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Department of Transportation and Communications (DOTC)

The Project for Capacity Development on Transportation Planning and Database Management in the Republic of the Philippines

MMUTIS Update and Enhancement Project
(MUCEP)

Manual vol. 2

Travel Demand Forecasting

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ABBREVIATIONS

AADT	annual average daily traffic
BPR	Bureau of Public Roads
DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
EDSA	Epifanio de los Santos Avenue
GDP	gross domestic product
h	hour
HIS	household interview survey
JICA	Japan International Cooperation Agency
km	kilometer
LRT	Light rail transit
LRTA	Light Rail Transportation Authority
LTFRB	Land Transportation Franchising and Regulatory Board
MMDA	Metropolitan Manila Development Authority
MRT 3	Metro Rail Transit Line 3
MRTC	Metro Rail Transit Corporation
MUCEP	MMUTIS Update and Capacity Enhancement Project
NCR	National Capital Region
O-D	origin–destination
PCEF	passenger car equivalent factor
PCU	passenger car unit
PHP	Philippine peso
PNR	Philippine National Railways
PT	public transportation
PUB	public utility bus
PUJ	public utility jeepney
RTIA	Road Traffic Information Application
TAZ	traffic analysis zone

1 INTRODUCTION

1.1 Background

The acceleration of economic activities and population concentration in Metro Manila and other cities in the Philippines has caused severe social problems such as traffic congestion, traffic accidents, and deterioration of the living environment. The development of the public transportation network is crucial in tackling these problems. In addition, investment in infrastructure development is essential to realize a sustainable economic growth. Metro Manila, in particular, requires a transportation policy to facilitate a modal shift from private cars to public transportation by developing and integrating transportation networks and strengthening linkages between transportation modes.

It is within this context that the Government of Japan has provided technical assistance to the Philippines' Department of Transportation and Communications (DOTC) and other related agencies through the Japan International Cooperation Agency (JICA) in conducting a capacity development project entitled "The Project for Capacity Development on Transportation Planning and Database Management in the Republic of the Philippines." MUCEP, as the project is known (short for MMUTIS Update and Capacity Enhancement Project), has been carried out for more than four years, starting on 27 September 2011 and completing on 30 November 2015.

The overall project goal of MUCEP is to enable the DOTC to prepare a public transportation plan for Metro Manila for strategic corridors by strengthening their capacity in transportation database management and public transportation network planning. Transportation planning requires a multi-disciplinary approach with important considerations given to socio-economic conditions, environment, and sustainability.

Toward this end, the project included capacity building in travel demand forecasting carried out through pilot studies. Demand forecasting is a multi-stage process and can use several different techniques at each stage. It is undertaken in order to:

- Estimate the impact of any improvement projects, such as the construction of new roads and rehabilitation of old railways, on the transportation system; and
- Estimate the impact of any policies, such as tolls, fare level of public transportation, truck ban, and road pricing, on the transportation system.

1.2 Objectives

This manual on travel demand forecasting aims at providing an easy-to-understand and logical guide to travel demand analysis and modeling as part of transportation planning.

Generally, travel demand modeling is complex with variable approaches depending on the type of transportation planning activity. As such, it is suggested that approaches presented in this manual should be carefully evaluated as to their applicability in terms of the goals of the planning activity and the conditions for implementation (i.e., coverage, time frame, finances, data availability, etc.).

1.3 Structure of the Manual

This manual is composed of five chapters, namely:

- (i) Key Concepts
- (ii) Database Development
- (iii) Four-step Model
- (iv) Sketch Planning Methodology
- (v) Sample Sketch Planning Model

1.4 How to Use this Manual

This manual provides the users with a logical guide and a step-by-step approach for undertaking travel demand analysis and modeling based on the application of established techniques and tools to achieve the required planning results.

2 KEY CONCEPTS

Cities are locations with high accumulation and concentration of economic activities and are complex spatial structures supported by transportation systems. The most important transportation problems often relate to urban areas, especially when urban transportation systems, for a variety of reasons, cannot satisfy the numerous requirements of urban circulation.

Urban productivity is highly dependent on the efficiency of the transportation system, notably to move labor, consumers, and freight between several origins and destinations. The growing complexity of cities has been accompanied by a wide array of urban transportation problems.

Problems associated with urban transportation are:

- (i) Traffic congestion and parking difficulties
 - Most prevalent transportation problems in large urban agglomerations
 - Linked with the diffusion of the automobile, which increases parking demand in places often incapable of handling such requirements
 - Transportation infrastructure developments have often not been able to keep up with the growth of circulation
- (ii) Public transportation inadequacy
 - Many public transit systems, or parts of them, are either over or underused; and
 - During peak hours, crowdedness is creating discomfort for users while low ridership makes many services financially unsustainable, particularly in suburban areas.
- (iii) Difficulties for pedestrians
 - These difficulties are either the outcome of intense circulation where pedestrians and vehicles are impairing their respective movements, but also because of a blatant lack of considering pedestrian movements in the physical design of facilities.
- (iv) Environmental impacts and energy consumption
 - Pollution, including noise, generated by circulation has become a serious impediment to the quality of life and even the health of urban populations
 - Energy consumption by urban transportation has dramatically increased and so has the dependency on petroleum.
- (v) Loss of public space
 - The majority of roads are publicly owned and accessible. With the increase in traffic volumes, adverse impacts on public activities have been important;
 - In many cases, street activities (e.g., markets, agoras, parades and processions, games, and community interactions) have shifted to shopping malls, while in other cases, such activities have been abandoned altogether;
 - Traffic volumes influence the life and interactions of residents and their usage of street space;
 - More traffic encourages less social interactions and fewer street activities; and

- Heavy traffic also has adverse impact on human health. In fact, people tend to walk and cycle less when traffic is heavy.

(vi) Accidents and safety

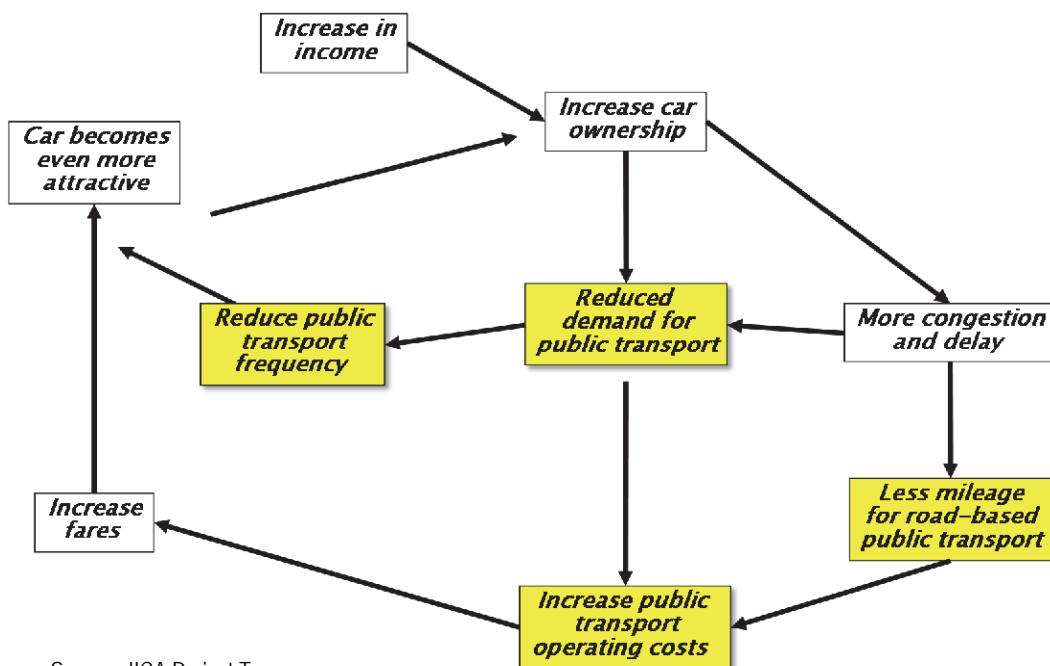
- Growing circulation in urban areas has been linked to a growing number of accidents and fatalities, especially in developing countries.

(vii) Land consumption

- As between 30% and 60% of a metropolitan area can be devoted to transportation, a large amount of land can be considered as wasted by an over-reliance on some forms of urban transportation.

A vicious cycle between car and public transportation exist wherein greater use of private cars reduces the demand for public transportation.

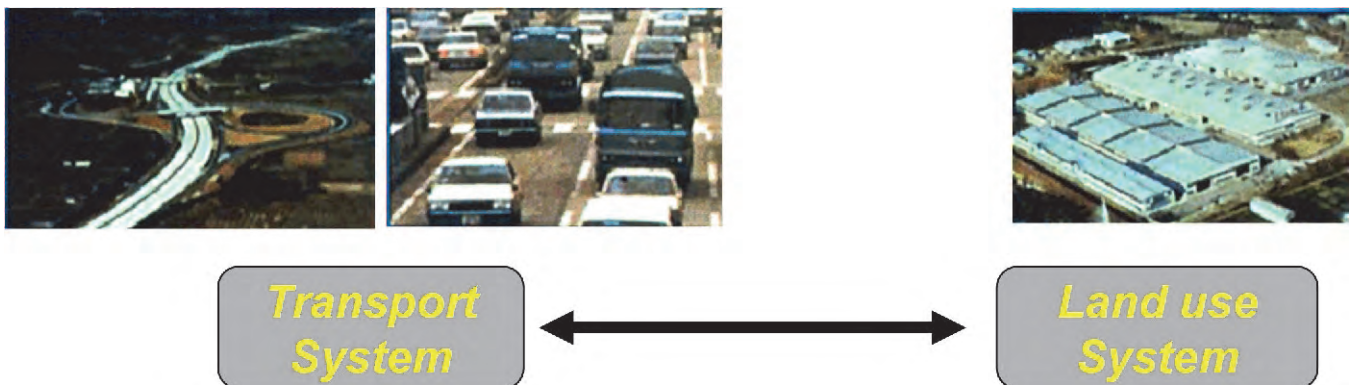
Figure 2.1: Car–Public Transportation Vicious Cycle



Source: JICA Project Team

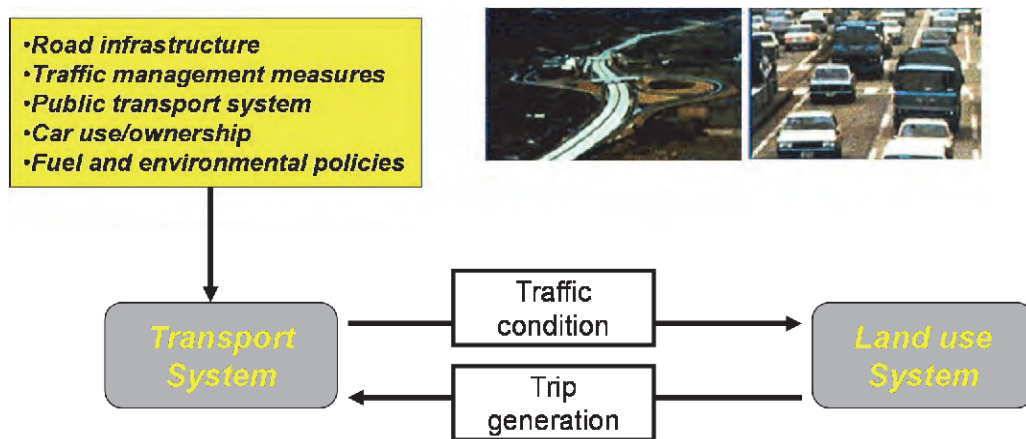
The concept of land use–transportation interaction asserts that land use and transportation systems are tightly interconnected. Any change in either variable will have an impact on the other.

Figure 2.2: Land Use and Transportation Interaction



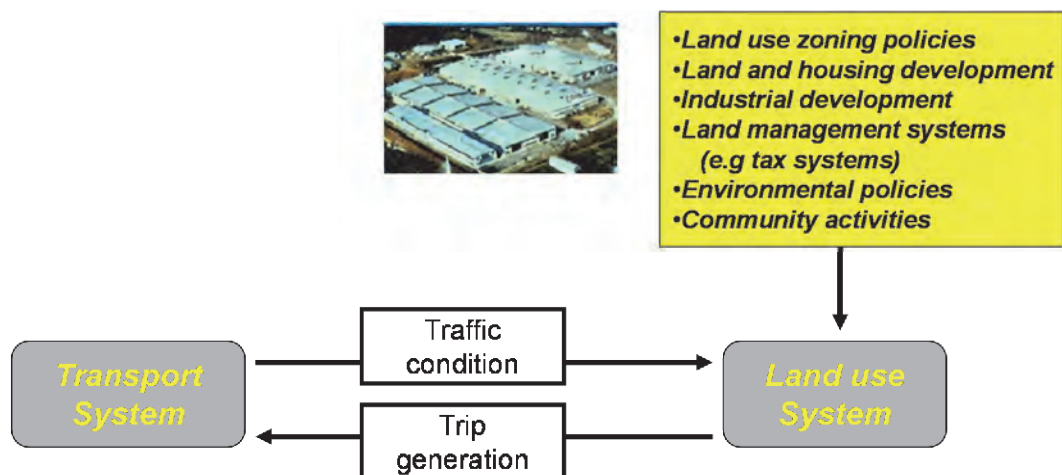
Source: JICA Project Team

Figure 2.3: Changes in the Transportation System



Source: JICA Project Team

Figure 2.4: Changes in the Land Use System



Source: JICA Project Team

The challenges in integrating land use and transportation are:

- (i) Weak integration of the social dimensions of urban planning in existing systems;
- (ii) Weak coordination mechanisms among local governments and the higher planning authorities
 - Effective land-use planning has two components: long-term comprehensive planning to deal with metropolitan scale issues and site or locality-specific plans.
- (iii) Lack of integrated planning models that are capable of addressing air pollution, transportation, and health issues as decision-support tools for a comprehensive planning process.
 - There is a need for good data but also for models that are not overly data-hungry.
 - Scope for development of 'sketch planning' methods
- (iv) Lack of effective urban development management skills, which are required to manage the implementation of land use/ transportation plans and policies.
 - Significant technical capacity, preferably at a local level, is required to provide

responsive urban management.

(v) Lack of timely provision of infrastructure

- Transportation is a useful instrument for structuring land uses within an appropriate planning framework.

In rejecting the former paradigm of building capacity, transportation planners have turned increasingly to managing both demand and the transportation system. Building roads has produced a car-oriented society in which the other modal alternatives have little opportunity to co-exist.

Car ownership is beyond the ability of the transportation planner to control directly, and the question remains if it should. But car use and ownership are affected by land use and density, both elements that planners can affect. High population densities, in particular, favor walking, bicycling, and public transit use.

A great deal of attention in planning is being paid to densification and integration. These include concentrating development along well-served transportation corridors (transit-oriented development) and increasing densities in areas undergoing rehabilitation.

Managing the demand for travel is made up of a large number of small interventions that cumulatively can have an impact on car use, but in particular improve the livability of cities.

Some of the well-practiced and successful interventions include:

- (i) Implementing park and ride schemes;
- (ii) Carrying out traffic calming measures;
- (iii) Providing priority lanes for buses and high occupancy vehicles;
- (iv) Adopting alternate work schedules;
- (v) Promoting bicycle use;
- (vi) Sharing cars;
- (vii) Enhancing pedestrian areas;
- (viii) Improving public transit; and
- (ix) Managing parking.

Sustainable development is defined as the "development which meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission in 1987).

A sustainable city must offer to its population a suitable urban environment, employment, food, housing, and transportation without compromising the welfare of the future population of that city.

There are three dimensions of sustainable development, as follows:

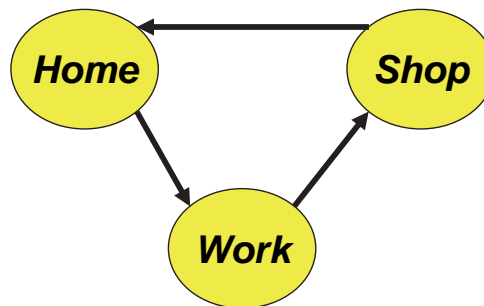
- (a) **Intergenerational Equity:** The success of cities of the future will largely depend upon the legacy on current cities on resources and the environment. National capital assets passed on to the next generation must be at least of equal value.
- (b) **Social Equity:** This implies a fair and equitable distribution of resources among the current generation. In terms of the urban environment, the city should provide a place of equal opportunity and not be an agent of segregation.

(c) **Spatial Responsibility:** This involves the idea that the city has a "footprint" which is considerably larger than the area it occupies. This includes supply of resources and wastes, whose impacts must be considered in the total space a city occupies.

Transportation planning is the functional area within transportation engineering that deals with the relationship of land use to travel patterns and demands. It involves the planning, evaluation, and programming of transportation facilities, including roadways, transit terminals, parking, pedestrian facilities, bikeways, and goods movement.

A trip is a one-way movement from a point of origin to a point of destination. Home-based trips are trips that either start from or end at the home. Trips from home to work are referred to as home-based work (HBW) trips. Trips from home to school are referred to as home-based school (HBS) trips. Other types of trips originating from home are referred to as home-based others (HBO). Finally, trips that do not have home as their origin or destination are referred to as non-home-based (NHB) trips.

Figure 2.5: Definition of a Trip



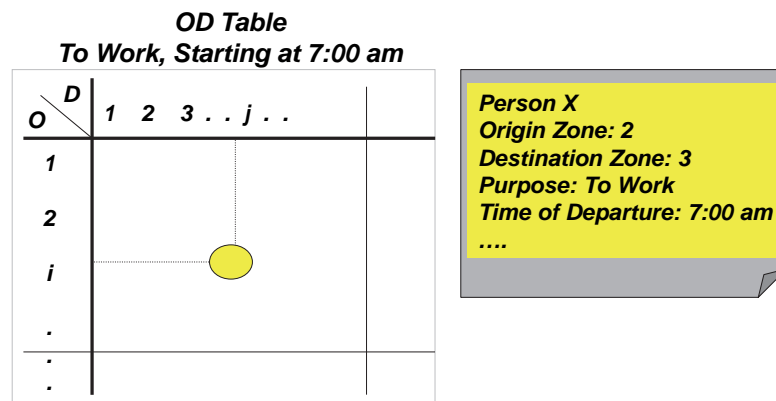
Source: JICA Project Team

Trips captured in the conduct of household interview surveys (HIS) can be classified based on:

- (i) Purpose (Work, School, Shop, Others);
- (ii) Time of day (AM, PM, peak, off-peak); and
- (iii) Person type (income, car ownership, family size, accessibility, etc.).

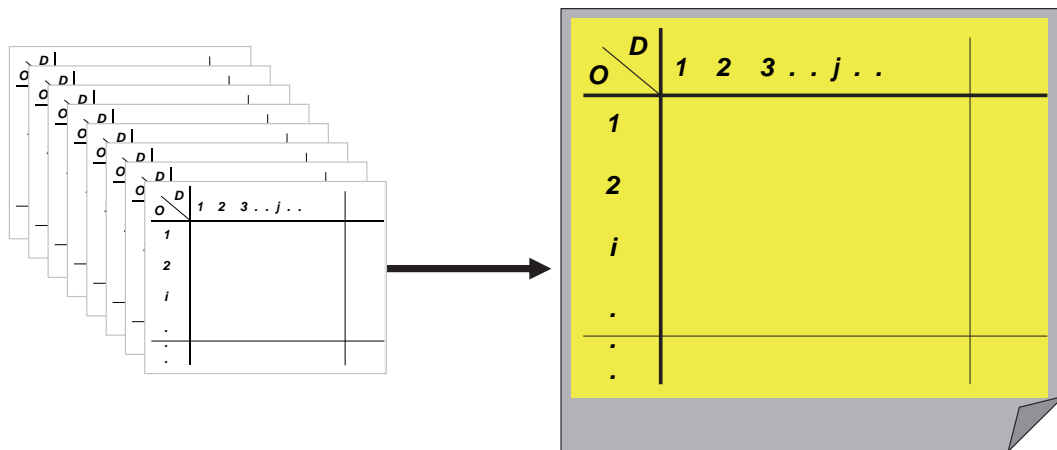
The origin-destination (OD) data is a collection of typical day trip activities of residents within the study area.

Figure 2.6: Single Trip Entry



Source: JICA Project Team

Figure 2.7: Constructing an OD Table



Source: JICA Project Team

Transportation demand models refer to a series of mathematical equations that are used to represent how choices are made when people travel. Travel demand occurs as a result of thousands of individual travelers making individual decisions on how, where, and when to travel. These decisions are affected by many factors such as family situations, characteristics of the person making the trip, and the choices (destination, route, and mode) available for the trip.

Mathematical relationships are used to represent (model) human behavior in making these choices. Models require a series of assumptions in order to work and are limited by the data available to make forecasts. The coefficients and parameters in the model are calibrated using existing data. Normally, these relationships are assumed to be valid and to remain constant in the future.

Travel demand modeling was first developed in the late 1950s. Since then the modeling process has been modified to add additional techniques to deal with other problems that have arisen, such as transit, land-use issues, and air quality analysis.

Models are important because transportation plans and investments are based on what the models say about future travel. Models are used to estimate the number of trips that will be made on a transportation systems alternative at some future date.

These estimates are the basis for transportation plans and are used in analyzing major investments and environmental impact statements, as well as in setting priorities for investments.

Models provide forecasts only for those factors and alternatives that are explicitly included in the equations of the models. If the models are not sensitive to certain policies or programs (i.e., policy-sensitive), they will not show the effects of such policies.

3 DATABASE DEVELOPMENT

Generally, the development of database for use in travel demand forecasting involves the following items:

- (i) Breakdown of the area which requires the prediction of future travel demand into study zones that can be accurately described by a few variables (Zoning Design);
- (ii) Collection of existing socio-economic data for the study area;
- (iii) Conduct of person-trip (PT) surveys to establish the present travel patterns, specifically, person OD trips;
- (iv) Conduct of other traffic surveys to calibrate the model for the base year (e.g., screen line traffic counts); and
- (v) Conduct of land use surveys to establish land use development patterns

The zoning design requires considering the decision-making context, the schemes to be modeled, and the nature of trips of interest in the study. The study area should have majority of origin and destination trips inside it. The study area should be somewhat bigger than the specific area of interest.

The Study Area will be comprised of zones. The zoning system is a way of aggregating trips into manageable chunks for modeling purposes. The Traffic Analysis Zone (TAZ) is a basic unit of a zoning system where each zone is a point of origin and destination for trips.

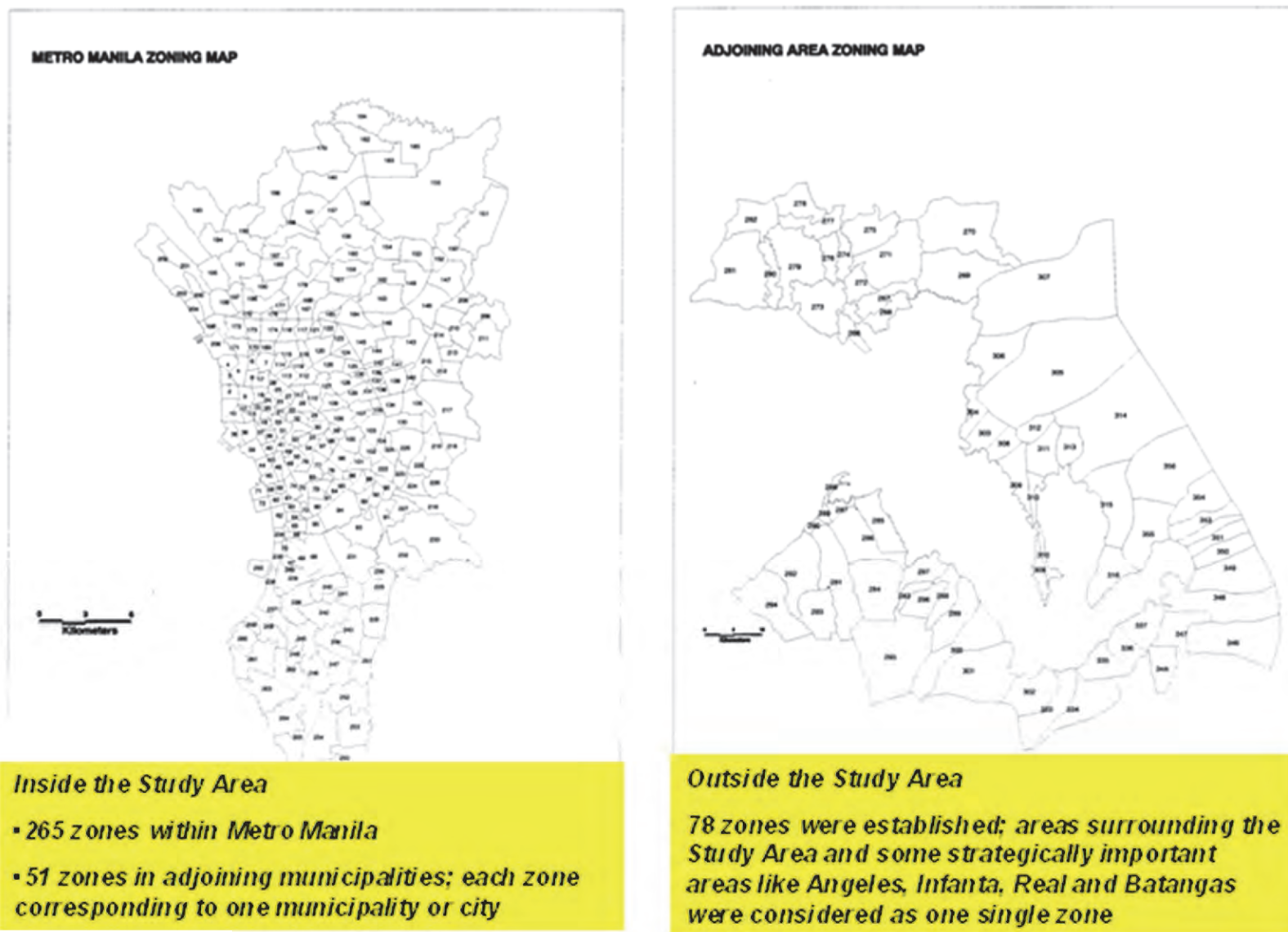
The zoning criteria that are used in establishing the zone boundaries of Traffic Analysis Zones (TAZ) are:

- (i) Zoning size must be such that aggregation errors are minimized;
- (ii) Zoning system must be compatible with other administrative divisions, particularly with census zones;
- (iii) Zones should be as homogeneous as possible in their land use and/or population composition;
- (iv) Zone boundaries must be compatible with cordons and screen lines and with those of previous zoning systems;
- (v) Shape of the zones should allow easy identification of centroid connectors;
- (vi) Zones do not have to be of equal size; and
- (vii) Zone sizes must consider population distribution; that each zone may have similar population (homogeneity).

Typical surveys that are undertaken in the development of a travel demand forecasting model are:

- (i) Infrastructure and existing services inventories;
- (ii) Land use inventories;
- (iii) Household interview surveys (HIS); and
- (iv) Socio-economic information collection.

Figure 3.1: Zoning System



Source: MMUTIS 1996

Figure 3.3: Member Information Survey Form

FORM 2: HOUSEHOLD MEMBER INFORMATION

INSTRUCTION: To be completed by every household member aged 5 years and above.

(1) Name _____ Last Name _____ First Name _____ M.I. _____

(2) Age _____ (3) Gender Male Female (4) Differently Able Yes No

(5) Work address _____ No. _____ Street _____ Barangay _____
 _____ Municipality/City _____ Province _____

(6) School address _____ No. _____ Street _____ Barangay _____
 _____ Municipality/City _____ Province _____

(7) Occupation (PHP)

(Encircle one item)

1. Official of Govt. & Special Interest Org., Corporate Exec., Manager
2. Professional
3. Technical & Associate Professionals
4. Clerical Staff
5. Service Worker, Shop & Market Worker
6. Farmer, Forestry Worker & Fisherman
7. Trader & Related Worker
8. Plant & Machine Operator & Assembler
9. Laborer & Unskilled Worker
10. Student (Elem.)
11. Student (H.S. & Univ.)
12. Housewife
13. Unemployed
14. Others (*specify*) _____

(8) Employment sector

(Encircle one item)

1. Agriculture, Hunting & Forestry
2. Fishing
3. Mining & Quarrying
4. Manufacturing
5. Electricity, Gas & Water Supply
6. Construction
7. Wholesale & Retail Trade; Repair of Motor Vehicles, Personal & Household Goods
8. Hotels & Restaurants
9. Transport, Storage & Comm.
10. Financial Intermediation
11. Real Estate Development, Rental and Sale
12. Public Admin. & Defense; Compulsory Social Security
13. Education
14. Health & Social Work
15. Other Community, Social & Personal Services
16. Private Households
17. Extraterritorial Organizations

(9) Monthly income

(Encircle one item)

1. Below 5,000
2. 5,000–9,999
3. 10,000–14,999
4. 15,000–19,999
5. 20,000–24,999
6. 25,000–29,999
7. 30,000–34,999
8. 35,000–39,999
9. 40,000–49,999
10. 50,000–59,999
11. 60,000–79,999
12. 80,000–99,999
13. 100,000–149,999
14. 150,000–199,999
15. 200,000–299,999
16. 300,000–499,999
17. Above 500,000

(10) State the type of driver's license held

Student Non-Prof. Professional None

(11) Number of vehicles for your own use

Bicycle: _____ Motorcycle: _____ Car/Jeep: _____ Others: _____

(12) Work hours

Fixed Time Flexible Time

A pilot study is examining the possibility of using mobile phones to complement household interview surveys. It involves the analysis of the Call Detail Record (CDR), which shows call durations, as well as approximate locations where calls were made and text messages were sent from.

(13) Are you willing to participate in the pilot study for Metro Manila? Rest assured that no information to identify you or the location of your house is kept in the CDR. Data collection will also stop when the household survey ends. All data will be treated with utmost confidentiality.

Yes. Mobile phone #: _____ Carrier: _____ or Globe/SMART
 No I have no cellular phone.

Figure 3.4: Trip Information Survey Form

Household No. <input style="width: 100px;" type="text"/> Member code: <input style="width: 100px;" type="text"/> Trip No. 1 of <input style="width: 100px;" type="text"/>	Origin Departure time at origin and mode Transfer point(s) Departure time(s) Travel mode(s)	Origin address No. _____ Street / Block _____ Barangay _____ Municipality / City _____ Landmark _____ Institution code _____ Type code _____ c _____ d _____ e _____ Hours _____ Minutes _____ f _____ Mode code _____ g _____ 1st transfer point _____ h _____ If others, specify, _____ Bus stop, station, landmark, location, etc. _____ Departure time _____ i _____ Mode code _____ j _____ 2nd transfer point _____ k _____ If others, specify, _____ Bus stop, station, landmark, location, etc. _____ Departure time _____ l _____ Mode code _____ m _____ 3rd transfer point _____ n _____ If others, specify, _____ Bus stop, station, landmark, location, etc. _____ Departure time _____ o _____ Mode code _____ p _____ Hours _____ Minutes _____ q _____ If others, specify, _____	
Institution of origin and destination 1. Residence 2. Commercial Institution 3. Office / Bank 4. Factory / Warehouse 5. School / University 6. Park / Recreational Place 7. Medical / Welfare 8. Religious / Social 9. Wholesale / Retail shop 10. Restaurant / Entertainment 11. Others	Arrival time at destination Destination Trip purpose Trip purpose of companion, if any Trip cost Type of parking facility and fee Reason for modal choice	Destination address No. _____ Street / Block _____ Barangay _____ Municipality / City _____ Landmark _____ Institution code _____ Type code _____ r _____ s _____ t _____ Hours _____ Minutes _____ u _____ If others, specify, _____ Trip purpose code _____ If others, specify, _____ Trip purpose code _____ If others, specify, _____ PHP _____ w _____ x _____ y _____ 1. Parking lot _____ PHP _____ 2. On-road, authorized _____ Fee paid _____ 3. On-road, unauthorized _____ 4. Inside building or house premises _____ 1. Travel time 3. Convenience 5. Safety z 2. Comfort 4. Cost 6. No other choice	
Type of origin and destination 1. Home (Answer in Form 1-(2)) 2. Workplace / School (Answer in Form 2-(5)/(6)) 3. Others	Travel mode 1. Walking 2. Bicycle 3. Motorcycle - driver 4. Motorcycle - passenger 5. Car/Jeep - driver 6. Car/Jeep - passenger 7. Pedicab 8. Tricycle 9. Taxi 10. Filcab 11. HOV 12. Jeepney 13. Minibus - w/o aircon 14. Minibus - w / aircon 15. Standard Bus - w/o aircon 16. Standard Bus - w / aircon 17. School Bus 18. Company Bus 19. Tourist Bus 20. Pick-up / Delivery Van 21. Truck 22. Trailer 23. LRT / MRT 24. PNR 25. Water Transport 26. Airplane 27. Others	Trip purpose 1. To home 2. To work 3. To school / Education 4. Private Business 5. Employer's Business 6. Private - Medical 7. Private - Social 8. Private - Eating 9. Private - Shopping 10. Private - Worship 11. Private - Recreation 12. To send/pick up other family members or friends 13. Others	Trip assessment Travel time 1. Very bad 2. Bad 3. OK 4. Good 5. Very good aa Comfort 1. Very bad 2. Bad 3. OK 4. Good 5. Very good ab Convenience 1. Very bad 2. Bad 3. OK 4. Good 5. Very good ac Cost 1. Very bad 2. Bad 3. OK 4. Good 5. Very good ad Safety 1. Very bad 2. Bad 3. OK 4. Good 5. Very good ae Overall 1. Very bad 2. Bad 3. OK 4. Good 5. Very good af

Source: JICA Project Team

A sampling design aims at ensuring that the data to be examined provide the greatest amount of useful information about the population of interest at the lowest possible cost. The problem is how to use the data (i.e., expand the values in the sample) in order to make correct inferences about the population.

The greatest difficulties in the conduct of sampling surveys are:

- How to ensure a representative sample; and
- How to extract valid conclusions from the sample.

Common sampling methods that are employed in the conduct of HIS are:

- Simple Random Sampling:** Simplest and basic method.
- Stratified Random Sampling:** Subdividing the population into homogeneous strata (with respect to the stratifying variable), then random sampling is conducted inside each stratum using the same sampling rate.
- Choice-based Sampling:** Stratifying the population based on the results of the choice process under consideration. This is fairly common in transportation planning, with the advantage that data may be produced at a much lower cost. The drawback is that the sample may not be random and therefore there is a risk of bias in the expanded values.

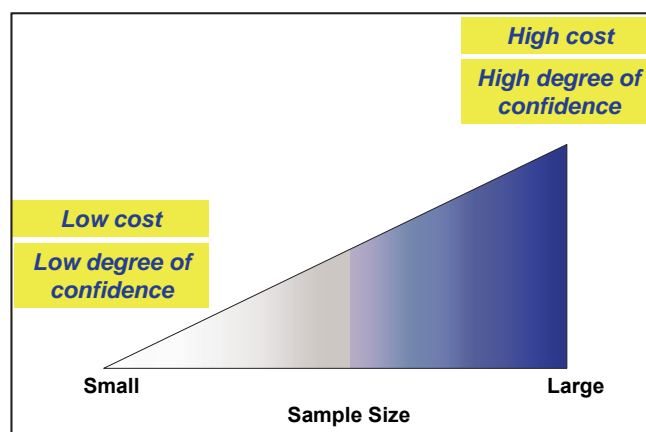
Sources of errors from household surveys include:

- Sampling Error:** Always present in dealing with samples. It does not affect the expected values but influences the variability and confidence level.
- Sampling Bias:** This is caused by mistakes either when defining the population of interest or when selecting the sampling methods and maybe avoided or eliminated by taking extra care during sampling design and data collection.

One critical aspect in survey planning is the determination of sample size. There is no straightforward or objective answer to the calculation of sample size in every situation. It must be produced by the analyst after careful consideration of the problem at hand. There is a trade-off between sample size and overall survey cost.

If the sample size is too small, the degree of confidence on the data will be very low. On the other hand, if the sample size is too big, the degree of confidence on the data will be very high, but the survey cost will be impractically high.

Figure 3.5: Trade-off between Sample Size and Cost



Source: JICA Project Team

The number of samples may be computed by using the following formula:

$$n = \frac{CV^2 Z^2}{E^2}$$
$$CV = \sigma / \mu$$

Where CV is the coefficient of variation, E is the level of accuracy (expressed as a proportion) and $Z\alpha$ is the value of the standard normal variate for the confidence level (α) required.

The types of errors encountered in household surveys, include:

- (a) **Measurement Errors:** Errors in getting base year data.
- (b) **Sampling Errors:** Models must be estimated using finite data sets.
- (c) **Specification Errors:** Phenomenon being modeled is not well understood due to simplifications.
- (d) **Transfer Errors:** Spatial and temporal transfers.
- (e) **Aggregation Errors:** This arises basically out of the need to make forecasts for groups while modeling needs to be done at the individual level. Types: data aggregation, aggregation of alternatives, model aggregation.

A network is usually modeled as a directed graph. It consists of a system of nodes and links joining them. Most nodes are taken to represent junctions and the links stand for homogeneous stretches of road between junctions.

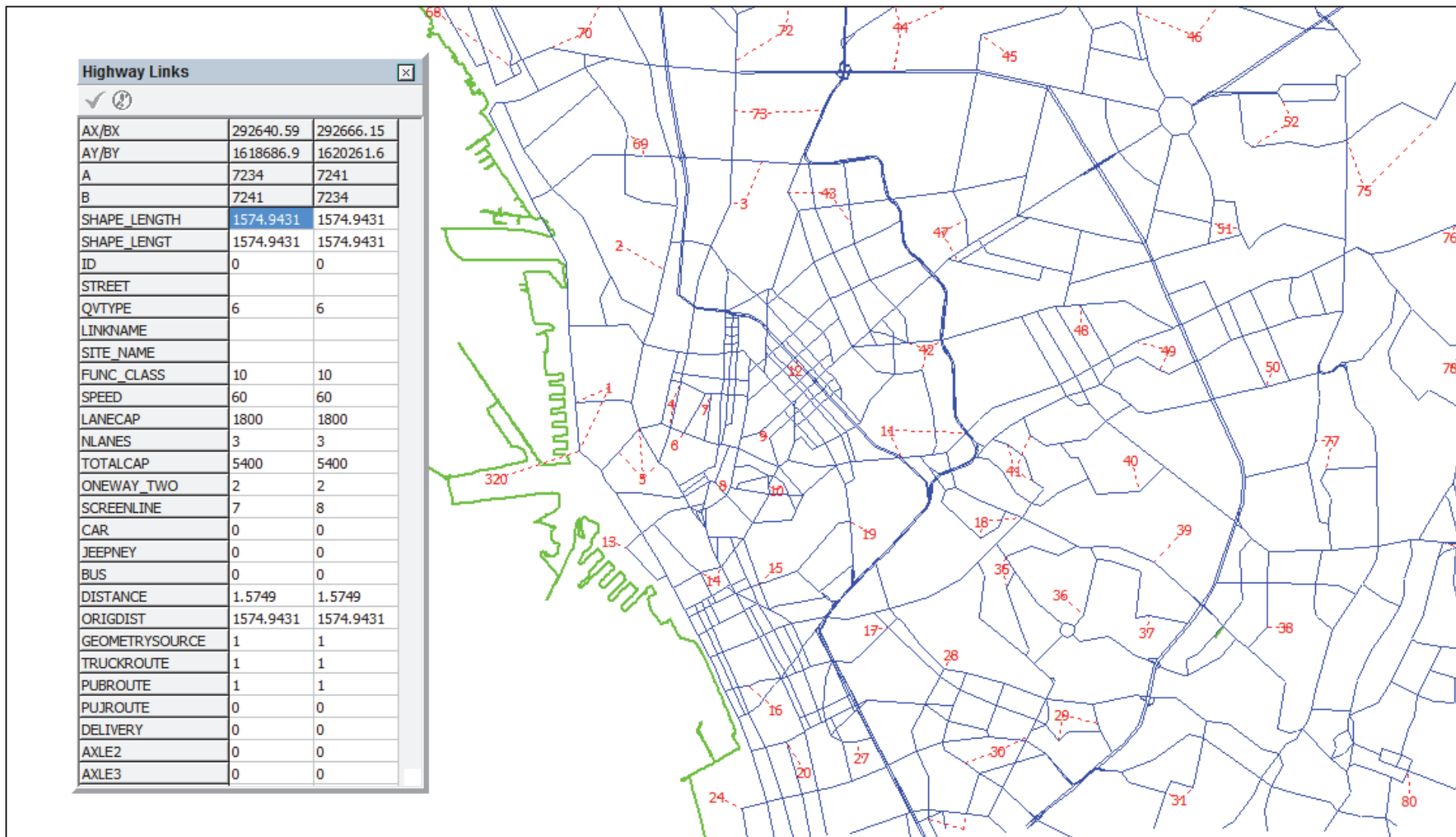
Links are characterized by attributes such as:

- (i) Length;
- (ii) Travel speeds (in speed-flow curves);
- (iii) Link capacity (in PCU per hour);
- (iv) Additional information;
- (v) Type of road;
- (vi) Road width, number of lanes;
- (vii) Turn penalties;
- (viii) Type of junctions; and
- (ix) Signal phasing.

A subset of the nodes is associated with zone centroids and a subset of the links to centroid connectors.

Turning movement controls may be modeled as penalties and/or turn restrictions, e.g., no entry. Movement controls can be represented by dummy links.

Figure 3.6: Sample Road Network



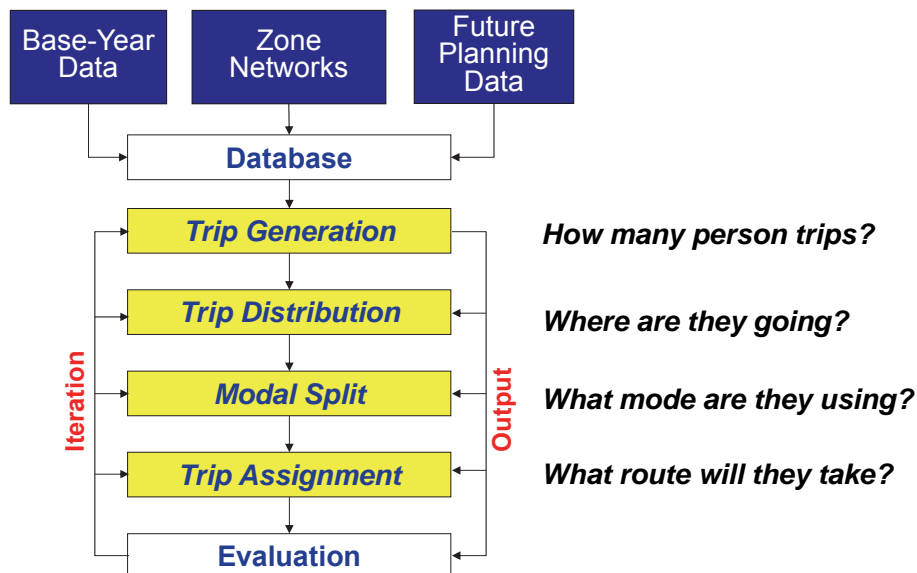
Source: JICA Project Team

4 OVERVIEW OF THE FOUR-STEP MODEL

The Four-Step Model is a sequential process for generating travel demand forecasts with the following steps:

- (a) **Trip Generation:** Calculate the number of trips starting in each zone for a particular trip purpose.
- (b) **Trip Distribution:** Produce a table of the number of trips starting in each zone and ending up in each of the zones.
- (c) **Modal Split:** Complete the allocation of the various trips among the available transportation systems (bus, train, pedestrian, and private vehicles).
- (d) **Traffic Assignment:** Identify the specific routes on each transportation system that will be selected by the travelers.

