

### 4.2.3 Long-term Plans

The long-term strategy for Cubao hinges on a strong public and private sector cooperation and has the following elements:

- a) The expansion in the present capacity of access roads thru new and wider road links and one-way street couples. This will enhance the first role of Cubao - that of another CBD within Metro Manila.
- b) The improvement in the passenger-handling capability of the Cubao area, particularly with regards to the considerable volume of duty passenger transfers occurring therein. This will address the second role of Cubao - that of a mode interchange area.
- c) Careful scheduling of the subsequent stages of private developmental activities within the Araneta Complex to match the construction of new or wider access road by the government.
- d) Retention, if not expansion, of existing terminal spaces within the Araneta complex thru a conscious policy and public transport accommodation. Alternatively, new sites should be identified and developed in the future into an integrated mode interchange facility with special regard to the requirements of the second LRT Line (which would most likely be along Aurora Boulevard).

### 4.3 EVALUATION AND SCREENING

The numerous options available for Cubao had to be narrowed down systematically into few viable alternatives. A set of criteria for evaluation and screening were adopted, viz.:

#### Screening Factors

- technical viability and traffic engineering coherence
- acceptability to the principal implementors or sponsors

#### Preference Factors

- least cost projects/options
- public transport vehicles and users as the beneficiaries
- least complicated solutions
- minimum government intervention

The reason for the above two categorization of evaluation factors was the fact that some of the alternatives were not mutually exclusive choices.

### 4.4 AGENDA FOR SHORT-TERM ACTIONS

Table 4.3 summarizes the JUMSUT II package of recommendations under various categories and schedules. The short-term and medium-term (less than 5 years) actions are discussed below.

Table 4.3  
 Recommended Actions for the Cubao  
 Mode Interchange Area

ACTION AREAS	RECOMMENDED ACTIONS		
	SHORT TERM	MID-TERM	LONG TERM
A. REROUTING OF JEEPNEYS	/	/	/
A-1 REROUTING OF EASTBOUND VIA AURORA BOULEVARD TERMINATING JEEPNEYS	● A101	→ ● A102	→
A-2 REROUTING OF WESTBOUND VIA AURORA BOULEVARD TERMINATING JEEPNEYS	NA STATUS QUO	● A201	→
A-3 REROUTING OF WESTBOUND VIA AURORA BOULEVARD AND E. RODRIGUEZ TERMINATING JEEPNEYS	NA STATUS QUO	● A301	→
A-4 REROUTING OF JEEPNEYS TERMINATING IN ARAYAT AREA.	● A401 A402	→	→
A-5 REROUTING OF OTHER ARANETA CENTER BOUND JEEPNEYS	● A501 A502	→	→
A-6 REROUTING OF PASSING-THROUGH JEEPNEYS	NR STATUS QUO	NR STATUS QUO	NR STATUS QUO
A-7 REROUTING OF NORTHBOUND JEEPNEY ROUTES	● A701 A702	→	→
B. IMPROVEMENT OF BUS OPERATION ALONG EDSA	● B01	→ ● B02	→
C. STRENGTHENING OF EXTERNAL ACCES	● C01	→ ● C02	→ ● C03 C04 C05 C06
D. IMPROVEMENT OF INTERNAL CIRCULATION OF ARANETA CENTER	NR STATUS QUO	→ ● D01	→
E. IMPROVEMENT OF PEDESTRIAN FACILITIES	●	→ ●	→
F. IMPROVEMENT OF AURORA BOULEVARD TRAFFIC MANAGEMENT	● F01	→ ● F02 F03	→
G. DEVELOPMENT OF MODE INTERCHANGE FACILITIES	● G01 G02	→ ● G03	→ ● G04 G05 G06
<p>LEGEND</p> <p>● PROPOSALS AVAILABLE</p> <p>→ PROPOSALS REMAIN EFFECTIVE</p> <p>NA NOT AVAILABLE</p> <p>NR NOT RECOMMENDED</p>			

#### 4.4.1 Jeepney Reroutings

Seven types of jeepney routes offered opportunities for improvements. Each type were amplified further into 2 or more options, thus:

- A1 : Eastbound terminating jeepneys via Aurora Boulevard, 3 options labelled A101, A102, and A103.
- A2 : Westbound terminating jeepneys via Aurora Boulevard, 3 options labelled A201, A202, and A203.
- A3 : Westbound terminating jeepneys from Aurora Boulevard, via E. Rodriguez, 3 options tagged A301, A302, and A303.
- A4 : Terminating jeepneys within the Arayat Block, 3 options known as A401, A402, and A403.
- A5 : Terminating jeepneys within the Araneta Center complex, 3 options labelled as A501, A502, and A503.
- A6 : Passing through jeepneys via Aurora and E. Rodriguez, only 2 choices available, both of which may be adopted. These are labelled as A601 and A602.
- A7 : Northbound terminating jeepneys via New York or Ermin Garcia, 2 non-mutually exclusive choices known as A701 and A702.

The set of short-term actions for jeepney reroutings are shown in Figure 4.2. These are as follows:

- Status quo for jeepneys on route types A-2, A-3, and A-6
- Changes for jeepneys on route types A-1, A-4, A-5, and A-7 since they require no traffic signals
- Mid-term changes are illustrated in Figure 4.2.

#### 4.4.2 Bus Operations along EDSA

Six proposals were evaluated with a view of minimizing the traffic congestion impact of buses along the EDSA service roads. Two of these schemes are software-type solutions requiring no investment in physical facilities but only in time and efforts of the institutional players. The remaining four options entail minor civil works of doubtful impact without proven success in the first two schemes. Two of them are alternative ways of constructing bus bays. All four, however, are deemed mid-term actions (see Figure 4.3)

#### 4.4.3 Improving External Access to Cubao

Only the introduction of one-way pair of streets can provide partial relief to the access problems of Cubao in the short- to medium-term period. As shown in Figure 4.4, these are:

- Ermin Garcia as one-way westward and New York as one-way eastward, combined with Imperial as one-way southward and Yale one-way northward.
- In the mid-term and subject to installation of traffic signals and opening of Banahaw/EDSA Median, P. Tuazon as one-way eastward with Banahaw - Gen. McArthur as one-way westward.

#### 4.4.4 Internal Circulation of the Araneta Center

No changes are supported in the short-term since the Center Management has found the current traffic circulation as still workable.

For the medium-term period, revision is imperative in conjunction with the implementation of Banahaw - P. Tuazon one-way couple.

Figure 4.5 illustrates several possibilities with option D04 slightly favored over the other schemes.

#### 4.4.5 Improvement of Pedestrian Facilities

It is difficult to segregate short and long-term measures to facilitate pedestrian movement, hence these are presented in Section 4.5.4. Aside from crosswalk stripings/markings, the improvement of sidewalks and construction of pedestrian barriers and overpasses and the like can be programmed over a longer period consistent with other proposals for Cubao. (see Figure 4.6)

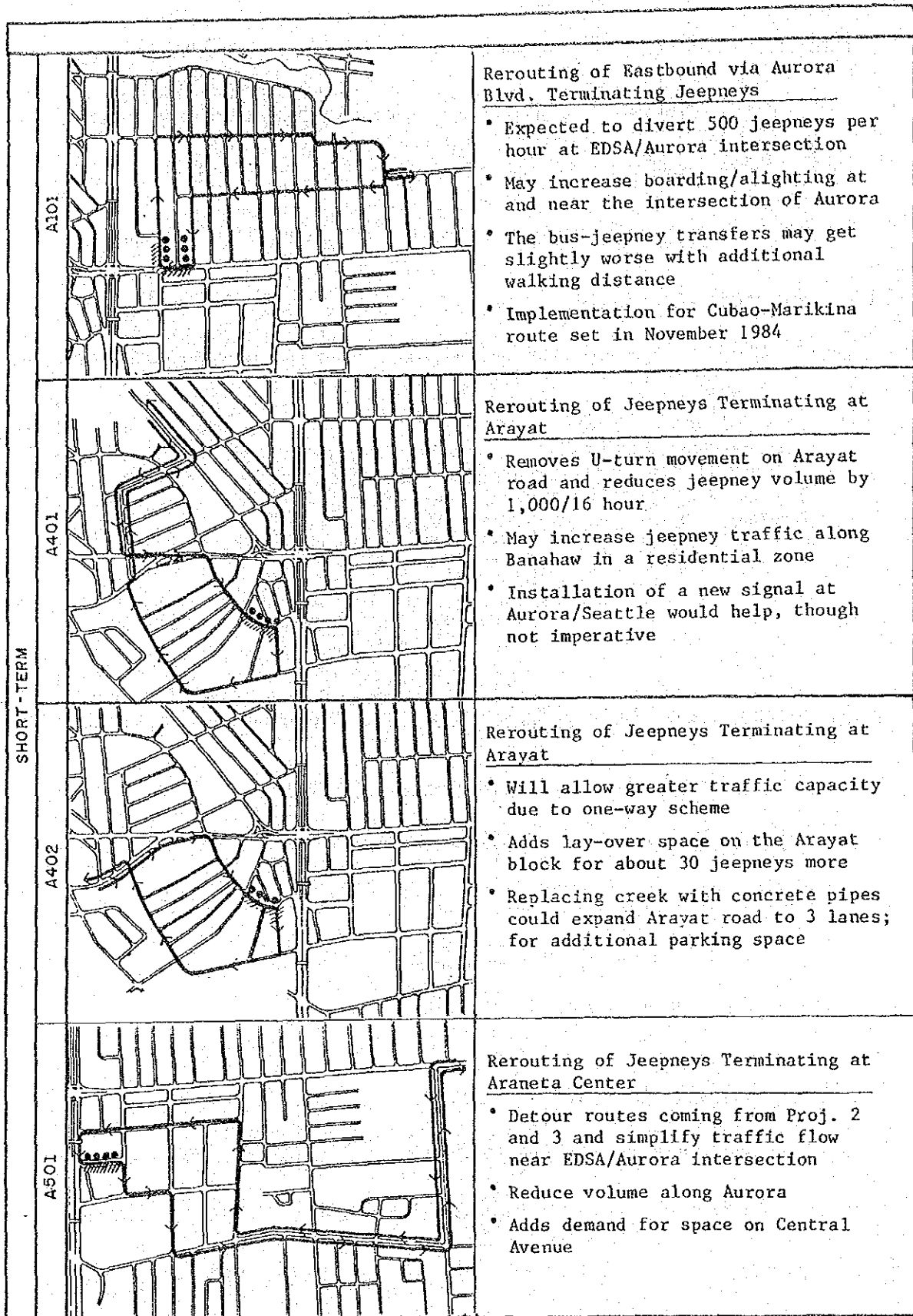
#### 4.4.6 Traffic Management Improvement along Aurora

All of the options under this category belong to the short and mid-term period (see Figure 4.7). Introduction of better dispatching control of waiting jeepneys is supported, as a complementary measure to the prevailing enforcement drive against PU vehicles "parking" along Aurora. Conversion of available parking spaces into jeepney/bus bays is also beneficial. At a later time, the construction of a median fence and installation of traffic signals at Imperial would help a lot.

#### 4.4.7 Mode Interchange Facilities

Other than improvement of existing on-street terminals, no short-time options are available. The only actions open are the following (as shown in Figure 4.8):

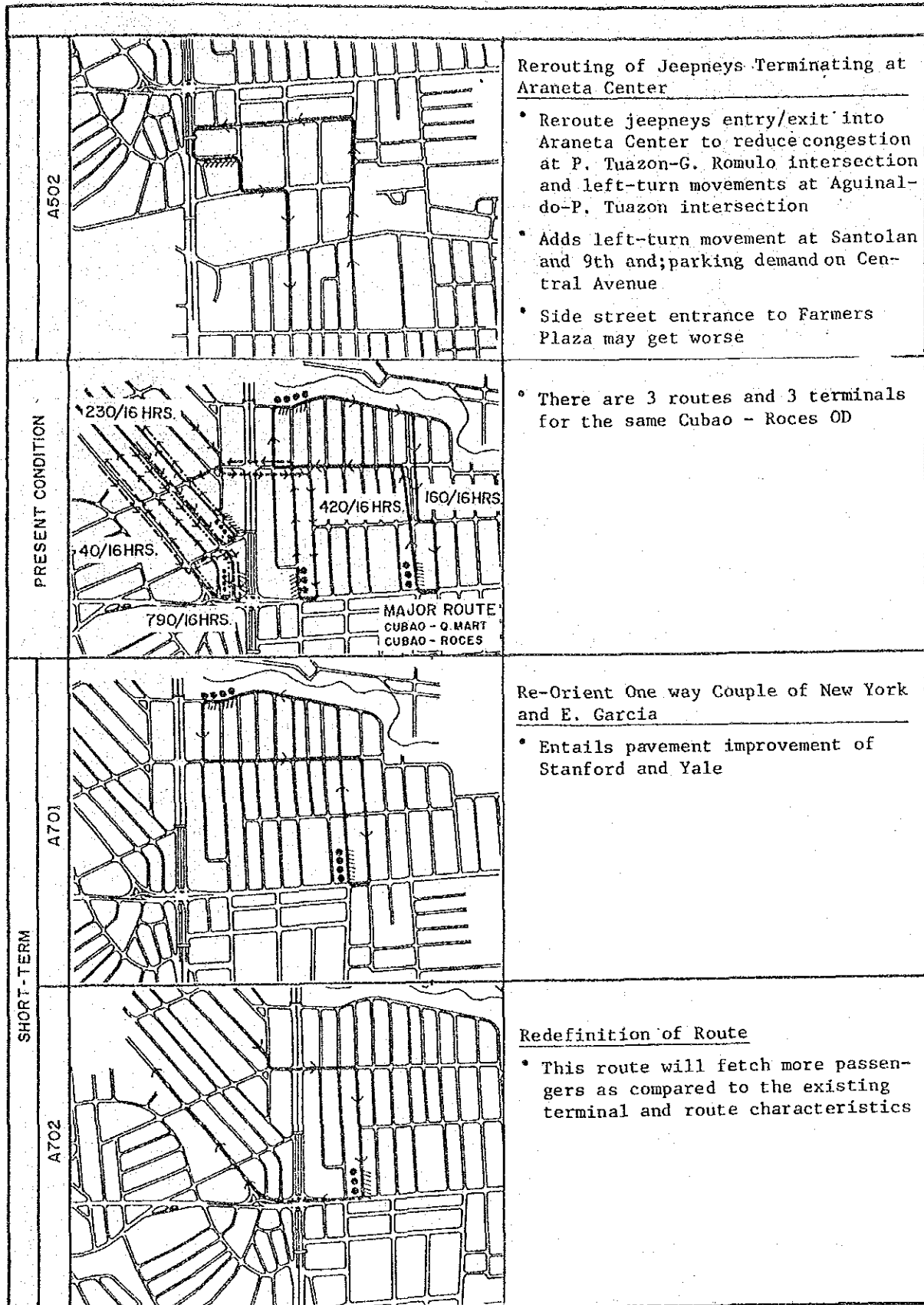
- Exclusive use of Center Avenue for PUJs, with corresponding stripings, signs, and dispatching control.
- Expansion of Arayat Road space to accommodate more jeepney parkings.
- Efficient allocation of space along Gen. Araneta for more PUJs in need of on-street lay-over areas.



**LEGEND:**

- FLOW OF JEEPNEYS
- JEEPNEY WAITING PLACES
- MAJOR BOARDING /ALIGHTING PLACES

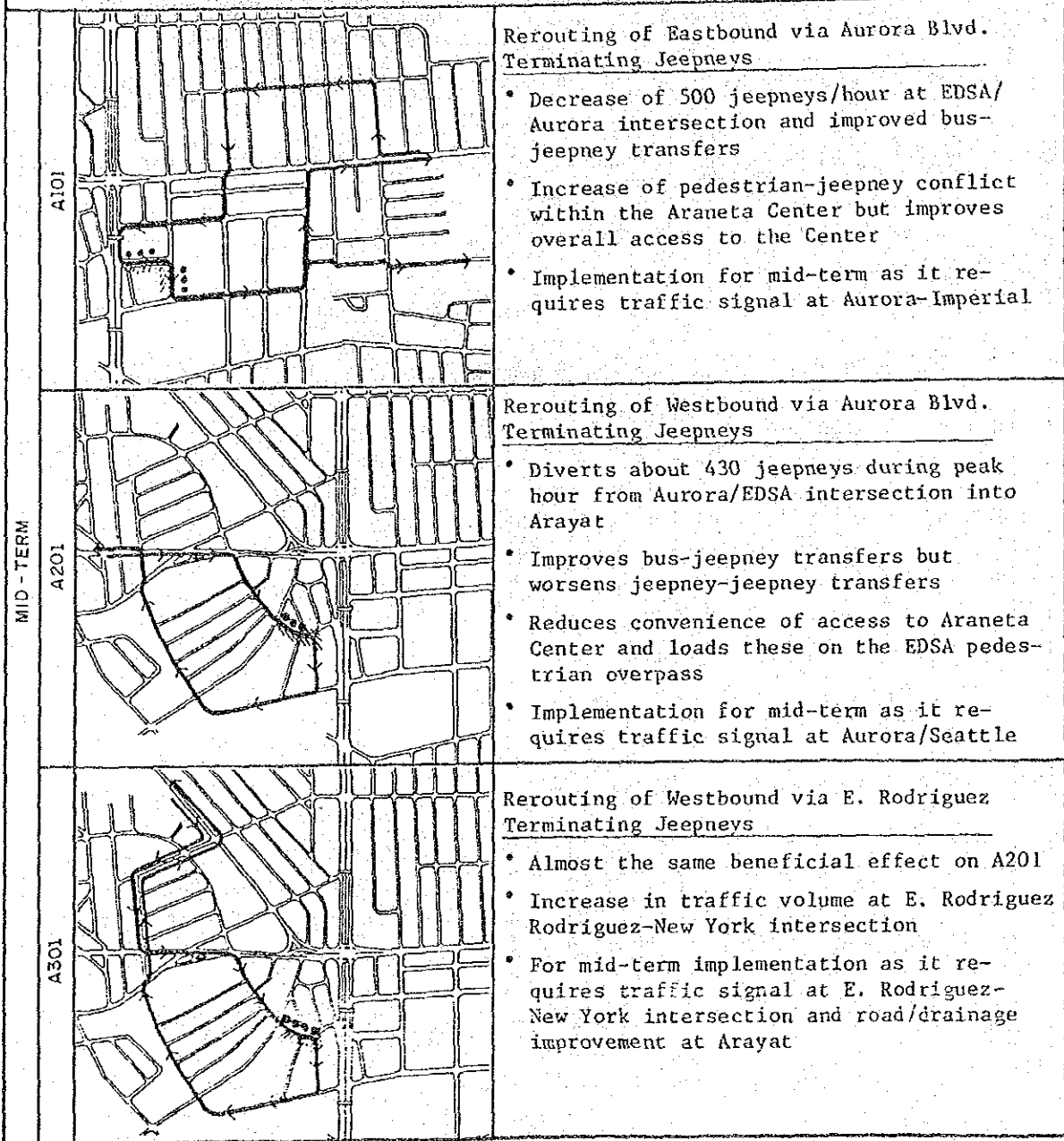
Figure 4.2  
Rerouting of Jeepneys  
Short to Medium Term  
Actions



