

Laguna

There are two trunklines connecting the province of Laguna with Metro Manila. These are:

- The South Luzon Expressway (SLE) is a tollway with a 4-lane carriageway. The Muntinlupa-Carmona section has a carriageway of 21.0 meters.

The SLE is currently undergoing extension under the Southern Luzon Expressway Extension Project (SLEEP). The project will extend the SLE from Calamba to Batangas City leading to the Port of Batangas.

- Running parallel to the SLE, the National Highway, runs from San Pedro to Calamba with a carriageway of 7 meters and extends up to the town of Los Banos with a large carriageway of 10 meters.

Other roads within the province are narrow including those that are classified as provincial roads. This is with the exception of the Sta. Rosa Road and Cabuyao TP Road, each having a carriageway of 12 meters.

Cavite

There are three (3) major trunklines that connect the province of Cavite with Metro Manila. These are:

- The Carmona road, starting from SLE Carmona Exit to Pala-pala/Aguinaldo Highway with a carriageway of 12 m.. This road is paved with concrete and in good condition.
- The Manila-Cavite Coastal Road (MCCR) section of the Aguinaldo Highway has a carriageway of 22.6 m. It runs from MIA Road up to Las Pinas-Talaba Diversion, also known as Bacoor By-pass Road. The total distance of this section is 6.7 kms.
- The Bacoor By-pass Road runs from Las Pinas to Bacoor, Cavite. The carriageway is narrow at 7 m. but the road is concrete and in good condition.

The other roads within the province are narrow with carriageways ranging from 5 to 7 meters. The exception is Putting Kahoy Road (Sta. Rosa, laguna to Silang TP). with a carriageway of 12 meters. The road map of Cavite is shown in Figure 2.3.

Batangas

There are no trunklines that directly connect the province of Batangas with Metro Manila. This province is accessible only via Laguna and Cavite. Only until the completion of SLEEP shall Batangas be directly connected to Metro Manila. The road map of Batangas is shown in Figure 2.4.