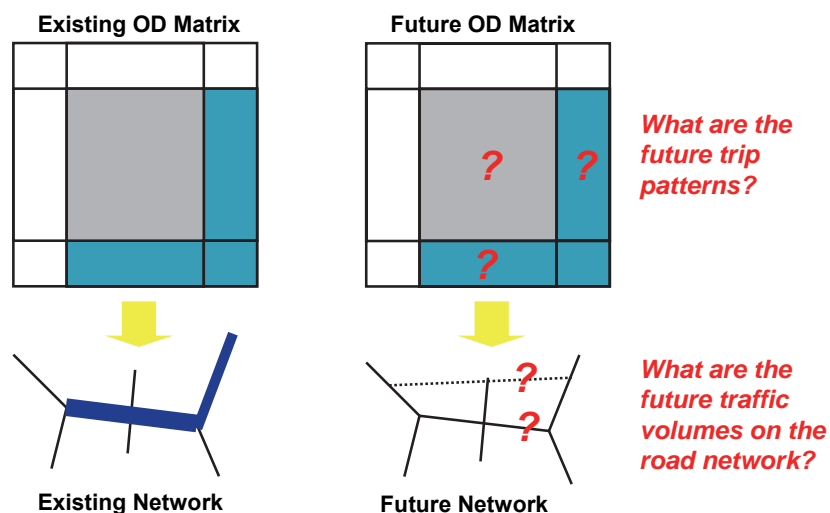
Figure 4.1: Four-Step Model



Source: JICA Project Team

The key objective of the four-step model is to determine the future traffic volumes on the road network under various assumptions of road and land use changes.

Figure 4.2: Objectives of the Four-Step Model



Source: JICA Project Team

The total traffic volume in the future will be composed of the following components:

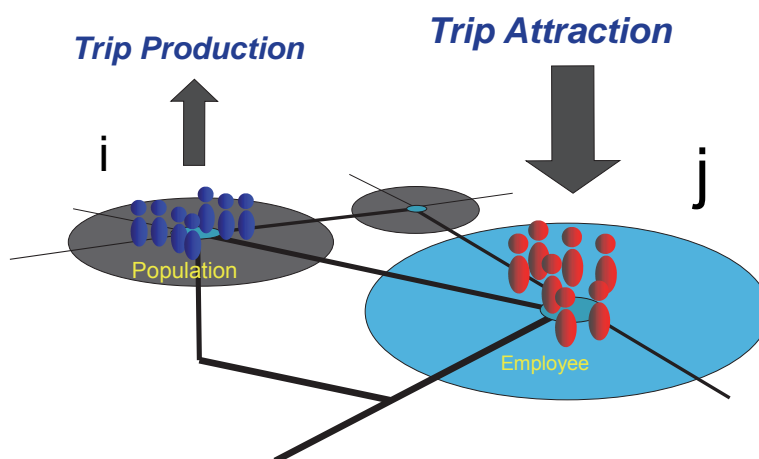
- (i) Existing traffic;
- (ii) Traffic due to natural population increase;
- (iii) Traffic due to proposed development; and
- (iv) Traffic due to other developments.

Trip generation is the first step in the conventional four-step transportation planning process, widely used for forecasting travel demands. It predicts the number of trips originating in or destined for a particular traffic analysis zone.

Trip generation uses trip rates that are averages for a large segment of the study area. Trip productions are based on household characteristics such as the number of people in the household and the number of vehicles available.

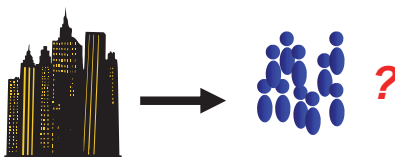
For example, a household with four people and two vehicles may be assumed to produce 3.00 work trips per day. Trips per household are then expanded to trips per zone. Trip attractions are typically based on the level of employment in a zone. For example, a zone could be assumed to attract 1.32 home-based work trips for every person employed in that zone. Trip generation is used to calculate person trips.

Figure 4.3: Trip Generation



Source: JICA Project Team

Figure 4.4: Sample Trip Generation Computation



$$Total\ Person\ Trips = \sum (Floor\ Area_i \times Trip\ Rates_i)$$

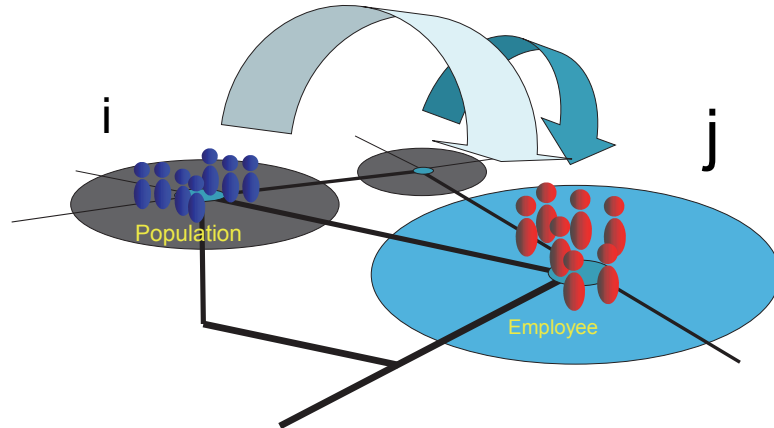
where $i = Land\ Use\ Classification$

Land Use Classification	Trip Rates		
	Production	Attraction	Unit
Office	0.0027	0.0176	trips / sq.m. of GFA
Commercial	0.0576	0.0735	trips / sq.m. of GFA
Hotel	2.00	2.55	trips / hotel room
Residential	2.42	1.52	trips / dwelling unit
Mixed Use	0.0172	0.0243	trips / sq.m. of GFA

Source: JICA Project Team

Trip distribution is the second component in the traditional four-step transportation planning (or forecasting) model. This step matches trip makers' origins and destinations to develop a "trip table," a matrix that displays the number of trips going from each origin to each destination.

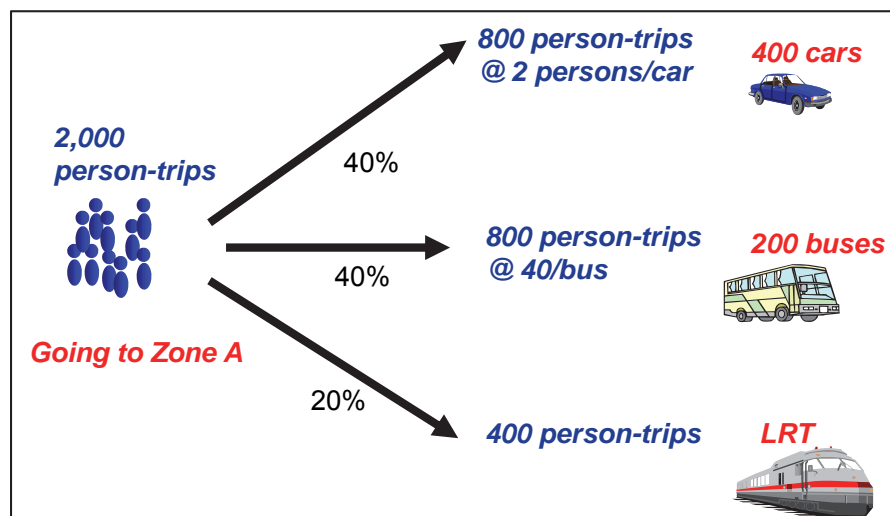
Figure 4.5: Trip Distribution



Source: JICA Project Team

Mode choice analysis is the third step in the conventional four-step transportation planning model. Trip distribution's zonal interchange analysis yields a set of origin–destination tables which tell where the trips will be made; mode choice analysis allows the modeler to determine what mode of transportation will be used.

Figure 4.6: Modal Split



Source: JICA Project Team

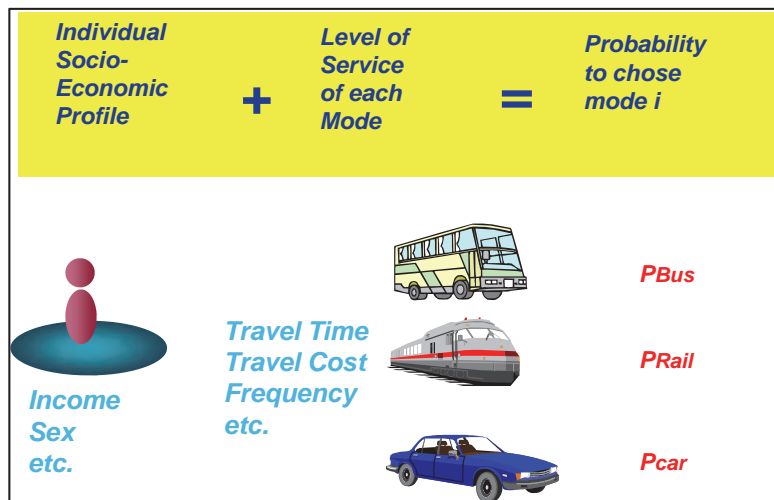
Mode choice is one of the most critical parts of the travel demand modeling process. It is the step where trips between a given origin and destination are split into trips using transit, trips by car pool or as automobile passengers and trips by automobile drivers.

A utility function measures the degree of satisfaction that people derive from their choices and a disutility function represents the generalized cost that is associated with each choice.

The most commonly used process for mode split is to use the 'Logit' model. This involves a comparison of the "disutility" or "utility" of travel between two points for the different

modes that are available. Disutility is a term used to represent a combination of the travel time, cost, and convenience of a mode between an origin and a destination. It is obtained by placing multipliers (weights) on these factors and adding them together.

Figure 4.7: Choice Model



Source: JICA Project Team

Disutility calculations may contain a "mode bias factor" which is used to represent other characteristics or travel modes that may influence the choice of mode (such as a difference in privacy and comfort between transit and automobiles). The mode bias factor is used as a constant in the analysis and is found by attempting to fit the model to actual travel behavior data.

Generally, the disutility equations do not recognize differences within travel modes. For example, a bus system and a rail system with the same time and cost characteristics will have the same disutility values. There are no special factors which allow for the difference in attractiveness of alternative technologies.

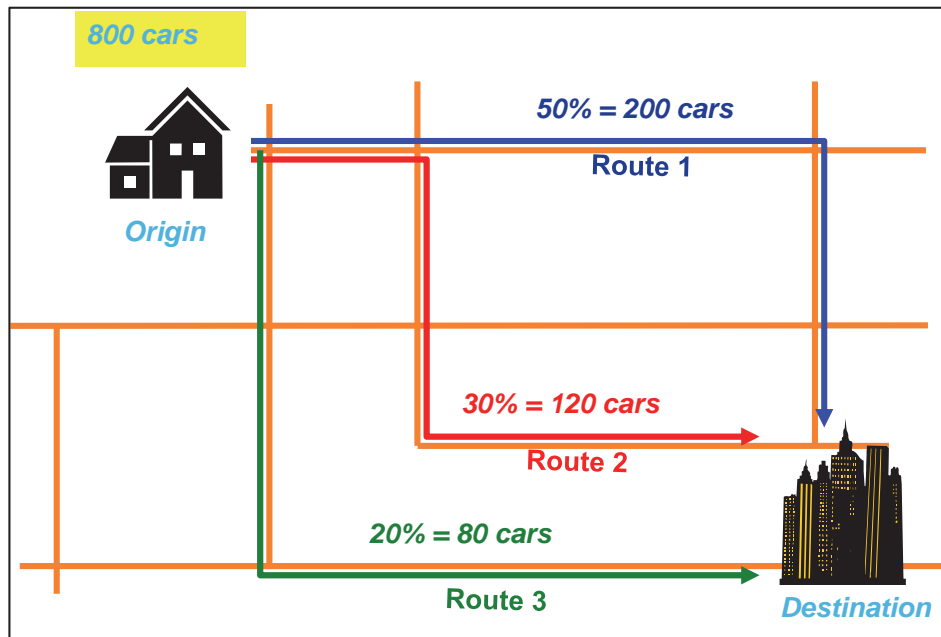
Once disutilities are known for the various mode choices between an origin and a destination, the trips are split among various modes based on the relative differences between disutilities. The logit equation is used in this step.

A large advantage in disutility will mean a high percentage for that mode. Mode splits are calculated to match splits found from actual traveler data. Sometimes a fixed percentage is used for the minimum transit use (percent captive users) to represent travelers who have no automobile available or are unable to use an automobile for their trip.

Trip assignment, traffic assignment, or route choice concerns the selection of routes (alternative called paths) between origins and destinations in transportation networks. It is the fourth step in the conventional transportation planning model. To determine facility needs, as well as costs and benefits, the number of travelers on each route and link of the network should be known.

Once trips have been split into highway and transit trips, the specific path that they use to travel from their origin to their destination must be found. These trips are then assigned to that path in the step called traffic assignment.

Figure 4.8: Traffic Assignment



Source: JICA Project Team

The process first involves the calculation of the shortest path from each origin to all destinations (usually the minimum time path is used). Trips for each O-D pair are then assigned to the links in the minimum path and the trips are added up for each link. The assigned trip volume is then compared to the capacity of the link to see if it is congested. If a link is congested the speed on the link needs to be reduced to result in a longer travel time on that link.

Changes in travel times mean that the shortest path may change. Hence, the whole process is repeated several times (iterated) until there is equilibrium between travel demand and travel supply. Trips on congested links will be shifted to uncontested links until this equilibrium occurs. Traffic assignment is the most complex calculation in the travel modeling sequence, and there is a variety of ways in which it is done to keep computer time to a minimum.

The U.S. Bureau of Public Roads (BPR) function is the most commonly used function for relating changes in travel speed to increases in travel volume. The BPR function is specified as follows:

$$T_f = T_o * \left(1 + \alpha * \left[\frac{V}{C} \right]^\beta \right)$$

where:

- T_f = final link travel time
- T_o = original (free-flow) link travel time
- alpha = coefficient (often set at 0.15)
- V = assigned traffic volume
- C = the link capacity
- beta = exponent (often set at 4.0)

Traffic assignment models usually compute the shortest path based on generalized travel cost on the network. In transportation economics, the generalized cost is the sum of the monetary and non-monetary costs of a journey.

Monetary (or "out-of-pocket") costs might include a fare on a public transportation journey, or the costs of fuel, wear and tear, and any parking charge, toll or congestion charge on a car journey.

Non-monetary costs refer to the time spent undertaking the journey. Time is converted to a money value using a value of time figure, which usually varies according to the traveler's income and the purpose of the trip.

The generalized cost is equivalent to the price of the good in supply and demand theory, and so demand for journeys can be related to the generalized cost of those journeys using the price elasticity of demand. Supply is equivalent to capacity (and, for roads, road quality) on the network.

5 TRAVEL DEMAND MODEL FOR METRO MANILA

5.1 Zoning System

The Traffic Analysis Zones (TAZs) for Metro Manila are organized according to the zoning system shown below.

Table 5.1: Traffic Analysis Zones

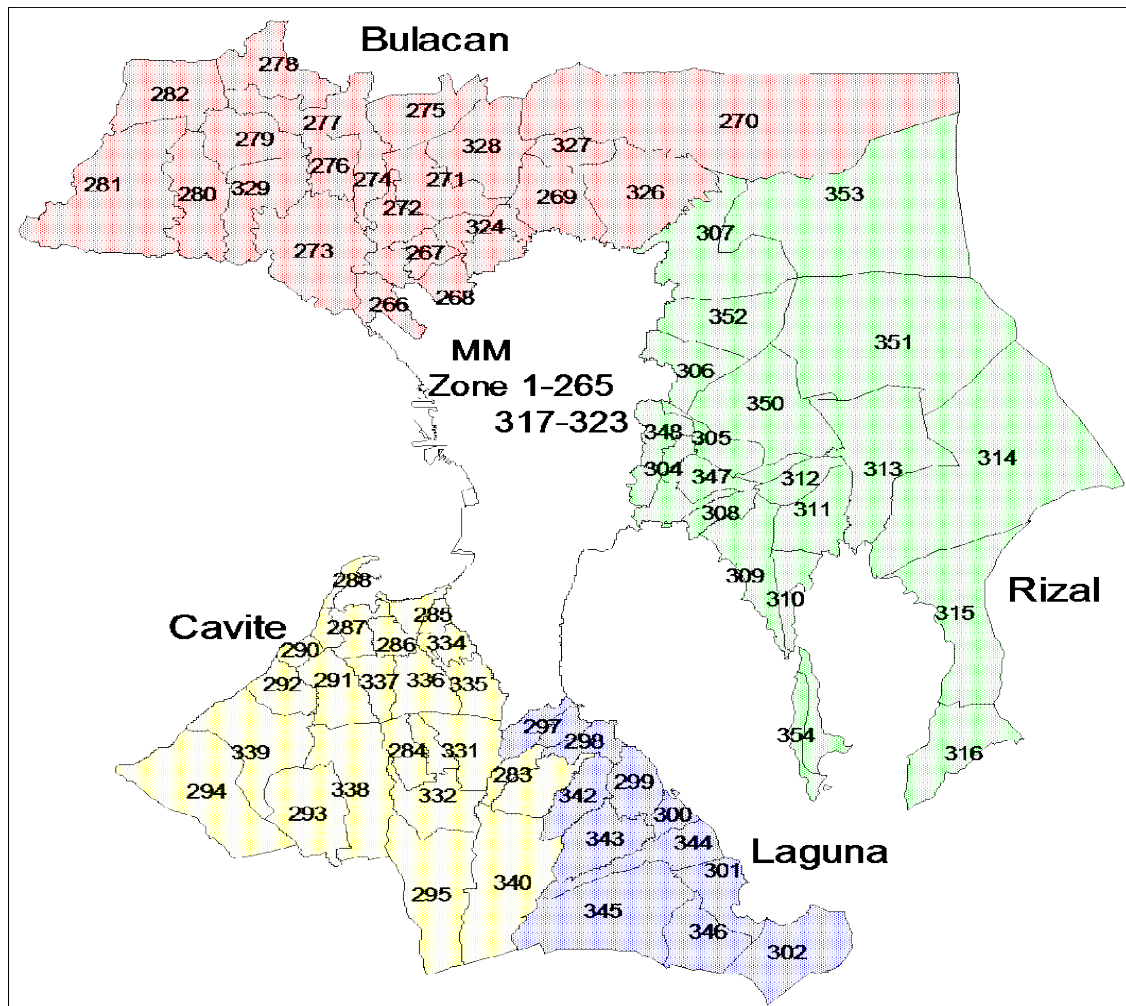
Zoning System	Number of Zones			Total
	MUCEP Study Area		Outside the Study Area	
	NCR	Provinces		
Small Zone	272	82	67	432
Medium Zone	24	51	14	89
Large Zone	1	4	3	8

Source: JICA Project Team

Based on the Small Zone system, NCR is subdivided into 272 zones, while the areas in the adjacent provinces of Bulacan, Rizal, Cavite, and Laguna are subdivided into 82 zones.

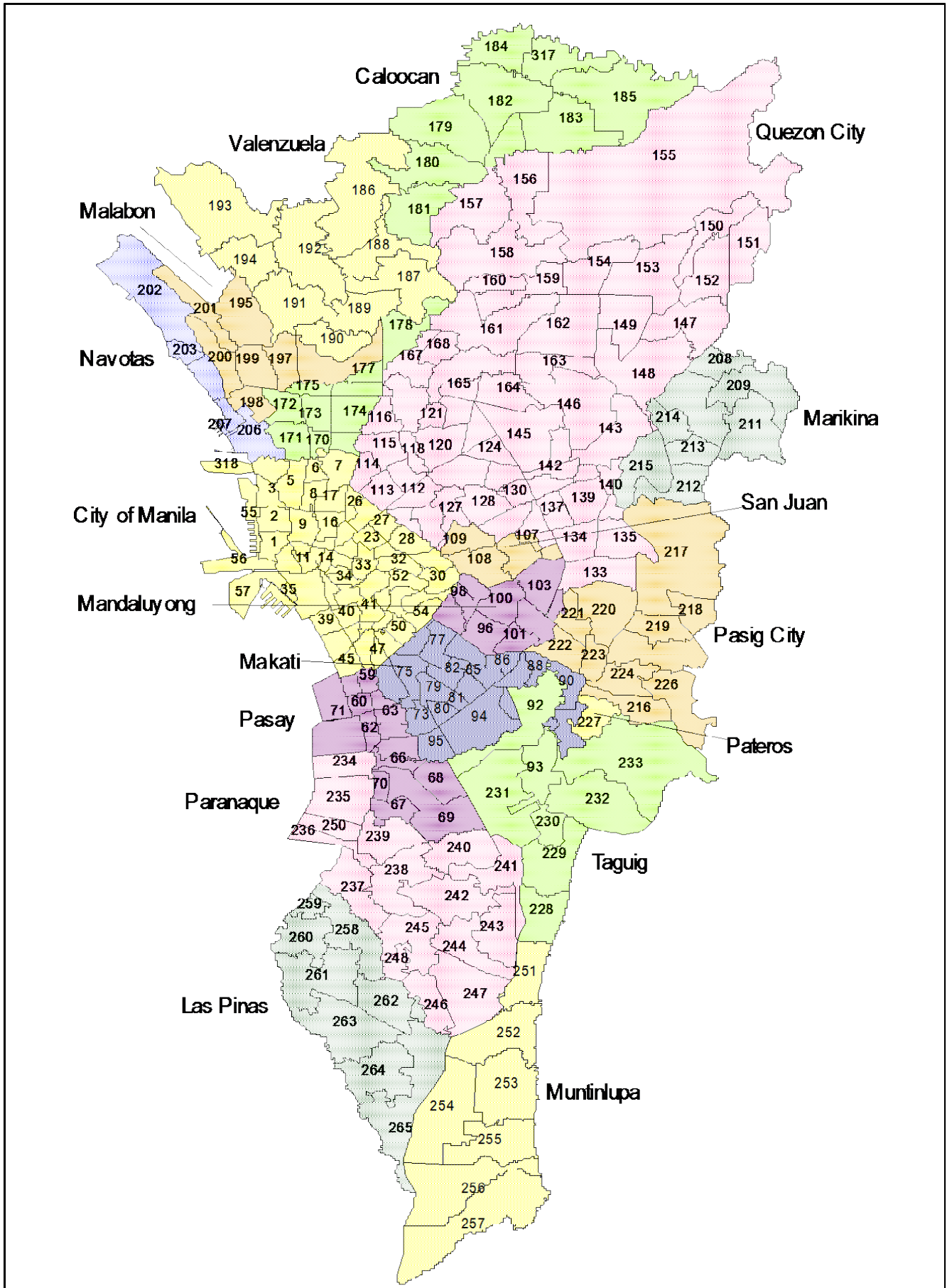
Medium and large zones are set based on the boundary of a municipality/ city and the boundary of a province, respectively. The description of the zoning system is presented in **Appendix A**.

Figure 5.1: Traffic Analysis Zones in Adjacent Provinces



Source: JICA Project Team

Figure 5.2: Traffic Analysis Zones within NCR



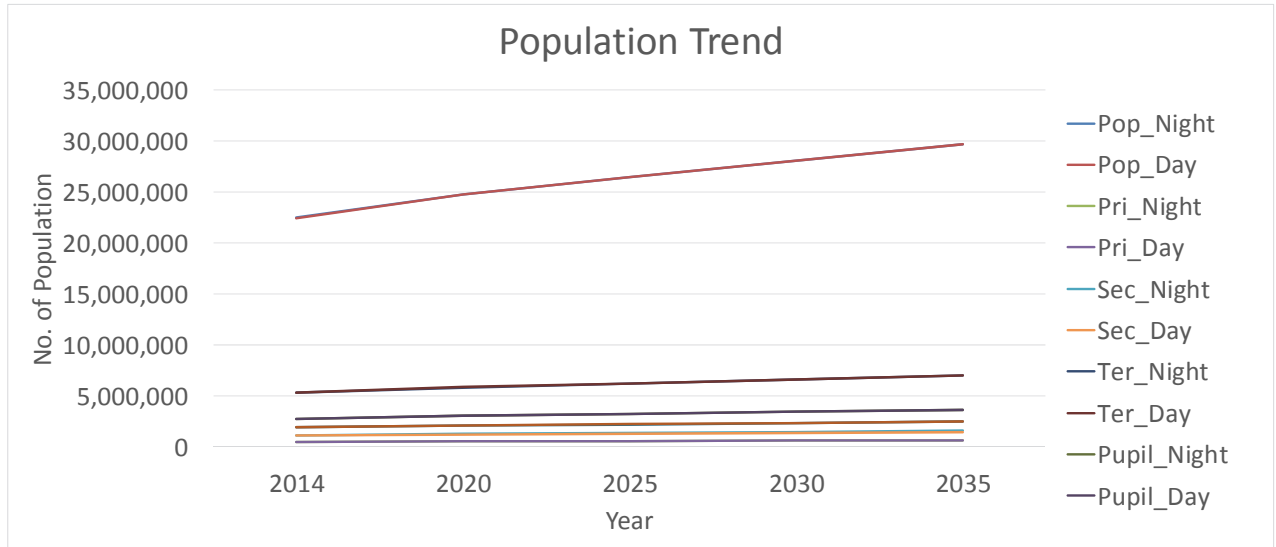
Source: JICA Project Team

5.2 Socio-economic Framework

1) Population Trend

Population trends in the MUCEP area are shown in Figure 5.3. Population data for 2014, 2025, and 2035 are shown in **Appendix B**.

Figure 5.3: Population Trends in MUCEP Area



Source: JICA Project Team

2) Car Ownership Rate

Trip patterns are generally different between car-owning and non-car-owning households. Private car choice rate of car-owning households is higher than that of non-car-owning household. In MUCEP, the difference in trip patterns by car-owning households is confirmed through an HIS analysis.

The number of car-owning households in the future is estimated through an HIS analysis using the model below. The estimated car ownership rate is shown in **Appendix C**.

$$COR_i = AI_i \times 0.000008307$$

Where: COR_i : Car-owning Household Rate in Zone i

AI_i : Average Household Income in Zone i

And,

$$AI_i = AI_{0i} \times GRDP$$

AI_{0i} : Base Year (2014) Average Household Income in Zone i

GRDP: Increase Ratio of GRDP/capita in Target Year by 2014

Table 5.2: Increase Ratios of GRDP/Capita

Year	Increase Ratio of GRDP/Capita by 2014
2014	1.00
2025	1.80
2035	2.93

Source: JICA Project Team

5.3 Road Network

1) Road Inventory Survey

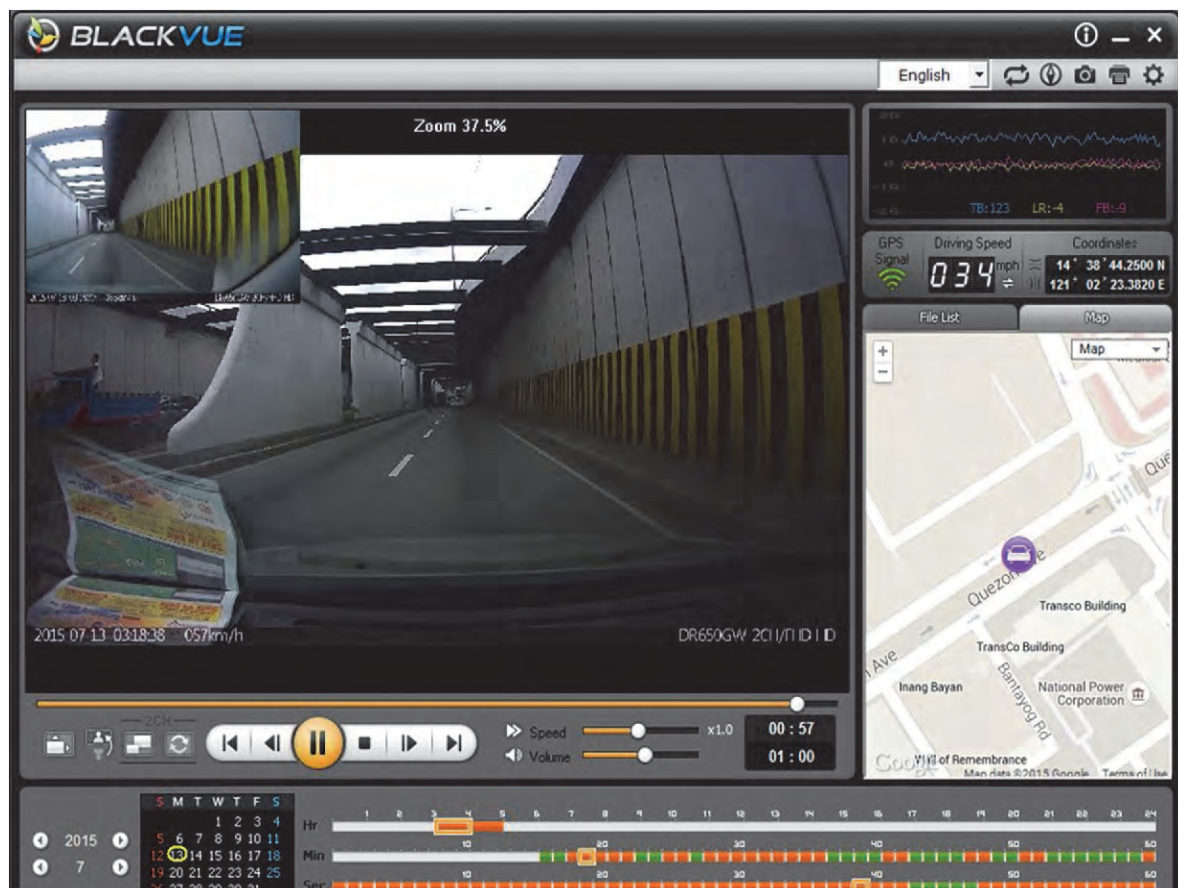
A road inventory survey was conducted in MUCEP to update the existing road network. For this survey, BlackVue was used for capturing the roads for profiling, a road survey form, and ArcGIS for digitizing, validating, and checking the links of the road network shapefiles.

The survey was conducted in the MUCEP study area, which are the entire Rizal and Metro Manila, as well as some cities and municipalities of Cavite, Laguna, and Bulacan provinces. The schedule of road survey was from 8 a.m. to 4 p.m., five days a week excluding holidays.

Updating the GIS database of existing roads was divided into three parts: road survey, road survey inventory, and updating of the road network shapefile. The road survey was done with the use of BlackVue dash cameras to capture road profiles which will be used in filling out the survey form which is the second part. The survey form contains the information to every road link within the boundaries of the MUCEP study area. Information such as link name and nodes are based on the existing shapefile, while those that are visible on the BlackVue dash cameras are width, center median, road parking, pavement, and road marks. The BlackVue also comes with a GPS map viewer, as shown in the figure below, to keep track of the location of cameras, which helped in determining the road names and identifying new or missing links in the road network.

Road survey in Bulacan, Rizal, Laguna, and Cavite was done in July 2015, while that in Metro Manila was divided into north (July 2015) and south (August 2015).

Figure 5.4: Interface of the BlackVue Software



Source: JICA Project Team

2) Updating the Road Network

The table below shows the summary of the road network update, wherein 748 are identified as missing links, 284 as revised links, and 2,810 as existing links. Missing links pertain to links that exist but are not digitized or recorded in the existing road network data. In addition, links, such as newly built overpasses and underpasses, are also considered missing links. Revised links, on the other hand, are links that are included in the road network data but are modified due to the changes in nodes that connect the existing to the missing links. Lastly, existing links are those that are present in the road network data and are not modified.

In addition, road capacity and maximum speed was updated based on the number of lanes which were identified from the road inventory survey. They are summarized in Table 5.5.

Table 5.3: Schedule of the Road Survey

Area	July					August				
	1 st Week	2 nd Week	3 rd Week	4 th Week	5 th Week	1 st Week	2 nd Week	3 rd Week	4 th Week	5 th Week
Metro Manila										
Rizal										
Bulacan										
Laguna										
Cavite										

Source: JICA Project Team

Table 5.4: Summary of the Updated Road Links

Area	Missing Link	Revised Link	Existing Link
Metro Manila	300	126	2,124
Rizal	146	30	122
Bulacan	10	12	238
Laguna	171	58	118
Cavite	121	58	208
Total	748	284	2,810

Source: JICA Project Team

The rail networks in Metro Manila, which comprises three mass transit systems and the PNR, are also included in the MUCEP network. Table 5.6 show the link parameters of public modes. The fares are not the same as current fares as a result of model calibration.

Table 5.5: Road Capacity and Maximum Speed by Road Category

Area	Road Category	Carriageway Type	Capacity 1-way pcu/day/lane	Maximum Speed (km/h)
Inside EDSA	Local road	Single	2,200	30
	Secondary	Single	4,400	40
	Primary	Single	6,600	45
Outside EDSA Inside MM (including EDSA)	Secondary	Single	7,700	50
	Primary	Single	8,250	60
	Secondary	Divided	14,000	70
	Primary	Divided	16,500	80
Outside MM	Local road	Single	8,000	30
	Secondary	Single	11,000	55
	Primary	Single	15,400	60
Urban / Intercity	Access / egress	Single	15,000	80
	Expressway	Single	17,000	80
	Expressway	Divided	20,000	100

Note: Based on MMUTIS and MUCEP updated by JICA Project Team where appropriate

Table 5.6: Parameters for Public Modes

Parameter Description	LRT-1	LRT-2	MRT-3	PNR	Jeepney	Bus
Average Speed (km/h)	30.0	30.0	26.0	26.0	-	-
Boarding Fare (PHP/boarding)	7.5	7.5	6.5	5.0	-	-
Additional Fare (PHP/km)	0.8	0.8	0.9	0.4	1.4	1.8
Access Walk Speed (km/h)	4.0	4.0	4.0	4.0	-	-

Source: JICA Project Team

Figure 5.5: 2015 Network



Road Network

Rail Network

Source: JICA Project Team

1) Future Network

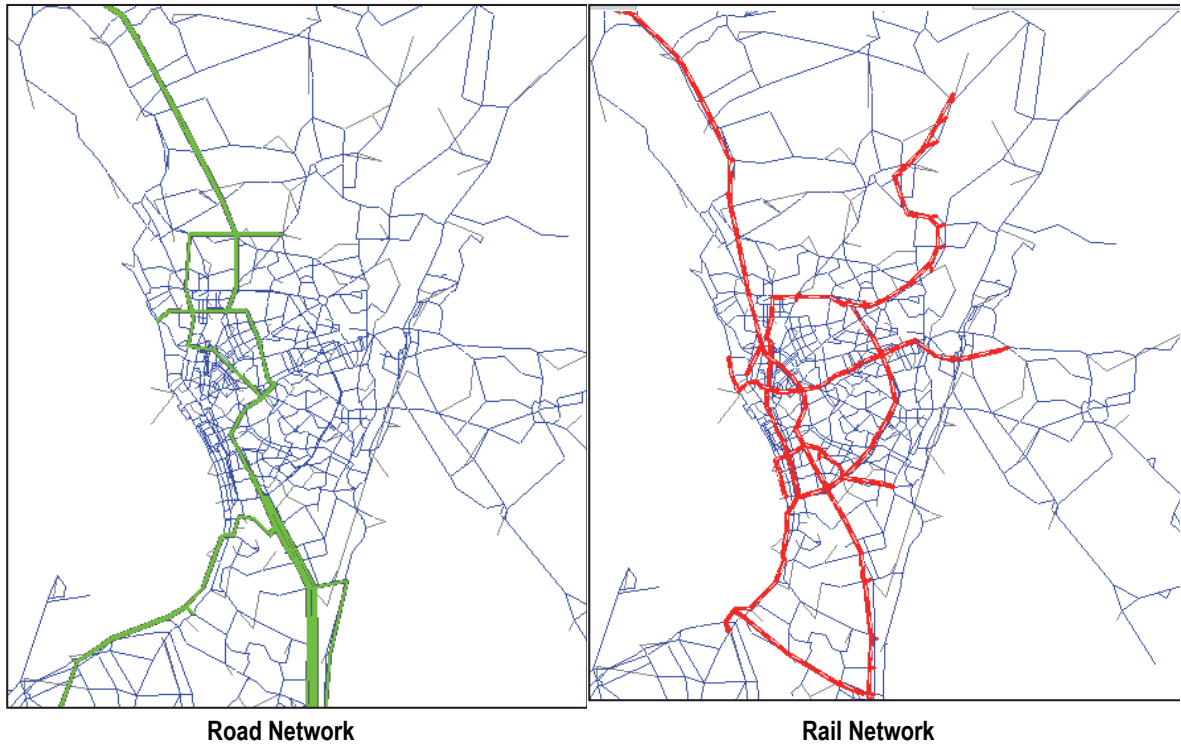
The networks in 2025 and 2035 are prepared as future networks. The future networks include new road projects, updating existing roads, new railway project, and extension of the existing railways, which were proposed by the JICA roadmap study (“Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (Region III and Region IV-A)”). Table 5.7 lists the included projects and are presented in Figure 5.6 and Figure 5.7.

Table 5.7: Projects Included in the Roadmap for Metro Manila and Surrounding Areas

Year	Road/Rail	Project Code	Project name
2025 Network	Road	Ex-1	Segments 9 & 10
		Ex-2,3	NLEX-SLEX connector
		Ex-4,5	Skyway Stage 3
		Ex-6	NAIA Expressway
		Ex-12	Dike road
		Ex-13	Calamba-Las Pinas
		Ex-15	CALA Expressway
		Ex-18	Plaridel Bypass
	Rail	LRT1-2	LRT1 Extension
		LRT2-2	LRT2 Extension
		MRT7-2	MRT7
		M-5	Alabang Monorail
		NSCR	North-South Commuter Rail
2035 Network	Road	Ex-7	Makati Expressway
		Ex-8	R-4 Expressway
		Ex-9	R-7 Expressway
		Ex-10	C-6 North Section
		Ex-11	C-5 Expressway
		Ex-14	Daang Hari Expressway
		Ex-16	CAVITEX Extension
		Ex-17	Tarlac Center Expressway
		Ex-19	NLEX Phase 3
		Ex-20	CLEX
		Ex-21	2 nd Pan Philippine Highway
		Ex-22	SLEX Extension
		R-1-40	Primary road packages
		Rail	LRT1-3
	LRT2-3		LRT2 West Extension
	KRT3-1		MRT3 South Extension
	MRT3-2		MRT3 North Extension
	MRT-NS-1,2		MRT EDSA Subway
	M-1		Ortigas Monorail
	M-2		Pasig Monorail
	M-4		Marikina Monorail
	M-6		Cavite Monorail

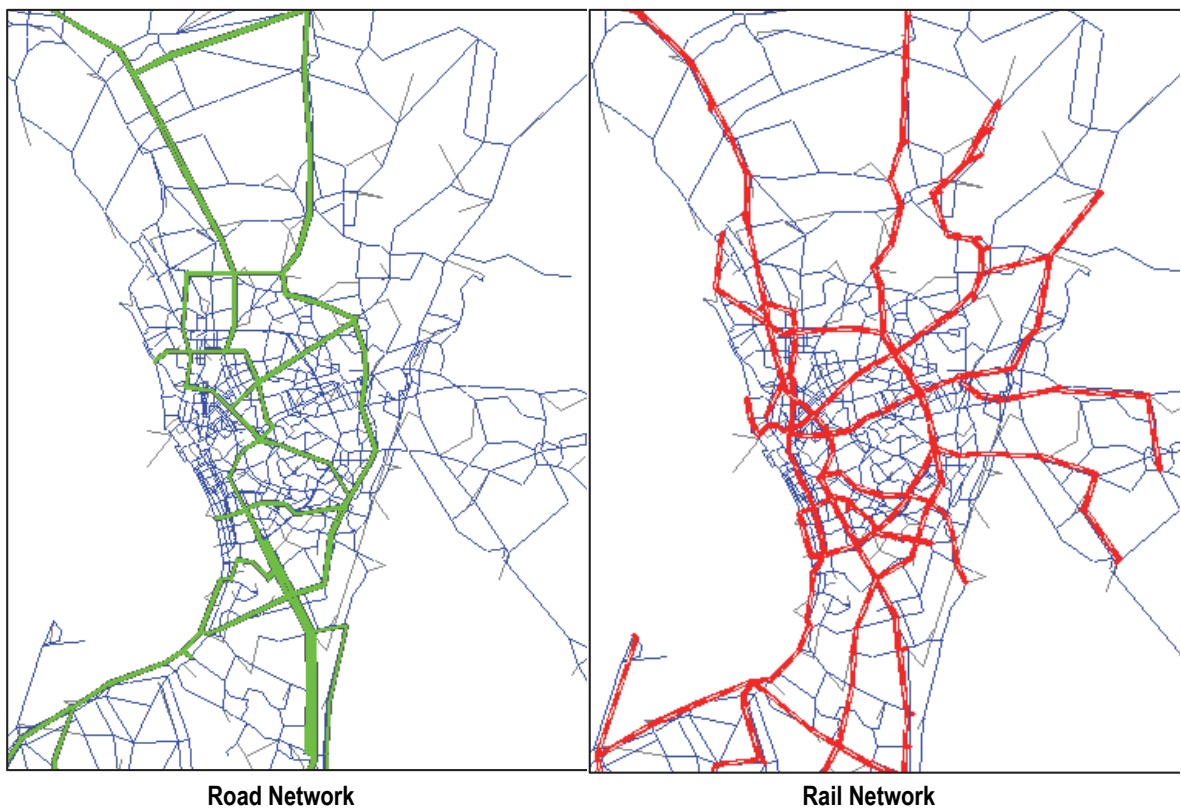
Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (Region III and Region IV-A), 2013

Figure 5.6: 2025 Network



Source: JICA Project Team

Figure 5.7: 2035 Network



Source: JICA Project Team

2) Link Information

The link that presents a road section or a rail segment has information is shown in Table 5.8.

Table 5.8: Link Information

Item	Explanation
A	Node number i
B	Node number j
LINKNAME	Link name
DISTANCE	Link distance (km)
VMAX	Maximum velocity (km/h)
CAP	Link capacity (pcu). See Table 5.5.
QV	QV Type. 1: Road, 2: Rail, 3: EDSA
LNKDIR	1: One-way road (Node i to j), 2: Two-way road
FARE1	Toll for motorcycle (PHP)
FARE2	Toll for private car (PHP)
FARE3	Jeepney fare and Rail fare (PHP)
FARE4	Bus fare and Rail fare (PHP)
FARE5	Toll for truck (PHP)
DIRFLAG1	Directional control flag for motorcycle 0: passable both ways, 1: not passable from i to j, 2: not passable from j to i, 3: not passable both ways
DIRFLAG2	Directional control flag for private car
DIRFLAG3	Directional control flag for Jeepney
DIRFLAG4	Directional control flag for bus
DIRFLAG5	Directional control flag for truck
ROADFLAG	0: Road link, 1: Expressway link, 3: Rail link
USERFLAG1	0: Road and Expressway, 1: Access link to rail, 2: Railway, 3: Rail station
USERFLAG2	Not use
USERFLAG3	Not use
USERFLAG4	0: Zone connector, 1: 2015 Net, 2: 2025 Net, 3: 2035 Net
USERFLAG5	Link type or Project code, See Table 5.9.

