

17.5 Economic and Financial Assessment of Container Freight Stations

17.5.1 Objective Container Freight Stations

This master plan suggests that two container stations be constructed; Cairo Trade Container Freight Station (Cairo Trade CFS) and Cairo-Alexandria Domestic Container Freight Station (Cairo-Alexandria Domestic CFS). Both are evaluated in terms of efficiency in resource allocation and financial return.

Financial evaluation places an analytical emphasis on relationship of charge, government support and investment return since an investment return to the investor is low without it.

17.5.2 Classification of Economic Benefit

Inland container depot can generate four kinds of economic benefits as indicated below;

1) Saving in VOC of Trucks

Containerization can contribute to reduce number of necessary trucks. This is attributable to the rationalization of loading condition.

Since one tractor-semi trailer can transport containing 12 tons in average in one TEU container, Cairo Trade CFS can reduce number of truck-semi trailer to be 30% of that of conventional truck fleet, and Cairo-Alexandria Domestic CFS 27%. This reduction in number has a significant impact on evaluation results.

This benefit is offset to some extent by increase in unit VOC. It is assumed that tractor-semi trailer (25 ton) play a role of container transportation, while 8 ton truck is engaged in conventional truck transportation at present.

2) Saving in VOC of Distribution/Collection Vehicles in urban area

With Cairo Trade CFS, smaller trucks will play a role of distribution/collection services, and replace present conventional trucks in the urban area. Change in type of vehicle engaged in distribution/collection service is expected to produce a saving in VOC.

At present containers are stripped at the ports and the imported freights were transported by the conventional trucks to the consignees in Cairo metropolitan area. This will be replaced by smaller trucks if the container will be stripped at Cairo Trade CFS.

In addition, this gives a significant impact on total vehicle-hour. Smaller trucks will make a individual trip between CFS and consigners (or consignees). This additional trip with small truck increases vehicle-hour, while distribution/collection by conventional large truck will reduce its vehicle-hour. So in this section, actual calculation procedures alone are shown.

As for Cairo-Alexandria Domestic CFS, same kind of saving in VOC can be expected.

17.5.3 Estimation of Economic Benefit

Reckoning functions of each benefit items are the same as the benefit reckoning functions of truck terminal.

1) Saving in VOC of Line Haul Vehicles

It is assumed that, with the Cairo Trade CFS, 25 ton truck-semi trailer will replace the conventional 8 ton trucks. Average travel distance is set 192.25 km for one trip, which is average distance between Cairo and other three ports i.e. Alexandria, Port Said and Damyat. Corresponding VOCs are adopted in reckoning the benefit of this item.

Number of vehicles necessary to carry the estimated amount of freight cargoes is calculated to be 645,235 trucks (8 ton) per year in case of "without" the CFS project." This turns to be 195,416 truck-semi trailers (25 tons). Reduction rates are 70%.

With the Cairo-Alexandria Domestic CFS generates the same change in vehicles, while average travel distance is set 230 km. 233,745 trucks (8 tons) will be replaced by 63,492 truck-semi trailers (25 tons), which shows 73% reduction in number. Total amounts of saving in VOC of vehicles are shown below;

(1) Cairo Trade CFS

$$\begin{aligned}
 & 645,235(\text{veh/year}) \times 192.25(\text{km}) \times 283.27(\text{LE}) / 1000 \\
 & - 195,416 (\text{veh/year}) \times 192.25 (\text{km}) \times 738.28(\text{LE}) / 1000 \\
 & = 7.40 \text{ M.LE/year}
 \end{aligned}$$

$$\begin{aligned}
 & 645,235(\text{veh/yr}) \times 192.25(\text{km}) / 50(\text{km/hr}) \times 20.94(\text{LE/hr}) \\
 & / 1000 - 195,416(\text{veh/yr}) \times 192.25(\text{km}) / 50 (\text{km/hr}) \times \\
 & 35.37(\text{LE/hr}) / 1000 \\
 & = 25.37 \text{ M.LE/year}
 \end{aligned}$$

(2) Cairo-Alexandria Domestic CFS

$$\begin{aligned}
 & 233,745(\text{veh/year}) \times 230(\text{km}) \times 283.27(\text{LE}) / 1000 \\
 & - 63,492(\text{veh/yr}) \times 230(\text{veh}) \times 738.28(\text{LE}) / 1000 \\
 & = 3.72 \text{ M.LE/year}
 \end{aligned}$$

$$\begin{aligned}
& 233,745(\text{veh/yr}) \times 230(\text{km}) / 50(\text{km/hr}) \times 20.94(\text{LE/hr}) \\
& / 1000 - 63,492(\text{veh/yr}) \times 230(\text{km}) / 50(\text{km/hr}) \times \\
& 35.37(\text{LE/hr}) / 1000 \\
& = 10.19 \text{ M.LE/year}
\end{aligned}$$

2) Saving in VOC of Distribution/Collection Vehicles in urban area

Smaller trucks (2 tons) replace the 8 ton trucks in this activities. As for the route distance and number of vehicles for distribution/collection are set same as Cairo truck terminal project. One container is set to carry 12 ton and requires 6 fleet of 2 ton trucks. Each small truck makes a trip of 5 km for one trip and returns with empty load.

(1) Cairo Trade CFS

$$\begin{aligned}
& 645,235(\text{veh/year}) \times 10(\text{km}) \times 283.27(\text{LE}) / 1000 \\
& - 195,416(\text{veh/yr}) \times 6(\text{veh}) \times 5(\text{km}) \times 2(\text{trips}) \\
& \times 188.52(\text{LE}) / 1000 = -0.38 \text{ M.LE/year}
\end{aligned}$$

$$\begin{aligned}
& 645,235(\text{veh/yr}) \times 10(\text{km}) / 25(\text{km/hr}) \times 20.94(\text{LE/hr}) \\
& / 1000 - 195,416(\text{veh/yr}) \times 6(\text{veh}) \times 5(\text{km}) \times 2(\text{trips}) \\
& / 25(\text{km/hr}) \times 12.37(\text{LE/hr}) / 1000 = -0.40 \text{ M.LE/year}
\end{aligned}$$

(2) Cairo-Alexandria Domestic CFS

$$\begin{aligned}
& 233,745(\text{veh/year}) \times 10(\text{km}) \times 283.27(\text{LE}) / 1000 \\
& - 63,492(\text{veh/yr}) \times 6(\text{veh}) \times 5(\text{km}) \times 2(\text{trips}) \\
& \times 188.52(\text{LE}) / 1000 = -0.06 \text{ M.LE/year}
\end{aligned}$$

$$\begin{aligned}
& 233,745(\text{veh/yr}) \times 10(\text{km}) / 25(\text{km/hr}) \times 20.94(\text{LE/hr}) \\
& / 1000 - 63,492(\text{veh/yr}) \times 6(\text{veh}) \times 5(\text{km}) \times 2(\text{trips}) \\
& / 25(\text{km/hr}) \times 12.37(\text{LE/hr}) / 1000 = 0.07 \text{ M.LE/yr}
\end{aligned}$$

Thus the total benefit which each CFS can receive are aggregated as shown in Tables 17-5-1 and 17-5-2. Total benefit amounts to 32.0 M.LE for Cairo Trade CFS and 13.92 M.LE for Cairo-Alexandria Domestic CFS.

Table 17-5-1 Annual Benefit of Cairo Trade CFS

Description	Annual Benefit
Line haul truck;	
VOC (distance-related) ;	7.40 million LE (27%)
VOC (time-related) ;	25.37 million LE (82%)
Distribution/collection truck	
VOC (distance-related) ;	-0.38 million LE (-3%)
VOC (time-related) ;	-0.40 million LE (-6%)
Total	; 32.00 million LE

Table 17-5-2 Annual Benefit of Cairo-Alexandria Domestic CFS

Description	Annual Benefit
Line haul truck;	
VOC (distance-related) ;	3.72 million LE (27%)
VOC (time-related) ;	10.19 million LE (82%)
Distribution/collection truck	
VOC (distance-related) ;	-0.06 million LE (-3%)
VOC (time-related) ;	0.07 million LE (-6%)
Total	; 13.92 million LE

17.5.4 Estimation of Economic Costs

Economic cost is obtained with a help of conversion factors estimated based on the actual cost information.

Conversion factors and economic costs of both CFSS are shown in Table 17-5-3. Economic cost is larger than financial costs by 117% and 116% for CFSS of imported goods and domestic goods respectively because of the inclusion of equipment depreciation costs.

Table 17-5-3 Financial and Economic Costs of Container Freight Stations

Unit:M.LE

Work Items	Conversion Factor	Cairo Inbound Cairo-Alex. Imports (CFS) Inbound (CFS)			
		Fin.		Eco.	
		Fin.	Eco.	Fin.	Eco.
1. Building, etc.	1.03	28.71	29.57	11.67	12.02
2. Asphalt Pavement	1.51	10.36	15.64	3.34	5.04
3. Fencing	0.96	0.01	0.01	0.01	0.01
4. Site Preparation	2.27	2.38	5.40	0.79	1.79
5. Land Acquisition	1.00	11.92	11.92	3.97	3.97
Total		53.38	62.55	19.78	22.84

17.5.5 Economic Analysis

Three evaluation indicators are prepared to assess the CFS projects. Those are financial rate of return (FIRR), net present value (NPV), and benefit cost ratio (B/C). There are some assumptions set for the analysis.

Project life ; 20 years after completion of the terminal
 Construction ; All the cost is expensed in one year (2011).
 Benefit ; Economic benefit generates at the first year (2012) of the operation and is kept

constant during the project life.
Discount rate ; 12%

Results are as follows;

(1) Cairo Trade CFS

EIRR ; 43.1 %
NPV ; 55.6 million LE
B/C ; 4.2

(2) Cairo-Alexandria Domestic CFS

EIRR ; 76.2 %
NPV ; 31.0 M.LE
B/C ; 7.3

17.5.6 Setting of Unit Charge for Financial Analysis

Charge is collected whenever the container arrives at the CFS. It is reckoned that 195,416 and 63,492 containers annually use CFSS of import goods and domestic goods respectively.

Possible range of Cairo Trade CFS charge should be equal to make the total amount equivalent to economic benefit of 32.0 M.LE per year at the most and at least it should cover 2.56 M.LE of annual operational cost. Thus the maximum level is set at 163 LE/vehicle and minimum at 21.85 LE/vehicle.

Same principle is applied to the charge of Cairo-Alexandria Domestic CFS. Economic benefit is 16.65 M.LE and annual operational cost is 1.33 M.LE. With the number of container fleets of 63,492, maximum level of charge is set at 262 LE/vehicle and minimum at 24.92 LE/vehicle.

17.5.7 Estimation of Project Cost

This is already shown in Table 17-5-1. Cairo Trade CFS is 53.38 M.LE in 1992 price. 54% of which is expended to the building and platform, followed by 22% of land acquisition and 19% of asphalt pavement.

Cairo-Alexandria Domestic CFS requires 19.78 M.LE for construction cost. Cost component shows similar pattern as Cairo Trade CFS.

17.5.8 Financial Analysis

This aims at clarifying at which level of charge financial viability is guaranteed and to what extent the government has to finance the CFS project. Relationship of the charge level, the government support and financial internal rate of return are shown in Tables 17-5-4 and 17-5-5.

Table 17-5-4 Relationship of FIRR, Charge, the Government Support; Cairo Trade CFS (%)

	Private	Government's Support on;				
		Land	+	+	+	+
			Land up to 25% Prepa. of Pavement	up to 50% of Build. Pavement	up to 75% of Build. Pavement	up to 75% of Build. & Pavement
(million)	53.38	41.46	39.08	29.3	19.54	9.77
Charge (LE/veh)						
21.85	-	-	-	-	-	-
25	-	-	-	-	-	2.33
50	8.16	11.86	12.81	18.16	27.95	56.30
75	18.84	24.75	26.33	35.36	53.14	106.31
100	28.43	36.76	39.02	52.11	78.15	156.31
125	37.70	48.60	51.57	68.79	103.16	206.32
150	46.89	60.40	64.08	85.47	128.16	256.32
163	51.66	66.53	70.58	94.14	141.16	282.32

Table 17-5-5 Relationship of FIRR, Charge, the Government Support; Cairo-Alexandria Domestic CFS (%)

	Private	Government's Support on;				
		Land	+	+	+	+
			Land up to 25% Prepa. of Pavement	up to 50% of Build. Pavement	up to 75% of Build. Pavement	up to 75% of Build. & Pavement
(million)	19.78	15.81	15.02	11.265	7.51	3.755
Charge (LE/veh)						
24.92	-	-	-	-	-	-
50	5.05	7.87	8.56	12.91	20.74	42.43
75	15.12	19.56	20.69	28.04	42.33	84.74
100	23.77	30.01	31.62	42.30	63.50	127.01
125	32.01	40.16	42.28	56.42	84.64	169.28
150	40.11	50.23	52.88	70.52	105.78	211.55
175	48.17	60.28	63.45	84.61	126.91	253.82
200	56.20	70.32	74.02	98.70	148.05	296.10
225	64.23	80.36	84.59	112.79	169.18	338.37
262	76.11	95.22	100.23	133.64	200.46	400.97

Table for Cairo Trade CFS shows that, the investment by the private sector alone has to set a charge of 1000 LE/vehicle to guarantee sufficient FIRR of more than 20%.