FIGURE 2.3
CAVITE ROAD MAP

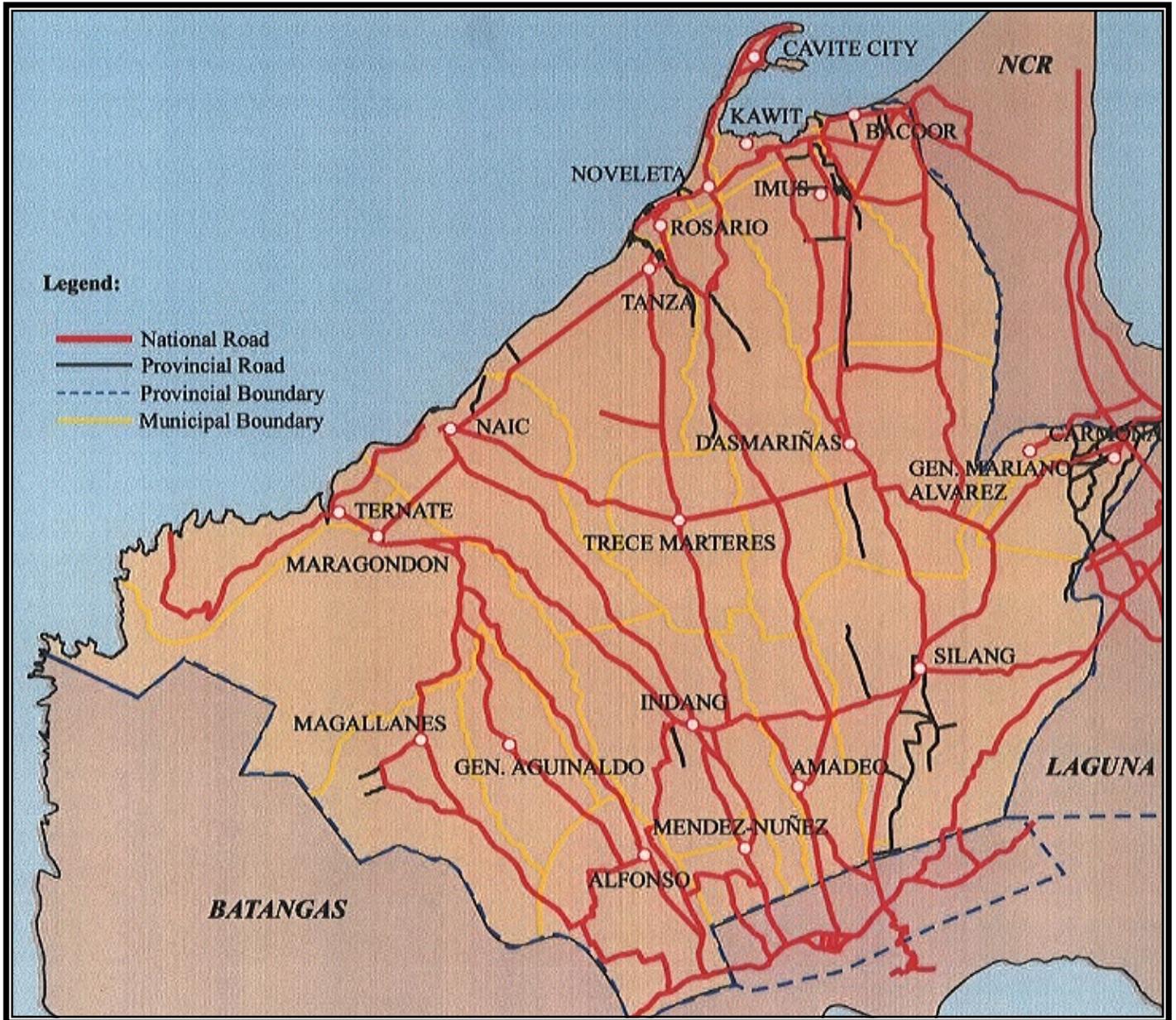
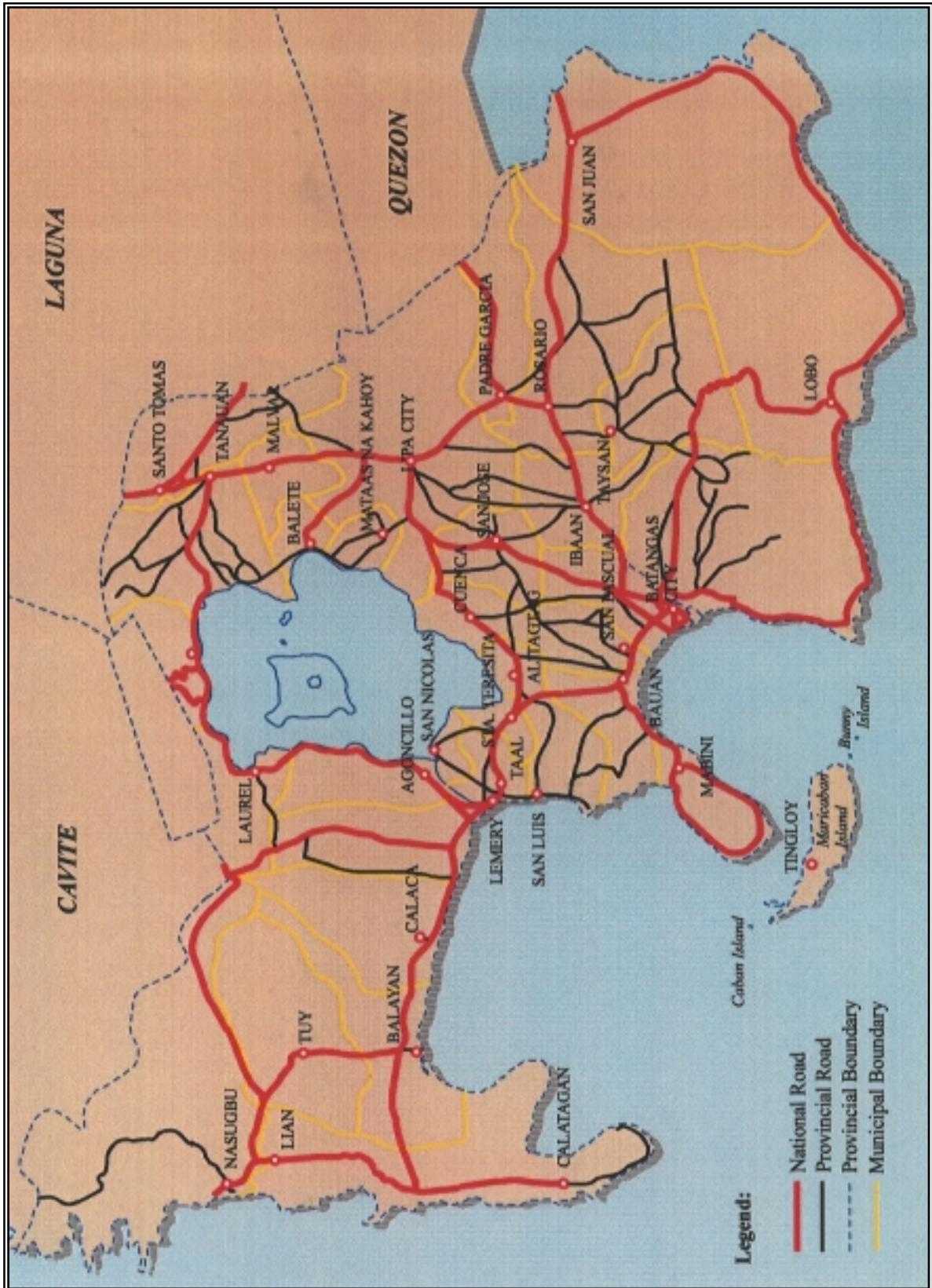