Source: JICA Project Team

Table 5.9: Link Type (USERFLAG5) for Road Link

Link Type - Description	Code	Link Type - Description	Code
Centroid Connector	0	Ex11 C5Ex	61
Local Road (MM)	1	Ex7 MAKATI	62
Secondary Road (MM)	2	Ex8 R4Ex	63
Primary Road (MM)	3	Ex9 R7Ex	64
Local Road (Outside)	11	Ex6 NAIA Ex	65
Secondary Road (Outside)	12	Ex14 Daan Hari	66
Primary Road (Outside)	13	Ex22 SLEX Extension	67
NLEX	51	Ex13 Calamba-Las Pinas	68
SCTEX	52	Ex16 CAVITEX Extension	69
SLEX	53	Ex10 C6 north section	70
Skyway	54	Ex17 Tarlak Center	71
CAVITEX	55	Ex19 NLEX Phase3	72
Ex23 NLEX-SLEX Connector	56	Ex21 2nd Pan Philippine HW	73
Ex15 CALA Expressway	57	Ex18 Plaridel Bypass	74
Ex1 SEG 9&10	58	Ex20 CLEX	75
Ex4,5 Skyway3	59	Ex12 DIKE Road	76

Source: JICA Project Team

Table 5.10: Link Type (USERFLAG5) for Rail Link

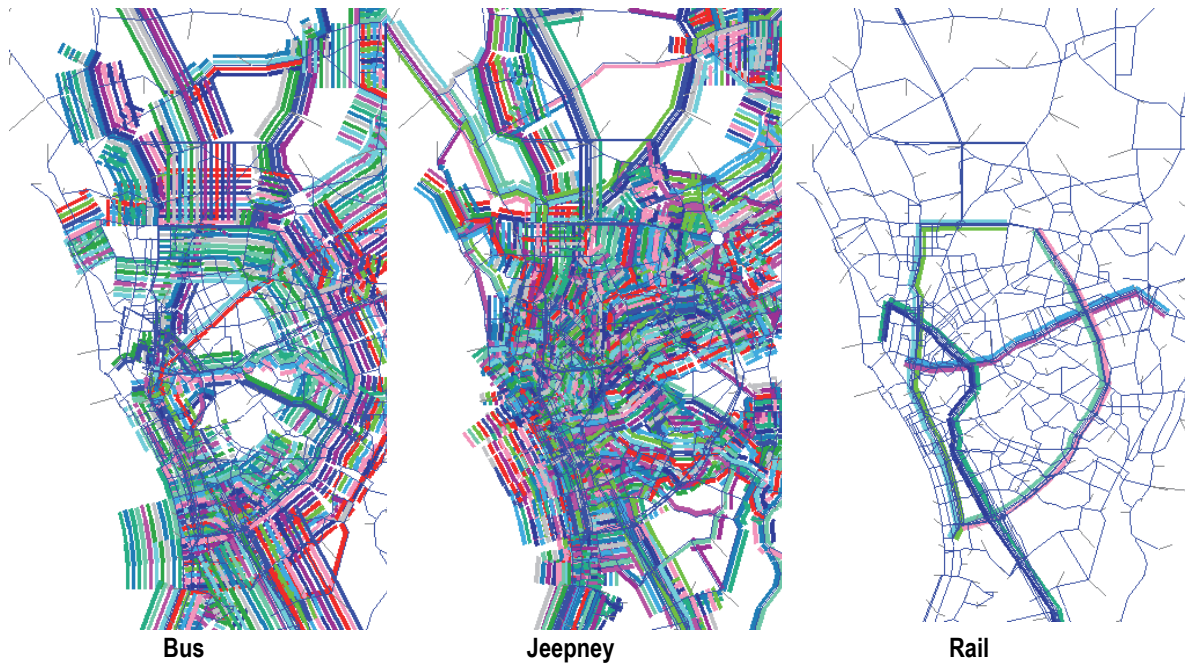
Link Type - Description	Code	Link Type - Description	Code
Transfer Link	90	M-2 Pasig	105
LRT-1	91	M-1 Ortigas	106
LRT-2	92	NSCR North South Commuter	107
MRT-3	93	LRT1-3 LRT-1 North	108
MRT-7	95	LRT2-3 LRT-2 West	109
PNR	98	MRT7-1,2 MRT7-Ex	110
LRT1-2 LRT-1 CAVITE	99	MRT3-1 MRT-3 South	113
M-5 ALABANG	100	M-4 Marikina Mono	114
M-6 CAVITE	101	PNRC-2 PNRC North Extension	115
MRT3-2 MRT-3 Malolos	102	PNRC-3 PNRC South Extension	116
LRT2-2 LRT-2 Ext2	103	MRT-NS-1,2 EDSubway AA-4	117
MRT-NS-1 C5Line	104		

Source: JICA Project Team

3) Transit Data

The transit network data was initially created using the STRADA transit network (*.TNT) format. However, data conversion was done in order to export the data into the Cube Transportation Modeling Software. The data includes the city bus, jeepney, and the rail route in Mega Manila.

Figure 5.8: Transit Data



Source: JICA Project Team

5.4 Trip Generation Model

The trip generation and attraction models for five trip purposes are shown in Table 5.11.

Table 5.11: Trip Generation and Attraction Models

Purpose	Formula	R ²
1. To Work	Generation = 0.3063 x [Population>4 years old:Night] + 1124.83	0.90
	Attraction = 0.7539 x [Secondary Worker:Day] + 0.9288 x [Tertiary:Day] + 630.78	0.78
2. To School	Generation = 1.2885 x [Elementary:Night] + 0.6961 x [High School/Univ.:Night] + 1046.67	0.95
	Attraction = 1.0269 x [Elementary:Night] + 1.1197 x [High School/Univ.:Night] + 824.10	0.95
3. Business	Generation = 0.2906 x [Primary Worker:Night] + 0.1561 x [Secondary+Tertiary:Night] + 33837.62 x Dummy + 1506.73	0.72
	Attraction = 0.2579 x [Primary Worker:Day] + 0.2006 x [Secondary+Tertiary:Day] + 27967.75 x Dummy + 776.99	0.70
4. Private	Generation = 0.2001 x [Population>4 years old:Night] + 0.0435 x [Population>4 years old:Day] + 1986.04	0.80
	Attraction = 0.2891 x [Primary+Secondary+Tertiary:Day] + 0.4866 x [Student:Day] + 45019.16 x Dummy + 1543.98	0.73
5. To Home	Generation = 1.5509 x [Primary+Secondary+Tertiary:Day] + 0.7956 x [Elementary:Day] + 1.6794 x [High School/Univ.:Day] + 4339.60	0.84
	Attraction = 0.8911 x [Population>4 years old:Night] + 3868.03	0.95

Source: JICA Project Team

5.5 Trip Distribution Model

The Trip Distribution Model is the Fratar Method. This method assumes that the trip-making pattern will remain the same in the future as it is in the base year. Also, the volume will increase according to the growth in the generating and attracting zones. Future trip ends are computed using the following formula:

$$t'_{ij} = t_{ij} \cdot \frac{P_i}{p_i} \cdot \frac{A_j}{a_j} \cdot \frac{\sum_{k=1}^n t_{ik}}{\sum_{k=1}^n \left(\frac{A_k}{a_k} \right) t_{ik}}$$

The Fratar Method requires the base year OD table and the future trip ends. The future trip ends will be generated from the Trip Generation Model and since the total generation and attraction values will be different, balancing will be done.

5.6 Modal Split Model

The Modal Split Model is created for car-owning and non-car-owning households. The basic policies of modal split model are follows:

- (i) The adopted modal split ratio for intra-zone is the present ratio. Intra-zone trips are not affected by the highway assignment results, and
- (ii) Modal split model parameters are set by purpose and car ownership/non-car ownership; and
- (iii) Modal split model style between “private” and “public” modes follows that of MMUTIS.

Meanwhile, the basic steps of modal split model are shown in Table 5.12 and below.

- (i) “Truck” trips are estimated by present volume x increase ratio of GRDP/capita;
- (ii) “Walk” trips, “Other Land” trips, and “Other” trips also adopted the present ratio. (“Other Land” trips are motorized trips, and “Other” trips are non-motorized trips.)
- (iii) Modal split model between “private” and “public” modes is obtained from the remaining trips after steps (i) and (ii).

Table 5.12: Modal Split Model

Mode	Formula
1. Truck	Trip = [Present Volume] x [Increase Ratio of GRDP/Capita]
2. Walk Other Land Transportation Other	Present Modal Split Ratio
3. Private Mode Public Mode	$P = \frac{1}{1 + \text{Exp}(\alpha\Delta t + \beta\Delta C + \gamma)}$ Where, Δt : Travel time differences in minutes (private mode – public mode) ΔC : Travel time differences in PHP (private mode – public mode) α, β, γ : Parameters in Table 5.13 Remaining Trips

Source: JICA Project Team

Table 5.13: Modal Split Parameters between Private and Public Modes

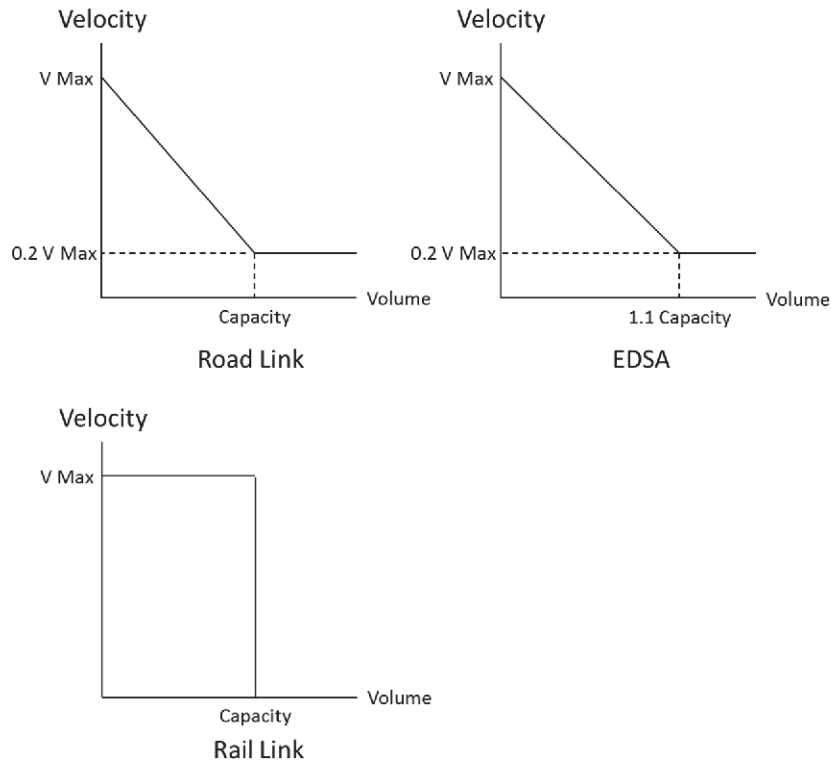
Type	Purpose	α	β	γ
1. Car-owing HHs	To Work	-0.7596	-0.0341	-0.7499
	To School	-0.4930	-0.0312	-0.2468
	To Business	-0.6120	-0.0399	-0.1511
	Private	-0.0868	-0.0098	-0.5184
	To Home	-0.6840	-0.0337	-0.8248
2. Non-car-owning HHs	To Work	-0.2765	-0.0184	-0.1975
	To School	-0.4930	-0.0312	-0.2468
	To Business	-0.6120	-0.0399	-0.1511
	Private	-0.0868	-0.0098	-0.5184
	To Home	-0.1903	-0.0217	-0.4856

Source: JICA Project Team

5.7 Highway Assignment

Travel speed is decided based on the QV function shown below. This is defined as a result of model validation.

Figure 5.9 QV Function



Source: JICA Project Team

5.8 Origin–Destination (OD) Data

The base year OD table was prepared based on the results of the Household Interview Survey, while the OD in 2025 and 2035 were estimated using the MUCEP demand forecast model. The estimated total trips by mode are shown in the table below. The OD tables are available in the MUCEP Database.

Table 5.14: Total Trips by Mode

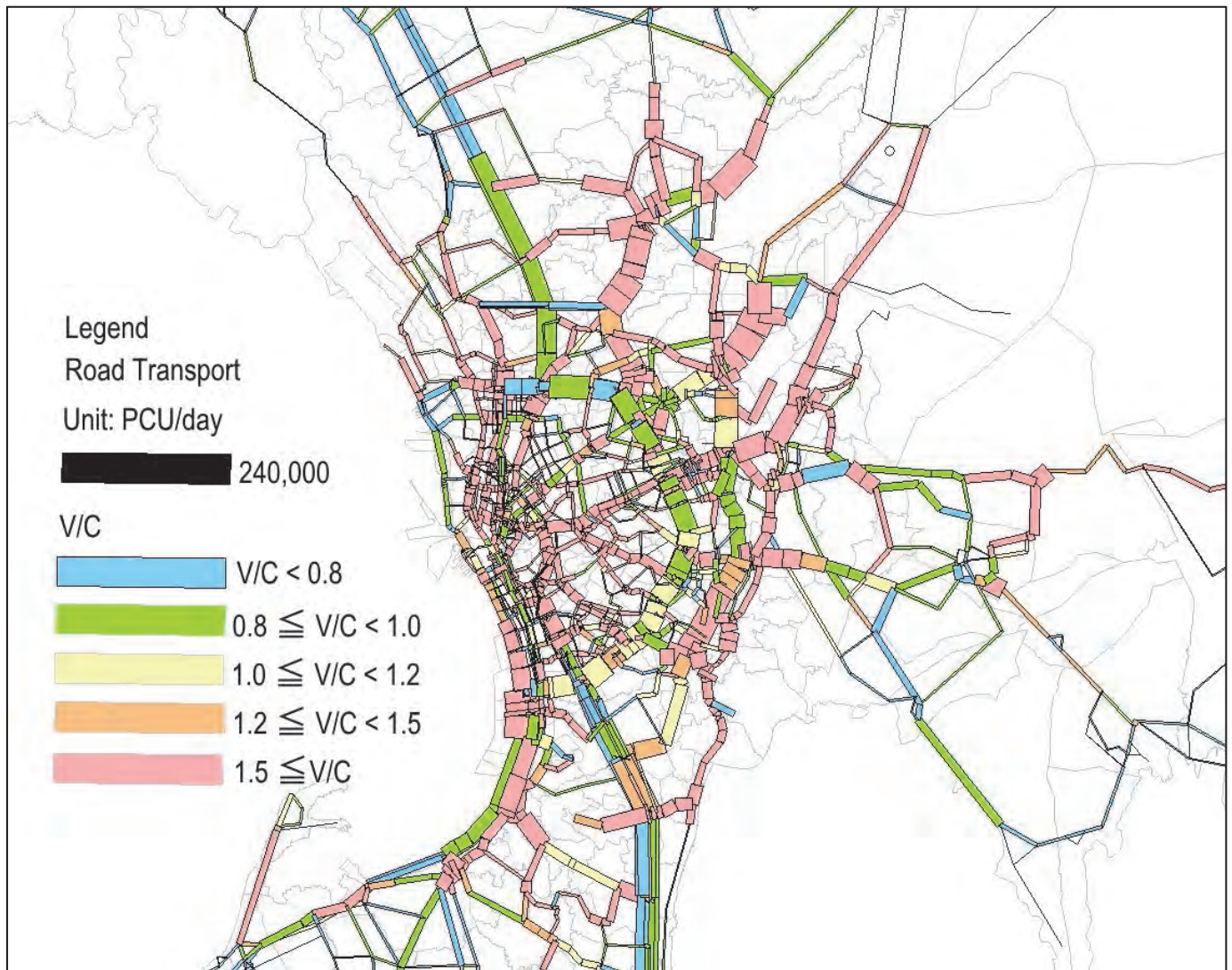
Year	Walk	Private Mode	Public Mode	Truck	Other
2014	10,910,100	6,467,516	11,092,775	275,327	7,189,171
2025	12,517,837	7,092,241	11,293,851	393,450	6,800,664
2035	13,764,329	8,748,371	12,091,295	581,391	7,473,246

Source: JICA Project Team

5.9 Highway Assignment Result

Highway assignment results for 2014 are shown in Figure 5.10.

Figure 5.10: Highway Assignment Results for 2014



Source: JICA Project Team

6 SKETCH PLANNING

6.1 Methodology

One of the major constraints in medium to large-size cities is the capacity to undertake travel demand analysis on a regular basis as part of a urban transportation master plan development, implementation, monitoring, and evaluation. The major activity in such efforts is the conduct of travel demand estimation.

Up to now, estimation of urban travel demand in medium and large-size cities in the Philippines has been very limited. And the prevailing mindset among planners and decision-makers is that such activities are very costly.

It is argued that the development of simplified travel demand estimation techniques has been the subject of research work for a long time now, and best practices and traffic modeling tools are now readily accessible to cities.

A feasible approach to simplified transportation demand estimation is the development of sketch planning tools. Sketch planning is the preliminary screening of possible configurations or concepts.

Sketch planning modeling aims to realize highlighted objectives based on simplified processes, released parameters estimation, and using data sets at rougher level or with coarser resolution. In comparison with a full-scale model, it can offer such merits as quick response, ease of use and understanding, and low-cost development. The key idea of sketch planning method is to facilitate the generation of alternatives quickly and easily.

The main features of the sketch planning methodology include the following:

- (i) Adopting the logic structure of the traditional transportation modeling process;
- (ii) Limiting the classification of trip purposes (working, schooling, shopping, and others) and trip modes (private car, transit, and walking);
- (iii) Setting the appropriate zoning system (grouping of residents and activities that are consistent with past zoning systems);
- (iv) Updating network representation with appropriate level of aggregation;
- (v) Utilizing past OD tables as bases for OD table updating; and
- (vi) Calibrating modest models but where practicable, employing extensive use of matrix estimation techniques.

Sketch planning in the context of urban transportation planning is seen as a relatively low-cost, rapid planning exercise, employing short-cut methods, and suited to circumstances where quick responses are often required to tackle complex urban transportation problems. Such circumstances are typically characterized by limited or invalid local data with which to formulate an effective and efficient response, obliging one to rely on proxy data collected from similar settlements in the same region, country, or region.

Where primary data is not available, sketch-plan methodologies can rely on traffic generation and production relationships derived from former studies of settlements of similar characteristics. These are used to limit data collection and expedite the execution of sketch-plan exercises.

In instances, however, where OD traffic surveys have been conducted in the past, the

use of low-cost methods of updating trip patterns in travel demand forecasting is especially appropriate.

The principal steps of the sketch-plan methodology are:

- (a) **Step 1:** This entails an assessment and review of existing conditions which concern (i) current national, provincial, and urban transportation and development policies, plans, and projects affecting the study area; (ii) the present characteristics and condition of urban transportation services and facilities; and (iii) selected priority areas of concern for which critical data is needed.
- (b) **Step 2:** This requires the undertaking of simple urban travel demand analysis and forecasting exercises tempered by normative, enabling, and controlling policies as appropriate. Normative policies or plans are those that provide direction, aspirations, and standards for government, community, and the private sector to pursue and strive after. Enabling policies and plans are designed to support welcome market forces and community preferences which simultaneously contribute to normative directives. Controlling policies and plans are those that provide the basis for enforcement and regulation, particularly of the private sector and communities, to ensure both normative and enabling directives are followed within the prescribed limits.
- (c) **Step 3:** This involves the identification of transportation infrastructure and service problems.
- (d) **Step 4:** This necessitates the screening of identified urban transportation problems. It involves the categorization and prioritization of problems in terms of spatial characteristics; different professional and vested interests; root problems and their manifestations; and current and future problems impeding important development considerations.
- (e) **Step 5:** This entails the preparation of responses to screened problems for citywide and area/corridor/street-specific situations under selected policy circumstances.
- (f) **Step 6:** This requires the evaluation and appraisal of urban transportation proposals. Firstly, a proposal's contribution to national, provincial, and local development objectives is assessed together with its compatibility to available resources. Secondly, it will be assessed in terms of more conventional optimization terms.
- (g) **Step 7:** This involves the integration and coordination of proposals generated by the planning approach.

The above-mentioned steps are not in any way strictly sequential but allow forward and backward feedback.

There is a need to develop clear guidelines, standards, and toolkits on the sketch-plan methodology in urban transportation planning for medium to large-size cities in the country. These guidelines and standards should be integrated with existing statutory guidelines and standards in land use planning, local development planning, and existing engineering standards for the built environment.

6.2 Sample Sketch Planning Model

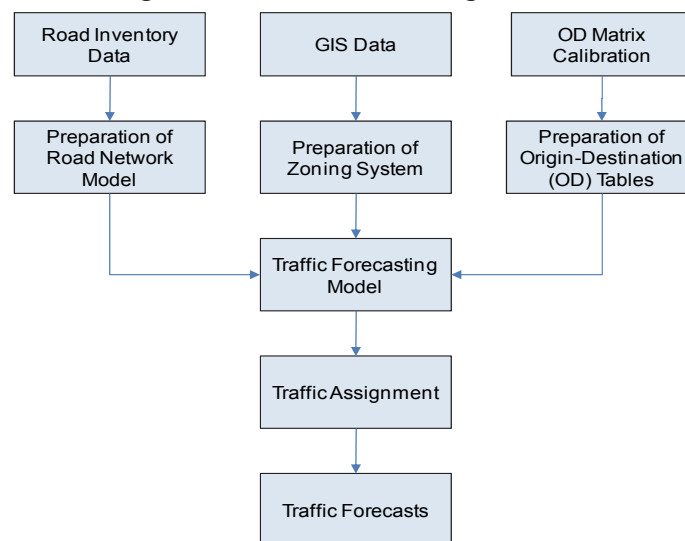
A sketch planning model was developed for General Santos City, a regional city located in Mindanao, in order to assess the existing and future urban transportation situation in the city. It also provides the basis for evaluating the transportation impacts of the

proposed redevelopment of the city's Central Public Market (CPM) and Integrated Food Terminal (IFT).

The sketch planning model is structured as a travel demand forecasting model but based on simplified processes and released parameters estimation, and using data sets at rougher levels or with coarser resolutions. The model made extensive use of available road inventory data, existing OD tables, and existing traffic.

The development of the model consists of the following steps, namely: (i) preparation of road network model; (ii) preparation of zoning system; (iii) preparation of OD tables; (iv) OD matrix estimation; and (v) traffic assignment.

Figure 6.1: Sketch Planning Model Flow



Source: JICA Project Team

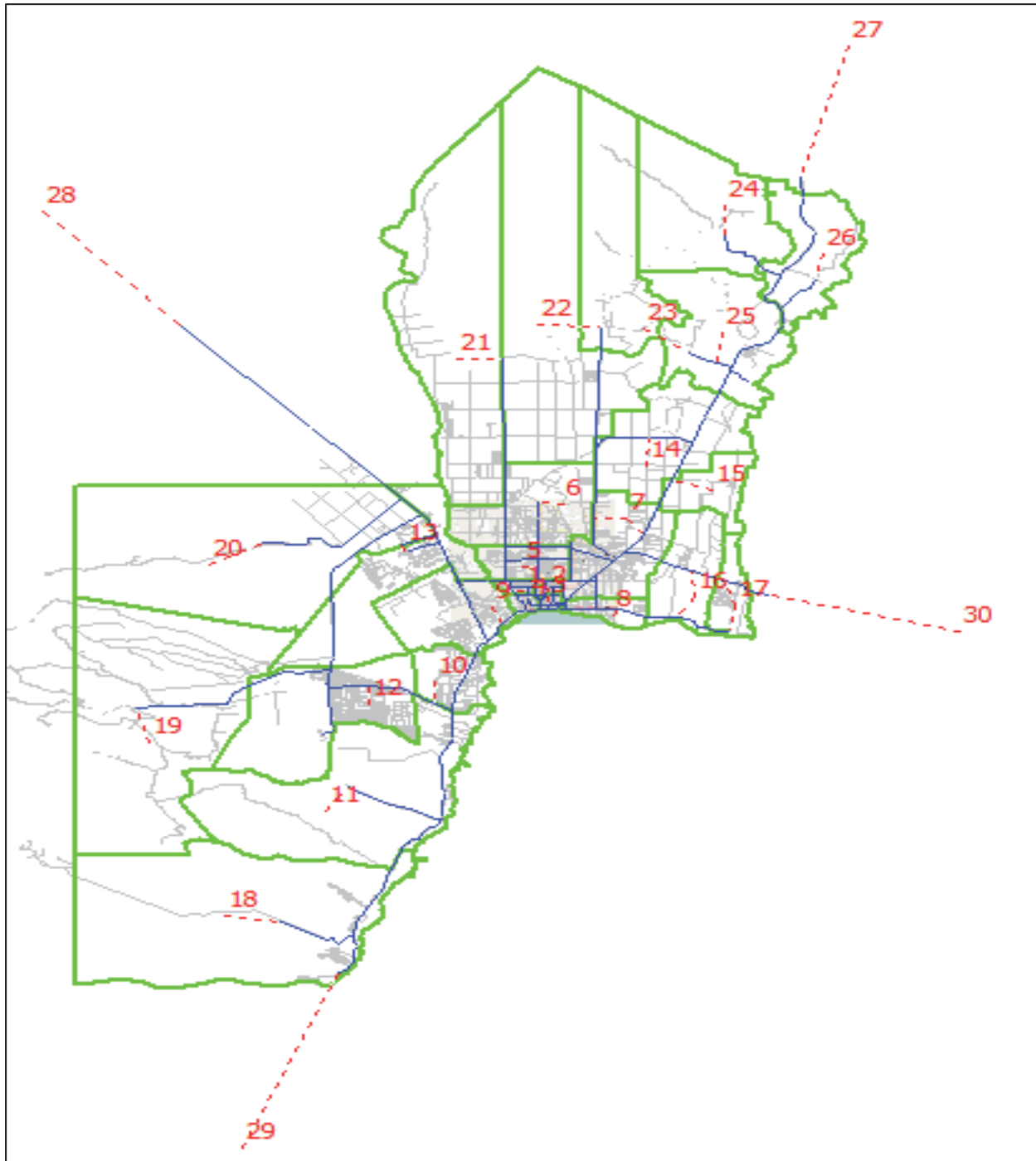
The zoning system for General Santos City was based on its existing boundaries. It consists of 26 internal zones and four external zones.

Table 6.1: Description of Zoning System for General Santos City

TAZ	Zone Name	Land Area	2011 Population	TAZ	Zone Name	Land Area	2011 Population
1	Dadiangas North	95.09	8,567	14	Katangawan	1,958.39	12,138
2	Dadiangas East	61.07	4,161	15	Ligaya	651.56	4,006
3	Dadiangas South	61.68	6,955	16	Baluan	1,059.33	7,349
4	Dadiangas West	86.29	14,063	17	Buayan	474.03	9,950
5	City Heights	480.62	18,757	18	Siguel	6,051.67	10,880
6	San Isidro	1,481.65	39,369	19	San Jose	5,969.05	9,220
7	Lagao	1,347.95	49,252	20	Sinawal	6,176.92	11,278
8	Bula	300.94	29,943	21	Mabuhay	4,994.70	22,205
9	Labangal	1,285.03	57,424	22	Conel	5,670.74	10,288
10	Calumpang	654.03	68,524	23	Olympog	2,506.75	3,113
11	Tambler	4,386.05	18,505	24	Upper Labay	2,623.96	2,838
12	Fatima	2,469.05	61,221	25	Tinagacan	2,121.80	5,952
13	Apopong	2,032.91	39,896	26	Batomelong	1,454.50	3,128

Source: JICA Project Team

Figure 6.2: Traffic Analysis Zones in General Santos City



Source: JICA Project Team

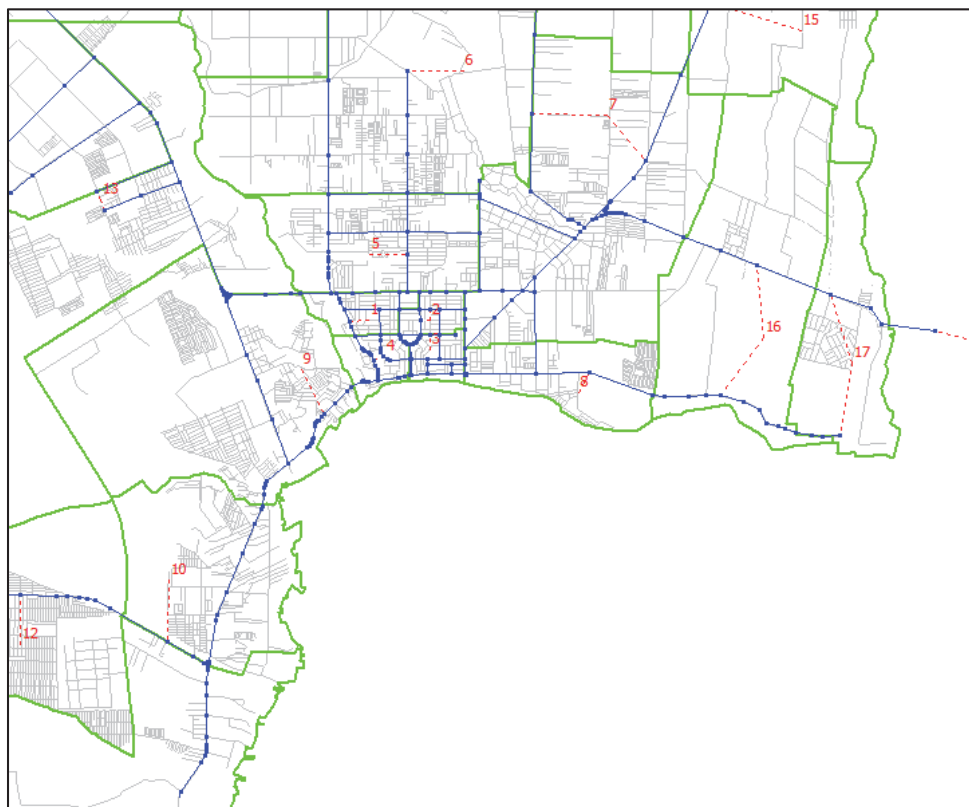
The road network of the model consists of nodes and links. Each of the links represents a section of the road and each of the nodes represents an intersection. The elements used in a link are length, maximum speed, capacity, fare system, directional regulation, and volume-speed relationship. Links are classified to determine capacity, maximum speed, and volume-speed relationship.

Table 6.2: Length of Roads in General Santos City by Barangay

Barangay	Total Length (km)	Length by Surface Type (km)			
		Asphalt	Gravel	Earth	Concrete
Apopong	7.24	-	-	4.34	2.9
Baluan	20.585	-	-	11.795	8.79
Batomelong	6.261	-	2.4	1.695	2.166
Bawing	23.905	-	23.473	-	0.432
Buayan	19.795	1.05	0.51	16.18	2.055
Bula	17.345	-	-	7.345	10
Calumpang	23.628	-	-	7.588	16.04
City Heights	14.027	1.532	-	5.845	6.65
Conel	21.25	-	-	14.465	6.785
Dadiangas East	9.15	-	-	0.05	9.1
Dadiangas North	12.026	1.022	-	-	11.004
Dadiangas South	11.315	1.388	-	-	9.927
Dadiangas West	7.437	0.646	-	0.266	6.525
Fatima	91.038	-	-	80.784	10.254
Government Center	1.683	0.306	-	-	1.377
Katangawan	42.691	0.22	0.37	35.791	6.311
Labangal	9.938	-	-	9.54	0.398
Lagao	38.99	3.973	-	17.257	17.759
Ligaya	11.998	-	-	10.892	1.106
Mabuhay	37.753	-	-	34.028	3.725
Olympog	6.916	-	-	6.174	0.742
San Isidro	31.11	0.606	-	23.515	6.989
San Jose	27.75	-	-	23.75	4
Sinawal	27.346	-	-	23.4	3.946
Tambler	2.687	-	-	0.458	2.229
Tinagakan	19.46	-	-	15.785	3.675
Upper Labay	39.87	-	-	37.52	2.35
Grand Total	583.194	10.743	26.753	388.463	157.235

Source: City Engineer's Office of Gen. Santos

Figure 6.3: Road Network Data of General Santos City



The maximum speed was set according to the class of roads, as follows:

- National highway : 60 km/h
- Major urban road : 50 km/h
- Secondary urban road : 50 km/h
- Barangay road : 40 km/h

The lane capacity of each class of road is set as follows:

- Expressway : 1,800 PCU/h/lane
- Major urban road : 1,600 PCU/h/lane
- Secondary urban road : 1,600 PCU/h/lane
- Barangay road : 1,400 PCU/h/lane

Traffic volumes by vehicle type were multiplied by their respective passenger car equivalent factors (PCEFs) in order to establish the traffic volumes in terms of passenger car unit (PCU).

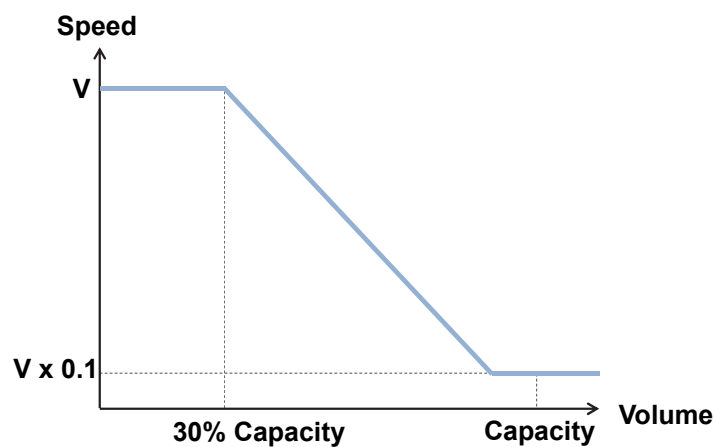
Travel time changes due to congestion, that is, the bigger the traffic volume, the longer the traffic time on the link. The model for General Santos City incorporated such speed reduction by traffic volume as a link cost function, which represents volume-speed relationship.

Table 6.3: Passenger Car Equivalent Factors

Vehicle Type	PCEF
Passenger Car/Van/AUV	1.0
Public Utility Jeepney (PUJ)	1.5
Public Utility Bus (PUB)	2.2
Medium Truck	2.0
Large Truck	2.5
Tricycle	0.8
Motorcycle	0.5

Source: JICA Project Team

Figure 6.4: Volume-Speed Relationship



Source: JICA Project Team

Traffic count data along national roads are available due to the DPWH Road Traffic Information Application (RTIA). As such, annual average daily traffic (AADT) volumes along sections of the national highway in General Santos City were utilized as screen line data.

Traffic growth rate (TGR) data are also available from the historical data in the DPWH RTIA. The recorded 3.401% growth for passenger cars in South Cotabato is the highest in the region and also one of the highest in the country.

Table 6.4: Traffic Volume along National Highways in General Santos City

Road Name	Motor - Tricycle	Passenger Car	Passenger Utility	Goods Utility	Small Bus	Large Bus	Rigid Truck 2 Axles	Rigid Truck 3+ Axles	Truck Semi-Trailer 3&4 Axles	Truck Semi-Trailer 5+ Axles	Truck Trailers 4 Axles	Truck Trailers 5+ Axles	Total
Digos-Makar Road	13,406	13,372	2,946	1,888	23	294	1,391	438	91	121	0	1	33,971
Makar-Marbel Road	7,813	5,727	1,045	406	16	20	1,043	443	109	213	0	0	16,835
Jct Digos-Buayan Airport Road	8,427	1,568	672	985	9	9	387	69	18	17	0	0	12,161
Makar-Kiamba Road	19,585	5,377	1,332	529	19	32	2,165	325	84	96	12	0	29,556

Source: DPWH

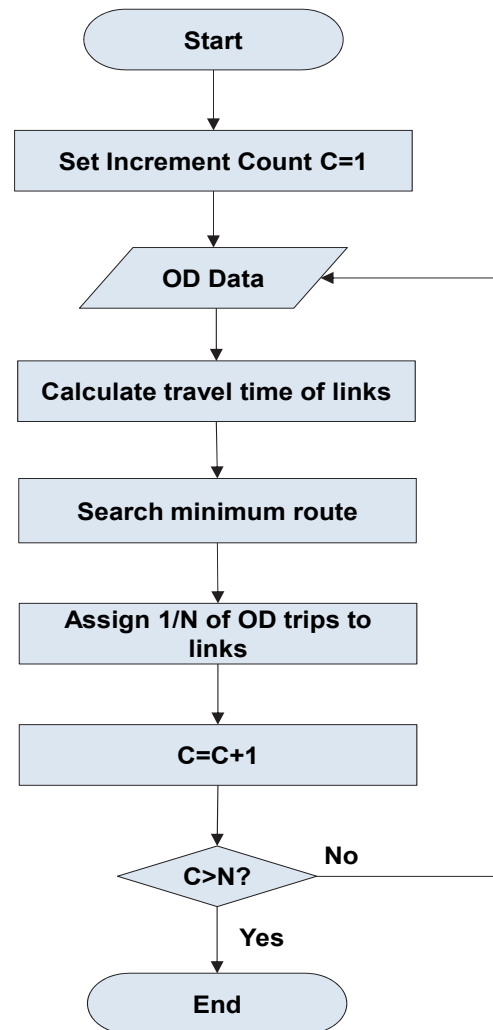
Table 6.5: Traffic Growth Rate in Region XII

Region/ Province	Motor - Tricycle	Passenger Car	Passenger Utility	Goods Utility	Small Bus	Large Bus	Rigid Truck 2 Axles	Rigid Truck 3+ Axles	Truck Semi-Trailer 3&4 Axles	Truck Semi-Trailer 5+ Axles	Truck Trailers 4 Axles	Truck Trailers 5+ Axles
REGION XII	2.497	3.047	2.497	2.407	2.497	2.497	2.407	2.407	2.407	2.407	2.407	2.407
South Cotabato	2.648	3.401	2.648	2.525	2.648	2.648	2.525	2.525	2.525	2.525	2.525	2.525
Sarangani	2.371	2.753	2.371	2.309	2.371	2.371	2.309	2.309	2.309	2.309	2.309	2.309
Sultan Kudarat	2.391	2.799	2.391	2.324	2.391	2.391	2.324	2.324	2.324	2.324	2.324	2.324
North Cotabato	2.417	2.961	2.417	2.345	2.417	2.417	2.345	2.345	2.345	2.345	2.345	2.345
Cotabato City	2.632	3.362	2.632	2.512	2.632	2.632	2.512	2.512	2.512	2.512	2.512	2.512

Source: DPWH

Figure 6.5: Incremental Traffic Assignment

Traffic volume on each link was calculated by allocating every OD data to minimum routes for each OD pair. In order to forecast traffic volumes, the highway network was loaded using vehicle trips in passenger car units or PCU.



Source: JICA Project Team

The trip generation stage involved the preparation of a database of zonal characteristics including total population, number of elementary students (STUDELEM), number of high school students (STUDHS), number of college students (STUDCOLL), number of workers in the primary sector (EMPPRI), number of workers in the secondary sector (EMPSEC), and number of workers in the tertiary sector (EMPTER).

Figure 6.6: Zonal Data

ZONENO	HBP	NHBP	SCHP	EXTP	TOTALP	HBA	NHBA	SCHA	EXTA	TOTALA
1	7024	4036	860	0	12076	7106	4036	839	0	11982
2	3037	1891	423	0	5566	3150	1891	395	0	5436
3	5566	3251	700	0	9694	5659	3251	677	0	9587
4	11996	6711	1404	0	20194	12041	6711	1393	0	20145
5	16246	8998	1869	0	27134	16256	8998	1866	0	27120
6	34896	19034	3910	0	57588	34763	19034	3943	0	57740
7	43839	23846	4889	0	72190	43637	23846	4939	0	72422
8	26366	14444	2976	0	43659	26300	14444	2993	0	43736
9	51233	27825	5698	0	84266	50974	27825	5762	0	84562
10	61278	33230	6797	0	100667	60941	33230	6880	0	101052
11	16016	8875	1843	0	26759	16030	8875	1840	0	26745
12	54669	29674	6074	0	89876	54384	29674	6145	0	90202
13	35374	19291	3963	0	58368	35236	19291	3996	0	58523
14	10256	5775	1213	0	17354	10313	5775	1199	0	17287
15	2897	1815	408	0	5337	3011	1815	380	0	5206
16	5922	3443	739	0	10276	6013	3443	717	0	10172
17	8275	4709	996	0	14118	8348	4709	979	0	14036
18	9117	5162	1089	0	15493	9183	5162	1072	0	15418
19	7615	4354	924	0	13040	7693	4354	905	0	12951
20	9478	5356	1128	0	16082	9541	5356	1113	0	16009
21	19364	10676	2210	0	32226	19352	10676	2213	0	32241
22	8581	4874	1030	0	14618	8652	4874	1013	0	14538
23	2088	1380	319	0	4016	2209	1380	289	0	3879
24	1840	1246	292	0	3611	1962	1246	262	0	3471
25	4658	2763	600	0	8211	4758	2763	575	0	8097
26	2103	1388	321	0	4040	2223	1388	291	0	3902
27	0	0	0	16000	16000	0	0	0	16000	16000
28	0	0	0	8000	8000	0	0	0	8000	8000
29	0	0	0	15000	15000	0	0	0	15000	15000

Under a sketch planning approach, the parameters of the trip generation and trip distribution model can be transferred from previous work on cities with similar characteristics. The parameters and structure of the trip generation and attraction model used for General Santos City were adopted from a previous study of Davao City¹. Figures 6.7 and 6.8 present the trip production and trip attraction equations, respectively.

¹ In 1979, the then Ministry of Public Works and Highways (MPWH) set up a team for a Davao City Urban Transport Cum Land Use Study (DCUTCLUS) and a steering committee consisting of representatives from concerned agencies.

Figure 6.7: Trip Production Equations

```

; purpose = home based
P[1] = (hbp_e*(zi.1.EMPSEC+zi.1.EMPTER) + hbp_sc*zi.1.TOTALSTUD - 728)
; purpose = non-home based
P[2] = (nhbp_e*(zi.1.EMPSEC+zi.1.EMPTER) + 134)
; purpose = school
P[3] = (schp_sc*zi.1.TOTALSTUD + 11)

hbp_e = 1.0940 ; production trip rate per secondary and tertiary employee per day
hbp_sc = 1.2542 ; production trip rate per pupil/student per day
nhbp_e = 0.6648 ; production trip rate per secondary and tertiary employee per day
schp_sc = 0.9904 ; production trip rate per pupil/student per day
hbp_sc = 1.254 ; production trip rate per pupil/student per day
nhbp_e = 0.6648 ; production trip rate per secondary and tertiary employee per day
schp_sc = 0.9904 ; production trip rate per pupil/student per day
    
```

Source: JICA Project Team

Figure 6.8: Trip Attraction Equations

```

; purpose = home based
A[1] = (hba_p*zi.1.POP2009 - 438)
; purpose = non-home based
A[2] = (nhba_e*(zi.1.EMPSEC+zi.1.EMPTER) - 163)
; purpose = school
A[3] = (scha_sc*zi.1.TOTALSTUD - 24)

hba_p = 0.6713 ; attraction trip rate per person (population) per day
nhba_e = 0.8223 ; attraction trip rate per secondary and tertiary employee per day
scha_sc = 1.0030 ; attraction trip rate per pupil/student per day
hba_p = 0.6713 ; attraction trip rate per person (population) per day
nhba_e = 0.8223 ; attraction trip rate per secondary and tertiary employee per day
scha_sc = 1.0030 ; attraction trip rate per pupil/student per day
    
```

Source: JICA Project Team

After the trip generation process, a trip distribution process was performed. The trip distribution model was also patterned after DCUTCLUS. The result of the trip distribution process is an initial base year OD table of person-trips.