Lowest level of charge which guarantee desirable investment

return is 50 LE/vehicle if the government share some burden of CFS project. In this case, the government financial support accounts for 81% of total construction cost. It requires significant involvement of the government. Furthermore the CFS management has to set a charge of 75 LE/vehicle if the government support is limited up to a half of the total construction cost.

50, 75 and 100 LE/vehicle are 40%, 60% and 100% of the present freight transportation charge. It suggests that trucking company cannot afford these level of charge.

Table about Cairo-Alexandria Domestic CFS contains similar conclusions as Cairo Trade CFS.

17.5.9 Conclusions for CFS Projects

- 1) Very promising CFS projects in terms of economic evaluation have to adopt unacceptable high charge on users and CFS projects are not feasible if these are managed without any government support.
- 2) With government support, the CFS projects can be feasible. However its charge level should be 50 LE/vehicle at least, which is equivalent to 40% of present freight transport charge. And the government financial burden reaches 81% of the total construction cost in the case of Cairo Trade CFS.
- 3) It is suggested that the government provide the government fund of at least 50% of the construction cost. If possible, this ratio should be raised up to 80%, while the charge be set at 50 LE/vehicle.
- 4) It is also suggested that construction of CFSS after 2012 be a strong policy alternative.

CHAPTER 18 Transportation related Policy and Institution Development

18.1 Roles of MOT in Public Transport Administration

MOT had been undertaking dominant roles in public transportation sector by directing the public companies concerning budget, marketing, financing and regulations until the law No.203 was issued in 1991, aiming at complete liberalization as a part of comprehensive economic reform program.

By this law, holding companies were established under the new Ministry of Public Business Sector and twelve public companies under MOT with the exception of four construction companies were transferred under the control of these Holding Companies, which have the role to sell all or some share of the government to private sector. In addition, the law No.203 aimed to realize the equality between public and private sector, under the principle that there is no deprivation to the public business sector companies of any advantages.

The holding companies are now preparing for privatization by reviewing financial conditions and evaluating the assets of each public company. The Government intends to complete the privatization program within four to five years.

Under this situation, TPA/MOT is needed to review its functional scheme to meet the progress of the privatization program. The prevailing liberalization policy of the Government will make the TPA/MOT's roles to public transport more limited ones, transferring the focal points from "management and control" to "monitor and follow-up", with no interference in private transport companies' management activities.

However, due to the strong public nature of transportation services, it will be risky to put transportation businesses suddenly into complete free market without control. If doing so, some social frictions will inevitably accrue. Transport services will concentrate to profitable routes while unprofitable routes tend to become badly serviced or neglected. Overheated competition will not allow weak companies to survive financially and excessive cost-down will sacrifice safety.

Thus, even based on the "laissez faire" policy, minimum level of control by the Government will be needed. New roles of TPA/MOT are suggested as followings from this point of view.

18.1.1 Licensing and Approval of Bus Operation

MOT is responsible to guide public bus transport activities in the private sector by limiting or encouraging increase of transport operators, so to balance demand and supply. The main objectives of the governmental administration in this field are:

- 1) To supply passengers with safe and fair service by approving qualified transport operators,
- 2) To protect existing transport operators enter the market vested interests by avoiding excessive number of transport operators, and
- 3) To provide at least minimum level of public transport service wherever people inhabit.

To attain these objectives, it is recommended to establish the license system that bus entities engaging in passenger public transport service must get a license issued by the Minister of Transport for inter city transport (or by the Governors in urban areas or within Governorate boundary).

The management of the existing 4 inter city bus companies will become more profit-oriented after they are privatized and will try to cut their operation on unprofitable routes. Therefore, the current operating routes should not be abolished without approval. In case that MOT judges the service on the route necessary to be maintained, the company should be subsidized the amount to cover the operating deficit of the route (see 18.1.3).

The headquarter of MOT should monitor performance of inter city transport operators based on a periodical survey and study demand and supply balance carefully. Also once a year, MOT should deliver the guideline for transport business to the local authorities in charge of licensing for local bus operation. The documentation and procedure must be simplified as much as possible and the authority in charge has to take quick action without delay, either in case of issuing license or not, in order not to hinder transport business activities.

18.1.2 Public Bus Fare Control

1) Present Conditions

Present liberalization policy of the Egyptian Government is directing the fare and tariff system to be determined by market mechanism without interference by the Government. Before the law No.203 was promulgated, fare systems were controlled by MOT, and after the public transport companies were transferred to the Holding Companies, they became able to revise their fare systems once a year within the range of 15%. If exceeding 15%, bus companies need to get permission of the Minister of Transport through the Holding Companies.

However, such request has not been made yet.

It is not foreseeable how the fare system will be controlled by the Government after the Holding Companies sell more than 51% of their capital shares to private financiers.

There is no control on transport fares of private taxis and trucks, although there is a fare system agreed on between unions and cooperatives and local authorities. The fare is sometimes raised with the excuses of inflation progress and change of gasoline price. Also, drivers tend to offer higher fares to passengers in the night time or when their cars are new.

2) Issues

In principle, it is desirable that transport services are made by the private sector and fares are determined in the free market. However, in the developing stage of transport industries where one-vehicle-owners are the majority of service suppliers, over-heated competitions may cause a fare lower than cost, proper maintenance of vehicles becomes difficult, drivers are forced to overwork and thereby traffic accident will increase.

Where a union or a syndicate of transport operators becomes too strong without any control, market mechanism will not work on price properly, and even if cartel fares become prevailed, public transport users, especially, the transportation poor with no other transport means have no measures against the unduly raised fares.

3) Recommendations

If the Government set an official fare/tariff system and forces transport operators to follow the system, it goes apparently against the Government policy. However, it may be recommended not as a compulsory measure, but as a guiding one, that MOT reviews current passenger fares and freight tariffs once a year, estimates a "standard fare and tariff" based on the cost-plus-profit principle, and notifies it to Governorates, Traffic Departments of MOI, and transport operators. The standard fare and tariff is not an obligatory one, but a guideline for transport operators to set their fare and tariff.

In order to put this system into practice, the following process is recommended:

- a. MOT is to establish a study group of transport fare and tariff (for example, in the economic unit in TPA) which is in charge of collecting and analyzing data and work out a draft standard fare and tariff once a year.
- b. The draft is submitted for deliberation, to a consul-

tative committee consisting of men of learning and experience and representatives of Governorates, and the committee submits the final standard fare and tariff to the Minister of Transport.

- c. The Minister of Transport notifies the standard fare and tariff to relevant organizations and transport operators and at the same time publicizes it through mass media.
- d. The said study group is to continue monitoring of fares and tariffs in the country.
- e. MOT allocates necessary budget for this process.

18.1.3 Policies for Fostering Transport Business

1) Subsidy to Minimum Level of Public Bus Transport Service

Minimum level of public bus transport service should be secured to areas with demand less than a certain amount, even though transport business to/from such areas may not be viable with reasonable tariff.

It is suggested to develop such a system that the Government subsidize, upon request, a public bus transport operator who is operating on a route designated as "subsidiary route", with upper-limit of a certain percent of his operating cost.

It is not desirable, however, that this subsidy system will burden the public budget, permanently. To avoid this situation, it may be worth considering to allot the surplus of bus and taxi terminal revenue for the subsidy.

MOT should make the study and plan of this subsidy system, and if it is feasible, develop a guidelines and notify it to the local Government, according to a law.

2) Research and Development

It is recommended that MOT prepares budget for research and development works in order to improve economy, safety and reliability of public bus transport services. MOT should carry out such kind of studies and also subsidize research organizations and private bus companies.

3) Finance to Transport Business

By establishing a "Public Bus Transport Business Fostering Fund" by the Government, soft loans should be provided to qualified public transport operators for purchase of fleet and development of terminals, garages and workshops. Examination of the loan application is to be undertaken by MOT.

4) Tax Reduction and Exemption

Taxes on private investment aiming at rationalization, safety and less public nuisance in public bus transport sector should be reduced or exempted by law.

18.1.4 Information Service

1) Effective Use of Transport Information

Reliable transport information and data are essential not only for the governmental administration but also for transport business development in all modes in the private sector. In this respect, information accumulated in the Transport Information Center of TPA/MOT should be utilized effectively, not limiting its use inside MOT, but opening to public use.

2) Publication of Transport White Book

It is strongly recommended that MOT should edit and publish its white book (Year Book) once a year. The white book shall cover MOT's policy, institutional system, annual performance, explanation of revised law and regulation, etc., as well as transport statistics on all modes.

3) Maintenance of Law and Regulation

In connection with the above issue, MOT should organize a section in charge of legal affairs which takes care of all the transport related laws, regulations and decrees. When present rules and systems are changed or a new system is introduced, the section is responsible to prepare a draft of the new law and regulation, abolishing out-of-date one.

18.1.5 Integration of Transport Administration

According to the present jurisdiction in Egypt, traffic management, vehicle registration, inspection and insurance are the responsibility of the traffic police departments in the governorates under the supervision of MOI, while public bus transport planning is the matter of MOT.

In order to administrate transportation sector in a consistent way, it is necessary to coordinate the functions of governorate traffic department, central traffic agency, local authorities and MOT. Registration of inter city public bus transport business should continue to be under the jurisdiction of MOT, so that MOT can have policy measures to manage public bus transport activities in the private sector.

18.2 Institutional Development

18.2.1 Institutional Alternatives for New Public Works

As for the execution and management agency of public-natured large scale projects such as the freeway projects and truck terminal projects recommended in this Master Plan, generally, four alternative types of agencies can be considered: the governmental body, public corporation, the third sector, and the private sector.

(1) Governmental Body

An organization of the Ministry of Transport undertakes directly implementation and operation of such projects. Currently in Egypt, most of transport infrastructure such as ports, airport, railway and road (including toll roads) are constructed, maintained and operated by the Government.

(2) Public Corporation

Public Companies in Egypt correspond to this. The public corporation is completely owned and controlled by the Government, however, is responsible to attain financial independence. Most of workers are employed by the corporation and not government officials.

(3) Third Sector (Semi-Governmental and Semi-Private Company)

The third sector company is established with the capital jointly of the Government (the first sector) and the private sector (the second sector), aiming to have merits of the both: public and equitable nature of the former and active and flexible nature of the latter. Funds procurement is easier since both sector sources can be tapped.

(4) Private Sector

There are toll road projects implemented by the private sector, using a method called BOT (build, operate and transfer). The Government gives the concession to a selected private company, which is responsible to raise the fund, construct and operate the toll road. After recovering all the cost and reasonable profit by toll revenue, the road will be transferred to the Government.

Characteristically, the Government and the private sector are opposite each other and the public corporation and the third sector are in-between of them. Each one has advantages and disadvantages.

As for the fund procurement, for example, the third sector may have the most advantage as mentioned above, followed by the public corporation. Many large-scale projects have been

achieved by the third sector organizations in Japan, mainly for this reason.

In most developing countries, salaries of the government officials are extremely low compared to those of the private sector, hence, it is difficult to recruit a large number of capable personnel to a governmental entity at a time. However, sudden decrease of staff after the peak of the project is more difficult than in a public sector.

Private companies are, in principle, profit oriented and keenly conscious of capital turnover. For this reason, their capital will not go toward such a long-term project as infrastructure development. Profit oriented mind will induce to offer a better service. It is rare to find a satisfactory service by the Government.

To acquire the land for a project, the Government is advantageous more than a private company. When developing a road or a terminal, the governmental agency will take a comprehensive way of planning, including regional development, not only aiming at profit.

Those characteristics are summarized as in Table 18-2-1. Above arguments are very simple and not applicable always. However, it may be agreeable, generally, as a rule of thumb.

Table 18-2-1 Comparison of Project Executing Body

Item of Comparison	Govern- ment	Public Corp.	Third Sector	Private Sector
1 Fund Procurement	B	A	A	B
2 Staffing	C	B	B	A
3 Profit Oriented	C	B	B	A
4 Long Project Cycle	A	A	B	C
5 Quality of Service	C	B	A	A
6 Land Acquisition	A	A	B	B
7 Regional Development	A	A	B	C

Note: A: Advantageous B: Fair C: Disadvantageous

18.2.2 Institution for Freeway Development

(1) Organization

Which type of organization is most suitable to develop a freeway network may depend on the national conditions. However, as long as the self-supporting financing system for freeway projects is targeted, it is not advisable that MOT becomes the executing agency directly, because of the following reasons.

- a. This agency will need more than one thousand staff in the peak time of the construction, however, completed the network after 20-30 years, several hundred personnel should be remained for the management.
- b. Completely independent accounting system will be needed to clarify borrowings, mortgage, toll revenue and expenditure, without mixing up with national account.
- c. Service spirit will be required to achieve complete maintenance of freeways, quick and proper counteraction to accidents and provision of various information services.