**LEGEND:**

- FLOW OF JEEPNEY
- JEEPNEY WAITING PLACES
- MAJOR BOARDING/ALIGHTING PLACES

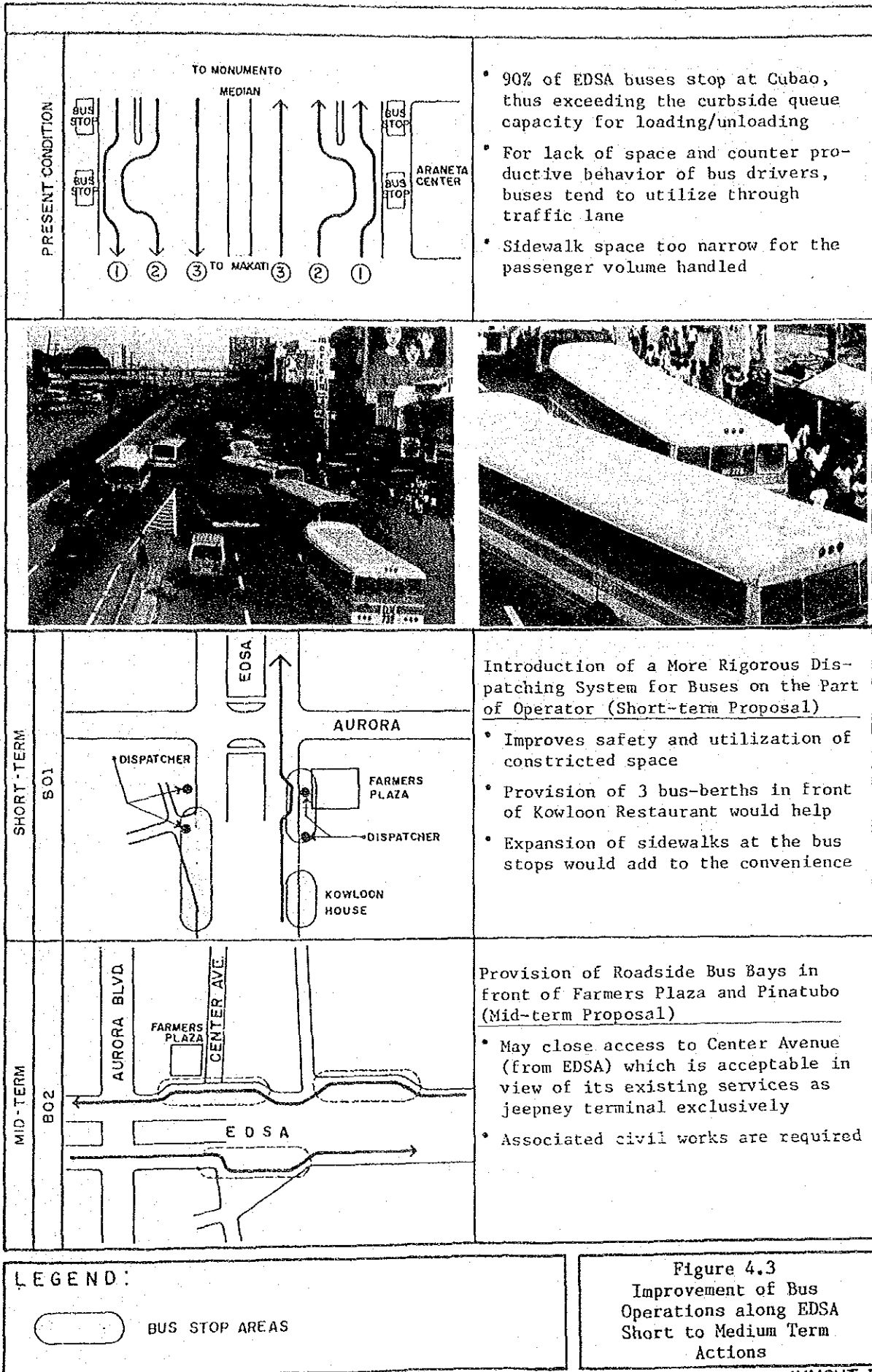
Figure 4.2  
Rerouting of Jeepneys  
Short to Medium Term  
Actions



**LEGEND:**

- FLOW OF JEEPNEYS
- JEEPNEY WAITING PLACES
- MAJOR BOARDING/ALIGHTING PLACES

Figure 4.2  
Rerouting of Jeepneys  
Short to Medium Term  
Actions





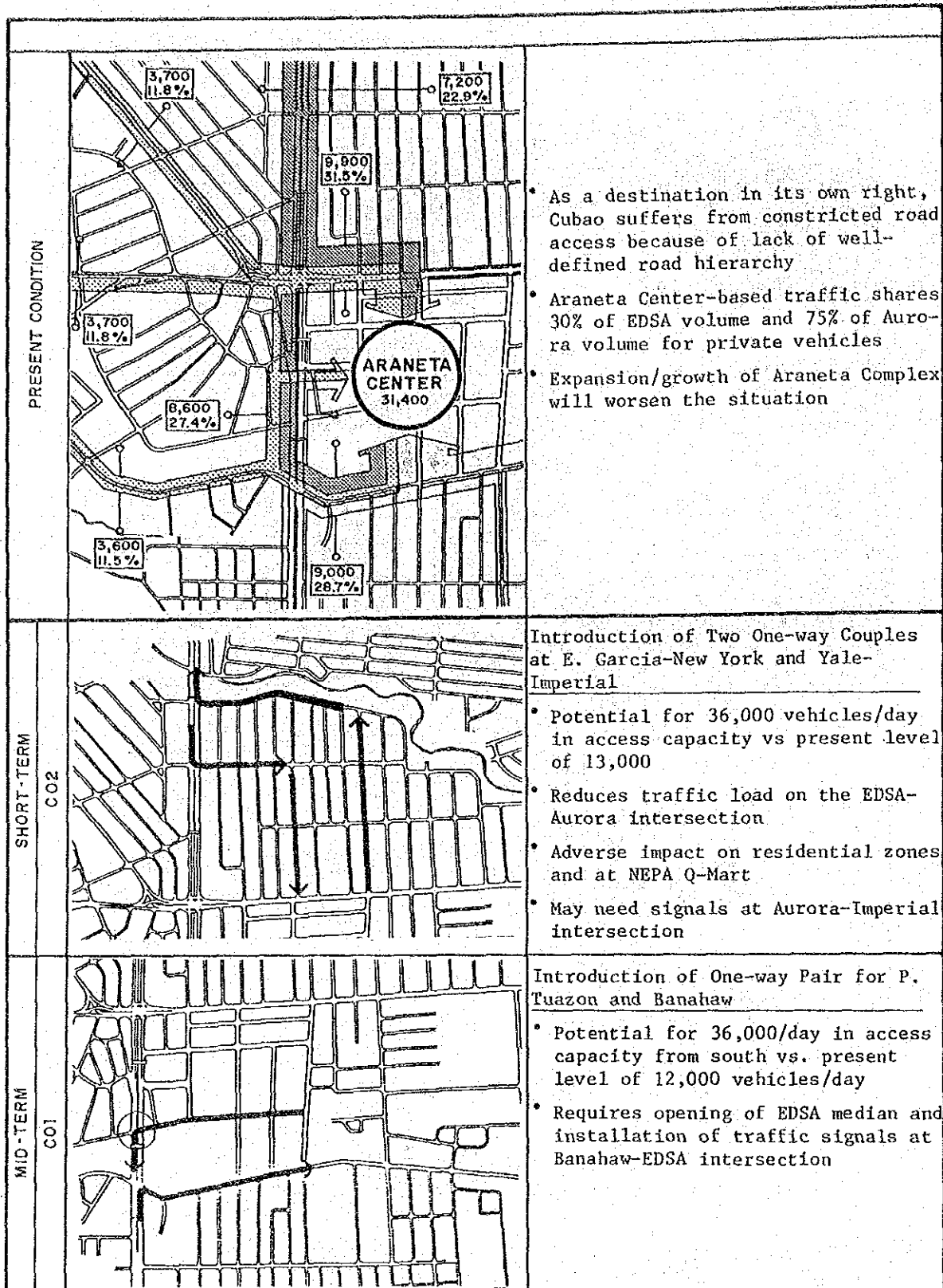


Figure 4.4  
Improving the External  
Access to Cubao; Short  
to Long Term  
Actions


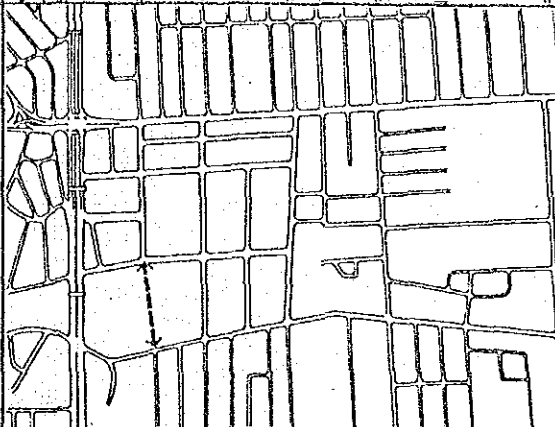
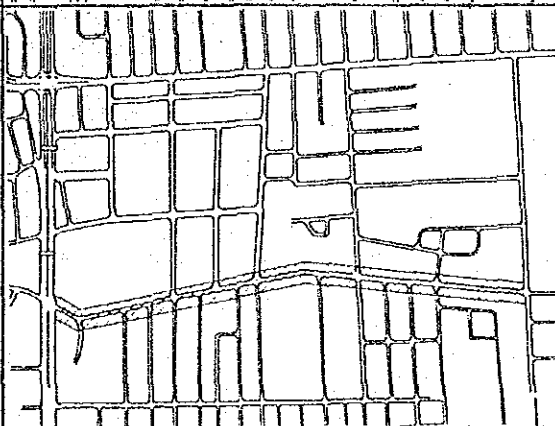
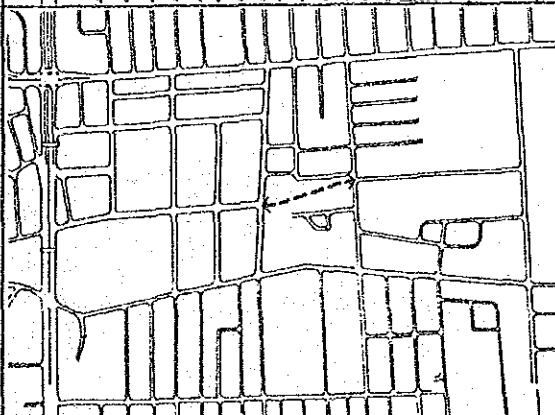
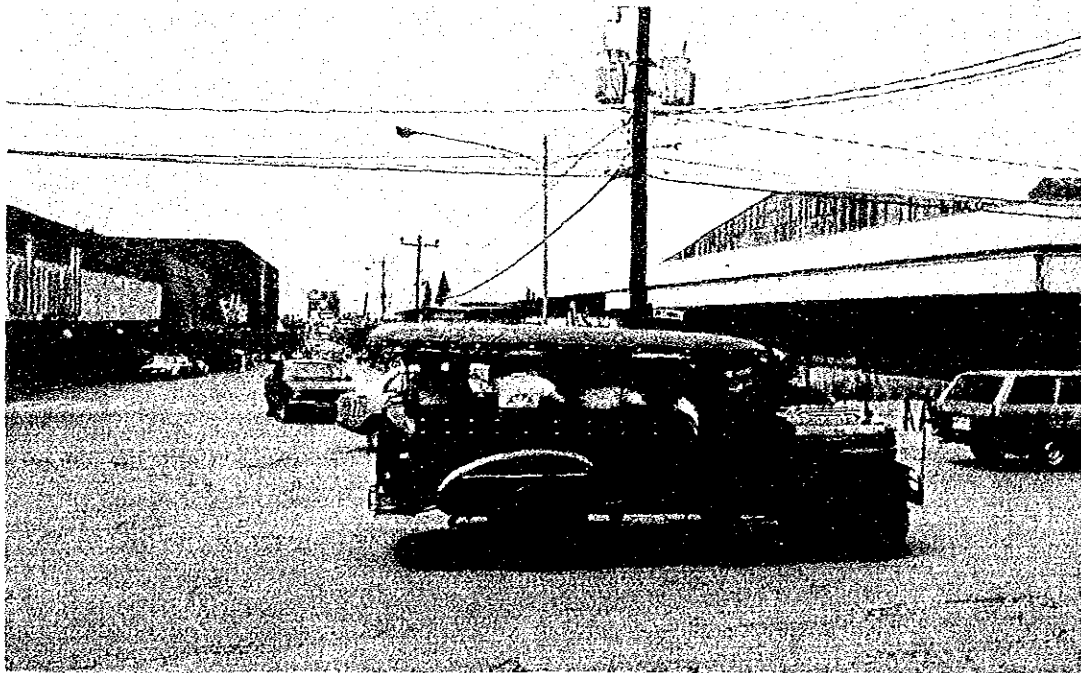
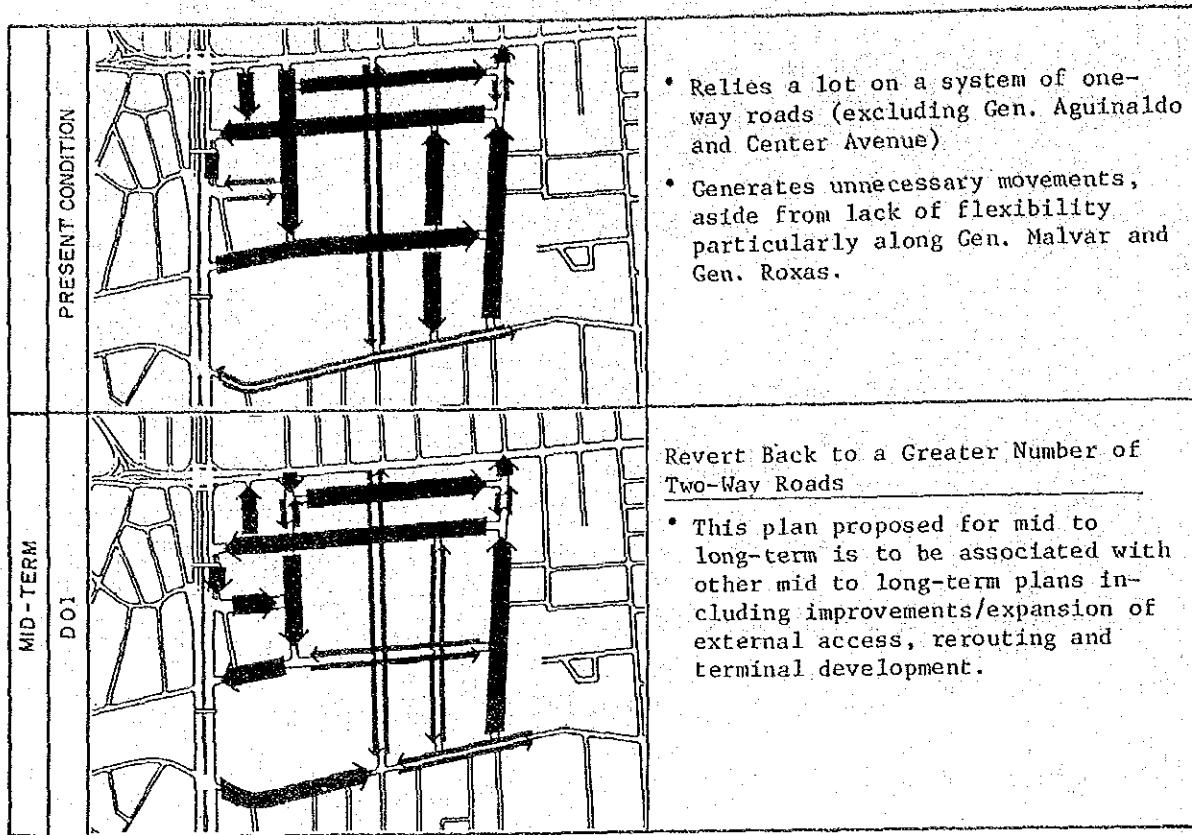
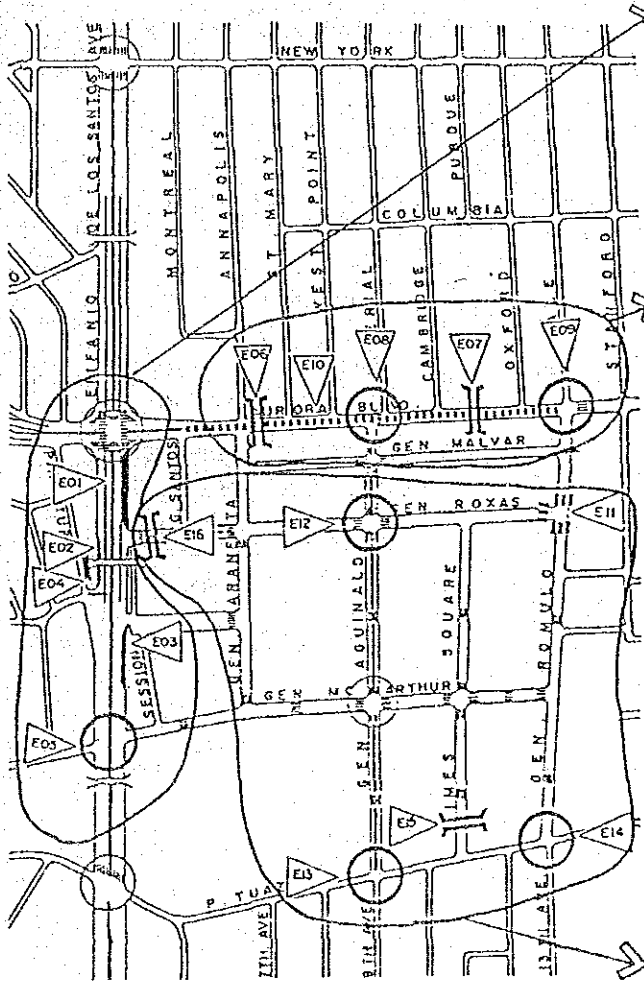
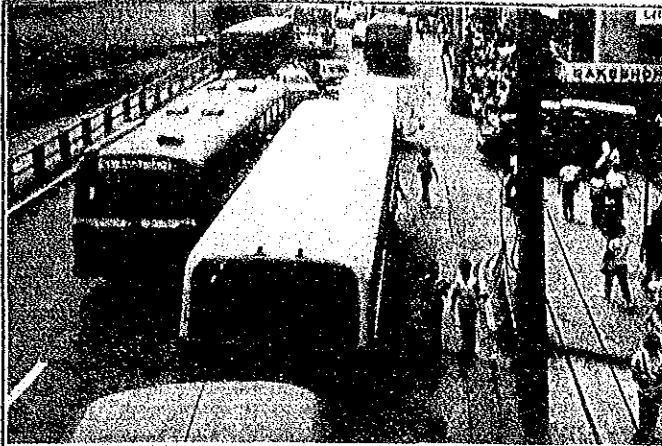
LONG-TERM	C03		<p><u>Construction of a Bridge Across Diliman Creek to Connect 15th Avenue to K-J St.</u></p> <ul style="list-style-type: none"> <li>• Increase in access capacity for northbound vehicles and will reduce load on EDSA and Anonas Road</li> <li>• Adds new options/Flexibilities to jeepney and mini-bus routes</li> </ul>
	C04		<p><u>Provision of New Link in Araneta Center Extending G. Araneta to 7th Avenue</u></p> <ul style="list-style-type: none"> <li>• Increase the access capacity on the southern approach</li> <li>• Simplifies flow/route of eastbound jeepneys</li> <li>• Maybe implemented by Araneta Center without government investment</li> </ul>
	C05		<p><u>Widening of P. Tuazon from 2 lanes to 4 lanes, from EDSA to 20th Avenue</u></p> <ul style="list-style-type: none"> <li>• Triples the access capacity from 12,000/day to 36,000/day</li> <li>• Land acquisition could be simplified if expanded on the Araneta Center's side</li> </ul>
	C06		<p><u>Construction of a New Road Link Extending G. McArthur to Mirasol cutting across G. Romulo</u></p> <ul style="list-style-type: none"> <li>• Increase the access capacity on the eastern approach and relieves volume on P. Tuazon</li> <li>• Problem with right-of-way acquisition</li> </ul>

Figure 4.4  
Improving the External  
Access to Cubao Short  
to Long Term  
Actions

Figure 4.5  
Suggested Changes in Internal Circulation  
of Araneta Center for Medium Term Action





MBUTSTRAP Proposal (\*)  
TEAM Proposal (\*\*)

\* Increase in conveniences of pedestrians, bus passengers and transfer passengers along EDSA

- 1) Widening of sidewalks
  - in front of Ocean Center ..... E01
  - under pedestrian overpass opposite Farmers Plaza ..... E02\*
  - in the north of Kowloon Restaurant ..... E03
  - under pedestrian overpass opposite Pantranco ..... E05
- 2) Widening of staircases of pedestrian overpass ..... E04\*
- 3) Improvement of sidewalk when a traffic signal is installed at - EDSA/McArthur intersection ..... E06\*

\* Segregation of large pedestrian traffic across Aurora from vehicle traffic for smooth traffic flow and safety of pedestrians.

