

6.1.9 Paco

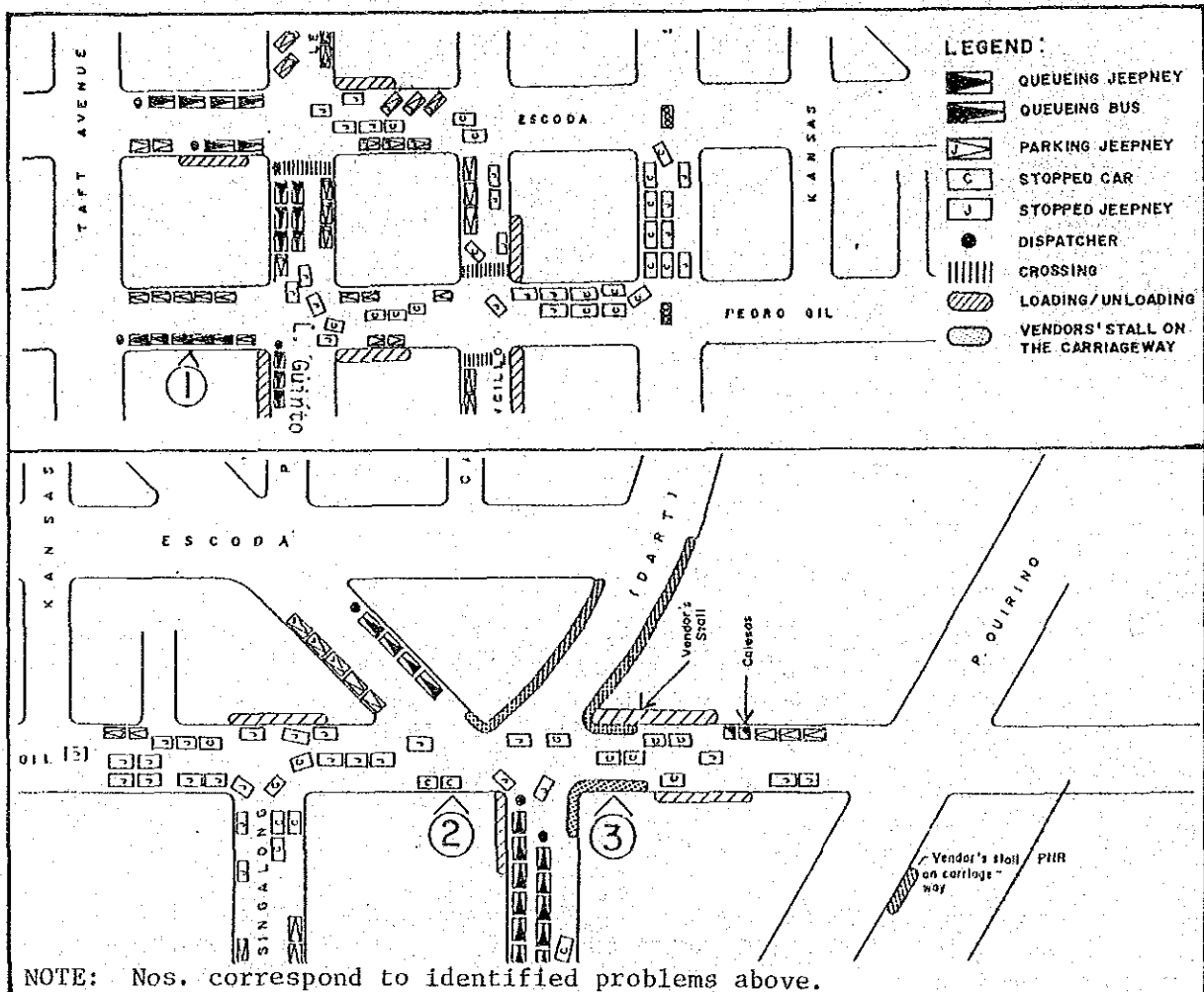
A. Identified Problems

The congestion in Paco is caused by the following:

1. Jeepneys queueing and on-street parking along Pedro Gil between Taft and Agoncillo occupy one out of three lanes.
2. The vendors' stalls occupy 3 m. out of 10 m. of the carriageway of P. Gil at the intersection of P. Gil, Dart and G. Luna. Because of this situation, the intersection may be considered to have reached its capacity.
3. The average travel speed along P. Gil, between Paco market and P. Quirino, is quite low due to bothsides, on-street parking, haphazard pedestrian crossing and PUJ loading/unloading.

The details and specific locations of these problems are shown in Figure 6.33.

Figure 6.33
Identified Problems at Paco



B. Route Structure Improvement

The following route improvements are recommended:

- 1) Rerouting of jeepney routes along Pedro Gil. Except for the section between G. Luna and Merced, Pedro Gil is basically a one-way street for jeepneys. In those sections where jeepneys are one-way, the total two-way traffic volume would go down by 30% - 50%.
- 2) Rerouting of southbound jeepney routes. Existing routes pass Dart, G. Luna, L. Guinto, etc. Instead, L. Guinto, Pedro Gil, and Singalong will be utilized. Congestion at the intersection of P. Gil, G. Luna and Dart would then be relieved significantly since 90% of the total traffic volume on Dart will disappear.

The schematic diagrams for both the existing and proposed route structures are presented in Figures 6.34 and 6.35.

Figure 6.34
Existing Traffic Situation at Paco

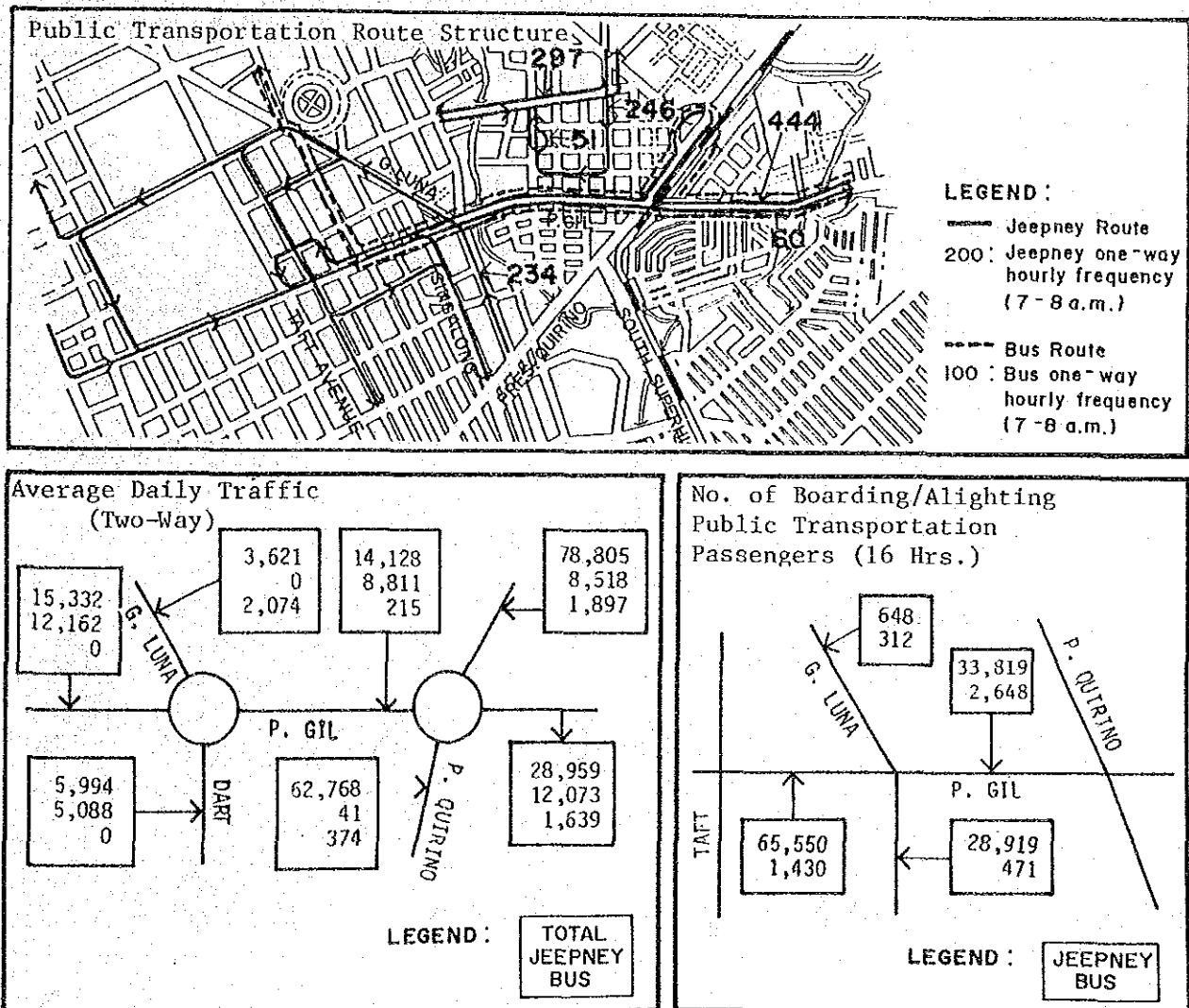
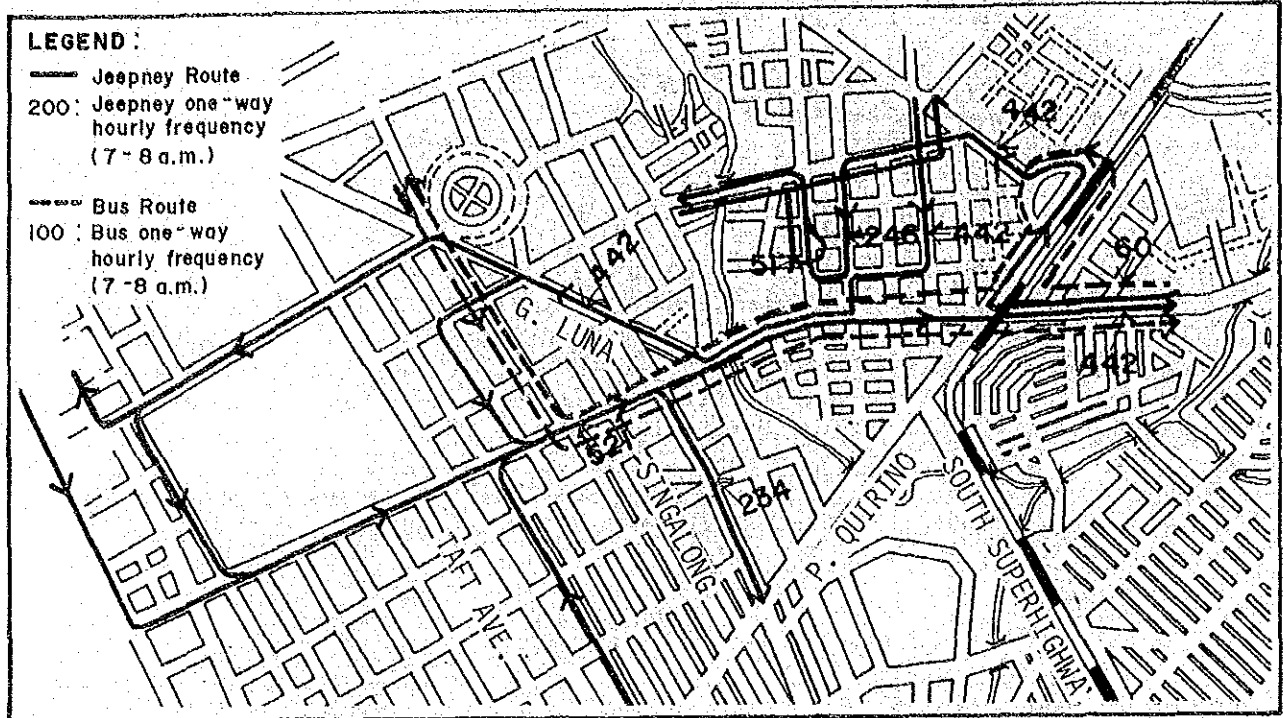
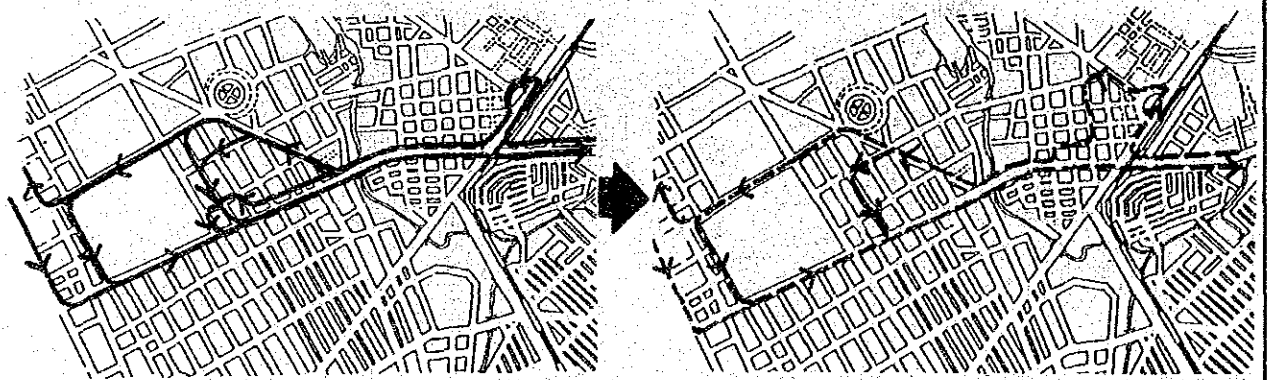


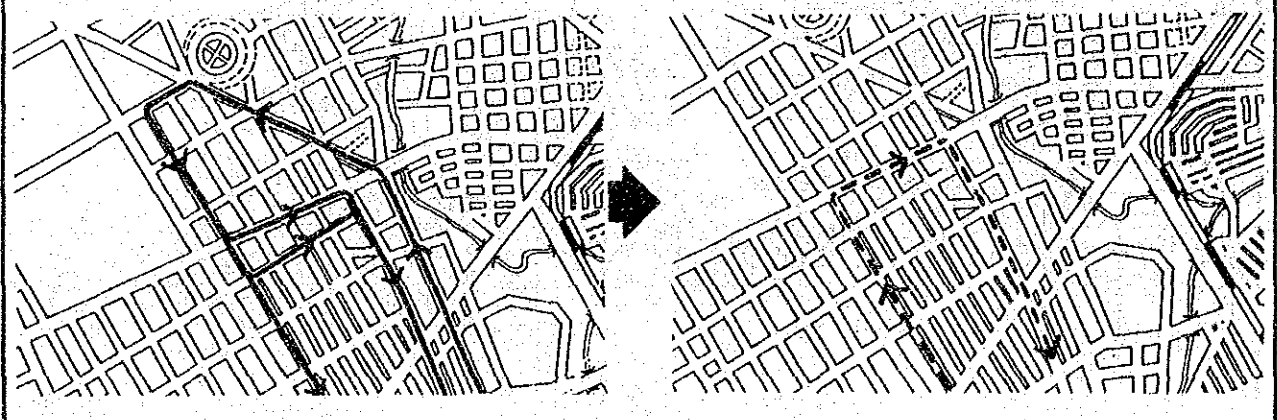
Figure 6.35
Proposed Route Structure Improvement in Paco



1) Reroute jeepneys along Pedro Gil



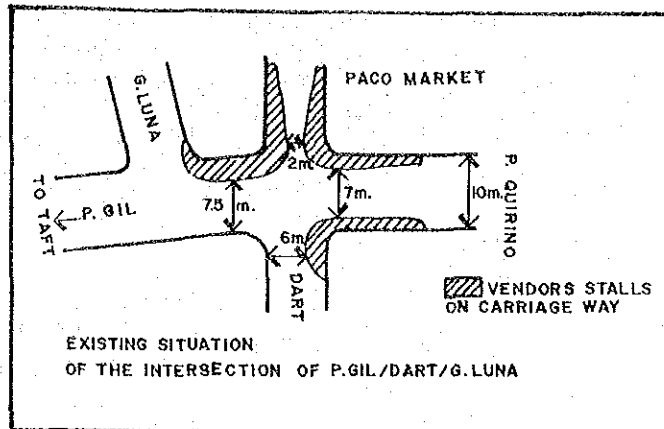
2) Reroute southbound jeepneys



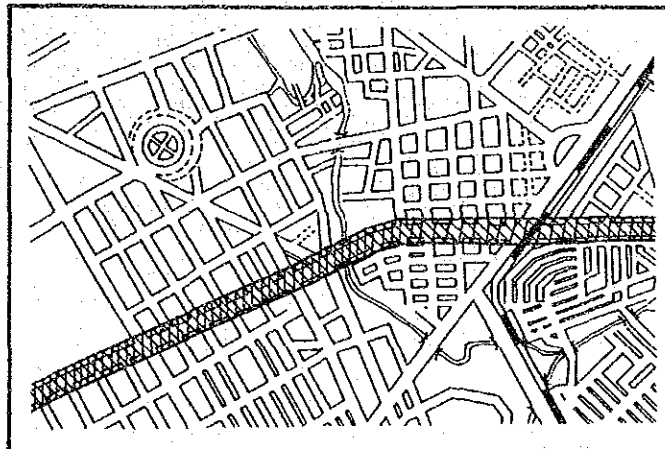
C. Associated Improvements

The proposed countermeasures are simple, such as:

- 1) Removal of vendors' stalls on the carriageway of Pedro Gil.



- 2) As proposed by MMUTSTRAP B1, on-street parking on Pedro Gil should be banned on bothsides, considering its traffic volume vis-a-vis road width. Sidestreets, which are well-developed, should be used for parking instead.



- 3) Calesas should be banned along Pedro Gil.

6.1.10 Buendia (Sen. Gil J. Puyat)

The problems of the Buendia Corridor generally fall on the mid-term and long-term category, because the traffic congestion there is due to capacity constraint.

However, due to the magnitude and variety of the traffic problems along Buendia Avenue, short-term palliatives cannot be ignored. The network analysis conducted by JUMSUT II showed a relatively low potential demand for this corridor. This implies that it presently serves through or detour traffic.

A. Identified Problems

1) Traffic Signal Operation

At present, Buendia Avenue has seven (7) signalized intersections. The intersection with Taft Avenue has yet to be signalized after the completion of the LRT construction.

The problems with the traffic signal operation can be described as follows:

- The traffic signals are not yet coordinated. The cycle times vary with intersections while the duration of the green signals for the through-traffic at Buendia Avenue are out of phase with each other (Refer to Table 4.4).
- The cycle time is extremely long, especially for some major intersections like EDSA/Buendia and Pasong Tamo/Buendia. It sometimes exceeds eight (8) minutes thereby creating a long vehicle queue that locks up nearby intersections (refer to Figure 4.3).