The form of the trip distribution model is:

$$X_{ij} = B_{ij} \cdot G_i \cdot \frac{A_j \cdot T_{ij}^{-\gamma}}{\sum_{\substack{j=1 \\ (j \neq i)}}^n A_j \cdot T_{ij}^{-\gamma}}$$

where X_{ij} is the trips between zones i and j

G_i is the generated trips of zone i

A_j is the attracted trips of zone j

T_{ij} is the distance between zones i and j

γ is a parameter

B_{ij} is a coefficient of access which expresses the intensity of zone linkage

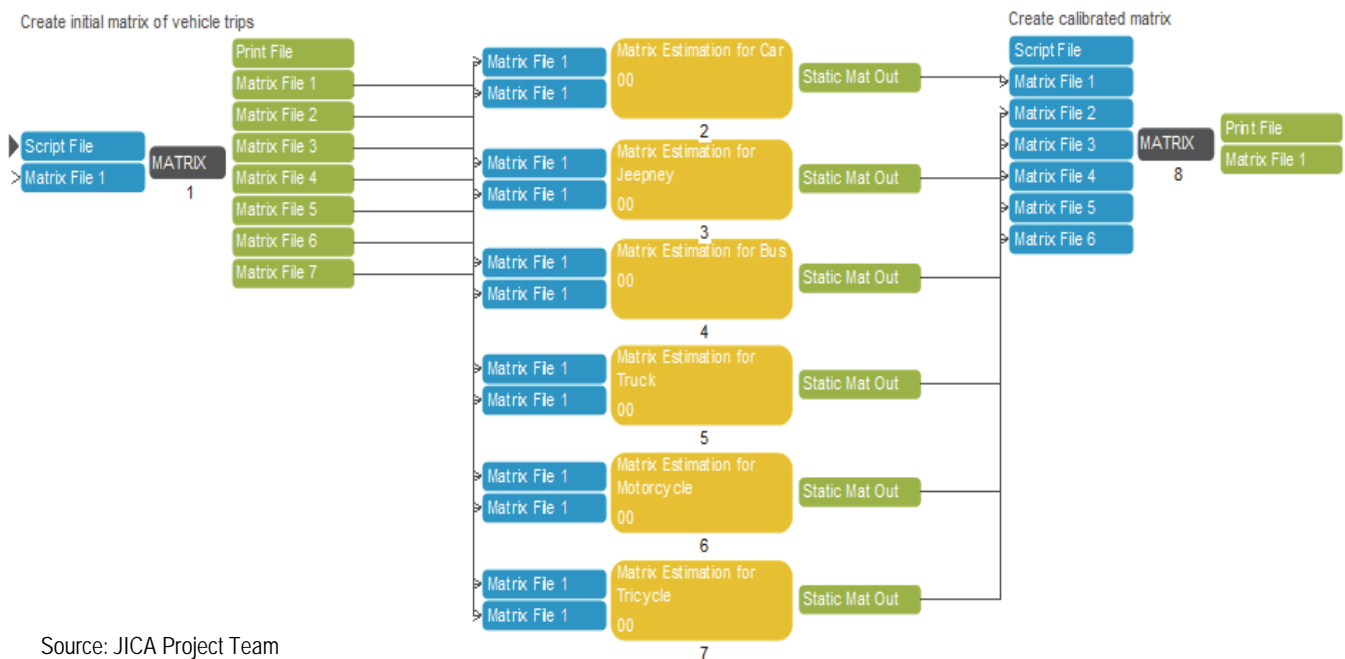
For the analysis, the parameters γ and B_{ij} were considered to have a value of 1.

The matrix estimation component produces calibrated OD matrices based on existing traffic count data along screen lines including assumptions of confidence levels of total trip values. This component utilizes the Matrix Analyst module of the Cube transportation modeling software.

Using the initial base year matrix, initial base year OD matrices by mode were generated using the assumed mode share values shown below. Figure 6.9 presents the Matrix Calibration application in the model environment.

- (i) Mode share of car trips – 21%;
- (ii) Mode share of PUJ trips - 2%;
- (iii) Mode share of PUB trips - 2%;
- (iv) Mode Share of Truck Trips - 5%; M
- (v) Mode Share of Motorcycle Trips - 40%;
- (vi) Mode Share of Tricycle Trips - 30%.

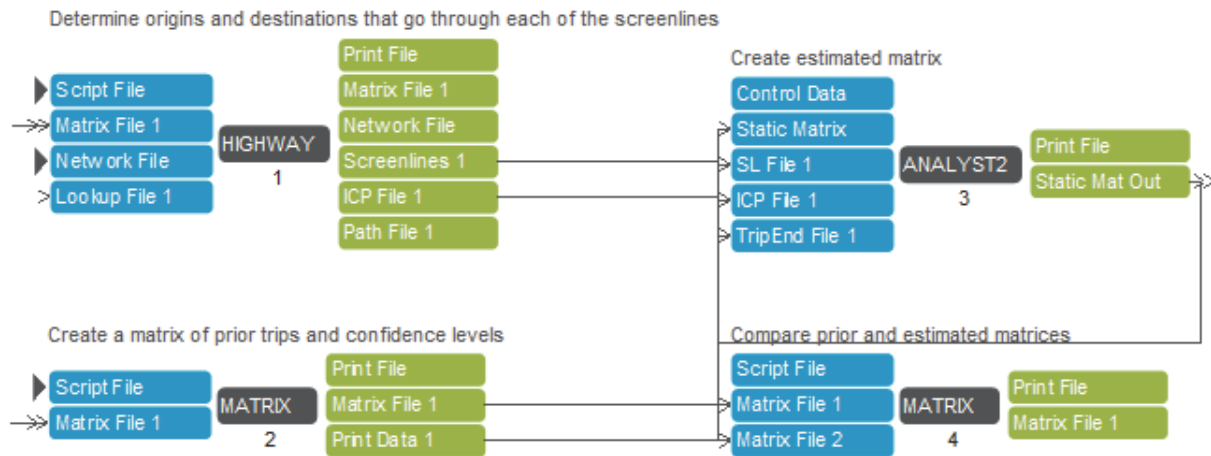
Figure 6.9: Matrix Calibration Application



Source: JICA Project Team

Separate matrix estimation steps were performed for each of the vehicle classes. Figure 6.10 presents the separate matrix estimation step for cars. Similar steps were performed separately for PUJs, PUBs, trucks, motorcycles, and tricycles. The end results of the matrix calibration step were calibrated OD matrices by mode.

Figure 6.10: Matrix Calibration for Car Trips



Source: JICA Project Team

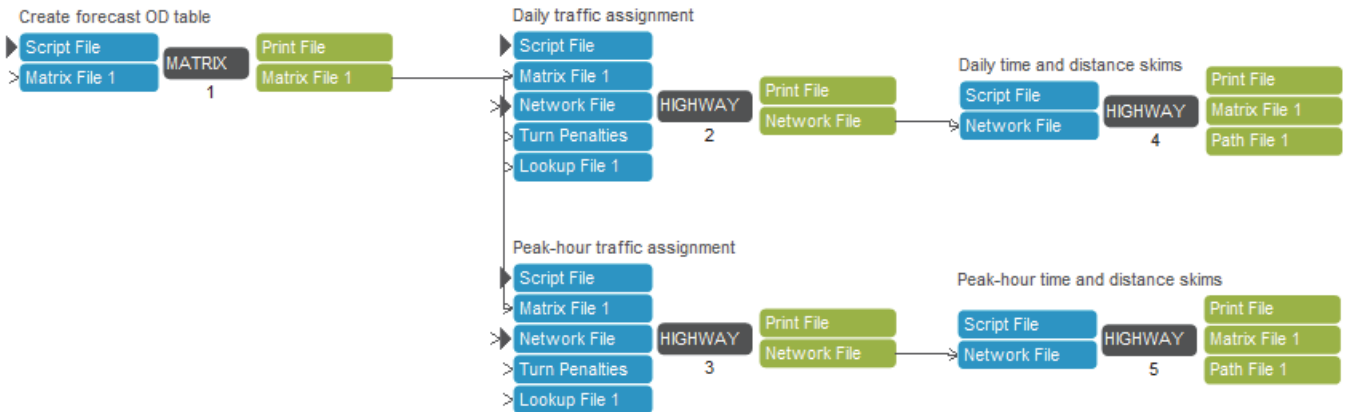
Figure 6.11: Calibrated OD Matrices by Mode

✓ *1 CAR	2 JEEPNEY	3 BUS	4 TRUCK	5 MC	6 TC	7 TOTAL									
Sum	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
100529	2404	1203	1840	4311	4616	6434	8675	6314	15303	11972	1301	9722	5849	1579	1745
1	1846	0	33	57	253	133	135	136	124	452	17	2	12	98	10
2	865	35	0	41	51	86	73	85	75	159	7	1	5	47	9
3	1484	62	42	0	106	127	122	130	121	328	14	2	10	74	11
4	3126	229	46	91	0	186	204	219	244	1089	30	4	20	143	28
5	3947	161	97	141	243	0	575	432	317	772	40	6	28	226	51
6	7651	241	123	201	388	819	0	1158	642	1464	268	15	73	543	149
7	9621	247	144	216	423	626	1153	0	1153	1700	476	19	179	624	359
8	6034	177	102	158	368	367	512	926	0	1357	73	10	52	333	102
9	11668	536	189	367	1308	780	1033	1201	1185	0	1529	24	710	761	159
10	9460	29	12	22	55	56	94	277	88	2142	0	484	5355	197	18
11	2001	6	3	5	11	13	25	30	21	56	919	0	648	24	5
12	9936	23	10	17	42	44	78	97	71	1282	6401	395	0	664	16
13	6075	77	9	15	210	300	612	724	427	1355	691	20	918	0	14
14	2645	43	22	36	73	103	205	544	180	305	26	5	20	148	0
15	949	14	8	12	24	35	67	139	61	99	8	1	6	52	30
16	1129	26	14	23	51	57	18	224	245	197	14	2	10	74	3
17	1527	35	19	30	66	75	63	334	251	265	20	3	15	99	4
18	1129	4	2	3	6	8	15	18	12	30	442	115	336	14	3
19	1296	3	1	2	5	6	11	14	10	24	393	55	431	134	3
20	1096	5	2	3	8	10	41	75	14	213	33	6	216	256	4
21	4284	108	44	76	176	246	500	522	303	717	61	10	48	355	84
22	2225	36	18	30	61	86	176	374	148	262	24	4	19	138	86
23	1031	44	40	43	51	58	81	111	74	103	6	1	5	79	60
24	975	43	39	42	49	55	76	98	68	96	6	1	5	78	50

Source: JICA Project Team

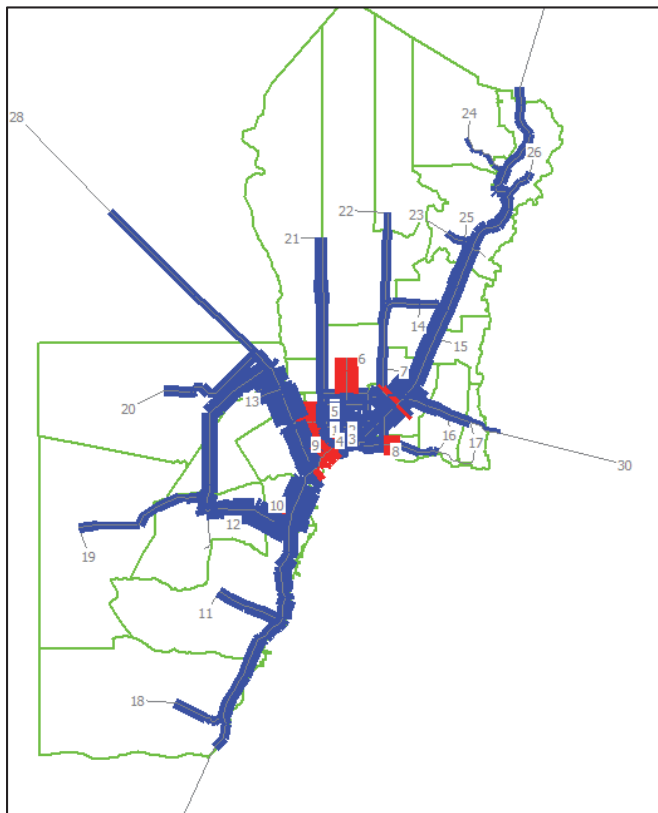
The Highway Assignment component performs traffic assignment procedures to generate link volumes on the network. Separate assignment steps were performed for daily and peak-hour traffic volumes. Analysis of daily traffic is often used for long-term planning, while analysis of peak-hour traffic demand provides the basis for operational improvements on the network.

Figure 6.12: Highway Assignment Application



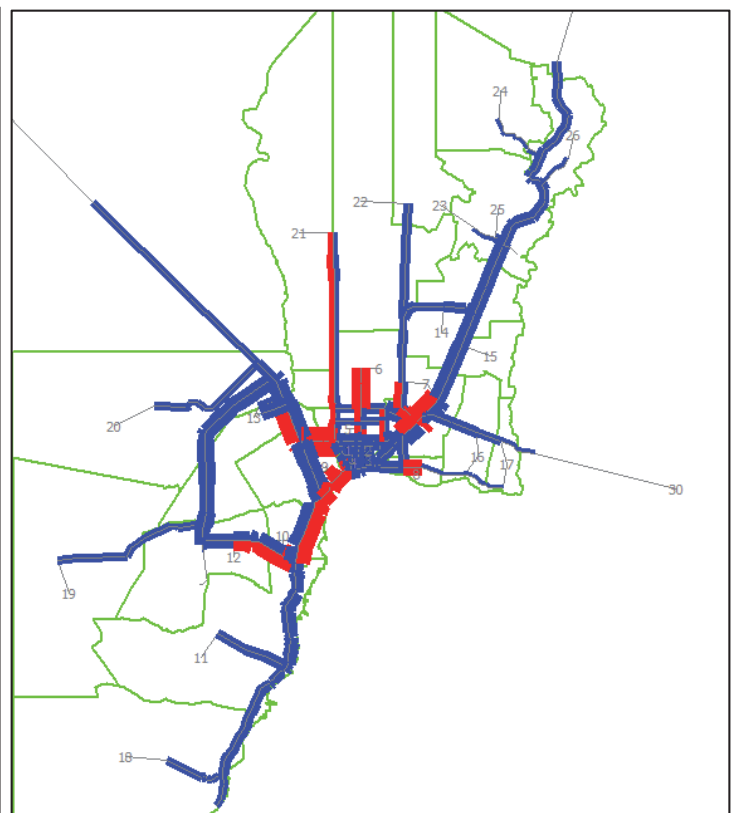
Source: JICA Project Team

Figure 6.13: Link Traffic Volumes for Daily Traffic



Source: JICA Project Team

Figure 6.14: Link Traffic Volumes for Peak-Hour Traffic



Source: JICA Project Team

Skim data are useful in evaluating the situation on the road network. Under the model environment, zone-to-zone skim data for travel time, distance, and speed are generated automatically in the form of tables.

Figure 6.15: Daily Time, Distance, and Speed Skims

✓ *1 TIME	2 DISTANCE	3 SPEED												
Sum	1	2	3	4	5	6	7	8	9	10	11	12	13	
27344.66	620.00	609.27	617.78	628.24	638.77	1277.82	597.53	884.39	908.37	1047.13	1203.48	1072.45	844	
1 551.17	0.00	1.53	1.46	0.80	3.28	27.84	8.61	13.74	13.60	25.11	31.02	26.81	14	
2 541.72	1.49	0.00	0.40	1.75	2.43	26.99	7.07	12.79	14.17	26.24	32.15	27.93	15	
3 549.32	1.42	0.40	0.00	1.68	2.83	27.39	7.47	12.41	14.10	26.50	32.41	28.20	15	
4 559.88	0.76	1.74	1.67	0.00	3.78	28.34	8.74	13.06	12.82	25.83	31.75	27.53	15	
5 573.08	3.48	2.53	2.93	3.93	0.00	24.63	7.87	15.31	16.66	27.82	33.73	29.51	17	
6 1240.28	28.86	27.91	28.31	29.32	25.45	0.00	30.05	39.73	42.04	53.08	59.00	54.78	42	
7 663.33	12.96	11.36	11.76	13.00	12.32	33.49	0.00	20.66	25.17	37.45	43.36	39.14	26	
8 756.41	11.31	10.37	10.00	10.78	12.79	36.51	14.08	0.00	22.94	36.39	42.30	38.08	25	
9 740.77	13.56	14.09	14.02	12.82	16.45	41.01	20.91	25.22	0.00	14.34	20.25	21.47	14	
10 941.60	23.89	24.96	25.31	24.66	26.28	50.58	31.66	37.59	24.02	0.00	14.05	7.25	23	
11 1231.04	34.08	35.15	35.51	34.85	36.47	60.78	41.86	47.78	34.22	18.41	0.00	25.54	33	
12 992.71	25.86	26.94	27.29	26.63	28.25	52.56	33.64	39.57	33.37	9.46	23.40	0.00	16	
13 776.46	14.11	15.19	15.54	14.88	16.50	40.81	21.89	27.82	25.35	24.34	30.25	17.55	0	
14 803.20	20.16	18.56	18.96	20.20	19.52	40.69	7.20	27.86	32.37	44.65	50.56	46.35	33	
15 719.59	16.23	14.64	15.04	16.28	15.59	36.77	3.39	23.94	28.45	40.73	46.64	42.42	29	
16 682.63	13.44	11.85	12.25	13.34	12.80	33.98	5.59	2.60	25.50	37.94	43.85	39.63	27	
17 716.06	14.67	13.08	13.47	14.72	14.03	35.20	6.81	5.07	26.88	39.16	45.08	40.86	28	
18 1303.44	37.18	38.26	38.61	37.95	39.57	63.88	44.96	50.89	37.32	21.51	16.69	28.64	36	
19 1227.25	32.82	33.89	34.24	33.58	35.20	59.51	40.59	46.52	44.05	25.37	39.31	16.00	23	
20 1019.57	23.20	24.27	24.62	23.96	25.58	49.89	30.97	36.90	34.43	33.14	39.33	23.77	14	

Source: JICA Project Team

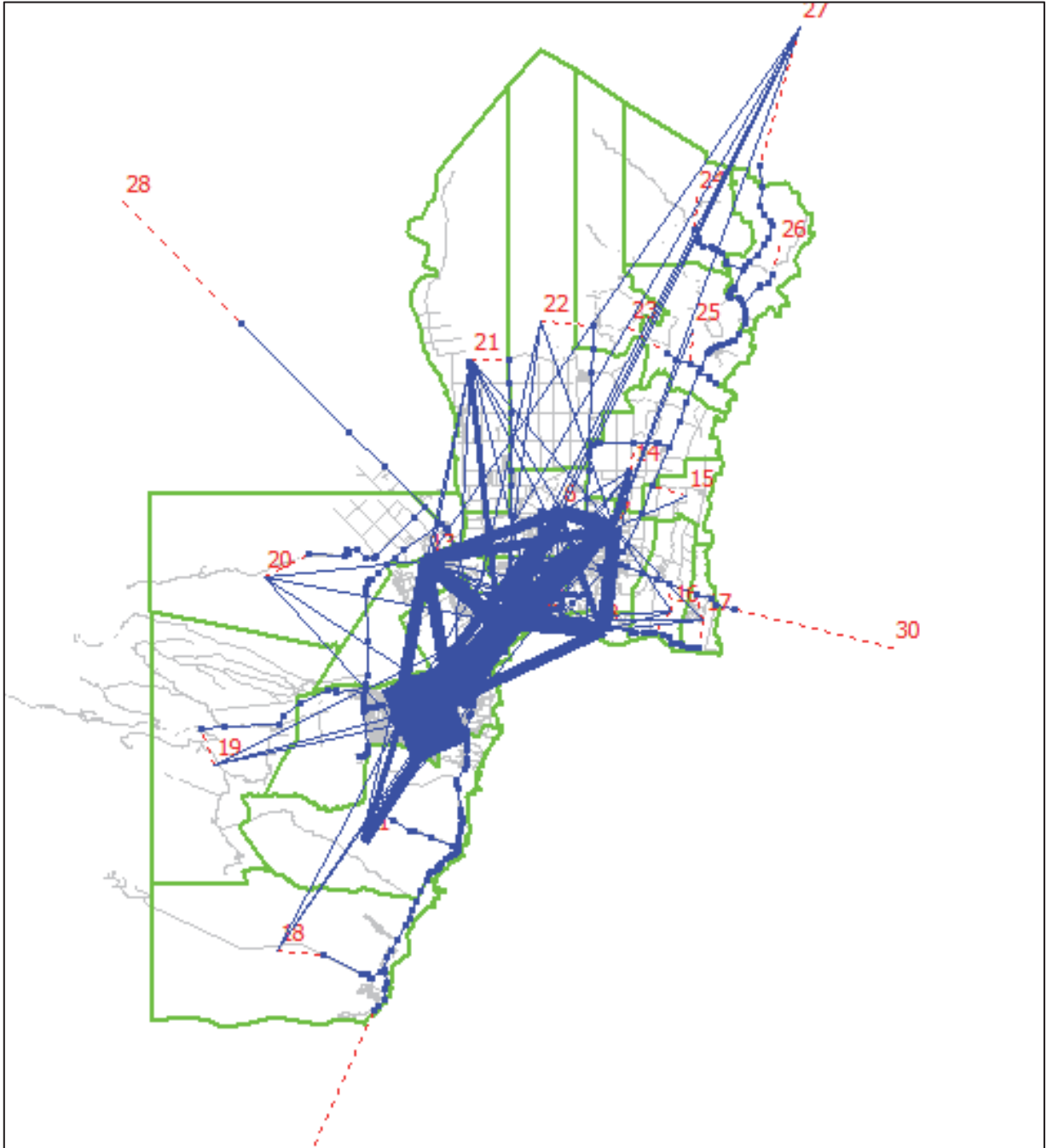
Figure 6.16: Peak-Hour Time, Distance, and Speed Skims

✓ *1 TIME	2 DISTANCE	3 SPEED												
Sum	1	2	3	4	5	6	7	8	9	10	11	12	13	
38494.78	960.64	952.21	957.69	972.38	1011.41	1602.96	884.47	1214.21	1159.86	1658.73	1697.89	1637.33	1338	
1 726.74	0.00	1.54	1.47	0.95	4.62	30.06	12.52	13.85	13.80	42.41	43.63	42.72	26	
2 716.96	1.54	0.00	0.40	1.92	3.74	29.04	10.97	12.88	14.48	43.53	44.75	43.84	28	
3 724.81	1.47	0.40	0.00	1.85	4.14	29.44	11.34	12.51	14.41	43.84	45.07	44.16	28	
4 734.96	0.78	1.74	1.67	0.00	5.11	30.55	12.61	13.29	12.87	43.15	44.37	43.47	27	
5 805.48	8.74	7.77	8.17	9.35	0.00	25.51	11.86	20.13	22.19	48.34	49.56	48.65	32	
6 1484.63	34.33	34.70	35.09	35.25	31.00	0.00	33.95	45.69	48.10	73.88	75.10	74.20	58	
7 996.77	23.73	22.13	22.36	23.89	24.12	41.73	0.00	31.11	36.06	65.64	66.86	65.95	50	
8 988.96	13.91	12.92	12.55	13.66	16.66	40.32	20.15	0.00	25.82	56.28	57.50	56.60	40	
9 919.24	13.58	14.18	14.11	12.82	17.88	43.32	24.73	25.41	0.00	30.56	31.78	42.37	28	
10 1443.49	43.35	44.42	44.79	44.27	47.24	71.51	55.31	57.16	31.85	0.00	17.49	11.93	34	
11 1783.95	54.37	55.43	55.80	55.28	58.26	82.53	66.32	68.18	42.86	27.38	0.00	39.19	47	
12 1551.70	47.33	48.39	48.77	48.25	51.22	75.49	59.29	61.15	48.75	17.84	35.21	0.00	22	
13 1240.78	31.25	32.32	32.69	32.17	35.14	59.41	43.21	45.07	32.67	39.19	40.42	23.44	0	
14 1196.56	33.41	31.81	32.04	33.57	33.80	51.41	8.27	40.78	45.73	75.32	76.54	75.63	59	
15 1071.66	27.85	26.25	26.48	28.01	28.24	45.85	4.23	35.22	40.17	69.76	70.98	70.07	54	
16 874.43	16.46	15.48	15.10	16.21	18.81	36.42	6.40	2.60	28.38	58.84	60.06	59.15	43	
17 925.00	18.93	17.95	17.57	18.69	20.04	37.65	7.63	5.07	30.85	61.31	62.53	61.62	45	
18 1798.71	55.46	56.52	56.89	56.37	59.34	83.62	67.41	69.27	43.95	28.47	17.91	40.28	48	
19 1762.52	53.02	54.08	54.46	53.94	56.91	81.18	64.98	66.84	54.44	36.17	53.54	18.42	27	
20 1485.65	40.78	41.84	42.22	41.70	44.67	68.94	52.73	54.60	42.20	45.67	49.94	27.92	15	

Source: JICA Project Team

As a typical output, the system can present a map showing the desire lines for the city. The thickness of the band represents the magnitude of OD trips. It is worthwhile to note that the sketch planning model developed thus far can be enhanced into a full-blown traffic forecasting model for General Santos City.

Figure 6.17: Desire Lines for General Santos City



Source: JICA Project Team

ANNEXES

APPENDIX A: DESCRIPTION OF THE ZONING SYSTEM

Table A-1: Description of Zoning System

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
1	Inside	NCR	METRO_MANILA	Manila	Divisoria/Zaragosa	1	1	1
2	Inside	NCR	METRO_MANILA	Manila	Tondo/Moriones	1	1	1
3	Inside	NCR	METRO_MANILA	Manila	Tondo/Herbosa	1	1	1
4	Inside	NCR	METRO_MANILA	Manila	Tondo/H.Lopez	1	1	1
5	Inside	NCR	METRO_MANILA	Manila	Tondo/J.Luna	1	1	1
6	Inside	NCR	METRO_MANILA	Manila	Tondo/Corregidor	1	1	1
7	Inside	NCR	METRO_MANILA	Manila	La Loma/Chinese Cemetery	1	1	2
8	Inside	NCR	METRO_MANILA	Manila	Tondo/J.A.Santos	1	1	1
9	Inside	NCR	METRO_MANILA	Manila	Sta.Cruz/J.A.Santos	1	1	1
10	Inside	NCR	METRO_MANILA	Manila	Divisoria/Del Pan	1	1	2
11	Inside	NCR	METRO_MANILA	Manila	Binondo/J.Luna	1	1	2
12	Inside	NCR	METRO_MANILA	Manila	Binondo/Reina Regente	1	1	2
13	Inside	NCR	METRO_MANILA	Manila	Binondo/Mesericordia	1	1	2
14	Inside	NCR	METRO_MANILA	Manila	Quiapo/Carriedo	1	1	2
15	Inside	NCR	METRO_MANILA	Manila	Sta.Cruz/D.Jose	1	1	2
16	Inside	NCR	METRO_MANILA	Manila	Sta.Crus/Bambang	1	1	2
17	Inside	NCR	METRO_MANILA	Manila	Sta.Cruz/San Lazaro	1	1	2
18	Inside	NCR	METRO_MANILA	Manila	Quiapo/Globo de Oro	1	1	2
19	Inside	NCR	METRO_MANILA	Manila	Quiapo/Bilibid Viejo	1	1	2
20	Inside	NCR	METRO_MANILA	Manila	Sampaloc/FEU/UE	1	1	3
21	Inside	NCR	METRO_MANILA	Manila	Sta.Mesa/Lardizabal Ext.	1	1	3
22	Inside	NCR	METRO_MANILA	Manila	Sta.Mesa/Peereza Ext.	1	1	3
23	Inside	NCR	METRO_MANILA	Manila	Sampaloc/NU	1	1	3
24	Inside	NCR	METRO_MANILA	Manila	Sampaloc/UST	1	1	3
25	Inside	NCR	METRO_MANILA	Manila	Sampaloc/Florentino	1	1	3
26	Inside	NCR	METRO_MANILA	Manila	Sampaloc/Calamba	1	1	3
27	Inside	NCR	METRO_MANILA	Manila	Sampaloc/S.Loyola	1	1	3
28	Inside	NCR	METRO_MANILA	Manila	Sta.Mesa/Altura Ext.	1	1	3
29	Inside	NCR	METRO_MANILA	Manila	Old Sta.Mesa/V.Mapa	1	1	3
30	Inside	NCR	METRO_MANILA	Manila	Sta.Mesa/P.Sanchez	1	1	3
31	Inside	NCR	METRO_MANILA	Manila	Punta	1	1	3
32	Inside	NCR	METRO_MANILA	Manila	Sta.Mesa/R.Magsaysay	1	1	3
33	Inside	NCR	METRO_MANILA	Manila	San Miguel/J.P.Laurel	1	1	3
34	Inside	NCR	METRO_MANILA	Manila	Quiapo/C.Palanca	1	1	3
35	Inside	NCR	METRO_MANILA	Manila	South Port Area	1	1	4
36	Inside	NCR	METRO_MANILA	Manila	Intramuros/Muralla	1	1	4
37	Inside	NCR	METRO_MANILA	Manila	Intramuros/Arroceros	1	1	4
38	Inside	NCR	METRO_MANILA	Manila	Intramuros/Tanque	1	1	4
39	Inside	NCR	METRO_MANILA	Manila	Ermita	1	1	4
40	Inside	NCR	METRO_MANILA	Manila	Paco/Apacible	1	1	4
41	Inside	NCR	METRO_MANILA	Manila	Paco/Canociga	1	1	4
42	Inside	NCR	METRO_MANILA	Manila	Paco/Linao (Dart)	1	1	4
43	Inside	NCR	METRO_MANILA	Manila	Malate/PCU	1	1	4
44	Inside	NCR	METRO_MANILA	Manila	Malate/J.C.Bocobo	1	1	4
45	Inside	NCR	METRO_MANILA	Manila	Malate/Harrison Plaza	1	1	4
46	Inside	NCR	METRO_MANILA	Manila	San Andres/L.Guinto	1	1	4
47	Inside	NCR	METRO_MANILA	Manila	San Andres/SSH	1	1	4
48	Inside	NCR	METRO_MANILA	Manila	San Andres/Diamante	1	1	4
49	Inside	NCR	METRO_MANILA	Manila	Paco/Fabie	1	1	4
50	Inside	NCR	METRO_MANILA	Manila	Sta.Ana/Estrada	1	1	4
51	Inside	NCR	METRO_MANILA	Manila	San Miguel/Malacanang	1	1	4
52	Inside	NCR	METRO_MANILA	Manila	Pandacan/Beata	1	1	4
53	Inside	NCR	METRO_MANILA	Manila	Pandacan/T.Claudio	1	1	4
54	Inside	NCR	METRO_MANILA	Manila	Sta.Ana/Panaderos	1	1	4
55	Inside	NCR	METRO_MANILA	Manila	Manila Noth Harbour	1	1	1
56	Inside	NCR	METRO_MANILA	Manila	MICT	1	1	1
57	Inside	NCR	METRO_MANILA	Manila	BASECO	1	1	4
58	Inside	NCR	METRO_MANILA	Pasay_City	San Jose	2	1	5
59	Inside	NCR	METRO_MANILA	Pasay_City	San Isidro	2	1	5
60	Inside	NCR	METRO_MANILA	Pasay_City	Sta.Clara/Leveriza	2	1	5
61	Inside	NCR	METRO_MANILA	Pasay_City	Sta.Clara/Tramo	2	1	5
62	Inside	NCR	METRO_MANILA	Pasay_City	San Rafael	2	1	5
63	Inside	NCR	METRO_MANILA	Pasay_City	San Roque	2	1	5
64	Inside	NCR	METRO_MANILA	Pasay_City	Tabon	2	1	5
65	Inside	NCR	METRO_MANILA	Pasay_City	Malibay	2	1	5
66	Inside	NCR	METRO_MANILA	Pasay_City	Maricaban	2	1	5
67	Inside	NCR	METRO_MANILA	Pasay_City	Sto.Nino(Pasay)	2	1	5

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
68	Inside	NCR	METRO_MANILA	Pasay_City	Villamore Air Base	2	1	5
69	Inside	NCR	METRO_MANILA	Pasay_City	Air Cargo	2	1	5
70	Inside	NCR	METRO_MANILA	Pasay_City	Domestic Airport	2	1	5
71	Inside	NCR	METRO_MANILA	Pasay_City	PICC(reclamation area)	2	1	5
72	Inside	NCR	METRO_MANILA	Pasay_City	CITE(reclamation area)	2	1	5
73	Inside	NCR	METRO_MANILA	Makati_City	Bangkal	3	1	6
74	Inside	NCR	METRO_MANILA	Makati_City	Palanan	3	1	6
75	Inside	NCR	METRO_MANILA	Makati_City	Pio Del Pilar	3	1	6
76	Inside	NCR	METRO_MANILA	Makati_City	Tejeros	3	1	6
77	Inside	NCR	METRO_MANILA	Makati_City	Olympia	3	1	6
78	Inside	NCR	METRO_MANILA	Makati_City	Poblacion(Makati)	3	1	6
79	Inside	NCR	METRO_MANILA	Makati_City	Legaspi Village	3	1	6
80	Inside	NCR	METRO_MANILA	Makati_City	San Lorenzo	3	1	6
81	Inside	NCR	METRO_MANILA	Makati_City	Ayala Center	3	1	6
82	Inside	NCR	METRO_MANILA	Makati_City	Salcedo Village	3	1	6
83	Inside	NCR	METRO_MANILA	Makati_City	Bel-Air II	3	1	6
84	Inside	NCR	METRO_MANILA	Makati_City	Urdaneta	3	1	6
85	Inside	NCR	METRO_MANILA	Makati_City	Bel-Air I	3	1	6
86	Inside	NCR	METRO_MANILA	Makati_City	Guadalupe Viejo	3	1	6
87	Inside	NCR	METRO_MANILA	Makati_City	Guadalupe Nuevo	3	1	6
88	Inside	NCR	METRO_MANILA	Makati_City	Cembo	3	1	6
89	Inside	NCR	METRO_MANILA	Makati_City	Post Proper Northside	3	1	6
90	Inside	NCR	METRO_MANILA	Makati_City	Rembo	3	1	6
91	Inside	NCR	METRO_MANILA	Makati_City	Pembo	3	1	6
92	Inside	NCR	METRO_MANILA	Taguig_City	Fort Bonifacio	4	1	7
93	Inside	NCR	METRO_MANILA	Taguig_City	Pinagsama	4	1	7
94	Inside	NCR	METRO_MANILA	Makati_City	Dasmarinas/Forbs	3	1	6
95	Inside	NCR	METRO_MANILA	Makati_City	Magallanes	3	1	6
96	Inside	NCR	METRO_MANILA	Mandaluyong_City	Plainview	5	1	8
97	Inside	NCR	METRO_MANILA	Mandaluyong_City	Old Zaniga	5	1	8
98	Inside	NCR	METRO_MANILA	Mandaluyong_City	Poblacion(Mandaluyong)	5	1	8
99	Inside	NCR	METRO_MANILA	Mandaluyong_City	Hagdang Bato	5	1	8
100	Inside	NCR	METRO_MANILA	Mandaluyong_City	Addition Hills	5	1	8
101	Inside	NCR	METRO_MANILA	Mandaluyong_City	Barangka	5	1	8
102	Inside	NCR	METRO_MANILA	Mandaluyong_City	Highway Hills	5	1	8
103	Inside	NCR	METRO_MANILA	Mandaluyong_City	Wack-Wack/Greenhills	5	1	8
104	Inside	NCR	METRO_MANILA	Mandaluyong_City	Ortigas Center	5	1	8
105	Inside	NCR	METRO_MANILA	San_Juan	East Greenhills	6	1	9
106	Inside	NCR	METRO_MANILA	San_Juan	Greenhills Com'l Center	6	1	9
107	Inside	NCR	METRO_MANILA	San_Juan	West Crame	6	1	9
108	Inside	NCR	METRO_MANILA	San_Juan	Batis	6	1	9
109	Inside	NCR	METRO_MANILA	San_Juan	Corazon De Jesus	6	1	9
110	Inside	NCR	METRO_MANILA	Quezon_City	Dona Imelda	7	1	10
111	Inside	NCR	METRO_MANILA	Quezon_City	Santo Nino	7	1	10
112	Inside	NCR	METRO_MANILA	Quezon_City	Tatalon	7	1	10
113	Inside	NCR	METRO_MANILA	Quezon_City	Santa Teresita	7	1	11
114	Inside	NCR	METRO_MANILA	Quezon_City	N.S.Amoranto(Gintong Silahis)	7	1	11
115	Inside	NCR	METRO_MANILA	Quezon_City	Manresa	7	1	11
116	Inside	NCR	METRO_MANILA	Quezon_City	Balingasa	7	1	11
117	Inside	NCR	METRO_MANILA	Quezon_City	Apolonio Samson	7	1	11
118	Inside	NCR	METRO_MANILA	Quezon_City	Masambong	7	1	11
119	Inside	NCR	METRO_MANILA	Quezon_City	Santo Domingo(Matalahib)	7	1	11
120	Inside	NCR	METRO_MANILA	Quezon_City	Del Monte	7	1	11
121	Inside	NCR	METRO_MANILA	Quezon_City	San Antonio	7	1	11
122	Inside	NCR	METRO_MANILA	Quezon_City	Veterans Village	7	1	11
123	Inside	NCR	METRO_MANILA	Quezon_City	Phil-Am	7	1	11
124	Inside	NCR	METRO_MANILA	Quezon_City	South Triangle	7	1	10
125	Inside	NCR	METRO_MANILA	Quezon_City	Kamuning	7	1	10
126	Inside	NCR	METRO_MANILA	Quezon_City	Roxas	7	1	10
127	Inside	NCR	METRO_MANILA	Quezon_City	Kalusugan	7	1	10
128	Inside	NCR	METRO_MANILA	Quezon_City	Mariana	7	1	10
129	Inside	NCR	METRO_MANILA	Quezon_City	Kaunlaran	7	1	10
130	Inside	NCR	METRO_MANILA	Quezon_City	Immaculate Concepcion	7	1	10
131	Inside	NCR	METRO_MANILA	Quezon_City	Bagong Lipunan Crame	7	1	10
132	Inside	NCR	METRO_MANILA	Quezon_City	Crame	7	1	10
133	Inside	NCR	METRO_MANILA	Quezon_City	Ugong Norte	7	1	12
134	Inside	NCR	METRO_MANILA	Quezon_City	Camp Aguinaldo	7	1	12
135	Inside	NCR	METRO_MANILA	Quezon_City	White Plains	7	1	12
136	Inside	NCR	METRO_MANILA	Quezon_City	Murphy District	7	1	12
137	Inside	NCR	METRO_MANILA	Quezon_City	Cubao(Araneta Center)	7	1	12

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
138	Inside	NCR	METRO_MANILA	Quezon_City	E. Rodriguez	7	1	12
139	Inside	NCR	METRO_MANILA	Quezon_City	San Roque	7	1	12
140	Inside	NCR	METRO_MANILA	Quezon_City	Escopa	7	1	12
141	Inside	NCR	METRO_MANILA	Quezon_City	Quirino 3	7	1	12
142	Inside	NCR	METRO_MANILA	Quezon_City	Quirino 2	7	1	12
143	Inside	NCR	METRO_MANILA	Quezon_City	Loyola Heights	7	1	13
144	Inside	NCR	METRO_MANILA	Quezon_City	Teachers Village	7	1	13
145	Inside	NCR	METRO_MANILA	Quezon_City	QMC	7	1	13
146	Inside	NCR	METRO_MANILA	Quezon_City	U.P. Campus	7	1	13
147	Inside	NCR	METRO_MANILA	Quezon_City	Batasan Hills	7	1	13
148	Inside	NCR	METRO_MANILA	Quezon_City	Matandang Balara	7	1	13
149	Inside	NCR	METRO_MANILA	Quezon_City	Holy Spirit	7	1	13
150	Inside	NCR	METRO_MANILA	Quezon_City	Payatas	7	1	13
151	Inside	NCR	METRO_MANILA	Quezon_City	Bagong Silangan	7	1	13
152	Inside	NCR	METRO_MANILA	Quezon_City	Constitution Hills	7	1	13
153	Inside	NCR	METRO_MANILA	Quezon_City	Commonwealth	7	1	13
154	Inside	NCR	METRO_MANILA	Quezon_City	Fairview	7	1	13
155	Inside	NCR	METRO_MANILA	Quezon_City	Pasong Putik	7	1	13
156	Inside	NCR	METRO_MANILA	Quezon_City	Kaligayahan	7	1	13
157	Inside	NCR	METRO_MANILA	Quezon_City	San Agustin	7	1	13
158	Inside	NCR	METRO_MANILA	Quezon_City	Gulod	7	1	13
159	Inside	NCR	METRO_MANILA	Quezon_City	Sauyo	7	1	13
160	Inside	NCR	METRO_MANILA	Quezon_City	Bagbag	7	1	13
161	Inside	NCR	METRO_MANILA	Quezon_City	Tandang Sora	7	1	13
162	Inside	NCR	METRO_MANILA	Quezon_City	Pasong Tamo	7	1	13
163	Inside	NCR	METRO_MANILA	Quezon_City	Culiat	7	1	13
164	Inside	NCR	METRO_MANILA	Quezon_City	Project 6	7	1	13
165	Inside	NCR	METRO_MANILA	Quezon_City	Ramon Magsaysay	7	1	13
166	Inside	NCR	METRO_MANILA	Quezon_City	Bahay Toro	7	1	13
167	Inside	NCR	METRO_MANILA	Quezon_City	Baesa	7	1	13
168	Inside	NCR	METRO_MANILA	Quezon_City	Sangandaan	7	1	13
169	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bo. San Jose	8	1	14
170	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	West 3/4 Ave.	8	1	14
171	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	A.Mabini	8	1	14
172	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Dagat Dagatan	8	1	14
173	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	West 8/10 Ave.	8	1	14
174	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Grace Park	8	1	14
175	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Sangandaan	8	1	14
176	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagon Barrio EDSA	8	1	14
177	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagon Barrio Center	8	1	14
178	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagon Barrio East	8	1	14
179	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagumbong 1(CN)	8	1	15
180	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagumbong 2(CN)	8	1	15
181	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Bagumbong 3(CN)	8	1	15
182	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Camarin 1(CN)	8	1	15
183	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	Camarin 2(CN)	8	1	15
184	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	North 1(CN)	8	1	15
185	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	West(CN)	8	1	15
186	Inside	NCR	METRO_MANILA	Valenzuela_City	Canumay	9	1	16
187	Inside	NCR	METRO_MANILA	Valenzuela_City	Mapulang Lupa/Ugong	9	1	16
188	Inside	NCR	METRO_MANILA	Valenzuela_City	Bagbaguin	9	1	16
189	Inside	NCR	METRO_MANILA	Valenzuela_City	Hen. T. De Leon	9	1	16
190	Inside	NCR	METRO_MANILA	Valenzuela_City	Marulas	9	1	16
191	Inside	NCR	METRO_MANILA	Valenzuela_City	Karuhatan	9	1	16
192	Inside	NCR	METRO_MANILA	Valenzuela_City	Maysan	9	1	16
193	Inside	NCR	METRO_MANILA	Valenzuela_City	Malanday(Valenzuela)	9	1	16
194	Inside	NCR	METRO_MANILA	Valenzuela_City	Dalandanan	9	1	16
195	Inside	NCR	METRO_MANILA	Malabon_City	Maysilo/Panghulo	10	1	17
196	Inside	NCR	METRO_MANILA	Malabon_City	Potrero	10	1	17
197	Inside	NCR	METRO_MANILA	Malabon_City	Tugatog	10	1	17
198	Inside	NCR	METRO_MANILA	Malabon_City	Longos	10	1	17
199	Inside	NCR	METRO_MANILA	Malabon_City	Tonsuya	10	1	17
200	Inside	NCR	METRO_MANILA	Malabon_City	Baritan/Concepcion	10	1	17
201	Inside	NCR	METRO_MANILA	Malabon_City	Dampalit	10	1	17
202	Inside	NCR	METRO_MANILA	Navotas_City	Tanza	11	1	18
203	Inside	NCR	METRO_MANILA	Navotas_City	Tangos	11	1	18
204	Inside	NCR	METRO_MANILA	Navotas_City	San Jose	11	1	18
205	Inside	NCR	METRO_MANILA	Navotas_City	Navotas East/West	11	1	18
206	Inside	NCR	METRO_MANILA	Navotas_City	North Bay Blvd.	11	1	18
207	Inside	NCR	METRO_MANILA	Navotas_City	Navotas Fishport	11	1	18