The third sector organization is generally suitable for such project that requires huge initial investment and starts with co-finance of the Government and is finally privatized. Freeways are the most basic national infrastructure, and even introducing private sector fund in the initial stage, it should be transferred to the Government in the long run.

According to the preliminary financial analysis, FIRR of the freeway project is estimated at 5%, which is not high enough to attract private fund. Therefore, if BOT system is intended to apply, some portion of initial cost (for example, land acquisition cost and interest payment during construction period) should be shouldered by the Government.

As the tentative conclusion, it is recommendable to study on the establishment of independent public organization for freeway development, such as the Egyptian Freeway Corporation (EFC). Prior to reaching the final conclusion, many cases in different countries should be studied for reference. In the Southeast Asian countries, there are examples of toll road projects developed by BOT system and by the third sector.

(2) Japan Highway Public Corporation

The Japan Highway Public Corporation (JHPC) was set up in 1956 as the comprehensive management organization for toll roads, with the purpose of development and expansion of toll road network, by widely introducing private sector funds.

JHPC is responsible to construct, improve, maintain and repair the toll road in comprehensive and effective way and contribute to smooth traffic flow. JHPC's works are stipulated by law, as followings:

- a. to construct, improve, maintain and repair the toll roads defined by the road act.
- b. to restore a disaster of the said roads
- c. to construct and manage parking facilities in connection to the said roads
- e. to construct and manage service areas, fuel stations

- and workshops to secure smooth traffic on the freeways.
- f. to construct and manage:
 - * truck terminals
 - * facilities to connect and disconnect trailers
 - * storages and lodges
 - g. to undertake other works relevant to above works
 - h. to construct and improve roads by the request of the central or local governments, and to undertake study, land survey, design, laboratory test and research works on road projects.

The paid-up capital of JHPC is 838.0 billion yen (8,000 million US\$) as of 1993, all of which is invested by the Central Government. Most part of JHPC's annual budget is financed by bonds and loans, which will be paid back by toll revenue in the future. Fig.18-2-1 illustrates the organization of JHPC.

Prior to the operation of new toll road, JHPC must get approval of the Minister of Transport on the toll system and toll period. By law, proposed toll system must meet the following principles:

A. Amortization Principle

Total cost must be amortized by the toll revenue in the toll period

B. Fairness Principle

Toll system must be fair and reasonable, applied to any users equally.

C. Benefit Principle

Toll amount must not exceed the benefit which users can get by using the toll road.

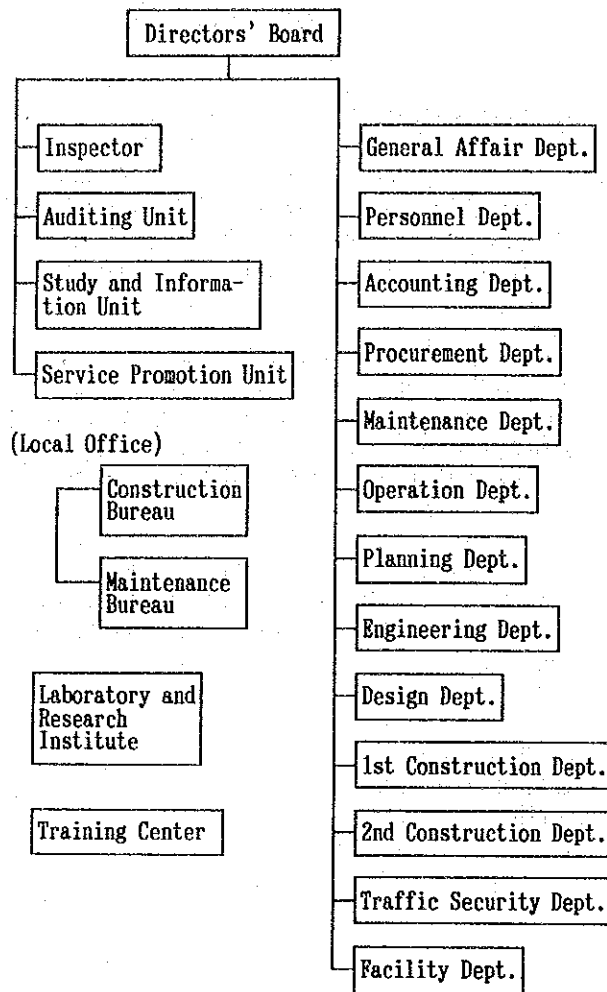


Fig.18-2-1 Organization of Japan Highway Public Corporation (JHPC)

18.2.3 Institution for Truck Terminal Development

(1) Investment

It is generally difficult to achieve high profitability in truck terminal operation, because, in addition to the considerable amount of land and construction cost required and the low intensity of land use, rental charges are kept low due to the public nature of terminals. The evaluation of the truck terminal revealed very low profitability of the project, in spite of the extraordinarily high economic return.

Since the private sector can hardly be expected to join in this kind of projects, the truck terminal project ought to be implemented by the Government finance. This is easily

justified by the high economic return.

(2) Management

Even though the project is not financially feasible, the revenue from rent of berths and cargo-handling space is enough to cover the operating costs of the terminal. Then, it is advisable to establish the third sector company for the terminal management, inviting main users (trucking companies) to participate in. By this, the terminal will become to offer better service to the users, attract more clients and, as a result, achieve the final goal of the project.

In Japan, there were 24 general truck terminals in 1980, managed by 18 entities. Of these, one third (equivalent to 13% in number of berths) were fully private concerns and the rest were third sector organizations.

In 1985, the Japanese Cabinet decided to privatize many public enterprises including Japan Public Truck Terminal Corporation (JPTTC), as well as Japan National Railway Corporation (JNR). This privatization meant withdrawal of the government's capital funds from JPTTC, which amounted at 5,779 million yen. This capital was converted to loan to be returned in the following 15 years without interest payment.

Appendices

Appendix-1

Governorate, Markaz and Zone Code

Governorate		Markaz		Semi-Governorate Zone		Zone	
Sq. Code	Name	Code	Name	Code	Name	Code Sq.	Name
1	01 Cairo	0101	Tebbin	01	Greater Cairo	0199	001 Greater Cairo
		0102	Helwan	01	Greater Cairo	0199	001 Greater Cairo
		0103	Fifteenth May	01	Greater Cairo	0199	001 Greater Cairo
		0104	Maadi	01	Greater Cairo	0199	001 Greater Cairo
		0105	Hasr El Qadima	01	Greater Cairo	0199	001 Greater Cairo
		0106	Saiyedah Zeinab	01	Greater Cairo	0199	001 Greater Cairo
		0107	Khalifah	01	Greater Cairo	0199	001 Greater Cairo
		0108	Abdin	01	Greater Cairo	0199	001 Greater Cairo
		0109	Hoski	01	Greater Cairo	0199	001 Greater Cairo
		0110	Qasr El Nile	01	Greater Cairo	0199	001 Greater Cairo
		0111	Boulaq	01	Greater Cairo	0199	001 Greater Cairo
		0112	Azbakiah	01	Greater Cairo	0199	001 Greater Cairo
		0113	Darb El Ahmar	01	Greater Cairo	0199	001 Greater Cairo
		0114	Gamalia	01	Greater Cairo	0199	001 Greater Cairo
		0115	Bab El Sharia	01	Greater Cairo	0199	001 Greater Cairo
		0116	Zaher	01	Greater Cairo	0199	001 Greater Cairo
		0117	Sharabiah	01	Greater Cairo	0199	001 Greater Cairo
		0118	Shubra	01	Greater Cairo	0199	001 Greater Cairo
		0119	Rod El Farag	01	Greater Cairo	0199	001 Greater Cairo
		0120	Sahel	01	Greater Cairo	0199	001 Greater Cairo
		0121	Wayli	01	Greater Cairo	0199	001 Greater Cairo
		0122	Hadaek El Kobba	01	Greater Cairo	0199	001 Greater Cairo
		0123	Zeitoun	01	Greater Cairo	0199	001 Greater Cairo
		0124	Hataria	01	Greater Cairo	0199	001 Greater Cairo
		0125	Nasr City	01	Greater Cairo	0199	001 Greater Cairo
		0126	Hasr El Gadida	01	Greater Cairo	0199	001 Greater Cairo
		0127	Nozha	01	Greater Cairo	0199	001 Greater Cairo
		0128	Badr City	01	Greater Cairo	0199	001 Greater Cairo
		0129	Ain Shams	01	Greater Cairo	0199	001 Greater Cairo
		0130	Zawia El Hanra	01	Greater Cairo	0199	001 Greater Cairo
		0131	Salam	01	Greater Cairo	0199	001 Greater Cairo
		0132	Zamalek	01	Greater Cairo	0199	001 Greater Cairo
		0133	Hanshiet Nasser	01	Greater Cairo	0199	001 Greater Cairo
		0134	Basatieh	01	Greater Cairo	0199	001 Greater Cairo
		0135	Amal City	01	Greater Cairo	0199	001 Greater Cairo
0136	Marg	01	Greater Cairo	0199	001 Greater Cairo		
2	02 Alexandria	0201	Montazah	18	Alexandria	0200	083 Alexandria
		0202	Raml	18	Alexandria	0200	083 Alexandria
		0203	Sidi Gaber	18	Alexandria	0200	083 Alexandria
		0204	Bah Sharki	18	Alexandria	0200	083 Alexandria
		0205	Hoharam Bik	18	Alexandria	0200	083 Alexandria
		0206	Attarein	18	Alexandria	0200	083 Alexandria
		0207	Hanshiya	18	Alexandria	0200	083 Alexandria
		0208	Karmouz	18	Alexandria	0200	083 Alexandria
		0209	Laban	18	Alexandria	0200	083 Alexandria
		0210	Ganarek	18	Alexandria	0200	083 Alexandria
		0211	Mina El Bassal	18	Alexandria	0200	083 Alexandria
		0212	Bekhila	18	Alexandria	0200	083 Alexandria
		0213	Amreya	18	Alexandria	0200	083 Alexandria
		0214	Police Port Department	18	Alexandria	0200	083 Alexandria
3	03 Port Said	0301	Shark	09	Port Said	0300	040 Port Said
		0302	Arab	09	Port Said	0300	040 Port Said
		0303	Hanakh	09	Port Said	0300	040 Port Said
		0304	Port Fouad	09	Port Said	0300	040 Port Said
		0305	Port Said Police Port Dept	09	Port Said	0300	040 Port Said
		0306	Dawahy	09	Port Said	0300	040 Port Said
4	04 Suez	0401	Suez	11	Suez	0400	044 Suez
		0402	Arheion	11	Suez	0400	044 Suez
		0403	Attaka	11	Suez	0400	044 Suez
		0404	Shatt	11	Suez	0400	044 Suez
		0405	Suez Police Port Dept.	11	Suez	0400	044 Suez
		0406	Fessal	11	Suez	0400	044 Suez
5	11 Damietta	1101	Damietta City	08	Damietta	1102	038 Damietta
		1102	Damietta Markaz	08	Damietta	1102	038 Damietta
		1103	Paraskour Markaz	08	Damietta	1103	039 Paraskour
		1104	Kafr Saad Markaz	08	Damietta	1101	037 Kafr Saad
		1105	Damietta El Gedida City	08	Damietta	1102	038 Damietta
		1106	New Damietta Port	08	Damietta	1102	038 Damietta
		1107	Zarqa Markaz	08	Damietta	1104	155 El Zarqa