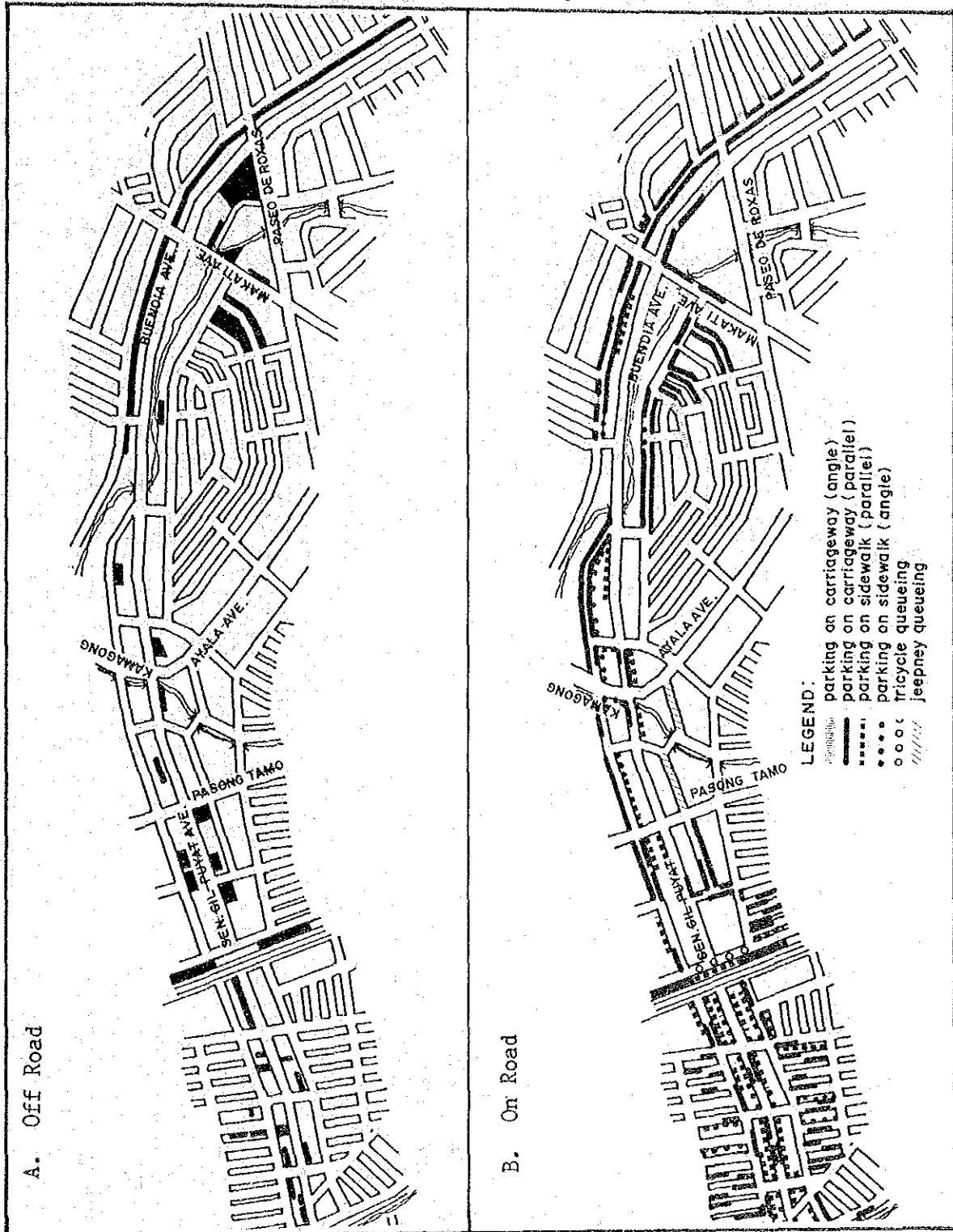
The disjointed operation of the traffic signals can be attributed to their manual control. Although the main reason for the congestion at intersections is the excessive traffic volume, this factor cannot be discounted nor minimized.

2) Parking

During office hours, most of the sidestreets along Buendia Avenue and Buendia Avenue itself (especially the narrow section between South Superhighway and Taft Avenue) serve as convenient parking for private vehicles. During peak hours, their rush to get out of Makati creates congestion (see Figure 6.36A).

Although all major buildings are provided with parking lots, most of them are at-grade and their combined capacities are inadequate. At present, approximately one-third of the total parking requirements along the Buendia Corridor is met on road surface (see Figure 6.36B).

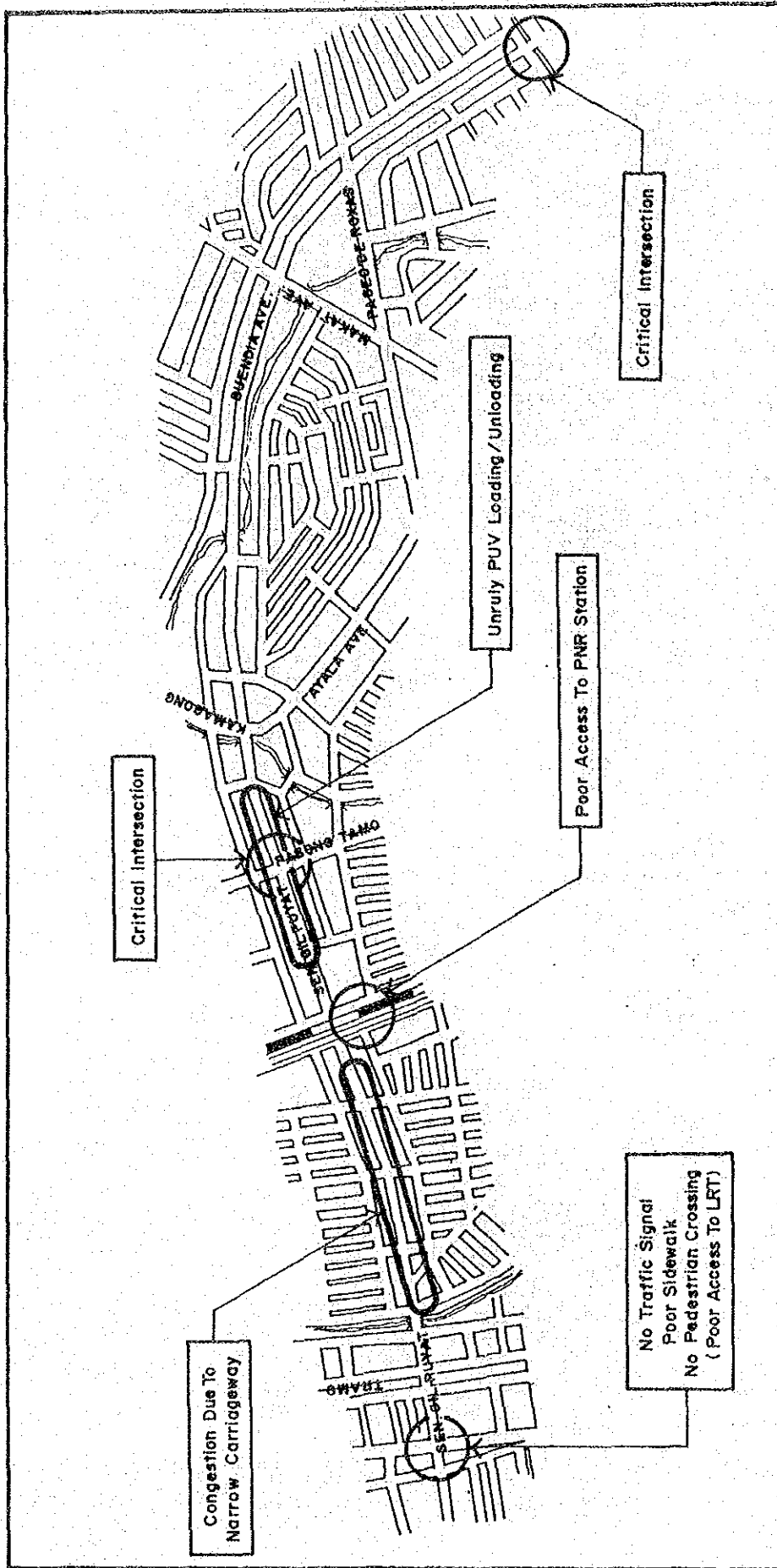
Figure 6.36
 Parking Situation along Buendia



3) Problems by Sections

The problems, by section, of the entire stretch of Buendia Avenue are shown in Figure 6.37 and discussed thereafter.

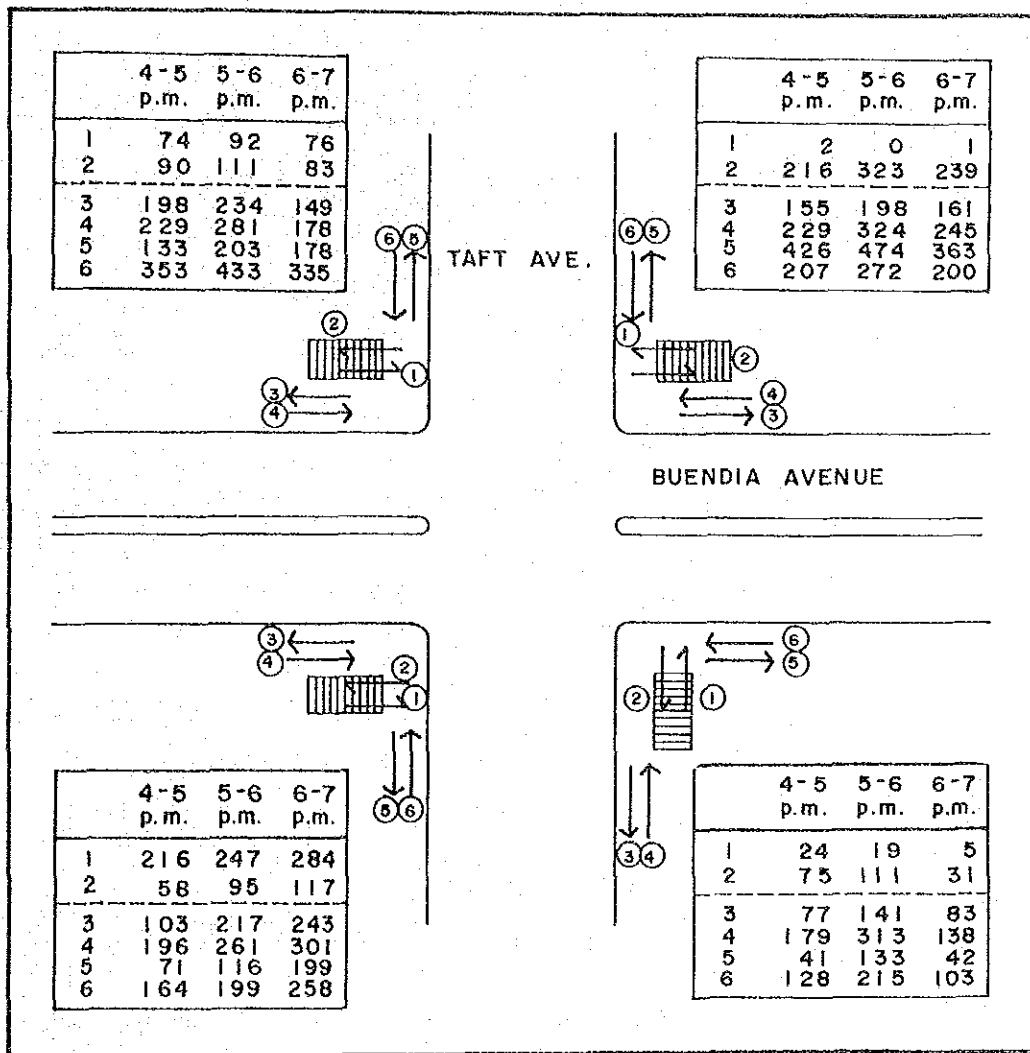
Figure 6.37
 Identified Problems at Buendia



Poor Access to the Buendia LRT Station (See Figure 6.38)

- No traffic signal (removed by the LRT construction)
- Absence of markings/signs for pedestrian crossing
- Narrow and deficient sidewalk from the Taft/Buendia intersection to the sidestreets where jeepneys are to be rerouted.

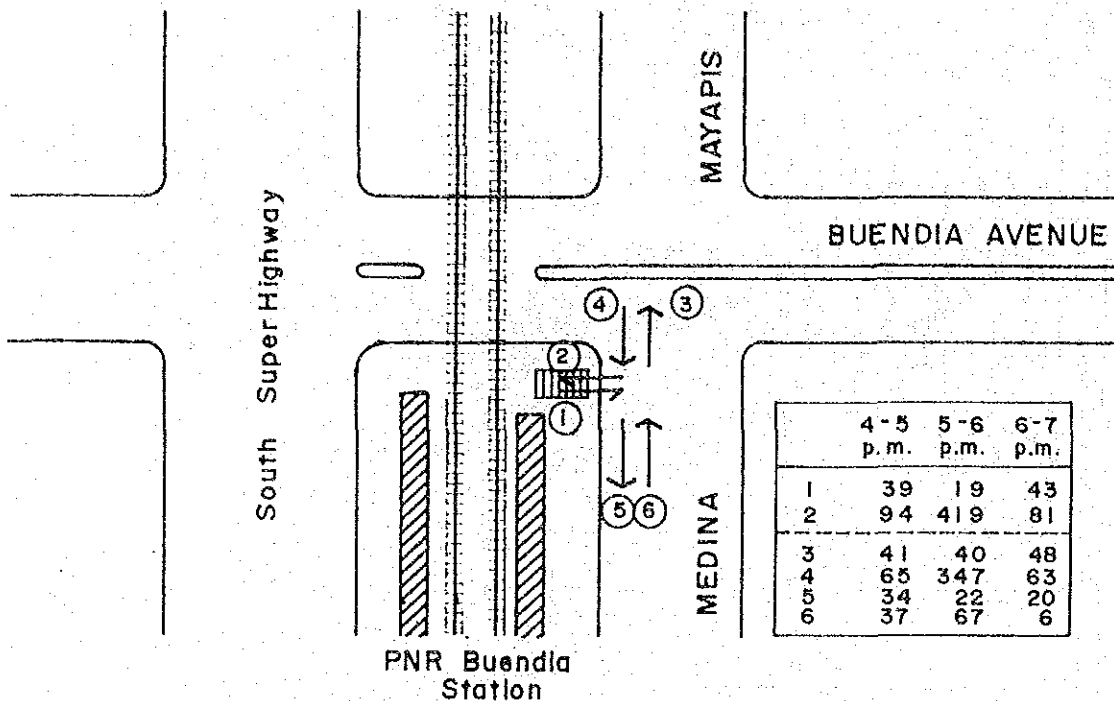
Figure 6.38
Number of Pedestrians Around the Buendia LRT Station
(January 18, 1985, 4:00-7:00 p.m.)



Poor Access to the Buendia PNR Station (See Figure 6.39)

- No sidewalk in front of the station
- The road connecting the station with Buendia Avenue is unpaved

Figure 6.39
Number of Pedestrians around the Buendia PNR Station
(January 18, 1985, 4:00-7:00 p.m.)



Traffic Congestion between South Superhighway and Tripa de Gallina

- Narrower roadway than the other sections
- Rampant on-street parking

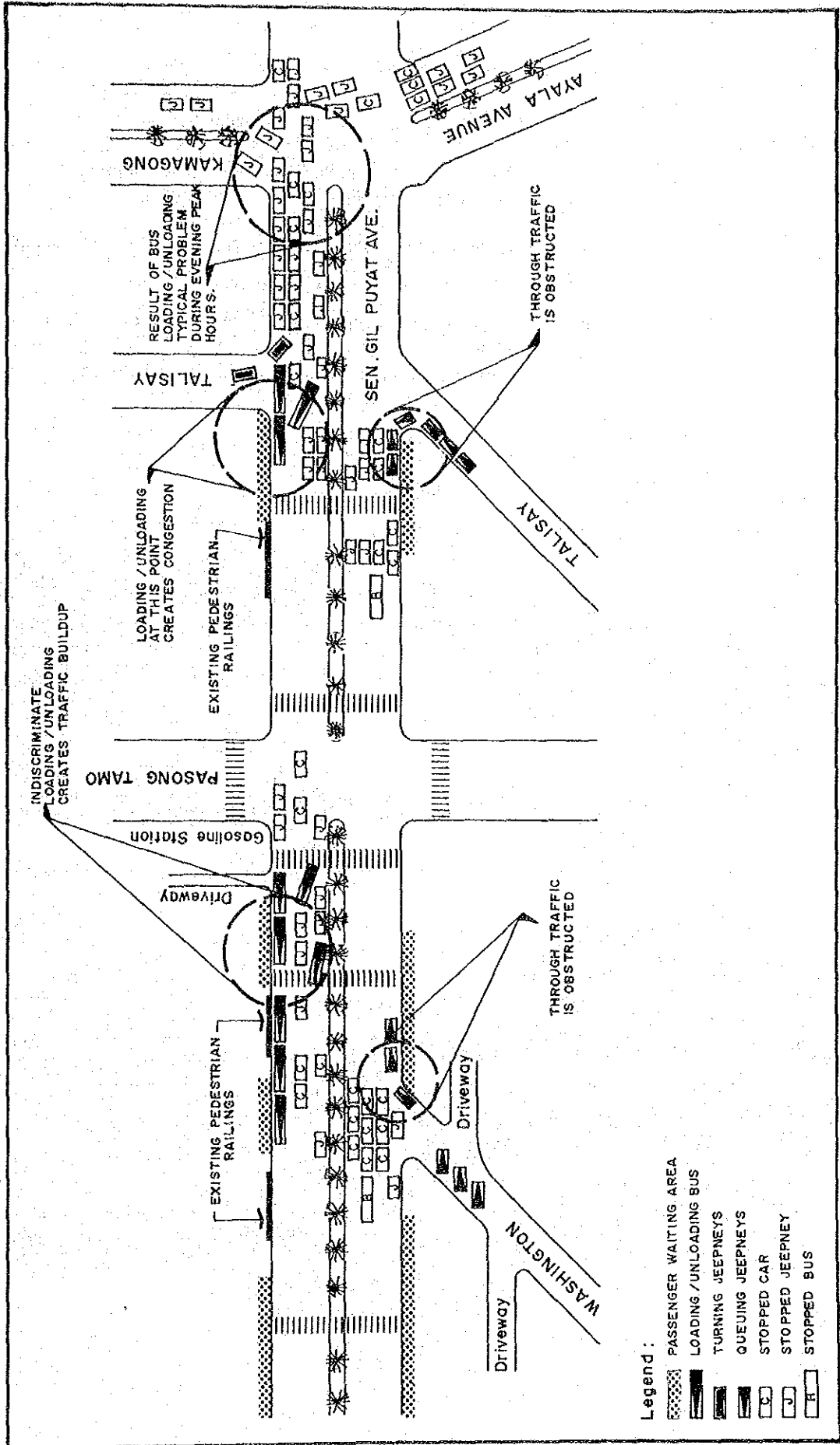
Unruly PUV loading/unloading near the Pasong Tamo/Buendia Intersection

- Buses and jeepneys loading or unloading passengers occupy two or more lanes, thus causing traffic congestion during peak hours (see Figure 6.40)

Saturation at the EDSA/Buendia and Pasong Tamo/Buendia Intersection

- Long vehicle queues affect nearby intersections during peak hours

Figure 6.40
 PUV Loading/Unloading near Pasong Tamo/Buendia Intersection



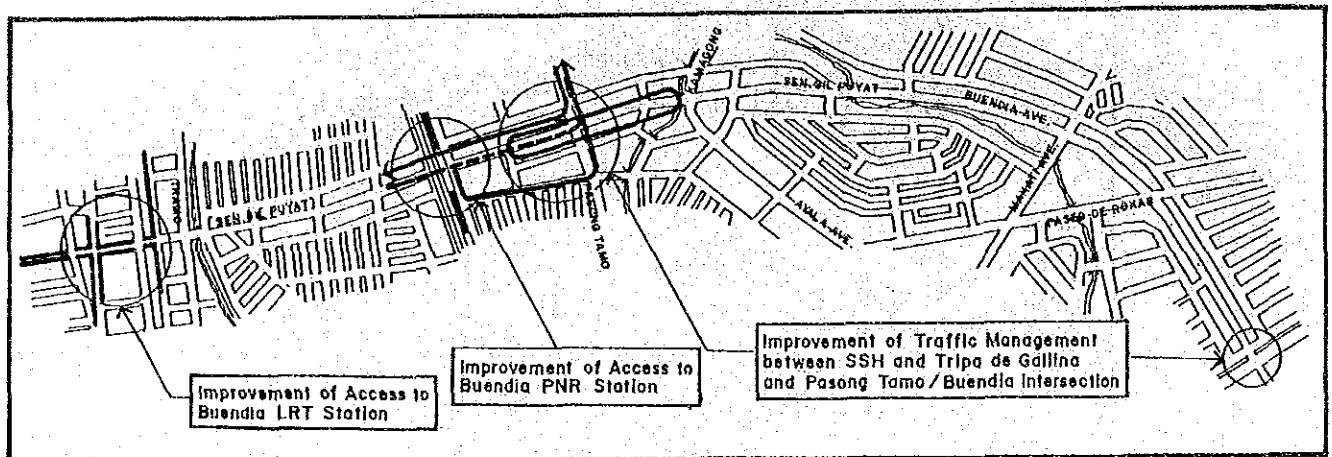
B. Proposed Remedial Steps

1) Short-term Proposals (see Figure 6.41)

As a general remedy for Buendia Avenue, the following steps are proposed:

- Adjustment of traffic signal phases and cycle times.
- Strengthening of parking control.
- Corollarily, additional Love/Limited Buses should be considered. Especially, from Makati to the South (Paranaque, Las Pinas and Muntinlupa), new routes appear to be in demand.