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
208	Inside	NCR	METRO_MANILA	Marikina_City	Nangka	12	1	19
209	Inside	NCR	METRO_MANILA	Marikina_City	Parang	12	1	19
210	Inside	NCR	METRO_MANILA	Marikina_City	Concepcion(Marikina)	12	1	19
211	Inside	NCR	METRO_MANILA	Marikina_City	Marikina Heights	12	1	19
212	Inside	NCR	METRO_MANILA	Marikina_City	Calumpang/San Roque	12	1	19
213	Inside	NCR	METRO_MANILA	Marikina_City	Santo Nino	12	1	19
214	Inside	NCR	METRO_MANILA	Marikina_City	Malanday(Marikina)	12	1	19
215	Inside	NCR	METRO_MANILA	Marikina_City	Barangka(Marikina)	12	1	19
216	Inside	NCR	METRO_MANILA	Pasig_City	Kalawaan	13	1	20
217	Inside	NCR	METRO_MANILA	Pasig_City	Santolan/Manggahan	13	1	20
218	Inside	NCR	METRO_MANILA	Pasig_City	Santa Lucia	13	1	20
219	Inside	NCR	METRO_MANILA	Pasig_City	Maybunga	13	1	20
220	Inside	NCR	METRO_MANILA	Pasig_City	Ugong	13	1	20
221	Inside	NCR	METRO_MANILA	Pasig_City	San Antonio	13	1	20
222	Inside	NCR	METRO_MANILA	Pasig_City	Kapitolyo	13	1	20
223	Inside	NCR	METRO_MANILA	Pasig_City	Bagong Ilog	13	1	20
224	Inside	NCR	METRO_MANILA	Pasig_City	Bambang	13	1	20
225	Inside	NCR	METRO_MANILA	Pasig_City	Canioan	13	1	20
226	Inside	NCR	METRO_MANILA	Pasig_City	Pinagbuhatan	13	1	20
227	Inside	NCR	METRO_MANILA	Pateros	Santa Ana(Pateros)	14	1	21
228	Inside	NCR	METRO_MANILA	Taguig_City	Bagumbayan	4	1	7
229	Inside	NCR	METRO_MANILA	Taguig_City	Bicutan	4	1	7
230	Inside	NCR	METRO_MANILA	Taguig_City	Signal Village	4	1	7
231	Inside	NCR	METRO_MANILA	Taguig_City	Western Bicutan	4	1	7
232	Inside	NCR	METRO_MANILA	Taguig_City	Hagonoy	4	1	7
233	Inside	NCR	METRO_MANILA	Taguig_City	Ususan	4	1	7
234	Inside	NCR	METRO_MANILA	Parañaque_City	Baclaran	15	1	22
235	Inside	NCR	METRO_MANILA	Parañaque_City	Tambo	15	1	22
236	Inside	NCR	METRO_MANILA	Parañaque_City	La Huerta	15	1	22
237	Inside	NCR	METRO_MANILA	Parañaque_City	San Dionisio	15	1	22
238	Inside	NCR	METRO_MANILA	Parañaque_City	Moonwalk	15	1	22
239	Inside	NCR	METRO_MANILA	Parañaque_City	Santo Nino(Paranaque)	15	1	22
240	Inside	NCR	METRO_MANILA	Parañaque_City	Merville	15	1	22
241	Inside	NCR	METRO_MANILA	Parañaque_City	Sun Valley	15	1	22
242	Inside	NCR	METRO_MANILA	Parañaque_City	Don Bosco	15	1	22
243	Inside	NCR	METRO_MANILA	Parañaque_City	Marcelo Green Village	15	1	22
244	Inside	NCR	METRO_MANILA	Parañaque_City	San Antonio	15	1	22
245	Inside	NCR	METRO_MANILA	Parañaque_City	San Isidro	15	1	22
246	Inside	NCR	METRO_MANILA	Parañaque_City	B.F.Homes	15	1	22
247	Inside	NCR	METRO_MANILA	Parañaque_City	B.F.Homes	15	1	22
248	Inside	NCR	METRO_MANILA	Parañaque_City	B.F.Homes	15	1	22
249	Inside	NCR	METRO_MANILA	Pasay_City	NAIA	2	1	5
250	Inside	NCR	METRO_MANILA	Parañaque_City	Marina Manila Baytown	15	1	22
251	Inside	NCR	METRO_MANILA	Muntinlupa_City	Sucab	16	1	23
252	Inside	NCR	METRO_MANILA	Muntinlupa_City	Cupang	16	1	23
253	Inside	NCR	METRO_MANILA	Muntinlupa_City	Alabang	16	1	23
254	Inside	NCR	METRO_MANILA	Muntinlupa_City	New Alabang Village	16	1	23
255	Inside	NCR	METRO_MANILA	Muntinlupa_City	Putatan	16	1	23
256	Inside	NCR	METRO_MANILA	Muntinlupa_City	Poblacion(Muntinlupa)	16	1	23
257	Inside	NCR	METRO_MANILA	Muntinlupa_City	Tunasan	16	1	23
258	Inside	NCR	METRO_MANILA	Las_Piñas_City	Manuyo	17	1	24
259	Inside	NCR	METRO_MANILA	Las_Piñas_City	Elias Aldana/Daniel Fajardo	17	1	24
260	Inside	NCR	METRO_MANILA	Las_Piñas_City	Pulang Lupa	17	1	24
261	Inside	NCR	METRO_MANILA	Las_Piñas_City	Pamplona	17	1	24
262	Inside	NCR	METRO_MANILA	Las_Piñas_City	B.F.International	17	1	24
263	Inside	NCR	METRO_MANILA	Las_Piñas_City	Talon	17	1	24
264	Inside	NCR	METRO_MANILA	Las_Piñas_City	Pilar	17	1	24
265	Inside	NCR	METRO_MANILA	Las_Piñas_City	Almanza	17	1	24
266	Inside	III	BULACAN	Obando	Obando	18	2	25
267	Inside	III	BULACAN	Marilao	Marilao(West)	19	2	26
268	Inside	III	BULACAN	Meycauayan	Meycauayan(West)	20	2	27
269	Inside	III	BULACAN	San_Jose_del_M	SJDM(West)	21	2	28
270	Inside	III	BULACAN	Norzagaray	Norzagaray	22	2	29
271	Inside	III	BULACAN	Santa_Maria	Santa Maria(SW)	23	2	30
272	Inside	III	BULACAN	Bocaue	Bocaue	24	2	31
273	Inside	III	BULACAN	Bulacan	Bulacan	25	2	32
274	Inside	III	BULACAN	Balagtas_(Bigaa)	Balagtas	26	2	33
275	Inside	III	BULACAN	Pandi	Pandi	27	2	34
276	Inside	III	BULACAN	Guiguinto	Guiguinto	28	2	35
277	Inside	III	BULACAN	Plaridel	Plaridel	29	2	36

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
278	Inside	III	BULACAN	Pulilan	Pulilan	30	2	37
279	Inside	III	BULACAN	Malolos_(Capital)	Malolos(North)	31	2	38
280	Inside	III	BULACAN	Paombong	Paombong	32	2	39
281	Inside	III	BULACAN	Hagonoy	Hagonoy	33	2	40
282	Inside	III	BULACAN	Calumpit	Calumpit	34	2	41
283	Inside	IV-A	CAVITE	GMA	Gen. Mariano Alvarez	35	4	42
284	Inside	IV-A	CAVITE	Dasmariñas	Dasmariñas(West)	36	4	43
285	Inside	IV-A	CAVITE	Bacoor	Bacoor(North)	37	4	44
286	Inside	IV-A	CAVITE	Imus	Imus(North)	38	4	45
287	Inside	IV-A	CAVITE	Kawit	Kawit	39	4	46
288	Inside	IV-A	CAVITE	Cavite_City	Cavite City	40	4	47
289	Inside	IV-A	CAVITE	Noveleta	Noveleta	41	4	48
290	Inside	IV-A	CAVITE	Rosario	Rosario	42	4	49
291	Inside	IV-A	CAVITE	General_Trias	General Trias(North)	43	4	50
292	Inside	IV-A	CAVITE	Tanza	Tanza(North)	44	4	51
293	Inside	IV-A	CAVITE	Trece_Martires	Trece Martires	45	4	52
294	Inside	IV-A	CAVITE	Naic	Naic	46	4	53
295	Inside	IV-A	CAVITE	Silang	Silang(West)	47	4	54
296	Inside	IV-A	CAVITE	Carmona	Carmona	48	4	55
297	Inside	IV-A	LAGUNA	San_Pedro	San Pedro(North)	49	5	56
298	Inside	IV-A	LAGUNA	Bijan	Binan(North)	50	5	57
299	Inside	IV-A	LAGUNA	Santa_Rosa	Santa Rosa(Center)	51	5	58
300	Inside	IV-A	LAGUNA	Cabuyao	Cabuyao(North)	52	5	59
301	Inside	IV-A	LAGUNA	City_of_Calamba	City of Calamba(Center)	53	5	60
302	Inside	IV-A	LAGUNA	Los_Bajos	Los Banos	54	5	61
303	Inside	IV-A	RIZAL	Taytay	Taytay(West)	55	3	62
304	Inside	IV-A	RIZAL	Cainta	Cainta(South)	56	3	63
305	Inside	IV-A	RIZAL	Antipolo	Antipolo(Center)	57	3	64
306	Inside	IV-A	RIZAL	San_Mateo	San Mateo(South)	58	3	65
307	Inside	IV-A	RIZAL	Rodriguez	Rodriguez(West)	59	3	66
308	Inside	IV-A	RIZAL	Angono	Angono	60	3	67
309	Inside	IV-A	RIZAL	Binangonan	Binangonan(North)	61	3	68
310	Inside	IV-A	RIZAL	Cardona	Cardona	62	3	69
311	Inside	IV-A	RIZAL	Morong	Morong	63	3	70
312	Inside	IV-A	RIZAL	Teresa	Teresa	64	3	71
313	Inside	IV-A	RIZAL	Baras	Baras	65	3	72
314	Inside	IV-A	RIZAL	Tanay	Tanay	66	3	73
315	Inside	IV-A	RIZAL	Pililla	Pililla	67	3	74
316	Inside	IV-A	RIZAL	Jalajala	Jalajala	68	3	75
317	Inside	NCR	METRO_MANILA	CALOOCAN_CITY	North 2(CN)	8	1	15
318	Inside	NCR	METRO_MANILA	Manila	Manila Harbour Center	1	1	1
319	Inside	NCR	METRO_MANILA	Manila	Manila South Harbour	1	1	4
320	Inside	NCR	METRO_MANILA	Parajaque_City	NAIA Terminal 1	15	1	22
321	Inside	NCR	METRO_MANILA	Pasay_City	NAIA Terminal 2	2	1	5
322	Inside	NCR	METRO_MANILA	Pasay_City	NAIA Terminal 3	2	1	5
323	Inside	NCR	METRO_MANILA	Pasay_City	NAIA Domestic Terminal	2	1	5
324	Inside	III	BULACAN	Marilao	Marilao(East)	19	2	26
325	Inside	III	BULACAN	Meycauayan	Meycauayan(East)	20	2	27
326	Inside	III	BULACAN	San_Jose DM	SJDM(East)	21	2	28
327	Inside	III	BULACAN	San_Jose DM	SJDM(North)	21	2	28
328	Inside	III	BULACAN	Santa_Maria	Santa Maria(NE)	23	2	30
329	Inside	III	BULACAN	Malolos_(Capital)	Malolos(South)	31	2	38
330	Inside	IV-A	CAVITE	Dasmariñas	Dasmariñas(Center)	36	4	43
331	Inside	IV-A	CAVITE	Dasmariñas	Dasmariñas(East)	36	4	43
332	Inside	IV-A	CAVITE	Dasmariñas	Dasmariñas(South)	36	4	43
333	Inside	IV-A	CAVITE	Bacoor	Bacoor (Coastal)	37	4	44
334	Inside	IV-A	CAVITE	Bacoor	Bacoor(Center)	37	4	44
335	Inside	IV-A	CAVITE	Bacoor	Bacoor(South)	37	4	44
336	Inside	IV-A	CAVITE	Imus	Imus(Center)	38	4	45
337	Inside	IV-A	CAVITE	Imus	Imus(South)	38	4	45
338	Inside	IV-A	CAVITE	General_Trias	General Trias(South)	43	4	50
339	Inside	IV-A	CAVITE	Tanza	Tanza(South)	44	4	51
340	Inside	IV-A	CAVITE	Silang	Silang(Eest)	47	4	54
341	Inside	IV-A	LAGUNA	San_Pedro	San Pedro(South)	49	5	56
342	Inside	IV-A	LAGUNA	Bijan	Binan(South)	50	5	57
343	Inside	IV-A	LAGUNA	Santa_Rosa	Santa Rosa(West)	51	5	58
344	Inside	IV-A	LAGUNA	Cabuyao	Cabuyao(South)	52	5	59
345	Inside	IV-A	LAGUNA	City_of_Calamba	City of Calamba(West)	53	5	60
346	Inside	IV-A	LAGUNA	City_of_Calamba	City of Calamba(East)	53	5	60
347	Inside	IV-A	RIZAL	Taytay	Taytay(East)	55	3	62

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
348	Inside	IV-A	RIZAL	Cainta	Cainta(North)	56	3	63
349	Inside	IV-A	RIZAL	Antipolo	Antipolo(South)	57	3	64
350	Inside	IV-A	RIZAL	Antipolo	Antipolo(North)	57	3	64
351	Inside	IV-A	RIZAL	Antipolo	Antipolo(North-East)	57	3	64
352	Inside	IV-A	RIZAL	San_Mateo	San_Mateo(North)	58	3	65
353	Inside	IV-A	RIZAL	Rodriguez	Rodriguez(East)	59	3	66
354	Inside	IV-A	RIZAL	Binangonan	Binangonan(South)	61	3	68
355	Outside	III	BULACAN	Bustos	Bustos(BULACAN)	69	6	76
356	Outside	III	BULACAN	Baliuag	Baliuag(BULACAN)	69	6	76
357	Outside	III	BULACAN	Angat	Angat(BULACAN)	69	6	76
358	Outside	III	BULACAN	San_Rafael	San_Rafael(BULACAN)	69	6	76
359	Outside	III	BULACAN	San_Idefonso	San_Idefonso(BULACAN)	69	6	76
360	Outside	III	BULACAN	Doja_Remedios_Trinidad	Doja_Remedios_Trinidad	69	6	76
361	Outside	III	BULACAN	San_Miguel	San_Miguel(BULACAN)	69	6	76
362	Outside	IV-A	CAVITE	Tagaytay	Tagaytay(CAVITE)	70	7	77
363	Outside	IV-A	CAVITE	Amadeo	Amadeo(CAVITE)	70	7	77
364	Outside	IV-A	CAVITE	Indang	Indang(CAVITE)	70	7	77
365	Outside	IV-A	CAVITE	Mendez	Mendez(CAVITE)	70	7	77
366	Outside	IV-A	CAVITE	Alfonso	Alfonso(CAVITE)	70	7	77
367	Outside	IV-A	CAVITE	Gen_Emilio_Aguinaldo	Gen_Emilio_Aguinaldo(CAVITE)	70	7	77
368	Outside	IV-A	CAVITE	Magallanes	Magallanes(CAVITE)	70	7	77
369	Outside	IV-A	CAVITE	Maragondon	Maragondon(CAVITE)	70	7	77
370	Outside	IV-A	CAVITE	Ternate	Ternate(CAVITE)	70	7	77
371	Outside	IV-A	LAGUNA	Bay	Bay(LAGUNA)	71	7	78
372	Outside	IV-A	LAGUNA	Calauan	Calauan(LAGUNA)	71	7	78
373	Outside	IV-A	LAGUNA	Victoria	Victoria(LAGUNA)	71	7	78
374	Outside	IV-A	LAGUNA	Pila	Pila(LAGUNA)	71	7	78
375	Outside	IV-A	LAGUNA	Santa_Cruz	Santa_Cruz(LAGUNA)	71	7	78
376	Outside	IV-A	LAGUNA	Alaminos	Alaminos(LAGUNA)	71	7	78
377	Outside	IV-A	LAGUNA	San_Pablo_City	San_Pablo_City(LAGUNA)	71	7	78
378	Outside	IV-A	LAGUNA	Nagcarlan	Nagcarlan(LAGUNA)	71	7	78
379	Outside	IV-A	LAGUNA	Rizal	Rizal(LAGUNA)	71	7	78
380	Outside	IV-A	LAGUNA	Liliw	Liliw(LAGUNA)	71	7	78
381	Outside	IV-A	LAGUNA	Majayjay	Majayjay(LAGUNA)	71	7	78
382	Outside	IV-A	LAGUNA	Magdalena	Magdalena(LAGUNA)	71	7	78
383	Outside	IV-A	LAGUNA	Luisiana	Luisiana(LAGUNA)	71	7	78
384	Outside	IV-A	LAGUNA	Cavinti	Cavinti(LAGUNA)	71	7	78
385	Outside	IV-A	LAGUNA	Pagsanjan	Pagsanjan(LAGUNA)	71	7	78
386	Outside	IV-A	LAGUNA	Lumban	Lumban(LAGUNA)	71	7	78
387	Outside	IV-A	LAGUNA	Kalayaan	Kalayaan(LAGUNA)	71	7	78
388	Outside	IV-A	LAGUNA	Paete	Paete(LAGUNA)	71	7	78
389	Outside	IV-A	LAGUNA	Pakil	Pakil(LAGUNA)	71	7	78
390	Outside	IV-A	LAGUNA	Pangil	Pangil(LAGUNA)	71	7	78
391	Outside	IV-A	LAGUNA	Siniloan	Siniloan(LAGUNA)	71	7	78
392	Outside	IV-A	LAGUNA	Famy	Famy(LAGUNA)	71	7	78
393	Outside	IV-A	LAGUNA	Mabitac	Mabitac(LAGUNA)	71	7	78
394	Outside	IV-A	LAGUNA	Santa_Maria	Santa_Maria(LAGUNA)	71	7	78
395	Outside	I	ILOCOS_NORTE	ADAMS	ADAMS(ILOCOS_NORTE)	72	8	79
396	Outside	I	ILOCOS_SUR	ALILEM	ALILEM(ILOCOS_SUR)	72	8	79
397	Outside	I	LA_UNION	AGOO	AGOO(LA_UNION)	72	8	79
398	Outside	I	PANGASINAN	AGNO	AGNO(PANGASINAN)	72	8	79
399	Outside	CAR	ABRA	BANGUED	BANGUED_(Capital)(ABRA)	73	8	80
400	Outside	CAR	BENGUET	ATOK	ATOK(BENGUET)	73	8	80
401	Outside	CAR	IFUGAO	BANAUE	BANAUE(IFUGAO)	73	8	80
402	Outside	CAR	KALINGA&APAYAO		KALINGA_and_APAYAO	73	8	80
403	Outside	CAR	MOUNTAIN_PROVINCE	BARLIG	BARLIG(MOUNTAIN_PROVINCE)	73	8	80
404	Outside	II	BATANES	BASCO_(Capital)	BASCO_(Capital)(BATANES)	74	8	81
405	Outside	II	CAGAYAN	ABULUG	ABULUG(CAGAYAN)	74	8	81
406	Outside	II	ISABELA	ALICIA	ALICIA(ISABELA)	74	8	81
407	Outside	II	NUEVA_VIZCAYA	AMBAGUIO	AMBAGUIO(NUEVA_VIZCAYA)	74	8	81
408	Outside	II	QUIRINO	AGLIPAY	AGLIPAY(QUIRINO)	74	8	81
409	Outside	III	BATAAN	ABUCAY	ABUCAY(BATAAN)	75	6	82
410	Outside	III	NUEVA_ECIJA	ALIAGA	ALIAGA(NUEVA_ECIJA)	75	6	82
411	Outside	III	PAMPANGA	ANGELES_CITY	ANGELES_CITY(PAMPANGA)	75	6	82
412	Outside	III	TARLAC	ANAO	ANAO(TARLAC)	75	6	82
413	Outside	III	ZAMBALES	BOTOLAN	BOTOLAN(ZAMBALES)	75	6	82
414	Outside	III	AURORA	BALER_(Capital)	BALER_(Capital)(AURORA)	75	6	82

MUCEP Zone (Small)	Area	Region	Province	City/Mun	Zone_Name	Mun/Prov	Large Zone	Medium Zone
415	Outside	IV-A	BATANGAS	AGONCILLO	AGONCILLO(BATANGAS)	76	7	83
416	Outside	IV-B	MARINDUQUE	BOAC_(Capital)	BOAC_(Capital)(MARINDUQUE)	76	7	83
417	Outside	IV-B	OCCIDENTAL_MIN DORO	ABRA_DE_ILOG	ABRA_DE_ILOG(OCCIDENTAL_MINDORO)	76	7	83
418	Outside	IV-B	ORIENTAL_MINDORO	BACO	BACO(ORIENTAL_MINDORO)	76	7	83
419	Outside	IV-B	PALAWAN	ABORLAN	ABORLAN(PALAWAN)	76	7	83
420	Outside	IV-A	QUEZON	AGDANGAN	AGDANGAN(QUEZON)	76	7	83
421	Outside	IV-B	ROMBLON	ALCANTARA	ALCANTARA(ROMBLON)	76	7	83
422	Outside	V	ALBAY	BACACAY	BACACAY(ALBAY)	77	8	84
423	Outside	V	CAMARINES_NORTE	BASUD	BASUD(CAMARINES_NORTE)	77	8	84
424	Outside	V	CAMARINES_SUR	BAAO	BAAO(CAMARINES_SUR)	77	8	84
425	Outside	V	CATANDUANES	BAGAMANOC	BAGAMANOC(CATANDUANES)	77	8	84
426	Outside	V	MASBATE	AROROY	AROROY(MASBATE)	77	8	84
427	Outside	V	SORSOGON	BARCELONA	BARCELONA(SORSOGON)	77	8	84
428	Outside	VI			Region_VI	78	8	85
429	Outside	VII			Region_VII	79	8	86
430	Outside	VIII			Region_VIII	80	8	87
431	Outside	IX_X_XI_XII_XIII_A RMM			Region_IX_X_XI_XII_XIII_ARMM	81	8	88
432	Outside	Out			All_Foreign_Countries	82	8	89

APPENDIX B: POPULATION TRENDS IN MUCEP AREA

Table B-1: Population in 2014

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
1	Divisoria/Zaragosa	155,046	123,251	1,508	1,017	4,217	2,648	52,212	39,689	18,035	15,092	15,471	1,384
2	Tondo/Moriones	125,999	106,363	829	1,425	2,755	1,123	42,246	29,825	15,472	13,231	10,757	7,084
3	Tondo/Herbosa	103,121	89,852	343	1,214	3,514	2,688	35,168	24,674	11,389	12,809	10,468	6,222
4	Tondo/H.Lopez	48,797	45,360	277	344	1,505	2,311	15,321	13,631	6,439	6,210	5,299	2,903
5	Tondo/J.Luna	86,939	80,978	367	433	2,423	1,595	27,536	21,099	9,401	8,532	10,583	12,708
6	Tondo/Corregidor	35,169	32,022	0	158	2,289	1,141	10,967	7,864	3,486	5,334	2,951	2,048
7	La Loma/Chinese Cemetery	20,358	17,331	75	157	767	1,425	7,605	6,518	1,593	768	1,925	48
8	Tondo/J.A.Santos	47,251	35,865	539	831	1,132	621	15,325	9,818	4,825	4,073	5,988	1,118
9	Sta.Cruz/J.A.Santos	62,790	66,234	82	308	1,319	2,073	25,107	28,771	5,393	8,896	7,433	2,589
10	Divisoria/Del Pan	25,592	45,318	197	627	1,168	1,591	9,034	17,730	1,554	6,336	2,048	7,268
11	Binondo/J.Luna	5,315	12,344	0	375	321	626	2,823	8,440	176	280	360	986
12	Binondo/Reina Regente	8,829	23,954	0	407	112	2,525	2,975	16,095	1,430	226	907	1,208
13	Binondo/Mesericordia	5,673	10,171	43	172	80	398	2,038	6,346	146	0	978	761
14	Quiapo/Carriedo	4,867	27,047	45	751	45	2,055	2,977	17,535	54	170	287	4,442
15	Sta.Cruz/D.Jose	20,575	21,093	0	0	290	766	6,994	6,479	2,611	316	2,737	4,961
16	Sta.Crus/Bambang	37,063	40,042	194	97	580	1,195	14,675	14,172	2,571	6,683	3,890	2,658
17	Sta.Cruz/San Lazaro	35,808	51,169	383	436	857	2,232	14,289	25,409	3,368	5,826	3,702	4,212
18	Quiapo/Globo de Oro	10,771	12,051	75	108	62	239	4,107	3,241	1,077	335	1,500	4,030
19	Quiapo/Bilibid Viejo	11,514	23,977	73	309	313	287	4,797	5,263	1,141	3,795	638	9,684
20	Sampaloc/FEU/UE	12,673	39,414	51	237	660	820	4,129	4,563	1,451	2,526	1,212	25,462
21	Sta.Mesa/Lardizabal Ext.	13,203	19,239	41	172	264	205	4,362	4,987	1,530	488	1,114	7,400
22	Sta.Mesa/Peereza Ext.	20,205	14,614	178	224	421	386	7,717	3,358	1,370	636	1,778	1,268
23	Sampaloc/NU	36,929	26,965	67	239	1,498	1,117	12,192	7,566	3,311	3,539	6,276	896
24	Sampaloc/UST	6,965	19,008	14	14	200	1,042	3,028	5,538	228	320	772	9,371
25	Sampaloc/Florentino	33,874	40,095	411	579	1,704	1,766	10,859	9,113	2,118	5,303	3,359	7,668
26	Sampaloc/Calamba	22,191	20,370	141	473	486	665	6,961	7,187	3,314	120	2,266	2,842
27	Sampaloc/S.Loyola	39,524	36,004	51	0	887	451	13,719	10,713	3,410	7,467	4,441	369
28	Sta.Mesa/Altura Ext.	54,565	43,408	197	333	1,707	1,146	19,946	12,484	3,112	4,232	5,074	1,114
29	Old Sta.Mesa/V.Mapa	50,801	43,484	197	698	2,435	2,254	17,456	13,410	4,743	711	4,313	4,758
30	Sta.Mesa/P.Sanchez	26,034	23,817	195	251	964	928	9,402	6,907	1,510	2,956	2,245	1,623
31	Punta	41,566	31,606	153	252	1,313	833	12,447	8,043	3,846	2,268	4,432	939
32	Sta.Mesa/R.Magsaysay	25,683	55,837	0	493	966	1,848	8,602	9,091	2,669	3,079	3,462	30,961
33	San Miguel/J.P.Laurel	6,670	16,460	914	296	95	90	2,195	3,490	566	724	537	9,458
34	Quiapo/C.Palanca	9,745	7,869	0	0	61	0	2,795	1,799	1,080	937	677	0
35	South Port Area	6,056	4,996	0	0	77	141	1,960	3,079	1,567	0	651	57
36	Intramuros/Muralla	5,973	34,030	53	916	119	1,212	2,522	12,443	824	247	162	16,746
37	Intramuros/Arroceros	3,049	55,463	0	723	75	1,801	1,178	21,929	216	721	267	28,202
38	Intramuros/Tanque	4,163	9,970	42	679	256	1,082	1,313	2,509	480	347	508	3,788
39	Ermita	4,392	30,298	0	316	0	1,817	1,689	25,156	541	94	482	938
40	Paco/Apacible	11,802	19,087	0	357	275	908	4,758	8,492	1,614	2,835	1,416	2,756
41	Paco/Canociga	24,304	22,301	209	174	1,213	551	6,910	4,200	2,038	2,909	2,227	2,839
42	Paco/Linao (Dart)	8,226	6,021	43	428	0	0	3,616	2,641	896	0	719	0
43	Malate/PCU	7,105	11,553	501	390	94	146	2,361	3,383	364	2,231	886	2,406
44	Malate/J.C.Bocobo	14,133	28,820	49	385	354	915	5,522	14,892	1,006	5,380	2,167	2,072
45	Malate/Harrison Plaza	17,723	20,255	0	342	812	1,515	6,716	9,987	2,183	131	1,379	1,647
46	San Andres/L.Guinto	40,216	29,319	117	536	2,512	866	13,934	9,008	2,578	484	4,564	1,758
47	San Andres/SSH	17,143	12,247	70	17	919	590	7,256	4,782	702	0	1,498	159
48	San Andres/Diamante	27,333	17,876	163	33	2,140	416	9,041	6,285	2,953	269	1,996	25
49	Paco/Fabie	19,936	19,407	50	32	737	419	4,699	4,013	1,555	3,235	1,979	703
50	Sta.Ana/Estrada	72,046	49,872	195	102	2,154	827	23,300	10,865	4,762	625	5,923	1,741
51	San Miguel/Malacanang	10,030	11,142	0	93	383	783	2,354	3,426	659	201	1,420	1,425
52	Pandacan/Beata	49,873	37,608	718	452	1,926	674	18,436	10,150	2,580	2,766	3,568	842
53	Pandacan/T.Claudio	25,086	16,478	116	116	889	388	7,747	2,731	3,246	1,129	2,758	1,863
54	Sta.Ana/Panaderos	20,016	20,658	183	272	839	817	6,013	4,516	2,101	4,933	1,950	997
55	Manila Noth Harbour	0	0	0	0	0	0	0	0	0	0	0	0

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
56	MICT	0	0	0	0	0	0	0	0	0	0	0	0
57	BASECO	60,148	45,483	834	498	3,361	1,382	17,419	10,324	7,073	5,791	6,465	2,407
58	San Jose	25,099	25,584	461	970	373	753	4,062	4,467	2,388	3,839	2,557	325
59	San Isidro	20,033	16,196	113	228	467	459	5,940	3,037	2,205	1,698	1,706	848
60	Sta.Clara/Leveriza	20,689	20,235	142	283	277	511	4,037	5,387	2,850	984	2,223	1,812
61	Sta.Clara/Tramo	24,063	26,600	772	346	896	551	5,325	5,112	2,730	4,397	2,767	4,597
62	San Rafael	23,253	40,848	338	1,205	325	1,527	6,850	14,124	3,988	5,634	2,384	8,597
63	San Roque	44,755	37,968	206	59	790	896	11,460	7,959	5,878	5,204	3,237	873
64	Tabon	27,304	23,577	73	182	1,046	429	7,742	8,536	3,490	176	1,454	666
65	Malibay	72,090	66,441	1,035	1,077	2,438	1,438	19,737	14,032	10,546	12,016	5,521	5,125
66	Maricaban	55,725	43,464	373	445	1,623	817	13,595	9,610	7,874	5,196	4,947	255
67	Sto.Nino(Pasay)	27,534	18,604	424	137	568	474	7,218	3,802	2,741	337	2,718	80
68	Villamore Air Base	24,545	31,162	329	424	0	820	3,949	4,753	1,364	4,124	2,550	4,688
69	Air Cargo	22,802	23,921	1,309	570	827	378	5,577	3,649	2,786	6,052	2,130	2,888
70	Domestic Airport	4,262	4,473	322	66	66	124	1,205	1,813	316	79	391	429
71	PICC(reclamation area)	1,414	13,930	356	1,482	0	2,077	40	9,506	310	0	0	69
72	CITE(reclamation area)	2,021	22,107	112	1,185	95	2,915	619	17,347	759	108	0	25
73	Bangkal	25,487	32,019	348	371	687	1,957	5,121	7,832	3,811	4,743	2,172	3,480
74	Palanan	23,406	31,914	1,067	275	548	1,623	4,034	12,486	2,097	2,561	2,782	1,839
75	Pio Del Pilar	36,384	48,983	433	1,028	404	2,542	10,497	18,666	5,451	6,303	3,394	3,598
76	Tejeros	32,062	27,712	368	175	1,130	1,170	7,788	5,534	4,055	4,722	1,719	239
77	Olympia	31,837	36,190	42	434	903	1,881	7,339	10,186	3,700	5,736	3,535	1,592
78	Poblacion(Makati)	22,397	37,820	349	1,015	563	3,677	7,652	15,963	2,957	2,436	1,814	5,280
79	Legaspi Village	4,462	17,948	0	1,140	0	1,858	1,426	11,803	0	0	388	405
80	San Lorenzo	2,901	32,387	0	1,497	0	3,855	670	22,804	0	0	480	1,746
81	Ayala Center	0	25,273	0	919	0	3,153	0	20,803	0	0	0	0
82	Salcedo Village	5,751	23,912	0	2,799	0	1,855	3,936	16,831	0	0	0	503
83	Bel-Air II	1,745	6,888	0	200	0	508	953	4,723	0	109	0	556
84	Urdaneta	2,300	26,247	0	883	0	2,938	347	20,229	59	0	0	92
85	Bel-Air I	5,059	20,189	187	1,208	0	1,355	2,750	15,286	0	0	0	0
86	Guadalupe Viejo	19,203	20,759	103	739	516	1,165	4,485	5,710	3,641	3,561	1,382	705
87	Guadalupe Nuevo	37,248	44,610	1,285	747	836	1,240	8,365	14,918	5,297	5,593	2,825	3,640
88	Cembo	43,749	33,437	387	87	669	491	11,860	5,680	4,198	5,201	5,395	738
89	Post Proper Northside	7,331	3,513	662	84	0	0	1,653	434	1,316	350	1,056	0
90	Rembo	57,987	58,437	762	264	2,660	995	13,067	5,591	7,247	8,015	6,621	15,881
91	Pembo	150,045	118,062	1,935	1,072	2,529	1,534	34,384	15,819	20,912	18,103	13,579	5,428
92	Fort Bonifacio	23,183	76,743	908	2,824	747	11,305	2,979	43,343	3,343	2,496	1,908	3,217
93	Pinagsama	23,651	27,236	1,005	643	482	841	2,908	4,670	1,555	3,112	920	1,286
94	Dasmariñas/Forbs	5,103	8,988	0	771	0	1,076	1,623	3,755	316	658	532	0
95	Magallanes	4,052	13,419	0	218	0	1,336	1,609	9,591	342	0	725	806
96	Plainview	59,363	62,738	449	1,443	1,208	1,580	11,941	12,895	4,921	5,519	4,992	4,982
97	Old Zaniga	29,048	25,099	339	34	518	728	6,128	2,894	1,095	578	896	793
98	Poblacion(Mandaluyong)	37,358	38,025	94	338	1,357	664	10,384	11,109	4,628	4,667	4,193	4,285
99	Hagdang Bato	33,040	42,442	502	245	517	1,334	7,564	6,829	2,837	5,438	2,641	10,064
100	Addition Hills	98,902	87,678	2,461	1,589	3,287	975	14,085	10,249	12,847	11,903	7,525	4,486
101	Barangka	33,916	45,353	507	912	1,424	2,812	8,295	15,290	2,851	1,611	3,614	7,650
102	Highway Hills	57,597	75,603	722	1,383	1,515	3,371	14,383	28,752	6,111	6,373	4,983	6,064
103	Wack-Wack/Greenhills	9,823	52,588	0	3,395	0	8,009	0	39,457	0	0	0	625
104	Ortigas Center	0	13,757	0	693	0	2,408	0	10,567	0	0	0	0
105	East Greenhills	2,147	6,190	0	0	0	545	0	5,414	0	0	0	232
106	Greenhills Com'l Center	8,210	15,582	0	90	0	1,067	3,149	8,916	0	292	551	257
107	West Crame	15,668	11,407	328	193	0	73	3,582	1,254	1,473	714	1,127	0
108	Batis	51,609	39,392	885	110	1,262	866	10,697	4,387	4,721	3,433	4,383	756
109	Corazon De Jesus	44,883	48,961	356	656	464	795	9,125	9,169	3,314	5,840	2,899	3,663
110	Dona Imelda	29,859	37,374	788	819	907	1,608	8,541	11,005	3,055	4,231	2,455	5,117
111	Santo Nino	29,368	31,350	196	90	1,029	484	8,110	8,343	2,041	4,127	1,779	2,165
112	Tatalon	65,531	54,770	1,056	988	2,222	1,275	12,731	8,734	7,831	5,600	5,121	1,596
113	Santa Teresita	21,150	26,752	344	305	649	1,286	5,816	10,902	1,840	1,979	437	104
114	N.S.Amoranto(Gintong Silahis)	25,530	24,290	675	881	815	776	5,576	4,785	2,468	1,130	2,060	2,578
115	Manresa	36,341	30,425	446	213	552	1,268	8,292	7,726	5,903	1,887	2,661	951
116	Balingasa	28,850	29,469	3,284	3,099	1,752	1,712	6,476	9,364	1,619	2,093	3,465	947

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
117	Apolonio Samson	39,244	45,568	680	890	1,224	1,729	7,004	13,666	2,754	3,247	2,006	383
118	Masambong	18,958	22,410	510	723	958	640	5,124	4,211	1,561	3,799	892	3,255
119	Santo Domingo(Matalahib)	14,107	16,364	222	761	570	1,112	4,181	7,361	1,740	58	485	465
120	Del Monte	55,469	60,039	956	1,141	2,212	5,000	14,141	15,311	5,977	7,218	3,636	3,058
121	San Antonio	25,351	19,516	479	437	850	769	7,178	5,236	3,670	1,916	2,408	297
122	Veterans Village	22,909	29,925	1,007	1,005	469	1,719	4,393	8,399	4,149	5,776	1,923	1,933
123	Phil-Am	7,865	10,802	0	379	757	1,223	2,871	5,533	1,096	740	406	66
124	South Triangle	12,735	30,704	87	1,553	87	3,167	2,513	16,969	1,231	415	538	264
125	Kamuning	27,308	38,408	890	1,285	475	2,139	7,985	12,564	2,158	5,959	2,288	3,148
126	Roxas	31,887	34,340	1,053	1,038	640	847	8,863	10,348	3,630	2,942	2,035	3,144
127	Kalusugan	20,435	18,368	499	238	594	467	5,727	6,998	3,209	513	1,581	1,326
128	Mariana	15,931	17,123	110	443	1,088	1,143	1,806	3,734	1,532	414	466	268
129	Kaunlaran	20,985	23,780	1,162	423	547	1,201	4,286	6,369	1,623	2,790	2,502	2,336
130	Immaculate Concepcion	15,996	16,211	149	277	185	653	4,398	2,220	875	661	1,673	3,750
131	Bagong Lipunan Crame	21,613	21,798	528	472	488	1,027	5,012	7,837	2,428	1,008	2,582	911
132	Crame	4,903	1,682	0	0	0	0	0	1,302	0	243	0	228
133	Ugong Norte	10,908	2,509	0	114	0	294	0	1,475	0	0	0	566
134	Camp Aguinaldo	5,428	11,176	0	0	0	478	1,356	4,853	447	493	340	1,998
135	White Plains	15,188	22,329	0	1,116	630	2,578	4,667	10,153	2,597	2,198	1,425	416
136	Murphy District	21,108	71,305	92	2,521	1,883	9,084	6,169	43,716	3,072	1,001	1,063	4,992
137	Cubao(Araneta Center)	0	6,589	0	499	0	2,684	0	3,406	0	0	0	0
138	E. Rodriguez	24,749	38,021	652	769	377	1,848	6,414	12,273	2,208	4,124	1,795	5,740
139	San Roque	59,763	72,022	1,193	851	1,044	2,421	14,016	11,120	5,877	10,554	4,712	13,702
140	Escopa	22,963	31,817	61	2,022	658	2,713	5,781	14,391	1,727	281	2,808	468
141	Quirino 3	14,523	16,894	91	208	396	395	4,197	3,820	1,454	2,159	860	2,968
142	Quirino 2	25,228	29,529	478	1,076	426	1,186	6,530	6,724	1,736	4,187	2,483	2,573
143	Loyola Heights	59,272	51,809	434	594	1,604	1,367	15,651	11,339	6,453	5,570	5,315	3,453
144	Teachers Village	19,839	18,062	770	581	0	1,015	6,480	6,640	1,558	432	1,886	367
145	QMC	65,662	95,474	1,687	4,443	1,308	3,590	18,822	45,594	3,891	4,371	6,247	4,209
146	U.P. Campus	60,769	60,385	1,591	1,651	1,228	1,266	19,094	19,688	4,543	2,278	4,967	5,833
147	Batasan Hills	157,133	139,789	5,166	2,884	6,304	4,020	39,418	25,847	17,878	19,893	14,471	13,115
148	Matandang Balara	74,306	60,004	3,015	1,110	3,488	2,377	18,335	12,969	7,482	4,695	5,387	2,985
149	Holy Spirit	101,028	86,623	3,072	2,301	6,009	2,054	23,037	13,861	9,774	12,939	7,656	5,127
150	Payatas	124,374	92,257	3,537	1,542	5,074	1,983	31,264	13,194	16,061	15,079	11,935	4,078
151	Bagong Silangan	0	0	0	0	0	0	0	0	0	0	0	0
152	Constitution Hills	84,452	64,506	886	81	4,618	1,739	21,805	9,029	8,759	8,064	8,235	5,718
153	Commonwealth	209,787	211,933	5,682	4,902	6,204	6,593	52,740	48,078	25,115	27,825	17,605	21,265
154	Fairview	49,789	55,189	1,503	1,137	2,161	2,210	12,922	15,565	5,703	5,706	4,340	8,268
155	Pasong Putik	98,425	146,310	2,577	4,635	4,871	5,789	19,896	43,048	10,532	12,890	10,770	28,415
156	Kaligayahan	99,481	89,889	2,818	1,473	4,764	2,908	20,322	15,651	13,584	11,904	12,060	12,296
157	San Agustin	98,267	122,699	1,939	2,325	4,303	9,173	21,928	36,875	13,167	12,562	7,713	12,028
158	Gulod	124,801	122,912	3,930	2,516	4,699	3,152	25,969	21,063	13,840	15,674	12,189	16,779
159	Sauyo	83,170	63,670	1,204	273	2,396	2,133	20,152	7,137	7,984	6,763	8,069	3,878
160	Bagbag	43,173	35,761	472	195	2,854	2,014	8,917	6,235	5,309	5,024	4,234	1,125
161	Tandang Sora	132,870	130,425	3,760	2,449	4,688	3,830	28,025	29,044	13,365	14,536	11,637	9,376
162	Pasong Tamo	91,555	67,331	1,986	816	3,335	1,047	24,058	13,286	10,596	8,505	6,960	494
163	Culiat	71,222	60,764	1,333	536	3,200	758	15,899	10,969	9,286	8,142	6,177	4,955
164	Project 6	69,487	110,054	947	3,711	1,159	4,826	16,593	49,052	6,823	6,299	5,109	6,537
165	Ramon Magsaysay	33,960	44,026	562	1,086	682	1,600	6,983	10,989	2,366	3,195	3,978	7,299
166	Bahay Toro	78,158	72,920	1,669	1,193	3,868	4,284	23,033	21,344	8,237	7,047	4,635	2,900
167	Baesa	72,254	58,796	498	960	3,618	3,235	16,745	9,882	8,810	7,845	6,403	1,774
168	Sangandaan	25,102	27,632	941	669	1,095	814	4,373	4,488	2,618	3,915	2,921	4,001
169	Bo. San Jose	26,661	19,472	1,079	460	544	238	8,443	5,738	3,629	2,459	2,615	157
170	West 3/4 Ave.	33,630	27,436	717	412	771	1,132	6,616	4,896	3,868	2,435	3,682	913
171	A.Mabini	138,655	107,571	1,567	546	3,339	1,453	32,021	15,923	18,343	14,063	10,605	3,205
172	Dagat Dagatan	117,464	99,995	2,741	1,531	3,940	2,999	25,009	17,456	15,617	14,900	10,981	4,034
173	West 8/10 Ave.	64,932	79,731	1,291	2,221	1,437	2,427	15,150	22,222	7,887	8,609	7,952	12,720
174	Grace Park	50,427	60,198	628	1,187	1,008	2,513	12,511	16,701	7,017	7,230	4,775	8,032

