

**Republic of the Philippines**

**DOTC\*MMDA\*DPWH\*NEDA\*PNP-NCR\*HUDCC\*UP-NCTS\*EMB  
Japan International Cooperation Agency (JICA)**

**METRO MANILA  
URBAN TRANSPORTATION  
INTEGRATION STUDY**

**TECHNICAL REPORT NO. 5**

**TRANSPORTATION  
TERMINALS**

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**mmutis**

**MMUTIS STUDY TEAM**

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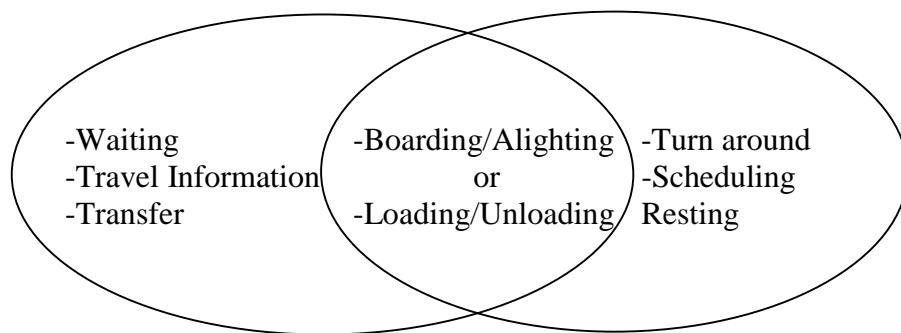
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# 1. INTRODUCTION

## 1.1 Definition of Public Transportation Terminals

From the planning or engineering viewpoints, transportation terminals can be defined as an area or facility with the fundamental function of properly meeting the passengers' boarding/alighting or vehicles' loading/unloading requirements. Passengers further require waiting and transfer areas as well as travel information services, while vehicles (drivers) require turn-around, scheduling and parking facilities for efficient operation as schematically shown below.

**FIGURE 1.1**  
**BASIC FUNCTION OF THE TRANSPORTATION TERMINAL**



Transportation terminals are defined as facilities of starting and ending points of the public transportation systems, such as railroad, LRT and bus transport. Examples are railway terminal, bus terminal, LRT terminal, etc. Sometimes, these terminals are called Public Transport Terminals, Multi-Modal Terminals, or Integrated Transport Terminals.

In transportation planning, transport terminals are also called Mode Interchange and Transport Nodes. Mode interchanges mainly refer to transfer points from one to another. On the other hand, transport nodes are basically boarding and alighting points, including terminals, railway/LRT stations and bus stops.

For this MMUTIS technical report, the following terms will be applied:

Transportation Node: covers all boarding and alighting points including terminals, stations and bus stops.

Mode Interchange: refers to the transfer points from one mode to another mode, such as from railway to LRT, LRT to bus transport, and so forth.

Public Transport Terminal: means termination and destination facilities for the public transport system, such as railway terminal and bus terminals. The facilities for several public transport modes will be called Multi-Modal Transport Terminal.

In addition to the above terminology, another important term utilized in this study is the following:

Integrated Transport Node

Area Development: which refers to the integrated development of the transportation facilities with urban development projects.

## **1.2 The Need for Terminals in Metro Manila**

Rapid urbanization and motorization have resulted in serious traffic congestion and environmental pollution in Metro Manila. Due to this traffic nuisance, urban economic activities have also been adversely affected.

The Government of Philippines recognizes the traffic problem as a national issue and has introduced a series of possible countermeasures. Unfortunately, these countermeasures so far have not been effective enough to eliminate the traffic congestion.

The transportation system in Metro Manila is mainly a road-based transportation system, including private motorcar, bus and jeepney. There are two rail-based transportation systems, the PNR and LRT Line 1. However, the PNR line has very limited operation while Line 1 already has overcapacity.

In order to eliminate traffic congestion in the metropolis, development of the rail-based transportation network system has become the most significant issue.

## **1.3 Planning Components of Terminal Development**

There are two basic issues in transportation development planning, namely the planning issue and the institutional Issue. The planning issue is further divided into two aspects; one is transportation and the other is urban development. To ensure their effectiveness, the transportation terminal plans should be carefully examined in terms of these three major planning aspects.