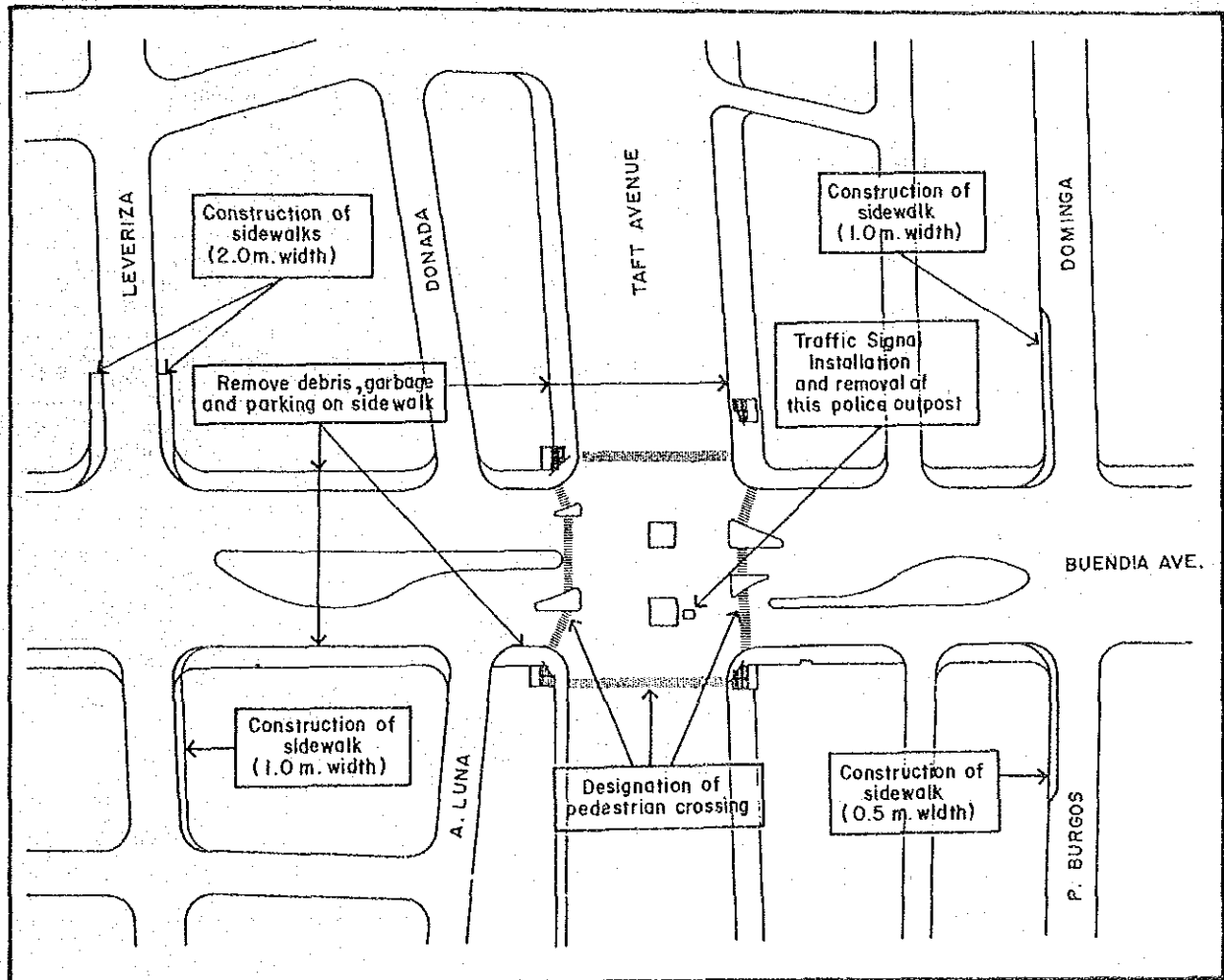
Figure 6.41
Short-Term Proposals



Improvement of Access to the Buenda LRT Station (see Figure 6.42)

- Reinstallation of traffic signal (already included in the TEAM II Schedule).
- Designation of pedestrian crossing around the intersection.
- Improvement/widening/construction of sidewalks around the intersection including, Leveriza, P. Burgos and Dominga.

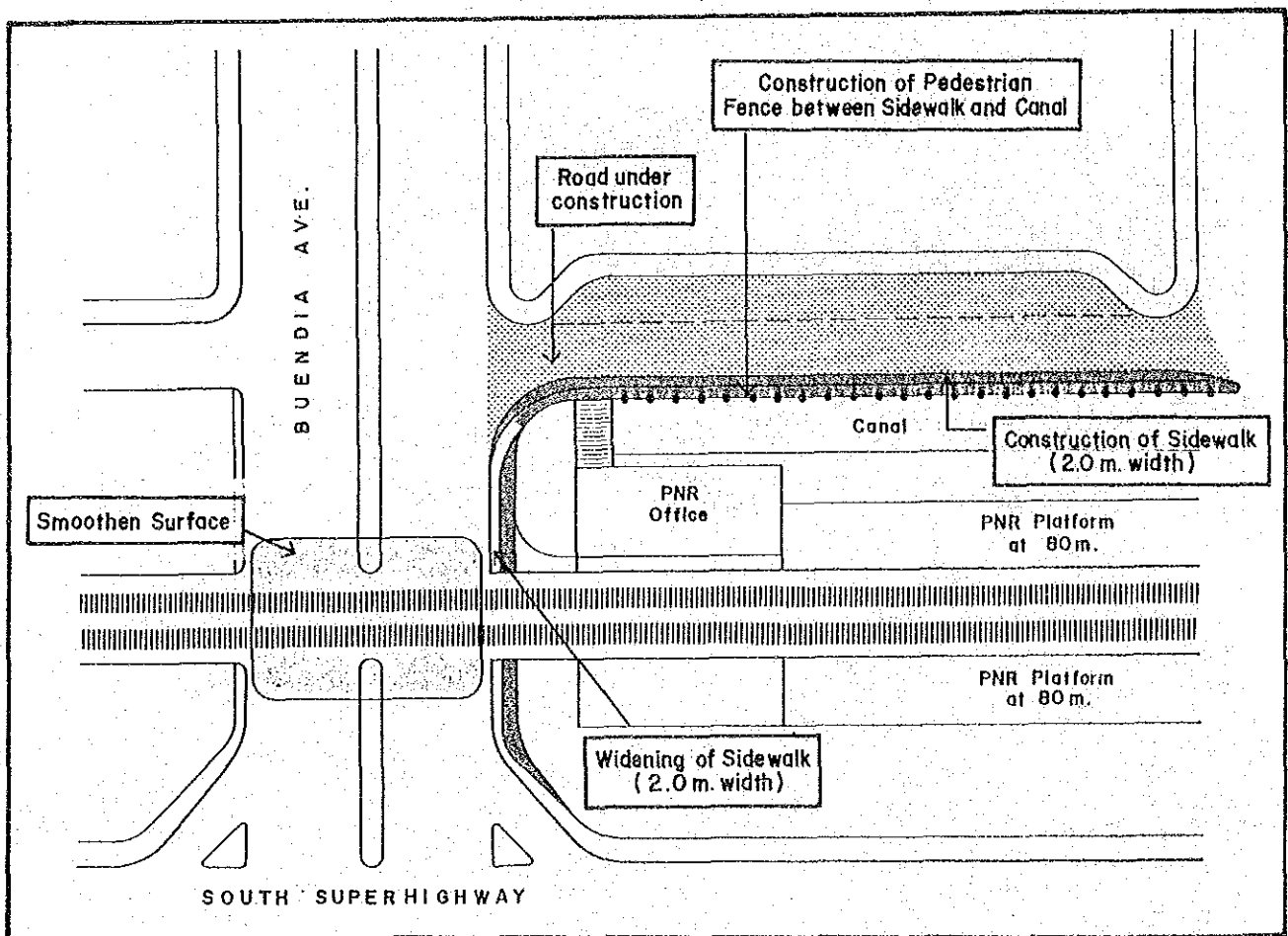
Figure 6.42
Proposed Improvement of Access to the
Buendia LRT Station



Improvement of Access to the Buendia PNR Station
(see Figure 4.43)

- Paving of the dusty section of Medina Street in front of the station as well as the PNR crossing.
- Construction of sidewalks in front of the station coupled with a barrier fence between the sidewalk and the canal.
- Detouring of a jeepney route (Libertad-PRC) from Buendia to De la Rosa, eastbound between Medina and Pasong Tamo.

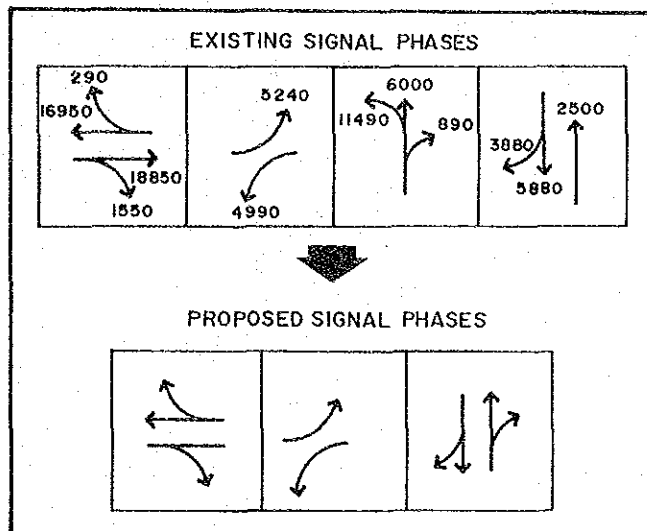
Figure 6.43
Improvement of Access to the Buendia PNR Station



Improvement of Traffic Management along the Sections Between Tripa de Gallina and South Superhighway and Pasong Tamo/Buendia Intersection.

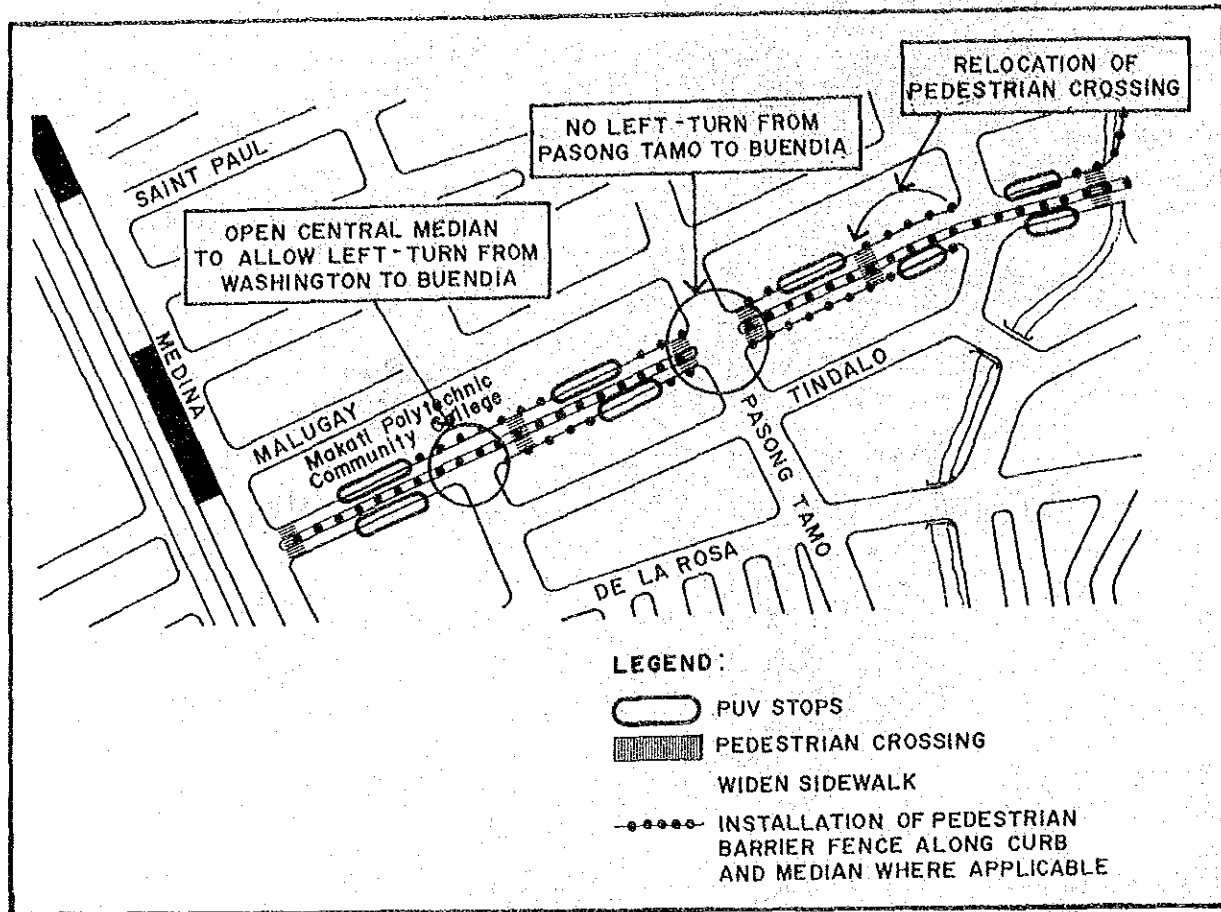
- Signal Phase Modification of the Pasong Tamo/Buendia Intersection, coupled with the Opening of the Buendia/Washington Intersection.
 - a) No left-turn from Pasong Tamo to Buendia in order to reduce the signal phases from four (4) to three (3), as shown below:

Figure 6.44
Traffic Signal Phase Improvement
for Buendia/Pasong Tamo Intersection



- b) Opening of the central median of Buendia Avenue at the intersection with Washington in order to allow left-turning from Washington to Buendia (one of the TEAM II Proposals).
- Strict Banning of On-road Parking between Tripa de Gallina and South Superhighway
- Traffic Management near the Pasong Tamo/Buendia Intersection (see Figure 6.45)
 - a) Relocation of new designation of pedestrian crossing.
 - b) Designation of PUV stops coupled with stricter enforcement.
 - c) Installation of pedestrian barrier fence along the curb and the central median where applicable.
 - d) Widening of sidewalk near Crispa.

Figure 6.45
Proposed Improvement at Buendia/Pasong Tamo Intersection



2) Mid-term and Long-term

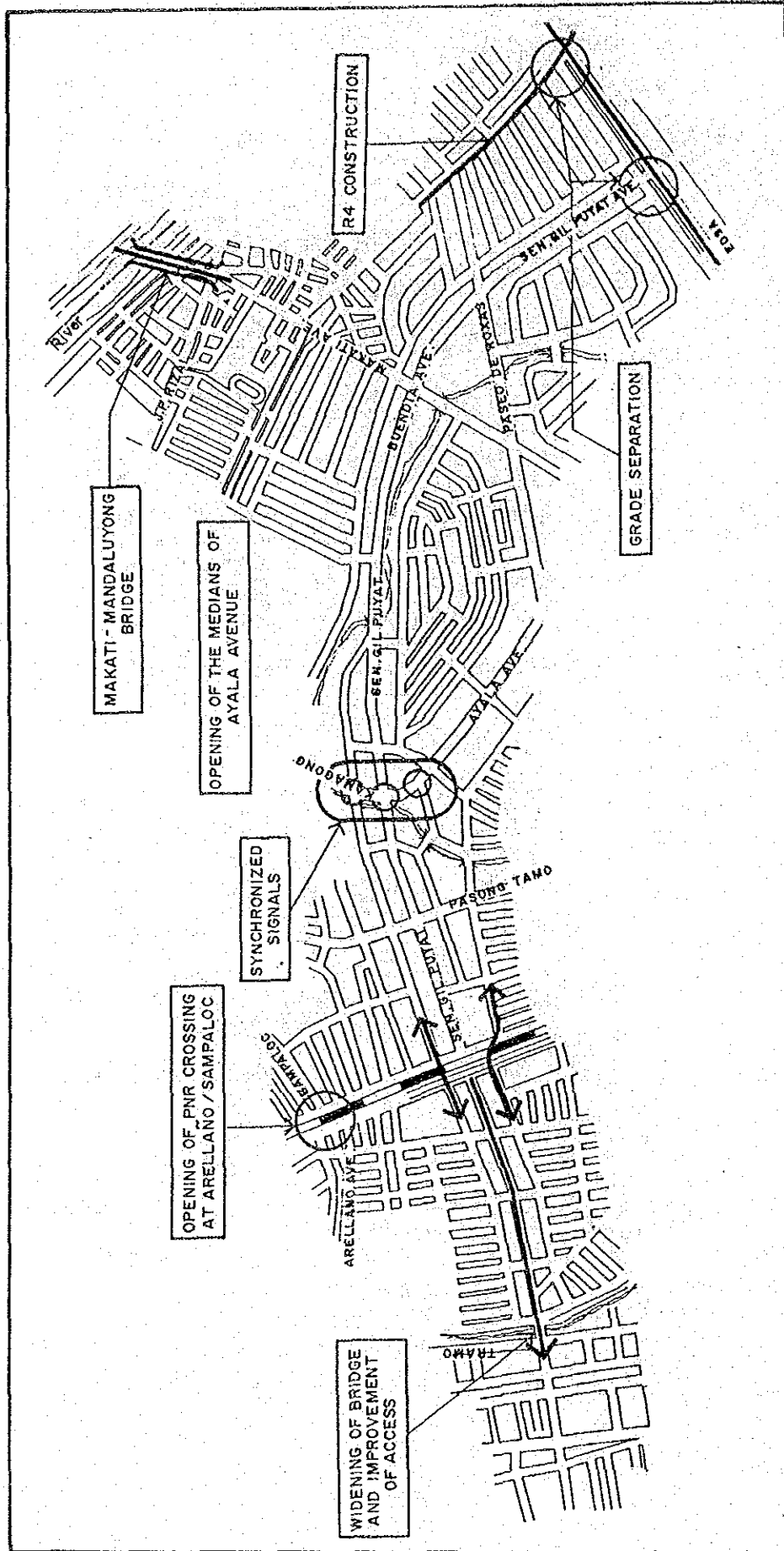
The following are recommended for the entire corridor:

- Synchronization of traffic signals. A traffic signal system controlled by a central computer (presumably of the TCC) is supported. In order to attain smooth traffic flows, the provision of monitoring/detecting equipment at major intersections may also be required.
- Strict control of on-road parking and encouragement of greater use of public transport. Even after the completion of C-3, Makati-Mandaluyong Road, R-4 (Imelda Avenue) and the grade separation at the EDSA/Buendia and EDSA/Ayala intersections, the present traffic situation will not significantly change. The rampant practice of vehicles parking on the carriageway and on sidewalks must be strictly prohibited. Multi-storey parking buildings may not be a realistic solution as it only encourages Low Occupancy Vehicles (LOVs). Greater utilization of public transportation services will be more promising.