FIGURE 2.4
BATANGAS ROAD MAP



2.2 Road Traffic

A road traffic survey was conducted by MMUTIS under the Public Transport Terminal/Route Survey for selected provinces adjoining Metro Manila. The data below was obtained by 16-hour counts. Tables 2.1 and 2.2 present the summary of the traffic counts for each province for bus and jeepney respectively.

**TABLE 2.1
 BUS FREQUENCY COUNTS IN SELECTED PROVINCES**

Province	Destination		Total
	Metro Manila	Outside Study Area	
Bulacan	1,067	200	1,267
Rizal	644	-	644
Laguna	1,598	155	1,753
Cavite	1,302	21	1,323

Source: MMUTIS Project

**TABLE 2.2
 JEEPNEY FREQUENCY COUNTS IN SELECTED PROVINCES**

Province	Destination			Total
	Metro Manila	Within Province	Outside Study Area	
Bulacan	2,302	4,937	261	7,500
Rizal	3,748	2,573	30	6,351
Laguna	-	5,068	507	5,575
Cavite	2,835	-	-	2,835

Source: MMUTIS Project

Bulacan

A total of 1,267 buses were counted for Bulacan during the 16-hour survey. Data for buses include mini-bus, air conditioned and ordinary buses. Majority of the buses counted were those coming to and from Metro Manila.

For jeepneys, Bulacan posted the biggest volume with 7,500 counted during the survey. Almost 66% of jeepneys travel within the province. Only a small percentage (3.4%) travels outside the targeted area.

Rizal

Rizal posted the lowest bus count among the four provinces covered by the Survey with only 644 vehicles recorded.

On the other hand, jeepney count was very high, 59% of which travel between Metro Manila and the province. Only a small number of jeepneys travel outside of the Study Area.

Laguna

The province posted the highest bus count with a total of 1,753 buses recorded. 91% of these buses travel between Laguna and Metro Manila.