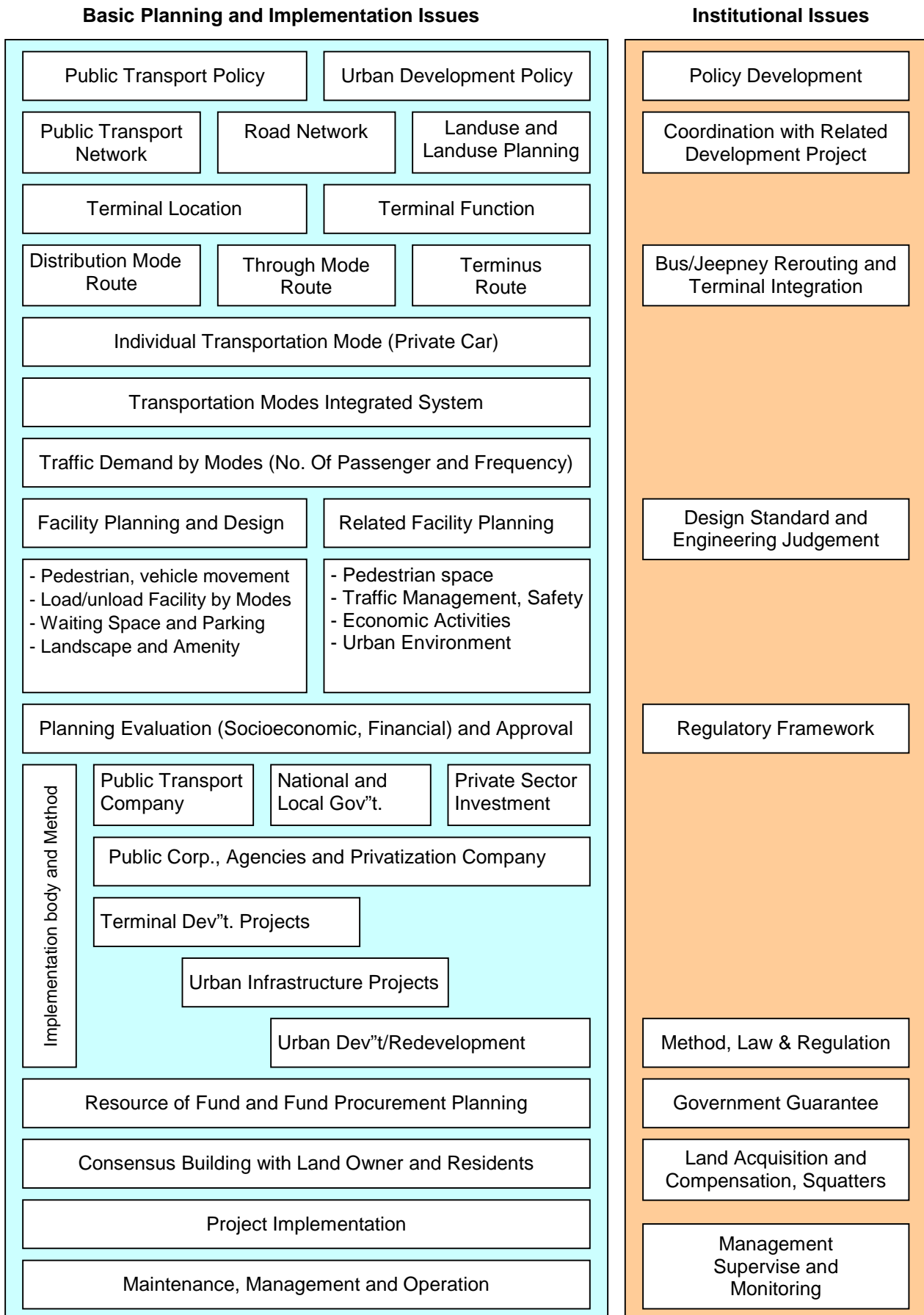
Figure 1.2 shows the planning components which have to be considered in terminal development. Although the terminal, as defined earlier, is part of the transportation facility providing better accessibility between transport modes, coordination with urban development is indispensable to enhance the effectiveness of the public transport system.

The institutional issues looks at how to guarantee the smooth implementation of the projects and the appropriate management and operation of the terminals. They provide an idea of the terminal development projects discussed since the early 1980's under the JUMSUT study.

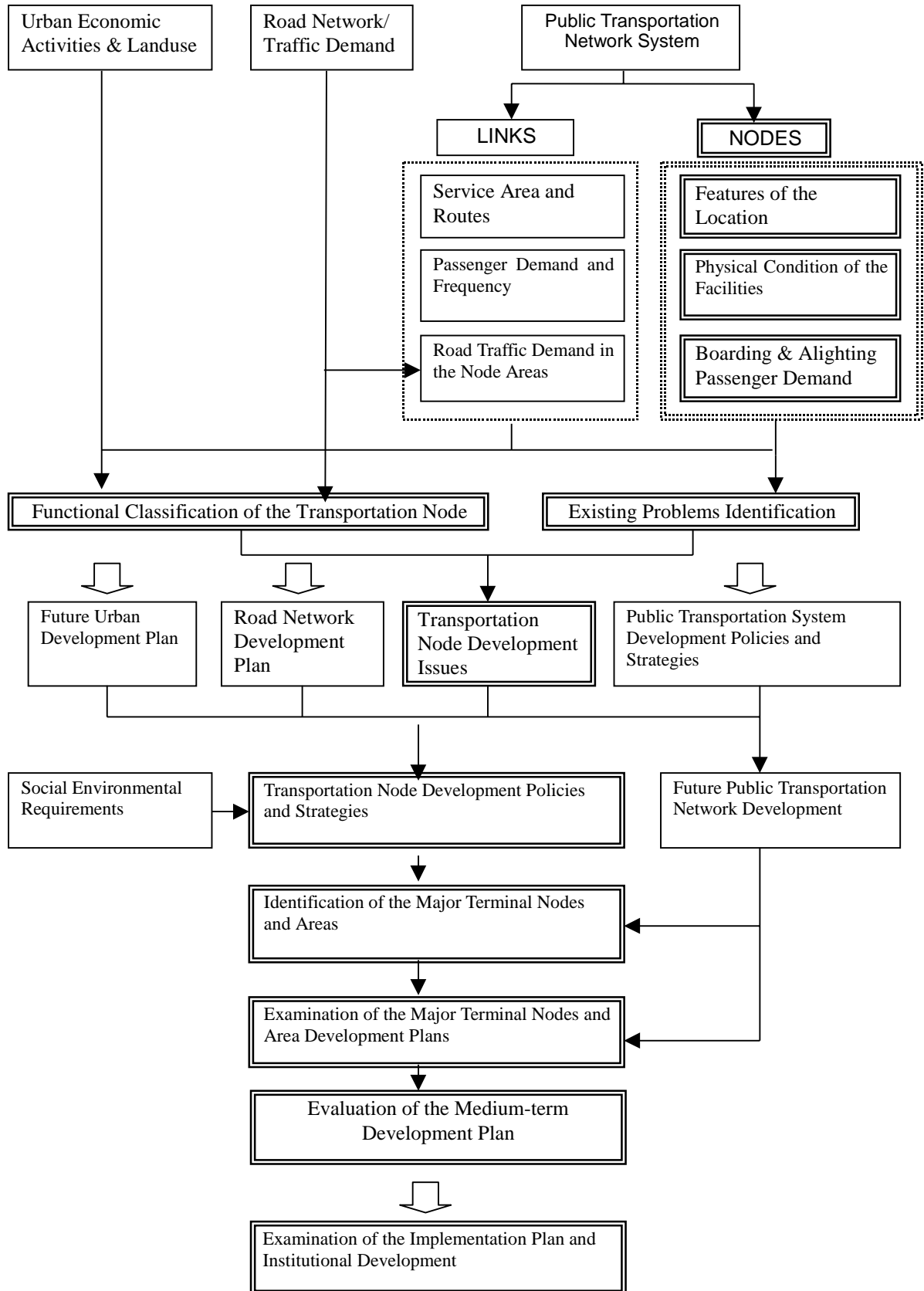
Figure 1.3 shows the examination process for the terminal development study under MMUTIS. The study will make an effort to establish a functional classification of the terminals.