Other proposals are presented in Figure 6.46. They are:

- Construction of Makati/Mandaluyong Bridge: The bridge is almost completed. However, due to the lack of access, the impact may not be much until connections with C-3, Shaw Boulevard, and Makati Avenue are rehabilitated.
- Opening of the PNR Railway at Malugay, De la Rosa, and Arellano, coupled with the widening of the bridge over the Estero de Tripa de Gallina; improvement of access from the bridge to Emilia and Finlandia and the intersection improvement at Ayala/Buendia, Malugay/Kamagong and Salcedo/Ayala: These are all intended to make maximum use of the sidestreets. Considering the low utilization of PNR, new crossings at Malugay/Emilia, De la Rosa/Finlandia, and Arellano/Sampaloc appear viable. Moreover, they do not disrupt South Superhighway. This was originally proposed in the C-3 Feasibility Study and endorsed by MMUTSTRAP B1 after some refinement. To complement the above opening it is necessary to secure a good access from Buendia to Emilia and Finlandia by widening the bridge over the Estero de Tripa de Gallina. Also at Ayala Avenue, the central median should be opened at Malugay and Salcedo. These intersections should then be treated as a single intersection by synchronizing their traffic signals.
- Construction of R-4: Outside EDSA, the construction of R-4 (Imelda Avenue) should be pursued and be completed by 1990. However, the Bel-Air portion of Imelda Avenue (land is equally-owned by the Bel-Air Village Association and the Makati Municipal Government) cannot be expected to materialize.
- Grade Separation of the EDSA/Buendia and R-4/EDSA Intersections: This is also a long-range plan of MPWH, but its construction schedule has yet to be fixed. Dramatic improvements of the EDSA/Buendia intersection hinge on these proposals.
- Widening of Buendia between Tripa de Gallina and South Superhighway. This has been in the backburner for the last decade with MPWH. The logic for widening this section is evident; but while not constructed, use of one-way pair of sidestreets is endorsed.

Figure 6.46
 Medium/Long-Term Proposals



6.2 SHORT-TERM PRELUDE TO MID-TERM PROBLEMS

6.2.1 Use of Sidestreets

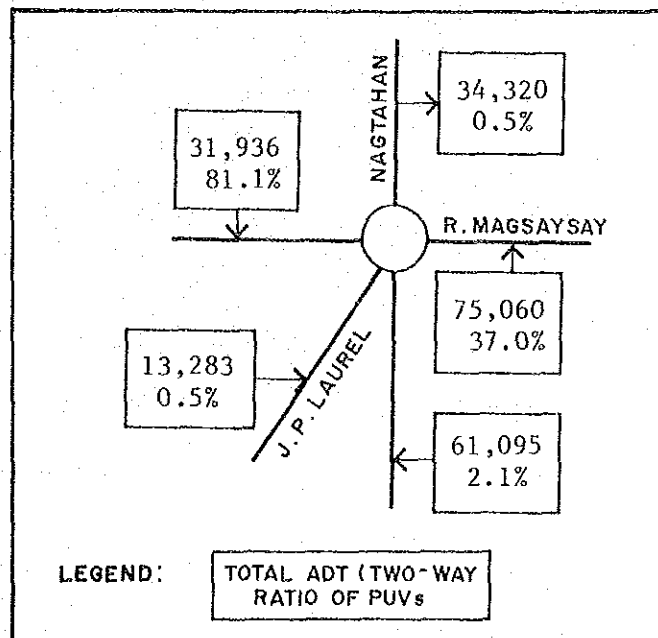
Traffic problems at several major roads, specifically those mentioned below, can be relieved in some ways by the use of their sidestreets.

A. R. Magsaysay/Nagtahan

1) Identified Problem

This intersection is oversaturated. Long queues can be observed along R. Magsaysay throughout the day - stretching to 500 m, during peak hours. The average daily traffic volume is shown in Figure 6.47.

Figure 6.47
Average Daily Traffic at the Intersection
of R. Magsaysay/Nagtahan



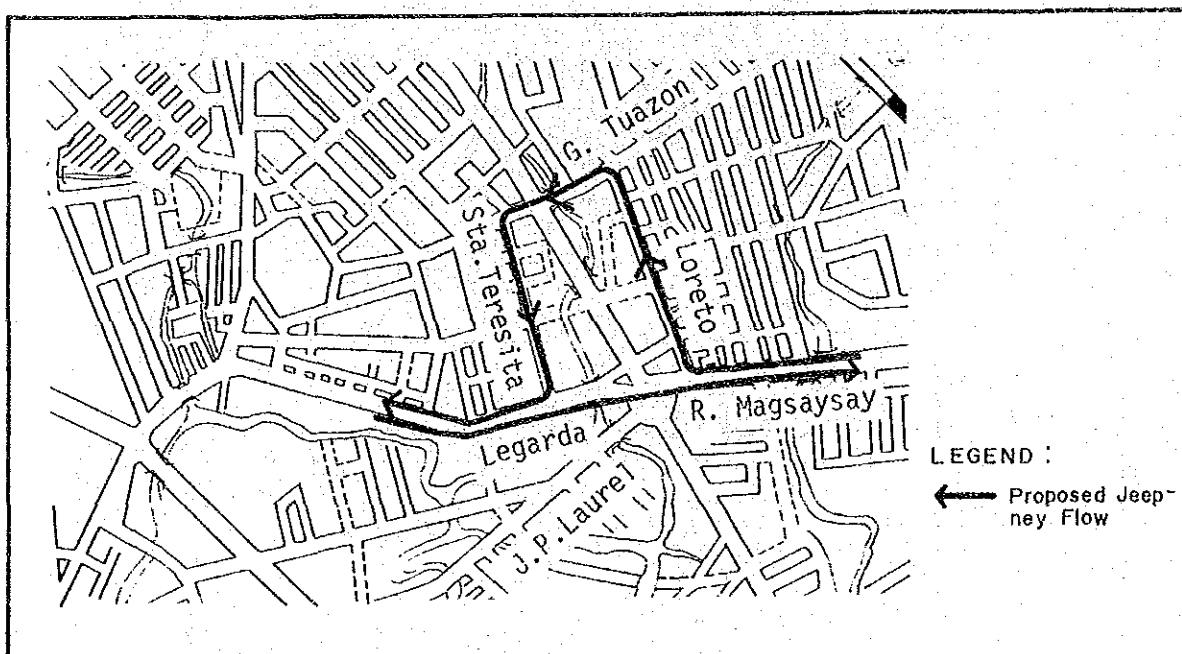
2) Countermeasures

From the mid or long-term viewpoint, grade separation is recommended at this intersection. MPWH had an old plan of constructing an overpass at A. Mendoza over R. Magsaysay. It did not materialize for reason of security. Recent construction work at the northern end of Nagtahan Bridge foreclosed the idea of connecting the overpass to the bridge.

Over the short-term, two countermeasures may be considered - the modification of signal phases and the greater use of sidestreets. TEAM proposes a minor modification of signal phases. JUMSUT recommends a detour of jeepney routes with the use of such sidestreets as Loreto, G. Tuazon, and Sta. Teresita, as shown in Figure 6.48.

Based on the intersection analysis, it has been estimated that the queue length on R. Magsaysay could be reduced by 50% as a result of the detour. However, G. Tuazon should be designated as one-way westbound in the vicinity of the intersection of A. Mendoza/G. Tuazon. Otherwise, this intersection would remain saturated.

Figure 6.48
Proposed Jeepney Detour at R. Magsaysay/Nagtahan



B. Rosario Junction

1) Identified Problem

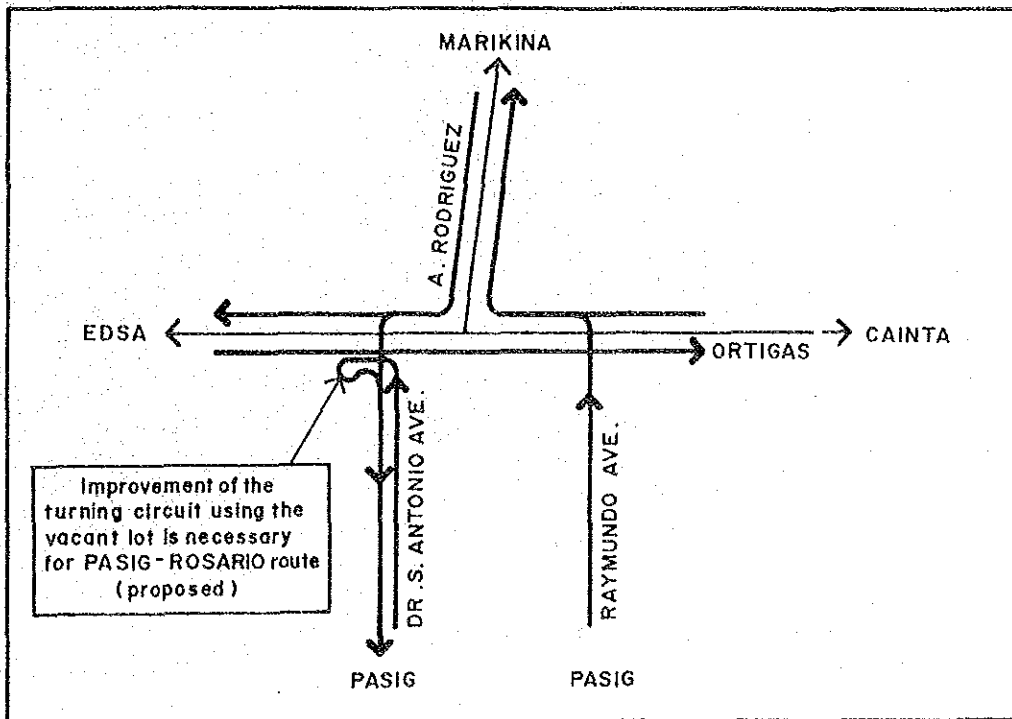
Outside of EDSA, Ortigas Avenue's width goes down from four lanes to two lanes after the intersection of Ortigas/A. Rodriguez. The road surface condition is poor at this section. Travel speed along Ortigas outside the Rosario Junction crawls to less than 20 kilometers throughout the day. At present, all Pasig-bound traffic pass Raymundo Avenue because Dr. S. Antonio is under construction. As a result, a marked congestion is observed at the intersection of Ortigas and Raymundo Avenues.

2) Countermeasures

To relieve the congestion at the intersection, it is recommended that Dr. S. Antonio and Raymundo Avenue be made basically one-way for PUJs connecting the north and the south once construction work on Dr. S. Antonio is completed (see Figure 6.49). This proposed rerouting should bring down traffic on Dr. S. Antonio or Raymundo Avenue by about 15%.

Although it is difficult to evaluate the intersections due to the on-going construction work at Dr. S. Antonio, it is nevertheless recommended that the intersections of Ortigas/Dr. S. Antonio, Ortigas/A. Rodriguez, and Ortigas/Raymundo Avenue be signalized. In addition, the road surface of Ortigas Avenue near this junction should be reworked as soon as possible, and a turning circuit provided for the proposed Pasig-Rosario jeepney route before reaching the Ortigas/S. Antonio intersection by using the nearby vacant lot.

Figure 6.49
Proposed Rerouting Plan for Rosario Junction



C. España

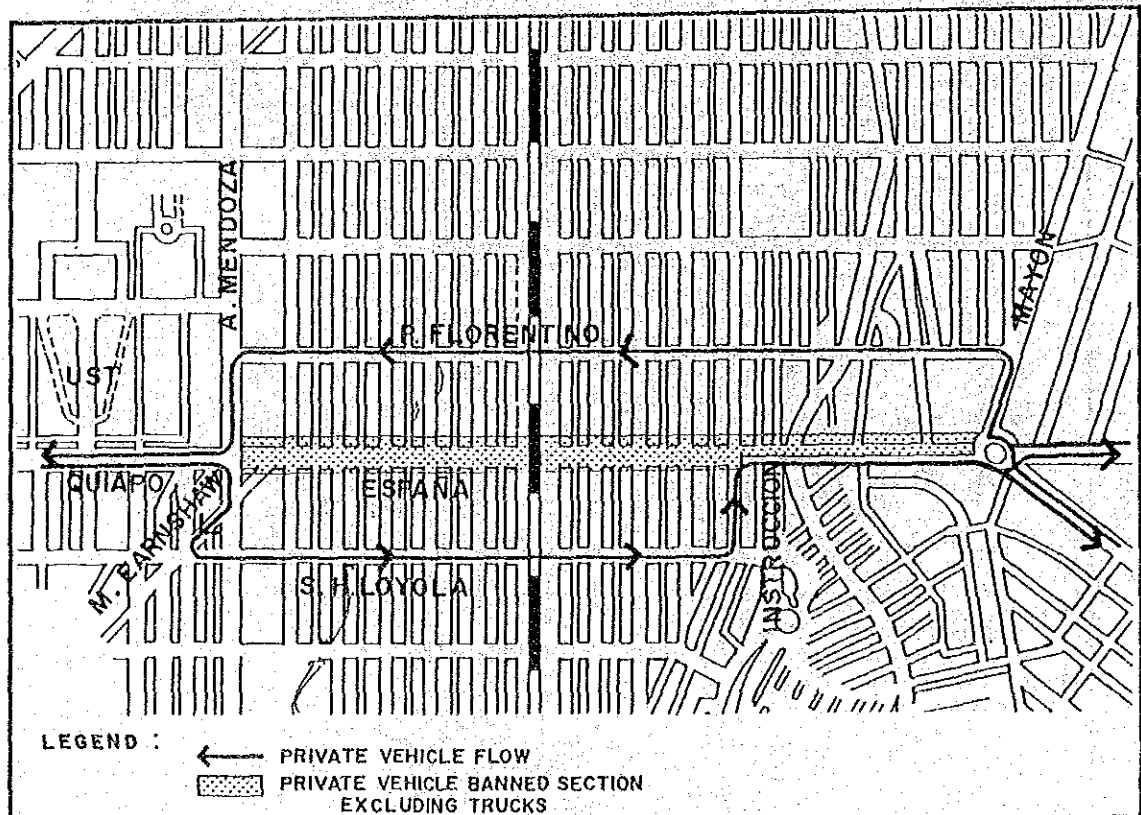
1) Identified Problem

It is observed that several sections of España have already reached capacity. Sidestreets, however, are still available.

2) Countermeasures

España has well-developed sidestreets; namely: P. Florentino (carriageway width: 9.5 m. sidewalk width: 1.5 m.) on the north and S. H. Loyola (carriageway width: 10.0 m.; sidewalk width: 1.5 m.) on the south. It is recommended that these sidestreets be used in order to ease vehicle flows on España. The vehicle mix on España are as follows: 38% for car/taxi/jeep; 65% jeepney; 1.5% bus; and 8.5% for the rest. (ADT: 66,000 vehicles) It seems more practical to detour private vehicles rather than public vehicles, following the route shown in Figure 6.50. However, the private vehicle ban should be enforced only from about 6:00 a.m. to 8:00 p.m. Trucks may be allowed to pass España at designated hours also.

Figure 6.50
Private Vehicle Ban Scheme along España



P. Florentino and S. H. Loyola have two lanes each and have enough capacity to accommodate additional private vehicle traffic volume (on top of the existing 25,000 vehicles/day, two-way) especially if designated as one-way street (S. H. Loyola, at present, is one-way eastbound). The effect on España would be considerable since volume would shrink by 38%.

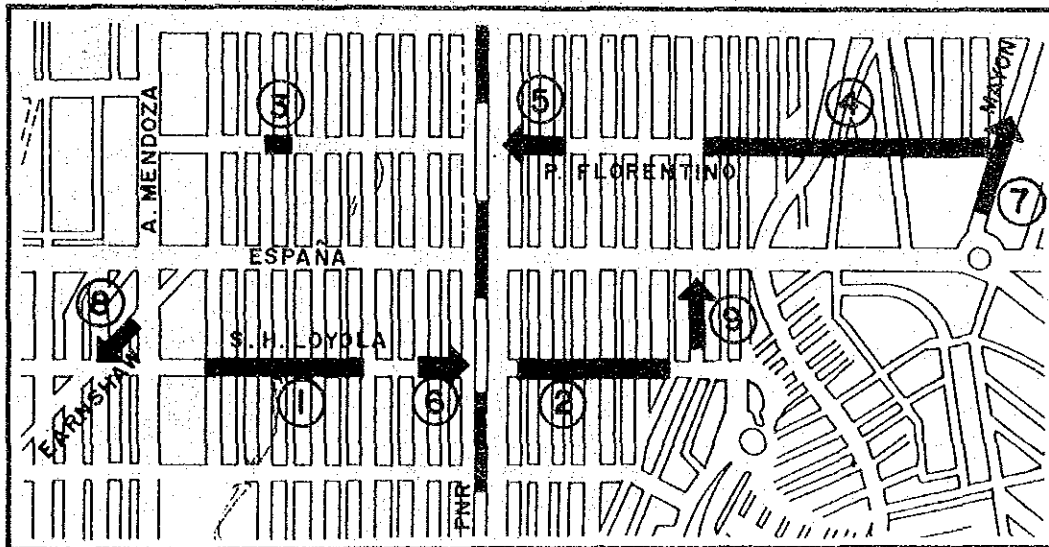
The trouble with this proposal is the intersection at A. Mendoza/España. The degree of saturation at this intersection could worsen, not to mention the short distance to A. Mendoza/P. Florentino (about 175 m.). To minimize the adverse effects, A. Mendoza should be widened to four lanes (southbound), between P. Florentino and España by using the existing median which is 4 m. wide.

Complementary Measures

Improvement of road surface is necessary at the following sections (see Figure 6.51):

- S. H. Loyola between Dos Castillas and V. G. Cruz: ①
- S. H. Loyola between San Diego and Merica: ②
- P. Florentino between Don Quijote and Ma. Cristina: ③
- P. Florentino between Instruccion and Mayon: ④

Figure 6.51
Improvement of Road Surface



One-way (see Figure 6.51) flow for:

- P. Florentino between A. Mendoza and Mayon (westbound): ⑤
- S. H. Loyola (eastbound): existing: ⑥
- Mayon between España and Sen. M. Cuento (northbound): ⑦
- M. Earnshaw between A. Mendoza and S. H. Loyola (southbound): ⑧

- Instruccion between S. H. Loyola and España (north-bound): ⑨

Modification of traffic signal phasing may also be necessary at the following intersections:

- España/A. Mendoza
- A. Mendoza/P. Florentino
- A. Mendoza/S. H. Loyola

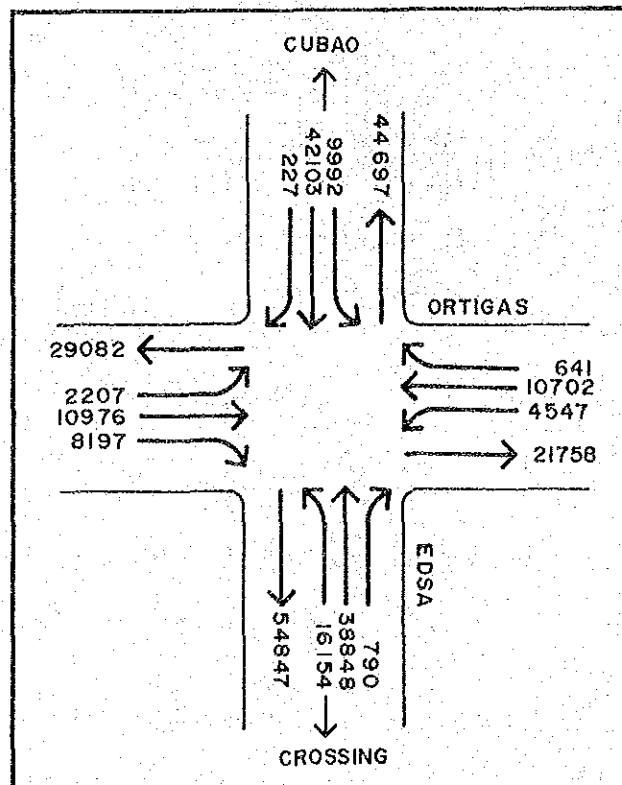
6.2.2 Signal Improvement

The previous section touched on the improvement of signal phasing in conjunction with the use of sidestreets for three intersections or road sections. The Ortigas/EDSA intersection deserves special mention in this regard.