Laguna also posted high count for jeepneys at 5,575. However, no counts were posted for jeepneys travelling from Metro Manila to Laguna or vice versa. Most of the jeepneys counted (91%) service only the areas within the province.

Cavite

Bus count for Cavite at 1,323 is the second highest frequency recorded during the Survey. As in most cases, majority of these buses ply the Metro Manila-Cavite route.

For jeepney frequency counts, Cavite posted the lowest at 2,835. All of these jeepneys likewise ply the Metro Manila-Cavite route.

Batangas

Since Batangas is not included in the MMUTIS, no traffic counts are available for analysis.

2.3 Road-Based Public Transport

The MMUTIS Public Transport Terminal/Route Survey provided us with the number of road-based public transportation existing in the four adjoining provinces covered by MMUTIS. Tables 2.3 and 2.4 show the number of bus and jeepney terminals, respectively, and the number of routes for each terminal, by province.

**TABLE 2.3
 BUS TERMINALS AND ROUTES BY PROVINCE**

Province	Terminal	Route
Bulacan	6	10
Rizal	7	9
Laguna	4	12
Cavite	4	12

Source: MMUTIS Project

**TABLE 2.4
 JEEPNEY TERMINALS AND ROUTES BY PROVINCE**

Province	Terminal	Route
Bulacan	14	48
Rizal	14	58
Laguna	12	39
Cavite	22	63

Source: MMUTIS Project

Bulacan

There are 6 bus terminal in the province of Bulacan plying 10 different routes. On the other hand, there are 14 jeepney terminals recorded plying 48 routes.

Rizal

The most number of bus terminals exist in the province of Rizal. However, the number of recorded routes these cover is the lowest among the four provinces. For jeepneys, a total of 14 terminals with 58 different routes exist in the entire province.

Laguna

Laguna has the least number of terminals but with the highest number of routes available. In the case of jeepneys, however, the province posted the lowest number of terminals and routes.

Cavite

As in the case with the province of Laguna, Cavite also posted the lowest number of bus terminals which is 4, but posted the most number of routes. The province likewise posted the highest number of jeepney terminals and routes at 22 and 63 respectively.

3. REVIEW OF PNR RAILWAY NETWORK

3.1 Chronology

In order to extend the railway network to Luzon, the Manila Railway Company was established in 1902. The company opened the Statsenberg Line (?) and developed it covering a distance of about 950 km. until 1938.

In addition to the railway assets under the Spanish regime, the company also operated a 1,140km. long railway network. It was the longest railway operated in the Phiippines.

The chronology of railway network, extension and its gradual decline, after World War II can be outlined as follows:

1946	Only a total of 452 km. of rail network was operational due to war devastation.
1954-56	Steam locomotives were replaced with diesel ones for modernization.
1955	The Bacnotan branch line, with a distance of 20.34 km., was opened.
1964	The Philippine National Railways (PNR) was founded.
1973	The San Pedro-Carmona branch line, with a distance of 4.0 kms. was opened.
1974	PNR reduced its railway operation from 1.059 kms. to 811 kms. due to damages caused by typhoons that hit the country.
1975	The rehabilitation of the South Main Line started through a loan provided by the Asian Development Bank (ADB).
1983	PNR suspended its operation between Dagupan and San Fernando, La Union.
1984	PNR abandoned the branch line between Guinobatan and Camalig, a distance of 18.5 kms.
1986	PNR restored the branch line between Guinobatan and Daraga for long distance service. However, operations between Travesla and Legaspi were suspended due to weak railway tracks.
1987	PNR suspended its operation between Polangui and Travesla due to weak railway tracks.

1988	PNR suspended its operation between Tarlac and Dagupan.
1989	PNR suspended its operation between Malolos and Tarlac. PNR announced the METROTREN plan for commuter service.
1990	The revitalization of the South Line Project started with financial assistance from the Overseas Economic Development Fund (OECF) of Japan.
1991	PNR partially suspended the operation of the North Main Line due to Mt. Pinatubo's eruption.