Governorate		Markaz		Semi-Governorate Zone		Zone	
Sq. Code	Name	Code	Name	Code	Name	Code Sq.	Name
6	12 Dakahlia	1108	Ras El Bar	08	Damietta	1102 038	Damietta
		1201	First Mansoura	06	East Dakahlia	1204 030	Mansoura
		1202	Second Mansoura	06	East Dakahlia	1204 030	Mansoura
		1203	Mansoura Markaz	06	East Dakahlia	1204 030	Mansoura
		1204	Aga Markaz	06	East Dakahlia	1202 028	Aga
		1205	Senbellawen Markaz	06	East Dakahlia	1203 029	Senbellawen
		1206	El Matariya	06	East Dakahlia	1207 033	El Matariya
		1207	Manzala Markaz	06	East Dakahlia	1206 032	Manzala
		1208	Belkas Markaz	07	West Dakahlia	1209 035	Belkas
		1209	Dekernes Markaz	07	West Dakahlia	1205 031	Dekernes
		1210	Sherbin Markaz	07	West Dakahlia	1210 036	Sherbin
		1211	Talkha Markaz	07	West Dakahlia	1208 034	Talkha
		1212	Hit Ghawr	06	East Dakahlia	1201 027	Hit Ghawr
		1213	Hit Ghawr Markaz	06	East Dakahlia	1201 027	Hit Ghawr
7	13 Sharkia	1214	Menyet El Nasr Markaz	06	East Dakahlia	1211 156	Menyet El Nasr
		1215	El Gamalja	06	East Dakahlia	1206 032	Manzala
		1301	First Zagazig	04	North Sharkia	1304 019	Zagazig
		1302	Second Zagazig	04	North Sharkia	1304 019	Zagazig
		1303	Zagazig Markaz	04	North Sharkia	1304 019	Zagazig
		1304	Abu Hamad Markaz	04	North Sharkia	1305 020	Abu Hamad
		1305	Abu Kebir Markaz	05	South Sharkia	1309 024	Abu Kebir
		1306	Hessenia Markaz	05	South Sharkia	1311 026	Hessenia
		1307	Salhia City	05	South Sharkia	1312 157	Salhia City
		1308	Belbes Markaz	04	North Sharkia	1302 017	Belbes
		1309	Tenth of Ramadan City	04	North Sharkia	1301 016	Tenth Of Ramadan
		1310	Obour City	04	North Sharkia	1313 158	Obour City
		1311	Diarb Nega Markaz	04	North Sharkia	1306 021	Diarb Nega
		1312	Faqous Markaz	05	South Sharkia	1310 025	Faqous
8	14 Qalyubia	1313	Kafr Saqr Markaz	05	South Sharkia	1308 023	Kafr Saqr
		1314	Menyet El Kanh Markaz	04	North Sharkia	1303 018	Menyet El Kanh
		1315	Hehia	04	North Sharkia	1307 022	Hehia
		1316	Mashloul El Souq Markaz	04	North Sharkia	1314 159	Mashloul ElSouq
		1317	Ibrahimia Markaz	04	North Sharkia	1315 160	Ibrahimia
		1318	Qanayat	04	North Sharkia	1316 161	Qanayat
		1319	Awlad Saqr Markaz	05	South Sharkia	1317 162	Awlad Saqr
		1320	Rep. Qurin	04	North Sharkia	1318 163	El Qurin
		1401	Benha City	03	Qalyubia	1407 014	Benha
		1402	Benha Markaz	03	Qalyubia	1407 014	Benha
		1403	Khanka Markaz	03	Qalyubia	1404 011	Khanka
		1404	Kan. El Khairia Markaz	03	Qalyubia	1402 009	Kanater ElKhairia
		1405	Shebin El Kan. Markaz	03	Qalyubia	1405 012	Shebin El Kanater
		1406	First Shubra El Kheima	01	Greater Cairo	1401 008	Shubra El Kheima
1407	Second Shubra El Kheima	01	Greater Cairo	1401 008	Shubra El Kheima		
9	15 Kafr Al Sheikh	1408	Toukh Markaz	03	Qalyubia	1406 013	Toukh
		1409	Qalyub Markaz	03	Qalyubia	1403 010	Qalyub
		1410	Kafr Shokr Markaz	03	Qalyubia	1408 015	Kafr Shokr
		1501	Kafr El Sheikh City	15	Kafr El Sheikh	1501 061	Kafr El Sheikh
		1502	Kafr El Sheikh Markaz	15	Kafr El Sheikh	1501 061	Kafr El Sheikh
		1503	Borollous Markaz	15	Kafr El Sheikh	1507 067	Borollous
		1504	Beyala Markaz	15	Kafr El Sheikh	1508 068	Beyala
		1505	Desouk Markaz	15	Kafr El Sheikh	1503 063	Desouk
		1506	Sidi Salem Markaz	15	Kafr El Sheikh	1506 066	Sidi Salea
		1507	Fouh Markaz	15	Kafr El Sheikh	1504 064	Fouh
		1508	Qellin Markaz	15	Kafr El Sheikh	1502 062	Qellin
		1509	Mutubis Markaz	15	Kafr El Sheikh	1505 065	Mutubis
		1510	El Hamoul Markaz	15	Kafr El Sheikh	1509 164	El Hamoul
		1511	Desouk	15	Kafr El Sheikh	1503 063	Desouk
10	16 Gharbia	1512	El Royad Markaz	15	Kafr El Sheikh	1510 165	El Royad
		1601	First Tanta	13	North Gharbia	1603 055	Tanta
		1602	Second Tanta	13	North Gharbia	1603 055	Tanta
		1603	Tanta Markaz	13	North Gharbia	1603 055	Tanta
		1604	Santa Markaz	13	North Gharbia	1602 054	Santa
		1605	First Mahalla El Kubra	14	South Gharbia	1607 059	Mehalla El Kubra
		1606	Second Mahalla El Kubra	14	South Gharbia	1607 059	Mehalla El Kubra
		1607	Mahalla El Kubra Markaz	14	South Gharbia	1607 059	Mehalla El Kubra
		1608	Bassyoun Markaz	13	North Gharbia	1605 057	Bassyoun
		1609	Zefta Markaz	13	North Gharbia	1601 053	Zefta
		1610	Samanoud Markaz	14	South Gharbia	1608 060	Samanoud
		1611	Kotour Markaz	13	North Gharbia	1605 058	Kotour
		1612	Kafr El Zayat Markaz	13	North Gharbia	1604 056	Kafr El Zayat

Governorate		Markaz		Semi-Governorate Zone		Zone			
Sq. Code	Name	Code	Name	Code	Name	Code Sq.	Name		
11	17 Minufia	1701	Shebin El Kom City	12	Minufia	1706 050	Shebin El Kom		
		1702	Shebin El Kom Markaz	12	Minufia	1706 050	Shebin El Kom		
		1703	Ashmoun Markaz	12	Minufia	1701 045	Ashmoun		
		1704	Bagour Markaz	12	Minufia	1702 046	Bagour		
		1705	El Shuhada Markaz	12	Minufia	1704 048	El Shuhada		
		1706	Berket El Sabe Markaz	12	Minufia	1708 052	Berket El Sabe		
		1707	Tala Markaz	12	Minufia	1705 049	Tala		
		1708	Quesna Markaz	12	Minufia	1707 051	Quesna		
		1709	Minuf Markaz	12	Minufia	1703 047	Minuf		
		1710	Sers El Layan	12	Minufia	1709 156	Sers El Layan		
		12	18 Beheira	1801	Damanhour City	17	South Beheira	1805 074	Damanhour
1802	Damanhour Markaz			17	South Beheira	1805 074	Damanhour		
1803	Abo El Matameer Markaz			17	South Beheira	1811 081	Abu El Matameer		
1804	Abo Hommos Markaz			17	South Beheira	1809 079	Abu Hommos		
1805	Dalangat Markaz			16	North Beheira	1805 073	Dalangat		
1806	El Mahmudia Markaz			17	South Beheira	1807 077	Mahmudia		
1807	Etay El Baroud Markaz			16	North Beheira	1804 072	Etay El Baroud		
1808	Hosh Esa Markaz			17	South Beheira	1812 082	Hosh Esa		
1809	Rashed Markaz			17	South Beheira	1808 078	Rashed		
1810	Shubra Khit Markaz			16	North Beheira	1813 075	Shubra Khit		
1811	Kafr El Dawar			17	South Beheira	1810 080	Kafr El Dawar		
1812	Kafr El Dawar Markaz			17	South Beheira	1810 080	Kafr El Dawar		
1813	Kom Hamada Markaz			16	North Beheira	1803 071	Kom Hamada		
1814	Wadi El Natron Markaz			16	North Beheira	1802 070	Wadi El Natron		
1815	Sadat City			16	North Beheira	1801 069	Sadat City		
1816	El Rahmania Markaz			17	South Beheira	1814 076	El Rahmania		
1817	Edco Markaz			17	South Beheira	1815 167	Edco		
13	19 Ismailiya	1901	First Ismailiya	10	Ismailiya	1902 042	Ismailiya		
		1902	Second Ismailiya	10	Ismailiya	1902 042	Ismailiya		
		1903	Ismailiya Markaz	10	Ismailiya	1902 042	Ismailiya		
		1904	El Tell El Kebir Markaz	10	Ismailiya	1903 043	El Tell El Kebir		
		1905	El Qantara Markaz	10	Ismailiya	1901 041	El Qantara		
		1906	Fayed Markaz	10	Ismailiya	1904 168	Fayed		
		1907	El Qantara Shark	10	Ismailiya	1901 041	El Qantara		
		1908	Third Ismailiya	10	Ismailiya	1902 042	Ismailiya		
		14	21 Giza	2101	Imbaba	01	Greater Cairo	0199 001	Greater Cairo
				2102	Agouza	01	Greater Cairo	0199 001	Greater Cairo
2103	Dokki			01	Greater Cairo	0199 001	Greater Cairo		
2104	Giza			01	Greater Cairo	0199 001	Greater Cairo		
2105	Boulaq El Bakroun			01	Greater Cairo	0199 001	Greater Cairo		
2106	El Ahram			01	Greater Cairo	0199 001	Greater Cairo		
2107	Six October City			02	Giza	2107 169	6 th October		
2108	Hawmdya			02	Giza	2104 005	Badrashin		
2109	Giza Markaz			02	Giza	2103 004	Giza		
2110	El Badrashin Markaz			02	Giza	2104 005	Badrashin		
2111	El Saff Markaz			02	Giza	2101 002	Saff		
2112	El Aiyat Markaz			02	Giza	2105 006	Aiyat		
2113	Imbaba Markaz			02	Giza	2102 003	Imbaba		
2114	Baharia Oasis			02	Giza	2106 007	Baharia Oasis		
2115	Atfih Markaz			02	Giza	2108 170	Atfih		
2116	Oseem Markaz			02	Giza	2109 171	Ossem		
15	22 Beni Suef	2201	Beni Suef City	22	Beni Suef	2203 101	Beni Suef		
		2202	Beni Suef Markaz	22	Beni Suef	2203 101	Beni Suef		
		2203	Beni Suef El Gedida City	22	Beni Suef	2208 172	BeniSuef ElGedida		
		2204	El Fashn Markaz	22	Beni Suef	2207 105	Fashn		
		2205	El Wasta Markaz	22	Beni Suef	2201 099	Wasta		
		2206	Ihnasia Markaz	22	Beni Suef	2204 102	Ihnasia		
		2207	Beba Markaz	22	Beni Suef	2205 103	Beba		
		2208	Sumusta Markaz	22	Beni Suef	2206 104	Sumusta		
		2209	Naser Markaz	22	Beni Suef	2202 100	Bush		
		16	23 Fayoum	2301	El Fayoum City	21	Fayoum	2303 096	Fayoum
2302	El Fayoum Markaz			21	Fayoum	2303 096	Fayoum		
2303	Abshaway Markaz			21	Fayoum	2304 097	Abshawai		
2304	Itsa Markaz			21	Fayoum	2305 098	Itsa		
2305	Sennoures Markaz			21	Fayoum	2302 095	Sennoures		
2306	Tania Markaz			21	Fayoum	2301 094	Tania		
17	24 Minya	2401	Minya City	23	Minya	2406 111	Minya		
		2402	Minya Markaz	23	Minya	2406 111	Minya		
		2403	Minya El Gedida City	23	Minya	2406 111	Minya		
		2404	Abo Krikas Markaz	23	Minya	2407 112	Abu Kerkas		