**FIGURE 1.2**  
**PLANNING COMPONENTS OF TERMINAL DEVELOPMENT**



**FIGURE 1.3**  
**EXAMINATION PROCESS FOR THE TERMINAL DEVELOPMENT STUDY (MMUTIS)**



## 2. EXISTING PUBLIC TRANSPORTATION TERMINALS

### 2.1 Number of Terminals and Locations

At present, there are a number of public transportation terminals scattered throughout the study area (refer to Figures 2.1 to 2.4). However, most of these terminals are on-road turning circuits or parking spaces without any facilities both for passengers and drivers (refer to Table 2.1).

**TABLE 2.1**  
**NUMBER OF BUS, JEEPNEY AND TRICYCLE TERMINALS**

Location	Bus	Jeepney	Tricycle
Metro Manila	35	210	640
Adjoining Area	23	113	551
Study Area Total	58	323	1,191

Large-scale bus terminals are mostly located in Cubao, Buendia, Baclaran, Quiapo/Sta. Cruz, Monumento, Alabang, etc. Cubao's share of total intercity bus terminals is particularly high. Jeepney terminals are concentrated in Manila City, around EDSA, and in some suburban areas like Novaliches and Alabang. Tricycle terminals are found everywhere except in highly developed business/commercial areas and some upper-class subdivisions.

### 2.2 Traffic Demand of the Terminals

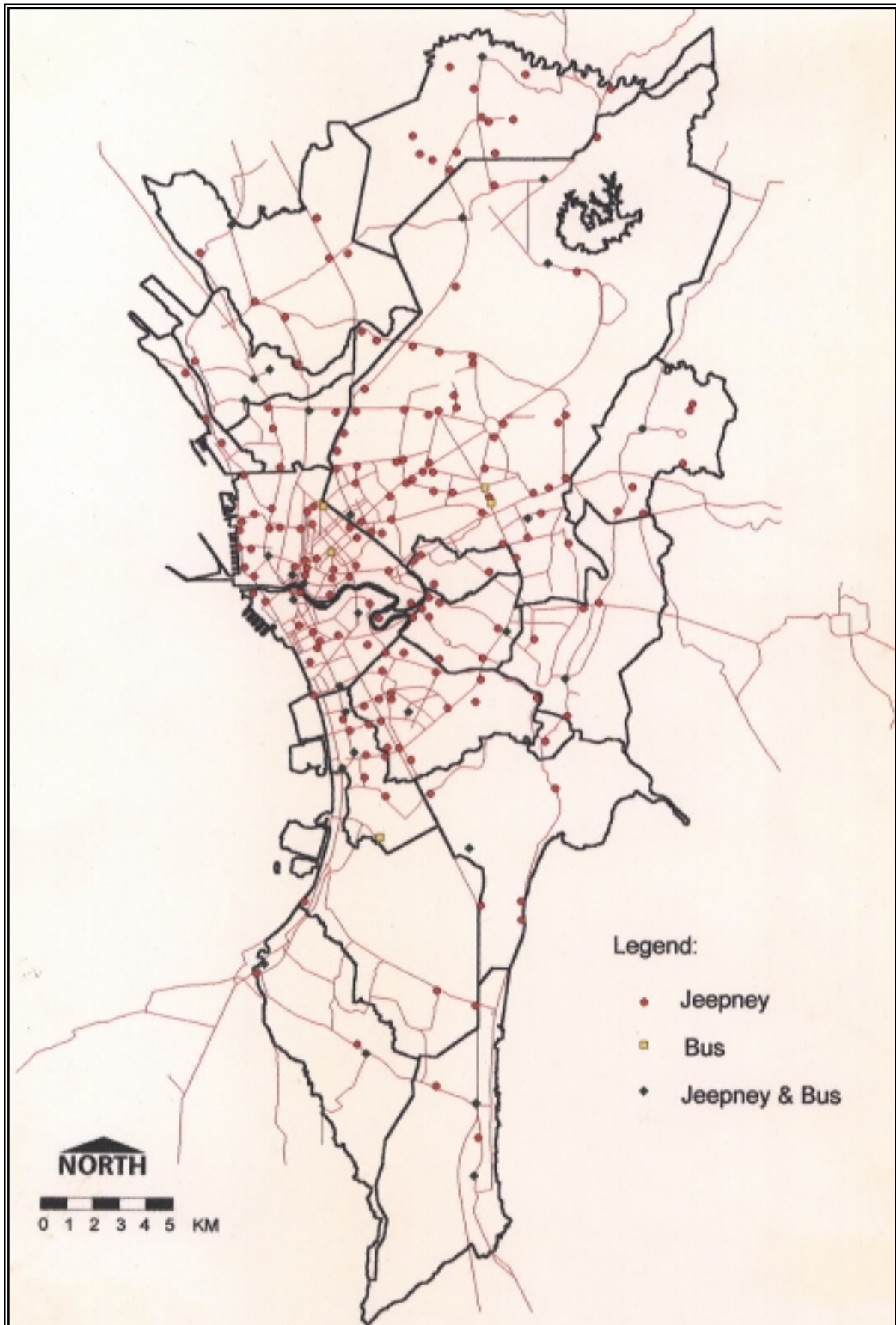
The turn over volumes of vehicles in a terminal is indicative of its demand. Figures 2.5 and 2.6 present the number of leaving/arriving jeepneys, buses and tricycles by terminal, respectively. It is noted that areas within the City of Manila still exhibit high demand for its terminals.