Table 3.1 summarizes the status of the PNR Network. The entire PNR Network is graphically shown in Figure 3.1.

**TABLE 3.1
STATUS OF THE PNR NETWORK**

Status of Rail Line	North		South	
	Section	Length (km.)	Section	Length (km.)
Operational	Manila-Meycauayan	15	Manila-Ligao Carmona Branch	445 4
Suspended/Abandoned	Meycauayan-San Fernando U.	251	Ligao-Legaspi Calamba-Lipa	34 32
	Cabanatuan Branch	91		
	San Jose Branch	55		
Removed		161		208
Sub-Total		573		723
TOTAL		1,296		

3.2 Analysis of Existing Conditions

Cavite

The railway was extended from Paco, Manila to Naic, Cavite in 1938. However, it was totally abandoned after World War II with no railway assets left. The following situations were observed near the former Naic Station during the field survey:

- Railway tracks are being used as roads.
- The railway bridge and plate-girder were dismantled and is being used as a wooden road-bridge.
- *Paaralang Elementarya ng Ibayo* now stands on the former station site, facing towards *Barangay La Tropica ABC 1991* road.

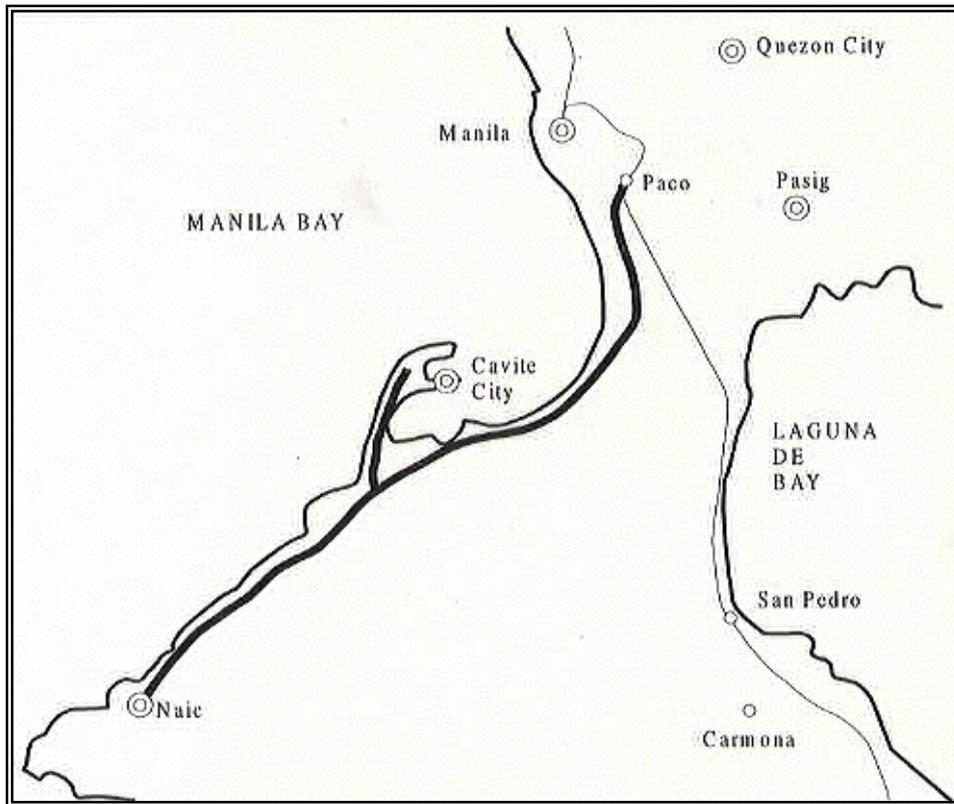
Batangas

Before 1986, PNR operated a branch line between Calamba and Lipa which was later suspended. Moreover, an extension line from Lipa to Batangas City was abandoned before 1986.