- 1) Construction of pedestrian overpass:
  - near Aurora/Gen. Araneta intersection ..... E06\*
  - mid-way between G. Aguinaldo and G. Romulo
- 2) Installation of pedestrian crossing and signals:
  - at Aurora/Gen. Aguinaldo intersection ..... E08\*\*
  - at Aurora/Gen. Romulo intersection (improvement) ..... E09\*\*
- 3) Installation of fence in the middle of Aurora Blvd. between Gen. Santos and Gen. Romulo ..... E11

\* Provision of pedestrian space segregated from vehicle traffic:

- 1) Provision of pedestrian crossing at Gen. Romulo/Gen. Roxas intersection. E11
- 2) Installation of traffic signal at Gen. Roxas/Gen. Aguinaldo intersection ..... E12\*
- 3) Provision of traffic signals and pedestrian crossing:
  - at P. Tuazon/Gen. Aguinaldo intersection ..... E13\*
  - at P. Tuazon/Gen. Romulo intersection ..... E14\*
- 4) Provision of pedestrian sky-ways:
  - between Shoemart and Ali Mall .... E15\*
  - between Farmers Plaza and Aristocrat Bldg. .... E16

Araneta Group of Companies has a long term plan of expanding the pedestrian skyway over the complex

LEGEND:

- PROPOSED COUNTER MEASURE
- PEDESTRIAN OVERPASS
- MEDIAN BARRIER
- PEDESTRIAN CROSSING
- SIDEWALK WIDENING
- TRAFFIC SIGNAL

Figure 4.6  
Improvement of  
Pedestrian Facilities

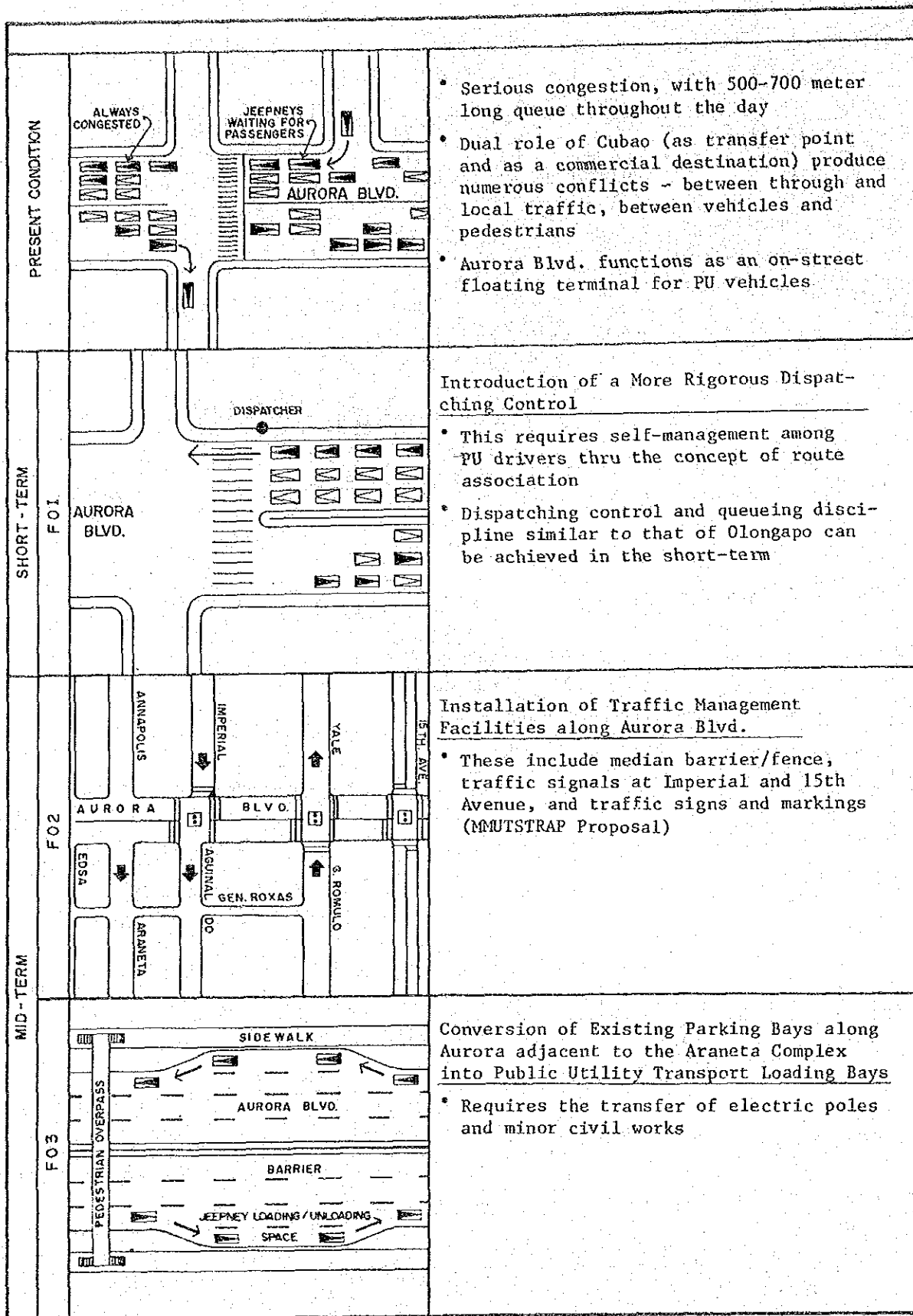


Figure 4.7  
Traffic Management  
Actions along  
Aurora Boulevard

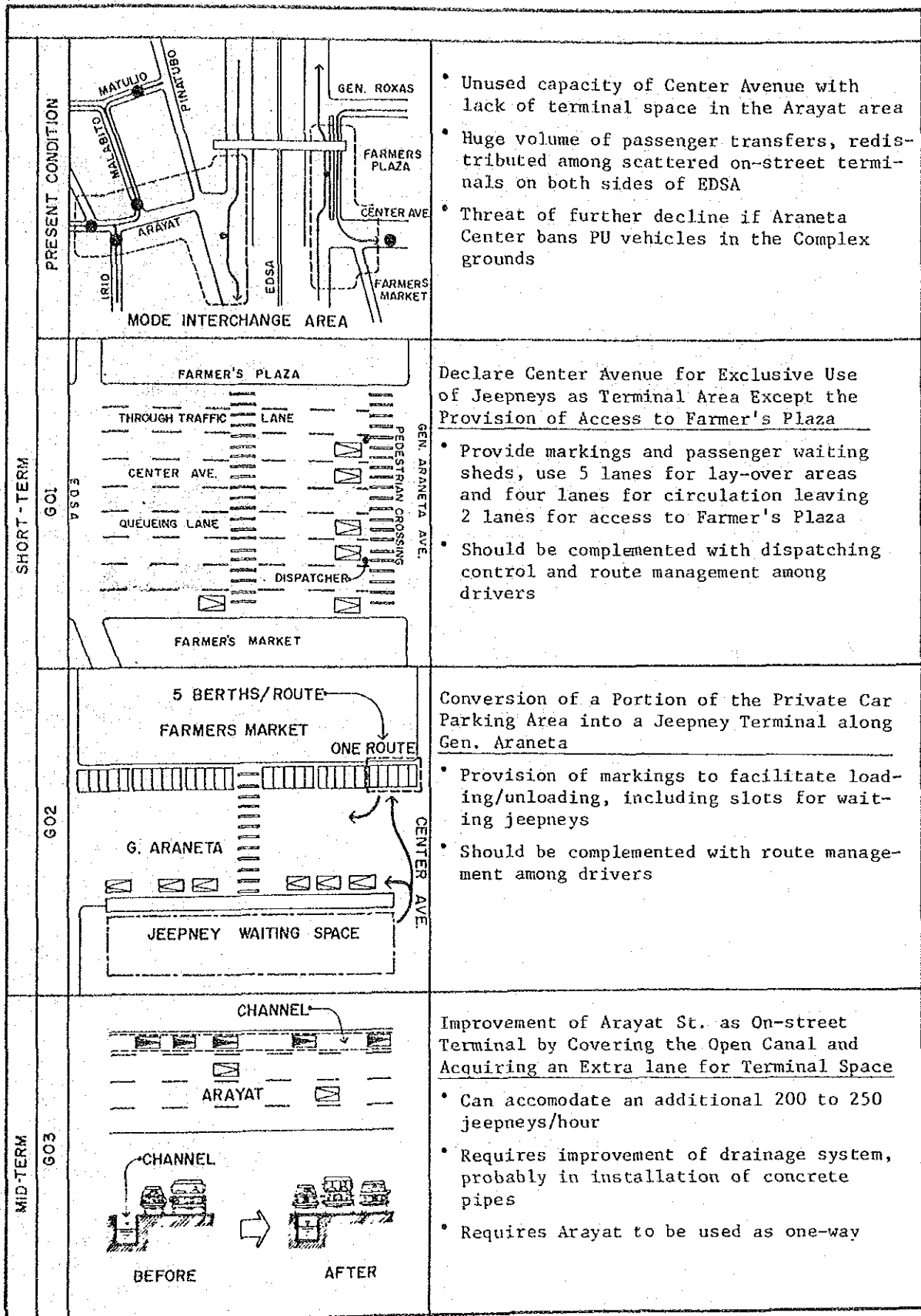


Figure 4.8  
Improving Existing  
Terminal Facilities  
Short to Medium  
Term Actions

#### 4.5. LONG-TERM AGENDA

##### 4.5.1 Jeepney Routes

The construction of new access roads (principally Mirasol and the bridge across Diliman Creek) would necessitate changes in the jeepney routes. Detailed plans are therefore of academic interest.

##### 4.5.2 Bus Operation along EDSA

Similarly, proposal for further improvement of bus operations will depend on the provision of additional bus-bays and off-street terminals in the future.

##### 4.5.3 Improving External Access

This is the "meat" of the long-term proposals. By their nature, they are capital intensive and would entail prolonged rights-of-way acquisition. Figure 4.4 shows all the proposals - implementation of any or all can be supported. Widening of P. Tuazon could be implemented sooner than the others of the right-of-way expansion to occur on the Araneta Center property.

##### 4.5.4 Pedestrian Facilities

Figure 4.6 portrays the existing recommendations for pedestrian control and convenience. JUMSUT II endorses all of them with special mention to the greater role of private developers in their construction.

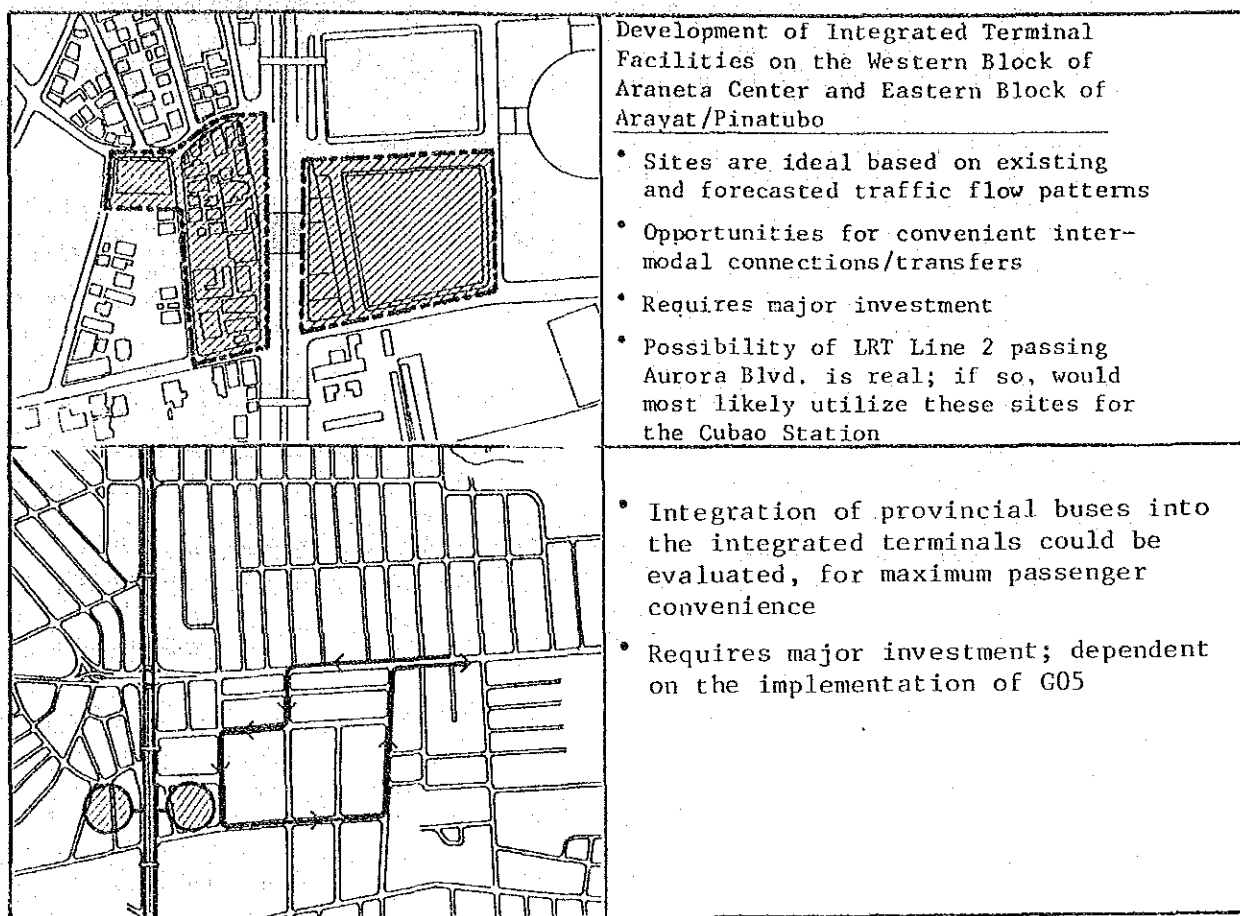
##### 4.5.5 Development of Mode Interchange Facilities

This aspect is the keystone of JUMSUT II recommendations for the long-term growth of Cubao.

As shown in Figure 4.9, the two most convenient sites are the Arayat block and the western block of the Araneta Complex. One or both should be developed into an integrated mode interchange facility.

For reasons of cost, the Arayat site is less attractive. If the LRT Line 2 is constructed radially along Aurora Boulevard, the most logical spot for its Cubao Station would be either of these two sites. It is recommended that the Araneta Center owner strongly consider the incorporation of the LRT station and intermodal terminal in its future plans. A positive action on their part can swing the choice in favor of the complex (with enormous commercial advantages) rather than the Arayat Block (which, if chosen, would represent a major competition to the Araneta complex of shops).

Figure 4.9  
Long-term Development  
of Mode Interchange Area



#### 4.6 INSTITUTIONAL CONSIDERATIONS

##### 4.6.1 Metro Manila Reality

The viability of any of the proposals mentioned above depends on the institutional make-up and the willingness of the various groups to coordinate.

As a private development, the Araneta Center can proceed on its own schemes independent of the rest on matters within the Center's boundary. Unfortunately, its problems cannot be insulated from the rest of Quezon City and Metro Manila. It needs the additional access roads to support its planned growth.

Construction and improvement of the new roads would fall under the responsibility of two separate offices at MPWH: the Urban Roads Projects Office and the NCR Office. Both would need a lead time of 2 to 3 years - to design, acquire ROW, seek budgetary outlay, and begin actual construction.



The traffic signals and other geometric improvements are to be handled by MPWH-TEAM Office. Some of the signals are scheduled under TEAM II. The traffic management schemes will require the endorsement of TEAM, MMC-TOC, the Northern Police Districts, and the Quezon City government. These multiple and overlapping authorities make the traffic proposals very difficult to implement institutionally.

Changes in the jeepney routes would require the approval of the Board of Transportation, not to mention tacit agreement of jeepney drivers and operators. Modification of bus behavior along EDSA depends primarily on the cooperation of six (6) bus companies. Likewise, the local traffic impact of provincial buses can only be tackled with the latter's support.

#### 4.6.2 Responsibility for Terminal

For the land within the Araneta Center which serve as terminals for jeepneys, mini-buses, and "Love Buses" the responsibility clearly belongs to the owner. In this case, the Progressive Development Corporation. Should the Corporation decide to accommodate PU vehicles into the future, it should set up an administrative unit for terminal operation - to charge fees, handle dispatching of vehicles, regulated entry and duration of parking, and perform such other functions as needed.

It may balk, however, at investing in additional facilities perceived as low-income generator. A possible arrangement is for government to introduce a lower property tax rate on lots used as PU terminals. Alternatively, the management of Araneta Center should consider building PU terminals in lieu of multi-storey car parks similar to Makati's. It may turn out that terminals have better returns than car-parks.

An entirely new terminal outside the Araneta Center might be adjudged as technically feasible. However, institutionally, it would be a question mark. It is difficult for government to spend for a terminal due to various reasons, such as scarcity of investment funds, legal constraints on expropriation of private property for public transport, limited role for government in public transport operations, and the like. At least, not in the next few years. For such a proposal to take-off the ground, a strong private participation is implied. Such enterprise can only be expected from transport operators and land developers - with "hard" incentives and gentle persuasion from government. It must, therefore, be packaged from a financial (rather than public service) stand-points.

## 5.0 DETAILED PLANNING

### 5.1 INTRODUCTION

The alternatives for the implementation package were thoroughly reviewed and evaluated as to the traffic benefits it will make available, its feasibility and economy of implementation, and as to its agreeability to various affected systems and institutions.

This chapter presents further details of the relevant plans and proposals, advocated in the study and their corresponding estimated input requirements.

### 5.2. IMPROVEMENT OF JEEPNEY ROUTE STRUCTURE

#### 5.2.1 Affected Routes

As shown in Table 5.1, a total of 24 and 28 jeepney routes will be affected due to the implementation of the proposed improvement scheme for short-term and mid-term period, respectively.

Table 5.1  
List of Affected Jeepney Routes

	Affected Routes	Frequency <sup>1/</sup>			
		MP	EP	OP	16 hrs.
<b>A. Short-term Plan</b>					
<b>A.1 Rerouting of Eastbound via Aurora Blvd. Terminating Jeepneys (A101)</b>	1) Marikina - Cubao	16	15	17	226
	2) Calumpang - Cubao	59	65	37	838
	3) Montalban - Cubao	58	45	50	859
	4) Cogeo - Cubao	20	9	7	183
	5) Cubao - Parang	57	64	39	813
	6) Cubao - San Mateo	13	15	13	206
	7) Cubao - Proj. 4	3	6	4	73
	8) Cubao - Pasig via Marikina	8	7	2	83
	9) Cubao - SSS Village	37	53	25	547
	Sub-Total	271	279	194	3,828
<b>A.2 Rerouting of Jeepneys Terminating in Arayat Area (A401, A402)</b>	1) Cubao Arayat - Lagro	31	23	5	236
	2) Cubao Arayat - PHHC	42	37	48	701
	3) Cubao Arayat - City Hall	24	85	51	654
	4) San Juan - Cubao	103	74	100	1,366
	5) Cubao - V. Luna	23	36	22	391
	6) Cubao - Fairview	0	0	0	5
	Sub-Total	223	255	226	3,353
<b>A.3 Rerouting of other Aroneta Center Bound Jeepneys (A501, A502)</b>	1) Cubao - Antipolo	22	39	7	251
	2) Cubao - Angono	4	6	1	70
	3) Cubao - Binangonan	14	32	11	277
	4) Cubao - Taytay	41	43	25	541
	5) Cubao - Calumpang	42	61	32	696
	6) Cubao - Libis via Murphy	43	60	16	628
	7) Cubao - Libis via Bagong Bayan	13	27	20	312
	8) Cubao - Crame	35	95	12	1,004
	9) Farmer's - Proj. 4 via P. Tuazon	42	89	19	723

Table 5.1 cont'd

	Affected Routes	Frequency <sup>1/</sup>			
		MP	EP	OP	16 hrs.
	10) Cubao - Proj. 2 & 3	26	18	29	402
	11) Cubao - Rosario	17	27	10	335
	12) Cubao - Pasig	4	3	5	67
	Sub-Total	303	500	187	5,306
A.4	<u>Rerouting of other minor jeepney routes (A701, A702)</u>				
	1) Cubao (Yale) - Q-Mart	12	12	7	155
	2) Cubao - Roces (via Annapolis)	20	44	19	421
	3) Cubao - Roces (via Sgt. Catolos)	52	66	70	785
	4) ABS-CBN	13	6	8	138
	5) Cubao - T. Morato	7	22	5	95
	6) Cubao - Espana Rtda.	1	3	2	42
	Sub-Total	105	153	111	1,636
B.	Mid-term Plan				
B.1	<u>Rerouting of Eastbound via Aurora Blvd. Termination Jeepneys (A102)</u>				
	1) Marikina - Cubao	16	15	17	226
	2) Calumpang - Cubao	59	65	37	838
	3) Montalban - Cubao	58	45	50	859
	4) Cogeo - Cubao	20	9	7	183
	5) Cubao - Parang	57	64	39	813
	6) Cubao - San Mateo	13	15	13	206
	7) Cubao - Proj. 4	3	6	4	73
	8) Cubao - Pasig via Marikina	8	7	2	83
	9) Cubao - SSS Village	37	53	25	547
	Sub-Total	271	279	194	3,828
B2.	<u>Rerouting of Westbound via Aurora Blvd. Terminating Jeepnev (A201)</u>				
	1) Stop & Shop - Cubao	21	19	16	256
	2) Divisoria - Cubao via Sta. Mesa	145	82	102	1,725
	3) Quiapo - Cubao via Sta. Mesa	49	61	56	824
	Sub-Total	215	165	174	2,805
B3.	<u>Rerouting of Westbound via Aurora Blvd. and E. Rodriguez Terminating Jeepneys (A301)</u>				
	1) Cubao - Baclaran via Taft	11	9	11	127
	2) Cubao - Baclaran via Dakota	5	4	1	58
	3) Cubao - Baclaran via Mabini	11	11	11	175
	4) Cubao - Recto	51	48	47	708
	5) Cubao - Quiapo via Espana	39	31	25	276
	6) Cubao - Libertad via Mabini	8	10	4	117
	7) Cubao - Libertad via Taft	8	6	7	90
	8) Cubao - Libertad via Dakota	7	2	4	46
	9) Cubao - Pier	6	10	5	124
	10) Cubao - Kalaw	14	9	14	191
	11) Cubao - Pasay Rtda. via Taft	5	3	4	58
	12) Cubao - Pasay Rtda via Dakota	1	1	1	20
	13) Cubao - Pasay Rtda. via Mabini	0	1	0	5
	14) Cubao - V. Cruz via Dakota	39	52	46	749
	15) Cubao - V. Cruz	11	16	11	219
	16) Cubao - V. Cruz	9	9	1	126
	Sub-Total	225	306	196	3,089

1/ MP - morning peak  
EP - evening peak  
OP - off-peak

### 5.2.2 Impact of Rerouting

A significant impact due to the implementation of the scheme is a considerable decrease in jeepney traffic along Aurora Boulevard between Seattle and Gen. Romulo, which is the most critical bottle-neck of this area including EDSA/Aurora Boulevard intersection.