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
175	Sangandaan	19,008	34,361	0	591	127	1,477	3,576	7,918	1,171	995	946	10,325
176	Bagon Barrio EDSA	18,429	29,118	281	1,261	281	1,567	6,857	9,815	1,444	3,585	744	4,069
177	Bagon Barrio Center	78,036	59,701	1,424	198	4,294	1,592	16,026	8,312	9,901	7,078	7,228	3,352
178	Bagon Barrio East	80,572	68,936	1,621	808	2,840	1,927	15,724	9,845	11,037	11,078	7,525	4,599
179	Bagumbong 1(CN)	126,620	110,396	1,142	863	6,811	3,518	24,316	15,532	18,161	15,530	12,597	11,447
180	Bagumbong 2(CN)	87,208	84,470	1,363	722	3,405	3,721	17,355	15,376	10,380	12,305	7,461	4,926
181	Bagumbong 3(CN)	47,301	42,963	1,390	654	2,234	1,525	8,420	4,713	8,016	9,395	5,063	4,497
182	Camarin 1(CN)	92,666	88,135	1,061	831	4,842	3,190	25,955	17,963	11,135	12,397	11,259	15,279
183	Camarin 2(CN)	191,358	167,630	1,441	1,019	6,683	1,449	35,114	21,724	22,755	23,206	13,715	8,782
184	North 1(CN)	264,546	227,822	2,247	1,440	11,562	4,091	49,310	26,816	35,517	35,825	23,847	17,677
185	West(CN)	174,034	143,170	4,066	2,622	9,049	2,659	37,743	19,490	21,442	19,598	17,390	14,538
186	Canumay	95,958	89,258	1,110	997	5,957	6,772	21,579	16,943	14,320	12,560	8,107	7,083
187	Mapulang Lupa/Ugong	79,589	72,779	3,793	3,516	4,109	3,999	12,424	7,875	10,003	8,968	8,310	7,383
188	Bagbaguin	27,712	33,881	687	771	1,378	2,731	6,075	10,951	2,849	3,999	2,108	814
189	Hen. T. De Leon	87,080	74,063	3,060	1,470	3,078	951	15,678	7,628	11,746	11,143	6,499	5,658
190	Marulas	51,711	60,801	96	193	502	1,458	5,995	6,141	3,478	4,805	2,616	9,070
191	Karuhatan	88,131	111,399	1,153	1,639	1,617	5,206	13,188	26,722	5,515	7,421	6,175	9,622
192	Maysan	66,515	52,798	1,315	975	4,804	3,132	14,065	8,822	6,058	5,836	8,450	2,306
193	Malanday(Valenzuela)	48,409	45,400	828	1,179	882	942	7,942	6,873	4,732	4,371	2,860	1,054
194	Dalandanan	54,622	61,602	216	587	3,481	4,162	10,721	11,620	9,047	9,579	4,757	9,267
195	Maysilo/Panghulo	44,481	36,587	589	243	2,479	994	9,312	5,304	4,964	4,972	3,768	1,847
196	Potrero	39,971	38,950	815	533	1,884	3,020	3,916	3,606	5,794	5,977	3,316	1,568
197	Tugatog	47,553	49,336	405	282	1,403	2,493	14,467	10,824	5,274	8,071	3,483	5,147
198	Longos	61,077	65,244	1,058	1,686	1,416	944	10,530	9,489	6,134	7,367	3,520	7,001
199	Tonsuya	83,311	70,552	1,698	603	2,178	1,079	15,231	11,657	8,585	6,476	5,502	807
200	Baritan/Concepcion	64,051	66,934	1,440	1,746	1,221	874	12,543	12,302	7,296	9,798	7,683	8,022
201	Dampalit	16,823	12,599	538	318	1,523	1,207	3,683	2,031	2,362	1,227	589	0
202	Tanza	26,704	19,714	1,047	341	1,028	157	6,405	3,257	4,329	3,159	2,401	1,304
203	Tangos	52,188	46,394	3,508	2,057	1,109	712	7,312	5,193	6,060	5,766	2,618	1,086
204	San Jose	61,825	66,147	536	884	885	1,245	7,479	8,447	3,757	5,747	2,438	3,355
205	Navotas East/West	44,176	40,610	842	601	1,079	1,336	3,924	3,306	4,455	2,833	1,422	81
206	North Bay Blvd.	75,594	72,548	2,044	3,560	2,578	2,565	11,492	9,607	7,893	7,394	7,188	5,200
207	Navotas Fishport	0	0	0	0	0	0	0	0	0	0	0	0
208	Nangka	41,182	34,011	513	632	2,399	1,157	12,103	7,321	5,991	6,007	3,275	2,365
209	Parang	74,272	77,915	411	306	2,841	3,921	6,731	7,343	2,689	4,653	3,609	3,598
210	Concepcion(Marikina)	84,564	82,953	1,238	719	4,108	2,185	18,198	16,193	8,358	8,575	8,356	10,991
211	Marikina Heights	60,458	55,471	631	502	1,816	1,230	12,600	10,733	4,883	3,863	5,166	3,601
212	Calumpang/San Roque	40,400	69,315	683	715	1,178	3,990	9,545	25,430	3,341	6,777	5,159	11,605
213	Santo Nino	28,125	32,659	686	600	1,190	2,686	8,434	11,387	3,131	3,393	2,165	1,881
214	Malanday(Marikina)	54,079	47,325	666	668	2,282	599	9,814	6,157	3,289	3,148	2,824	1,550
215	Barangka(Marikina)	54,919	52,973	369	171	1,242	1,441	11,481	10,935	4,300	4,775	4,214	2,338
216	Kalawaan	53,332	51,882	816	455	1,612	1,902	7,186	5,857	4,987	6,315	3,962	2,788
217	Santolan/Manggahan	173,440	187,400	3,794	3,470	6,230	13,448	34,975	45,071	19,933	18,116	14,563	12,997
218	Santa Lucia	44,231	45,036	562	179	900	1,159	7,448	5,796	4,360	6,047	3,339	4,223
219	Maybunga	34,457	40,296	313	745	1,757	2,873	5,373	5,604	1,774	3,892	2,567	4,509
220	Ugong	21,572	34,347	1,204	1,311	505	3,188	3,379	14,991	2,456	2,741	2,474	460
221	San Antonio	21,141	55,135	83	1,867	83	4,574	2,549	29,485	931	1,193	788	828
222	Kapitolyo	34,474	34,837	659	979	1,420	1,593	9,450	10,145	3,230	2,817	3,686	3,351
223	Bagong Ilog	17,252	16,307	63	377	692	1,088	3,182	3,516	2,089	1,466	1,432	66
224	Bambang	73,614	92,639	1,376	1,473	2,213	3,953	10,769	21,104	5,164	9,061	4,056	6,839
225	Caniogan	66,495	71,264	1,190	1,550	1,625	1,780	13,535	9,907	5,999	7,809	4,977	10,848
226	Pinagbuhatan	149,354	128,208	2,040	1,669	4,750	2,414	24,828	14,453	14,635	11,857	11,260	6,271
227	Santa Ana(Pateros)	68,080	65,392	3,068	2,175	2,190	916	17,747	15,155	6,845	7,446	7,006	8,159
228	Bagumbayan	91,014	84,584	1,050	927	4,481	4,004	16,899	11,867	12,621	14,319	6,478	3,983
229	Bicutan	170,887	162,669	2,804	2,377	6,923	5,912	36,828	28,880	23,382	20,175	18,898	22,936
230	Signal Village	75,609	74,933	349	220	794	334	9,849	7,655	4,217	6,283	4,239	4,526
231	Western Bicutan	73,046	72,093	1,034	766	3,976	2,690	9,349	10,741	10,117	10,380	7,061	6,012
232	Hagonoy	94,348	79,396	935	806	1,677	886	12,571	5,313	7,270	5,566	6,126	1,001

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
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233	Ususan	139,833	127,107	3,605	2,756	8,350	5,489	30,536	23,710	19,231	18,980	14,485	12,661
234	Baclaran	18,789	39,686	369	423	575	1,872	5,887	20,201	2,217	5,124	2,519	4,649
235	Tambo	27,623	32,867	190	765	986	2,383	4,517	9,540	4,265	3,686	1,686	504
236	La Huerta	10,405	16,652	196	81	0	96	2,543	4,608	1,881	3,454	909	3,538
237	San Dionisio	63,287	73,586	1,145	2,053	892	1,847	18,585	18,752	7,756	10,450	7,992	12,993
238	Moonwalk	70,395	61,424	1,464	950	4,008	2,706	16,674	10,118	9,349	8,961	6,381	6,303
239	Santo Nino(Paranaque)	34,411	36,328	709	845	1,430	1,114	8,913	12,191	4,630	3,914	1,998	1,342
240	Merville	23,945	16,755	1,340	723	1,555	1,242	3,950	3,428	3,454	135	2,209	0
241	Sun Valley	60,117	58,254	1,119	857	2,149	2,329	16,425	14,873	7,678	6,613	5,215	6,053
242	Don Bosco	53,538	61,477	512	1,273	2,689	3,427	12,706	18,881	10,106	12,749	4,540	1,943
243	Marcelo Green Village	30,118	21,734	0	105	1,832	1,224	6,652	4,808	3,988	87	1,475	0
244	San Antonio	64,969	70,131	1,753	461	1,798	2,214	7,686	12,099	6,743	9,953	4,335	2,757
245	San Isidro	78,558	61,071	1,455	301	1,974	1,435	17,202	12,856	14,672	7,342	7,222	3,081
246	B.F.Homes	27,441	23,723	136	253	1,383	940	5,068	3,550	2,327	1,164	1,161	570
247	B.F.Homes	50,722	49,023	1,455	1,221	427	2,029	13,681	12,998	5,690	5,233	2,919	900
248	B.F.Homes	10,198	9,804	232	157	116	124	2,026	2,436	1,276	1,020	603	122
249	NAIA	2,621	4,159	0	0	0	0	655	672	482	1,857	147	292
250	Marina Manila Baytown	12,697	11,983	199	288	515	656	2,093	757	2,345	2,246	978	1,677
251	Sucacat	54,019	58,513	428	908	2,289	3,176	8,732	10,089	4,290	4,281	5,625	7,050
252	Cupang	57,341	46,951	699	721	1,694	2,883	10,417	4,339	7,111	4,394	3,871	876
253	Alabang	97,581	153,694	1,571	3,391	3,727	9,636	18,075	56,227	10,451	16,084	6,320	9,975
254	New Alabang Village	22,219	14,555	2,529	551	382	269	6,386	2,929	1,627	478	1,019	103
255	Putatan	84,448	75,620	1,878	999	3,522	2,669	17,339	13,730	11,189	11,815	7,310	3,686
256	Poblacion(Muntinlupa)	113,263	108,054	1,541	1,661	3,200	1,314	25,956	16,344	12,426	12,371	11,289	17,699
257	Tunasan	52,044	55,227	1,433	1,480	2,856	3,409	10,105	14,779	7,685	6,793	3,657	2,459
258	Manuyo	55,980	49,481	206	317	2,490	1,535	14,048	9,802	7,618	6,166	4,711	5,089
259	Elias Aldana/Daniel Fajardo	28,133	24,204	285	478	1,328	474	7,084	3,711	3,577	4,011	1,988	1,974
260	Pulang Lupa	61,900	55,083	631	1,232	2,814	3,698	16,758	13,554	8,414	6,510	4,976	1,796
261	Pamplona	96,228	104,560	2,642	2,051	4,495	5,651	20,219	17,753	10,631	14,700	6,507	12,567
262	B.F.International	99,667	91,363	1,873	888	4,285	3,704	23,828	14,623	13,933	15,715	7,053	7,659
263	Talon	100,772	96,967	1,615	1,717	5,368	3,947	19,811	16,734	15,560	16,282	7,427	7,094
264	Pilar	72,115	62,284	1,036	616	3,809	2,152	15,920	11,407	12,023	10,717	4,669	3,119
265	Almanza	72,698	78,875	1,397	1,777	2,471	2,242	8,309	13,364	7,975	9,484	5,365	5,016
266	Obando	61,364	56,138	1,935	1,708	2,547	1,629	13,903	12,410	9,769	9,428	4,527	2,280
267	Marilao(West)	63,598	70,319	534	1,200	3,718	4,623	15,397	18,272	13,784	13,678	5,821	7,998
268	Meycauayan(West)	127,191	124,676	1,424	1,177	6,861	6,339	31,438	28,765	22,590	23,341	9,925	10,056
269	SJDM(West)	197,238	185,160	5,804	6,856	8,541	10,726	54,148	35,735	18,520	18,629	16,902	19,888
270	Norzaragay	104,724	98,410	4,815	5,159	6,128	5,070	15,778	12,344	19,199	20,095	10,158	7,100
271	Santa Maria(West)	78,584	94,110	1,135	1,572	5,878	7,456	21,843	29,274	12,721	14,706	6,004	9,881
272	Bocaue	110,438	110,971	3,042	3,557	6,975	7,349	23,284	23,446	23,560	23,852	10,606	9,958
273	Bulacan	73,738	68,566	4,134	4,340	4,773	3,589	19,149	17,439	9,879	9,651	5,807	3,551
274	Balagtas	69,879	75,630	1,997	1,661	3,771	4,404	15,740	20,765	11,937	11,212	5,302	6,563
275	Pandi	74,008	70,047	3,408	3,146	2,886	1,671	15,969	13,272	10,069	10,297	4,756	4,800
276	Guiguinto	94,559	95,015	1,460	1,553	5,915	6,457	27,482	28,277	12,114	12,334	9,427	7,557
277	Plaridel	106,132	100,719	1,354	1,462	3,181	2,442	30,264	28,696	22,709	22,598	9,195	6,250
278	Pulilan	89,384	83,398	2,418	2,408	7,750	6,417	24,198	21,217	5,462	5,744	8,147	5,959
279	Malolos(North)	118,923	139,805	3,943	4,397	3,161	4,181	27,807	29,091	19,021	17,592	12,634	32,348
280	Paombong	50,716	45,221	3,895	3,906	2,062	792	10,991	8,435	8,198	8,391	4,768	2,894
281	Hagonoy	129,403	116,661	5,615	4,709	3,116	1,595	28,903	22,297	22,333	22,346	10,642	7,588
282	Calumpit	106,916	100,392	1,595	1,378	4,295	4,257	27,557	25,821	12,979	12,443	7,069	3,073
283	Gen. Mariano Alvarez	144,436	128,165	2,295	1,804	9,764	5,259	44,493	34,671	16,895	16,219	9,201	8,646
284	Dasmariñas(West)	99,934	124,449	2,768	3,649	9,412	7,693	33,772	45,027	10,678	17,314	5,133	12,610
285	Bacoor(North)	79,558	72,979	1,784	984	3,047	3,989	21,104	18,535	10,255	10,011	4,656	1,140
286	Imus(North)	111,200	126,873	1,299	1,129	10,428	12,638	33,730	41,042	6,481	9,715	4,050	7,248
287	Kawit	82,116	75,679	1,910	1,496	6,964	4,659	21,972	20,101	12,230	11,238	6,482	5,729
288	Cavite City	101,678	93,197	2,310	1,477	5,523	2,732	35,712	31,274	5,307	5,686	7,465	6,908
289	Noveleta	44,956	39,653	503	357	1,973	514	12,844	10,993	5,709	4,470	3,871	3,329
290	Rosario	93,644	150,355	4,548	6,767	10,673	36,441	30,131	52,883	5,958	6,936	3,616	7,281

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
291	General Trias(North)	102,127	91,979	3,675	2,986	13,404	9,941	33,405	27,489	7,178	6,705	3,011	3,462
292	Tanza(North)	106,985	98,135	4,726	4,303	8,730	2,871	36,048	32,071	4,383	6,147	3,790	3,480
293	Trece Martires	120,676	111,557	1,423	2,151	12,727	10,718	34,993	27,650	15,304	15,403	8,110	8,070
294	Naic	91,782	85,915	6,009	5,319	4,214	1,903	21,663	19,419	15,806	15,806	5,638	4,963
295	Silang(West)	97,462	95,997	2,910	2,350	9,006	7,284	25,054	23,090	18,354	19,290	5,629	7,388
296	Carmona	83,186	90,416	2,239	2,960	8,173	9,693	22,114	27,503	10,880	10,743	5,619	5,479
297	San Pedro(North)	164,960	148,110	1,354	909	8,166	5,761	42,102	28,711	22,826	21,938	14,845	15,223
298	Binan(North)	192,662	201,088	7,304	6,898	8,183	5,946	41,328	45,169	28,306	32,732	18,184	20,650
299	Santa Rosa(Center)	248,540	250,704	6,639	6,722	16,930	13,892	55,993	60,182	33,181	32,115	18,639	20,002
300	Cabuyao(North)	122,908	115,885	3,284	2,836	7,537	7,111	27,717	22,372	17,810	17,894	9,579	8,373
301	City of Calamba(Center)	197,356	191,474	8,141	7,359	8,048	5,297	35,344	32,640	30,863	30,748	12,972	13,758
302	Los Banos	107,759	106,402	3,494	3,220	3,102	2,144	24,053	22,470	15,216	15,198	8,529	10,115
303	Taytay(West)	222,583	195,338	1,941	1,081	11,951	10,068	51,429	35,318	23,299	22,271	29,667	23,208
304	Cainta(South)	206,125	166,739	2,426	674	10,335	5,887	43,443	26,210	26,757	20,349	19,400	11,005
305	Antipolo(Center)	284,928	275,260	8,636	7,892	18,691	16,751	59,513	46,725	36,842	40,862	26,353	27,589
306	San Mateo(South)	146,003	130,297	1,801	1,042	7,568	5,475	30,059	22,358	15,501	14,720	9,954	5,976
307	Rodriguez(West)	173,838	160,489	1,106	1,209	9,865	5,996	38,229	27,412	21,023	23,362	16,682	15,410
308	Angono	109,996	99,732	1,984	1,733	6,983	4,587	26,276	19,989	11,698	11,539	16,071	14,697
309	Binangonan(North)	239,300	216,106	18,333	18,042	12,654	9,470	53,527	39,305	31,175	30,938	19,249	14,968
310	Cardona	50,984	44,117	3,030	2,226	2,804	1,834	10,097	7,196	5,213	4,942	5,196	3,422
311	Morong	55,224	57,783	2,649	1,375	2,774	2,330	12,701	10,832	10,702	10,868	5,160	11,184
312	Teresa	50,945	45,765	1,352	1,646	2,681	2,725	14,444	12,301	5,698	5,803	5,246	1,669
313	Baras	34,543	30,769	623	710	2,478	1,574	10,090	8,473	3,052	3,052	4,110	2,771
314	Tanay	105,696	104,352	5,174	4,834	6,989	6,507	19,787	19,366	16,214	16,346	11,258	10,929
315	Pililia	62,256	58,857	4,589	4,483	2,739	2,263	9,744	7,149	9,024	9,024	6,662	6,679
316	Jalajala	32,140	29,659	2,367	2,361	1,224	743	6,909	5,995	5,090	5,090	3,126	2,162
317	North 2(CN)	19,846	15,470	0	501	1,233	423	4,594	2,312	2,162	2,436	2,332	391
318	Manila Harbour Center	0	0	0	0	0	0	0	0	0	0	0	0
319	Manila South Harbour	0	0	0	0	0	0	0	0	0	0	0	0
320	NAIA Terminal 1	0	4,570	0	376	0	503	0	3,691	0	0	0	0
321	NAIA Terminal 2	0	1,691	0	368	0	0	0	1,323	0	0	0	0
322	NAIA Terminal 3	0	2,492	0	0	0	280	0	2,212	0	0	0	0
323	NAIA Domestic Terminal	0	1,005	0	0	0	0	0	1,005	0	0	0	0
324	Marilao(East)	150,684	134,592	1,607	1,071	14,751	10,883	26,055	20,211	29,241	28,151	15,032	10,864
325	Meycauayan(East)	80,691	78,225	1,066	1,283	7,247	9,862	17,311	16,785	17,654	16,721	7,033	3,568
326	SJDM(East)	95,757	87,844	1,363	1,658	6,004	4,329	21,587	18,013	13,753	13,668	9,447	7,239
327	SJDM(North)	189,302	157,191	7,573	4,596	13,564	5,194	39,225	25,696	30,363	28,902	17,302	12,205
328	Santa Maria(West)	157,933	143,439	2,811	2,269	6,637	5,426	41,220	34,661	28,043	26,189	13,710	9,477
329	Malolos(South)	133,648	136,728	5,708	6,176	5,971	4,985	37,234	39,515	20,423	22,379	12,918	12,480
330	Dasmariñas(Center)	251,132	209,751	2,250	201	20,296	12,524	81,104	58,093	23,880	18,012	11,756	9,304
331	Dasmariñas(East)	138,247	107,963	1,941	1,195	16,697	7,369	32,333	15,864	13,110	11,909	9,500	7,316
332	Dasmariñas(South)	120,387	160,265	2,563	4,120	14,203	30,733	39,682	58,909	12,434	14,026	6,747	7,247
333	Bacoor (Coastal)	193,332	176,559	4,227	4,282	15,834	9,204	46,265	40,730	31,151	29,149	13,256	9,908
334	Bacoor(Center)	164,881	149,843	2,878	1,300	13,057	11,335	40,304	29,521	23,729	23,774	11,813	10,740
335	Bacoor(South)	170,333	155,851	2,115	744	13,913	12,546	40,316	32,178	25,405	24,767	10,894	8,513
336	Imus(Center)	141,300	148,435	2,289	2,099	10,827	15,246	36,852	45,258	12,701	11,132	11,595	7,283
337	Imus(South)	102,883	89,474	3,677	2,918	7,280	6,552	27,513	15,650	10,621	9,842	6,022	6,742
338	General Trias(South)	170,333	167,618	4,394	6,219	22,706	18,198	44,232	44,541	15,113	15,230	11,011	10,520
339	Tanza(South)	102,147	84,922	5,221	3,993	10,169	4,462	21,207	13,828	12,078	10,369	4,926	4,014
340	Silang(East)	134,095	117,388	5,518	5,317	9,562	8,178	41,582	30,759	14,599	14,257	10,694	7,141
341	San Pedro(South)	148,919	147,821	3,131	3,205	8,073	8,898	39,515	37,032	21,602	22,437	10,300	9,759
342	Binan(South)	117,075	120,487	1,547	1,807	7,365	15,404	33,320	34,208	15,705	12,528	11,957	9,274
343	Santa Rosa(West)	59,912	63,753	1,542	1,894	3,459	7,955	13,691	15,948	10,012	9,930	5,023	2,397

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
344	Cabuyao(South)	173,306	172,801	4,418	5,665	11,556	11,219	33,284	32,173	25,305	24,639	14,548	14,703
345	City of Calamba(West)	172,857	170,619	3,180	3,021	12,186	12,506	29,761	28,662	24,093	23,876	10,163	9,735
346	City of Calamba(East)	55,995	64,197	666	1,129	2,212	4,723	9,150	13,222	7,008	7,504	2,518	2,683
347	Taytay(East)	98,323	102,608	1,300	1,012	8,772	7,237	22,180	26,812	12,591	14,410	8,933	7,399
348	Cainta(North)	134,240	152,193	1,617	2,840	5,868	7,588	30,518	34,518	17,146	14,801	15,697	28,841
349	Antipolo(South)	183,748	177,475	2,151	3,226	10,069	8,655	36,557	32,457	23,462	25,967	19,119	14,984
350	Antipolo(North)	185,813	147,971	1,338	933	11,538	6,092	38,222	23,122	23,587	16,416	18,448	9,876
351	Antipolo(North-East)	81,629	71,726	891	862	4,700	3,164	11,477	7,371	10,303	9,318	7,272	4,635
352	San Mateo(North)	83,437	72,953	2,033	920	4,157	1,983	16,631	11,695	9,488	9,235	5,793	3,660
353	Rodriguez(East)	171,024	149,813	1,959	1,610	10,406	7,328	29,843	18,909	26,470	24,071	14,660	10,964
354	Binangonan(South)	27,604	24,476	5,028	4,039	1,240	737	4,008	3,002	2,246	1,910	2,394	1,771
Total		22,477,415	22,449,644	477,652	477,650	1,099,477	1,099,474	5,293,660	5,293,650	2,730,712	2,730,719	1,886,357	1,886,367

Table B-2: Population in 2025

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
1	Divisoria/Zaragoza	155,560	145,065	1,513	1,197	4,231	3,117	52,385	46,714	18,095	17,763	15,522	1,629
2	Tondo/Moriones	126,417	125,188	832	1,677	2,764	1,322	42,386	35,104	15,523	15,573	10,793	8,338
3	Tondo/Herbosa	103,463	105,755	344	1,429	3,526	3,164	35,285	29,041	11,427	15,076	10,503	7,323
4	Tondo/H.Lopez	48,959	53,388	278	405	1,510	2,720	15,372	16,044	6,460	7,309	5,317	3,417
5	Tondo/J.Luna	87,227	95,310	368	510	2,431	1,877	27,627	24,833	9,432	10,042	10,618	14,957
6	Tondo/Corregidor	35,286	37,690	0	186	2,297	1,343	11,003	9,256	3,498	6,278	2,961	2,410
7	La Loma/Chinese Cemetery	20,426	20,398	75	185	770	1,677	7,630	7,672	1,598	904	1,931	56
8	Tondo/J.A.Santos	47,408	42,213	541	978	1,136	731	15,376	11,556	4,841	4,794	6,008	1,316
9	Sta.Cruz/J.A.Santos	62,998	77,957	82	363	1,323	2,440	25,190	33,863	5,411	10,471	7,458	3,047
10	Divisoria/Del Pan	25,677	53,339	198	738	1,172	1,873	9,064	20,868	1,559	7,457	2,055	8,554
11	Binondo/J.Luna	5,333	14,529	0	441	322	737	2,832	9,934	177	330	361	1,161
12	Binondo/Reina Regente	8,858	28,194	0	479	112	2,972	2,985	18,944	1,435	266	910	1,422
13	Binondo/Mesericordia	5,692	11,971	43	202	80	468	2,045	7,469	146	0	981	896
14	Quiapo/Carriedo	4,883	31,834	45	884	45	2,419	2,987	20,639	54	200	288	5,228
15	Sta.Cruz/D.Jose	20,643	24,826	0	0	291	902	7,017	7,626	2,620	372	2,746	5,839
16	Sta.Cruz/Bambang	37,186	47,129	195	114	582	1,407	14,724	16,680	2,580	7,866	3,903	3,128
17	Sta.Cruz/San Lazaro	35,927	60,225	384	513	860	2,627	14,336	29,906	3,379	6,857	3,714	4,957
18	Quiapo/Globo de Oro	10,807	14,184	75	127	62	281	4,121	3,815	1,081	394	1,505	4,743
19	Quiapo/Bilibid Viejo	11,552	28,221	73	364	314	338	4,813	6,194	1,145	4,467	640	11,398
20	Sampaloc/FEU/UE	12,715	46,390	51	279	662	965	4,143	5,371	1,456	2,973	1,216	29,969
21	Sta.Mesa/Lardizabal Ext.	13,247	22,644	41	202	265	241	4,376	5,870	1,535	574	1,118	8,710
22	Sta.Mesa/Peereza Ext.	20,272	17,201	179	264	422	454	7,743	3,952	1,375	749	1,784	1,492
23	Sampaloc/NU	37,051	31,738	67	281	1,503	1,315	12,232	8,905	3,322	4,165	6,297	1,055
24	Sampaloc/UST	6,988	22,372	14	16	201	1,226	3,038	6,518	229	377	775	11,030
25	Sampaloc/Florentino	33,986	47,191	412	681	1,710	2,079	10,895	10,726	2,125	6,242	3,370	9,025
26	Sampaloc/Calamba	22,265	23,975	141	557	488	783	6,984	8,459	3,325	141	2,274	3,345
27	Sampaloc/S.Loyola	39,655	42,376	51	0	890	531	13,765	12,609	3,421	8,789	4,456	434
28	Sta.Mesa/Altura Ext.	54,746	51,091	198	392	1,713	1,349	20,012	14,694	3,122	4,981	5,091	1,311

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
29	Old Sta.Mesa/V.Mapa	50,970	51,180	198	822	2,443	2,653	17,514	15,783	4,759	837	4,327	5,600
30	Sta.Mesa/P.Sanchez	26,120	28,032	196	295	967	1,092	9,433	8,129	1,515	3,479	2,252	1,910
31	Punta	41,704	37,200	154	297	1,317	980	12,488	9,467	3,859	2,669	4,447	1,105
32	Sta.Mesa/R.Magsaysay	25,768	65,720	0	580	969	2,175	8,631	10,700	2,678	3,624	3,473	36,441
33	San Miguel/J.P.Laurel	6,692	19,373	917	348	95	106	2,202	4,108	568	852	539	11,132
34	Quiapo/C.Palanca	9,777	9,262	0	0	61	0	2,804	2,117	1,084	1,103	679	0
35	South Port Area	6,076	5,880	0	0	77	166	1,967	3,624	1,572	0	653	67
36	Intramuros/Murallas	5,993	40,053	53	1,078	119	1,427	2,530	14,645	827	291	163	19,710
37	Intramuros/Arroceros	3,059	65,279	0	851	75	2,120	1,182	25,810	217	849	268	33,193
38	Intramuros/Tanque	4,177	11,735	42	799	257	1,274	1,317	2,953	482	408	510	4,458
39	Ermita	4,407	35,660	0	372	0	2,139	1,695	29,608	543	111	484	1,104
40	Paco/Apacible	11,841	22,465	0	420	276	1,069	4,774	9,995	1,619	3,337	1,421	3,244
41	Paco/Canociga	24,385	26,248	210	205	1,217	649	6,933	4,943	2,045	3,424	2,234	3,341
42	Paco/Linao (Dart)	8,253	7,087	43	504	0	0	3,628	3,108	899	0	721	0
43	Malate/PCU	7,129	13,598	503	459	94	172	2,369	3,982	365	2,626	889	2,832
44	Malate/J.C.Bocobo	14,180	33,921	49	453	355	1,077	5,540	17,528	1,009	6,332	2,174	2,439
45	Malate/Harrison Plaza	17,782	23,840	0	403	815	1,783	6,738	11,755	2,190	154	1,384	1,939
46	San Andres/L. Guinto	40,349	34,508	117	631	2,520	1,019	13,980	10,602	2,587	570	4,579	2,069
47	San Andres/SSH	17,200	14,415	70	20	922	694	7,280	5,628	704	0	1,503	187
48	San Andres/Diamante	27,424	21,040	164	39	2,147	490	9,071	7,397	2,963	317	2,003	29
49	Paco/Fabie	20,002	22,842	50	38	739	493	4,715	4,723	1,560	3,808	1,986	827
50	Sta.Ana/Estrada	72,285	58,699	196	120	2,161	973	23,377	12,788	4,778	736	5,943	2,049
51	San Miguel/Malacanan	10,063	13,114	0	109	384	922	2,362	4,032	661	237	1,425	1,677
52	Pandacan/Beata	50,038	44,264	720	532	1,932	793	18,497	11,946	2,589	3,256	3,580	991
53	Pandacan/T.Claudio	25,169	19,394	116	137	892	457	7,773	3,214	3,257	1,329	2,767	2,193
54	Sta.Ana/Panaderos	20,082	24,314	184	320	842	962	6,033	5,315	2,108	5,806	1,956	1,173
55	Manila Noth Harbour	0	0	0	0	0	0	0	0	0	0	0	0
56	MICT	0	0	0	0	0	0	0	0	0	0	0	0
57	BASECO	60,348	53,533	837	586	3,372	1,627	17,477	12,151	7,096	6,816	6,486	2,833
58	San Jose	26,662	30,112	490	1,142	396	886	4,315	5,258	2,537	4,518	2,716	383
59	San Isidro	21,280	19,063	120	268	496	540	6,310	3,575	2,342	1,999	1,812	998
60	Sta.Clara/Leveriza	21,977	23,816	151	333	294	601	4,288	6,340	3,027	1,158	2,361	2,133
61	Sta.Clara/Tramo	25,561	31,308	820	407	952	649	5,657	6,017	2,900	5,175	2,939	5,411
62	San Rafael	24,701	48,078	359	1,418	345	1,797	7,276	16,624	4,236	6,631	2,532	10,119
63	San Roque	47,541	44,688	219	69	839	1,055	12,173	9,368	6,244	6,125	3,439	1,028
64	Tabon	29,004	27,750	78	214	1,111	505	8,224	10,047	3,707	207	1,545	784
65	Malibay	76,578	78,200	1,099	1,268	2,590	1,693	20,966	16,516	11,203	14,143	5,865	6,032
66	Maricaban	59,194	51,157	396	524	1,724	962	14,441	11,311	8,364	6,116	5,255	300
67	Sto.Nino(Pasay)	29,248	21,897	450	161	603	558	7,667	4,475	2,912	397	2,887	94
68	Villamore Air Base	26,073	36,677	349	499	0	965	4,195	5,594	1,449	4,854	2,709	5,518
69	Air Cargo	24,222	28,155	1,390	671	878	445	5,924	4,295	2,959	7,123	2,263	3,399
70	Domestic Airport	4,527	5,265	342	78	70	146	1,280	2,134	336	93	415	505
71	PICC(reclamation area)	1,502	16,395	378	1,744	0	2,445	42	11,188	329	0	0	81
72	CITE(reclamation area)	2,147	26,020	119	1,395	101	3,431	658	20,417	806	127	0	29
73	Bangkal	28,313	37,686	387	437	763	2,303	5,689	9,218	4,234	5,582	2,413	4,096
74	Palanan	26,001	37,562	1,185	324	609	1,910	4,481	14,696	2,330	3,014	3,090	2,164
75	Pio Del Pilar	40,418	57,652	481	1,210	449	2,992	11,661	21,970	6,055	7,419	3,770	4,235
76	Tejeros	35,617	32,617	409	206	1,255	1,377	8,652	6,513	4,505	5,558	1,910	281
77	Olympia	35,367	42,595	47	511	1,003	2,214	8,153	11,989	4,110	6,751	3,927	1,874
78	Poblacion(Makati)	24,880	44,514	388	1,195	625	4,328	8,500	18,788	3,285	2,867	2,015	6,215
79	Legaspi Village	4,957	21,125	0	1,342	0	2,187	1,584	13,892	0	0	431	477
80	San Lorenzo	3,223	38,119	0	1,762	0	4,537	744	26,840	0	0	533	2,055

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
81	Ayala Center	0	29,746	0	1,082	0	3,711	0	24,485	0	0	0	0
82	Salcedo Village	6,389	28,144	0	3,294	0	2,183	4,372	19,810	0	0	0	592
83	Bel-Air II	1,938	8,107	0	235	0	598	1,059	5,559	0	128	0	654
84	Urdaneta	2,555	30,892	0	1,039	0	3,458	385	23,809	66	0	0	108
85	Bel-Air I	5,620	23,762	208	1,422	0	1,595	3,055	17,991	0	0	0	0
86	Guadalupe Viejo	21,332	24,433	114	870	573	1,371	4,982	6,721	4,045	4,191	1,535	830
87	Guadalupe Nuevo	41,378	52,506	1,427	879	929	1,459	9,292	17,558	5,884	6,583	3,138	4,284
88	Cembo	48,600	39,355	430	102	743	578	13,175	6,685	4,663	6,122	5,993	869
89	Post Proper Northside	8,144	4,135	735	99	0	0	1,836	511	1,462	412	1,173	0
90	Rembo	64,416	68,780	846	311	2,955	1,171	14,516	6,581	8,051	9,434	7,355	18,692
91	Pembo	166,682	138,958	2,150	1,262	2,809	1,806	38,196	18,619	23,231	21,307	15,085	6,389
92	Fort Bonifacio	27,421	90,326	1,074	3,324	884	13,306	3,524	51,014	3,954	2,938	2,257	3,786
93	Pinagsama	27,975	32,056	1,189	757	570	990	3,440	5,497	1,839	3,663	1,088	1,514
94	Dasmarinas/Forbs	5,669	10,579	0	907	0	1,266	1,803	4,420	351	774	591	0
95	Magallanes	4,501	15,794	0	257	0	1,572	1,787	11,289	380	0	805	949
96	Plainview	61,339	73,842	464	1,698	1,248	1,860	12,339	15,177	5,085	6,496	5,158	5,864
97	Old Zaniga	30,015	29,541	350	40	535	857	6,332	3,406	1,131	680	926	933
98	Poblacion(Mandaluyong)	38,602	44,755	97	398	1,402	782	10,730	13,075	4,782	5,493	4,333	5,043
99	Hagdang Bato	34,140	49,954	519	288	534	1,570	7,816	8,038	2,931	6,400	2,729	11,845
100	Addition Hills	102,195	103,196	2,543	1,870	3,396	1,148	14,554	12,063	13,275	14,010	7,776	5,280
101	Barangka	35,045	53,380	524	1,073	1,471	3,310	8,571	17,996	2,946	1,896	3,734	9,004
102	Highway Hills	59,514	88,984	746	1,628	1,565	3,968	14,862	33,841	6,314	7,501	5,149	7,137
103	Wack-Wack/Greenhills	10,150	61,896	0	3,996	0	9,427	0	46,440	0	0	0	736
104	Ortigas Center	0	16,192	0	816	0	2,834	0	12,437	0	0	0	0
105	East Greenhills	2,182	7,286	0	0	0	641	0	6,372	0	0	0	273
106	Greenhills Com'l Center	8,343	18,340	0	106	0	1,256	3,200	10,494	0	344	560	302
107	West Crame	15,922	13,426	333	227	0	86	3,640	1,476	1,497	840	1,145	0
108	Batis	52,444	46,364	899	129	1,282	1,019	10,870	5,163	4,797	4,041	4,454	890
109	Corazon De Jesus	45,609	57,627	362	772	472	936	9,273	10,792	3,368	6,874	2,946	4,311
110	Dona Imelda	33,677	43,989	889	964	1,023	1,893	9,633	12,953	3,446	4,980	2,769	6,023
111	Santo Nino	33,124	36,899	221	106	1,161	570	9,147	9,820	2,302	4,857	2,007	2,548
112	Tatalon	73,911	64,464	1,191	1,163	2,506	1,501	14,359	10,280	8,832	6,591	5,776	1,878
113	Santa Teresita	23,855	31,487	388	359	732	1,514	6,560	12,832	2,075	2,329	493	122
114	N.S.Amoranto(Gintong Silahis)	28,795	28,589	761	1,037	919	913	6,289	5,632	2,784	1,330	2,323	3,034
115	Manresa	40,988	35,810	503	251	623	1,492	9,352	9,093	6,658	2,221	3,001	1,119
116	Balingasa	32,539	34,685	3,704	3,647	1,976	2,015	7,304	11,021	1,826	2,463	3,908	1,115
117	Apolonio Samson	44,263	53,633	767	1,048	1,381	2,035	7,900	16,085	3,106	3,822	2,263	451
118	Masambong	21,382	26,376	575	851	1,081	753	5,779	4,956	1,761	4,471	1,006	3,831
119	Santo Domingo(Matalahib)	15,911	19,260	250	896	643	1,309	4,716	8,664	1,963	68	547	547
120	Del Monte	62,562	70,665	1,078	1,343	2,495	5,885	15,949	18,021	6,741	8,496	4,101	3,599
121	San Antonio	28,593	22,970	540	514	959	905	8,096	6,163	4,139	2,255	2,716	350
122	Veterans Village	25,839	35,221	1,136	1,183	529	2,023	4,955	9,886	4,680	6,798	2,169	2,275
123	Phil-Am	8,871	12,714	0	446	854	1,439	3,238	6,512	1,236	871	458	78
124	South Triangle	14,364	36,138	98	1,828	98	3,728	2,834	19,972	1,388	488	607	311
125	Kamuning	30,800	45,206	1,004	1,512	536	2,518	9,006	14,788	2,434	7,014	2,581	3,705
126	Roxas	35,965	40,418	1,188	1,222	722	997	9,996	12,179	4,094	3,463	2,295	3,700
127	Kalusugan	23,048	21,619	563	280	670	550	6,459	8,237	3,619	604	1,783	1,561
128	Mariana	17,968	20,154	124	521	1,227	1,345	2,037	4,395	1,728	487	526	315
129	Kaunlaran	23,669	27,989	1,311	498	617	1,414	4,834	7,496	1,831	3,284	2,822	2,749
130	Immaculate Concepcion	18,042	19,080	168	326	209	769	4,960	2,613	987	778	1,887	4,414
131	Bagong Lipunan Crame	24,377	25,656	596	556	550	1,209	5,653	9,224	2,738	1,186	2,912	1,072
132	Crame	5,530	1,980	0	0	0	0	0	1,532	0	286	0	268
133	Ugong Norte	12,303	2,953	0	134	0	346	0	1,736	0	0	0	666
134	Camp Aguinaldo	6,122	13,154	0	0	0	563	1,529	5,712	504	580	383	2,352
135	White Plains	17,130	26,281	0	1,314	711	3,034	5,264	11,950	2,929	2,587	1,607	490
136	Murphy District	23,807	83,925	104	2,967	2,124	10,692	6,958	51,453	3,465	1,178	1,199	5,876
137	Cubao(Araneta Center)	0	7,755	0	587	0	3,159	0	4,009	0	0	0	0

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
138	E. Rodriguez	27,914	44,750	735	905	425	2,175	7,234	14,445	2,490	4,854	2,025	6,756
139	San Roque	67,406	84,769	1,346	1,002	1,178	2,849	15,808	13,088	6,629	12,422	5,315	16,127
140	Escopa	25,900	37,448	69	2,380	742	3,193	6,520	16,938	1,948	331	3,167	551
141	Quirino 3	16,380	19,884	103	245	447	465	4,734	4,496	1,640	2,541	970	3,493
142	Quirino 2	28,454	34,755	539	1,266	480	1,396	7,365	7,914	1,958	4,928	2,801	3,028
143	Loyola Heights	66,852	60,979	490	699	1,809	1,609	17,652	13,346	7,278	6,556	5,995	4,064
144	Teachers Village	22,376	21,259	868	684	0	1,195	7,309	7,815	1,757	508	2,127	432
145	QMC	74,059	112,372	1,903	5,229	1,475	4,225	21,229	53,664	4,389	5,145	7,046	4,954
146	U.P. Campus	68,540	71,073	1,794	1,943	1,385	1,490	21,536	23,173	5,124	2,681	5,602	6,865
147	Batasan Hills	177,227	164,530	5,827	3,394	7,110	4,731	44,459	30,422	20,164	23,414	16,322	15,436
148	Matandang Balara	83,808	70,624	3,401	1,306	3,934	2,798	20,680	15,264	8,439	5,526	6,076	3,513
149	Holy Spirit	113,948	101,954	3,465	2,708	6,777	2,418	25,983	16,314	11,024	15,229	8,635	6,034
150	Payatas	140,279	108,586	3,989	1,815	5,723	2,334	35,262	15,529	18,115	17,748	13,461	4,800
151	Bagong Silangan	0	0	0	0	0	0	0	0	0	0	0	0
152	Constitution Hills	95,252	75,923	999	95	5,209	2,047	24,593	10,627	9,879	9,491	9,288	6,730
153	Commonwealth	236,615	249,443	6,409	5,770	6,997	7,760	59,484	56,587	28,327	32,750	19,856	25,029
154	Fairview	56,156	64,957	1,695	1,338	2,437	2,601	14,574	18,320	6,432	6,716	4,895	9,731
155	Pasong Putik	111,012	172,205	2,907	5,455	5,494	6,814	22,440	50,667	11,879	15,171	12,147	33,444
156	Kaligayahan	112,203	105,798	3,178	1,734	5,373	3,423	22,921	18,421	15,321	14,011	13,602	14,472
157	San Agustin	110,834	144,415	2,187	2,737	4,853	10,797	24,732	43,401	14,851	14,785	8,699	14,157
158	Gulod	140,761	144,666	4,433	2,961	5,300	3,710	29,290	24,791	15,610	18,448	13,748	19,749
159	Sauyo	93,806	74,939	1,358	321	2,702	2,511	22,729	8,400	9,005	7,960	9,101	4,564
160	Bagbag	48,694	42,090	532	230	3,219	2,370	10,057	7,339	5,988	5,913	4,775	1,324
161	Tandang Sora	149,862	153,509	4,241	2,882	5,288	4,508	31,609	34,184	15,074	17,109	13,125	11,035
162	Pasong Tamo	103,263	79,248	2,240	960	3,761	1,232	27,135	15,637	11,951	10,010	7,850	581
163	Culiat	80,330	71,519	1,503	631	3,609	892	17,932	12,910	10,474	9,583	6,967	5,832
164	Project 6	78,373	129,532	1,068	4,368	1,307	5,680	18,715	57,734	7,696	7,414	5,762	7,694
165	Ramon Magsaysay	38,303	51,818	634	1,278	769	1,883	7,876	12,934	2,669	3,760	4,487	8,591
166	Bahay Toro	88,153	85,826	1,882	1,404	4,363	5,042	25,978	25,122	9,290	8,294	5,228	3,413
167	Baesa	81,494	69,202	562	1,130	4,081	3,808	18,886	11,631	9,937	9,233	7,222	2,088
168	Sangandaan	28,312	32,523	1,061	787	1,235	958	4,932	5,282	2,953	4,608	3,295	4,709
169	Bo. San Jose	28,926	22,918	1,171	541	590	280	9,160	6,754	3,937	2,894	2,837	185
170	West 3/4 Ave.	36,487	32,292	778	485	837	1,332	7,178	5,763	4,197	2,866	3,995	1,075
171	A.Mabini	150,435	126,610	1,700	643	3,623	1,710	34,742	18,741	19,901	16,552	11,506	3,772
172	Dagat Dagatan	127,444	117,693	2,974	1,802	4,275	3,530	27,134	20,546	16,944	17,537	11,914	4,748
173	West 8/10 Ave.	70,449	93,843	1,401	2,614	1,559	2,857	16,437	26,155	8,557	10,133	8,628	14,971
174	Grace Park	54,711	70,852	681	1,397	1,094	2,958	13,574	19,657	7,613	8,510	5,181	9,454
175	Sangandaan	20,623	40,443	0	696	138	1,738	3,880	9,319	1,270	1,171	1,026	12,152
176	Bagon Barrio EDSA	19,995	34,272	305	1,484	305	1,844	7,440	11,552	1,567	4,220	807	4,789
177	Bagon Barrio Center	84,666	70,267	1,545	233	4,659	1,874	17,388	9,783	10,742	8,331	7,842	3,945
178	Bagon Barrio East	87,418	81,137	1,759	951	3,081	2,268	17,060	11,587	11,975	13,039	8,164	5,413
179	Bagumbong 1(CN)	137,378	129,935	1,239	1,016	7,390	4,141	26,382	18,281	19,704	18,279	13,667	13,473
180	Bagumbong 2(CN)	94,617	99,420	1,479	850	3,694	4,380	18,830	18,097	11,262	14,483	8,095	5,798
181	Bagumbong 3(CN)	51,320	50,567	1,508	770	2,424	1,795	9,135	5,547	8,697	11,058	5,493	5,293
182	Camarin 1(CN)	100,539	103,734	1,151	978	5,253	3,755	28,160	21,142	12,081	14,591	12,216	17,983
183	Camarin 2(CN)	207,616	197,299	1,563	1,199	7,251	1,705	38,097	25,569	24,688	27,313	14,880	10,336
184	North 1(CN)	287,022	268,144	2,438	1,695	12,544	4,815	53,499	31,562	38,535	42,166	25,873	20,806
185	West(CN)	188,820	168,510	4,411	3,086	9,818	3,130	40,950	22,940	23,264	23,067	18,867	17,111
186	Canumay	104,242	105,056	1,206	1,173	6,471	7,971	23,442	19,942	15,556	14,783	8,807	8,337
187	Mapulang Lupa/Ugong	86,460	85,660	4,120	4,138	4,464	4,707	13,497	9,269	10,867	10,555	9,027	8,690
188	Bagbaguin	30,104	39,878	746	907	1,497	3,214	6,599	12,889	3,095	4,707	2,290	958