A. Identified Problem

The Ortigas/EDSA intersection is one of the most congested in Metro Manila. Queue length reaches over 300 m. on Ortigas Avenue throughout the day and over 500 m. during peak hours. Figure 6.52 depicts traffic volume and flow at this intersection.

Figure 6.52
Traffic Volume at Ortigas Avenue/EDSA
(24 hours)



B. Countermeasure

Although MPWH has a plan for grade separation of Ortigas/EDSA intersection, no definite schedule has yet been set. From the short-term viewpoint, the modification of traffic signal phasing seems to be the only possible relief. This means prohibition of left-turn movements from Ortigas to EDSA and shortening of existing cycle times to reduce queue length. The intersections of EDSA/Santolan and EDSA/Shaw can be used as substitutes for left-turn movements from Ortigas Avenue to EDSA. Analysis indicates that these intersections could accommodate the additional traffic volume.

6.3 MINOR PROBLEM AREAS

6.3.1 Intersection Management

Oftentimes, traffic congestion occurs even when capacity has not yet been reached. This type of congestion may be caused by any or all of the reasons enumerated below, as gleaned from such major problem areas as Guadalupe and Shaw Crossing.

- Poor traffic control
- PUVs loading/unloading or queueing near the intersection
- On-street parking near the intersection
- Uncontrolled pedestrian movements

However, they are more evident at intersections and near major trip generating/attracting sources - such as universities, schools, and commercial centers.

The more congested intersections within the scope of the study area are discussed below for short-term planning.

A. Ortigas/Santolan

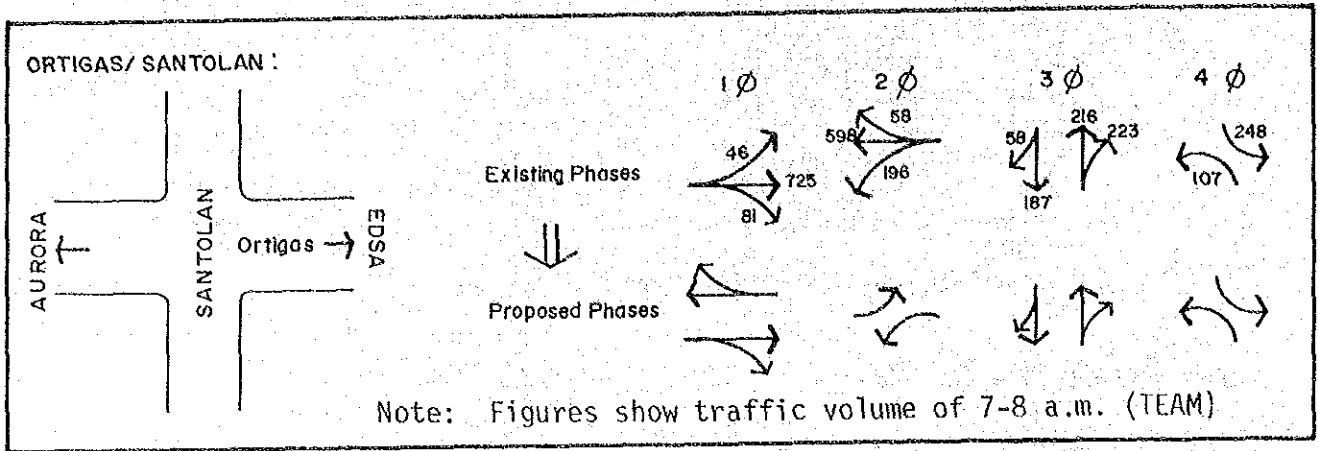
1) Identified Problem

Although this intersection has not yet reached its capacity as indicated in the intersection analysis, the queue length at the eastside of Ortigas reaches over 300 m. throughout the day. On the other hand, queueing has not been observed on Santolan. This is due to improper phasing of the traffic signals.

2) Remedies

As a solution, the modification of traffic signal phases is recommended (see Figure 6.53).

Figure 6.53
Traffic Signal Phases at the Intersection
of Ortigas/Santolan

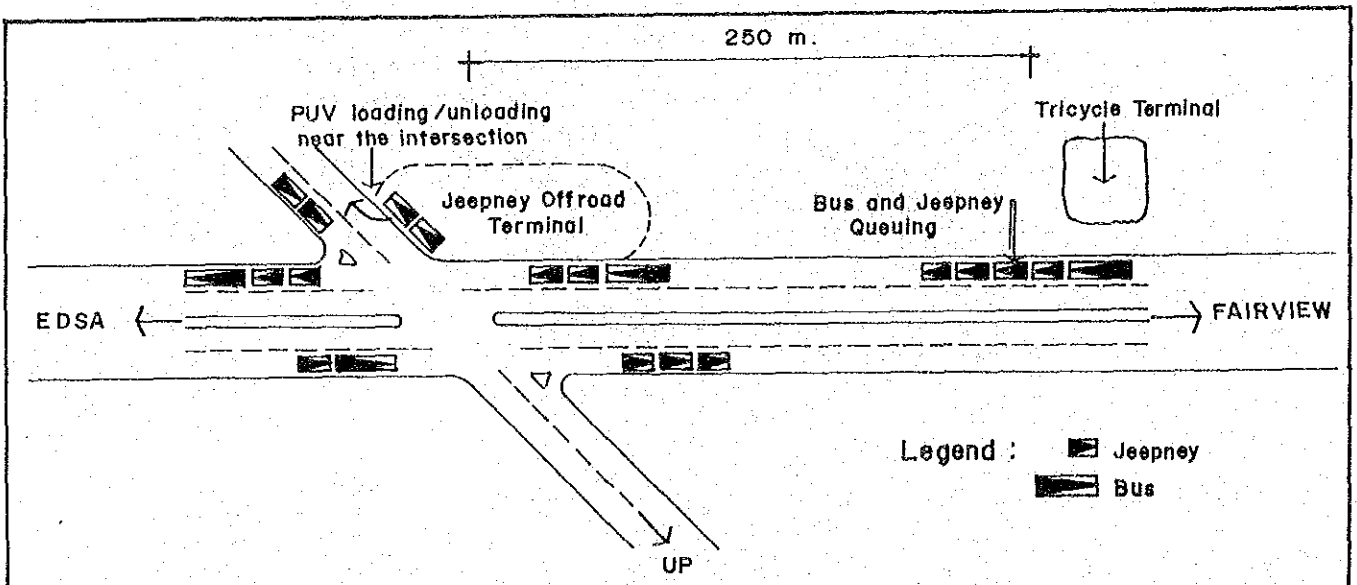


B. D. M. Marcos/Tandang Sora

1) Identified Problems

This intersection is controlled by traffic aides during peak hours, at which period, queue length reaches over 400 meters on D. M. Marcos Avenue. Traffic volume appears too large for efficient handling of traffic aides. PUVs loading/unloading behavior on D. M. Marcos, 250 m. away from the intersection effectively reduces by one lane the road capacity (see Figure 6.54). Jeepneys on Tandang Sora often conflict with through-traffic. Most of the passengers at this intersection transfer from one PUV route to another, thus creating dangerous crossing on D. M. Marcos.

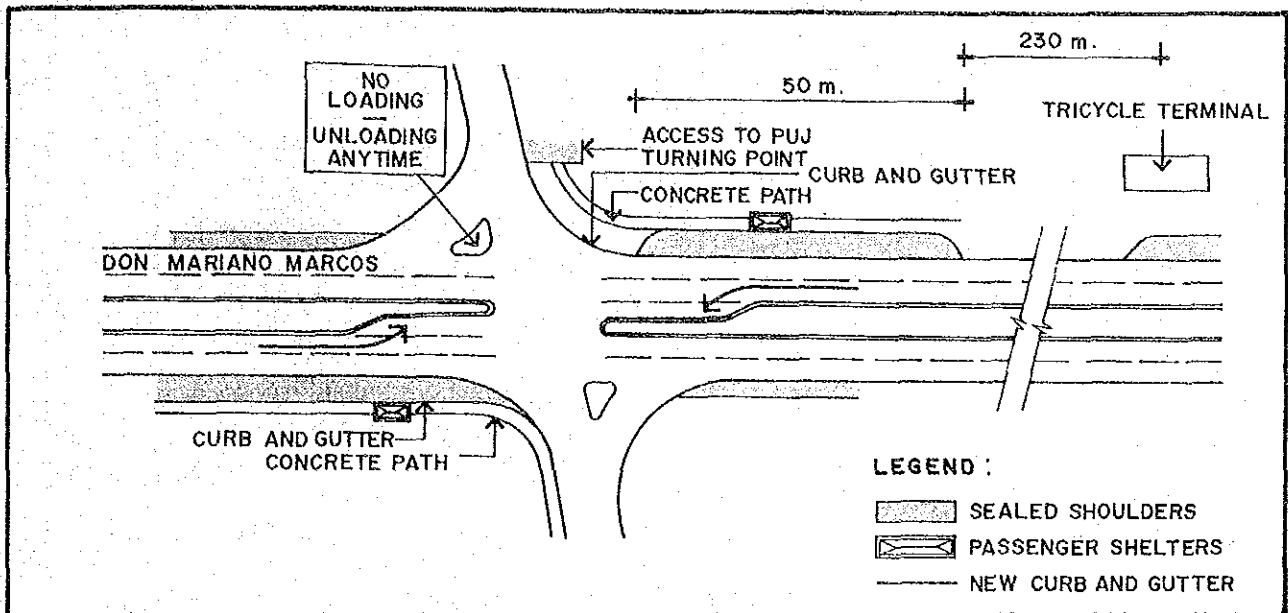
Figure 6.54
PUV Loading/Unloading and Queuing
at the Intersection of D. M. Marcos/Tandang Sora



2) Remedial Steps

TEAM II has proposed the installation of a traffic signal. However, its installation would not remove congestion unless remedies are applied against PUVs loading/unloading. The recommendation is to seal/pave the shoulder for use in loading/unloading (see Figure 6.55). Without sealing the shoulder the edge will chip off and the road could deteriorate.

Figure 6.55
Proposed Improvements at D. M. Marcos/Tandang Sora



C. Quezon Avenue/Roosevelt Avenue

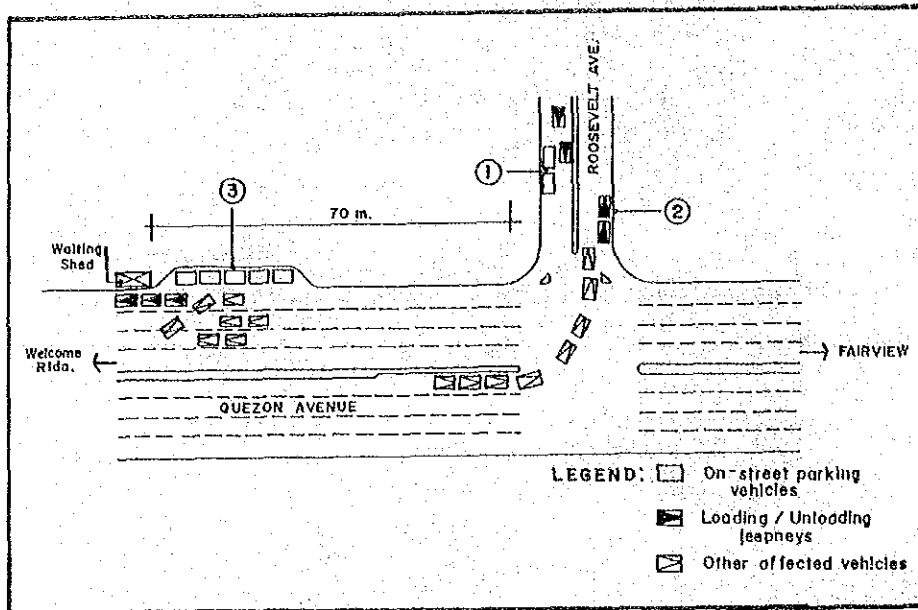
1) Identified Problems

The factors affecting its capacity are shown on Figure 6.56 and briefly explained below:

- On-street parking on Roosevelt: ①
- PUJs loading/unloading on Roosevelt result in queueing up to Quezon Avenue: ②
- Parked vehicles occupy the PUV bay on Quezon Avenue. As a result, PUVs have to load/unload on the carriage-way: ③

Most of the passengers are transferring between PUV routes along Quezon Avenue and Roosevelt Avenue.

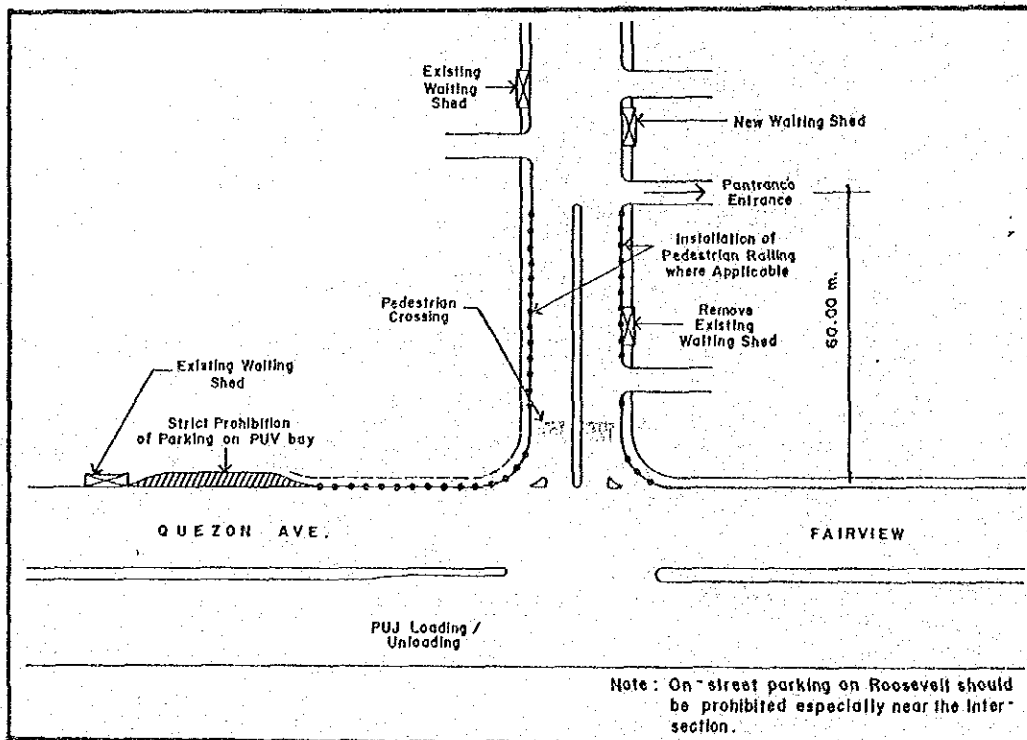
Figure 6.56
Traffic Situation at the Intersection
of Quezon Avenue and Roosevelt Avenue



2) Countermeasures

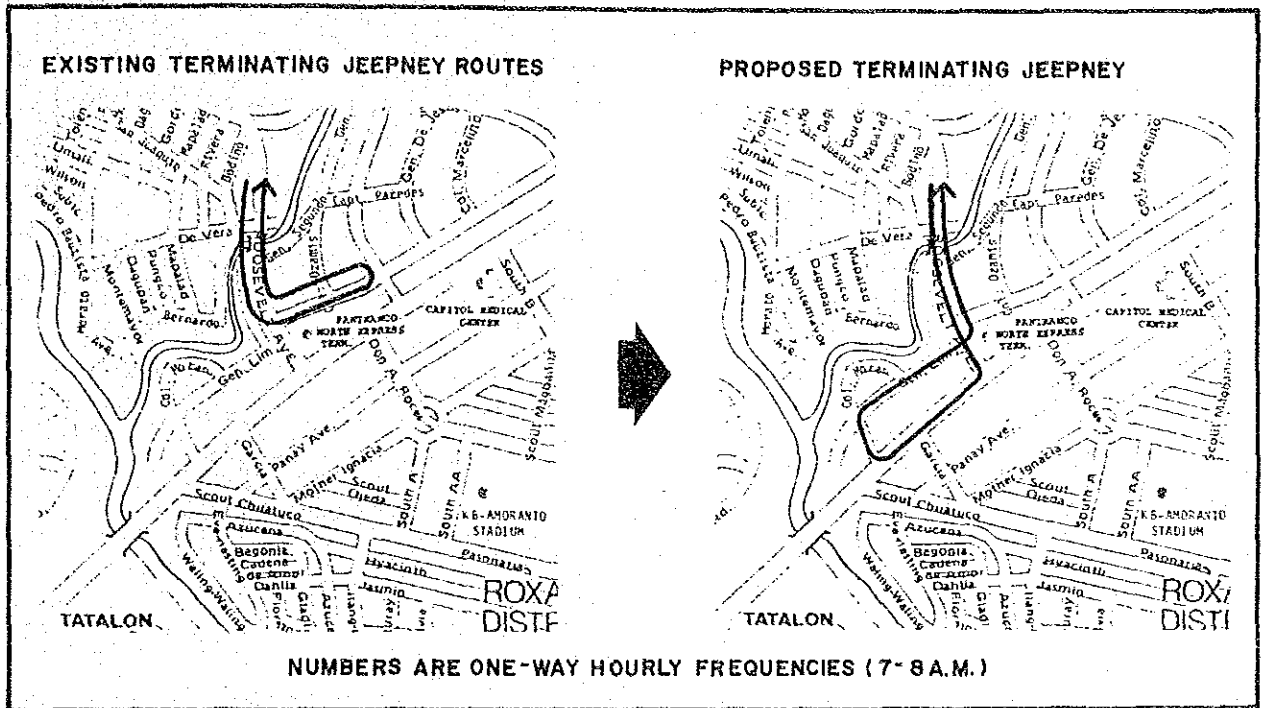
The countermeasures include the installation of pedestrian railings and waiting sheds, the designation of loading/unloading zones, and the enforcement of no parking bans (see Figure 6.57).

Figure 6.57
Proposed Facilities Improvement at Quezon
Avenue/Roosevelt Avenue



In addition, modification of terminating jeepney routes is proposed (see Figure 6.58).

Figure 6.58
Proposed Route Improvement at Quezon
Avenue/Roosevelt Avenue



D. EDSA/Kamias

1) Identified Problem

Uncontrolled queuing of jeepneys along Kamias near the EDSA intersection is the culprit (see Figure 6.59). The jeepneys tend to tarry (even after the traffic signal turns green) until they have enticed enough passengers.

2) Countermeasures

Rerouting of terminating jeepneys is recommended to remove jeepney queuing near the intersection. In addition, dispatching operations should be adopted so as to restrict double-lane queuing along Kamias Avenue if strict enforcement cannot be maintained (see Figure 6.60).