Implementation of short-term plan will contribute to the reduction of approximately 1,200 jeepneys during peak hour or 14,000 per day along sections of congested length. Mid-term plan will further reduce the above traffic by an additional 500 jeepneys during peak hour or 6,000 vehicles per day.

The reduction in load of a total of 1,700 vehicles/peak hour or 20,000 vehicles/day at the sections will benefit not only jeepney operators and passengers but also improve access and through-traffic of the area. The results of the network analysis give the benefits in reduction of vehicle operating costs with particular regard to the savings in time due to the reduced congestions at a rough estimate of no less than a million pesos per day.

**Table 5.2**  
**Estimated Reduction in Jeepney Traffic**  
**along Aurora Boulevard due to the Proposed Route**  
**Structure Improvement Plan**

Route Type	Frequency	
	Peak Hr.	16 Hrs.
<b>A. Short-term Plan</b>		
A.1 Eastbound via Aurora Blvd. Terminating Routes	279	3,828
A.2 Arayat Terminating Routes	152	1,987
A.3 Other Araneta Center Bound Routes	26	402
A.4 Other Feeder Routes	153	1,636
<b>B. Mid-Term Plan</b>		
B.1 Eastbound via Aurora Blvd. Terminating Routes	279	3,828
B.2 Westbound via Aurora Blvd. Terminating Routes	215	2,805
B.3 Westbound via R. Rodriguez Terminating Routes	306	3,089

Source: JUMSUT I

### 5.2.3 Estimated Costs and Inputs Required

In order to implement the proposed plan satisfactorily, the inputs shown in Table 5.3 are required:

**Table 5.3**  
**Required Inputs for Proposed Rerouting of Jeepneys**

Item	Quantity	Unit Cost	Estimated Cost (#000)	Remarks
<b>A. SHORT TERM PLAN</b>				
<b>A.1 Road Component</b>				
1) Improvement of Annapolis				
a. Carriageway	640 m <sup>2</sup>	544/m <sup>2</sup>	456.96	120m(L)x7m(W)
b. Sidewalk	510m(L)	690/m	351.9	510m(L)x2m(W)
2) Improvement of N. Domingo				
a. Carriageway	1,800 m <sup>2</sup>	544/m <sup>2</sup>	979.2	180m(L)x10m(W)
b. Sidewalk	180m(L)	690/m	124.2	180m(L)x2m(W)
3) Improvement of New York				
a. Carriageway	720 m <sup>2</sup>	256 m <sup>2</sup>	184.3	90m(L)x8m(W)
		<b>Sub-Total</b>	<b>2,096.56</b>	
<b>A.2 Traffic Management Component</b>				
1) One way of Columbia				
a. Traffic Signs	11 pcs	1,077/pc	11.85	
b. Enforcement	-		-	
2) One way of Arayat/Irid				
a. Traffic Signs	15 pcs	1,077/pc	16.16	
b. Enforcement	-		-	
3) Designation of Jeepney Queueing Space Along Annapolis Westpoint				
a. Markings	50m x 2		7.2	
b. Enforcement	-		-	
		<b>Sub-Total</b>	<b>35.21</b>	
	<b>Short-term Plan Total</b>		<b>2,131.77</b>	
<b>B. MID-TERM PLAN</b>				
<b>B.1 Road Component</b>				
1) Improvement of 15th Ave.				
a. Carriageway	2,240 m <sup>2</sup>	544/m <sup>2</sup>	1,218.56	280m(L)x8m(W)
b. Sidewalk	280 m	690/m	193.2	280m(L)x2m(W)
2) Improvement of Arayat				
a. Carriageway Pavement	3,600 m <sup>2</sup>	544/m <sup>2</sup>	1,958.4	450m(L)x8m(W)
b. Sidewalk Pavement	480 m	1,084/m	531.16	480m(L)x4m(W)
3) Improvement of P. Tuazon				
a. Carriageway Pavement	3,640sqm	256/m <sup>2</sup>	931.84	520m(L)x7m(W)
b. Sidewalk Pavement	520m(L)	789/m	410.28	510m(L)x2.5m(W)
c. Pedestrian Crossing Marking	7m	864/m	6.05	
4) Carriageway Repair of Other Roads				
a. Matulio	700 m <sup>2</sup>	256/m <sup>2</sup>	179.2	100m(L)x7m(W)
b. C. Benitez	1,700 m <sup>2</sup>	"	435.2	170m(L)x10m(W)
c. Felix Manalo	700 m <sup>2</sup>	"	179.2	100m(L)x7m(W)
d. Liberty Avenue	1,750 m <sup>2</sup>	"	448.0	250m(L)x7m(W)
e. Main Avenue	1,050 m <sup>2</sup>	"	268.8	150m(L)x7m(W)
f. 15th Avenue	210 m <sup>2</sup>	"	53.76	30m(L)x7m(W)
		<b>Sub-Total</b>	<b>6,813.65</b>	
<b>B.2 Traffic Management Component</b>				
1) Installation of Traffic Signals				
a. Santolan/9th Avenue	1 unit	832,000	832.0	TEAM Plan
b. Santolan/15th Avenue	1 unit	"	832.0	TEAM Plan
c. E. Rodriguez/New York	1 unit	"	832.0	TEAM Plan
d. N. Domingo/Banahaw	1 unit	"	832.0	JUMSUT II
e. Aurora Blvd/Seattle	1 unit	"	832.0	JUMSUT II
f. Aurora Blvd/20th Avenue	1 unit	"	832.0	TEAM Plan
g. P. Tuazon/15th Avenue	1 unit	"	832.0	TEAM Plan
h. P. Tuazon/G. Romulo	1 unit	"	832.0	TEAM Plan
i. P. Tuazon/G. Aguinaldo	1 unit	"	832.0	JUMSUT II
		<b>Sub-Total</b>	<b>7,488.0</b>	
<b>B.3 Terminal Component</b>				
1) Improvement of Arayat as	lump sum		1,381.50	drainage improvement, provision of cover
	<b>Mid-term Plan Total</b>		<b>15,683.15</b>	

### 5.3 IMPROVEMENT OF BUS OPERATION ALONG EDSA SERVICE ROAD

#### 5.3.1 Short-term Plan

The recommended actions shown in Figure 4.4 are proposed with a view of minimize traffic congestion impact of buses along the EDSA service roads. One requires no investment in physical facilities providing only for a more rigorous bus dispatching system. The other entails minor civil works in the construction and/or improvement of bus bays.

#### 5.3.2 Mid-term Plan

Two plans of improving bus stops and bays are proposed on the sides of EDSA service roads as shown in Figures 5.1 and 5.2. Existing road space of EDSA service road is evidently ample enough to provide fairly good bus bays and bus stops with relatively small inputs. Both plans, however, are dependent on effective dispatching control.

The plan on Araneta Center side (Figure 5.1) comprises the following physical tasks:

- a) cut existing parking space in front of Kowloon House to provide 3 bus berths
- b) close the entrance of Center Avenue to EDSA to convert to sidewalk

The plan of Pinatubo side (Figure 5.2) comprises the following tasks:

- a) close Arayat to convert to sidewalk
- b) construct new media which will prevent sharp angled weaving from through-traffic
- c) construct a waiting shed
- d) widen stairs of existing pedestrian overpass and expand sidewalks consequently by setting back approximately 4 meters towards the existing Merced Drug Building Compound

#### 5.3.3 Required Inputs

The required inputs to implement the above plans are summarized in Table 5.4.

### 5.4 STRENGTHENING OF EXTERNAL ACCESS

The introduction of one-way couples is resorted to for the partial relief of access problems in the short to mid-term period. Long term implementation calls for the construction of a bridge across Diliman Creek, new road links, and road widening. Required improvements are shown in Figure 5.3 and listed in Table 5.5.

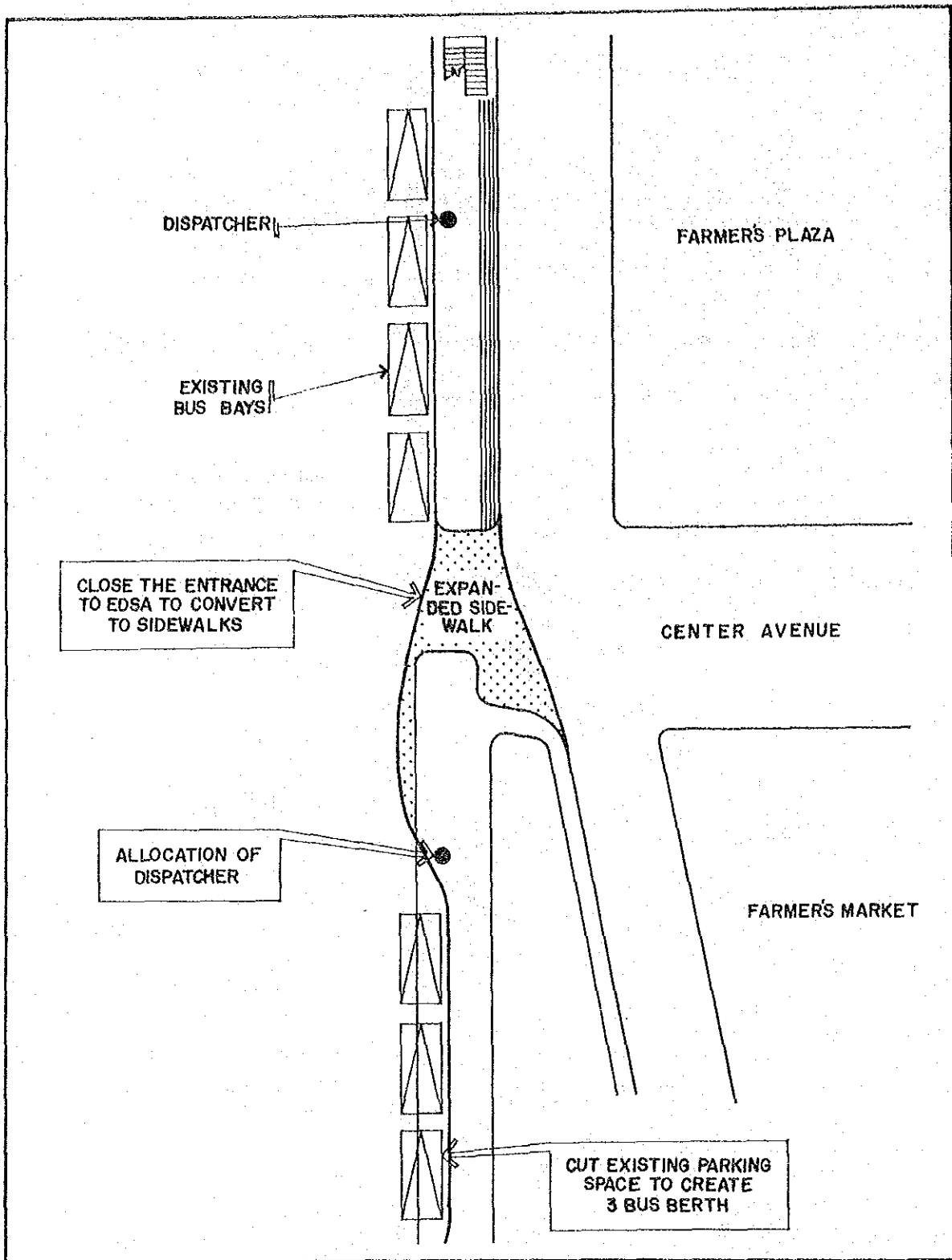


Figure 5.1  
 Improvement of Bus Bays  
 on EDSA Service Road  
 Araneta Center Side

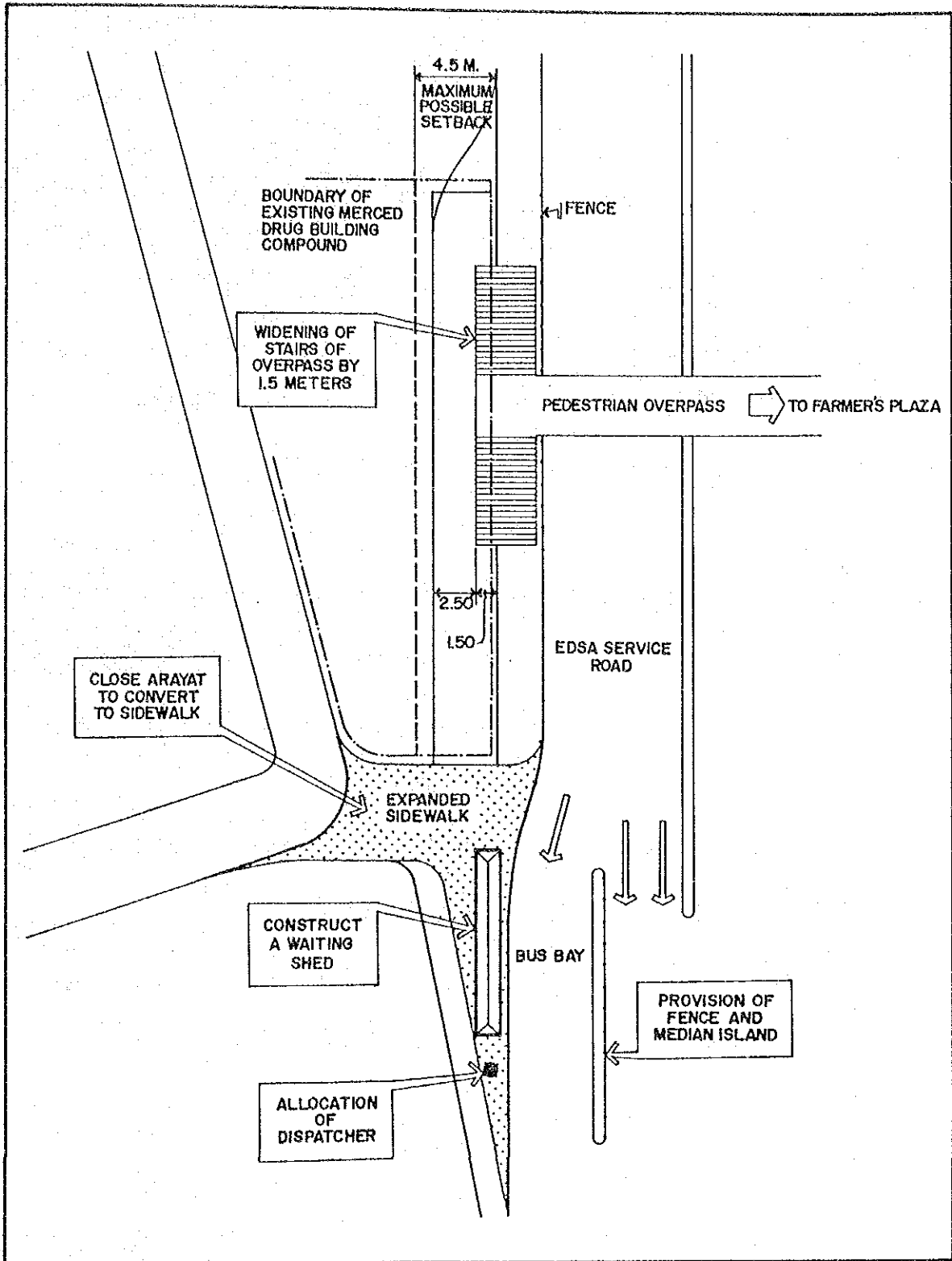


Figure 5.2  
 Improvement of Bus Bays  
 on EDSA Service Road  
 Pinatubo Side



Table 5.4  
Associated Improvements/Input Required for  
Improvement of EDSA Bus Operation

Item	Quantity	Unit Cost	Amount (₱000)	Remarks
<b>A. SHORT TERM PLAN</b>				
<b>A.1 Improvement of Bus Dispatching System</b>				
a. Allocation of Dispatchers	6 pcs	--	--	
<b>A.2 Improvement of Bus Bays</b>				
1) EDSA in front of Kowloon House				for 3 berths No entry from EDSA to Centre Avenue
a. Removal of Sidewalks	60m(L)x2.5m(W)	1,454/m	87.24	
b. Pavement of Roads	60m(L)x2.5m(W)			
c. Traffic Sign Posts	2 pcs	1,077/pc	2.15	
2) EDSA in front of Farmer's Garden				Planned in de- velopment of Robinson Plaza
a. Pavement of Sidewalks	130 m <sup>2</sup>	493/m	64.09	
b. Traffic Sign Posts	3 pcs	1,077/pc	3.23	
Short-Term Plan Total			156.71	
<b>B. MID-TERM PLAN</b>				
<b>B.1 Improvement of Bus Bays</b>				
1) EDSA on Pinatubo side				
a. Pavement of Carriageway	320 m <sup>2</sup>	544/m <sup>2</sup>	184.96	
b. Construction of Median	50m(L)x1m(W)	548/m	27.04	
c. Provision of Fence	50 m	725/m	36.25	
d. Extension of EDSA Median	10m(L)x2m(W)	592/m	5.92	
e. Provision of Passenger Shelter	25m(L)x4m(W)	2,978/m <sup>2</sup>	237.8	
f. Traffic Sign Post	5 pcs	1,077/pc	5.38	
g. Widening of stairs of pedestrian overpass and expansion of sidewalks				
Sub-Total			497.71	
2) Expansion of Farmers Plaza				
a. Removal of Sidewalk	40m(L)x2m(W)	154/m <sup>2</sup>	12.32	
b. Pavement of Sidewalk	220 m <sup>2</sup>	777/m <sup>2</sup>	170.94	
c. Traffic Sign Post	3 pcs	1,077/pc	3.23	
Sub-Total			186.49	
Mid-Term Plan Total			684.20	

1/ Costs are as of February 1985.