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
189	Hen. T. De Leon	94,597	87,171	3,324	1,730	3,344	1,119	17,031	8,978	12,760	13,115	7,060	6,659
190	Marulas	56,175	71,562	104	227	545	1,716	6,513	7,228	3,778	5,655	2,842	10,675
191	Karuhatan	95,739	131,115	1,253	1,929	1,757	6,127	14,326	31,452	5,991	8,734	6,708	11,325
192	Maysan	72,257	62,143	1,429	1,148	5,219	3,686	15,279	10,383	6,581	6,869	9,179	2,714
193	Malanday(Valenzuela)	52,588	53,435	899	1,388	958	1,109	8,628	8,089	5,141	5,145	3,107	1,241
194	Dalandanan	59,337	72,505	235	691	3,782	4,899	11,647	13,677	9,828	11,274	5,168	10,907
195	Maysilo/Panghulo	45,382	43,063	601	286	2,529	1,170	9,501	6,243	5,064	5,852	3,844	2,174
196	Potrero	40,780	45,844	831	627	1,922	3,555	3,995	4,244	5,911	7,035	3,383	1,846
197	Tugatog	48,516	58,068	413	332	1,431	2,934	14,760	12,740	5,381	9,499	3,554	6,058
198	Longos	62,314	76,792	1,079	1,984	1,445	1,111	10,743	11,168	6,258	8,671	3,591	8,240
199	Tonsuya	84,998	83,039	1,732	710	2,222	1,270	15,539	13,720	8,759	7,622	5,613	950
200	Baritan/Concepcion	65,348	78,781	1,469	2,055	1,246	1,029	12,797	14,479	7,444	11,532	7,839	9,442
201	Dampalit	17,164	14,829	549	374	1,554	1,421	3,758	2,390	2,410	1,444	601	0
202	Tanza	27,013	23,203	1,059	401	1,040	185	6,479	3,833	4,379	3,718	2,429	1,535
203	Tangos	52,792	54,605	3,549	2,421	1,122	838	7,397	6,112	6,130	6,787	2,648	1,278
204	San Jose	62,540	77,854	542	1,040	895	1,465	7,566	9,942	3,800	6,764	2,466	3,949
205	Navolas East/West	44,687	47,798	852	707	1,091	1,572	3,969	3,891	4,507	3,334	1,438	95
206	North Bay Blvd.	76,468	85,388	2,068	4,190	2,608	3,019	11,625	11,307	7,984	8,703	7,271	6,120
207	Navolas Fishport	0	0	0	0	0	0	0	0	0	0	0	0
208	Nangka	42,310	40,031	527	744	2,465	1,362	12,435	8,617	6,155	7,070	3,365	2,784
209	Parang	76,307	91,705	422	360	2,919	4,615	6,915	8,643	2,763	5,477	3,708	4,235
210	Concepcion(Marikina)	86,881	97,635	1,272	846	4,221	2,572	18,697	19,059	8,587	10,093	8,585	12,936
211	Marikina Heights	62,115	65,289	648	591	1,866	1,448	12,945	12,633	5,017	4,547	5,308	4,238
212	Calumpang/San Roque	41,507	81,583	702	842	1,210	4,696	9,807	29,931	3,433	7,976	5,300	13,659
213	Santo Nino	28,896	38,439	705	706	1,223	3,161	8,665	13,402	3,217	3,994	2,224	2,214
214	Malanday(Marikina)	55,561	55,701	684	786	2,345	705	10,083	7,247	3,379	3,705	2,901	1,824
215	Barangka(Marikina)	56,424	62,349	379	201	1,276	1,696	11,796	12,870	4,418	5,620	4,329	2,752
216	Kalawaan	63,787	61,065	976	536	1,928	2,239	8,595	6,894	5,965	7,433	4,739	3,281
217	Santolan/Manggahan	207,440	220,568	4,538	4,084	7,451	15,828	41,831	53,048	23,841	21,322	17,418	15,297
218	Santa Lucia	52,902	53,007	672	211	1,076	1,364	8,908	6,822	5,215	7,117	3,994	4,970
219	Maybunga	41,212	47,428	374	877	2,101	3,381	6,426	6,596	2,122	4,581	3,070	5,307
220	Ugong	25,801	40,426	1,440	1,543	604	3,752	4,041	17,644	2,937	3,226	2,959	541
221	San Antonio	25,285	64,893	99	2,197	99	5,384	3,049	34,704	1,114	1,404	942	975
222	Kapitolyo	41,232	41,003	788	1,152	1,698	1,875	11,303	11,941	3,863	3,316	4,409	3,944
223	Bagong Ilog	20,634	19,193	75	444	828	1,281	3,806	4,138	2,499	1,725	1,713	78
224	Bambang	88,045	109,035	1,646	1,734	2,647	4,653	12,880	24,839	6,176	10,665	4,851	8,049
225	Caniogan	79,530	83,877	1,423	1,824	1,944	2,095	16,188	11,660	7,175	9,191	5,953	12,768
226	Pinagbuhatan	178,632	150,899	2,440	1,964	5,681	2,841	29,695	17,011	17,504	13,956	13,467	7,381
227	Santa Ana(Pateros)	69,500	76,966	3,132	2,560	2,236	1,078	18,117	17,837	6,988	8,764	7,152	9,603
228	Baqumbayan	107,653	99,554	1,242	1,091	5,300	4,713	19,988	13,967	14,928	16,853	7,662	4,688
229	Bicutan	202,128	191,460	3,317	2,798	8,189	6,958	43,561	33,991	27,657	23,746	22,353	26,995
230	Signal Village	89,431	88,195	413	259	939	393	11,650	9,010	4,988	7,395	5,014	5,327
231	Western Bicutan	86,400	84,853	1,223	902	4,703	3,166	11,058	12,642	11,967	12,217	8,352	7,076
232	Hagonoy	111,596	93,448	1,106	949	1,984	1,043	14,869	6,253	8,599	6,551	7,246	1,178
233	Ususan	165,396	149,604	4,264	3,244	9,876	6,460	36,118	27,906	22,747	22,339	17,133	14,902
234	Baclaran	21,142	46,710	415	498	647	2,203	6,624	23,776	2,495	6,031	2,834	5,472
235	Tambo	31,082	38,684	214	900	1,109	2,805	5,083	11,228	4,799	4,338	1,897	593
236	La Huerta	11,708	19,599	221	95	0	113	2,861	5,424	2,117	4,065	1,023	4,164
237	San Dionisio	71,211	86,610	1,288	2,416	1,004	2,174	20,912	22,071	8,727	12,300	8,993	15,293
238	Moonwalk	79,209	72,295	1,647	1,118	4,510	3,185	18,762	11,909	10,520	10,547	7,180	7,419
239	Santo Nino(Paranaque)	38,720	42,758	798	995	1,609	1,311	10,029	14,349	5,210	4,607	2,248	1,580
240	Merville	26,943	19,720	1,508	851	1,750	1,462	4,445	4,035	3,886	159	2,486	0
241	Sun Valley	67,644	68,564	1,259	1,009	2,418	2,741	18,482	17,505	8,639	7,783	5,868	7,124

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
242	Don Bosco	60,242	72,358	576	1,498	3,026	4,034	14,297	22,223	11,371	15,005	5,108	2,287
243	Marcelo Green Village	33,889	25,581	0	124	2,061	1,441	7,485	5,659	4,487	102	1,660	0
244	San Antonio	73,104	82,543	1,972	543	2,023	2,606	8,648	14,240	7,587	11,715	4,878	3,245
245	San Isidro	88,394	71,880	1,637	354	2,221	1,689	19,356	15,131	16,509	8,641	8,126	3,626
246	B.F.Homes	30,877	27,922	153	298	1,556	1,106	5,703	4,178	2,618	1,370	1,306	671
247	B.F.Homes	57,073	57,700	1,637	1,437	480	2,388	15,394	15,299	6,402	6,159	3,284	1,059
248	B.F.Homes	11,475	11,539	261	185	131	146	2,280	2,867	1,436	1,201	679	144
249	NAIA	2,784	4,895	0	0	0	0	696	791	512	2,186	156	344
250	Marina Manila Baytown	14,287	14,104	224	339	579	772	2,355	891	2,639	2,644	1,100	1,974
251	Sucacat	59,532	68,869	472	1,069	2,523	3,738	9,623	11,875	4,728	5,039	6,199	8,298
252	Cupang	63,194	55,261	770	849	1,867	3,393	11,480	5,107	7,837	5,172	4,266	1,031
253	Alabang	107,541	180,896	1,731	3,991	4,107	11,341	19,920	66,179	11,518	18,931	6,965	11,740
254	New Alabang Village	24,487	17,131	2,787	649	421	317	7,038	3,447	1,793	563	1,123	121
255	Putatan	93,067	89,004	2,070	1,176	3,881	3,141	19,109	16,160	12,331	13,906	8,056	4,338
256	Poblacion (Muntinlupa)	124,823	127,178	1,698	1,955	3,527	1,547	28,605	19,237	13,694	14,561	12,441	20,832
257	Tunasan	57,356	65,002	1,579	1,742	3,148	4,012	11,136	17,395	8,469	7,995	4,030	2,894
258	Manuyo	59,077	58,239	217	373	2,628	1,807	14,825	11,537	8,040	7,257	4,972	5,990
259	Elias Aldana/Daniel Fajardo	29,690	28,488	301	563	1,401	558	7,476	4,368	3,775	4,721	2,098	2,323
260	Pulang Lupa	65,325	64,832	666	1,450	2,970	4,353	17,685	15,953	8,880	7,662	5,251	2,114
261	Pamplona	101,552	123,066	2,788	2,414	4,744	6,651	21,338	20,895	11,219	17,302	6,867	14,791
262	B.F.International	105,182	107,533	1,977	1,045	4,522	4,360	25,146	17,211	14,704	18,496	7,443	9,015
263	Talon	106,348	114,129	1,704	2,021	5,665	4,646	20,907	19,696	16,421	19,164	7,838	8,350
264	Pilar	76,105	73,308	1,093	725	4,020	2,533	16,801	13,426	12,688	12,614	4,927	3,671
265	Almanza	76,721	92,835	1,474	2,092	2,608	2,639	8,769	15,729	8,416	11,163	5,662	5,904
266	Obando	64,000	66,074	2,018	2,010	2,656	1,917	14,500	14,606	10,189	11,097	4,721	2,684
267	Marilao(West)	109,814	82,765	922	1,412	6,420	5,441	26,586	21,506	23,801	16,099	10,051	9,414
268	Meycauayan(West)	151,737	146,742	1,699	1,385	8,185	7,461	37,505	33,856	26,950	27,472	11,840	11,836
269	SJDM(West)	279,521	217,931	8,225	8,069	12,104	12,624	76,737	42,060	26,246	21,926	23,953	23,408
270	Norzagaray	142,500	115,828	6,552	6,072	8,338	5,967	21,469	14,529	26,124	23,652	13,822	8,357
271	Santa Maria(West)	115,459	110,767	1,668	1,850	8,636	8,776	32,093	34,455	18,690	17,309	8,821	11,630
272	Bocaue	133,000	130,612	3,663	4,187	8,400	8,650	28,041	27,596	28,373	28,074	12,773	11,720
273	Bulacan	83,500	80,701	4,681	5,108	5,405	4,224	21,684	20,526	11,187	11,359	6,576	4,179
274	Balagtas	76,000	89,016	2,172	1,955	4,101	5,183	17,119	24,440	12,983	13,196	5,766	7,725
275	Pandi	95,500	82,445	4,398	3,703	3,724	1,967	20,606	15,621	12,993	12,119	6,137	5,650
276	Guiguinto	125,000	111,832	1,930	1,828	7,819	7,600	36,329	33,282	16,014	14,517	12,462	8,895
277	Plaridel	131,000	118,545	1,671	1,721	3,926	2,874	37,355	33,775	28,030	26,598	11,349	7,356
278	Pulilan	110,500	98,159	2,989	2,834	9,581	7,553	29,915	24,972	6,752	6,761	10,072	7,014
279	Malolos(North)	153,497	164,549	5,089	5,175	4,080	4,921	35,891	34,240	24,551	20,706	16,307	38,073
280	Paombong	64,000	53,225	4,915	4,597	2,602	932	13,870	9,928	10,345	9,876	6,017	3,406
281	Hagonoy	143,000	137,309	6,205	5,542	3,443	1,877	31,940	26,243	24,680	26,301	11,760	8,931
282	Calumpit	128,500	118,160	1,917	1,622	5,162	5,010	33,120	30,391	15,599	14,645	8,496	3,617
283	Gen. Mariano Alvarez	166,500	150,849	2,646	2,123	11,256	6,190	51,290	40,807	19,476	19,090	10,607	10,176
284	Dasmariñas(West)	135,879	146,475	3,764	4,295	12,797	9,055	45,919	52,996	14,519	20,378	6,979	14,842
285	Bacoor(North)	108,719	85,896	2,438	1,158	4,164	4,695	28,840	21,816	14,014	11,783	6,363	1,342
286	Imus(North)	137,990	149,328	1,612	1,329	12,940	14,875	41,856	48,306	8,042	11,434	5,026	8,531
287	Kawit	95,000	89,073	2,210	1,761	8,057	5,484	25,419	23,659	14,149	13,227	7,499	6,743
288	Cavite City	102,500	109,692	2,329	1,738	5,568	3,216	36,001	36,809	5,350	6,692	7,525	8,131
289	Noveleta	52,500	46,671	587	420	2,304	605	14,999	12,939	6,667	5,261	4,521	3,918
290	Rosario	112,000	176,966	5,439	7,965	12,765	42,891	36,037	62,243	7,126	8,164	4,325	8,570
291	General Trias(North)	189,103	108,258	6,805	3,514	24,819	11,700	61,854	32,354	13,291	7,892	5,575	4,075
292	Tanza(North)	155,005	115,504	6,847	5,065	12,648	3,379	52,228	37,747	6,350	7,235	5,491	4,096
293	Trece Martires	238,500	131,301	2,812	2,532	25,153	12,615	69,159	32,544	30,246	18,129	16,028	9,498
294	Naic	104,000	101,121	6,809	6,260	4,775	2,240	24,547	22,856	17,910	18,603	6,389	5,841

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
295	Silang(West)	117,852	112,987	3,519	2,766	10,890	8,573	30,295	27,177	22,194	22,704	6,807	8,696
296	Carmona	111,000	106,419	2,988	3,484	10,906	11,409	29,508	32,371	14,518	12,644	7,498	6,449
297	San Pedro(North)	177,637	174,324	1,458	1,070	8,794	6,781	45,337	33,793	24,580	25,821	15,986	17,917
298	Binan(North)	214,596	236,679	8,136	8,119	9,115	6,998	46,033	53,163	31,529	38,525	20,254	24,305
299	Santa Rosa(Center)	294,104	295,076	7,856	7,912	20,034	16,351	66,258	70,834	39,264	37,799	22,056	23,542
300	Cabuyao(North)	169,914	136,395	4,540	3,338	10,419	8,370	38,317	26,332	24,621	21,061	13,242	9,855
301	City of Calamba(Center)	217,171	225,363	8,958	8,661	8,856	6,235	38,893	38,417	33,962	36,190	14,274	16,193
302	Los Banos	115,000	125,234	3,729	3,790	3,310	2,523	25,669	26,447	16,238	17,888	9,102	11,905
303	Taytay(West)	265,305	229,911	2,314	1,272	14,245	11,850	61,300	41,569	27,771	26,213	35,361	27,316
304	Cainta(South)	227,100	196,250	2,673	793	11,387	6,929	47,864	30,849	29,480	23,951	21,374	12,953
305	Antipolo(Center)	343,717	323,978	10,418	9,289	22,547	19,716	71,792	54,995	44,444	48,094	31,790	32,472
306	San Mateo(South)	177,858	153,358	2,194	1,226	9,219	6,444	36,617	26,315	18,883	17,325	12,126	7,034
307	Rodriguez(West)	279,260	188,894	1,777	1,423	15,848	7,057	61,413	32,264	33,772	27,497	26,799	18,137
308	Angono	129,500	117,384	2,336	2,040	8,221	5,399	30,935	23,527	13,772	13,581	18,921	17,298
309	Binangonan(North)	277,042	254,355	21,224	21,235	14,650	11,146	61,969	46,262	36,092	36,414	22,285	17,617
310	Cardona	55,000	51,925	3,269	2,620	3,025	2,159	10,892	8,470	5,624	5,817	5,605	4,028
311	Morong	60,500	68,010	2,902	1,618	3,039	2,742	13,914	12,749	11,724	12,792	5,653	13,163
312	Teresa	66,000	53,865	1,752	1,937	3,473	3,207	18,712	14,478	7,382	6,830	6,796	1,964
313	Baras	40,500	36,215	730	836	2,905	1,853	11,830	9,973	3,578	3,592	4,819	3,261
314	Tanay	117,500	122,821	5,752	5,690	7,770	7,659	21,997	22,794	18,025	19,239	12,515	12,863
315	Pililia	73,000	69,274	5,381	5,276	3,212	2,664	11,426	8,414	10,581	10,621	7,812	7,861
316	Jalajala	36,000	34,908	2,651	2,779	1,371	875	7,739	7,056	5,701	5,991	3,501	2,545
317	North 2(CN)	21,532	18,208	0	590	1,338	498	4,984	2,721	2,346	2,867	2,530	460
318	Manila Harbour Center	0	0	0	0	0	0	0	0	0	0	0	0
319	Manila South Harbour	0	0	0	0	0	0	0	0	0	0	0	0
320	NAIA Terminal 1	0	5,379	0	443	0	592	0	4,344	0	0	0	0
321	NAIA Terminal 2	0	1,990	0	433	0	0	0	1,557	0	0	0	0
322	NAIA Terminal 3	0	2,933	0	0	0	330	0	2,604	0	0	0	0
323	NAIA Domestic Terminal	0	1,183	0	0	0	0	0	1,183	0	0	0	0
324	Marilao(East)	260,186	158,413	2,775	1,261	25,471	12,809	44,989	23,788	50,490	33,133	25,956	12,787
325	Meycauayan(East)	96,263	92,070	1,272	1,510	8,646	11,607	20,652	19,756	21,061	19,680	8,390	4,199
326	SJDM(East)	135,705	103,391	1,932	1,951	8,509	5,095	30,593	21,201	19,490	16,087	13,388	8,520
327	SJDM(North)	268,274	185,012	10,732	5,409	19,223	6,113	55,589	30,244	43,030	34,017	24,520	14,365
328	Santa Maria(West)	232,041	168,826	4,130	2,671	9,751	6,386	60,562	40,796	41,202	30,824	20,143	11,154
329	Malolos(South)	172,503	160,927	7,367	7,269	7,707	5,867	48,059	46,509	26,361	26,340	16,674	14,689
330	Dasmarinas(Center)	341,460	246,875	3,059	237	27,596	14,741	110,276	68,375	32,469	21,200	15,984	10,951
331	Dasmarinas(East)	187,972	127,071	2,639	1,407	22,703	8,673	43,963	18,672	17,825	14,017	12,917	8,611
332	Dasmarinas(South)	163,688	188,630	3,485	4,849	19,312	36,172	53,955	69,335	16,906	16,508	9,174	8,530
333	Bacoor (Coastal)	264,196	207,808	5,776	5,040	21,638	10,833	63,223	47,939	42,569	34,308	18,115	11,662
334	Bacoor(Center)	225,317	176,364	3,933	1,530	17,843	13,341	55,077	34,746	32,427	27,982	16,143	12,641
335	Bacoor(South)	232,767	183,435	2,890	876	19,013	14,767	55,094	37,873	34,717	29,151	14,887	10,020
336	Imus(Center)	175,341	174,706	2,840	2,471	13,435	17,944	45,730	53,268	15,761	13,102	14,388	8,572
337	Imus(South)	127,669	105,310	4,563	3,434	9,034	7,712	34,141	18,420	13,180	11,584	7,473	7,935
338	General Trias(South)	315,397	197,285	8,136	7,320	42,044	21,419	81,902	52,424	27,984	17,926	20,388	12,382

Zone	NAME	Population		Primary		Secondary		Tertiary		Student (Elem.)		Student (H.S. & Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
339	Tanza(South)	147,995	99,952	7,564	4,700	14,733	5,252	30,726	16,275	17,499	12,204	7,137	4,724
340	Silang(East)	162,148	138,164	6,672	6,258	11,562	9,625	50,281	36,203	17,653	16,780	12,931	8,405
341	San Pedro(South)	160,363	173,984	3,372	3,772	8,693	10,473	42,552	43,586	23,262	26,408	11,092	11,486
342	Binan(South)	130,404	141,812	1,723	2,127	8,203	18,130	37,113	40,262	17,493	14,745	13,318	10,915
343	Santa Rosa(West)	70,896	75,037	1,825	2,229	4,093	9,363	16,201	18,771	11,847	11,688	5,944	2,821
344	Cabuyao(South)	239,586	203,385	6,108	6,668	15,976	13,205	46,013	37,867	34,983	29,000	20,112	17,305
345	City of Calamba(West)	190,212	200,817	3,499	3,556	13,409	14,719	32,749	33,735	26,512	28,102	11,183	11,458
346	City of Calamba(East)	61,617	75,559	733	1,329	2,434	5,559	10,069	15,562	7,712	8,832	2,771	3,158
347	Taytay(East)	117,195	120,769	1,550	1,191	10,456	8,518	26,437	31,557	15,008	16,960	10,648	8,709
348	Cainta(North)	147,900	179,130	1,782	3,343	6,465	8,931	33,623	40,627	18,891	17,421	17,294	33,946
349	Antipolo(South)	221,660	208,886	2,595	3,797	12,147	10,187	44,100	38,202	28,303	30,563	23,064	17,636
350	Antipolo(North)	224,151	174,160	1,614	1,098	13,919	7,170	46,108	27,214	28,454	19,321	22,254	11,624
351	Antipolo (North-East)	98,471	84,421	1,075	1,015	5,670	3,724	13,845	8,676	12,429	10,967	8,772	5,455
352	San Mateo(North)	101,642	85,865	2,477	1,083	5,064	2,334	20,260	13,765	11,558	10,869	7,057	4,308
353	Rodriguez(East)	274,740	176,328	3,147	1,895	16,717	8,625	47,941	22,256	42,522	28,331	23,550	12,905
354	Binangonan(South)	31,958	28,808	5,821	4,754	1,436	867	4,640	3,533	2,600	2,248	2,772	2,084
Total		26,422,999	26,422,999	566,725	562,188	1,349,975	1,294,082	6,225,525	6,230,570	3,231,589	3,214,030	2,201,689	2,220,229

Table B-3: Population in 2035

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
1	Divisoria/Zaragoza	157,839	163,204	1,535	1,347	4,293	3,507	53,152	52,555	18,360	19,984	15,749	1,833
2	Tondo/Moriones	128,269	140,842	844	1,887	2,804	1,487	43,007	39,493	15,750	17,520	10,951	9,381
3	Tondo/Herbosa	104,979	118,979	349	1,608	3,578	3,560	35,802	32,672	11,594	16,961	10,657	8,239
4	Tondo/H.Lopez	49,676	60,064	282	456	1,532	3,060	15,597	18,050	6,555	8,223	5,395	3,844
5	Tondo/J.Luna	88,505	107,228	373	574	2,467	2,112	28,032	27,938	9,570	11,298	10,774	16,827
6	Tondo/Corregidor	35,803	42,403	0	209	2,331	1,511	11,164	10,413	3,549	7,063	3,004	2,711
7	La Loma/Chinese Cemetery	20,725	22,949	76	208	781	1,887	7,742	8,631	1,621	1,017	1,959	63
8	Tondo/J.A.Santos	48,103	47,491	549	1,100	1,153	822	15,601	13,001	4,912	5,393	6,096	1,481
9	Sta.Cruz/J.A.Santos	63,921	87,705	83	408	1,342	2,745	25,559	38,097	5,490	11,780	7,567	3,428
10	Divisoria/Del Pan	26,053	60,009	201	830	1,189	2,107	9,197	23,477	1,582	8,389	2,085	9,624
11	Binondo/J.Luna	5,411	16,346	0	496	327	829	2,873	11,176	180	371	366	1,306
12	Binondo/Reina Regente	8,988	31,719	0	539	114	3,344	3,029	21,313	1,456	299	923	1,600
13	Binondo/Mesericordia	5,775	13,468	44	227	81	527	2,075	8,403	148	0	995	1,008
14	Quiapo/Carriedo	4,955	35,815	46	995	46	2,721	3,031	23,220	55	225	292	5,882
15	Sta.Cruz/D.Jose	20,945	27,930	0	0	295	1,015	7,120	8,580	2,658	419	2,786	6,569
16	Sta.Crus/Bambang	37,731	53,022	198	128	591	1,583	14,940	18,766	2,618	8,850	3,960	3,519
17	Sta.Cruz/San Lazaro	36,453	67,756	390	577	873	2,955	14,546	33,646	3,429	7,714	3,768	5,577
18	Quiapo/Globo de Oro	10,965	15,958	76	143	63	316	4,181	4,292	1,097	443	1,527	5,336
19	Quiapo/Bilibid Viejo	11,721	31,750	74	409	319	380	4,884	6,969	1,162	5,026	649	12,823
20	Sampaloc/FEU/UE	12,901	52,191	52	314	672	1,086	4,204	6,043	1,477	3,345	1,234	33,716
21	Sta.Mesa/Lardizabal Ext.	13,441	25,475	42	227	269	271	4,440	6,604	1,557	646	1,134	9,799
22	Sta.Mesa/Peereza Ext.	20,569	19,352	182	297	428	511	7,856	4,446	1,395	843	1,810	1,679
23	Sampaloc/NU	37,594	35,707	68	316	1,525	1,479	12,411	10,019	3,371	4,686	6,389	1,187
24	Sampaloc/UST	7,090	25,169	14	18	204	1,379	3,083	7,333	232	424	786	12,409
25	Sampaloc/Florentino	34,484	53,092	418	766	1,735	2,339	11,055	12,067	2,156	7,022	3,419	10,154
26	Sampaloc/Calamba	22,591	26,973	143	627	495	881	7,086	9,517	3,374	159	2,307	3,763
27	Sampaloc/S.Loyola	40,236	47,675	52	0	903	597	13,967	14,186	3,471	9,888	4,521	488
28	Sta.Mesa/Altura Ext.	55,548	57,480	201	441	1,738	1,518	20,305	16,531	3,168	5,604	5,166	1,475
29	Old Sta.Mesa/V.Mapa	51,717	57,580	201	925	2,479	2,985	17,771	17,757	4,829	942	4,390	6,300
30	Sta.Mesa/P.Sanchez	26,503	31,537	199	332	981	1,229	9,571	9,146	1,537	3,914	2,285	2,149
31	Punta	42,315	41,852	156	334	1,336	1,103	12,671	10,651	3,916	3,003	4,512	1,243
32	Sta.Mesa/R.Magsaysay	26,146	73,938	0	653	983	2,447	8,757	12,038	2,717	4,077	3,524	40,998
33	San Miguel/J.P.Laurel	6,790	21,795	930	392	96	119	2,234	4,622	576	959	547	12,524
34	Quiapo/C.Palanca	9,920	10,420	0	0	62	0	2,845	2,382	1,100	1,241	689	0
35	South Port Area	6,165	6,615	0	0	78	187	1,996	4,077	1,595	0	663	75
36	Intramuros/Murallas	6,081	45,061	54	1,213	121	1,605	2,567	16,476	839	327	165	22,175
37	Intramuros/Arroceros	3,104	73,442	0	957	76	2,385	1,199	29,037	220	955	272	37,344
38	Intramuros/Tanque	4,238	13,202	43	899	261	1,433	1,336	3,322	489	459	517	5,015
39	Ermita	4,472	40,119	0	419	0	2,406	1,720	33,310	551	125	491	1,242
40	Paco/Apacible	12,014	25,274	0	473	280	1,203	4,844	11,245	1,643	3,754	1,442	3,650
41	Paco/Canociga	24,742	29,530	213	231	1,235	730	7,035	5,561	2,075	3,852	2,267	3,759
42	Paco/Linao (Dart)	8,374	7,973	44	567	0	0	3,681	3,497	912	0	732	0
43	Malate/PCU	7,233	15,298	510	516	95	193	2,404	4,480	370	2,954	902	3,186
44	Malate/J.C.Bocobo	14,388	38,163	50	510	360	1,212	5,621	19,720	1,024	7,124	2,206	2,744
45	Malate/Harrison	18,043	26,821	0	453	827	2,006	6,837	13,225	2,222	173	1,404	2,181

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
	Plaza												
46	San Andres/L. Guinto	40,940	38,823	119	710	2,557	1,146	14,185	11,928	2,625	641	4,646	2,328
47	San Andres/SSH	17,452	16,217	71	23	936	781	7,387	6,332	714	0	1,525	210
48	San Andres/Diamante	27,826	23,671	166	44	2,178	551	9,204	8,322	3,006	357	2,032	33
49	Paco/Fabie	20,295	25,698	51	43	750	555	4,784	5,314	1,583	4,284	2,015	930
50	Sta.Ana/Estrada	73,344	66,039	199	135	2,193	1,095	23,719	14,387	4,848	828	6,030	2,305
51	San Miguel/Malacanan g	10,210	14,754	0	123	390	1,037	2,397	4,536	671	267	1,446	1,887
52	Pandacan/Beata	50,771	49,799	731	599	1,960	892	18,768	13,440	2,627	3,663	3,632	1,115
53	Pandacan/T.Claudio	25,538	21,819	118	154	905	514	7,887	3,616	3,305	1,495	2,808	2,467
54	Sta.Ana/Panaderos	20,376	27,354	187	360	854	1,082	6,121	5,980	2,139	6,532	1,985	1,320
55	Manila Noth Harbour	0	0	0	0	0	0	0	0	0	0	0	0
56	MICT	0	0	0	0	0	0	0	0	0	0	0	0
57	BASECO	61,232	60,227	849	659	3,421	1,830	17,733	13,670	7,200	7,668	6,581	3,187
58	San Jose	27,544	33,877	506	1,285	409	997	4,458	5,915	2,621	5,083	2,806	431
59	San Isidro	21,984	21,447	124	302	512	608	6,519	4,022	2,420	2,249	1,872	1,123
60	Sta.Clara/Leveriza	22,704	26,794	156	375	304	676	4,430	7,133	3,127	1,303	2,439	2,400
61	Sta.Clara/Tramo	26,407	35,223	847	458	984	730	5,844	6,769	2,996	5,822	3,036	6,088
62	San Rafael	25,519	54,090	371	1,595	356	2,022	7,517	18,703	4,376	7,460	2,616	11,384
63	San Roque	49,114	50,276	226	78	867	1,187	12,576	10,539	6,451	6,891	3,553	1,156
64	Tabon	29,964	31,220	81	241	1,148	568	8,496	11,303	3,830	233	1,596	882
65	Malibay	79,112	87,978	1,135	1,427	2,676	1,905	21,660	18,581	11,574	15,911	6,059	6,786
66	Maricaban	61,153	57,554	409	589	1,781	1,082	14,919	12,725	8,641	6,881	5,429	338
67	Sto.Nino(Pasay)	30,216	24,635	465	181	623	628	7,921	5,035	3,008	447	2,983	106
68	Villamore Air Base	26,936	41,263	361	561	0	1,086	4,334	6,294	1,497	5,461	2,799	6,208
69	Air Cargo	25,024	31,676	1,436	755	907	501	6,120	4,832	3,057	8,014	2,338	3,824
70	Domestic Airport	4,677	5,923	353	88	72	164	1,322	2,401	347	105	429	568
71	PICC(reclamation area)	1,552	18,445	391	1,962	0	2,751	43	12,587	340	0	0	91
72	CITE(reclamation area)	2,218	29,274	123	1,569	104	3,860	680	22,970	833	143	0	33
73	Bangkal	29,394	42,398	402	492	792	2,591	5,906	10,371	4,396	6,280	2,505	4,608
74	Palanan	26,994	42,259	1,230	364	632	2,149	4,652	16,534	2,419	3,391	3,208	2,435
75	Pio Del Pilar	41,962	64,861	499	1,361	466	3,366	12,106	24,717	6,286	8,347	3,914	4,765
76	Tejeros	36,977	36,695	425	232	1,303	1,549	8,982	7,327	4,677	6,253	1,983	316
77	Olympia	36,718	47,921	49	575	1,041	2,491	8,464	13,488	4,267	7,595	4,077	2,108
78	Poblacion(Makati)	25,830	50,080	403	1,344	649	4,869	8,825	21,137	3,410	3,226	2,092	6,992
79	Legaspi Village	5,146	23,766	0	1,510	0	2,460	1,645	15,629	0	0	447	537
80	San Lorenzo	3,346	42,886	0	1,982	0	5,104	772	30,196	0	0	553	2,312
81	Ayala Center	0	33,466	0	1,217	0	4,175	0	27,547	0	0	0	0
82	Salcedo Village	6,633	31,663	0	3,706	0	2,456	4,539	22,287	0	0	0	666
83	Bel-Air II	2,012	9,121	0	264	0	673	1,099	6,254	0	144	0	736
84	Urdaneta	2,653	34,755	0	1,169	0	3,890	400	26,786	69	0	0	122
85	Bel-Air I	5,835	26,733	216	1,600	0	1,794	3,172	20,241	0	0	0	0
86	Guadalupe Viejo	22,147	27,488	118	979	595	1,542	5,172	7,561	4,199	4,715	1,594	934
87	Guadalupe Nuevo	42,958	59,071	1,482	989	964	1,641	9,647	19,754	6,109	7,406	3,258	4,820
88	Cembo	50,456	44,276	446	115	771	650	13,678	7,521	4,841	6,887	6,222	978
89	Post Proper Northside	8,455	4,652	763	111	0	0	1,906	575	1,518	464	1,218	0
90	Rembo	66,876	77,380	878	350	3,068	1,317	15,070	7,404	8,358	10,614	7,636	21,029
91	Pembo	173,048	156,334	2,232	1,420	2,916	2,032	39,655	20,947	24,118	23,971	15,661	7,188
92	Fort Bonifacio	30,371	101,621	1,190	3,740	979	14,970	3,903	57,393	4,379	3,305	2,500	4,259
93	Pinagsama	30,985	36,064	1,317	852	631	1,114	3,810	6,184	2,037	4,121	1,205	1,703
94	Dasmariñas/Forbs	5,886	11,902	0	1,020	0	1,424	1,872	4,973	364	871	614	0
95	Magallanes	4,673	17,769	0	289	0	1,769	1,855	12,701	395	0	836	1,068
96	Plainview	64,646	83,075	489	1,910	1,315	2,093	13,004	17,075	5,359	7,308	5,436	6,597
97	Old Zaniga	31,633	33,235	369	45	564	964	6,673	3,832	1,192	765	976	1,050
98	Poblacion(Mandal)	40,683	50,351	102	448	1,478	880	11,308	14,710	5,040	6,180	4,567	5,674

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
	uyong)												
99	Hagdang Bato	35,980	56,200	547	324	563	1,766	8,237	9,043	3,089	7,200	2,876	13,326
100	Addition Hills	107,704	116,100	2,680	2,104	3,579	1,291	15,339	13,571	13,991	15,762	8,195	5,940
101	Barangka	36,934	60,055	552	1,207	1,550	3,724	9,033	20,246	3,105	2,133	3,935	10,130
102	Highway Hills	62,722	100,111	786	1,832	1,649	4,464	15,663	38,073	6,654	8,439	5,427	8,029
103	Wack-Wack/Greenhills	10,697	69,636	0	4,496	0	10,606	0	52,247	0	0	0	828
104	Ortigas Center	0	18,217	0	918	0	3,188	0	13,992	0	0	0	0
105	East Greenhills	2,200	8,197	0	0	0	721	0	7,169	0	0	0	307
106	Greenhills Com'l Center	8,410	20,633	0	119	0	1,413	3,226	11,806	0	387	564	340
107	West Crame	16,050	15,105	336	255	0	97	3,669	1,661	1,509	945	1,154	0
108	Batis	52,865	52,161	906	145	1,292	1,146	10,957	5,809	4,836	4,546	4,490	1,001
109	Corazon De Jesus	45,975	64,833	365	869	476	1,053	9,347	12,141	3,395	7,733	2,970	4,850
110	Dona Imelda	36,356	49,489	960	1,085	1,104	2,130	10,399	14,573	3,720	5,603	2,989	6,776
111	Santo Nino	35,759	41,513	239	119	1,253	641	9,875	11,048	2,485	5,464	2,167	2,867
112	Tatalon	79,790	72,525	1,286	1,308	2,705	1,689	15,501	11,565	9,535	7,415	6,235	2,113
113	Santa Teresita	25,752	35,424	419	404	790	1,703	7,082	14,436	2,240	2,620	532	137
114	N.S.Amoranto(Gintong Silahis)	31,085	32,164	822	1,167	992	1,027	6,789	6,336	3,005	1,496	2,508	3,413
115	Manresa	44,248	40,288	543	282	673	1,679	10,096	10,230	7,188	2,499	3,240	1,259
116	Balingasa	35,127	39,022	3,999	4,103	2,133	2,267	7,885	12,399	1,971	2,771	4,219	1,254
117	Apolonio Samson	47,784	60,339	828	1,179	1,491	2,289	8,528	18,096	3,353	4,300	2,443	507
118	Masambong	23,083	29,674	621	957	1,167	847	6,239	5,576	1,901	5,030	1,086	4,310
119	Santo Domingo(Matalahib)	17,177	21,668	270	1,008	694	1,473	5,091	9,747	2,119	77	591	615
120	Del Monte	67,538	79,501	1,164	1,511	2,693	6,621	17,218	20,274	7,277	9,558	4,427	4,049
121	San Antonio	30,867	25,842	583	578	1,035	1,018	8,740	6,934	4,468	2,537	2,932	394
122	Veterans Village	27,894	39,625	1,226	1,331	571	2,276	5,349	11,122	5,052	7,648	2,342	2,559
123	Phil-Am	9,577	14,304	0	502	922	1,619	3,496	7,326	1,334	980	494	88
124	South Triangle	15,506	40,657	106	2,057	106	4,194	3,059	22,469	1,498	549	655	350
125	Kamuning	33,250	50,859	1,084	1,701	579	2,833	9,722	16,637	2,628	7,891	2,786	4,168
126	Roxas	38,826	45,472	1,282	1,375	779	1,122	10,791	13,702	4,420	3,896	2,478	4,163
127	Kalusugan	24,881	24,322	608	315	723	619	6,973	9,267	3,907	680	1,925	1,756
128	Mariana	19,397	22,674	134	586	1,325	1,513	2,199	4,945	1,865	548	568	354
129	Kaunlaran	25,552	31,489	1,415	560	666	1,591	5,218	8,433	1,977	3,695	3,046	3,093
130	Immaculate Concepcion	19,477	21,466	181	367	226	865	5,355	2,940	1,065	875	2,037	4,966
131	Bagong Lipunan Crame	26,316	28,864	643	625	594	1,360	6,103	10,377	2,956	1,334	3,144	1,206
132	Crame	5,970	2,228	0	0	0	0	0	1,724	0	322	0	302
133	Ugong Norte	13,282	3,322	0	151	0	389	0	1,953	0	0	0	749
134	Camp Aguinaldo	6,609	14,799	0	0	0	633	1,651	6,426	544	653	414	2,646
135	White Plains	18,493	29,567	0	1,478	768	3,413	5,683	13,444	3,162	2,910	1,735	551
136	Murphy District	25,701	94,419	112	3,338	2,293	12,029	7,511	57,887	3,741	1,325	1,294	6,611
137	Cubao(Araneta Center)	0	8,725	0	660	0	3,554	0	4,510	0	0	0	0
138	E. Rodriguez	30,134	50,346	793	1,018	459	2,447	7,809	16,251	2,688	5,461	2,186	7,601
139	San Roque	72,767	95,369	1,453	1,127	1,272	3,205	17,065	14,725	7,156	13,975	5,738	18,144
140	Escopa	27,960	42,131	74	2,678	801	3,592	7,039	19,056	2,103	372	3,419	620
141	Quirino 3	17,683	22,370	111	276	483	523	5,111	5,058	1,770	2,859	1,047	3,930
142	Quirino 2	30,717	39,101	582	1,424	518	1,571	7,951	8,904	2,114	5,544	3,024	3,407
143	Loyola Heights	72,169	68,604	529	786	1,953	1,810	19,056	15,015	7,857	7,376	6,472	4,572
144	Teachers Village	24,156	23,917	937	770	0	1,344	7,890	8,792	1,897	572	2,296	486
145	QMC	79,950	126,423	2,054	5,883	1,592	4,753	22,918	60,374	4,738	5,788	7,606	5,573
146	U.P. Campus	73,992	79,960	1,937	2,186	1,495	1,676	23,249	26,071	5,532	3,016	6,048	7,723
147	Batasan Hills	191,323	185,103	6,290	3,818	7,676	5,323	47,995	34,226	21,768	26,342	17,620	17,366
148	Matandang Balara	90,474	79,455	3,671	1,469	4,247	3,148	22,325	17,173	9,110	6,217	6,559	3,952
149	Holy Spirit	123,011	114,703	3,741	3,047	7,316	2,720	28,050	18,354	11,901	17,133	9,322	6,789
150	Payatas	151,437	122,164	4,306	2,042	6,178	2,626	38,067	17,471	19,556	19,967	14,532	5,400
151	Bagong Silangan	0	0	0	0	0	0	0	0	0	0	0	0
152	Constitution Hills	102,828	85,417	1,078	107	5,623	2,303	26,549	11,956	10,665	10,678	10,027	7,572