Figure 6.59
 PUJ Queuing at the Intersection
 of EDSA/Kamias

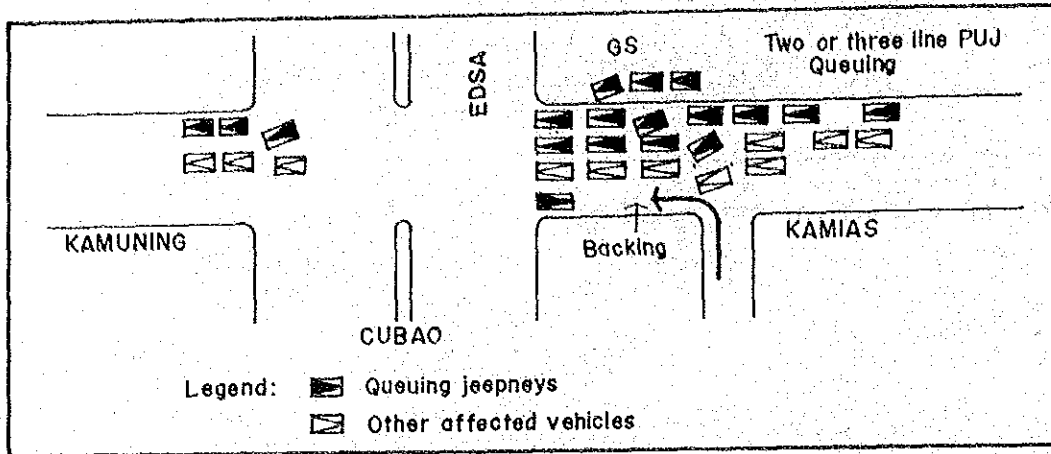
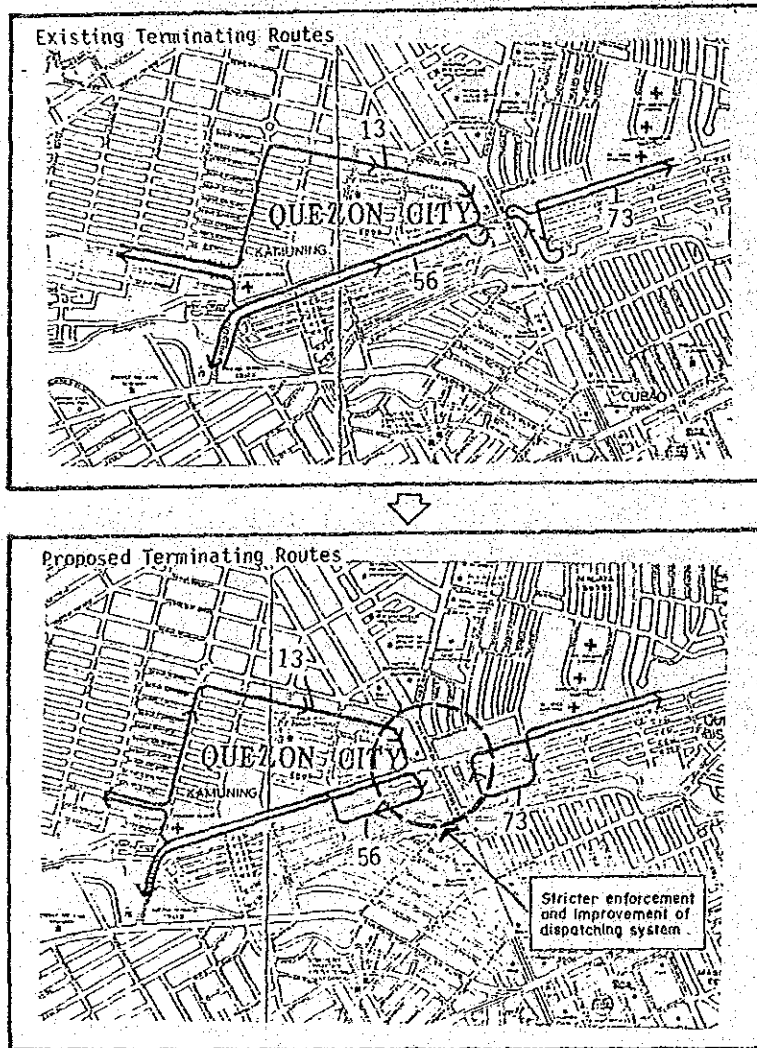


Figure 6.60
 Proposed Rerouting of Jeepney Routes at EDSA/Kamias



Numbers are one-way hourly frequencies. (7-8 a.m.)

E. E. Rodriguez/Banaue

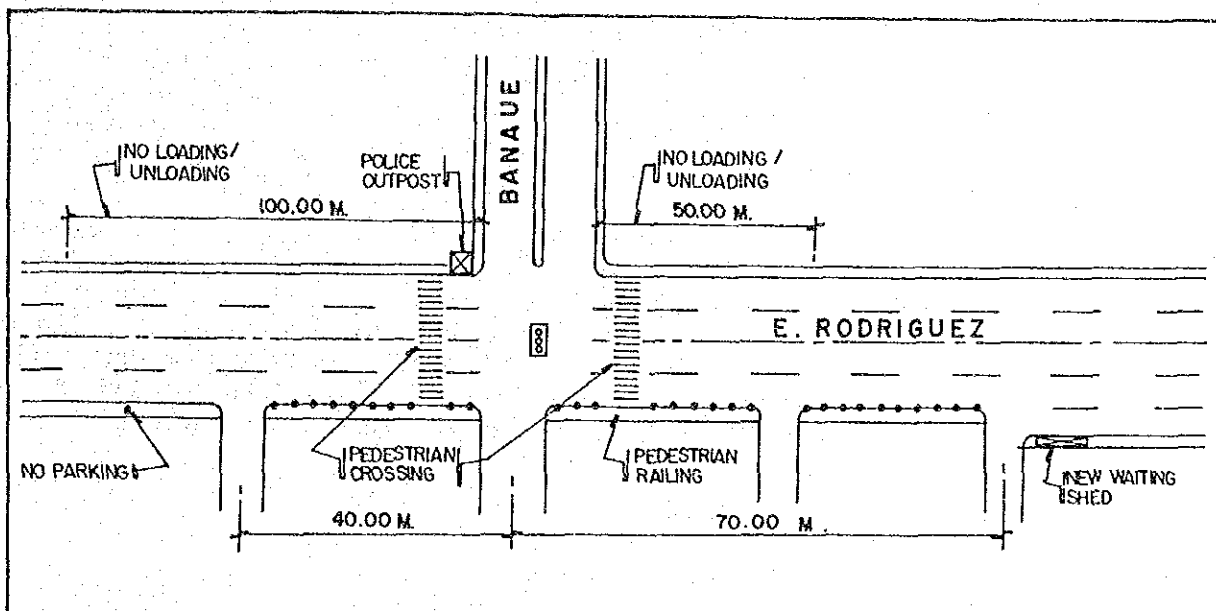
1) Identified Problem

The problem is mainly the jeepneys loading/unloading on E. Rodriguez, near the intersection, thus blocking one out of two lanes on one side.

2) Countermeasure

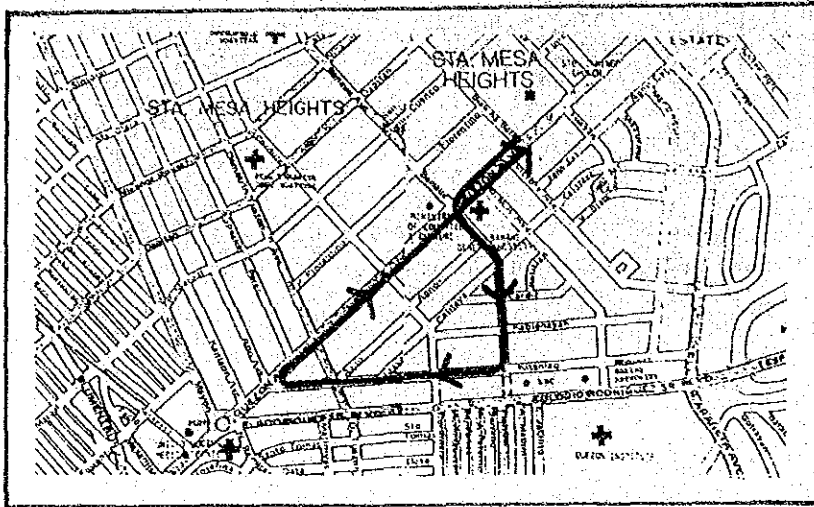
The recommendation for this intersection is to install pedestrian railings and a waiting shed on E. Rodriguez (southside). At the northside, it is not possible to install pedestrian railings due to the parking lot, hence, enforcement is the only solution (see Figure 6.61).

Figure 6.61
Proposed Improvement at E. Rodriguez/Banaue



In addition, MOTC is thinking of cutting jeepney routes coming from Project 8 and Munoz at the Welcome Rotonda. Under this scheme, Kitanlad, which intersects with Banaue before the intersection of E. Rodriguez/Banaue, is proposed as the turning route instead of E. Rodriguez (see Figure 6.62). Relative to this rerouting plan, on-street parking near the intersection of Banaue/Kitanlad should be banned.

Figure 6.62
Proposed Turning Points for Jeepney Routes
Bound for Quezon City



F. Aurora/Anonas

1) Identified Problem

Jeepneys loading/unloading near the intersection creates congestion at this intersection. Moreover, a tricycle terminal operates on the carriageway of Anonas about 30 meters from the intersection. This intersection is not signalized, although traffic volume may warrant its signalization.

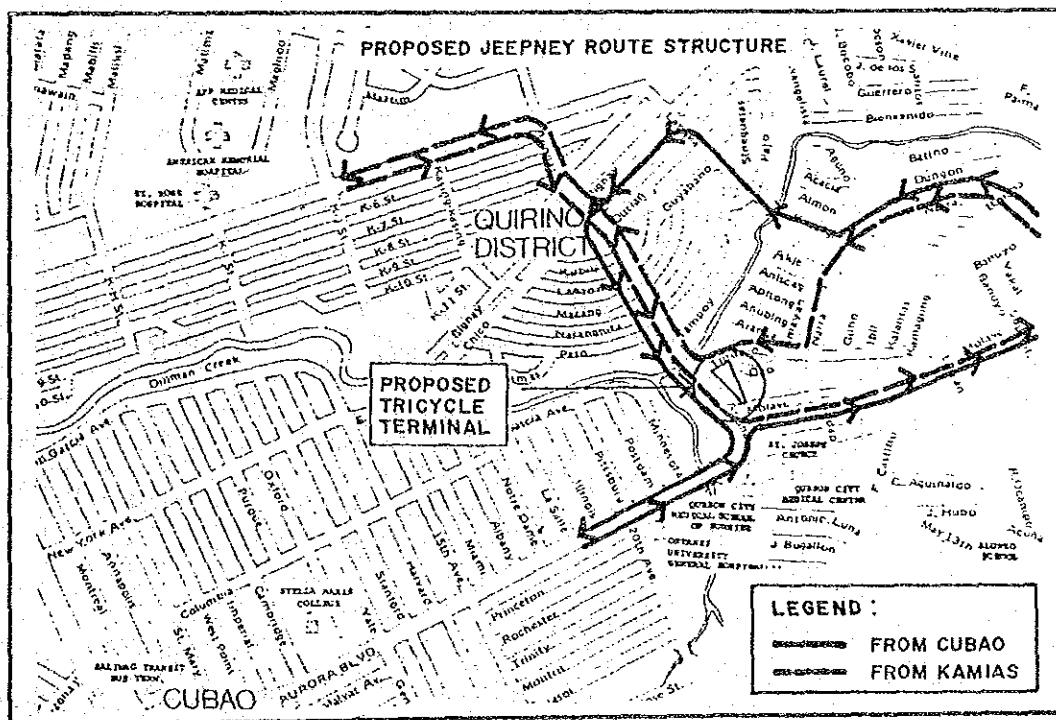
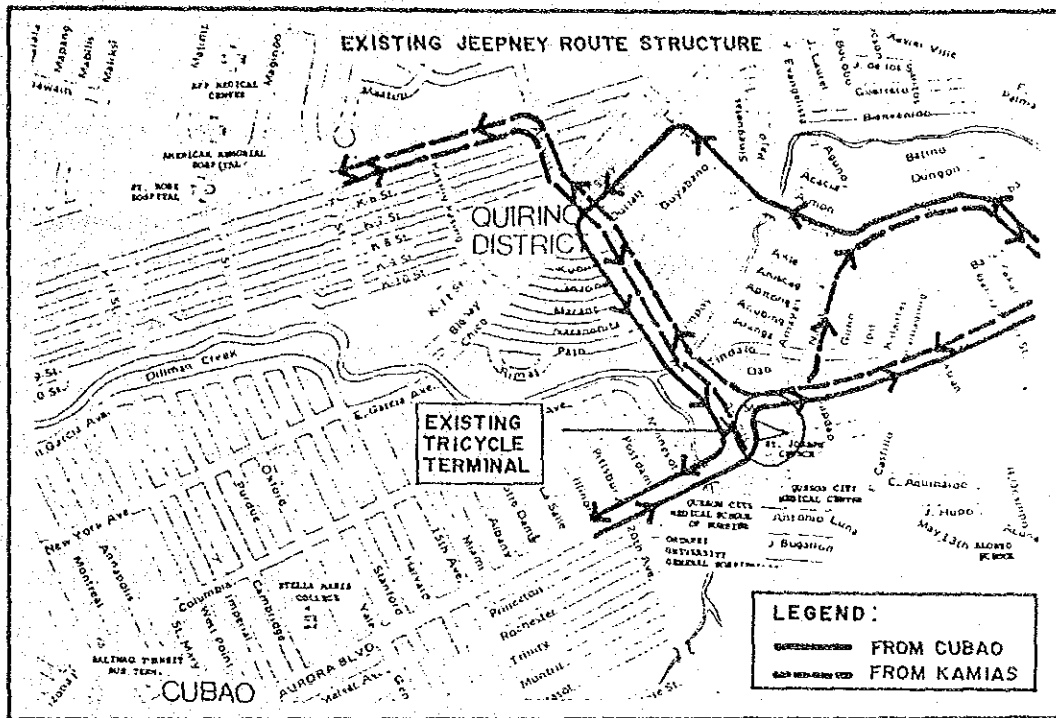
2) Countermeasures

The installation of a traffic signal has been proposed by TEAM II. In addition, the median island on Anonas should be removed or trimmed in size.

The tricycle terminals along Anonas should be transferred to sidestreets. For PUV loading/unloading, it is not possible to install pedestrian railings without blocking access to the parking lot nearby. Strict enforcement of PUV loading/unloading prohibition near the intersection appears to be the only option.

In addition to the above measures, MOTC recently drafted a proposed rerouting scheme after observing that vehicles coming from Kamias tend to obstruct traffic at Anonas/Molave, compounded by on-street parking vehicles (see Figure 6.63).

Figure 6.63
 Proposed Rerouting of
 Jeepney Routes for Aurora/Anonas



In summary, the proposed countermeasures for all problem intersections involve the following tasks:

- Installation of traffic signals
- Improvement of phasing of traffic signals
- Rerouting of public transportation so as to remove queueing or the loading/unloading of PUVs near the intersection.
- Installation of PUV bays, if there are available spaces in proper places.
- Installation of pedestrian railings, to restrict pedestrian movements in proper loading/unloading zones or crossing points.
- Installation of passenger waiting sheds, for convenience of passengers, in places where no other substitutes exist, such as shops, trees, etc.
- On-street or on-sidewalk parking should be prohibited strictly on both sides within 10 m. from major intersections. PUV loading/unloading points should be designated about 100 m. after an intersection for outflow lanes and 50 m. before the intersection for inflow lanes.
- To complement government-imposed remedies, operators should reinforce suitable dispatching mechanisms to control unruly PUV loading/unloading.

6.3.2 Control of Private Activities

There are instances when private activities cause congestion, as in the following cases:

- On-street parking
- Waiting private cars
- Large volume of PUVs loading/unloading

The congestion cost arising from private activities are often externalized to the public at large. The activities of a few cause the many to suffer.

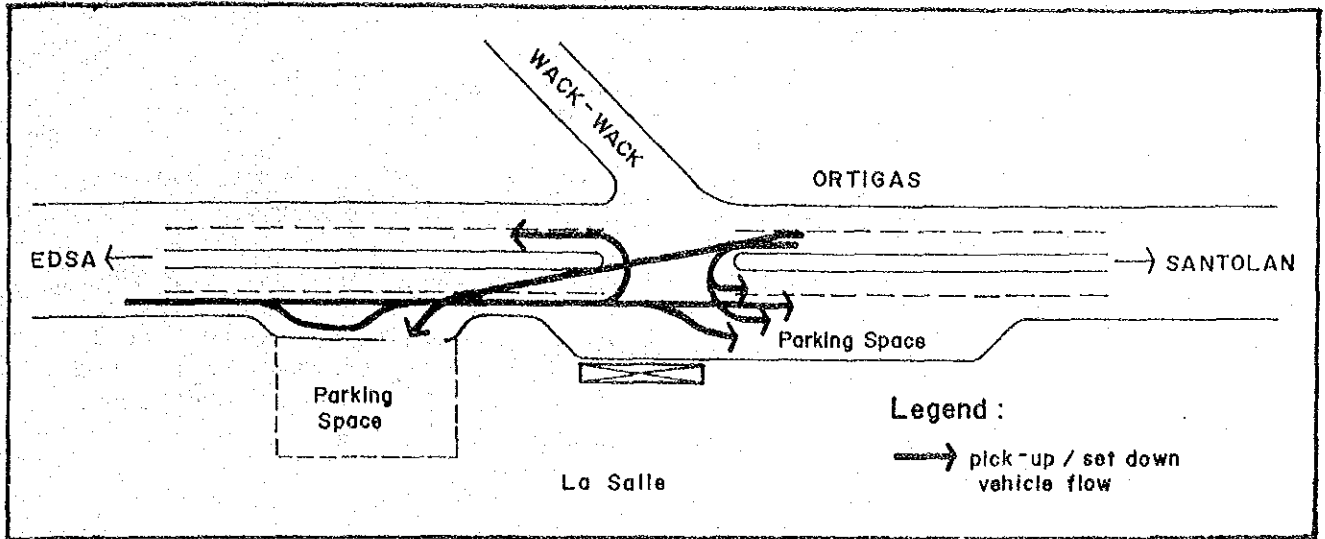
Although these problems are very noticeable in populous areas, isolated problems are also evidently counter-productive. The following areas, for example, highlight these cases:

A. La Salle in Ortigas

1) Identified Problem

The conveyance of students to and from school make Ortigas Avenue congested between Greenhills and the EDSA intersection, especially during the evening peak period. Figure 6.64 illustrates traffic movement in front of La Salle.

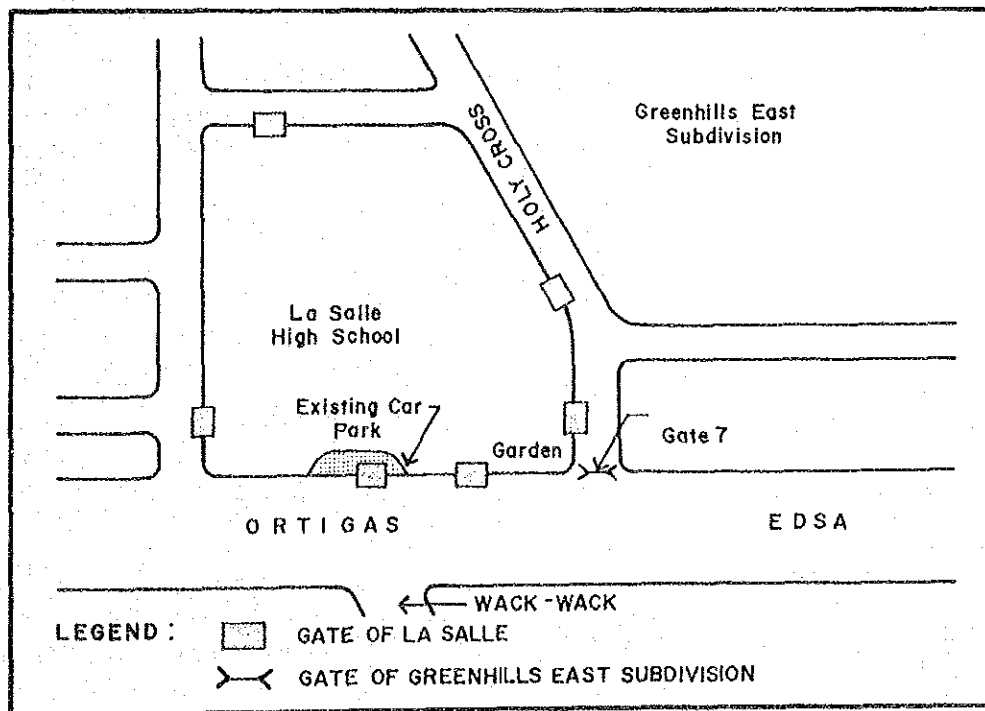
Figure 6.64
Pick-up/Set-down Vehicle Flow Infront of La Salle



2) Countermeasures

Due to the high number of private vehicles loading/unloading along Ortigas Avenue, the use of Gate 7 as an alternative was investigated. The gate leads to a private road, Holy Cross, which is owned by the Greenhills East Village Association. (see Figure 6.65).