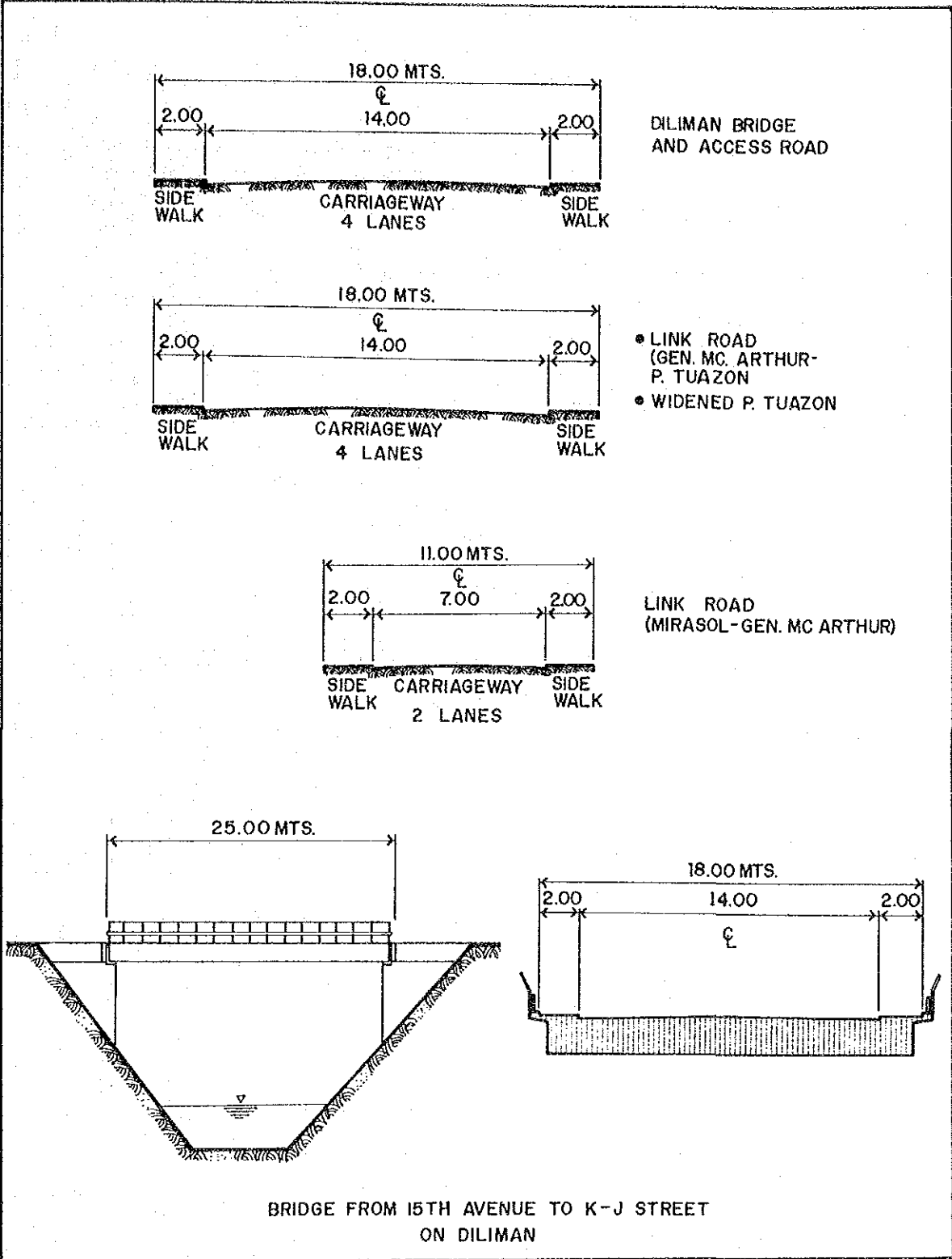


Figure 5.3  
Cross Section of  
Proposed Roads

**Table 5.5**  
**Improvements Required for Strengthening**  
**of External Access**

Item	Quantity	Unit Cost	Amount (P000)	Remarks
<b>A. SHORT TERM PLAN</b>				
<b>A.1 One-way Couple of New York and E. Garcia</b>				
1) Traffic Signs	33 pcs	1,077/pc	35.54	
<b>Short-Term Plan Total</b>			35.54	
<b>B. MID-TERM PLAN</b>				
<b>B.1 One-way Couple of G. McArthur and P. Tuazon</b>				
1) Improvement of EDSA/McArthur Intersection				
a. Opening of Median	30 m	1,472/m	44.16	
b. Pavement of Carriageway	30m(L)x2.4m(W)			
c. Installation of Traffic Signal	1 unit	32,000	832.0	
d. Pedestrian Crossing Markings	12 m	864/m	10.36	
2) Traffic Signs	15 pcs	1,077/pc	16.15	
<b>Mid-Term Plan Total</b>			902.67	
<b>C. LONG TERM PLAN</b>				
<b>C.1 Construction of Diliman Bridge</b>				
1) Land Acquisition	1,020 m <sup>2</sup>	840/m <sup>2</sup>	856.8	
2) Compensation	4 houses	200,000	800.0	
3) Road Construction				
a. Earthwork	90m(L)x18m(W) x 0.3(D)	47/m <sup>3</sup>	22.84	
b. Pavement of Carriageway	1,260 m <sup>2</sup>	511/m <sup>2</sup>	643.86	
c. Pavement of Sidewalk	190m(L)x2m(W)	536/m	101.84	
4) Bridge Construction	15m(L)x17m(W)	125,528/m	1,882.92	
<b>Sub-Total</b>			4,308.26	
<b>C.2 Widening of P. Tuazon</b>				
1) Land Acquisition	1,500m(L)x11 m 12m(W): 21,750m <sup>2</sup>	2,240/m <sup>2</sup>	48,720.0	
2) Compensation	75 houses	200,000	15,000.0	
3) Road Construction				
a. Earthwork	1,500m(L)x9m(W) x0.3m(D)	47/m <sup>3</sup>	190.35	
b. Pavement of Carriageway	1,500m(L)x9m(W)	511/m <sup>2</sup>	6,898.5	
c. Pavement of Sidewalk	1,500m(L)x4m(W)	1,084/m	16,260.0	
<b>Sub-Total</b>			87,068.85	
<b>C.3 Construction of G. McArthur - P. Tuazon Link</b>				
1) Land Acquisition	270m(L)x18(W)	2,240/m	10,885.40	
2) Compensation	2 houses	500,000	1,000.0	
3) Road Construction				
a. Earthwork	270m(L)x18m(W) x0.3m(D)	47/m <sup>3</sup>	68.52	
b. Pavement of Carriageway	270m(L)x14m(W)	511/m <sup>2</sup>	1,931.58	
c. Pavement of Sidewalk	270m(L)x4m(W)	838/m	226.26	
<b>Sub-Total</b>			14,112.76	
<b>C.4 Construction of Mirasol - G. McArthur Link</b>				
1) Land Acquisition	290m(L)x11m(W)	2,240/m	7,145.60	
2) Compensation	10 houses	500,000	5,000.0	
3) Road Construction				
a. Earthwork	290m(L)x11m(W) x 0.3m(D)	47/m <sup>3</sup>	129.58	
b. Pavement of Carriageway	290m(L)x7m(W)	511/m <sup>2</sup>	1,037.33	
c. Pavement of Sidewalk	290m(L)x4m(W)	838/m	243.02	
4) Improvement of Mirasol				
a. Pavement of Carriageway	520m(L)x7m(W)	544/m <sup>2</sup>	1,980.16	
b. Pavement of Sidewalk	520m(L)x4m(W)	1,084/m	563.58	
<b>Sub-Total</b>			16,099.57	
<b>Long-Term Plan Total</b>			121,589.24	

5.5 IMPROVEMENT OF INTERNAL CIRCULATION OF ARANETA CENTER

The current internal circulation of Araneta Center is considered fairly effective although it lacks car movement flexibility because of the almost exclusive one-way system. In addition to this inconvenience, the implementation of Banahaw - P. Tuazon one-way couple calls for other revisions in the internal circulation system. The improvement advocated is the introduction of other two-way roads specified and that internal circulation is afforded greater freedom and flexibility.

In conjunction with other relevant mid-term proposals including rerouting of jeepneys and strengthening of external accessibility, revision of the present system seems to be imperative particularly with the implementation of Banahaw - P. Tuazon one-way couple. The associated improvement required for the introduction of a greater number of two-way roads is shown in Table 5.6.

Table 5.6  
Associated Improvements Required for Internal  
Circulation of Araneta Center

Item	Quantity	Unit Cost	Amount (₱000)	Remarks
MID-TERM PLAN				
1) Traffic Signs				
a. Directional Control	54 pcs	1,077/pc	58.16	
b. Loading/unloading Control	54 pcs	1,077/pc	58.16	
	Mid-term Plan Total		116.32	

5.6 IMPROVEMENT OF PEDESTRIAN FACILITIES

The improvement of pedestrian facilities entail the following actions and costs shown in Table 5.7. The program of time of implementation for most of the actions is determined, among other factors, consistent with the other proposals for Cubao.

The nature of attraction of Cubao makes pedestrian convenience of prime consideration. The widening of sidewalks and staircases are aimed to achieve this in the short-term. Segregation of vehicle and pedestrian traffic as short to mid-term measures further accommodate pedestrian safety.

**Table 5.7**  
**Associated Improvements Required for**  
**Improvement of Pedestrian Facilities**

Item	Quantity	Unit Cost	Amount (P000)	Remarks
<b>A. SHORT TERM PLAN</b>				
<b>A.1 Widening of Sidewalks</b>				
1) Along EDSA Service Road				
a. Removal of Fence	60 m	26/m	1.56	
b. Pavement of Sidewalk	120m(L)x1m(W)	492/m	59.04	
c. Provision of Fence	120m	725/m	87.0	
2) Along EDSA on Pinatubo Area (commercial area)				
a. Land Acquisition	60m(L)x2.5m(W)	2,940/m	441.0	
b. Pavement of Sidewalk	60m(L)x2.5m(W)	892/m	53.52	
c. Provision of Fence	60m	725/m	43.50	
3) Along EDSA in Front of Kowloon Restaurant				
a. Pavement of Sidewalk	50m(L)x1m(W)	492/m	24.60	
4) At the Foot of Pedestrian Bridge Opposite Pantranco				
	40m(L)x1m(W)	492/m	19.68	
		Sub-Total	729.90	
<b>A.2 Widening of Staircases of Pedestrian Bridge in Front of Farmers Plaza</b>				
	1.5m(W)x12m(L) x 2 = 36m	247,000/stair	494.0	
<b>A.3 Pedestrian Crossing Markings</b>				
a. G. Romulo/G. Roxas	170m(L)x5m(W)	864/m	146.88	
b. G. Roxas/G. Aguinaldo	70m(L)x5m(W)	864/m	60.48	
c. P. Tuazon/G. Aguinaldo	70m(L)x5m(W)	864/m	60.48	
d. P. Tuazon/G. Romulo	70m(L)x5m(W)	864/m	60.48	
		Sub-Total	328.32	
<b>Short-Term Plan Total</b>			<b>1,552.22</b>	
<b>B. MID-TERM PLAN</b>				
<b>B.1 Construction of New Pedestrian Bridges</b>				
1) Aurora Blvd./B. Araneta				
	1 Span 30m	60,000/m	1,800.0	
2) Aurora Blvd./Cambridge Oxford				
	1 Span 30m	60,000/m	1,800.0	
		Sub-Total	3,600.0	
<b>B.2 Installation of Traffic Signal</b>				
1) G. Roxas/G. Aguinaldo				
	1 unit	832,000	832.0	
<b>B.3 Provision of Fence Along Aurora Blvd.</b>				
	200m	1,400/m	280.0	
<b>B.4 Construction of Pedestrian Skyway</b>				
1) Shoemart - Ali Mall				
	Span 32m	150,000/m	4,800.0	
2) Farmers Plaza - Aristocrat Bldg				
	Span 37m	150,000/m	5,550.0	
<b>B.5 Pedestrian Crossing Markings</b>				
a. G. McArthur/EDSA (E05)	15m x 5m	864/m	12.96	
b. Aurora/Imperial	23m x 5m	864/m	19.87	
c. Aurora/Yale	23m x 5m	864/m	19.87	
d. Aurora/15th Avenue	28m x 5m	864/m	19.87	
		Sub-Total	11,534.57	
<b>Mid-Term Plan Total</b>			<b>15,134.57</b>	

## 5.7 IMPROVEMENT OF AURORA BOULEVARD TRAFFIC MANAGEMENT

Numerous conflicts between through and local traffic and between vehicles and pedestrians call for the improvement of Aurora Boulevard traffic management. Dispatching control and self-management thru route association have been opted for short term; installation of traffic management facilities and conversion of parking bays to public utility transport loading bays for medium term. Proposed mid-term plan for improved use of Aurora Boulevard is shown in Figure 5.4 and the associated improvements required for short to mid-term in Table 5.8.

Table 5.8  
Associated Improvements Required for the Traffic  
Management Improvement of Aurora Boulevard

Item	Quantity	Unit Cost	Amount (P000)	Remarks
<b>A. SHORT-TERM PLAN</b>				
<b>A.1 Improvement of Dispatching System</b>				
1) Allocation of Dispatcher	4 persons			
<b>B. MID-TERM PLAN</b>				
<b>B.1 Improvement of Aurora Blvd.</b>				
1) Construction of Median Barrier				
a. Barrier/Fence	720m	1,400/m	1,008.	
b. Installation	720m			
2) Pedestrian Crossing Markings	160m(L)x5m(W)	864/m	138.24	
3) Improvement of Curbside along Aurora/Imperial	10m <sup>2</sup>	296/m <sup>2</sup>	2.96	
4) Traffic Signs	1 pc	1,077/pc	1.08	
		Sub-Total	1,150.28	
<b>B.2 Provision of Jeepney/Bus Bays</b>				
a. Transfer of Electric Poles	10 pcs		-	No Change
b. Removal of Parking Bays	400m(L)x2.5m(W)	892/m	356.80	
c. Pavement of PUV Bays	400m(L)x2.5m(W)	36/m	14.4	
d. Markings	400m	725/m	21.75	
e. Provision of Fence	30m			
		Sub-Total	392.95	
	Mid-Term Plan Total		1,543.23	

## 5.8 DEVELOPMENT OF TERMINAL (SHORT-TERM AND MID-TERM PLANS)

### 5.8.1 Short-term Plan

In order to accommodate the existing and rerouted jeepneys terminating at Araneta Center orderly, the following two plans were discussed and is shown schematically in Figure 5.5.

- a) Utilization of Center Avenue (30-meter wide and 150-meter long) more exclusively for jeepneys
- b) Better utilization of Gen. Araneta Avenue for jeepney terminal

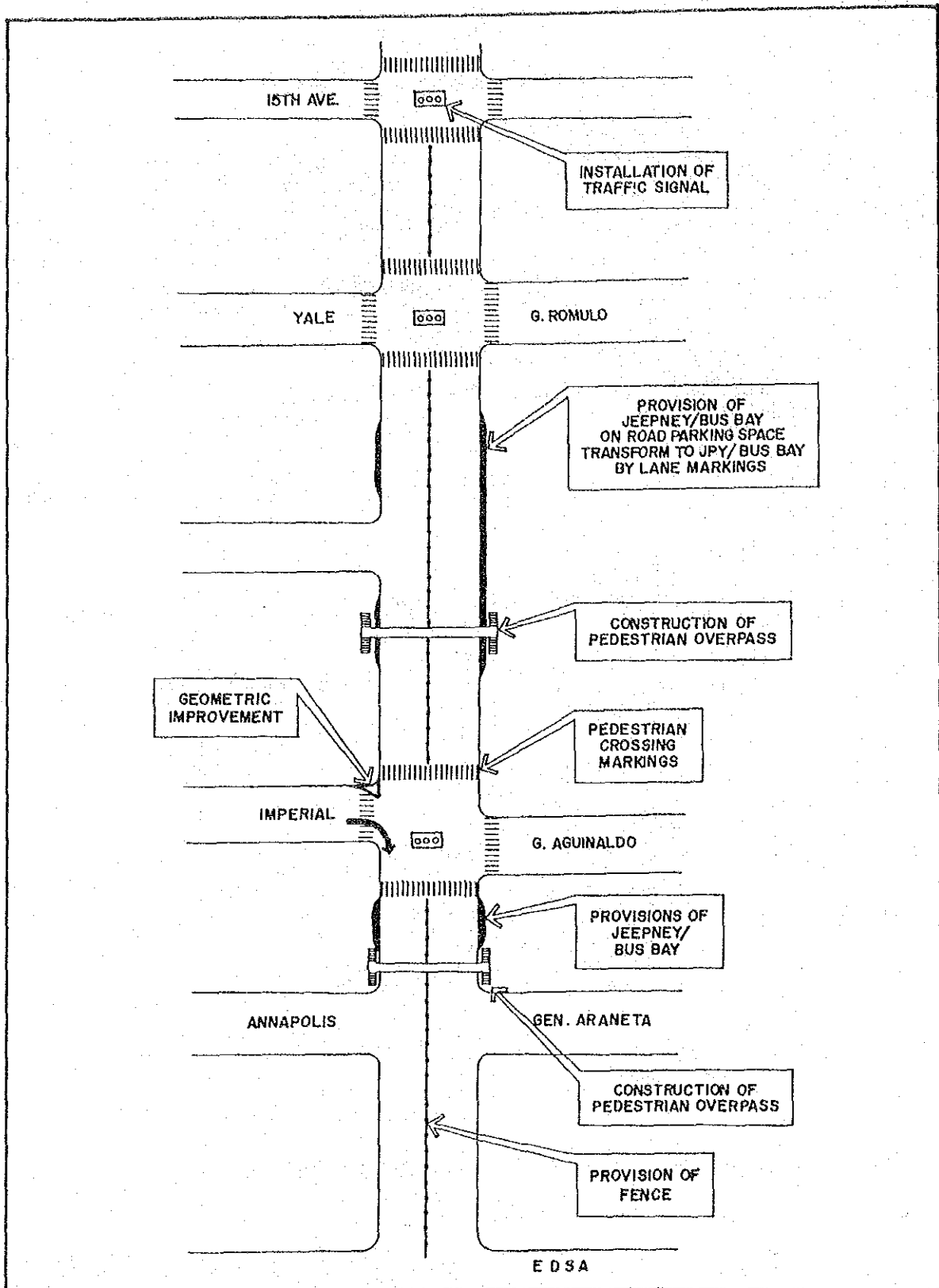


Figure 5.4  
Better Utilization  
of Aurora Boulevard

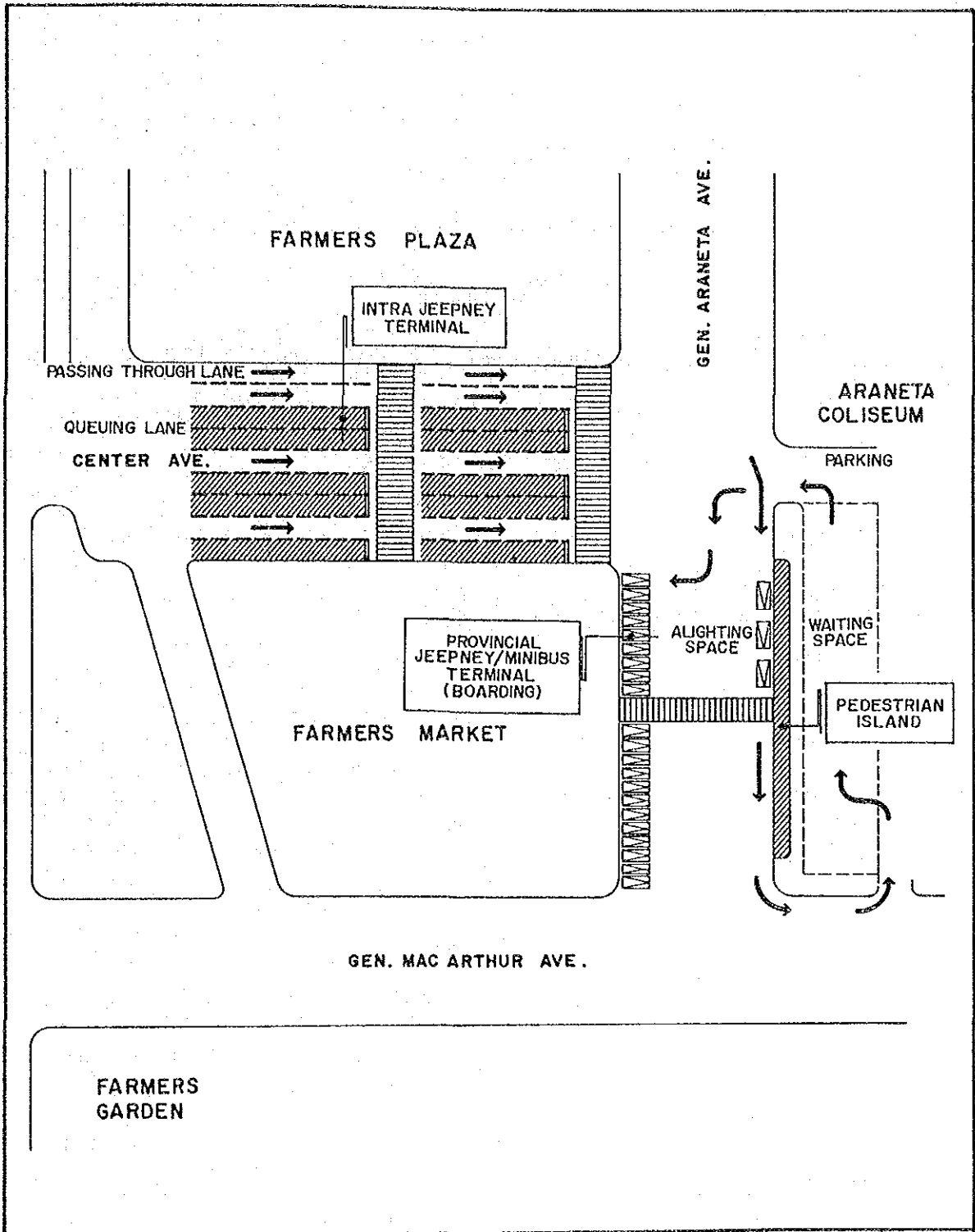


Figure 5.5  
 Proposed Plan on  
 Utilization of Center  
 Avenue and G. Araneta  
 Avenue as Jeepney/Bus  
 Terminal



The former plan provides the following function and facilities:

- a) Two lanes are reserved for vehicle access to Farmers Plaza
- b) Five lanes can be allocated for queueing jeepneys by direction or route, while two lanes for movement. Capacity of each queueing lane is approximately 60 jeepneys
- c) Two pedestrian crossings are designated

Although the latter plan represents more or less the existing situation, it gives the following characteristics:

- a) Clear distinction of function and utilization of Gen. Araneta Avenue
- b) Provision of provincial jeepney/mini-bus terminal along the east side of Farmers Market

As shown in Table 5.9, the above plans hardly require physical improvements but only specification of space utilization by markings and minimal enforcement.

#### 5.8.2 Mid-term Proposals

In order to implement the mid-term rerouting plan satisfactorily, one of the major tasks to be associated with is the improvement of Arayat. Arayat would provide ideal terminal/transfer function and capacity both for vehicles and passengers with the introduction of a number of measures such as covering the existing channel to widen the road space, designating Arayat as one-way, classifying a certain area for terminal space, etc. as shown in Figure 5.6. The plan would provide queueing space for approximately 100 jeepneys.

Associated improvements required are summarized in Table 5.9.