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
153	Commonwealth	255,435	280,634	6,919	6,491	7,554	8,730	64,215	63,663	30,580	36,845	21,435	28,159
154	Fairview	60,623	73,079	1,830	1,505	2,631	2,926	15,733	20,611	6,944	7,556	5,284	10,948
155	Pasong Putik	119,842	193,738	3,138	6,137	5,931	7,666	24,225	57,003	12,824	17,068	13,113	37,626
156	Kaligayahan	121,127	119,027	3,431	1,951	5,800	3,851	24,744	20,724	16,540	15,763	14,684	16,282
157	San Agustin	119,650	162,473	2,361	3,079	5,239	12,147	26,699	48,828	16,032	16,634	9,391	15,927
158	Gulod	151,957	162,755	4,786	3,331	5,722	4,174	31,620	27,891	16,852	20,755	14,841	22,218
159	Sauyo	101,267	84,310	1,466	361	2,917	2,825	24,537	9,450	9,721	8,955	9,825	5,135
160	Bagbag	52,567	47,353	574	259	3,475	2,666	10,857	8,257	6,464	6,652	5,155	1,490
161	Tandang Sora	161,782	172,704	4,578	3,242	5,709	5,072	34,123	38,459	16,273	19,248	14,169	12,415
162	Pasong Tamo	111,476	89,157	2,418	1,080	4,060	1,386	29,293	17,592	12,902	11,262	8,474	654
163	Culiat	86,719	80,462	1,623	710	3,896	1,004	19,358	14,524	11,307	10,781	7,521	6,561
164	Project 6	84,607	145,729	1,153	4,914	1,411	6,390	20,204	64,953	8,308	8,341	6,220	8,656
165	Ramon Magsaysay	41,350	58,297	684	1,438	830	2,118	8,502	14,551	2,881	4,230	4,844	9,665
166	Bahay Toro	95,165	96,558	2,032	1,580	4,710	5,672	28,044	28,263	10,029	9,331	5,644	3,840
167	Baesa	87,976	77,855	607	1,271	4,406	4,284	20,388	13,085	10,727	10,388	7,796	2,349
168	Sangandaan	30,564	36,590	1,145	885	1,333	1,078	5,324	5,943	3,188	5,184	3,557	5,298
169	Bo. San Jose	31,181	25,784	1,262	609	636	315	9,874	7,598	4,244	3,256	3,058	208
170	West 3/4 Ave.	39,332	36,330	839	546	902	1,499	7,738	6,484	4,524	3,224	4,306	1,209
171	A.Mabini	162,164	142,442	1,833	723	3,905	1,924	37,451	21,084	21,453	18,622	12,403	4,244
172	Dagat Dagatan	137,380	132,410	3,206	2,027	4,608	3,971	29,250	23,115	18,265	19,730	12,843	5,342
173	West 8/10 Ave.	75,942	105,577	1,510	2,941	1,681	3,214	17,719	29,425	9,224	11,400	9,301	16,843
174	Grace Park	58,977	79,712	734	1,572	1,179	3,328	14,632	22,115	8,207	9,574	5,585	10,636
175	Sangandaan	22,231	45,500	0	783	149	1,955	4,182	10,484	1,369	1,317	1,106	13,672
176	Bagon Barrio EDSA	21,554	38,557	329	1,670	329	2,075	8,020	12,997	1,689	4,748	870	5,388
177	Bagon Barrio Center	91,267	79,053	1,665	262	5,022	2,108	18,744	11,006	11,580	9,373	8,453	4,438
178	Bagon Barrio East	94,234	91,283	1,896	1,070	3,321	2,552	18,390	13,036	12,909	14,669	8,801	6,090
179	Bagumbong 1(CN)	148,089	146,182	1,336	1,143	7,966	4,659	28,439	20,567	21,240	20,565	14,733	15,158
180	Bagumbong 2(CN)	101,994	111,852	1,594	956	3,982	4,928	20,298	20,360	12,140	16,294	8,726	6,523
181	Bagumbong 3(CN)	55,321	56,890	1,626	866	2,613	2,019	9,847	6,241	9,375	12,441	5,921	5,955
182	Camarin 1(CN)	108,378	116,705	1,241	1,100	5,663	4,224	30,356	23,786	13,023	16,416	13,168	20,232
183	Camarin 2(CN)	223,803	221,970	1,685	1,349	7,816	1,918	41,067	28,766	26,613	30,728	16,040	11,628
184	North 1(CN)	309,400	301,673	2,628	1,907	13,522	5,417	57,670	35,509	41,539	47,439	27,890	23,408
185	West(CN)	203,542	189,581	4,755	3,472	10,583	3,521	44,143	25,808	25,078	25,951	20,338	19,251
186	Canumay	110,162	118,192	1,274	1,320	6,839	8,968	24,773	22,436	16,439	16,632	9,307	9,379
187	Mapulang Lupa/Ugong	91,370	96,371	4,354	4,655	4,718	5,296	14,263	10,428	11,484	11,875	9,540	9,777
188	Bagbaguin	31,814	44,864	788	1,020	1,582	3,616	6,974	14,501	3,271	5,296	2,420	1,078
189	Hen. T. De Leon	99,969	98,071	3,513	1,946	3,534	1,259	17,998	10,101	13,485	14,755	7,461	7,492
190	Marulas	59,365	80,510	110	255	576	1,931	6,883	8,132	3,993	6,362	3,003	12,010
191	Karuhatan	101,176	147,510	1,324	2,170	1,857	6,893	15,140	35,385	6,331	9,826	7,089	12,741
192	Maysan	76,361	69,913	1,510	1,291	5,515	4,147	16,147	11,681	6,955	7,728	9,700	3,053
193	Malanday(Val.)	55,575	60,117	950	1,562	1,012	1,248	9,118	9,101	5,433	5,788	3,283	1,396
194	Dalandanan	62,707	81,571	248	777	3,997	5,512	12,308	15,387	10,386	12,684	5,461	12,271
195	Maysilo/Panghulo	46,005	48,448	609	322	2,564	1,316	9,631	7,024	5,133	6,584	3,897	2,446
196	Potrero	41,339	51,576	842	705	1,948	3,999	4,050	4,775	5,992	7,915	3,429	2,077
197	Tugatog	49,182	65,329	419	374	1,451	3,301	14,962	14,333	5,455	10,687	3,603	6,816
198	Longos	63,169	86,394	1,094	2,232	1,465	1,250	10,890	12,565	6,344	9,755	3,640	9,270
199	Tonsuya	86,164	93,422	1,756	799	2,252	1,429	15,752	15,436	8,879	8,575	5,690	1,069
200	Baritan/Concepcion	66,244	88,632	1,489	2,312	1,263	1,158	12,973	16,290	7,546	12,974	7,947	10,623

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
201	Dampalit	17,399	16,683	557	421	1,575	1,599	3,810	2,689	2,443	1,625	609	0
202	Tanza	27,731	26,104	1,087	451	1,068	208	6,651	4,312	4,495	4,183	2,494	1,727
203	Tangos	54,194	61,433	3,643	2,724	1,152	943	7,593	6,876	6,293	7,636	2,718	1,438
204	San Jose	64,201	87,589	556	1,170	919	1,648	7,767	11,185	3,901	7,610	2,532	4,443
205	Navotas East/West	45,874	53,775	875	795	1,120	1,769	4,074	4,378	4,627	3,751	1,476	107
206	North Bay Blvd.	78,499	96,065	2,123	4,714	2,677	3,397	11,934	12,721	8,196	9,791	7,464	6,885
207	Navotas Fishport	0	0	0	0	0	0	0	0	0	0	0	0
208	Nangka	43,438	45,037	541	837	2,531	1,532	12,767	9,694	6,319	7,954	3,455	3,132
209	Parang	78,342	103,172	433	405	2,997	5,192	7,099	9,724	2,837	6,162	3,807	4,765
210	Concepcion(Marikina)	89,198	109,844	1,306	952	4,334	2,894	19,196	21,442	8,816	11,355	8,814	14,554
211	Marikina Heights	63,771	73,453	665	665	1,916	1,629	13,290	14,213	5,151	5,116	5,450	4,768
212	Calumpang/San Roque	42,614	91,784	721	947	1,242	5,283	10,069	33,674	3,525	8,973	5,441	15,367
213	Santo Nino	29,667	43,246	724	794	1,256	3,556	8,896	15,078	3,303	4,493	2,283	2,491
214	Malanday(Marikina)	57,043	62,666	702	884	2,408	793	10,352	8,153	3,469	4,168	2,978	2,052
215	Barangka(Marikina)	57,929	70,145	389	226	1,310	1,908	12,111	14,479	4,536	6,323	4,444	3,096
216	Kalawaan	69,744	68,701	1,067	603	2,108	2,519	9,398	7,756	6,522	8,362	5,182	3,691
217	Santolan/Manggahan	226,813	248,148	4,962	4,595	8,147	17,807	45,738	59,681	26,067	23,988	19,045	17,210
218	Santa Lucia	57,842	59,635	735	237	1,177	1,535	9,740	7,675	5,702	8,007	4,367	5,592
219	Maybunga	45,061	53,359	409	987	2,297	3,804	7,026	7,421	2,320	5,154	3,357	5,971
220	Ugong	28,211	45,481	1,574	1,736	660	4,221	4,418	19,850	3,211	3,629	3,235	609
221	San Antonio	27,646	73,007	108	2,472	108	6,057	3,334	39,043	1,218	1,580	1,030	1,097
222	Kapitolyo	45,083	46,130	862	1,296	1,857	2,109	12,359	13,434	4,224	3,731	4,821	4,437
223	Bagong Ilog	22,561	21,593	82	499	905	1,441	4,161	4,655	2,732	1,941	1,873	88
224	Bambang	96,267	122,669	1,800	1,951	2,894	5,235	14,083	27,945	6,753	11,999	5,304	9,056
225	Canioan	86,957	94,365	1,556	2,052	2,126	2,357	17,700	13,118	7,845	10,340	6,509	14,365
226	Pinagbuhatan	195,314	169,768	2,668	2,210	6,212	3,196	32,468	19,138	19,139	15,701	14,725	8,304
227	Santa Ana(Pateros)	72,500	86,590	3,267	2,880	2,333	1,213	18,899	20,067	7,290	9,860	7,461	10,804
228	Bagumbayan	119,234	112,003	1,376	1,227	5,870	5,302	22,138	15,714	16,534	18,960	8,486	5,274
229	Bicutan	223,873	215,401	3,674	3,148	9,070	7,828	48,247	38,241	30,632	26,715	24,758	30,371
230	Signal Village	99,052	99,223	457	291	1,040	442	12,903	10,137	5,525	8,320	5,553	5,993
231	Western Bicutan	95,695	95,463	1,355	1,015	5,209	3,562	12,248	14,223	13,254	13,745	9,250	7,961
232	Hagonoy	123,601	105,133	1,225	1,068	2,197	1,173	16,469	7,035	9,524	7,370	8,026	1,325
233	Ususan	183,189	168,311	4,723	3,650	10,939	7,268	40,004	31,395	25,194	25,132	18,976	16,765
234	Baclaran	23,029	52,551	452	560	705	2,479	7,215	26,749	2,718	6,785	3,087	6,156
235	Tambo	33,856	43,521	233	1,013	1,208	3,156	5,537	12,632	5,227	4,880	2,066	667
236	La Huerta	12,753	22,050	241	107	0	127	3,116	6,102	2,306	4,573	1,114	4,685
237	San Dionisio	77,567	97,440	1,403	2,718	1,094	2,446	22,779	24,831	9,506	13,838	9,796	17,205
238	Moonwalk	86,279	81,335	1,794	1,258	4,913	3,583	20,437	13,398	11,459	11,866	7,821	8,347
239	Santo Nino (Paranaque)	42,176	48,105	869	1,119	1,753	1,475	10,924	16,143	5,675	5,183	2,449	1,778
240	Merville	29,348	22,186	1,643	957	1,906	1,645	4,842	4,540	4,233	179	2,708	0
241	Sun Valley	73,682	77,137	1,371	1,135	2,634	3,084	20,132	19,694	9,410	8,756	6,392	8,015
242	Don Bosco	65,619	81,406	627	1,685	3,296	4,538	15,573	25,002	12,386	16,881	5,564	2,573
243	Marcelo Green Village	36,914	28,780	0	139	2,245	1,621	8,153	6,367	4,888	115	1,808	0
244	San Antonio	79,629	92,864	2,148	611	2,204	2,932	9,420	16,021	8,264	13,180	5,313	3,651
245	San Isidro	96,284	80,868	1,783	398	2,419	1,900	21,084	17,023	17,983	9,722	8,851	4,079
246	B.F.Homes	33,633	31,413	167	335	1,695	1,244	6,212	4,700	2,852	1,541	1,423	755
247	B.F.Homes	62,167	64,915	1,783	1,617	523	2,687	16,768	17,212	6,973	6,929	3,577	1,191
248	B.F.Homes	12,499	12,982	284	208	143	164	2,483	3,226	1,564	1,351	740	162
249	NAIA	2,876	5,507	0	0	0	0	719	890	529	2,459	161	387
250	Marina Baytown	15,562	15,868	244	381	631	869	2,565	1,002	2,875	2,975	1,198	2,221
251	Sucat	63,351	77,481	502	1,203	2,685	4,205	10,240	13,360	5,031	5,669	6,597	9,336
252	Cupang	67,248	62,171	819	955	1,987	3,817	12,216	5,746	8,340	5,819	4,540	1,160
253	Alabang	114,440	203,516	1,842	4,490	4,370	12,759	21,198	74,454	12,257	21,298	7,412	13,208
254	New Alabang Village	26,058	19,273	2,966	730	448	357	7,489	3,878	1,908	633	1,195	136
255	Putatan	99,037	100,133	2,203	1,323	4,130	3,534	20,335	18,181	13,122	15,645	8,573	4,880
256	Pob. (Muntinlupa)	132,831	143,081	1,807	2,199	3,753	1,740	30,440	21,642	14,573	16,382	13,239	23,437

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
257	Tunasan	61,035	73,130	1,680	1,960	3,350	4,514	11,850	19,570	9,012	8,995	4,289	3,256
258	Manuyo	62,126	65,521	228	420	2,764	2,033	15,590	12,980	8,455	8,164	5,229	6,739
259	Elias Aldana/Daniel Fajardo	31,222	32,050	317	633	1,473	628	7,862	4,914	3,970	5,311	2,206	2,614
260	Pulang Lupa	68,697	72,939	700	1,631	3,123	4,897	18,598	17,948	9,338	8,620	5,522	2,378
261	Pamplona	106,793	138,454	2,932	2,716	4,989	7,483	22,439	23,508	11,798	19,465	7,221	16,641
262	B.F.International	110,611	120,979	2,079	1,176	4,755	4,905	26,444	19,363	15,463	20,809	7,827	10,142
263	Talon	111,837	128,400	1,792	2,274	5,957	5,227	21,986	22,159	17,269	21,560	8,243	9,394
264	Pilar	80,033	82,475	1,149	816	4,227	2,850	17,668	15,105	13,343	14,191	5,181	4,130
265	Almanza	80,681	104,443	1,550	2,354	2,743	2,969	9,222	17,696	8,850	12,559	5,954	6,642
266	Obando	68,000	74,336	2,144	2,261	2,822	2,157	15,406	16,432	10,826	12,485	5,016	3,020
267	Marilao(West)	150,178	93,114	1,261	1,589	8,780	6,121	36,358	24,195	32,549	18,112	13,745	10,591
268	Meycauayan(West)	170,092	165,091	1,905	1,558	9,175	8,394	42,042	38,089	30,210	30,907	13,272	13,316
269	SJDM(West)	341,273	245,182	10,042	9,078	14,778	14,203	93,690	47,319	32,044	24,668	29,245	26,335
270	Norzagaray	167,500	130,311	7,701	6,831	9,801	6,713	25,236	16,346	30,707	26,609	16,247	9,402
271	Santa Maria(West)	144,365	124,618	2,085	2,081	10,798	9,873	40,128	38,763	23,369	19,473	11,030	13,084
272	Bocau	149,000	146,944	4,104	4,710	9,411	9,732	31,414	31,047	31,786	31,584	14,310	13,186
273	Bulacan	90,500	90,792	5,073	5,747	5,858	4,752	23,502	23,093	12,125	12,779	7,127	4,702
274	Balagtas	82,000	100,147	2,343	2,199	4,425	5,831	18,470	27,496	14,008	14,846	6,221	8,691
275	Pandi	114,500	92,754	5,273	4,166	4,465	2,213	24,706	17,574	15,578	13,634	7,358	6,356
276	Guiguinto	147,000	125,816	2,270	2,057	9,195	8,550	42,723	37,444	18,832	16,332	14,655	10,007
277	Plaridel	149,000	133,368	1,901	1,936	4,465	3,233	42,488	37,998	31,881	29,924	12,908	8,276
278	Pulilan	125,500	110,433	3,395	3,188	10,882	8,497	33,976	28,095	7,669	7,606	11,439	7,891
279	Malolos(North)	180,806	185,125	5,994	5,822	4,806	5,536	42,277	38,521	28,919	23,295	19,208	42,834
280	Paombong	72,000	59,880	5,529	5,172	2,927	1,049	15,604	11,169	11,638	11,111	6,769	3,832
281	Hagonoy	153,000	154,478	6,639	6,235	3,684	2,112	34,174	29,525	26,406	29,590	12,582	10,048
282	Calumpit	145,500	132,935	2,171	1,825	5,845	5,637	37,502	34,191	17,663	16,476	9,620	4,069
283	Gen. Mariano Alvarez	183,500	169,712	2,916	2,389	12,405	6,964	56,527	45,910	21,465	21,477	11,690	11,448
284	Dasmaringas(West)	163,088	164,791	4,518	4,832	15,360	10,187	55,114	59,623	17,426	22,926	8,377	16,698
285	Bacoor(North)	136,455	96,637	3,060	1,303	5,226	5,282	36,197	24,544	17,589	13,256	7,986	1,510
286	Imus(North)	166,777	168,000	1,948	1,495	15,640	16,735	50,588	54,346	9,720	12,864	6,074	9,598
287	Kawit	105,000	100,211	2,443	1,981	8,905	6,170	28,095	26,617	15,638	14,881	8,288	7,586
288	Cavite City	103,500	123,408	2,352	1,955	5,622	3,618	36,352	41,412	5,402	7,529	7,598	9,148
289	Noveleta	59,500	52,507	665	473	2,611	681	16,999	14,557	7,556	5,919	5,124	4,408
290	Rosario	124,000	199,094	6,022	8,961	14,133	48,254	39,898	70,026	7,889	9,185	4,788	9,642
291	General Trias(North)	262,945	121,795	9,462	3,953	34,511	13,163	86,007	36,400	18,481	8,879	7,752	4,585
292	Tanza(North)	194,907	129,947	8,610	5,698	15,904	3,802	65,673	42,467	7,985	8,140	6,905	4,608
293	Trece Martires	343,500	147,719	4,050	2,849	36,227	14,192	99,606	36,613	43,562	20,396	23,084	10,686
294	Naic	114,000	113,765	7,464	7,043	5,234	2,520	26,907	25,714	19,632	20,929	7,003	6,571
295	Silang(West)	135,530	127,115	4,047	3,112	12,524	9,645	34,839	30,575	25,523	25,543	7,828	9,783
296	Carmona	135,000	119,726	3,634	3,920	13,264	12,836	35,888	36,419	17,657	14,225	9,119	7,255
297	San Pedro(North)	191,301	196,122	1,570	1,204	9,470	7,629	48,824	38,019	26,471	29,050	17,216	20,157
298	Binan(North)	238,233	266,274	9,032	9,134	10,119	7,873	51,103	59,811	35,002	43,342	22,485	27,344
299	Santa Rosa(Center)	334,392	331,973	8,932	8,901	22,778	18,396	75,334	79,691	44,643	42,525	25,077	26,486
300	Cabuyao(North)	215,971	153,450	5,771	3,755	13,243	9,417	48,703	29,625	31,295	23,695	16,832	11,087

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
301	City of Calamba(Center)	239,397	253,543	9,875	9,744	9,762	7,015	42,873	43,221	37,438	40,715	15,735	18,218
302	Los Banos	123,000	140,894	3,988	4,264	3,540	2,839	27,455	29,754	17,368	20,125	9,735	13,394
303	Taytay(West)	306,228	258,660	2,671	1,431	16,442	13,332	70,755	46,767	32,055	29,491	40,815	30,732
304	Cainta(South)	250,113	220,790	2,944	892	12,541	7,795	52,714	34,706	32,467	26,946	23,540	14,573
305	Antipolo(Center)	394,810	364,489	11,967	10,450	25,899	22,181	82,464	61,872	51,050	54,108	36,516	36,532
306	San Mateo(South)	207,766	172,534	2,563	1,379	10,769	7,250	42,774	29,606	22,058	19,491	14,165	7,914
307	Rodriguez(West)	381,084	212,514	2,425	1,601	21,626	7,939	83,805	36,298	46,086	30,935	36,570	20,405
308	Angono	146,500	132,062	2,643	2,295	9,300	6,074	34,996	26,469	15,580	15,279	21,405	19,461
309	Binangonan(North)	309,319	286,160	23,697	23,890	16,357	12,540	69,189	52,047	40,297	40,967	24,881	19,820
310	Cardona	59,000	58,418	3,507	2,948	3,245	2,429	11,684	9,529	6,033	6,544	6,013	4,532
311	Morong	65,500	76,514	3,142	1,820	3,290	3,085	15,064	14,343	12,693	14,391	6,120	14,809
312	Teresa	78,000	60,600	2,070	2,179	4,105	3,608	22,114	16,288	8,724	7,684	8,032	2,210
313	Baras	45,500	40,743	820	940	3,264	2,085	13,290	11,220	4,020	4,041	5,414	3,669
314	Tanay	128,500	138,179	6,290	6,401	8,497	8,617	24,056	25,644	19,712	21,645	13,687	14,471
315	Pililia	81,000	77,936	5,971	5,936	3,564	2,997	12,678	9,466	11,741	11,949	8,668	8,844
316	Jalajala	40,000	39,273	2,946	3,126	1,523	984	8,599	7,938	6,334	6,740	3,890	2,863
317	North 2(CN)	23,211	20,485	0	664	1,442	560	5,373	3,061	2,529	3,226	2,727	518
318	Manila Harbour Center	0	0	0	0	0	0	0	0	0	0	0	0
319	Manila South Harbour	0	0	0	0	0	0	0	0	0	0	0	0
320	NAIA Terminal 1	0	6,052	0	498	0	666	0	4,887	0	0	0	0
321	NAIA Terminal 2	0	2,239	0	487	0	0	0	1,752	0	0	0	0
322	NAIA Terminal 3	0	3,300	0	0	0	371	0	2,930	0	0	0	0
323	NAIA Domestic Terminal	0	1,331	0	0	0	0	0	1,331	0	0	0	0
324	Marilao(East)	355,822	178,221	3,795	1,419	34,833	14,411	61,526	26,763	69,049	37,276	35,496	14,386
325	Meycauayan(East)	107,908	103,583	1,426	1,699	9,692	13,058	23,150	22,226	23,609	22,141	9,405	4,724
326	SJDM(East)	165,685	116,319	2,359	2,195	10,389	5,732	37,352	23,852	23,796	18,099	16,346	9,585
327	SJDM(North)	327,542	208,146	13,103	6,085	23,470	6,877	67,870	34,026	52,536	38,271	29,937	16,161
328	Santa Maria(West)	290,135	189,936	5,164	3,005	12,192	7,185	75,724	45,897	51,517	34,678	25,186	12,549
329	Malolos(South)	203,194	181,050	8,678	8,178	9,078	6,601	56,609	52,325	31,051	29,634	19,640	16,526
330	Dasmarinas(Center)	409,834	277,745	3,672	267	33,122	16,584	132,358	76,925	38,971	23,851	19,185	12,320
331	Dasmarinas(East)	225,612	142,960	3,167	1,583	27,249	9,758	52,766	21,007	21,394	15,770	15,504	9,688
332	Dasmarinas(South)	196,465	212,217	4,183	5,455	23,179	40,695	64,759	78,005	20,291	18,572	11,011	9,597
333	Bacoor (Coastal)	331,596	233,793	7,250	5,670	27,158	12,188	79,352	53,933	53,429	38,598	22,736	13,120
334	Bacoor(Center)	282,799	198,417	4,936	1,721	22,395	15,009	69,128	39,091	40,700	31,481	20,261	14,222
335	Bacoor(South)	292,149	206,372	3,627	985	23,863	16,613	69,149	42,609	43,574	32,796	18,685	11,273
336	Imus(Center)	211,920	196,552	3,433	2,780	16,238	20,188	55,270	59,929	19,049	14,740	17,390	9,644
337	Imus(South)	154,303	118,478	5,515	3,863	10,919	8,676	41,263	20,723	15,930	13,032	9,032	8,927
338	General Trias(South)	438,555	221,954	11,313	8,235	58,461	24,097	113,884	58,979	38,911	20,167	28,349	13,930
339	Tanza(South)	186,093	112,450	9,511	5,288	18,526	5,909	38,636	18,310	22,004	13,730	8,974	5,315
340	Silang(Eest)	186,470	155,440	7,673	7,041	13,296	10,829	57,823	40,730	20,301	18,878	14,871	9,456
341	San Pedro(South)	172,699	195,739	3,631	4,244	9,362	11,783	45,825	49,036	25,051	29,710	11,945	12,922
342	Binan(South)	144,767	159,54	1,913	2,393	9,107	20,397	41,201	45,297	19,420	16,589	14,785	12,280

Zone	NAME	Population		Primary		Secondary		Tertiary		Student(Elem.)		Student (H.S.&Univ.)	
		Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day
			5										
343	Santa Rosa(West)	80,608	84,420	2,075	2,508	4,654	10,534	18,420	21,118	13,470	13,149	6,758	3,174
344	Cabuyao(South)	304,529	228,817	7,764	7,502	20,306	14,856	58,485	42,602	44,466	32,626	25,564	19,469
345	City of Calamba(West)	209,679	225,928	3,857	4,001	14,781	16,560	36,101	37,953	29,225	31,616	12,328	12,891
346	City of Calamba(East)	67,923	85,007	808	1,495	2,683	6,254	11,099	17,508	8,501	9,936	3,055	3,553
347	Taytay(East)	135,272	135,870	1,789	1,340	12,069	9,583	30,515	35,503	17,323	19,081	12,290	9,798
348	Cainta(North)	162,887	201,529	1,963	3,761	7,120	10,048	37,030	45,707	20,805	19,599	19,046	38,191
349	Antipolo(South)	254,610	235,006	2,981	4,272	13,953	11,461	50,655	42,979	32,510	34,385	26,492	19,841
350	Antipolo(North)	257,471	195,937	1,854	1,235	15,988	8,067	52,962	30,617	32,684	21,737	25,562	13,077
351	Antipolo(North-East)	113,109	94,977	1,235	1,142	6,513	4,190	15,903	9,761	14,277	12,338	10,076	6,137
352	San Mateo(North)	118,734	96,602	2,893	1,218	5,916	2,626	23,667	15,486	13,502	12,228	8,244	4,847
353	Rodriguez(East)	374,916	198,377	4,294	2,132	22,812	9,703	65,421	25,039	58,027	31,874	32,137	14,519
354	Binangonan(South)	35,681	32,410	6,499	5,348	1,603	975	5,181	3,975	2,903	2,529	3,095	2,345
	Total	29,726,999	29,726,999	640,227	632,486	1,562,707	1,455,896	7,006,614	7,009,657	3,652,663	3,615,920	2,465,695	2,497,853

APPENDIX C: ESTIMATED CAR OWNERSHIP

Table C-1: Car Ownership Household Rate

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
1	17,773	15.0	26.8	43.5
2	17,171	10.1	21.5	37.6
3	17,329	17.2	28.7	45.0
4	17,542	11.4	23.1	39.5
5	17,597	16.5	28.2	44.7
6	24,238	17.0	33.1	55.8
7	21,886	8.6	23.2	43.7
8	25,558	30.9	47.9	71.9
9	20,672	23.8	37.5	56.9
10	20,302	22.3	35.8	54.8
11	34,975	45.2	68.4	100.0
12	20,534	37.1	50.7	70.0
13	24,615	23.1	39.4	62.5
14	23,507	30.6	46.2	68.2
15	13,663	5.9	14.9	27.8
16	22,538	19.6	34.6	55.7
17	22,981	15.9	31.2	52.8
18	30,646	35.5	55.9	84.6
19	16,694	8.2	19.3	35.0
20	16,038	13.3	24.0	39.0
21	24,866	26.8	43.4	66.7
22	29,576	23.7	43.4	71.2
23	31,789	37.7	58.8	88.7
24	28,745	34.3	53.4	80.3
25	28,424	29.4	48.3	75.0
26	19,988	27.6	40.9	59.6
27	19,889	23.2	36.4	55.1
28	20,880	25.6	39.5	59.1
29	26,574	25.1	42.8	67.7
30	23,632	39.8	55.5	77.6
31	24,333	25.6	41.8	64.6
32	27,830	26.8	45.3	71.4
33	21,971	20.2	34.8	55.5
34	13,182	0.0	8.8	21.1
35	12,500	0.0	8.3	20.0
36	15,591	22.3	32.7	47.3
37	18,253	35.5	47.6	64.7
38	18,229	14.2	26.3	43.4
39	20,061	26.8	40.2	59.0
40	16,675	16.3	27.3	43.0
41	16,507	25.6	36.6	52.1
42	18,974	32.8	45.4	63.3
43	14,200	9.3	18.8	32.1
44	23,504	23.7	39.4	61.4
45	12,699	4.7	13.1	25.1
46	25,221	18.7	35.4	59.1
47	33,111	48.5	70.5	100.0
48	16,161	19.6	30.4	45.6
49	22,089	34.1	48.8	69.5
50	23,051	14.8	30.1	51.8
51	17,159	10.2	21.6	37.7
52	17,316	17.3	28.8	45.1
53	31,277	17.8	38.6	67.9
54	26,728	29.8	47.6	72.6
55	0	0.0	0.0	0.0
56	0	0.0	0.0	0.0
57	14,182	12.5	22.0	35.3
58	16,641	10.7	21.7	37.3
59	25,734	27.8	44.9	69.1
60	17,472	4.6	16.2	32.6
61	23,027	10.8	26.1	47.7
62	16,314	15.3	26.2	41.5
63	16,091	6.5	17.2	32.3
64	15,810	3.6	14.1	28.9
65	18,183	8.8	20.9	38.0

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
66	19,275	6.7	19.5	37.6
67	23,414	23.3	38.9	60.9
68	17,124	32.8	44.2	60.3
69	15,253	5.5	15.6	29.9
70	20,112	42.3	55.7	74.6
71	8,750	0.0	5.8	14.0
72	7,500	0.0	5.0	12.0
73	22,067	26.0	40.6	61.4
74	26,497	12.5	30.2	55.0
75	20,958	28.6	42.5	62.2
76	20,806	13.6	27.4	46.9
77	25,000	21.3	37.9	61.4
78	16,176	16.8	27.6	42.7
79	30,378	76.7	96.9	100.0
80	42,021	88.5	100.0	100.0
81	0	0.0	0.0	0.0
82	79,839	90.8	100.0	100.0
83	287,500	100.0	100.0	100.0
84	37,732	76.7	100.0	100.0
85	348,571	100.0	100.0	100.0
86	15,938	0.0	10.6	25.6
87	27,326	25.1	43.2	68.9
88	22,077	13.4	28.1	48.8
89	14,032	19.1	28.4	41.6
90	17,684	7.9	19.7	36.3
91	19,951	21.1	34.3	53.1
92	17,711	11.9	23.6	40.3
93	16,262	6.2	17.0	32.3
94	123,177	97.3	100.0	100.0
95	27,551	66.4	84.8	100.0
96	26,150	25.1	42.5	67.0
97	22,811	4.6	19.7	41.1
98	16,658	16.3	27.3	43.0
99	19,106	14.5	27.2	45.1
100	15,471	5.4	15.7	30.2
101	20,023	24.6	37.9	56.7
102	27,776	20.9	39.3	65.4
103	0	0.0	0.0	0.0
104	0	0.0	0.0	0.0
105	0	0.0	0.0	0.0
106	20,833	0.0	13.8	33.4
107	18,941	16.3	28.8	46.6
108	21,700	14.3	28.7	49.0
109	19,956	13.7	27.0	45.7
110	14,455	4.8	14.4	28.0
111	16,399	9.3	20.2	35.6
112	17,441	6.6	18.2	34.6
113	17,491	11.9	23.5	39.9
114	14,798	0.0	9.8	23.7
115	20,460	13.2	26.8	46.0
116	23,228	35.9	51.3	73.1
117	14,425	0.0	9.6	23.1
118	12,738	0.0	8.5	20.4
119	21,841	9.3	23.9	44.4
120	15,689	7.8	18.2	33.0
121	16,362	19.1	29.9	45.3
122	13,813	6.2	15.4	28.3
123	32,769	50.8	72.5	100.0
124	15,657	11.3	21.7	36.4
125	32,606	21.3	43.0	73.6
126	20,695	36.6	50.3	69.7
127	16,020	7.0	17.6	32.7
128	18,891	8.6	21.2	38.9
129	19,063	0.0	12.7	30.6
130	28,151	33.3	52.0	78.5
131	22,937	23.1	38.3	59.8
132	0	0.0	0.0	0.0
133	0	0.0	0.0	0.0
134	31,137	52.4	73.1	100.0

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
135	20,468	20.2	33.8	53.1
136	16,222	0.0	10.8	26.0
137	0	0.0	0.0	0.0
138	13,547	10.7	19.7	32.4
139	24,359	18.8	35.0	57.9
140	32,830	34.1	55.9	86.7
141	17,179	0.0	11.4	27.5
142	15,943	5.3	15.9	30.9
143	16,364	17.2	28.1	43.4
144	20,698	17.7	31.5	50.9
145	16,416	30.0	40.9	56.3
146	19,996	28.2	41.5	60.3
147	14,933	9.5	19.4	33.5
148	14,829	0.0	9.9	23.8
149	15,009	7.2	17.1	31.2
150	13,984	10.3	19.5	32.7
151	0	0.0	0.0	0.0
152	19,653	5.2	18.3	36.7
153	16,226	6.9	17.7	32.9
154	15,785	8.6	19.1	33.9
155	17,877	15.2	27.1	43.9
156	24,664	19.9	36.3	59.5
157	17,705	9.7	21.5	38.1
158	14,548	14.2	23.8	37.5
159	23,728	32.6	48.4	70.6
160	15,699	0.0	10.4	25.2
161	17,086	15.4	26.8	42.8
162	17,342	4.8	16.3	32.6
163	15,963	20.7	31.3	46.3
164	23,426	33.3	48.9	70.9
165	22,116	8.2	22.9	43.6
166	23,773	26.7	42.5	64.8
167	21,176	5.8	19.9	39.7
168	15,626	5.9	16.2	30.9
169	23,155	17.6	32.9	54.7
170	14,347	0.0	9.5	23.0
171	18,425	11.7	23.9	41.2
172	16,879	11.3	22.6	38.4
173	16,944	9.3	20.6	36.5
174	17,613	9.7	21.4	37.9
175	22,296	0.0	14.8	35.7
176	21,879	22.3	36.8	57.4
177	13,844	7.0	16.2	29.2
178	16,735	5.3	16.4	32.1
179	15,191	11.9	21.9	36.2
180	19,133	22.9	35.6	53.6
181	16,523	11.4	22.3	37.9
182	18,991	14.3	26.9	44.7
183	16,203	4.5	15.3	30.5
184	15,546	5.7	16.1	30.7
185	19,375	13.7	26.5	44.7
186	17,987	7.3	19.3	36.2
187	18,998	5.4	18.0	35.8
188	22,090	0.0	14.7	35.4
189	13,914	6.5	15.7	28.8
190	19,751	12.9	26.1	44.6
191	18,952	13.6	26.2	44.0
192	16,145	10.3	21.0	36.2
193	18,770	5.4	17.9	35.5
194	15,561	7.6	17.9	32.5
195	13,168	3.4	12.1	24.5
196	14,080	7.4	16.8	30.0
197	17,205	6.1	17.5	33.7
198	21,286	4.9	19.1	39.1
199	14,279	3.6	13.1	26.5
200	15,201	12.7	22.8	37.1
201	10,625	0.0	7.1	17.0
202	13,243	10.2	19.0	31.4
203	12,742	8.0	16.5	28.4

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
204	18,425	15.0	27.2	44.5
205	13,962	6.0	15.3	28.4
206	14,459	5.6	15.2	28.7
207	0	0.0	0.0	0.0
208	23,066	30.0	45.3	67.0
209	20,485	17.0	30.6	49.8
210	17,944	16.5	28.4	45.3
211	14,388	2.5	12.1	25.6
212	18,484	25.0	37.3	54.7
213	19,183	19.1	31.8	49.8
214	16,438	0.0	10.9	26.4
215	13,465	7.8	16.7	29.4
216	17,466	5.1	16.7	33.1
217	19,435	15.5	28.4	46.7
218	24,022	30.6	46.5	69.1
219	17,658	0.0	11.7	28.3
220	22,239	11.9	26.6	47.5
221	18,636	12.1	24.5	42.0
222	21,143	11.3	25.3	45.2
223	19,036	39.8	52.4	70.3
224	22,306	9.9	24.7	45.7
225	21,504	15.2	29.5	49.7
226	16,082	1.9	12.6	27.7
227	15,771	7.6	18.1	32.9
228	15,572	4.8	15.2	29.8
229	15,899	5.4	16.0	30.9
230	14,109	5.9	15.3	28.6
231	15,027	6.0	16.0	30.1
232	17,350	1.6	13.1	29.4
233	16,113	4.2	14.9	30.0
234	21,588	24.8	39.2	59.4
235	13,516	0.0	9.0	21.7
236	19,306	12.5	25.4	43.5
237	20,786	16.0	29.8	49.3
238	19,643	12.8	25.9	44.3
239	15,416	4.0	14.3	28.7
240	16,518	0.0	11.0	26.5
241	14,984	2.4	12.3	26.4
242	18,757	9.8	22.3	39.9
243	14,571	0.0	9.7	23.4
244	20,403	4.2	17.8	37.0
245	17,128	18.9	30.3	46.4
246	14,609	0.0	9.7	23.4
247	27,018	27.2	45.2	70.5
248	19,650	23.1	36.1	54.6
249	9,167	0.0	6.1	14.7
250	18,777	10.2	22.7	40.3
251	12,758	11.3	19.8	31.8
252	14,044	6.6	15.9	29.1
253	14,098	3.9	13.3	26.5
254	66,088	69.5	100.0	100.0
255	15,808	9.0	19.5	34.3
256	16,727	4.5	15.6	31.4
257	12,851	2.5	11.0	23.1
258	15,947	13.9	24.5	39.4
259	19,684	13.8	26.8	45.3
260	16,187	2.3	13.0	28.2
261	21,355	21.6	35.8	55.8
262	15,073	1.4	11.4	25.6
263	16,000	2.8	13.4	28.4
264	15,982	7.5	18.2	33.2
265	15,557	2.0	12.3	26.9
266	10,062	5.1	11.8	21.2
267	15,144	9.5	19.5	33.8
268	20,501	6.8	20.4	39.7
269	19,132	19.5	32.2	50.2
270	17,148	12.0	23.4	39.5
271	11,403	4.6	12.2	22.9
272	10,617	1.5	8.6	18.5

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
273	11,199	4.5	11.9	22.4
274	10,682	4.4	11.5	21.5
275	10,770	11.1	18.2	28.3
276	16,687	9.7	20.8	36.5
277	14,334	11.4	20.9	34.3
278	22,327	18.3	33.1	54.1
279	15,144	14.5	24.6	38.8
280	13,260	12.4	21.2	33.7
281	8,146	6.1	11.5	19.2
282	16,642	25.4	36.4	52.1
283	14,311	4.3	13.8	27.3
284	17,099	11.7	23.0	39.1
285	23,344	22.0	37.6	59.5
286	12,410	6.3	14.5	26.2
287	14,542	9.3	18.9	32.6
288	8,486	8.6	14.2	22.2
289	14,621	5.6	15.3	29.0
290	14,423	2.8	12.4	25.9
291	14,896	12.7	22.6	36.6
292	15,254	1.3	11.4	25.8
293	13,922	1.2	10.4	23.5
294	16,192	5.8	16.5	31.7
295	16,908	14.9	26.1	42.0
296	18,387	7.0	19.3	36.5
297	17,447	16.2	27.8	44.2
298	15,531	7.4	17.7	32.3
299	14,623	8.9	18.7	32.4
300	15,664	6.5	16.9	31.7
301	14,964	7.5	17.4	31.5
302	14,182	6.5	16.0	29.3
303	23,450	18.9	34.5	56.5
304	19,905	12.3	25.5	44.2
305	17,430	6.2	17.8	34.1
306	16,151	18.9	29.7	44.8
307	12,942	6.0	14.6	26.8
308	21,772	14.0	28.5	48.9
309	19,312	5.7	18.5	36.7
310	14,939	0.0	9.9	23.9
311	19,722	21.7	34.9	53.4
312	23,857	14.3	30.1	52.5
313	17,600	0.0	11.7	28.2
314	17,084	3.0	14.3	30.4
315	15,051	15.7	25.7	39.8
316	22,615	0.0	15.0	36.3
317	15,618	7.0	17.4	32.0
318	0	0.0	0.0	0.0
319	0	0.0	0.0	0.0
320	0	0.0	0.0	0.0
321	0	0.0	0.0	0.0
322	0	0.0	0.0	0.0
323	0	0.0	0.0	0.0
324	12,763	1.1	9.6	21.5
325	15,537	5.6	15.9	30.5
326	13,633	11.7	20.7	33.5
327	11,348	4.5	12.1	22.7
328	13,271	16.1	24.9	37.4
329	11,816	5.5	13.3	24.4
330	12,175	5.6	13.7	25.1
331	16,233	4.6	15.4	30.6
332	15,583	9.4	19.8	34.4
333	18,263	10.6	22.7	39.9
334	16,717	6.5	17.6	33.3
335	16,940	12.1	23.3	39.2
336	16,050	19.6	30.2	45.3
337	15,524	13.6	23.9	38.5
338	15,211	7.7	17.9	32.1
339	15,221	6.7	16.8	31.1
340	19,004	15.9	28.6	46.4
341	15,091	7.5	17.6	31.7

Zone	Average Household Income in 2014 (PHP/month)	Car Owning Household Rate (%)		
		2014 Actual	2025 Model	2035 Model
342	14,607	19.8	29.5	43.2
343	12,648	12.1	20.5	32.4
344	17,266	8.3	19.8	36.0
345	15,010	14.3	24.2	38.3
346	17,386	7.7	19.2	35.6
347	21,380	12.0	26.2	46.3
348	27,675	26.1	44.5	70.4
349	17,671	11.0	22.7	39.3
350	15,028	12.4	22.4	36.5
351	16,185	9.6	20.4	35.6
352	15,615	16.1	26.5	41.1
353	11,990	13.4	21.3	32.6
354	13,553	0.0	9.0	21.7