Figure 6.65
Location of the Gates of La Salle



In an interview, it was found out that the gate was used by La Salle students six years ago but only on specified time periods, as follows:

- 6:30 a.m. - 7:45 a.m.
- 11:00 a.m. - 1:00 p.m.
- 2:30 p.m. - 5:00 p.m.

Furthermore, the use was restricted to class days and only to those cars with stickers issued by the school.

It is, therefore, recommended that Gate 7 be reopened, say, 6:30 a.m. - 8:00 a.m. and 11:00 a.m. - 6:00 p.m. and the Ortigas Gate of La Salle be closed to students. Holy Cross Street should be used instead, in addition to the other sidestreets. The issuance of gate pass to students being fetched by cars could easily be done (at cost or for a fee) by the Village Association.

B. Broadway Centrum

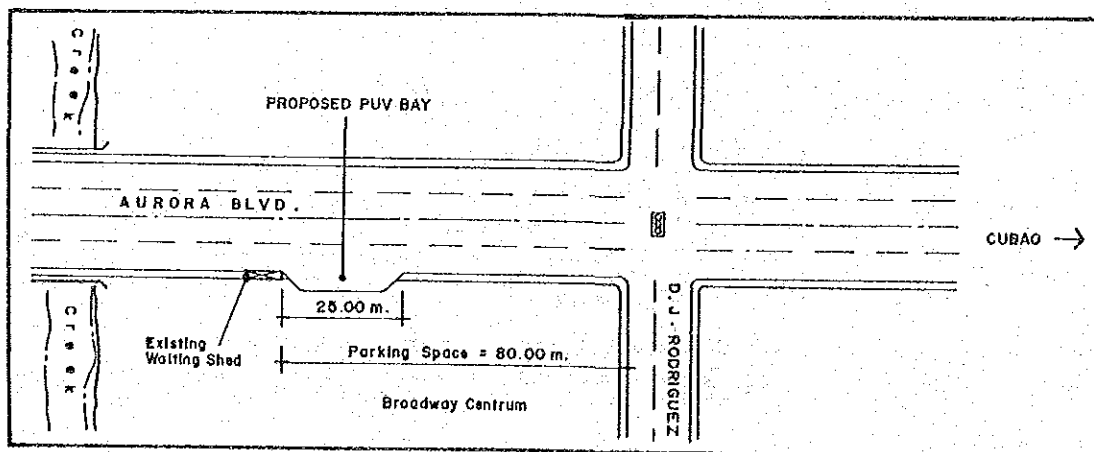
1) Identified Problem

This commercial complex is located at the corner of Aurora and D. J. Rodriguez. Several jeepneys line up to wait on bothsides in front of Broadway Centrum during peak hours, especially in the evening peak hours. As a result, queue over 200 m. form at the intersection of Aurora and D. J. Rodriguez. Based on the results of the passenger interview survey, more than two-thirds of boarding/alighting passengers at this point are generated from or attracted to Broadway Centrum.

2) Countermeasure

Since the congestion is traceable directly to Broadway Centrum, it is only logical for the solution to be lodged also with them. A PUV bay on its lot should be earmarked/constructed (see Figure 6.66).

Figure 6.66
Proposed PUV Bay Infront of
Broadway Centrum



6.4 RATIONALIZATION OF JEEPNEY ROUTES

6.4.1 Guidelines for Jeepney Route Structure Improvement

MOTC and other government agencies are presently engaged in rationalizing the jeepney route structure. Its central features are:

- a) To alleviate traffic congestion by:
 - establishing suitable turning circuits
 - making maximum use of available sidestreets
 - improving facilities at terminals/turning points
 - implementing appropriate traffic management measures coupled with stricter enforcement
- 2) To raise the service level of the jeepney by:
 - determining the RMC (Route Measured Capacity) for each route in order to secure the necessary levels of service
 - developing new routes to meet emerging demand, i.e., as feeder to the LRT
- 3) To facilitate control of jeepney operation by:
 - legalizing colorum operation on the basis of the determined RMC
 - renewing franchises on a more simplified and rational basis
 - imposing a ceiling on route length as a device for establishing service complementation with bus
 - limiting the entry of provincial jeepneys to Metro Manila to simplify their area of operation and minimize overlap with city-based jeepneys.

From among these things, the aspects pertaining to the improvement of jeepney service levels had been covered extensively in JUMSUT I and by follow-up activities of MOTC. The aspects regarding the alleviation of traffic congestion were dealt with in this report (see previous sections). The aspects of simplifying regulation of jeepney operation are currently being discussed among government agencies and are expected to be implemented soon.

6.4.2 Jeepney Route Proposals

The MOTC has drawn up a new register of jeepney routes based on the proposals and findings of JUMSUT I/II and the follow-up studies conducted by MOTC. This route list will soon be submitted to the BOT for implementation as basis for franchises issuance/renewal.

The number of jeepney routes in the MOTC proposal is 415. This includes 21 new routes as feeders to the LRT and 141 old/existing routes. Other routes are modifications or integrations of existing ones resulting from

- revised turning circuits;
- detour to available sidestreets;
- applying a 15-kilometer ceiling to Metro Manila jeepney routes
- limiting the entry of provincial jeepneys to Metro Manila up to EDSA and convenient transfer nodes.

Although the reduction in the number of routes from 744 (as identified by JUMSUT I in 1983) to 415 looks drastic, it is not really the case since the route structure has been unchanged.

- The 744 routes as identified by JUMSUT I included jeepney routes of negligible frequency as well as colorum lines.
- All of the preceding measures translates into a reduction in number of routes. For instance, ten routes bound for various places inside Metro Manila coming from a large center in the suburb collapses into one route when their turning points become the same.

Table 6.1
Categories in the Jeepney Route List prepared by MOTC

Categories	No. of Routes ^{1/}
• Same as the existing ones	141
• Turning circuit rationalized/modified	196
• Detoured to sidestreets	80
• Absorbs other routes of small service frequency	15
• Cut by 15-kilometer ceiling	7
• Cut by the policy of limiting entry of provincial jeepneys	21
• Complementary role with the LRT	138
• New routes (feeder to the LRT)	21
TOTAL	415

Source: MOTC

^{1/} Due to overlapping (some routes belong to more than one category), figures do not sum up to the total.

6.5 IMPLEMENTATION PROGRAM

Based on the intersectoral discussions that accompanied the planning efforts, the route changes and associated proposals can be

grouped by priority and work-type. These are:

- a) Ready for Implementation: This is a category for schemes that can be implemented immediately without any significant cost.
- b) Short-term: Schemes that can be implemented within 1 to 3 years after prior consultation with relevant agencies.
- c) Medium to Long Term: A category that requires major construction works. This applies to Guadalupe and Buendia only.

Table 6.2 summarizes the results of the cost estimates while Appendix 6.1 gives the breakdown. The cost for the "first category" is negligible, while the "Short-term" ones may need approximately ₱50 million mainly for road works. Out of this amount, about 62% or ₱31 million are strictly for road construction/rehabilitation; about 8% or ₱4 million to the pedestrian component and about 30% or ₱15 million to the traffic management component.

The "Medium to Long Term" projects were costed only for Guadalupe and Buendia Corridor for practical reasons. Estimated cost is about ₱20 million, of which 92% or ₱19 million is for road improvement. It should be noted, however, that this does not include the grade separation at the EDSA/Buendia intersection and other new links.

Table 6.2
Cost Summary by Priority and Type
of Work Needed (₱)

Area	Short-Term (000)1/				Medium to Long-Term (000)2/			Total
	Road Component	Pedestrian Component	Traffic Management	Sub-total	Road Component	Traffic Management	Sub-total	
1. Marikina	660	194	11	865	-	-	-	865
2. N. Domingo	-	-	1,681	1,681	-	-	-	1,681
3. Sta. Mesa	937	1,096	8	2,040	-	-	-	2,040
4. Pasig Town Proper	188	-	534	722	-	-	-	722
5. Shaw/EDSA	773	87	20	879	-	-	-	879
6. Kalentong	1,022	169	17	1,208	-	-	-	1,208
7. Guadalupe	627	427	2,501	3,555	1,846	-	1,846	5,401
8. J.P. Rizal	74	201	6,688	6,963	-	-	-	6,963
9. Paco	-	-	24	24	-	-	-	24
10. Buendia	943	772	1,707	3,422	18,542	1,686	20,228	23,650
11. R. Magsaysay/ Nagtahan	-	-	13	13	-	-	-	13
12. Rosario Junction	22,155	-	998	23,154	-	-	-	23,154
13. España	1,331	-	43	1,374	-	-	-	1,374
14. Ortigas/EDSA	-	-	-	-	-	-	-	-
15. Ortigas/Santolan	-	-	-	-	-	-	-	-
16. D.M. Marcos/ Tandang Sora	394	924	834	2,152	-	-	-	2,152
17. Quezon Avenue/ Roosevelt Avenue	5	147	3	155	-	-	-	155
18. EDSA/Kamlas	-	-	-	-	-	-	-	-
19. E. Rodriguez/Banawe	-	110	12	121	-	-	-	121
20. Aurora/Anonas	-	-	9	9	-	-	-	9
21. La Salle	-	-	-	-	-	-	-	-
22. Broadway Centrum	-	-	-	-	-	-	-	-
TOTAL	29,109	4,127	15,103	48,337	20,388	1,686	22,074	70,411

Source: Estimated by JHNSUT II

- 1/ Agencies Responsible: a) Road Component - MPWH (national road), TCC, Municipal Government, other agencies concerned
b) Pedestrian Component - MPWH, Municipal/Local Government, MWSS
c) Traffic Management - MPWH, TCC, MMC, Local/Municipal Government, Traffic Enforcement agencies

7.0 MID-TERM PROPOSALS

7.1 PLANNING GUIDELINES BY CORRIDOR

Guided by substantive analytical work presented in Chapter 4, some basic parameters for planning public transportation route structure improvement have been summarized in Table 7.1 for specific corridors in Metro Manila.

In general, there are still a number of options against congestion which will not entail significant capital investments, namely:

- a) Shift of passengers from private cars to the bigger capacity-modes;
- b) Shift of passengers from jeepneys to the larger capacity-buses;
- c) Greater use of available sidestreets;
- d) Reduction in the vehicle-kilometerage of both jeepney and bus through a redesigned route structure vis-a-vis passenger demand.

The shift from private cars to public transportation modes is extremely difficult judging from the large difference in the income levels of commuters. The only realistic option in this direction is to strengthen the premium bus service so as to attract a number of private car users at the margin or capture potential users.

The shift from jeepney to bus is also difficult but may be acceptable under the following conditions:

- a) Politically implementable such that the re-allocation of jeepneys does not mean fleet reduction nor profit-decline;
- b) Financially and technically feasible to introduce replacement bus units.

Depending upon their availability, greater use of sidestreets is a very realistic option since it could directly increase corridor capacity, without investment. As discussed in Section 4.3, there are several sidestreets in various corridors which can be tapped. These sidestreets may function as secondary roads which can induce traffic dispersal.

The reduction of public transportation traffic volume at some sections through rerouting is an indirect solution to mitigate traffic congestion. Although it is difficult to alter drastically the existing route structure because of the ramification on traffic management and its historical antecedents, attempts at rectifying distortions in supply and demand distribution must be pursued.

Table 7.1
Planning Guidelines by Corridor

Item Item	Southern Corridor			Southeastern Corridor		
	C-2	C-4	Peripheral	C-2	C-4	Peripheral
• 1980 Volume/ Capacity Ratio	1.2	1.4	1.0	0.7	1.0	1.3
• 1980 Jpy/Bus Share in Total P.C.U. Traffic	0.44	0.29	0.49	0.36	0.28	0.61
• 1990 Volume/ Capacity Ratio on 1990 Road Network						
- All Jpy Assump.	1.6 (1.2)	1.8 (1.5)	1.4	0.8	0.6	1.5
- All Bus Assump.	1.2 (1.0)	1.4 (1.2)	0.9	0.5	0.5	0.9
- All Jpy Assump. (w/sidestreets)	1.1 (0.8)	1.4 (1.1)	0.8	0.8	0.5	1.5
- All Bus Assump. (w/sidestreets)	0.8 (0.7)	1.1 (0.9)	0.6	0.5	0.4	0.9
• Direction for Rerouting	<ul style="list-style-type: none"> • Shift from jeepney to bus on major roads • Wider use of sidestreets • Use jeepney for primary service in peripheral areas • Strengthen premium bus service 			<ul style="list-style-type: none"> • Basically as is • Wider use of side-streets is required along P. Gil, J.P. Rizal and Buendia considering possible detour traffic • Use of jeepney in the peripheral area 		
• Priority Mode by Road	<ul style="list-style-type: none"> • R-1 - Bus/private car • Taft Ave. - LRT/bus • Roxas Blvd. - Private car • South Superhighway - Private car/bus • Quirino Ave. - Jeepney • Imelda Ave. - Bus • L. Guinto/Mabini/M.H. del Pilar/F.B. Harrison and other sidestreets - Jeepney 			<ul style="list-style-type: none"> • J.P. Rizal/P. Gil - jeepney • Buendia/Ayala - private car/bus • Pasay Road- private car/jeepney • Pasig Line, Malugay, Sampaloc and other sidestreets - jeepney 		
Remarks	<ul style="list-style-type: none"> • Even after the proposed re-routing, traffic congestion may persist in the area outside EDSA, where R-1 and/or LRT extension may be deemed necessary 					

Note: Figures in parenthesis show the estimates considering the LRT Line No. 1.

(Cont. Table 7.1)

Item	Northeastern Corridor			Northern Corridor		
	C-2	C-4	Peripheral	C-2	C-4	Peripheral
• 1980 Volume/ Capacity Ratio	1.3	0.8	0.4	0.9	0.9	0.9
• 1980 Jpy/Bus Share in Total P.C.U. Traffic	0.70	0.52	0.18	0.68	0.60	0.50
• 1990 Volume/Capacity Ratio on 1990 Road Network						
- All Jpy Assump.	1.3	0.8	1.3	1.3 (1.0)	1.3 (1.1)	1.5
- All Bus Assump.	0.9	0.5	1.0	0.8 (0.7)	0.9 (0.8)	1.0
- All Jpy Assump. (w/sidestreets)	0.7	0.7	1.3	1.1 (0.8)	1.1 (1.0)	1.5
- All Bus Assump. (w/sidestreets)	0.5	0.5	1.0	0.6 (0.6)	0.8 (0.7)	1.0
• Direction for Rerouting	<ul style="list-style-type: none"> • Conversion of jeepney to bus in relation to España • Effective use of sidestreets both for private car and jeepney • Strengthening of premium bus service • Usage of jeepney as a feeder to cover a wider peripheral area 			<ul style="list-style-type: none"> • Conversion of jeepney to bus on multi-lane roads • Effective use of sidestreets • Use of jeepney in peripheral area to widen public transportation coverage 		
• Priority Mode by Road	<ul style="list-style-type: none"> • España - Bus • Quezon Ave. - Bus • Roosevelt - Jpy (bus in connection with España) • D.M. Marcos - Bus • Other streets - Jpy 			<ul style="list-style-type: none"> • R-10 - private car and bus • Rizal/Rizal Ave. Ext. - LRT • J.A. Santos - private car • J. Luna/A. Mabini/H. Lopez - jpy • A. Bonifacio/Dimasalang - bus • McArthur Highway - bus • Gen. Luna/M.H. del Pilar - jpy • Quirino Highway - bus • North Div. Rd. - private car and bus • Other sidestreets - jpy 		
• Remarks	<ul style="list-style-type: none"> • In the peripheral area, construction of new roads such as Visayas Ave. is required as soon as possible. 			<ul style="list-style-type: none"> • In the peripheral area, construction of new roads is urgent. R-10 Extension and Mindanao Ave. will relieve this area. 		

Note: Figures in parentheses show the estimates considering the LRT Line No. 1.

(Cont. Table 7.1)

Item	Eastern Corridor				
	C-2	South	North	Peri- pheral South	Peri- pheral North
• 1980 Volume/ Capacity Ratio	1.1	1.2	1.2	0.8	1.1
• 1980 Jpy/Bus Share in Total P.C.U. Traffic	0.60	0.24	0.50	0.19	0.67
• 1990 Volume/ Capacity Ratio on 1990 Road Network					
- All Jpy Assump.	2.5	0.9	1.3	1.5	1.2
- All Bus Assump.	1.6	0.7	1.0	1.0	0.8
- All Jpy Assump. (w/sidestreets)	1.7	0.7	0.8	1.5	1.2
- All Bus Assump. (w/sidestreets)	1.1	0.5	0.6	1.0	0.8
• Direction for Rerouting	<ul style="list-style-type: none"> • Shift from LOV to HOV on primary roads • Greater use of sidestreets • Introduction of jeepney to the peripheral area as a feeder 				
• Priority Mode by Road	<ul style="list-style-type: none"> • Ortigas Ave. - Private car and bus • Shaw Blvd. - Bus • Boni Ave. - Jeepney • Legarda/R. Magsaysay - Bus • E. Rodriguez - Bus • Aurora Blvd. - Bus • Kamuning/Kamias, Santolan Road and other sidestreets - Jeepney 				
• Remarks	<ul style="list-style-type: none"> • Even after implementation of the above countermeasures, traffic congestion may persist on Legarda, R. Magsaysay, Ortigas, Shaw Blvd. and Aurora Blvd. For Ortigas Avenue, widening of the carriageway from 4 to 6 lanes by reducing the median is recommended coupled with intersection improvement - at EDSA/Ortigas. For R. Magsaysay and Aurora Blvd., the feasibility of an LRT line should be explored 				

(Cont. Table 7.1)

Item	C-2/C-3 Corridor				
	South	South-east	East	North-east	North
<ul style="list-style-type: none"> • 1980 Volume/Capacity Ratio 	0.9	1.1	1.4	0.9	0.7
<ul style="list-style-type: none"> • 1980 Jpy/Bus Share in Total P.C.U. Traffic 	0.14	0.24	0.25	0.32	0.20
<ul style="list-style-type: none"> • 1990 Volume/Capacity Ratio on 1990 Road Network - All Jpy Assump. - All Bus Assump. - All Jpy. Assump. (w/sidestreets) - All Bus Assump. (w/sidestreets) 	1.6 1.3 1.4 1.2	1.6 .12 1.6 1.2	2.2 1.7 2.2 1.7	1.6 1.2 0.9 0.7	1.1 0.8 0.9 0.7
<ul style="list-style-type: none"> • Direction for Rerouting 	<ul style="list-style-type: none"> • Priority to bus on multi-lane roads (especially in the east and the south) • Maximum use of sidestreets and secondary roads • Better connection to EDSA • Introduction of premium bus service (especially in the south) 				
<ul style="list-style-type: none"> • Priority Mode by Road 	<ul style="list-style-type: none"> • C-3 - Bus and private car • C-2 - Bus and private car • Del Monte/E. Rodriguez/Shaw Blvd. - Bus • Makati - Mandaluyong Road - Bus • Roces - Private car and jeepney • Ortigas/Buendia/V. Cruz - Private car and bus • Mayon/New Panaderos/Pasay Road and other sidestreets - Jeepney 				
<ul style="list-style-type: none"> • Remarks 	<ul style="list-style-type: none"> • Even after implementation of the above proposals, it is not considered enough to cope with the overwhelming demand. The planned extension of C-3 up to Makati and the R-4 construction inside EDSA are considered indispensable to alleviate this situation. 				