**Table 5.9**  
**Associated Improvements Required for the Development**  
**of Mode Interchange Facilities**

Item	Quantity	Unit Cost	Estimated Cost (P000)	Remarks
<b>A. SHORT TERM PLAN</b>				
<b>A.1 Improvement of Center Avenue Terminal</b>				
1) Jeepney Lane Markings	150m x 7 lanes	36/m	37.60	
2) Pedestrian Crossing Markings	30m(L)x5m(W)	864/s	51.85	
		Sub-Total	89.64	
<b>A.2 Improvement of G. Araneta Terminal</b>				
1) Terminal Markings	120m	36/m		
2) Pedestrian Crossing Markings	15m(L)x5m(W)	864/s	12.96	
3) Car Parking Markings	150m	36/s	5.40	
		Sub-Total	22.68	
<b>Short Term Plan Total</b>			<b>112.32</b>	
<b>B. MID-TERM PLAN</b>				
<b>B.1 Improvement of Arayat Terminal</b>				
1) Improvement of Drainage Facilities	300m(L)x3m(W)	1,231/s	396.30	
2) Provision of Cover Over Canal and Removal of existing Sidewalk	300m(L)x3m(W)	3,374/s	1,012.20	
<b>Mid-Term Plan Total</b>			<b>1,408.50</b>	

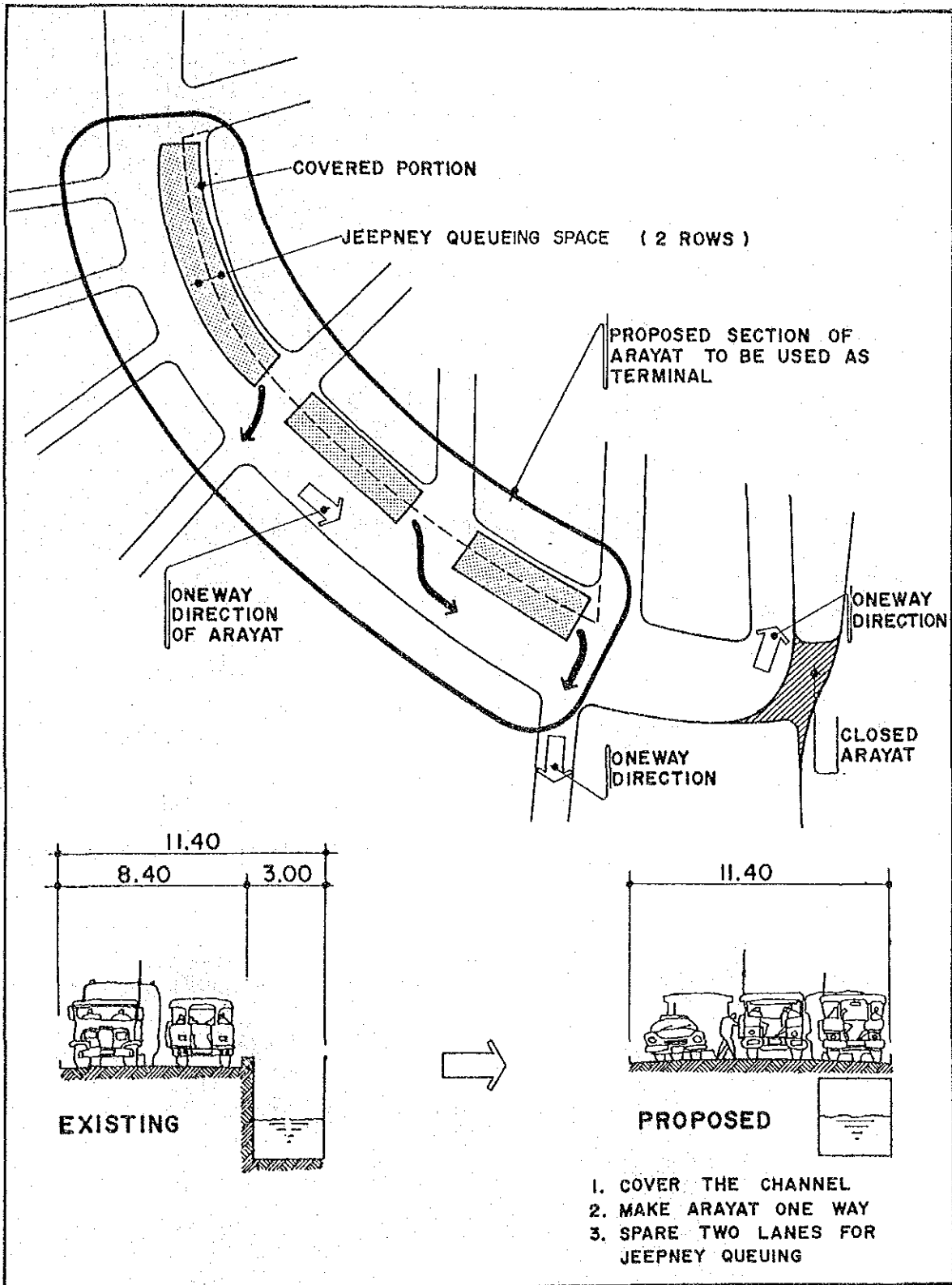
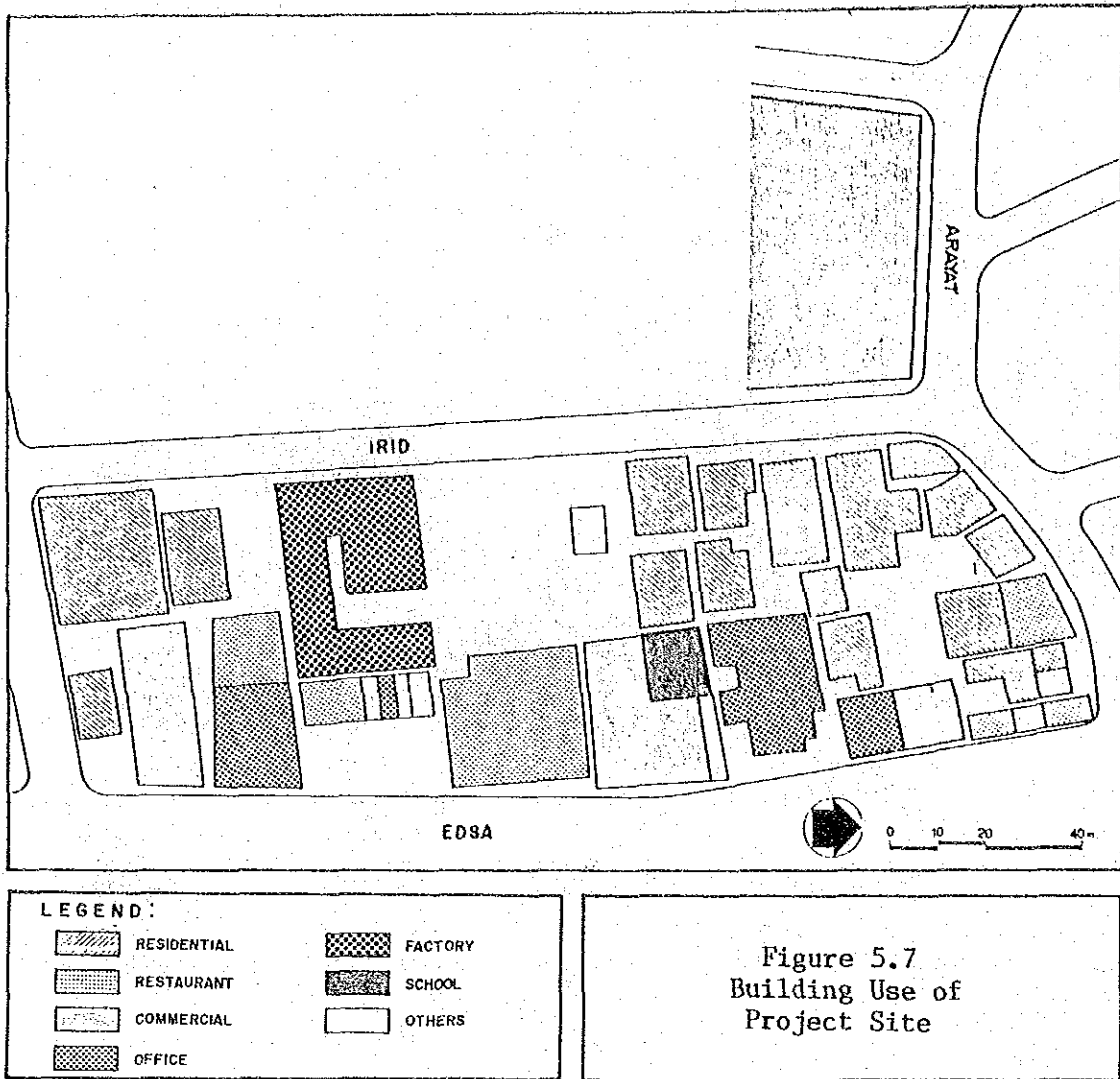


Figure 5.6  
Proposed Plan for the  
Arayat Jeepney Terminal



## 5.9 DEVELOPMENT OF INTEGRATED PUBLIC TRANSPORTATION TERMINAL

### 5.9.1 Present Condition

The project sites for future comprehensive transportation terminals are on both sides of EDSA. One on Pinatubo and the other on Araneta Center. Although the sites are located proximate to either, their characteristics are considerably different in terms of land use, ownership, activities, etc.

#### a) Pinatubo Area

Approximately 1.7 hectares of area along side of EDSA on Pinatubo were selected for the proposed site of integrated mode interchange facility development largely due to its location and shape which are ideal for transportation terminal as well as high density commercial activities. The present land use of the project site is a combination of commercial residential, while zoning given by the zoning ordinance is medium density commercial.

There are 27 buildings which are a mixture of residential and commercial buildings. Several residential buildings around the area combine commercial function in the lower floors. Not only are residential and commercial functions mixed but the commercial aspect in itself is much varied: 24-hour bakeries to discoteque and beer night spots, optometric supplies to furniture, shop repair service to Mercedes Benz service, fruit vendors to photo-copy services, and the like (or rather, the unlike).

Table 5.10  
Characteristics of the Project Site  
Pinatubo Side

<b>A. Site Characteristics</b>	
a) Total Area	: 16,917 m <sup>2</sup>
b) Lot Size Range	: 51 to 1,022 m <sup>2</sup>
c) Average Lot Size	: 469 m <sup>2</sup>
d) Number of Commercial Lots	: 17.5
e) Percentage of Commercial Lots in the Area	: 44%
f) Number of Residential Lots	: 19.5
g) Percentage of Residential Lots in the Area	: 56%
h) Lot Market Value Range	: P150 to P2,200/m <sup>2</sup>
i) Lot Mean Value Range	: P780/m <sup>2</sup>
j) Lot Norm Market Value (Most Common Price)	: P250/m <sup>2</sup> for residential P1,200/m <sup>2</sup> for commercial
k) Lots Owned by the Government (No. and Area)	: 4 lots, 1,477 m <sup>2</sup>
<b>B. Building Characteristics</b>	
a) Number of Buildings	: 27
b) Building Characteristics	: see Appendix 5.1
c) Number of Buildings Owned by same Lot Occupants	: 18
d) Number of Buildings not Owned by Lot Occupant	: 9
e) Building Market Value Range	: P9,000 to P4.3Million/bldg.
f) Building Mean Value Range	: P340,000/Building
g) Building Norm Market Value	: P40,000 to P50,000 per residential building

Source: 1) JUMSUT II Interview Survey  
2) Quezon City Hall

From the limited sample size of 27, the following can be gathered: car owning percentage is low, residents are usually neither building nor land owners of their respective abodes, household size may include domestic help even when household income may indicate otherwise, and for stores, employed service is at minimum more often employing domestic (family and household) services. Expenditure almost always include rental and overhead costs (electric, water, etc.). But expenditure from the same categories vary so greatly from ₱552/month that of an eatery to ₱18,000/month that of a fried chicken restaurant. Incomes vary in same manner from ₱12.00/day for that of a cigarette vendor to thousands of pesos per day for capitalized business.

b) Araneta Center Area

On the westside of EDSA is the vast and exclusive land property of the Araneta Center. Directly across the Pinatubo area is the 2.2 hectares of land chosen for redevelopment. It is composed of two blocks: one small block with nine buildings and a big block with only 1 building. The area is ideal for a terminal and is, in fact, existing as one now. Its location being directly across the other chosen site advances this appeal. Furthermore, the area is a convenient transport terminal because of the commercial services it offers, precisely what it is going to be developed for.

There is a total of 10 buildings all of which offer commercial services whether as an eatery, a bank, a betting station, a booking office, or as a retail and/or wholesale store. Two buildings provide space for various offices. Three buildings combine residential use in the upper floors, then two use the upper floor, wholly or partially, as stock room.

The Farmers Market, the one-storey wet market which occupies 1 big block with a total area of approximately 1.4 hectare caters from low to big income brackets and is actually perceived as one of the most expensive wet markets.

Land is totally owned by the Araneta Center. The real property in the small block are leased to the building owners on a 25-year period. Building space rentees are, again, different.

All buildings, save 1 small building, are classified as relatively new down to old with fair to poor building maintenance. The building maintenance is such probably, due to its deemed target market (low to middle income class) and its commercial use (eateries, wet market). Three buildings, including Farmers Market with its almost

75% of total redevelopment area, have only 1 floor, five buildings have 2, two buildings have 3 or more. It is generalized that vertical potential is not utilized. Horizontal potential, on the other hand, is not maximized.

## 5.9.2 Requisites of Redevelopment

### A. Pinatubo Area

Strong needs in redevelopment of Pinatubo area exist with regard to:

- 1) Convenience and safety for public transportation passengers and vehicle traffic
- 2) Effective land use
- 3) Superannuation of buildings
- 4) Social and environmental improvement

Public transportation transfer passengers are inconvenienced by the long walking distance between terminals caused by scattered public transport terminals. Arayat is a major transfer point from various points in Cubao and thus pedestrian facilities as well as loading/unloading facilities must be improved.

Loading and unloading risk for passengers also exist along EDSA because of vehicle traffic versus on-road loading and unloading points. Besides, these points are not well-defined, they constitute a whole stretch of about 250 meters for lack of any visible permanent waiting-loading/unloading shed or structure.

In need of good pedestrian facilities, pedestrians use the Arayat carriageway for sidewalks and EDSA service lane for waiting area.

The area has extremely high commercial appeal. With such an asset, the land use for low rise buildings and purely residential houses can be much more improved with the consideration of effective land usage. Most buildings have only two storeys and most buildings are residential uni-functional. Small makeshift stall and vendors with precarious stands are sprawled in the area advocating horizontal rather than vertical land usage. Vertical land usage is very poor.

Horizontal land usage is also poor. First floor area is still predominantly residential. Commercial usage is so varied, hardly establishing the area for specific business categories nor specific target markets both in the price and in ware.

Multi-function higher rise building accommodating residential in the upper storeys and commercial aspect in the lower floor would maximize land use. This concept is favored.

In general, building maintenance is poor to fair. Even "fair" is only relative to the area, comparing bad conditions with worst conditions. As the survey sheets indicate, only few have plans of renovating or redeveloping. Another factor to the poor maintenance is that usually, building inhabitants are neither land nor building owners and building owners do not usually live in the building, advocating negligence of maintenance responsibilities.

There is a lack of motivation for redevelopment. Possible reasons are discouragement due to high construction costs, and, although it has high commercial potential, existing area is generally medium to lower class (relative to Araneta Center); commercial appeal is below commercial potential.

A possible solution to catalyze the needed and due redevelopment of this area is by financing of construction costs by government or private entities like loans and grants from banks, government offices, established institutions, etc.

The redevelopment of buildings would facilitate integration of MIA improvement and would be beneficial for both. Commercial benefits are apparent and PT benefits are great considering the Cubao MIA generated traffic, as discussed earlier, and 25-40 percent transfer passenger using Cubao MIA.

Deterioration of road pavement along Arayat and surrounding areas cause discomfort to motorists, passengers and pedestrians alike. Lack of maintenance of road and drainage cause this. Poor drainage also cause floods during heavy rains along Arayat. Deterioration of environment is augmented by mixed land use caused by unplanned land development; the deteriorated environment and mixed usage lowers its market value.

The study area is near a squatters area. This may pose potential social problems in terms of crimes. As the survey for residents reflected, there is anxiety over the peace situation especially at night. One respondent even articulated the non-use of the EDSA pedestrian deck at night for fear of personal danger.

Though traffic inside the residential area create exhaust air pollution, noise and vehicular accident danger. It must be noted that this area is a high density residential area.

#### B. Araneta Center Site

The Farmers Market and the block between it and EDSA is ideally located for the terminal to suit this purpose. The rehabilitation of the existing market into a public transport termi-

nal would not only provide convenience to passengers and public vehicles but would relieve conditions in the general area as well. And, more important for the management, commercial benefits it will invoke will far exceed that which is existing.

Existing land use is way below the commercial potential the property is endowed. The inferior quality of the buildings in terms of materials, maintenance and facilities, can far be bettered. Existing buildings are outdated in architectural aesthetics and engineering techniques. Furthermore, structure, particularly the Farmers Market have life spans nearing their ends because of poor maintenance, materials, plans and/or construction methods.

### 5.9.3 Planning Direction

Essentially, the basic concept for the proposed terminal should endorse the creation of an efficient public transportation mode with large handling capacity to conform with the future high potential development of Cubao MIA. The aggregate space requirement estimated to enable the terminal to contain a comprehensive transport activity is 30,900 square meters (see Table 5.11). A large part of this area (i.e., 14,900) is reserved for the high volume transport mode - the jeepneys. Since at present only the north-bound provincial buses have terminals located in the study area, one side of the Cubao MIA, which is the Araneta Center side, allots approximately 2,100 square meters for their use.

Table 5.11  
Estimated Terminal Space Required

Use	Araneta Center Side (sq. m.)	Pinatubo side (sq. m.)	Total (sq. m.)
<b>A. Terminal Space</b>			
1) Jeepney Terminal <sup>1/</sup>	7,500	7,400	14,900
2) City Bus Terminal <sup>2/</sup>	2,700	3,300	6,000
3) Provincial Bus Terminal <sup>3/</sup>	2,100	-	2,100
4) Administration/Service Facilities	1,000	1,000	2,000
Sub-Total	13,300	11,700	25,000
<b>B. Road Space</b>	1,100	1,000	2,100
<b>C. Building Space</b>	-	1,500	1,500
<b>D. Others<sup>4/</sup></b>	1,100	1,200	2,300
<b>TOTAL</b>	<b>15,500</b>	<b>15,400</b>	<b>30,900</b>

<sup>1/</sup> Comprising unloading berth/loading berth/waiting space of 15/31/92 for Araneta Center side and 14/29/85 for Pinatubo side.

<sup>2/</sup> Comprising 14 bus bays each on both sides of EDSA.

<sup>3/</sup> Comprising 6 berths.

<sup>4/</sup> Medians, open spaces, etc.



Figure 5.8 shows the concept plan of the Cubao integrated terminal complex and its contribution to the rationalization of public transport flow. It basically endorses the following improvements:

- a) develop facilities where westbound jeepneys and EDSA buses are provided a proper interface on the westside of EDSA (Pinatubo)
- b) develop facilities where eastbound and Araneta Center based jeepneys and EDSA buses are provided a proper interface on the eastside of EDSA (Farmers Market)
- c) link these two facilities with a pedestrian deck
- d) create spaces for high density commercial development
- e) induce the renewal and improvement of Pinatubo area.

Inasmuch as huge terminal buildings are envisioned for the Cubao MIA, only the ground and second floors of said buildings are conceived to regulate the public transport movements. The rest of the floors of the buildings could be utilized for commercial and office purposes, depending on the decision of the implementor of the project. The ground floor will cater to the jeepneys, city buses and provincial buses, while the second floor will be for the LRT users (see Figures 5.9 and 5.10).

A model of the terminal buildings is shown in Figure 5.11 and Figure 5.12 shows the sectional plan of the terminal complex.

The undertaking of the proposed terminals entail associated improvement works which are listed in Table 5.12. In scope and size, the Araneta Center side would require approximately P60 million as against P45 million for the Pinatubo side. It should be noted that only the costs of the terminal facilities is considered in the costing of both terminal buildings. The estimated value of succeeding floors will be dependent on the plan and design of the developer.