Governorate		Markaz		Semi-Governorate Zone		Zone	
Sq. Code	Name	Code	Name	Code	Name	Code Sq.	Name
		2405	El Edwa Markaz	23	Minya	2402 107	Edwa
		2406	Beni Mazar Markaz	23	Minya	2403 108	Beni Mazar
		2407	Dair Mowas Markaz	23	Minya	2409 114	Dair Mowas
		2408	Samalot Markaz	23	Minya	2405 110	Samalot
		2409	Matay Markaz	23	Minya	2404 109	Matay
		2410	Maghagha Markaz	23	Minya	2401 106	Maghagha
		2411	Mallawi City	23	Minya	2408 113	Mallawi
		2412	Mallawi Markaz	23	Minya	2408 113	Mallawi
18	25 Asyut	2501	First Asyut	24	Asyut	2504 118	Asyut
		2502	Second Asyut	24	Asyut	2504 118	Asyut
		2503	Asyut Markaz	24	Asyut	2504 118	Asyut
		2504	Abnoub Markaz	24	Asyut	2509 123	Abnoub
		2505	Abo Tig Markaz	24	Asyut	2505 119	Abu Tig
		2506	Badari Markaz	24	Asyut	2510 124	Badari
		2507	Sahel Selim Markaz	24	Asyut	2508 122	El Sahel
		2508	Ghanaim Markaz	24	Asyut	2507 121	Ghanaim
		2509	Qossian Markaz	24	Asyut	2502 116	Qossiah
		2510	Dairut Markaz	24	Asyut	2501 115	Dairut
		2511	Sedfa Markaz	24	Asyut	2506 120	Sedfa
		2512	Manfalot Markaz	24	Asyut	2503 117	Manfalot
		2513	El Patth Markaz	24	Asyut	2511 173	El Fath
19	26 Sohag	2601	First Sohag	26	Sohag	2605 130	Sohag
		2602	Sohag Markaz	26	Sohag	2605 130	Sohag
		2603	Akhmin Markaz	26	Sohag	2606 131	Akhmin
		2604	Balyana Markaz	26	Sohag	2611 136	El Balyana
		2605	Maragha Markaz	26	Sohag	2603 128	Maragha
		2606	Menshah Markaz	26	Sohag	2609 134	El Menshah
		2607	Dar El Salan Markaz	26	Sohag	2608 133	Dar El Salan
		2608	Gerga Markaz	26	Sohag	2610 135	Gerga
		2609	Gehina El Gharbia Markaz	26	Sohag	2604 129	Gehina
		2610	Sukolla Markaz	26	Sohag	2607 132	Sukolla
		2611	Tema Markaz	26	Sohag	2601 126	Tema
		2612	Tahta Markaz	26	Sohag	2602 127	Tahta
		2613	Gerga City Polico	26	Sohag	2610 135	Gerga
		2614	Rep. Second Sohag	26	Sohag	2605 130	Sohag
20	27 Qena	2701	Qena City	27	Qena	2704 140	Qena
		2702	Qena Markaz	27	Qena	2704 140	Qena
		2703	Abu Tesht Markaz	27	Qena	2701 137	Abu Tesht
		2704	Arment Markaz	27	Qena	2708 144	Arment
		2705	Isna Markaz	27	Qena	2709 145	Isna
		2706	Luxor City	27	Qena	2707 143	Luxor
		2707	Luxor Markaz	27	Qena	2707 143	Luxor
		2708	Deshna Markaz	27	Qena	2703 139	Deshna
		2709	Ques Markaz	27	Qena	2705 141	Ques
		2710	Nag Hammadi Markaz	27	Qena	2702 138	Nag Hammadi
		2711	Nakada Markaz	27	Qena	2706 142	Nakada
		2712	Farshout Markaz	27	Qena	2710 174	Farshout
		2713	Qaft Markaz	27	Qena	2711 175	Qaft
		2714	El Wakf Markaz	27	Qena	2712 176	El Wakf
21	28 Aswan	2801	Aswan City	28	Aswan	2804 149	Aswan
		2802	Aswan Markaz	28	Aswan	2804 149	Aswan
		2803	Idfu Markaz	28	Aswan	2801 146	Idfu
		2804	Kom Ombo Markaz	28	Aswan	2802 147	Kom Ombo
		2805	El Nasser Markaz	28	Aswan	2803 148	El Nasser
22	31 Red Sea	3101	Hurghada	29	Red Sea	3102 151	Hurghada
		3102	Puseir	29	Red Sea	3104 153	Quseir
		3103	Aswan Border	29	Red Sea	3105 154	Bernice
		3104	Ras Ghareb	29	Red Sea	3101 150	Ras Gharb
		3105	Safaga	29	Red Sea	3103 152	Safaga
23	32 New Valley	3201	Kharga oasis	25	New Valley	3201 125	New Valley
		3202	Dakhla Oasis	25	New Valley	3201 125	New Valley
24	33 Matrouh	3301	Marsa Matrouh	19	Matrouh	3301 085	Matrouh
		3302	El Hamman	19	Matrouh	3302 089	El Hamman
		3303	El Amreya El Gedida City	19	Matrouh	3303 090	New Amreya City
		3304	Saloua	19	Matrouh	3304 086	Saloua
		3305	Daba	19	Matrouh	3305 084	Daba
		3306	Boro El Arab	19	Matrouh	3306 088	Borg El Arab
		3307	Sidi Barani	19	Matrouh	3307 087	Sidi Barani
		3308	Siewa	19	Matrouh	3308 177	Siewa
25	34 North Sinai	3401	1st Arish (Sadat Hayh)	20	North Sinai	3401 091	El Arish

Governorate		Markaz		Semi-Governorate Zone		Zone	
Sq. Code	Name	Code	Name	Code	Name	Code Sq.	Name
		3402	2nd Arish (Arish City)	20	North Sinai	3401 091	El Arish
		3403	3rd Arish (Hassaied Hayh)	20	North Sinai	3401 091	El Arish
		3404	Beir El Abd Markaz	20	North Sinai	3402 092	Beir El Abd
		3405	El Hosna Markaz	20	North Sinai	3403 181	EL Hosna
		3406	Nakhl Markaz	20	North Sinai	3404 178	Nakhl
		3407	El Sheikh Zowayed Markaz	20	North Sinai	3405 179	EL Sheikh Zowayed
		3408	Rafah Markaz	20	North Sinai	3406 180	Rafah
26	35 South Sinai	3501	El Tor	20	South Sinai	3501 093	Tor
		3502	Abu Zenima	20	South Sinai	3502 182	Abu Zenima
		3503	Ras Sedr	20	South Sinai	3503 183	Ras Sedr
		3504	Abu Redis	20	South Sinai	3504 184	Abu Redis
		3505	Saint Katrin	20	South Sinai	3505 185	Saint Katrin
		3506	Sharm El Sheikh	20	South Sinai	3506 186	Sharm El Sheikh
		3507	Dahab	20	South Sinai	3507 187	Dahab
		3508	Newaibai	20	South Sinai	3508 188	Newaibai

Appendix-2

Abbriviation

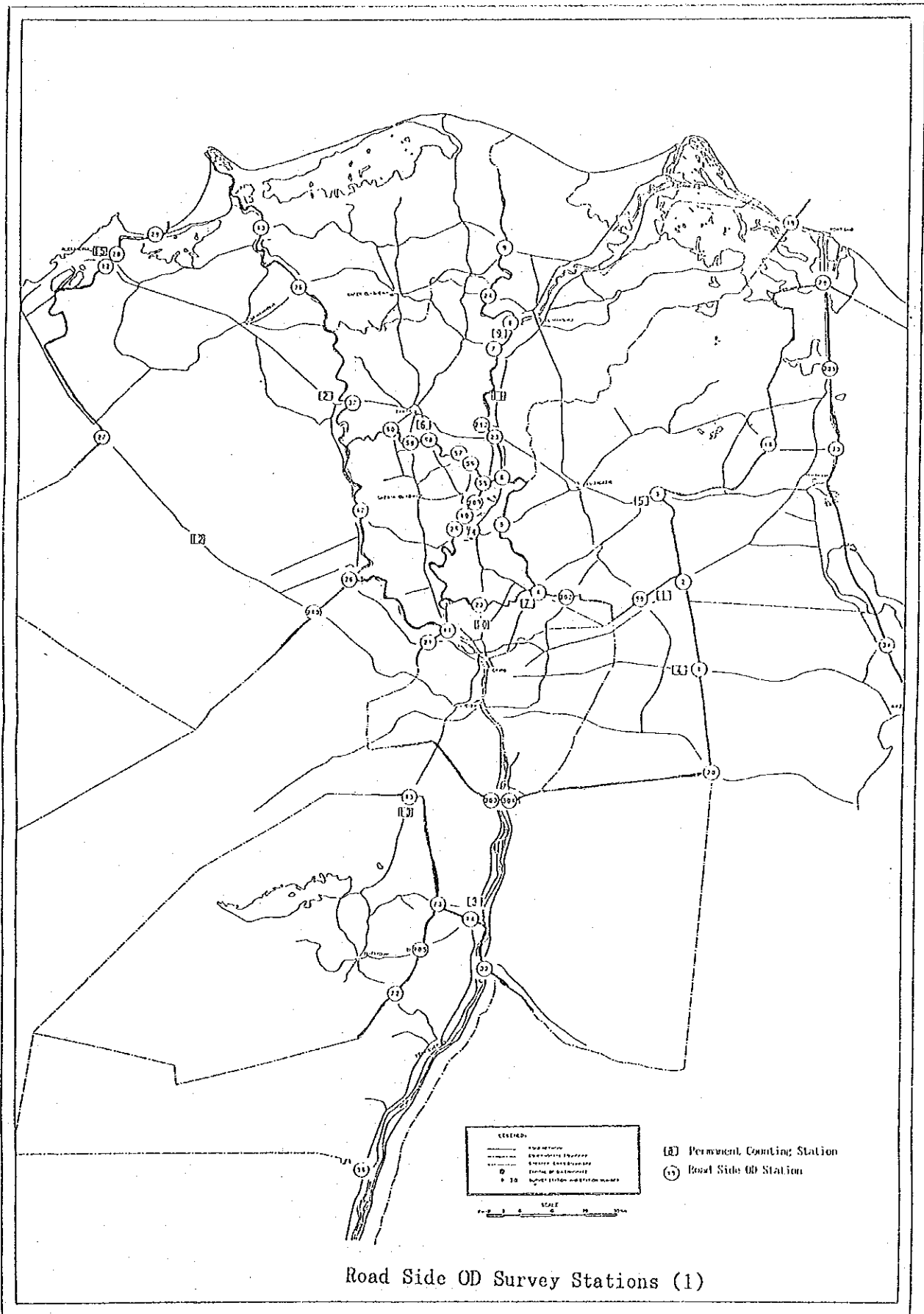
No Abb. Governorate	No Abb. Zone	No Abb. Commodity Groups
1 CAI Cairo	1 CAI Cairo	1 COIL Crude Oil
2 ALX Alexandria	2 GIZ Giza	2 PETR Petroleum Products
3 PTS Port Said	3 QAL Qaliubia	3 NGAS Natural Gas
4 SUZ Suez	4 SKS South Sharkia	4 CEMT Cement
5 DAM Damietta	5 SKN North Sharkia	5 CMAT Other Construction Materials
6 DAK Dakhalia	6 DKE East Dakhalia	6 PHOS Phosphate
7 SHR Sharikia	7 DKW West Dakhalia	7 IORE Iron Ore
8 QAL Qaliubia	8 DAM Damietta	8 COAL Coal and Coke
9 KAF Kafr El Sheik	9 PTS Port Said	9 MNRL Other Minerals
10 GHR Gharbia	10 ISM Ismailia	10 WHET Wheat
11 MIF Minufia	11 SUZ Suez	11 CBRE Other Cereals
12 BEH Beheira	12 MIF Minufia	12 FRUT Fruits and Vegetables
13 ISM Ismailia	13 GHS South Gharbia	13 SCAN Sugar Cane
14 GIZ Giza	14 GHN North Gharbia	14 FCRP Fiber Crops
15 BES Beni Suef	15 KAF Kafr El Sheik	15 LSTK Live Stocks
16 FAY Fayoum	16 BHS South Beheira	16 APRD Animal Products
17 MYA Minya	17 BHN North Beheira	17 AGPR Agricultural Products
18 ASY Asyut	18 ALX Alexandria	18 SGAR Sugar
19 SOH sohag	19 WDS Western Desert	19 FATS Edible Oil and Fats
20 QEN Qena	20 SIN Sinai	20 AFED Animal Feed
21 ASW Aswan	21 FAY Fayoum	21 BVRG Beverages
22 RED Red Sea	22 BES Beni Suef	22 OFOD Other Food Products
23 NEW New Valley	23 MYA Minya	23 CHEM Chemical Products
24 WDS Wester Desert	24 ASY Asyut	24 MTAL Metal and Metal Products
25 NSI North Sinai	25 NEW New Valley	25 TXTL Textiles
26 SSI South sinai	26 SOH Sohag	26 FTLZ Manufactured Fertilizer
	27 QEN Qena	27 PULP Pulp and Paper
	28 ASW Aswan	28 LUMB Lumber and Timber
	29 RED Red Sea	29 MANU Other Manufactured Goods
		30 MIXC Mixed Commodities