(Cont. Table 7.1)

Item	C-4 Corridor				
	South	South-east	East	North-east	North
<ul style="list-style-type: none"> • 1980 Volume/Capacity Ratio 	0.9	1.0	1.2	0.9	0.8
<ul style="list-style-type: none"> • 1980 Jpy/Bus Share in Total P.C.U. Traffic 	0.28	0.23	0.37	0.33	0.37
<ul style="list-style-type: none"> • 1990 Volume/Capacity Ratio on 1990 Road Network - All Jpy Assump. - All Bus Assump. - All Jpy Assump. (w/sidestreets) - All Bus Assump. (w/sidestreets) 	1.2 0.9 1.2 0.9	1.3 1.0 1.3 1.0	0.9 0.9 0.7 0.5	1.4 1.0 0.8 0.6	0.8 0.7 0.8 0.7
<ul style="list-style-type: none"> • Direction for Rerouting 	<ul style="list-style-type: none"> • Basically as is (priority to bus on EDSA) • Expansion of jeepney/bus coverage in the north 				
<ul style="list-style-type: none"> • Priority Mode by Road 	<ul style="list-style-type: none"> • EDSA - Bus and private car • T. Sora - Private car and jeepney • E. Rodriguez and other sidestreets - Jpy 				
<ul style="list-style-type: none"> • Remarks 	<ul style="list-style-type: none"> • For the expected congestion of the southeastern part of EDSA, the planned extension of C-3 up to Makati will be effective. 				

(Cont. Table 7.1)

Item	Metro Manila Periphery				
	South	South-east	East	North-east	North
<ul style="list-style-type: none"> • 1980 Volume/Capacity Ratio^{1/} 	1.7	1.4	1.5	0.6	0.3
<ul style="list-style-type: none"> • 1980 Jpy/Bus Share in Total P.C.U. Traffic^{1/} 	0.07	0.16	0.15	0.32	0.19
<ul style="list-style-type: none"> • 1990 Volume/Capacity Ratio of 1990 Road Network - All Jpy Assump. - All Bus Assump. - All Jpy Assump. (w/sidestreets) - All Bus Assump. (w/sidestreets) 	0.3 0.2 0.2 0.1	0.6 0.3 0.6 0.3	1.3 0.9 0.8 0.5	0.3 0.2 0.1 0.1	0.2 0.2 0.2 0.2
<ul style="list-style-type: none"> • Direction for Rerouting 	<ul style="list-style-type: none"> • Expansion of jeepney bus/service coverage • Effective use of sidestreets in the east 				
<ul style="list-style-type: none"> • Priority Mode by Road 	<ul style="list-style-type: none"> • Geronimo/Katipunan/E.A. Rodriguez/Bambang Bridge/Pres. M.L. Quezon and other secondary roads and sidestreets - jeepney 				

Source: JUMSUT II

^{1/} In the absence of traffic count data, traffic assignment results are indicated.

Only after the low-cost options have been exhausted shall the feasibility of more capital-hungry solutions be explored, such as the construction of new roads or new mass transit lines.

7.2 ALTERNATIVE PLANS

The alternative plans for route improvements consist of a combination of the following factors:

- a) the extent of the shift from jeepney to bus,
- b) the degree of utilization of sidestreets, and
- c) route configuration.

Initially, based on earlier discussions, several alternatives revolving around a shift from jeepney to bus (the a) above) were prepared, and these are presented in Table 7.2. In all the alternatives, public transportation routes either by jeepney or by bus had been assumed for the new roads (as summarized in Table 7.3). Demand was derived from the traffic assignment exercise. Also, a number of new routes linking the north and the south of Metro Manila via C-2 had been assumed for all the alternatives, because these routes were deemed the most suitable given anticipated demand.

Table 7.2
Summary of Alternative Plans

	Priority on New Roads to:		Priority to Bus in the Corridor of:					North-South Routes via C-2 by:	
	Jeepney	Bus	S	SE	E	NE	N	Jeepney	Bus
1. Overall Bus Priority		o	o	o	o	o	o		o
2. Bus Priority on New Roads		o							o
3. Bus Priority on New Roads/ Eastern Corridor		o			o				o
4. Jeepney Priority on New Roads	o							o	

Source: JUMSUT II

The alternatives were then tested on the TRANSTEP public transportation assignment model. In the exercise, the conversion of jeepney to bus was tested only for multi-lane roads that were deemed problematic and only for routes greater than 10 kilometers. The results are summarized in Table 7.4.

Table 7.3
Desired Structure of PUV Routes on New Roads

Constructed	Major OD Pairs to be Serviced by the New Road	Approximate Distance (kms.)	Representative Existing Routes Corresponding to the OD Pair (existing as of 1983)
C-3 (R-10-Aurora Blvd.)	• CBD - Novaliches/Lagro and further North (via Rizal Avenue and C-3)	• 15 or more	• Jeepney : Blumentritt-Novaliches Ord. Bus: Sapang Palay - Sta. Cruz mini Bus: Divisoria - Bulacan
	• Monumento - Retiro/Del Monte (via Rizal Ave. Extension and C-3)	• 3 - 4	• None
	• CBD - Balintawak/Muñoz (via Rizal Ave. and C-3)	• 7 - 10	• Jeepney : Project 8 - Quiapo
	• España - Makati (via E. Rodriguez, C-3, Shaw Blvd. and Makati-Mandaluyong Road)	• 8 - 10	• None
	• CBD - Malabon (via R-10, C-3 and H. Lopez)	• 15 or more	• Jeepney : Divisoria - Gasak
	• Tayuman - Navotas (via R-10, C-3 and H. Lopez)	• 4 - 6	• None
R-10 (Del Pan Bridge-C-4)	• CBD - Navotas (via Del Pan Bridge and R-10)	• 5 - 7	• Jeepney : Navotas - Recto
	• Tayuman - Navotas (via R-10, C-3 and H. Lopez)	• 4 - 6	• None
	• CBD - Malabon (via R-10, C-3 and H. Lopez)	• 15 or more	• Jeepney : Divisoria - Gasak
Makati-Mandaluyong Road (Shaw Blvd. - J.P. Rizal)	• San Juan - Las Piñas/Parañaque (via Shaw Blvd., Makati-Mandaluyong Road, Makati Avenue and EDSA)	• 15 or more	• None
	• Boni - Sta. Ana/Buendia (via Boni, Makati-Mandaluyong Road and J.P. Rizal/P. Tamo)	• 4 - 5	• None
R-1 Extension	• Cavite/Zapote - Baclaran	• 15	• Jeepney : Baclaran - Zapote Minibus : Baclaran - Cavite
	• Cavite/Zapote - CBD	• 20 or more	• Minibus : Lawton - Cavite

Source: JUNSUT II

Table 7.4
Summary Result of TRANSTEP Simulation
of Alternative Plans (Morning Peak Hour)

	1980	1984	Do Nothing Case ^{2/}	1990			
				1	2	3	4
				Overall Bus Priority	Bus Priority on New Roads	Bus Priority on New Roads & Eastern Corridor	Jeepney Priority on New Roads
<u>No. of Pass. (000)</u>	758	857	1,043	1,015	1,015	1,018	998
Jeepney	580	639	660	443	590	566	724
Bus	176	209 ^{1/}	323	535	386	417	239
LRT	-	6 ^{1/}	42	29	29	27	29
PNR	2	3	18	8	8	8	6
<u>Pass.-Kms. (000)</u>	4,604	5,277	7,070	6,956	6,979	6,974	6,799
Jeepney	3,021	3,318	3,420	2,053	3,195	2,988	4,152
Bus	1,551	1,883 ^{1/}	3,028	4,539	3,421	3,637	2,323
LRT	-	39 ^{1/}	348	251	244	288	243
PNR	32	39	274	113	229	121	81
<u>Vehicle-Kms. (000)</u>	398	421	467	363	454	438	525
Jeepney	349	364	375	225	350	328	455
Bus	49	57	92	138	104	110	70
<u>Ave. No. of Trans- fers per Passenger</u>	0.39	0.39	0.39	0.34	0.34	0.34	0.34

Source: JUMSUT II

1/ South Line only

2/ "Do Nothing" assumes a proportional increase of jeepney/bus fleet for each of the existing route in relation to demand.

The "Overall Bus Priority" alternative implies a 38% reduction in jeepney fleet from 1984 to 1990. Correspondingly, it requires a bus fleet 2.4 times larger than the existing level. Although appealing to some transport planners, it is neither economical nor practical.

At the other extreme, the "Jeepney Priority on New Roads" alternative will require a 25% and 23% increase in jeepney and bus fleet, respectively (the relatively larger increase for bus is due to the larger increment of population in the peripheral areas of Metro Manila). While the ratios look reasonable, the severity of traffic congestion will not allow such a large increase in jeepney units.

The "Bus Priority on New Roads" alternative implies a 4% reduction in jeepney fleet and an 82% increase in bus fleet during the period 1984 to 1990. On pragmatic grounds, this alternative appears to be realistic since no substantial decrease in jeepneys nor major restructuring of routes had been assumed. However, it leaves open the issue of traffic congestion in the central-eastern part of Metro Manila, and sidesteps the fact that public transportation vehicles will grow by about 14% during the same period.

The "Bus Priority on New Roads and the Eastern Corridor" alternative needs a 10% decrease in jeepney fleet and a 93% increase in the bus fleet. Although this might be considered as a difficult target, the serious congestion anticipated in the eastern corridor will be mitigated to a considerable extent. As an intermediate step to the "Overall Bus Priority" option, this alternative is considered to be the best planning goal to be pursued.

It is worth noting that the average number of transfers per passenger - which is a good criterion of service efficiency in the public transport network - will dip significantly in any of these four alternative scenarios.

7.3 EVALUATION OF THE PREFERRED ALTERNATIVE

The preferred alternative calls for a "Bus Priority on New Roads and in the Eastern Corridor". Further evaluations of this alternative in terms of traffic impact were made, using pre-set jeepney and bus split on the 1990 road network. The results are presented in Table 7.5.

The preferred alternative leads to a saving in total vehicle operating cost of ₱3.3 million a day in economic terms or ₱4.0 million a day in financial terms, against the "Do Nothing" case. The travel speed of vehicles also registers considerable improvement, although still at very low levels because of the traffic situation all over Metro Manila.

A look into the traffic condition for the year 1990 after the implementation of the preferred plan reveals that congestion will still remain at several road sections, which includes Kamuning-Kamias, A. Mendoza-Pres. Quirino, Tejeron/J. P. Rizal, Legarda/R. Magsaysay, among others. Nonetheless, the overall situation is one of improvement compared to the "Do Nothing" situation. The impact is remarkable, especially on Aurora Boulevard, Shaw Boulevard, Ortigas Avenue, and EDSA.

Table 7.5
Summary Result of the Assessment of Road
Traffic for the Selected Alternative 1/

		1984	1990	
			Do-Nothing Case	Bus Priority on New Roads and the Eastern Corridor
Vehicle-Kms (000/day)				
Jeepney		3,415	3,518	3,079
Bus		483	779	933
Private		<u>11,050</u>	<u>14,106</u>	<u>14,087</u>
Total		14,948	18,403	18,099
Vehicle-Hours (000/day)				
Jeepney		384	448	375
Bus		45	88	91
Private		<u>913</u>	<u>1,385</u>	<u>1,355</u>
Total		1,342	1,921	1,821
Pass-Hours ^{3/} (000/day)				
Jeepney		3,456	4,032	3,375
Bus		1,350	2,840	2,730
Private		<u>1,826</u>	<u>2,770</u>	<u>2,710</u>
Total		6,632	9,442	8,815
Average Travel Speed (kms/hr)				
Jeepney		8.9	7.9	8.2
Bus		10.8	8.9	10.2
Private		12.1	10.2	10.4
Vehicle Operating Cost (P000/day) ^{2/}				
Economic	Jeepney	18,174	19,606	16,516
	Bus	10,716	19,389	21,491
	Private	<u>56,905</u>	<u>77,616</u>	
	Total	85,795	116,611	113,261
Financial	Jeepney	20,093	21,694	18,269
	Bus	11,961	21,691	24,033
	Private	<u>70,797</u>	<u>96,592</u>	
	Total	102,851	139,977	135,918

Source: JUMSUT II

1/ Traffic assignment result

2/ 1985 prices

3/ Average load factors assumed are 9 for jeepney, 30 for bus and 2 for private car.

7.4 IMPLEMENTATION GUIDELINES

7.4.1 Fleet Requirements

As a natural outgrowth of the changes in distribution of population and economic activities, traffic demand on existing bus routes will increase by about 60% during the period 1984 to 1990. To meet this natural growth, the preferred bus alternative will require a 33% increase in bus units. Table 7.6 gives the bus fleet calculation broken down into areas of operation.

To meet the projected demand on the new roads scheduled for completion by 1990, 1,400 additional bus units will be necessary. This corresponds to about 25% of the total growth in fleet.

The conversion of long jeepney routes to bus routes at the Eastern Corridor will entail 300 additional bus units. Although this corresponds to only 5% of the total requirement during the period 1984 to 1990, its implementation needs careful consideration of the following:

- a) Start date - The franchises for jeepneys are to be issued during the first half of 1985 with their validity for five years. Therefore, for the total conversion of long jeepney routes to bus routes, 1990 would be the most opportune time to start.
- b) Where to relocate jeepneys - A large number of the jeepney units plying the long routes at present along R. Magsaysay, Aurora Boulevard, and Shaw Boulevard can be absorbed on the shorter routes on the same road or on the side-streets where demand will also grow. The balance of the fleet should be relocated to new feeder routes at the eastern outskirts where population will grow rapidly.

For the new north-south routes proposed along C-2, 800 additional bus units (14% of the additional fleet requirement) will be necessary. This will ease the distortion of demand distribution on the circumferential direction (especially to EDSA).

In addition to the above, 3,100 additional bus units (or 55% of the additional fleet requirement) are required to cope with the natural growth in passenger demand.

7.4.2 Tactical Aspects

The timing of implementation is evident in Table 7.7, which covers the mid-term period.

Since most of the committed road projects are scheduled to be completed by 1990, and the jeepney route franchises will expire by then, the regulatory load in 1990 will be quite heavy. By 1989, therefore, major preparation should be done on the proposed north-south bus routes via C-2 and on existing routes.

To realize the desired expansion in bus fleet by 1990, the complementary measures required are:

- a) No additional issuance of jeepney route franchise except route conversion from major road to sidestreet: This is to suppress the increase in jeepney fleet size as well as to facilitate the increase in bus fleet.
- b) Sidestreet improvement in the problem corridors: This is to expand the road capacity as a whole as well as to facilitate the rerouting of jeepneys. The short-term plans included in this report are quite extensive.
- c) Strengthen regulatory controls over jeepney operation: Strict enforcement of jeepney regulations is imperative in the following items -
 - colorum operation (elimination of illegal units, "out of line", etc.)
 - loading/unloading zone, turning point, curbside parking, etc.

These measures are especially important in the Eastern Corridor.

7.5 RECOMMENDATIONS FOR FURTHER STUDY

Despite the assumed implementation of the preceding proposals, the prognosis is still gloomy. Service levels on the road network will worsen. Thus, the feasibility of the following projects should be examined as soon as possible.

- a) C-3 Extension up to Makati: This road is considered very important in redistributing flow in the road network and for making maximum use of the R-10 - Aurora Boulevard section of C-3, expected to be completed by 1990. The advisability of proceeding with the project despite strong objections and right-of-way (ROW) problems need to be re-examined.
- b) Secondary Roads connecting C-3 and the Makati-Mandaluyong Road: This can be considered as an alternative to the C-3 extension. It is essential to identify and improve the best combination of secondary roads connecting C-3 to the Makati-Mandaluyong Bridge. The project will also alleviate anticipated traffic congestion at Aurora Boulevard and Shaw Boulevard. Although presently under study by MPWH, its immediate execution is strongly endorsed. Use of the abandoned ROW of the PNR Line should also be studied.
- c) LRT Line No. 2 for the Eastern Corridor: The Eastern Corridor needs a major boost in transport capacity which may not be forthcoming from roads. It is recommended

that a feasibility study be made as soon as possible for an LRT Line covering the following:

- Route Alignment
 - Demand Forecast
 - Preliminary Design
 - Jeepney/Bus Rerouting
 - Financial/Economic Feasibility
 - Implementation Schedule
 - Miscellaneous
- d) Completion of R-4: This will alleviate current and future traffic congestion on J. P. Rizal and Buendia. A sooner implementation is warranted.
- e) Widening of Buendia: This will eliminate the current bottleneck between the section of Tripa de Gallina and South Superhighway. Also, the study should assess the following developments:
- Opening of PNR at
 - . Malugay/Emilia
 - . Finlandia/De la Rosa
 - . Sampaloc/Arellano
 - Direct access from Buendia to Emilia and Finlandia
- f) Grade Separation of Major Intersections: This includes the following problem intersections:
- EDSA/Ortigas
 - EDSA/R-4
 - EDSA/Buendia
 - Nagtahan/R. Magsaysay
 - España/A. Mendoza

For the EDSA intersections, implementation awaits funding since detailed designs have already been completed. Likewise, the feasibility of widening Ortigas Avenue from 4 to 6 lanes using the central medians should be examined. For Nagtahan/R. Magsaysay and España/A. Mendoza intersections, it is recommended that a re-assessment of the old proposals for grade separation be looked into considering the serious traffic situation at these intersections.

Table 7.6
Bus Fleet Requirements of the Preferred Alternative Plan

	No. of Bus Units ^{2/}
● 1984 Estimated No. of Bus Units	6,000
● Required No. of Additional Bus Units by 1990 for the Existing Bus Routes	3,100 ^{1/}
● Required No. of Additional Bus Units by 1990 for:	
1. New Roads	
- C-3	600
- R-10	300
- Makati- Mandaluyong Rd.	100
- R-1 Extension	400
Sub-total	1,400
2. Replacement of Long Jeepney Routes along R. Magsaysay, Shaw Blvd., and Aurora Blvd.	300
3. New North-South Routes via C-2	
- McArthur Highway/Rizal Avenue Ext./Rizal Ave./C-2/South Superhighway	300
- North Diversion Rd./A. Bonifacio/ Dimasalang/C-2/Taft Ave./Quirino Ave.	500
Sub-total	800
TOTAL	2,500
GRAND TOTAL	11,600

Source: JUMSUT II

1/ after reduction of bus units absorbed by new routes

2/ those actually being operated

Table 7.7
General Program for the Implementation of Medium-Term Proposals

	1985	1986	1987	1988	1989	1990																
• Additional Bus Fleet Requirement																						
1. New Roads																						
° C-3				600																		
° R-10			300																			
° Makati-Mandaluyong Road					100																	
° R-1 Extension		400																				
2. Eastern Corridor						300																
3. New North-South Routes	200	200	200	200																		
4. Existing Bus Routes	500	200	400	200	1000	800																
Total No. Required	700	800	900	1000	1100	1100																
• Complementary Steps	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="6">No additional issuance of franchise for jeepney routes (except the conversion from major road to sidestreet)</td> </tr> <tr> <td colspan="4">Improvement of sidestreets in the problem corridors (JUMSUT II short-term plans form its integral part)</td> <td colspan="2" rowspan="2">Jeepney Rerouting on the eastern corridor</td> </tr> <tr> <td colspan="4">Strengthening the control of jeepney operation</td> </tr> </table>						No additional issuance of franchise for jeepney routes (except the conversion from major road to sidestreet)						Improvement of sidestreets in the problem corridors (JUMSUT II short-term plans form its integral part)				Jeepney Rerouting on the eastern corridor		Strengthening the control of jeepney operation			
No additional issuance of franchise for jeepney routes (except the conversion from major road to sidestreet)																						
Improvement of sidestreets in the problem corridors (JUMSUT II short-term plans form its integral part)				Jeepney Rerouting on the eastern corridor																		
Strengthening the control of jeepney operation																						

Sources: JUMSUT II