One of the major functions of public transportation terminals is to provide facilities for transferring passengers. The number of transfers between jeepneys and tricycles is 3.1 million a day. Transfers between jeepney and jeepney are about 2.9 million, and between jeepney and bus, 2.2 million (refer to Table 2.2 and Figures 2.7 to 2.10).

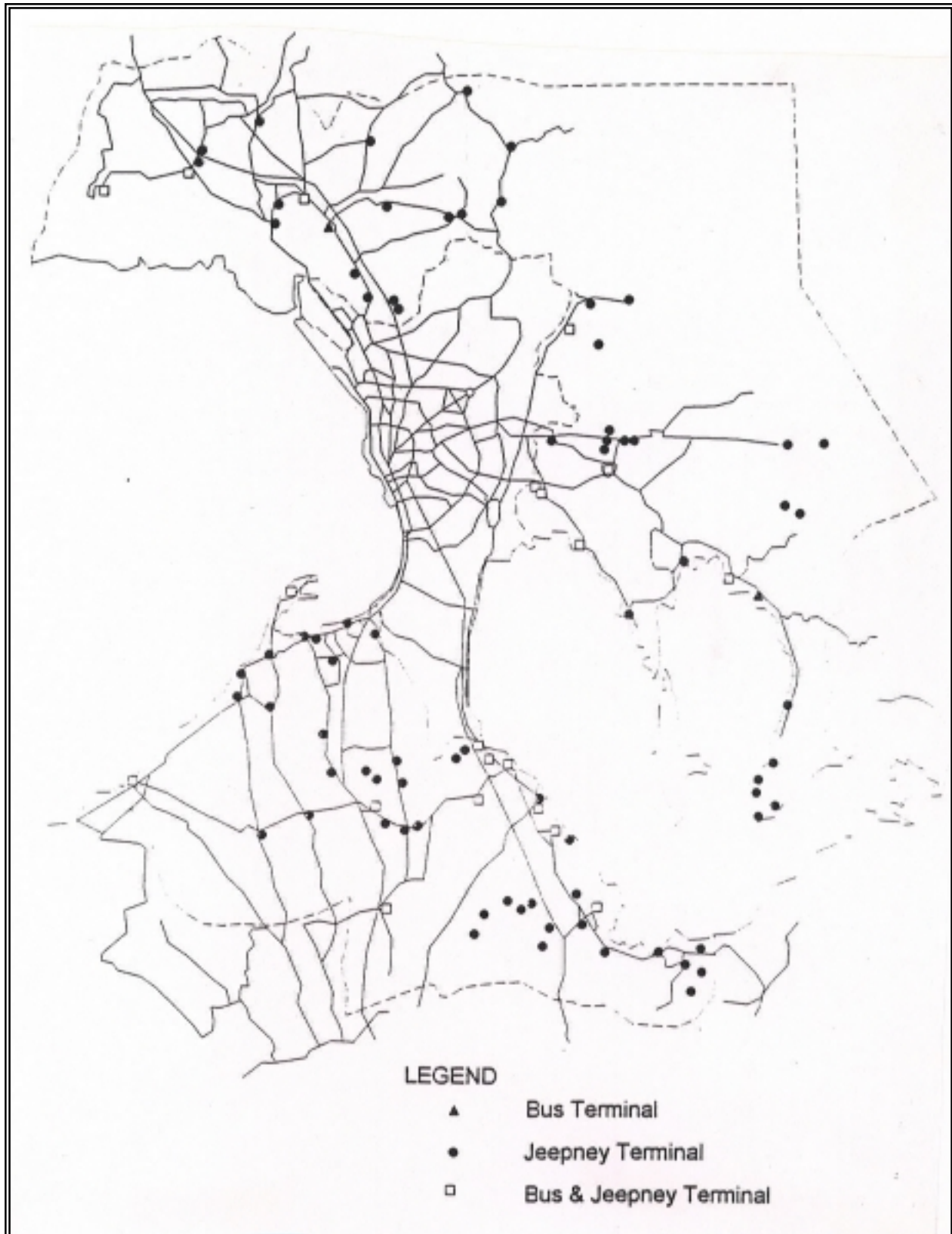
**TABLE 2.2**  
**NUMBER OF PASSENGER TRANSFERS BETWEEN TRANSPORT MODES**

Mode	(000 person trips)							
	LRT/ PNR	Tricycle	Jeepney	Bus	Taxi	Car/ Truck	Others	Total
LRT/PNR	1	19	170	29	2	1	0	222
Tricycle	16	93	1,540	347	28	13	6	2,042
Jeepney	164	1,531	2,911	1,086	54	23	8	5,776
Bus	31	349	1,105	105	22	13	0	1,624
Taxi	4	46	65	27	10	3	4	18
Car/Truck	0	11	16	3	0	0	0	32
Others	0	6	8	1	0	4	0	20
<b>Total</b>	<b>215</b>	<b>2,055</b>	<b>5,815</b>	<b>1,597</b>	<b>116</b>	<b>56</b>	<b>20</b>	<b>9,874</b>