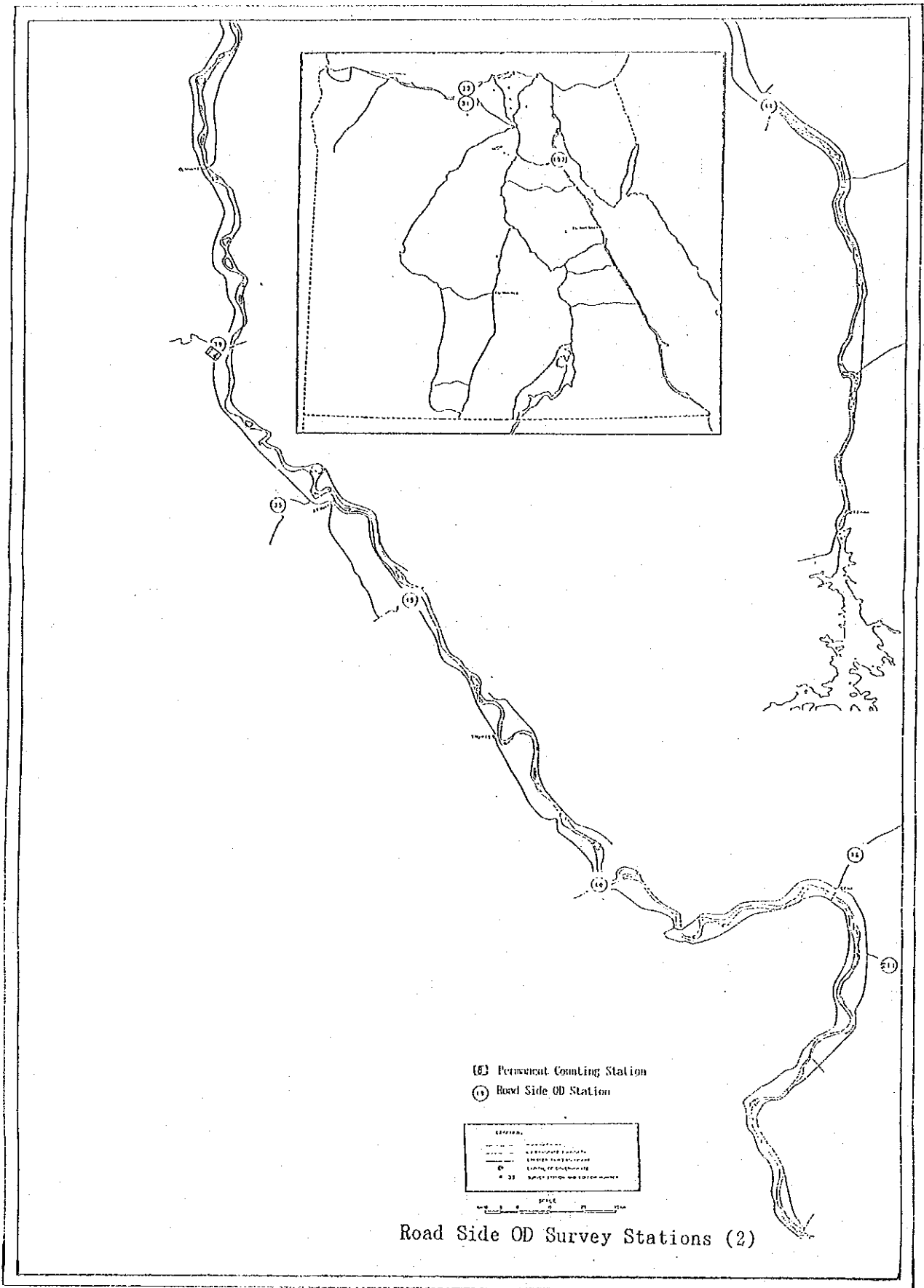
AADT	Annual Average Daily Traffic
BOT	Built, Operation and Transfer
CAPMAS	Central Agency for Population, Mobilization and Statistics
CFS	Container Freight Station
CIF	Cost Insurance and Ferry
COBA	Cost Benefit Analysis
CRF	Capacity Restriction Formula
CTA	Cairo Transport Authority
CTD	Central Traffic Department, Ministry of Interior
DHV	Design Hourly Vehicle
DIWAN	Administration Department, Ministry of Transport
DRTPC	Department of Research and Technological Planning Center, Cairo University
EA	Egyptian Airline
EGPC	Egyptian General Petroleum Corporation
EIRR	Economic Internal Rate of Return
EIU	Economist Intelligence Unit, UK
ENR	Egyptian National Railway
ENTS	Egyptian National Transport Study
FCL	Full Container Loading
FEU	Forty Feet Equivalent Unit
FIRR	Financial Internal Rate of Return
FTL	Full Truck Loading
FY	Fiscal Year
GDP	Gross Domestic Product
GOFI	General Organization for Industry
GOPP	General Organization for Physical Planning, Ministry of Development, Housing and Construction
GRDP	Gross Regional Domestic Product
HLS	Higher Level of Service Project
IC	Inter Change
ICD	Inland Container Depot
IMF	International Monetary Fund
IRR	Internal Rate of Return
JHPC	Japan Highway Public Corporation
JICA	Japan International Cooperation Agency
JNR	Japan National Railway
JPTTC	Japan Public Truck Terminal Corporation
KPH	Kilometer per Hour
LCL	Less than Container Loading
LDA	Land Use Development Aimed Project
LE	Egyptian Pound
LP	Linear Programing
LTL	Less than Truck Loading
MLE	Million Egyptian Pound
MLS	Maintaining Level of Service Protects
MOCA	Ministry of Civil Aviation
MODANC	Ministry of Development and New Communities (Ministry of Development, Housing and Construction)
MOEFT	Ministry of Economic and Foreign Trade
MOF	Ministry of Finance
MOI	Ministry of Interior
MOLG	Ministry of Local Government

MOMT	Ministry of Maritime Transport
MOP	Ministry of Planning
MOPW	Ministry of Public Works
MOT	Ministry of Transport
MPBS	Ministry of Public Business Sector
MPMW	Ministry of Petroleum and Mineral Wealth
NERI	National Economic Research Institute
NIB	National Investment Bank
NPV	Net Present Value
NTI	National Transport Institute
OD	Origin-Destination
OM	Overhead and Maintenance
PCI	Pavement Condition Index
PCU	Passenger Car Unit
PHF	Peak Hour Factor
PPC	Petroleum Pipeline Company
PT	Peaster (1/100 LE)
PTC	Permanent Traffic Counting Project
RBA	Roads and Bridges Authority, Ministry of Transport
RLTA	River and Land Transport Authority
RLTHC	River and Land Transport Holding Company
RTA	River Transport Authority, Ministry of Transport
RTDS	River Transport Data System
TEU	Twenty Feet Equivalent Unit
TIC	Transport Information Center, TPA
TPA	Transport Planning Authority, Ministry of Transport
TSIS	Transport Sector Information System
TT	Truck Terminal
UK	United Kingdom
USAID	U.S. Agency for International Development
VOC	Vehicle Operation Cost