The Study Team found traces of the suspended railway near the former Tanauan Station. The observations are as follows:

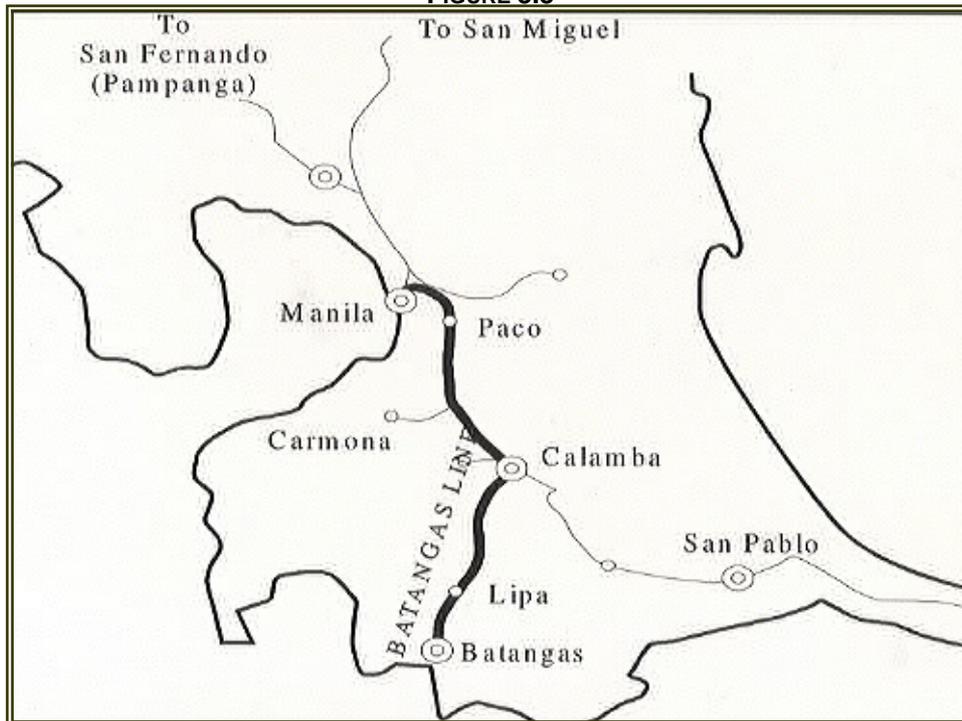
- Houses are built along the railway tracks.
- Only some parts of the tracks remain.
- Railway tracks are now being used as roads.
- Market vendors occupy the former station site.

FIGURE 3.2
MAP OF NAIC RAILWAY LINE (ABANDONED)