FIGURE 2.1  
LOCATION OF BUS/JEEPNEY TERMINALS IN METRO MANILA



**FIGURE 2.2**  
**LOCATION OF BUS/JEEPNEY TERMINALS IN THE STUDY AREA**  
**(OUTSIDE METRO MANILA)**



**FIGURE 2.3**  
**TRICYCLE TERMINALS AND SERVICE AREAS IN METRO MANILA**



**FIGURE 2.4**  
**TRICYCLE TERMINALS IN THE STUDY AREA**  
**(OUTSIDE METRO MANILA)**

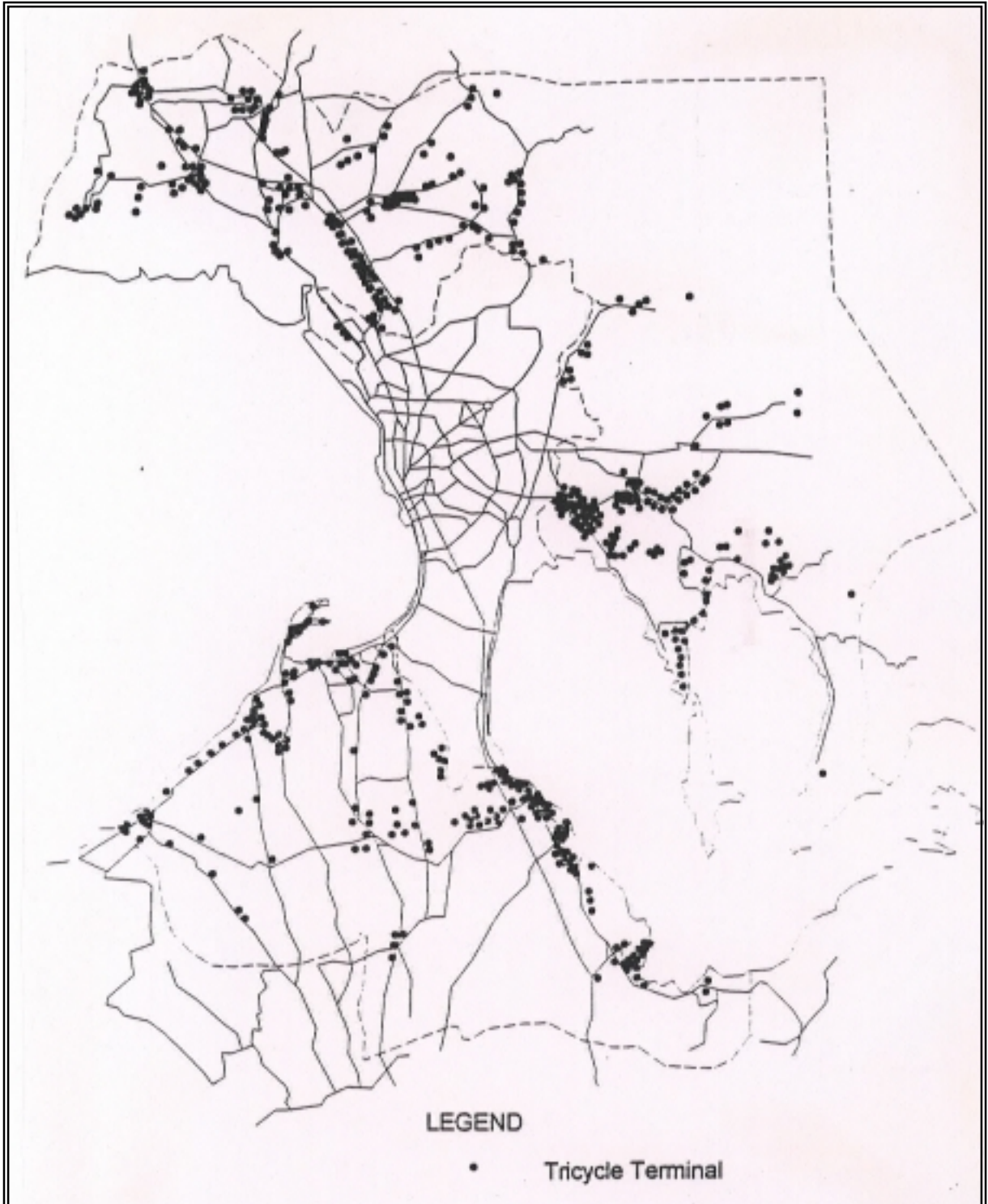
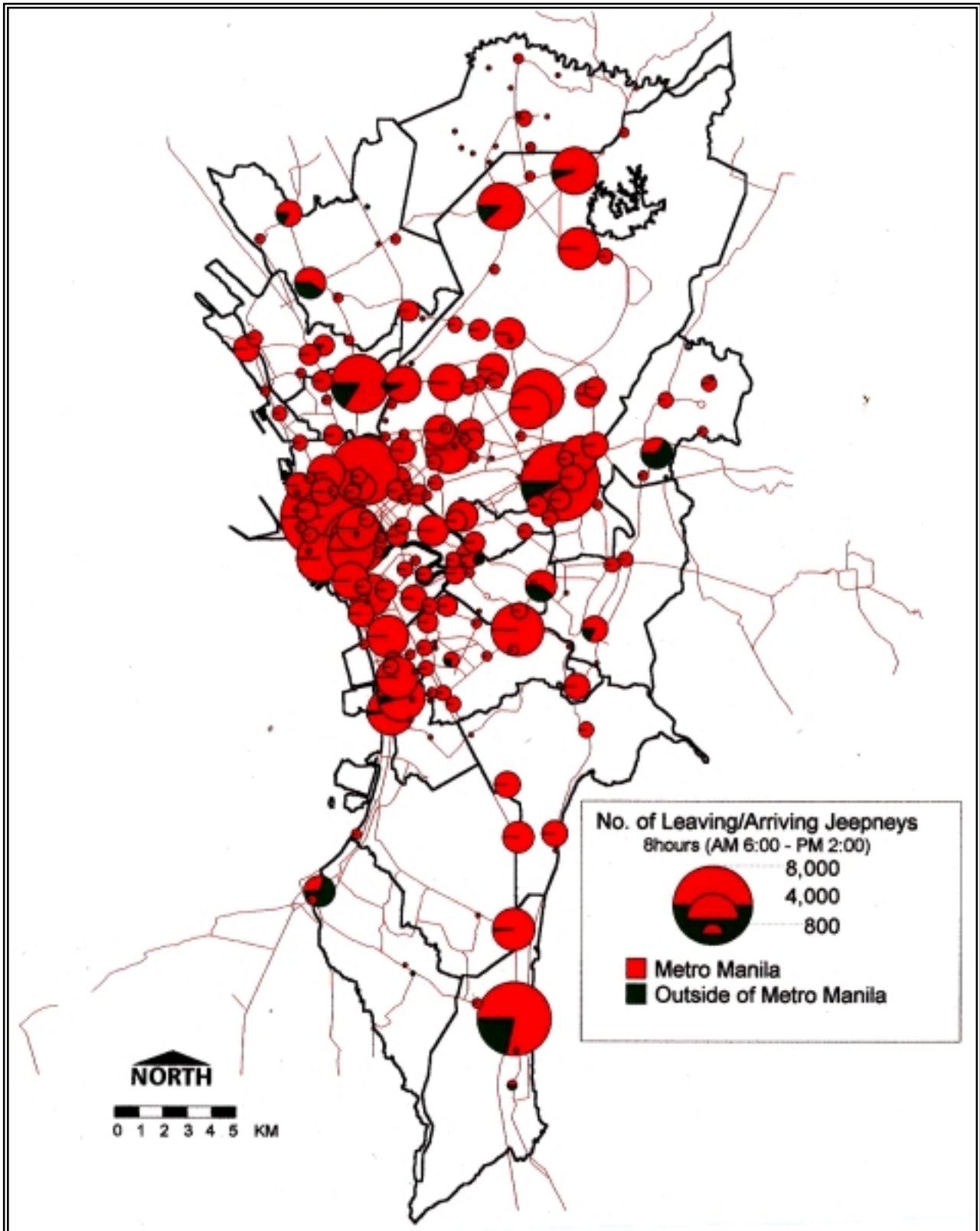
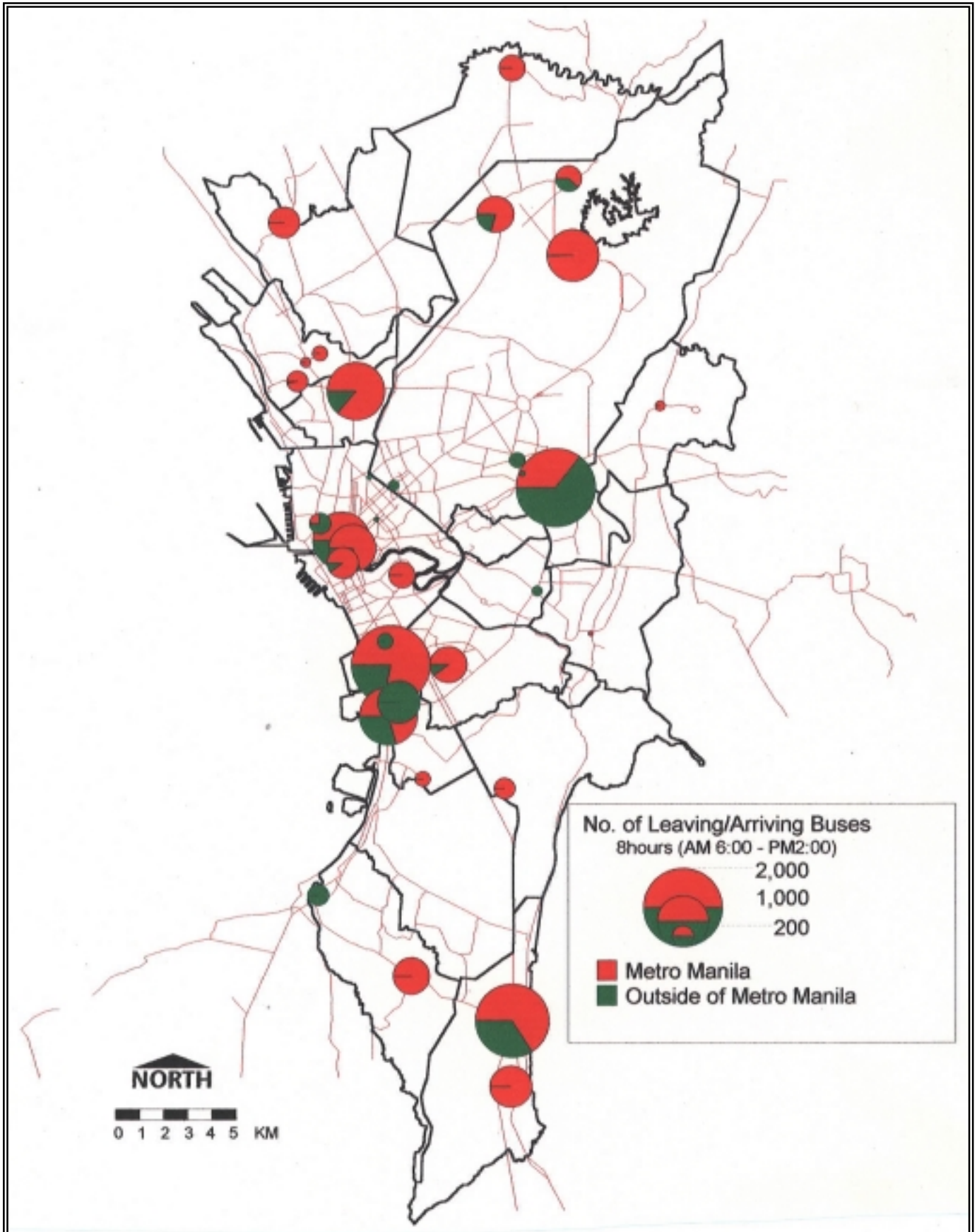