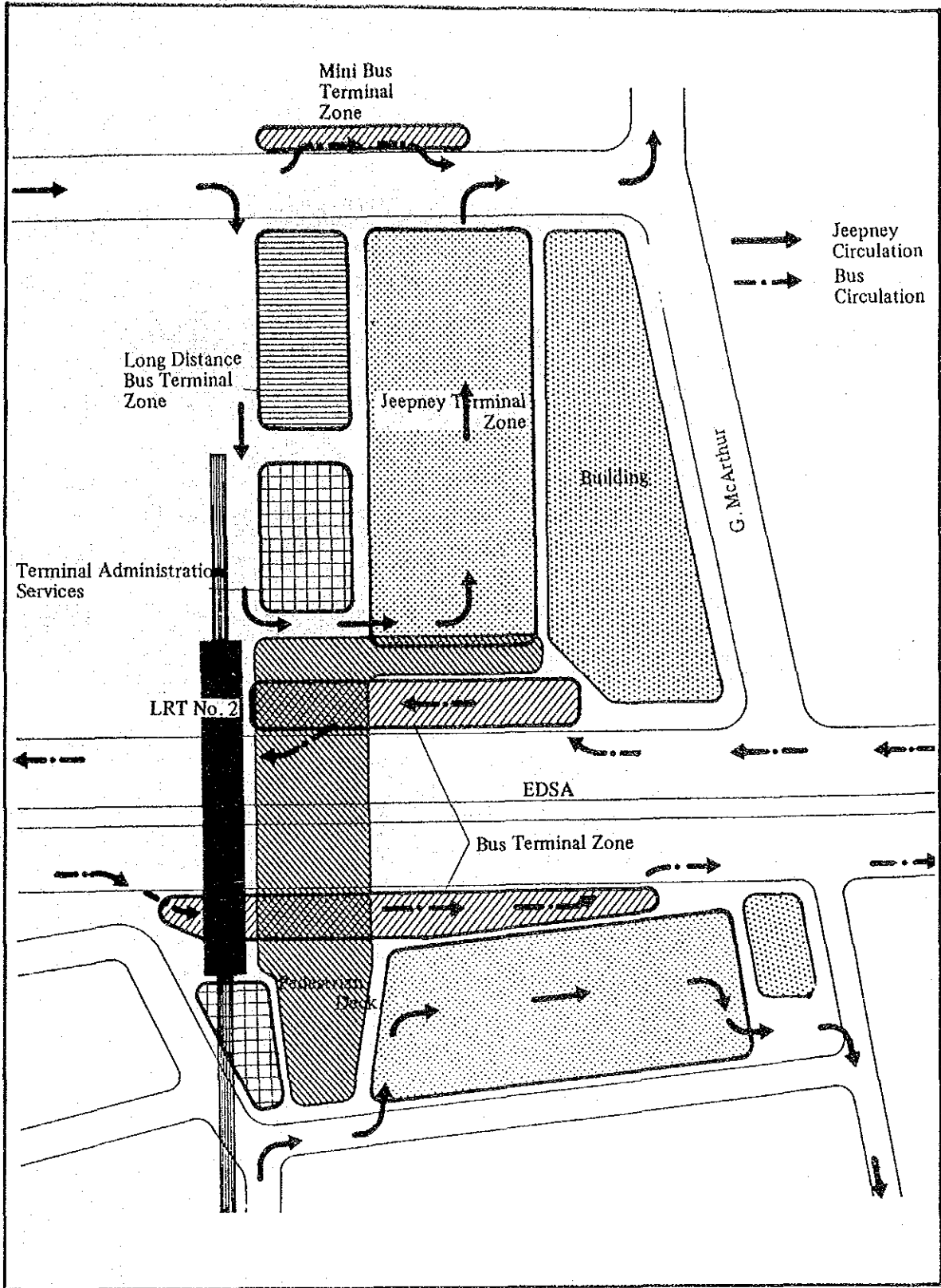


Figure 5.8  
Zoning Plan of  
Integrated Terminal  
Complex

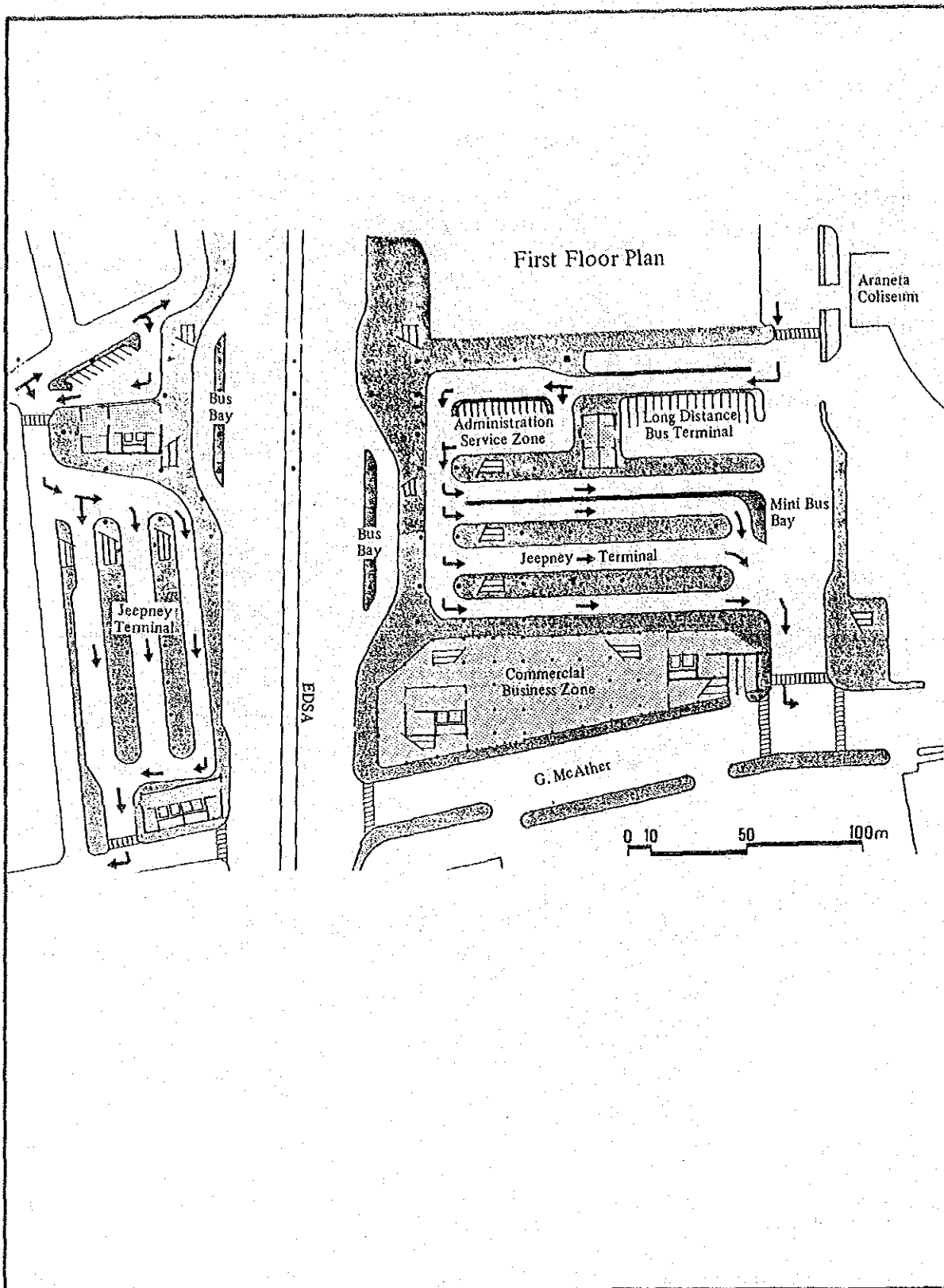


Figure 5.9  
Terminal Plan  
(1st Floor)

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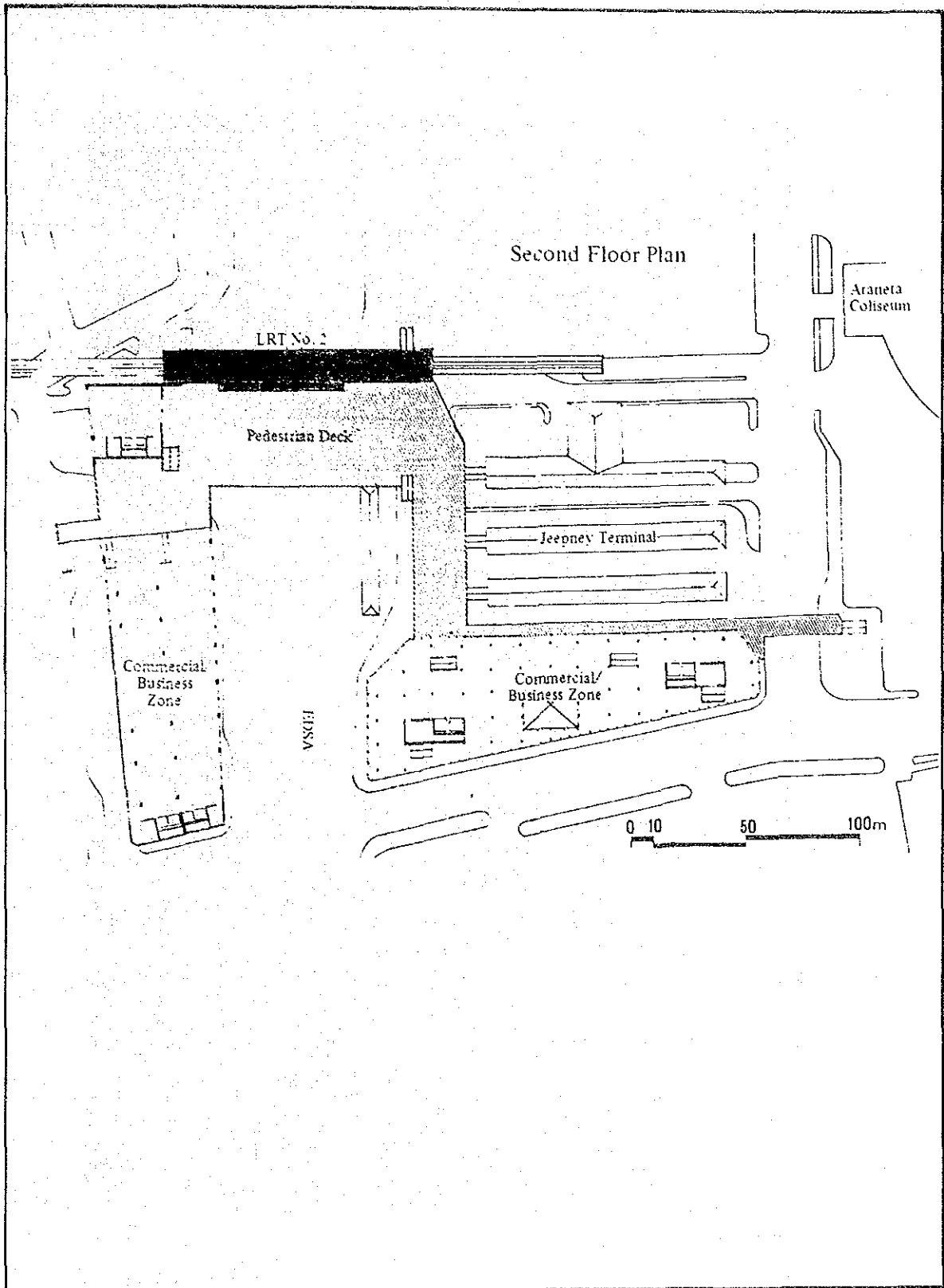


Figure 5.10  
Terminal Plan  
(2nd Floor)

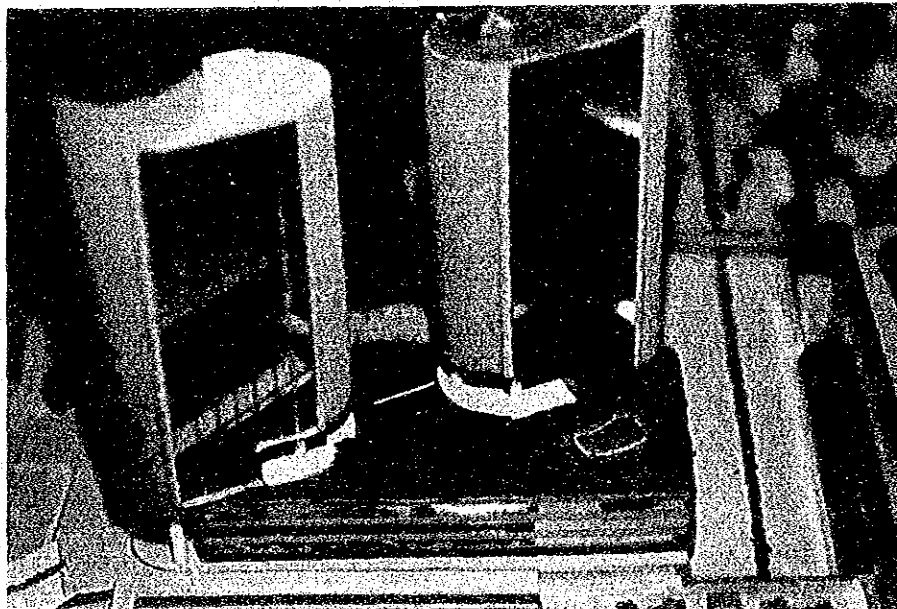
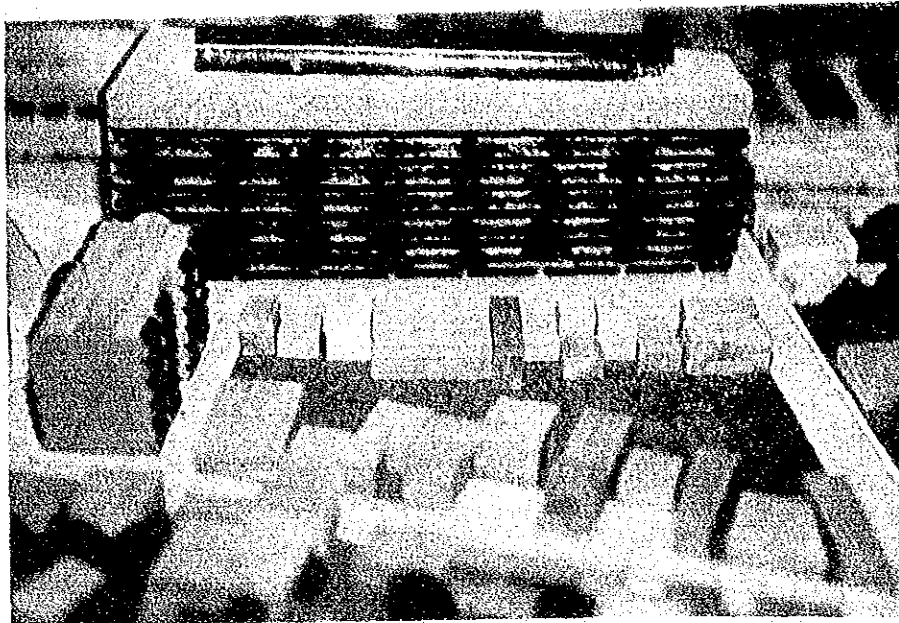


Figure 5.11  
General Views of  
Integrated Terminal  
Complex

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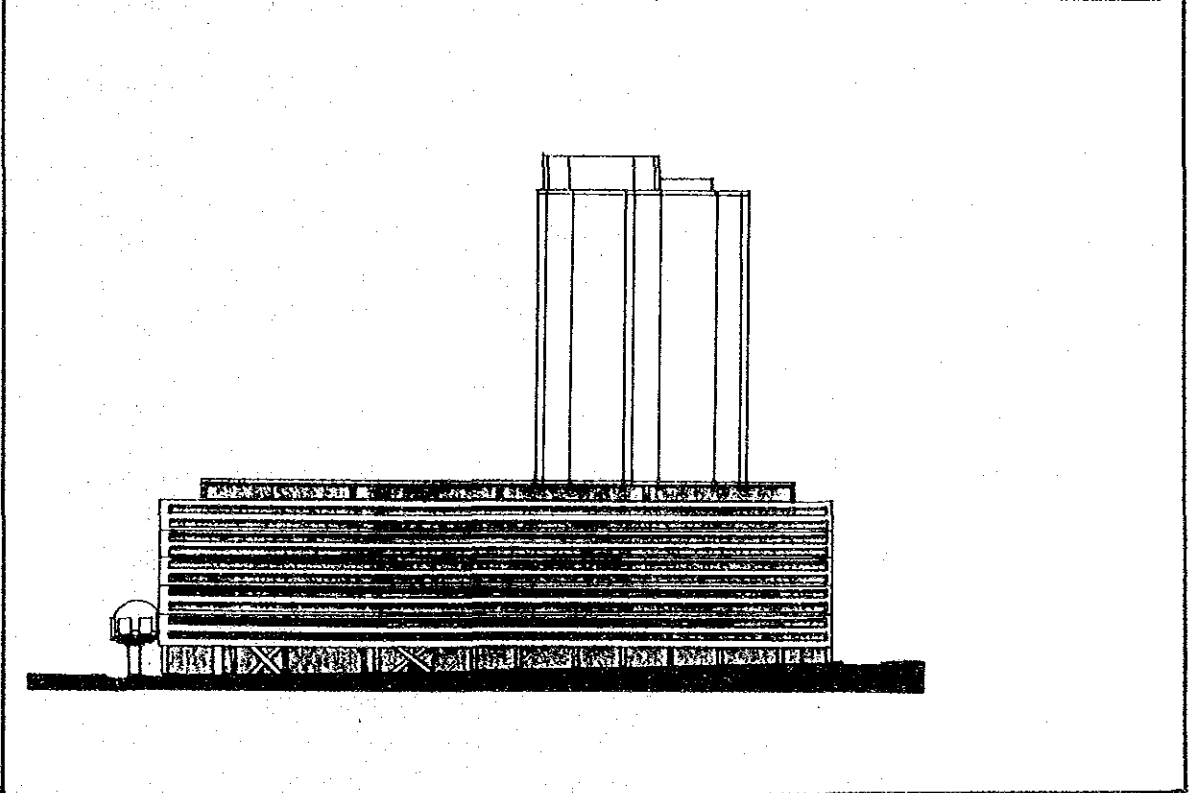
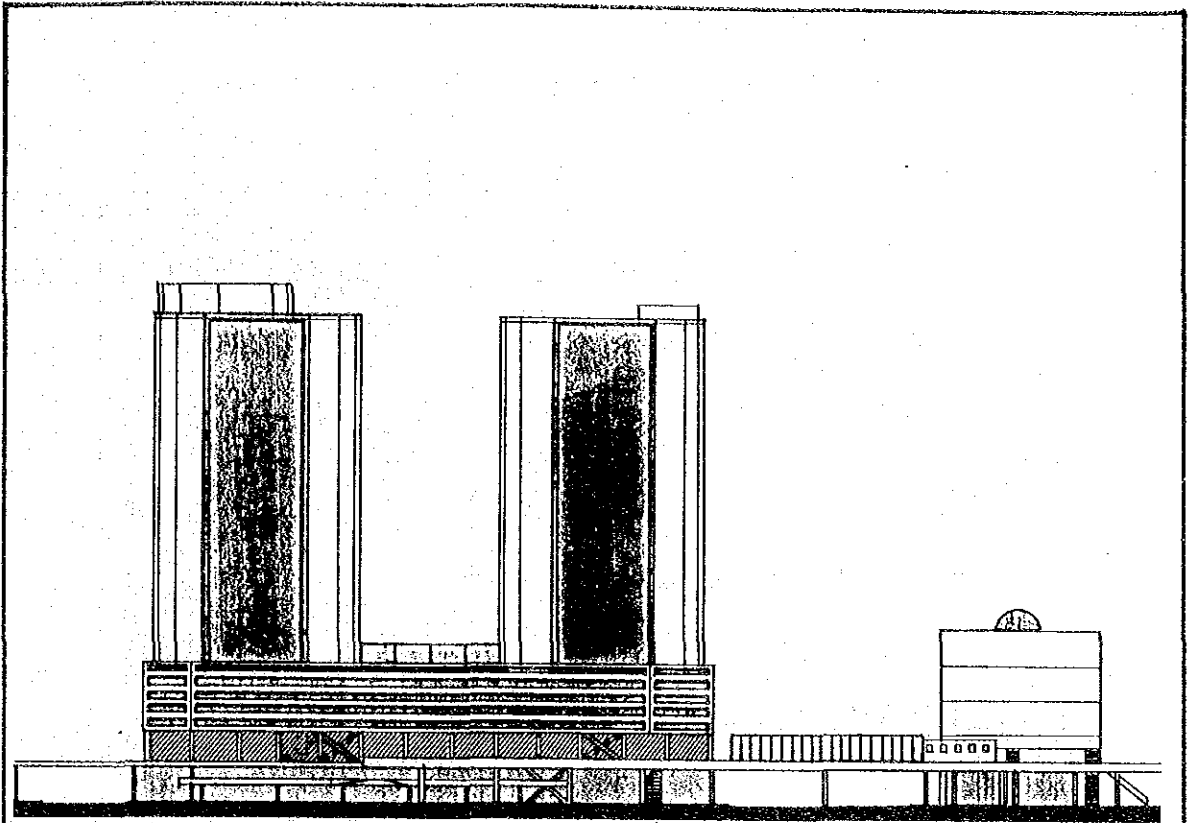


Figure 5.12  
Sectional Plan of  
Terminal Complex

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Table 5.12  
Associated Improvement Required for the Development  
of Pinabuto and Araneta Center Mode Interchange Area

Item	Quantity	Unit Cost	Estimated Cost (#000)	Remarks
<b>C. LONG TERM PLAN</b>				
<b>C.1 Development of MIF on Pinatubo Side</b>				
1) Land Acquisition	15,400 m <sup>2</sup>	1,092/m <sup>2</sup>	16,816.80	
2) Compensation	29 buildings	268,500	7,786.50	
3) Clearance of Existing Facilities	200m	1,360	260.00	
4) Construction of Terminal Facilities				
a. Earthwork	15,400m <sup>2</sup>	47	723.80	
b. Pavement of Carriageway	9,229m <sup>2</sup>	511	4,716.02	
c. Pavement of Sidewalk	300m(L)x2m(W)	690/m	207.00	
d. Construction of Adm. Building	200 m <sup>2</sup>	2,165	433.00	
e. Traffic Signs	10 pcs	1,077	10.77	
f. Markings	2,000m	36	72.00	
g. Lights	15 pcs	4,306	64.59	
h. Fence	150m	725	108.75	
i. Median Curb	1,508m	145	218.66	
j. Median Pavement	4,931m <sup>2</sup>	151	744.58	
Sub-Total			32,162.47	
<b>C.2 Development of MIF on Araneta Center</b>				
1) Land Acquisition	15,500 m <sup>2</sup>	2,940/m <sup>2</sup>	45,570.00	
2) Compensation	8 buildings	474,000	3,792.00	
3) Clearance of Existing Facilities	150m	1,300	195.00	
4) Construction of Terminal Facilities				
a. Earthwork	15,500m <sup>2</sup>	47	728.50	
b. Pavement of Carriageway	9,699m <sup>2</sup>	511	4,956.19	
c. Pavement of Sidewalk	395m(L)x5m(W)	989/m	390.66	
d. Construction of Adm. Building	200m <sup>2</sup>	2,165	433.00	
e. Traffic Signs	10 pcs	1,077	10.77	
f. Markings	500m	36	18.00	
g. Lights	15 pcs	4,306	64.59	
h. Fence	30m	725	21.75	
i. Median Curb	1,869m	145	271.01	
j. Median Pavement	3,826m <sup>2</sup>	151	577.72	
Sub-Total			57,029.19	
<b>C.3 Construction of Pedestrian Deck to Link both Terminals</b>				
1) Across EDSA	80m(L)x6.4m(W)	120,000/m	9,600.00	
2) Towards Shoemart	145m(L)x9.6m(W)	180,000/m	26,100.00	
Sub-Total			35,700.00	
Long Term Plan Total			124,891.66	

#### 5.9.4 Management Aspects

##### A. Implementing Agency

###### 1) Degree of Government Participation

Active participation of the public sector should be encouraged for the implementation of the Pinatubo Mode Interchange development. The purpose of such a facility calls for public sector commitment. Government intervention in this case will be vital for the following reasons:

- a) To secure a strategic location for the Pinatubo Mode Interchange Facility (PMIF) since it can only effectively function as public transport terminal if it is on public-owned site.
- b) To avoid major difficulty on the part of private developers on matters regarding land acquisition and compensation.
- c) To provide an alternative site for housing the low income households which will be displaced due to the project.
- d) To cushion the draw-back of such public facility. It should be stressed that large profits will not be realized unless costs are volleyed back to the transport operators. Then again, this could usher in reluctance on the part of the operators to use the PMIF and eventually the purpose of this facility will be defeated when transport operators revert back to using the on-street system for loading/unloading. Hence, some sort of subsidy should be offered to also insure the success of the project's objectives.