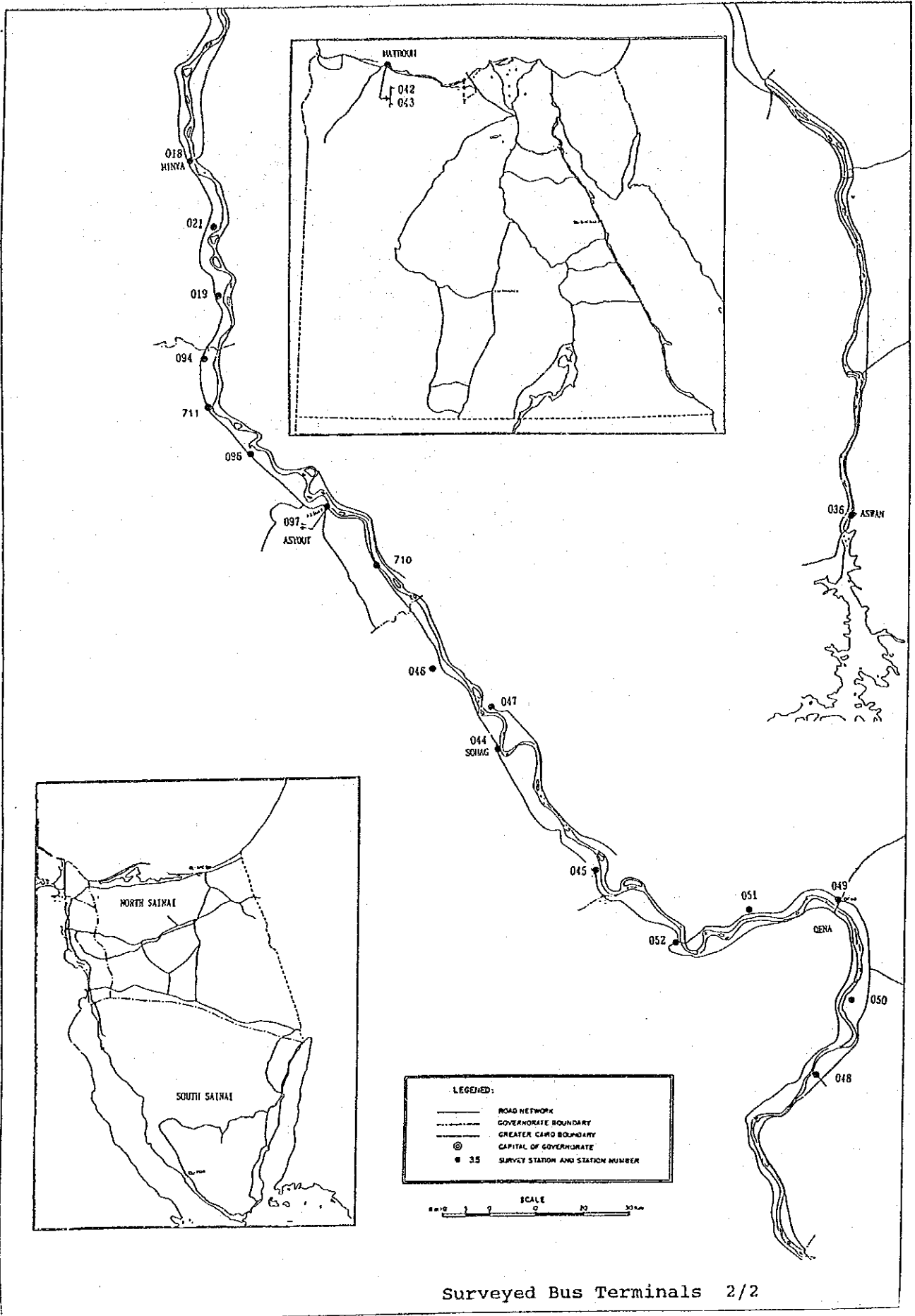
Appendix-3

Road Side OD Survey Stations and
Bus and Taxi Terminal Locations

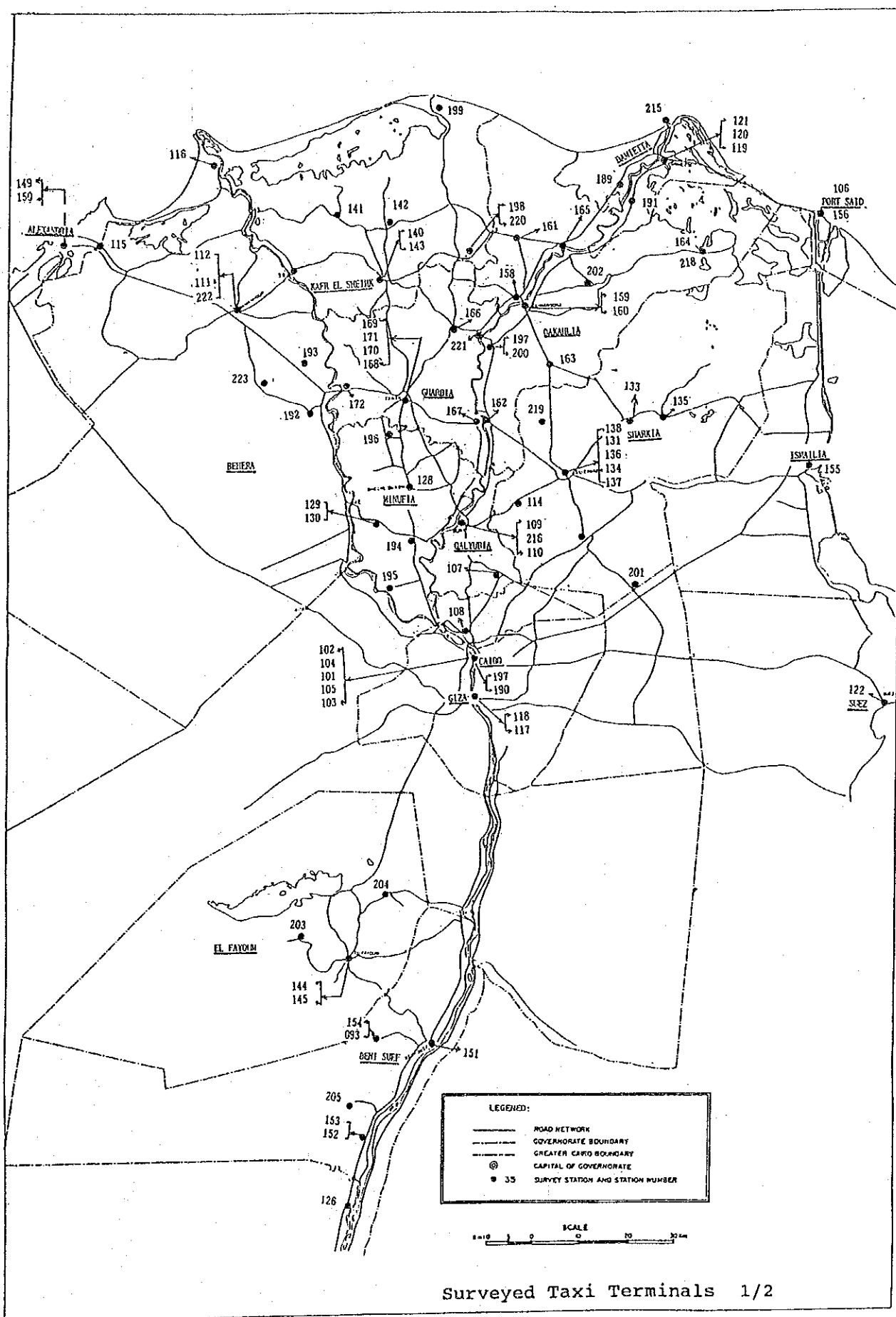




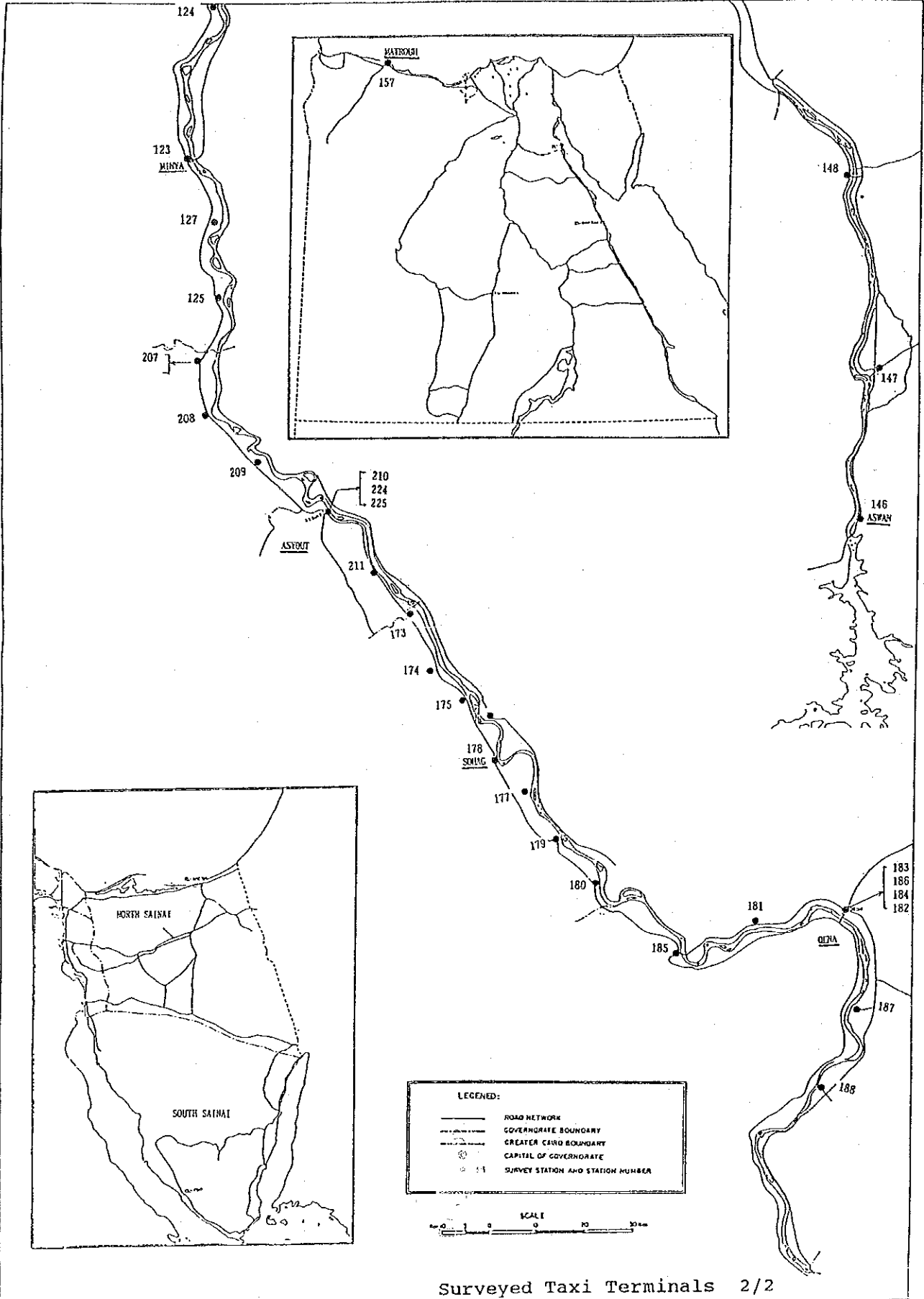
Road Side OD Survey Stations (2)



Surveyed Bus Terminals 2/2



Surveyed Taxi Terminals 1/2



Surveyed Taxi Terminals 2/2

Appendix-4

List of Data Files

LIST.PRN

File Name	File No.	File Size (byte)	Compressed	Contents
1 Survey Data	1037	8,245,284		
1 VEH920???.???	124	232,002	VEH	Road Side Vehcile Count
2 OD1920???.???	124	1,014,757	OD1	Road Side Interview (P.Car)
3 OD2920???.???	124	1,917,512	OD2	Road Side Interview (Taxi)
4 OD3920???.???	123	710,161	OD3	Road Side Interview (Bus)
5 OD4920???.???	124	1,528,696	OD4	Road Side Interview (Truck)
6 MD02.MST	1	1,040,740	MD2	Mode Choice Survey
7 INV920?.???	15	60,594	INV	Road Inventory
8 PPB920?.???	66	161,856	PPB	Bus Terminal Pass.
9 PPT920?.???	88	796,539	PPT	Taxi Terminal Pass.
10 TRB920?.???	99	27,750	TRB	Bus Terminal
11 TRT920?.???	121	24,063	TRT	Taxi Terminal
12 CCI92???	3	281,006	CCI	Company Survey
13 T?I92???	3	8,228	TIS	Transport Industries Survey
14 FMT???.PRN	22	441,380	FMT00	Survey Data File Format
2 Statistics	35	8,587,402		
15 MARKAZ.PRN	1	21,118		Markaz - Zone Data
16 POP86.PRN	1	27,289		Population by 295 Markaz, 1986
17 EMP86.PRN	1	39,995		Employment by 295 Mz, 10 Sec.1986
18 RTA???.PRN	5	131,609	RTA	Freight Port OD 1988 RTA
19 RPROD.PRN	1	609	RTA	Product Code by RTA
20 RPORT.PRN	1	1,825	RTA	Port Code by RTA
21 RTAFMT.DAT	1	749	RTA	Data Format for RTA???.PRN
22 VOL???.RBA	4	2,434,068	RBA	RBA Perm. Traff.Count.1988
23 E???.PRN	5	150,946	IE	Export 1987
24 I???.PRN	5	218,124	IE	Import 1987
25 IECODE.PRN	1	4,137	IE	Import/Export Comm. Code
26 ENR???.PRN	2	501,787	ENR	Freight Station OD 1991 ENR
27 EP9???.002	4	4,997,983	ENRP	Pass. Station OD Feb 92
28 STACODE.PRN	1	45,543	ENR	Station Code
29 PCODE.PRN	1	9,651	ENR	Product Code (Org.)
30 ENRCCD.PRN	1	1,969	ENR	Product Code (30 Comm.)
3 Network	25	938,403		
31 RWYNET.PRN	1	78,130	NET	Railway Net
32 WWYNET.PRN	1	98,069	NET	Waterway Net
33 HWYNET.PRN	1	79,439	NET	Highway Net
34 ASS?_LST.TXT	10	216,269	RD_ASS	Structure.Ass.Detail by Dist.
35 INV?_LST.TXT	10	217,885	RD_INV	Section Inventory Detail by Dist.
36 BRDG.PRN	1	93,731	NET	Bridge List
37 MSTNET.PRN	1	154,880		Highway Net Master File
4 Estimate Result	21	11,309,682		
38 PD910226.DAT	1	88,928		Prod/Cons 28 comm. 26 Gov. 92-12
39 COM2930.ODC	1	225,060	IS	1991 Com.OD from P/C Survey
40 P8612188.PRN	1	8,836		Population Estimate
41 E8612188.PRN	1	58,280		Employee Estimate
42 G8612188.PRN	1	68,040		GRDP Estimate
43 POD???.PAS	4	2,872,650	OD-EST	Passenger OD in 19?? Pas./day 4 Modes
44 COD???.PRN	4	3,391,648	OD-EST	Freight OD in 19?? Ton/year 30x4
45 OD???.VEH	4	2,298,120	OD-EST	Vehicle OD in 19?? Veh/day
46 OD???.PCU	4	2,298,120	OD-EST	Vehicle OD in 19?? PCU/day

LIST.PRN

File Name	File No.	File Size (byte)	Comp- ressed	Contents
5 Source Programs	68	646,843		
47 CK1FMT???.BAS	18	112,347	DATACHK	Survey Data Check Program
48 CK2FMT???.FOR	18	255,178	DATACHK	Survey Data Check Program
49 CK3FMT???.FOR	18	241,097	DATACHK	Survey Data Check Program
50 CK4FMT???.FOR	1	5,612	DATACHK	Survey Data Check Program
51 GMODEL.FOR	1	664		Passenger Generation Model
52 DMODEL.FOR	1	3,000		Passenger Distribution Model
53 MMODEL.FOR	1	1,747		Passenger Modal Split Model
54 CGMODEL1.FOR	1	1,289		Commodity Generation Model
55 CGMODEL2.FOR	1	1,675		Commodity Generation Model
56 CDMODEL1.FOR	1	3,741		Commodity Distribution Model
57 CDMODEL2.FOR	1	3,677		Commodity Distribution Model
58 CMMODEL1.FOR	1	1,539		Commodity Modal Split Model
59 CMMODEL2.FOR	1	2,732		Commodity Modal Split Model
60 BUSTX.FOR	1	1,288		Bus and Taxi Share Model
61 VEHOD3.FOR	1	807		3 Veh. OD Producer
62 VEHOD4.FOR	1	2,790		4 Veh. OD Producer
63 LKVOC05.FOR	1	7,660		Link VOC Calculation
Total	1,118	29,727,614		

Appendix-5

Role of Ministry of Transport of Japan
in Public Transportation Business Administration

**ROLE OF MINISTRY OF TRANSPORT OF JAPAN
IN PUBLIC TRANSPORTATION BUSINESS ADMINISTRATION**

1 Organization and Function

The Ministry of Transport of Japan is composed of seven Bureaus, many District Bureaus and external Agencies, of which Road Transport Bureau and Transport Planning Bureau plays dominant roles for public transport business administration.

1) Bureau of Road Transport

(1) Organization

- General Affairs Division
- Road Transport Planning Division
- Passenger Transport Division
- Cargo Transport Division
- Accident Compensation Division

Engineering and Safety Department

- Administration and Registration Division
- Engineering and Planning Division
- Vehicle and Component Approvals Division
- Maintenance Service Division
- Operation Safety and Environment Division

(2) Functions

- Licenses, fares, etc. on road passenger transport business (buses and taxis)
- Licenses, fares and approval of motor freight transportation
- Licenses, permission, authorization and toll for toll motor road industries
- License, permission, approval of motor freight transportation enterprises
- Matters concerning plan and coordination of road transport
- Matters concerning intended route construction plan and toll for high speed national motorway and urban highways
- Matters concerning parking lot
- Automobile liability insurance business
- Regulations of Automobiles
- License of vehicle service business
- Safety operation of land transport, manufacturing, selling and repair business of rolling stock
- Vehicle and component approvals, recall of vehicles

- Safety securing and pollution protection standards, inspection and technological development

2) Transport Planning Bureau

(1) Organization

- Policy Division
- Comprehensive Transport Planning Division
- Transport Industries Division
- Technology and Safety Division
- Cargo Transport Planning Division
- Cargo Facilities Division
- Freight Forwarders Division
- (Omitted other six Divisions)

Information and Research Department
Tourism Department

(2) Functions concerning Public Transport

- Making of fundamental and general policies and plans concerning the jurisdiction of MOT
- Promotion and utilization of technology in connection with the jurisdiction of MOT
- Research into the technology in connection with the jurisdiction of MOT
- Basic policy making, planning and coordination of urban and regional transport
- Making policies concerning cargo transport and distribution
- Permission and approval of warehouses business
- Matters concerning freight motor terminal
- (Omitted others)

2 License and Approval of Public Transport Business

Any person who wants to start public transport business has to get the license issued by the Minister of Transport, prior to commencement of operation. In application form for the license, he has to specify his intended route (or area), operation schedule, fare, vehicles, employees, etc. Also when he wants to change or abolish his route or service area, he needs to get approval of MOT.

Route license is applied to buses and area license to taxis which can transport a passenger with at least either origin point or destination point. For trucks, applicants can select one of route license and local license. In most cases, service area is a city or a town for taxis and a prefecture for trucks.

3 Fare Control

By the road transport law, transporters engaging in public transport using buses, taxis and trucks have to get approval by the Minister of Transport on their fare or tariff system.

The criteria of approval on the applied fare and tariff systems are:

- (1) They shall cover properly estimated cost plus profit under effective operation (Overall Cost Principle).
- (2) They shall not exceed the range of passengers' or consignors' capability to pay, which make it difficult for them to use the public transport service (Capability-to-pay Principle).
- (3) They shall treat all the users impartially, without discriminating some group of users.
- (4) They shall not cause undue competition among other transporters.

Based on those principles, the Minister of Transport is responsible to set up a standard fare and tariff, by consulting the Transport Advisory Committee. The report of the Committee is submitted to the Ministers Conference on Prices for deliberation and approval. Transporters have freehand to determine their fare and tariff within 10% of difference from the standard fare and tariff.

In early 1980s, home-to-home parcel transport services were started by truckers and have been growing very rapidly due to their handy services (handling one hundred parcels in 1981 and one billion parcels in 1990). Heated competition among transporters urged rationalization and remarkable cost reduction, with which the standard tariff could hardly catch up. Thus, some transporters wanted to make their tariff lower than the Standard by more than 10%. Sometimes, the cases were brought in a court and judged, resulting in transporters' win in most cases. Under this situation, fare and tariff is, seemingly, going to be liberalized.