FIGURE 2.5  
No. of LEAVING/ARRIVING JEEPNEYS, BY TERMINAL



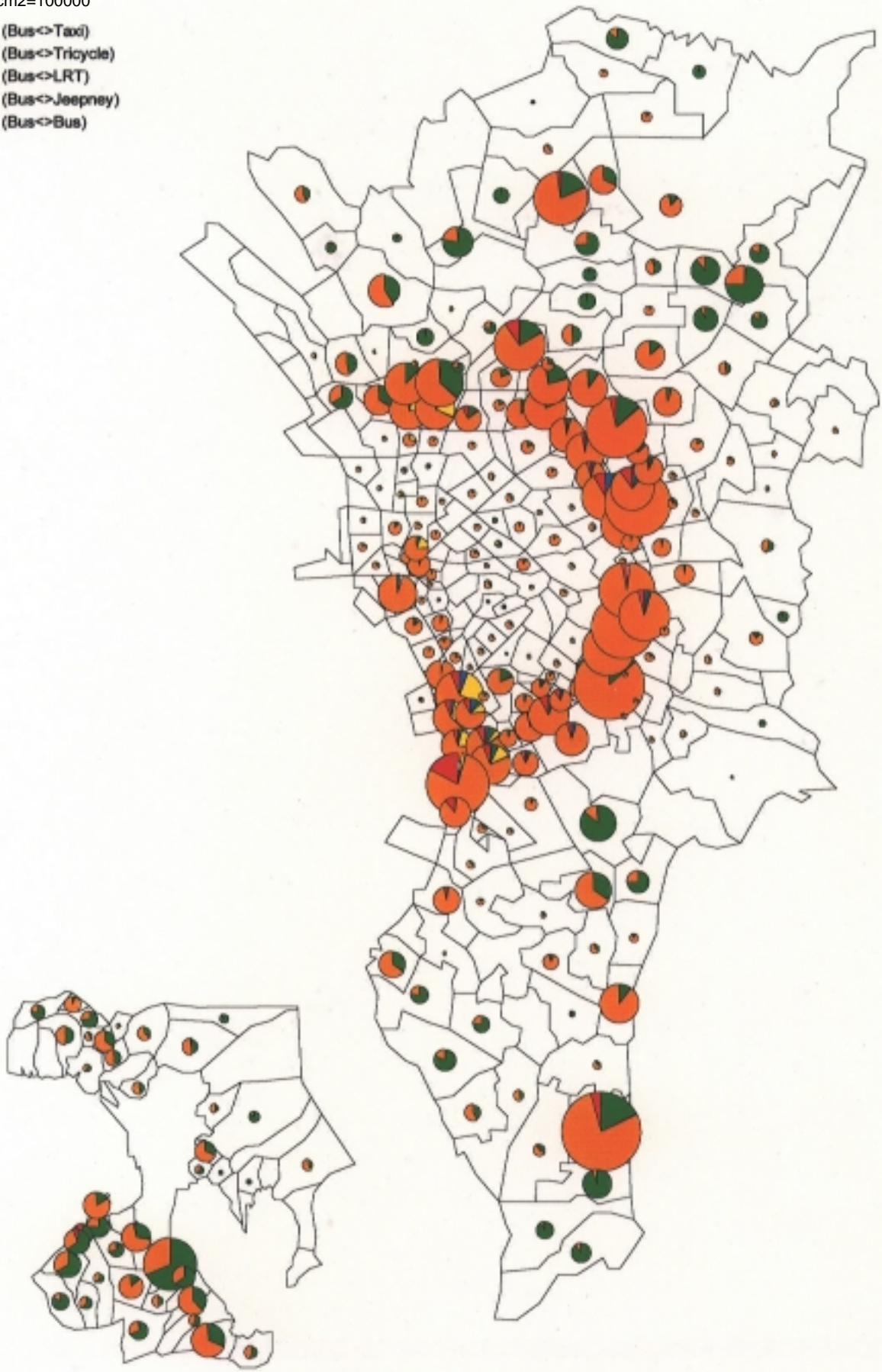
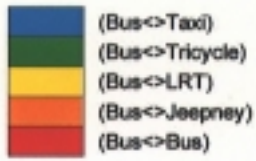