###### 2) Project Implementor

Based on the above cited requirements for such a facility, only the public sector has the resources for this endeavor. Needless to say that it takes not only strength in terms of resources but also sustained efforts for the PMIF development. Hence, this facility can only exist under the full responsibility of the government.

Owing the multi-function envisioned for the PMIF, there is no single agency that may be pinpointed to shoulder full responsibility of the project. The undertaking should rationally be on a multi-agency level. Hence, the project implementor should be one lead agency with the support of related agencies. Corollarily, it is necessary to confirm the functions and competence of agencies involved and to set up a cooperative relationship among the agencies.

As of this report, both the suitable implementing agency and support agencies have not yet been identified for the PMIF development.



## B. Implementation Procedure

### 1) Conceptual Plan

Initially, the implementing lead agency presents the purpose of redevelopment in a concept plan. At this stage, it would be impossible to concretize all prerequisites and details for the development project. Then the implementing agency discusses this concept plan with the government and agencies concerned, and confirms the outline for the development. In cooperation with supporting agencies, the implementing agency completes a primary plan and conducts a prefeasibility study.

### 2) Authorization

In order to channel government funds for the development of the PMIF as a public utility facility, authorization from the government is indispensable. The completed primary plan is submitted to the government and concerning agencies for conformity. Uprooting and displacement is a major consequence of urban redevelopment and thus, has to be handled prudently. A series of public hearings should be employed to acquire the public's consensus.

### 3) Land Acquisition and Resettlement

After the authorization, the implementing agency negotiates with landowners, building owners, residents, and tenants regarding the proposed project site. Since urban redevelopment should be undertaken with full cooperation of all parties involved, the implementing agency has to hold meetings with the affected people as many times as necessary.

The tandem with land acquisition, public housing has to be prepared in a nearby vicinity to accommodate low-income households affected by the project. Also, shops, offices, restaurants and other facilities are necessary for transient accommodation.

In addition, agreement may be facilitated by tendering substitute real property and the proposition of securing a place in the PMIF after its development.

### 4) Detailed Design

As the usage of the building is not clear at present, the physical planning of PMIF is limited to the at-grade terminal and the 2nd floor pedestrian deck. The upper portion of the building should be planned and proposed with utmost care on the basis of research focused on real estate development. Due to its limited area, the urban redevelopment plan is easily affected by a variance of circumstances. Since it takes quite some time to complete

an urban redevelopment project, the details of the plan are expected to undergo frequent changes necessary for its promotion. If the detailed design is fixed from the beginning, the progress of the redevelopment project becomes difficult.

Therefore, the urban redevelopment plan has to be flexible and practical in both the physical and management aspects. It is usually the practice that the detailed design becomes fixed just before bidding for construction starts.

## C. Financing

### 1) Government Finance

On the assumption that the public sector takes on a high degree of commitment in this project, the development is consequently financed by the government.

If the implementing agency undertakes the PMIF development using private loans with high interest rate, payment of debts will make it impossible for PMIF to operate on a self-liquidating account. In the event that funding from the government would not be possible, the promotion of the project through private investments on the introduction of foreign economic assistance should be considered.

### 2) Introduction of Private Investment

From the standpoint of project financing, there are two major stages in the project implementation. One is the land acquisition stage and the other is building construction stage. As it is extremely difficult for the private sector to purchase all the lots in the site, the land acquisition stage should be directly carried out by the implementing agency. As to the building construction stage, the possibility of another source of funds can be advocated. As a provision against inadequate government funding for the second stage, the government can allow the agency to lease the acquisitioned lands to the private sector whereupon the construction will be under taken by the latter. There is an enormous market potential in the Pinatubo/Araneta area. Owing its huge market, the investment of the private sector in developing the PMIF is not difficult to recover. However, this method would entail minimizing public sector's commitment in order to make the project attractive to private investors. The private sector should also be permitted to modify the detailed design to some extent as to maximize profitability.

### 3) Introduction of Foreign Economic Assistance

As mentioned above, the success of the PMIF development depends largely on the amount of the initial investment. Since the implementing agency experiences difficulty in

pursuing the project through domestic funding, the introduction of foreign economic assistance should be advocated. Soft loans from foreign countries or national agencies with low interest rates will enable the PMIF to generate reasonable profits to cover its obligations.

D. Administration and Management

1) Land Lease

Should the implementing agency only undertake the land acquisition and introduce private investment for the building, it is rational for the government to lease the entire land to the private sector. This poses as an effective incentive to the private investor, and also facilitates convenient administration of the land on the part of the government.

2) Building Lease

Notwithstanding the case that the government or private investor uses the PMIF building itself, the floors are to be leased to various tenants including jeepney owners' association. In this case, the government should establish a subsidiary which would take full responsibility of the actual administration and management of PMIF.

3) Jeepney Owners' Association

As there are numerous jeepney owners' associations/cooperative and more than 20 jeepney routes estimated in operation through PMIF, it would be too difficult for the implementing agency to manage the jeepney terminal efficiently by itself. For instance, without reliable dispatchers, jeepney activities will be unregulated which may consequently form serious congestions in the terminal. It is necessary, therefore, to evolve a united jeepney owner's, association/cooperations which will use the PMIF. The body will take full responsibility of the management and administration of the PMIF jeepney terminal on the basis of an essential agreement with the implementing agency. In this event, all facilities in the jeepney terminal and its floor are leased to the association at minimal cost.

4. Economic Aspects of the Project

It is generally conceded that the economic benefits of a public transport terminal will outweigh its cost. However, there is considerable methodological difficulty in estimating the value of such benefits. Precedents are hard to come by. A possible approach is to assume a priori that an off-street facility will siphon off vehicles which would otherwise be obstructing the roads and

interfering in the normal flow of traffic. Hence, higher speeds and lower operating costs of vehicles plus passenger time savings can be ascribed to a terminal similar to a road undertaking.

A computer based network assignment analysis indicates that direct benefits due to reduction in vehicle operating costs and passenger travel time are:

saving in vehicle operating cost; ₱150,000/day
+ saving in passenger travel time; ₱135,000/day
-----
total; ₱285,000/day or ₱85.5 million/year

A prima facie case for the economic viability of a mode interchange facility can therefore be made.

There are, of course, other benefits. Among these are the following intangibles:

- increase in the comfort and safety of commuters
- better control and scheduling of PU vehicles, which should in turn rebound to better profit margin
- increase in the value of land due to higher accessibility
- higher volume business transactions since more people can gain entry and transact

Not only are the intangible benefits difficult to value, their effects are also complex and not identifiable to specific actions or measures. Thus, the rerouting of jeepneys may lead to improvements in two variables and deterioration in another. Different sectors will also experience them in different ways that only a qualitative assess is possible. Table 5.13 provides an incidence matrix vis-a-vis the foregoing benefits and the following affected sectors:

- 1) Transport providers, such as: Drivers, Operators
- 2) Transport Users, such as: Business, Passengers
- 3) Local Residents/Neighborhoods
- 4) Government as the regulator

Table 5.13  
Economic Consequences of Mode Interchange Area  
Improvement

TYPE OF ACTIONS / SYSTEM INVENTIONS	LINKAGE	CATEGORY OF BENEFITS/ CONSEQUENCES	PUBLIC TRANSPORTATION				OTHER ROAD USERS		LOCAL NEIGHBORHOODS	GOVERNMENT
			PROVIDERS		USERS		PEDESTRIANS	VEHICLES		
			DRIVERS	OPERATORS	PASSENGERS	BUSINESS				
REROUTING OF JEEPNEY		● DIRECT SAVINGS IN THE FORM OF:  - REDUCED VEHICLE OPERATING HOURS AND COST  - REDUCED PASSENGER TIME								
BETTER QUEUEING CONTROL OF BUSES ON EDSA			●	●	●	●	△	△	△	△
INCREASE CAPACITY OF EXTERNAL ACCESS										
IMPROVE INTERNAL CIRCULATION OF ARANETA		● INCREASE IN COMFORT AND SAFETY	●	●	●	●	●	△	△	●
IMPROVE PEDESTRIAN FACILITIES		● BETTER CONTROL OF PUBLIC UTILITY VEHICLE SCHEDULES	△	●	△	△	-	-	-	●
BETTER TRAFFIC MANAGEMENT AT AURORA		● INCREASE IN THE VALUE OF LAND	-	-	-	-	-	-	*	△
DEVELOP AN INTEGRATED TERMINAL		● HIGHER VOLUME OF BUSINESS TRANSACTIONS	△	△	-	-	-	-	●	△

LEGEND:

- SIGNIFICANTLY BENEFITED
- △ BENEFITED TO LESSER EXTENT
- NEUTRAL
- \* IN SIGNIFICANTLY BENEFITED (COULD BE NEGATIVE)

## 5. Financial Assessment of the Terminal

An exercise was made to examine the financial viability of terminal operation. The results are summarized in Table 5.14.

Thus, it is not reasonable to expect the private sector to invest purely in a terminal business when returns are way below prevailing rates. The possibilities are:

- For government to own the land and lease it for almost nothing
- For the loan to be given at subsidized rate
- For the private developer to internalize the cost as part of a more profitable venture, say a commercial center, whose patronage depends on transport accessibility. In which case, the air space over the terminal will be the profit generator. The optimum profit will then occur when the marginal returns due to increased accessibility equals the marginal cost of operating the terminal.

As to the 3rd possibility, a conservative projection is shown in Table 5.15. Using the fixed rental income, the average return on equity is proven to be higher than that of the terminal alone. This projection does not include the upside potential of a rental income based on gross sales of the shops and establishments leasing the space, which is the practice in Araneta Center and in Makati Commercial Center. Nor is the residual value of the real estate property considered in the cash flow. What the exercise simply proves is the viability of integrating terminal activities with commercial operations. A detailed study to determine the contribution of accessibility to the sales generation of the commercial establishments is recommended.

Table 5.14  
Proforma Annual Income Statement  
(Pinatubo/Arayat Terminal)

Item	% of Own Capital		
	100%	50% <sup>1/</sup>	50% <sup>2/</sup>
1. Revenue (₱/year) <sup>3/</sup>	4,655,000	4,655,000	4,655,000
2. Expenditure (₱/year) <sup>4/</sup>			
1) Depreciation	1,245,000	1,245,000	1,245,000
2) Operating Costs	1,240,000	1,240,000	1,240,000
3) Rent of Land	840,000	840,000	-
4) Interest on Loan	0	373,500	373,500
Sub-Total	3,325,000	3,325,000	3,325,000
3. Profit (₱/year)	1,330,000	956,500	1,996,500
4. Investment (terminal construction cost) (₱)	24,900,000	24,900,000	24,900,000
5. Return on Investment	5.3%	3.8%	8.0%
6. Pay-back period (years)	18.9	26.3	12.5

<sup>1/</sup> 50% owners' equity and 50% loans

<sup>2/</sup> 50% owners' equity together with land owned and 50% loans

<sup>3/</sup> Revenue

a) Revenue from Jeepney

i) Terminal fee: ₱3.00/unit/day

ii) Number of jeepneys using the terminal: 1,650

iii) Frequency advocating dispatching service: 4,000 trips/day (60% of total frequency)

Revenue from jeepney = (terminal fee x no. of jeepneys using the terminal)  
+ (dispatcher fee x frequency advocating service)  
= (₱3.00 x 1,650) + (₱0.25 x 4,000)  
= ₱9,250/day or ₱3,237,500/year

b) Revenue from Bus

i) Dispatcher fee: ₱0.50/trip

ii) Frequency using the terminal: 8,100 trips/day

Revenue from bus = (dispatcher fee x frequency using the terminal)  
= (₱0.50 x 8,100)  
= ₱4,050/day or ₱1,417,500/year

c) Total Revenue

Total Daily Revenue = Revenue from bus + revenue from jeepney

= (₱9,250 + ₱4,050)

= ₱13,300

Total daily revenue = ₱13,300/day

Total yearly revenue = Total daily revenue x 350

= (₱13,300 x 350)

= ₱4,655,000/year

<sup>4/</sup> Expenditure

a) Terminal Construction Cost: ₱24,500,000

b) Rent on land at 5% of the market value : ₱325,000/year

c) Operating costs of terminal: ₱1,950,000/year

<sup>5/</sup> Assumptions

a) Straight line depreciation: 20 years

b) Loan equivalent to 20-year repayment period at 5% interest rate

c) No corporate income tax, assuming the terminal is operated by jeepney/bus association or cooperative

Table 5.15  
 Proforma Annual Income Statement  
 on Pinatubo-Arayat Site  
 (Terminal cum Commercial Complex)

Financial Items	Case 1: Low Rent & 100% Equity	Case 2: Low Rent & 50% Equity	Case 3: High Rent 100 Equity	Case 4: &High Rent & 50% Equity
1. Revenues				
- Space rentals <sup>1/</sup>	33,696,000	33,696,000	44,928,000	44,928,000
- Terminal fees	4,655,000	4,655,000	4,655,000	4,655,000
Total Revenues	38,351,000	38,351,000	49,583,000	49,583,000
2. Expenditures				
- Operating costs	3,775,000	3,775,000	3,775,000	3,775,000
- Land rent	840,000	840,000	840,000	840,000
- Depreciation	12,475,000	12,475,000	12,475,000	12,475,000
- Realty tax	1,912,500	1,912,500	1,912,500	1,912,500
- Interest on Loan	0	12,475,000	0	12,475,000
Total Cost	19,002,500	31,477,500	19,002,500	31,477,500
3. Income Bef. Tax	19,348,500	6,873,500	30,580,500	18,105,500
4. Income Tax <sup>2/</sup>	6,771,975	2,405,725	10,703,175	6,336,925
5. Net Profit	12,576,525	4,467,775	19,877,325	11,768,575
6. Average ROE (%)	5.04	1.79	7.97	4.72

1/ Assumptions made are: total floor area of 39,000 sqm. of which rentable floor is 60% or 23,400 sqm. at ₱120/sqm./month for low rent and ₱160/sqm./month for high rent.

2/ 35% of income before tax





## APPENDICES



Appendix 2.1  
Jeepney Route Characteristics of Cubao  
Mode Interchange Area

Mode/Route Type	Terminal in Cubao	No. of Routes	No. of Units	Frequency	
				16 hrs. (7-8 am)	16 hrs. Morning % to
<b>A. INTRA-CITY JEEPNEY</b>					
• <u>Terminating Routes</u>					
1. via E. Rodriguez	Yale/Catolos	3	115	1226	91 (7.4)
(a) Quiapo/Recto	Yale	14	560	2105	135 (6.4)
(b) V. Cruz/Baclaran					
2. via Aurora Blvd. (1)					
(a) Sta. Mesa	Yale	1	18	256	21 (8.2)
(b) Quiapo/Divisoria	Yale	2	405	2549	194 (7.6)
3. via Aurora Blvd. (2)					
(a) Cubao environs	N. Domingo/Central Ave.	2	80	796	45 (5.7)
(b) East	Central Avenue	4	188	1843	125 (6.8)
(c) North Eastern	N. Domingo	2	195	1360	94 (6.9)
4. via Other roads					
(a) Q.M.C.	Arayat/Yale	8	265	2544	158 (6.2)
(b) Roces	Diamond/Mercury	4	98	1439	92 (6.4)
(c) San Juan	Arayat	1	75	1366	103 (7.5)
(d) South					
i) Crame	Central Avenue	1	99	1004	35 (3.5)
ii) Pasig	Gen. Araneta	4	102	1342	77 (5.7)
Sub-Total		46	2200	17830	1170 (6.6)
• <u>Passing Through Routes</u>					
5. via Aurora Blvd/E. Rodriguez					
(a) Quiapo/Recto: Parang/Proj. 4		8	349	1445	117 (8.1)
(b) V. Cruz/Baclaran: Proj. 4/Murphy		25	408	1238	96 (7.8)
6. via Aurora Blvd.					
(a) Sta. Mesa: Marikina/Proj. 4		8	476	2858	202 (7.1)
(b) Divisoria: Proj. 4/Murphy		7	169	836	66 (7.9)
Sub-Total		8	1402	6377	481 (7.5)
TOTAL		94	3602	24207	1651 (6.8)
<b>B. INTER-CITY JEEPNEY</b>					
• <u>Terminating Routes</u>					
1. via Aurora Blvd.					
(a) Cogeo/Montalban	N. Domingo	3	245	1248	91 (7.3)
2. via Other roads					
(a) Antipolo/Taytay	Gen. Araneta	4	222	1139	81 (7.1)
• <u>Passing Through Routes</u>					
1. via Aurora Blvd.					
(a) Stop & Shop: Montalban		1	14	33	3 (9.1)
TOTAL		8	481	2420	175 (7.2)

Appendix 2.1 cont'd

Mode/Route Type	Terminal in Cubao	No. of Routes	No. of Units	Frequency	
				16 hrs. (7-8 am)	Morning % to 16 hrs.
<b>C. INTRA-CITY BUS</b>					
• <u>Terminating Routes</u>					
1. via EDSA : North bound	McArthur Love Bus Terminal	1	8	57	5 (8.8)
(a) Fairview (b) Ayala		1	26	82	6 (7.3)
2. via EDSA : South bound	Love Bus Terminal	1	20	114	10 (8.8)
(a) Ayala					
3. Northeast bound	McArthur	2	30	155	3 (1.9)
(a) Lagro/Fairview					
	Sub-Total	5	84	269	24 (8.9)
• <u>Passing Through Routes</u>					
4. Aurora Blvd.	-	4	77	241	14 (5.8)
(a) Divisoria : Marikina					
5. EDSA	-	12	703	1307	123 (9.4)
(a) Monumento : Alabang		35	1698	4205	333 (7.9)
(b) Monumento : Ayala		5	122	226	26 (11.5)
(c) Fairview : Alabang (d) Fairview : Ayala		13	194	479	41 (8.6)
	Sub-Total	69	2794	6458	537 (8.3)
	TOTAL	74	2878	6727	561 (8.3)
<b>D. INTER-CITY BUS</b>					
• <u>Terminating Routes</u>					
1. via EDSA	EDSA	1	33	37	5 (3.5)
(a) Sapang Palay					
2. via Aurora Blvd. (Cogeo	Pinatubo	1	16	69	6 (8.7)
	Sub-Total	1	49	106	11 (10.4)
• <u>Passing Through Route</u>					
3. via Aurora Blvd.		1	5	18	1 (5.6)
(a) Quiapo : Cogo		2	31	35	2 (6.4)
(b) Divisoria : Cogo/San Mateo					
4. via EDSA		1	8	6	2 (33.3)
(a) FTI : Sapang Palay		2	38	47	3 (6.4)
(b) Ayala : Sapang Palay/ Francisco Homes					
	Sub-Total	6	82	106	8 (7.5)
<b>E. INTER-CITY (Long Distance) BUS</b>					
• <u>Terminating Routes</u>					
1. EDSA : South bound	Own Facilities <sup>2/</sup>	4	-	12 <sup>1/</sup>	1 (8.3)
2. EDSA : North bound	Own Facilities <sup>2/</sup>	15	-	240 <sup>1/</sup>	18 (7.5)
	Sub-Total	19	-	252 <sup>1/</sup>	19 (7.5)

1/ Frequency/day

2/ Dagupan Bus Company Terminal/Pantranco Cubao Sub-terminal/Superline Trans Co. Inc. Terminal Baliwag Transit Terminal/Sunshine Transportation Inc. Terminal