4 Subsidy

Currently in Japan, the following bus services are subsidized;

- (1) Project to activate bus system
- (2) Maintenance of local bus system
- (3) Local bus service substituting abolished railway line

4.1 Project to Activate Bus System

MOT together with Local Authorities subsidizes a part of investment cost aiming at activating bus system by improving punctuality of scheduled operation, convenience of passengers, etc.

1) Investment Project to be Subsidized

(1) General Project

* Operational Environment Improvement Project

- New Urban bus System
- Bus Operation Information System, etc.

* Transfer System

- Rail and Bus Relay System
- Park and Ride System
- Cycle and Ride System
- Reduced Fare Bus-to-bus Transfer System, etc.

* Bus Terminal

* Bus Information System

- Total Guide System of Bus Operation
- Terminal Sign System
- Bus Approaching Sign, etc.

* Card System

(2) Research Project

Study, coordination and planning toward implementation of general project

(3) Pioneer Project

Research and feasibility study on the system for activation of bus system which is not operated yet in Japan

2) Rate of Subsidy

(1) General Project

1/5 by MOT and 1/5 by Local Government with the limit of 60 million (3 m.LE) yen for each one project a year

(2) Research Project

1/5 by MOT and 1/5 by Local Authority

(3) Pioneer Project

1/4 by MOT and 1/4 by Local Authority

Subsidy by MOT to activate bus system

1985	217,393,000 yen
1986	326,090,000
1987	269,257,000
1988	171,000,000
1989	365,580,000
1990	265,580,000
1991	540,000,000

4.2 Maintenance of Local Bus System

MOT(50%) and Prefecture Government(50%) subsidize operators of local bus routes which do not have demand enough to cover its operating cost but are designated by the Prefecture Governor as "life routes" necessary to support daily life of people living in remote places.

1) Life Route in Category 2

Bus routes with average passenger number of more than five and less than 15, operated less than 10 times a day are subsidized its deficit (current revenue minus current expenditure), within the limit of one third of current revenue. Bus route with current revenue less than one third of its current expenditure is additionally subsidized by the City/Town/Village Authorities.

Bus acquisition costs for the routes of this category are fully subsidized by MOT and the Prefecture Government.

2) Life Route in Category 3

Bus routes with less than five passengers, designated as category 3 are subsidized one third of their current deficits by route individually, by MOT(1/4), Prefecture(1/4) and City/Town/Village (1/4) each.

Total amount of Subsidy by MOT was 10,361 million yen (345 m.LE) in 1990.

4.3 Bus Service Substituting Abolished Railway

1) General Bus Route Substituting Abolished Railway

* Fleet Acquisition Cost (Fully subsidized within the limit of 4.5 million yen (150,000 LE) per unit)

* Initial Cost (maximum 2.5 million yen per City/Town/Vil-

lage for garage, waiting shed, etc.)

* Operating Cost (a part of current expenditure)

Those are subsidized by MOT(1/3), Prefecture(1/3) and City/Town/Village(1/3)

2) Special Bus Route Substituting Abolished Railway

MOT subsidized bus companies which operate the designated routes substituting local railway lines of JNR abolished at the period of privatization, for the first five years.

Subsidy is the total amount of current deficit caused by the operation of such routes. In 1992, 30 bus companies were subsidized with 1,414 million yen (47 m.LE) in total.

5 Preferential Taxation

At present in Japan, national tax on of diesel oil is 24.3 yen (8.1 LE) per litter, while tax on gasoline is 45.6 yen (15.2 LE), which is one of the preferential conditions for transporters who uses buses and trucks, consuming diesel.

In addition to this, there are many preferential taxation policies taken by MOT, in order to foster transport business in the private sector. Main taxation policies are shown below.

1) Corporation Tax

- (1) Special deduction of taxed income or special depreciation, for equipment installation with the purpose of improvement of energy consumption structure, such as less pollutive diesel engine.
- (2) Special deduction of taxed income or special depreciation for acquirement of electronic apparatus
- (3) Special depreciation of designated equipment (such as pollution preventive machinery) (18/100 of cost)
- (4) Special depreciation when a transport corporation acquires machinery in less developed region (15/100 for machinery and apparatus and 8/100 for building)
- (5) Special reduction of tax for replacement of designated asset

2) Vehicle Weight Tax

(1) Vehicle weight tax of vehicles for public transport use is 1/2.25 of that for private use vehicle.

3) Business License Tax

(1) Business License tax is exempted for bus operator whose route length is less than 30 Km and who changes his service area in the same prefecture.

4) Vehicle Tax

(1) Vehicle tax for business use is reduced as shown below.

Bus		
Business use		
Omnibus (less than 30 pax)		14,500 yen
Others (40-50 Pax)		38,800
Private use (40-50 Pax)		49,800
Passenger Car	1/2.72 - 1/4.16 of Private use car	
Truck		
Business use		18,500
Private use		25,500

(2) Special reduction for vehicles with methanol engine and hybrid engine, applying old tax rate before 1984, until 1993.

(3) Vehicle tax is exempted for buses operating on "life route" and buses substituting abolished railway line.

(4) Vehicle tax is reduced to 1/2 for new bus and truck satisfying regulations for pollution prevention, replaced to old one.

5) Real Estate Tax

(1) Real estate acquisition tax is reduced to 3/4 for the first three years, for the land of bus terminal invested by the Local Authorities and acquired by January 1 of 1993.

(2) Special real estate tax is exempted, for the land used for public bus business, trucking business and truck terminal business.

6 Financing

Preferential loans are offered to public transport enterprises by the Japan Development Bank, Hokkaido-Tohoku Development Corporation and Okinawa Promotion and Development Corporation.

	Coverage of Loan (%)	Interest Rate	Repayment (Grace) Period(Yr)
1) In three Metropolises			
(1) Urban Bus Facilities (Office, garage, etc.)	less than 30 %	standard	25 (5)
(2) Freight Distribution Facilities (Terminal, depot centers, etc.)	40	sp-int-3	25 (5)
2) Regional Development			
(1) Local Bus Facilities (Fleet, office, garage etc.)	50-70	sp-int-4	25 (5)
(2) Freight Distribution Facilities	50-70	sp-int-1	25 (5)

7 Toll Road

There are about 8,000 Km of toll road in Japan, as of 1992. MOT plays the role of assessment of a toll road project and giving approvals of construction and toll system.

- Expressway	4,869.4 Km	
- Urban Expressway	481.7	
- Honshu-Sikoku Bridge	107.4	
- Motorway	497.1	(60 routes)
- General Toll Road	2,155.5	(209 routes)

Among above toll roads, most of motorway are constructed and operated by the private sector and the Local Authorities.

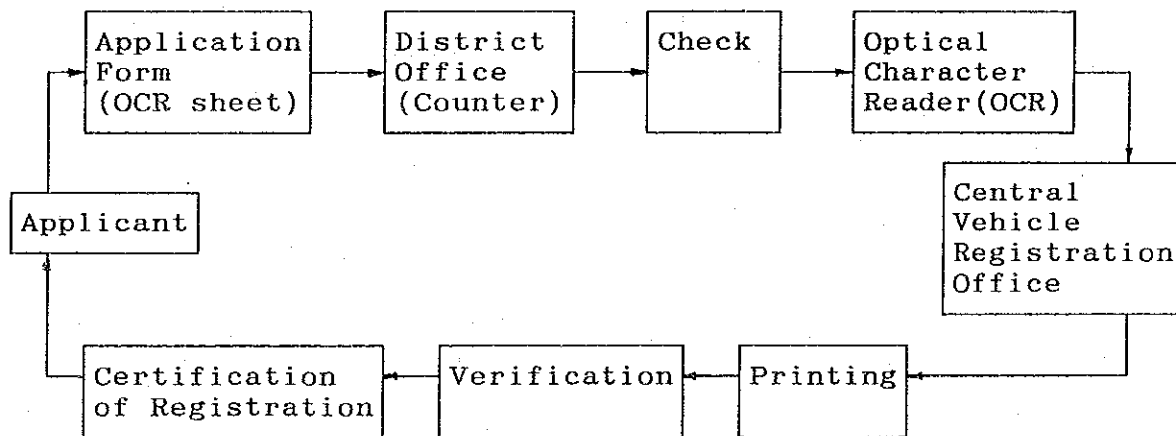
8 Registration and Inspection of Fleet

1) Vehicle Registration

Vehicle registration is under the jurisdiction of MOT. In 1992, the following vehicles were registered.

- Newly registered	6,716,398
- Changed (Model, Chassis No., Engine No. Owner's name, address, main place of use)	1,770,338
- Owner Change	4,770,790
- Abolished	4,959,962

To cope with rapid increase of vehicles, the registration process has been computerized since 1970. Before computerized, information of registered vehicle was managed in each Road Transport District Office, but now such information is sent to the computer of the Central Vehicle Registration Office, on line in real time and processed into the vehicle registration record and the vehicle inspection record.



Procedure of Vehicle Registration

Current registration fee is as follows:

- First time registration	600 yen
- Change and abolishment registration	300
- Owner change registration	400
- Application for inspection	1,000
- Charge on number plate issuance(yen)	

Large Vehicle	Medium Vehicle	Small Vehicle
---------------	----------------	---------------

Registration Plate	887	643	-
Vehicle Plate	-	643	463

2) Vehicle Inspection

In order to secure safety and to prevent pollution, every vehicle has to be inspected at the Road Transport District Office or the Vehicle Registration and Inspection Office, according to the Law of Automobiles for Road Transport.

Inspection Category		Vehicles Inspected in 1992
First Time Inspection	Vehicles to be newly used	6,871,263
Renewal Inspection	Vehicles to be used after the expiration of inspection validity	17,833,833
Structural Change Inspection	vehicles remodeled changing in length, height, width, capacity, etc.	71,957

No. of Road Transport District Office	53
No. of Vehicle Registration and Inspection Office	35
No. of Inspection Office	90
No. of Inspection Course	294

In case of the renewal inspection, a vehicle to be inspected does not need to be shown at the inspection office, if it is already maintained and tested at the designated workshop with license. In those workshops, average cost of periodical maintenance is as follows:

6 month maintenance	13,000 yen	433 LE
12 month maintenance	19,000	633
24 month maintenance	60,000	2,000

3) Authorization of Workshop

Person who wants to start a workshop of vehicle has to get a license issued by MOT. In addition, MOT issues its authorization to qualified workshops

(1) Qualified Workshop (82,250 workshops)

Workshop authorized by the executive director of the Dis-

trict Transport Bureau, to reach a certain level of skills for the repair and maintenance.

(2) Better Qualified Workshop (3,518 workshops)

Workshop authorized by the executive director of the District Transport Bureau, to be excellent in technology, facility and management.

(3) Designated Workshop (20,235 workshops)

Workshop authorized by the executive director of the District Transport Bureau, to be excellent and to be facilitated with equipment for vehicle test. Vehicles maintained and tested in this workshop does not need the check of MOT for renewal inspection. Currently, 66.5% of vehicles for the renewal inspection are testes in the designated workshops of the private sector.

4) Qualification of Vehicle Mechanics

MOT carries out a vehicle mechanic test every year and issues the authorized qualification to those who pass the test. A person with the third grade qualification can be a workshop administrator and a person with second grade qualification can be a vehicle inspector.

9 Safety and Pollution Prevention

In accordance with the Law of Automobiles for Road Transport, MOT has been amending the Ministerial Ordinances of "Security Standard of Automobiles for Road Transport", to improve safety and to prevent pollution, specifying maximum allowable exhausted gas and noise.

For example, amendments for accident prevention in the recent years are:

1985- 9-25	Strengthening the obligatory use of seat belt Strengthening the restriction of HPR front glass
1986- 3-19	Obligatory use of parking light and speed alarm apparatus
1989- 3-29	Additional condition to rear fog light
1990- 3-20	Strengthening the restriction of color film use
1991- 8- 2	Obligatory use of antilock break system(ABS) to specified trucks

1992-11-16 To large trucks, obligatory use of larger sized rear reflector and device preventing a car from entering under the truck at collision from behind

10 Compensation of Traffic Accident

By the Law of Automobiles for Road Transport, every vehicle has to be secured by insurance. MOT is responsible to monitor, amend and manage the obligatory insurance. Present amounts of insurance and premium are as follows:

(1) Insurance premium for one year contract

Private car	22,250 yen	742 LE
Bus public use	57,850	1,924
private use	28,750	958
Taxi company	84,850-140,600	2,828-4,687
individual	34,550	1,152
Truck public use		
>= 2ton	91,050	3,035
< 2ton	56,600	1,887
private use		
>= 2ton	62,250	2,075
< 2ton	37,400	1,247

(2) Insurance amount

Death	30,000,000 yen	1,000,000 LE
Injury until death	1,200,000	40,000
Injury	1,200,000	40,000
After effect	750,000-30,000,000	25,000-1,000,000

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