**FIGURE 2.6**  
**NO. OF LEAVING/ARRIVING BUSES, BY TERMINAL**



**FIGURE 2.7**  
**DISTRIBUTION OF TRANSFERS BETWEEN BUS AND OTHER MODES**

Legend:  
Scale: 1cm<sup>2</sup>=100000



**FIGURE 2.8**  
**DISTRIBUTION OF TRANSFERS BETWEEN JEEPNEY AND OTHER MODES**

Legend:  
Scale: 1cm<sup>2</sup>= 150000

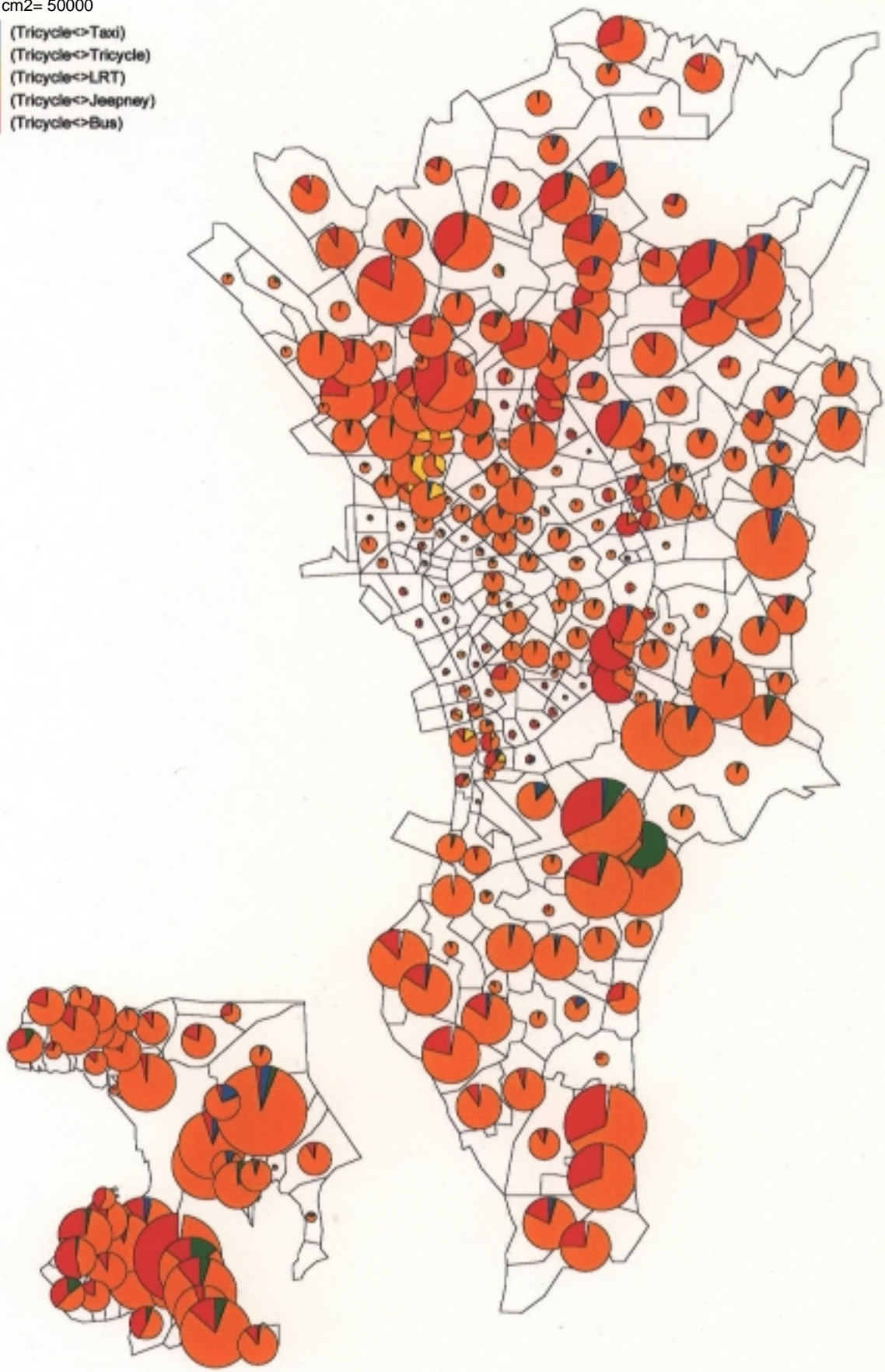
-  (Jeepney <math>\leftrightarrow</math> Taxi)
-  (Jeepney <math>\leftrightarrow</math> Tricycle)
-  (Jeepney <math>\leftrightarrow</math> LRT)
-  (Jeepney <math>\leftrightarrow</math> Jeepney)
-  (Jeepney <math>\leftrightarrow</math> Bus)



**FIGURE 2.9**  
**DISTRIBUTION OF TRANSFERS BETWEEN TRICYCLE AND OTHER MODES**

Legend:  
Scale: 1cm<sup>2</sup>= 50000

-  (Tricycle<->Taxi)
-  (Tricycle<->Tricycle)
-  (Tricycle<->LRT)
-  (Tricycle<->Jeepney)
-  (Tricycle<->Bus)



**FIGURE 2.10**  
**DISTRIBUTION OF TRANSFERS BETWEEN TAXI AND OTHER MODES**

Legend:  
Scale: 1cm<sup>2</sup>= 15000