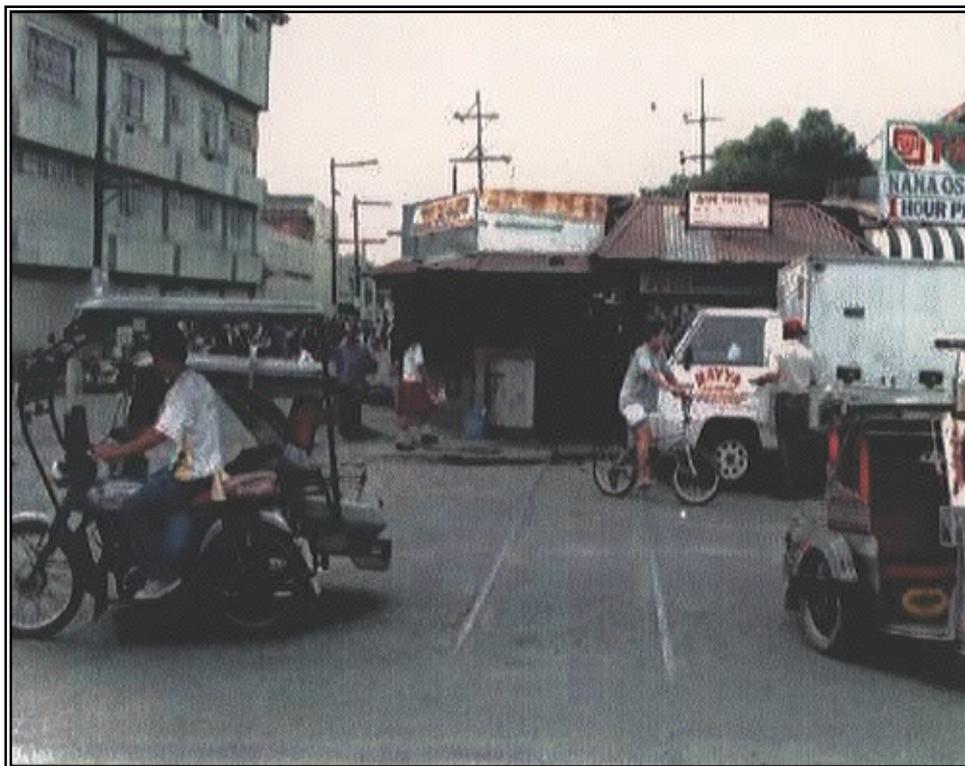


Ibayo Elementary School stands on the Old Naic Station

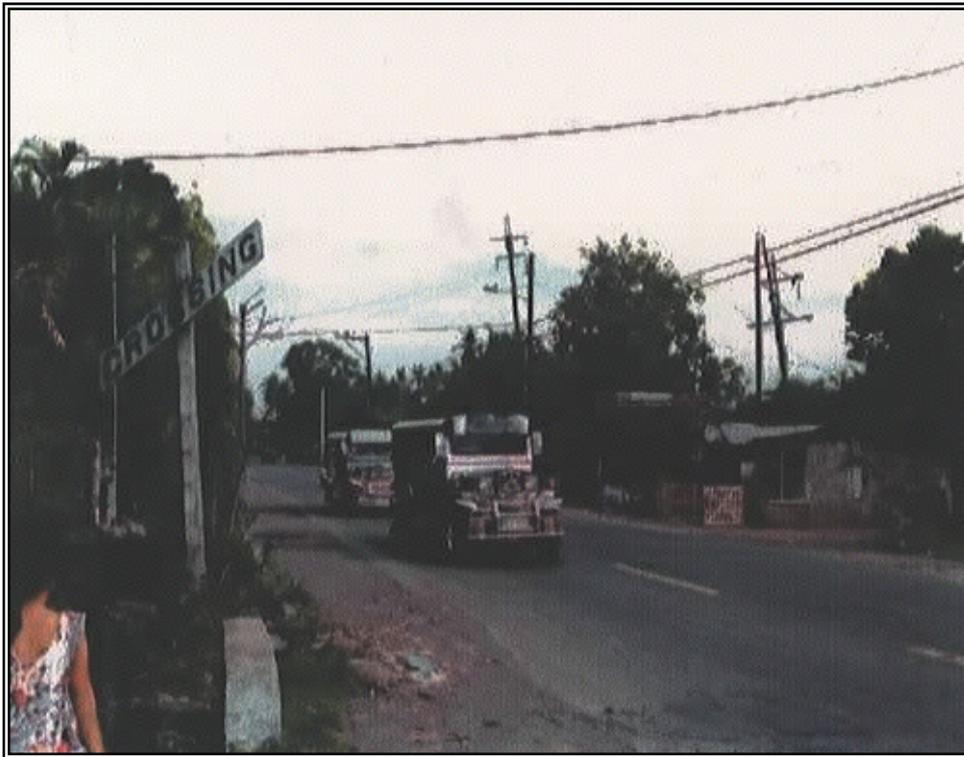
FIGURE 3.3



Section Calamba – Lipa = Suspended
Section Lipa – Batangas = Abandoned



An old railway crossing



An old railway crossing along the National Highway, Sto. Tomas, Batangas



Houses built along railway tracks