

Japan International Cooperation Agency (JICA)
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. 5

Database Management

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ABBREVIATIONS

DOTC	Department of Transportation and Communications
DPWH	Department of Public Works and Highways
HIS	household interview survey
JICA	Japan International Cooperation Agency
MMDA	Metropolitan Manila Development Authority
MUCEP	MMUTIS Updated and Capacity Enhancement Project

1 INTRODUCTION

1.1 Background

An updated and reliable transportation planning database is paramount in undertaking and sustaining transportation planning. The single most comprehensive and expensive data for strategic transportation planning is person-trip data collected during the conduct of a Household Interview Survey (HIS).

1.2 Objectives

The manual aims at providing an easy-to-understand and logical guide in understanding and utilizing the Transportation Planning Database developed under the MMUTIS Updated and Capacity Enhancement Project (MUCEP) Project.

1.3 Structure of the Manual

This manual is composed of seven (7) parts:

- (i) Overall Description of the database component;
- (ii) Household Interview Survey (HIS) Data;
- (iii) Cordon Line Survey and Screen Line Survey Data;
- (iv) Demand Forecast Data;
- (v) GIS Data;
- (vi) Database Management; and
- (vii) Updating the Database

2 DATABASE COMPONENTS

The MUCEP database consists of manuals, survey forms and results, demand forecast data, and GIS. Table 2.1 shows the structure of the MUCEP database.

Table 2.1: Database Structure

Folder and File Name			
00_Manual	Manual on Database Management.pdf		
01_Survey_Form	HIS_forms.pdf		
	OD Interview Survey Forms.doc		
	Traffic_Count_Survey_Form.xls		
	Veh_Occupancy_Survey_Form.xls		
02_HIS	Results	1_HH.xlsx	
		2_HHM.xlsx	
		3_Trip.xlsx	
		4_Frm.xlsx	
	Zone	Zone_List-MUCEP.xlsx	
		Zone-Barangay(MUCEP).xlsx	
03_Cordon	Count	OC_Occ1hr.xlsb	
		OC_TV01hr.xlsb	
	Interview	FormA.xlsx	
		FormB.xlsx	
		FormC.xlsx	
		FormD.xlsx	
		Airport.xlsx	
		Ferry_PNR.xlsx	
04_Screen	SLS_Occ1hr_V17.xlsx		
	SLS_TV01hr.xlsx		
05_Socio_Frame	Socio_Frame.xlsx		
11_OD	CUBE	2014	MUCEP_Trp2014_Lnk_MD14_z432.mat
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.mat
			MUCEP_Trp2014_Lnk_PP05_z432.mat
		2020	MDL2020_interpolation.mat
		2025	MDL2025.mat
		2035	MDL2035.mat
	STRADA	2014	MUCEP_Trp2014_Lnk_MD14_z432.aod
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.aod
			MUCEP_Trp2014_Lnk_PP05_z432.aod
		2020	MDL2020_interpolation.aod
		2025	MDL2025.aod
		2035	MDL2035.aod
		Transit	MUCEP_Trp2014_Lnk_Public_z432.aod
12_Zoning	A007	Area007-035_Index.xlsx	
		Zone_List-Modify.xlsx	
		CenU07 (Map Info format)	
		Zoning_MUCEP_Area7 (Map Info format)	
		Area7.pzn	
	A008	Area008-035_Index.xlsx	
		Zone_List-Modify.xlsx	
		CenU08 (Map Info format)	
		Zoning_MUCEP_Area8 (Map Info format)	
		Area8.pzn	
	A009	Area009-035_Index.xlsx	
		Zone_List-Modify.xlsx	
		CenU09 (Map Info format)	
		Zoning_MUCEP_Area9 (Map Info format)	
		Area9.pzn	
	A035	Area035_Index.xlsx	
		MUCEP_Area35 (Map Info format)	
		Muni-CenU35 (Map Info format)	
		Area035.pzn	
	Z082(Muni_City)	A_CityMunBoundary_SA_MUCEP2012_UTMWGS84 (Map Info format)	
		Muni-Cen(Map Info format)	
		Area432-082.pzn	
	Z089(Muni_City_and_Division)	Zone_List-Modify2.xlsx	
		A_CityMunPlusBoundary_StudyA (Map Info format)	
		Muni-Cen (Map Info format)	
		Area432-089.pzn	
	Z432	Zoning_MUCEP.xlsx	

		Zoning MUCEP (Map Info format)		
13_Network_and_PAR	CUBE	2015	NET2015.net	
		2025	NET2025.net	
		2035	NET2035.net	
		Tranist	Pub_2014.lin	
		CUBE_Model	Assignment_MUCEP.zip	
	STRADA	2015	Network2015.int	
			2015.par	
			Run_2015.acn	
			Net2015 (Map Info Format)	
		2025	Network2025.int	
			Network2025.csv	
			2025.par	
		2035	Network2035.int	
			Network2035.csv	
			2035.par	
Transit	Net2012-2_Z432_rev2-D_Pub-2.int			
	Pub2014-Capa2.tnt			
		2014_for_rev2.tpa		
21_GIS	DataDocumentation_MUCEP_GIS.xls			
	10_Administrative	A_BarangayBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		A_BarangayCenter_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		A_BarangayBoundary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)		
		A_CityMunBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		A_CityMunBoundary_MM_MMUTIS1996_UTMWGS84 (Map Info Format)		
		A_ProvBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		A_RegionBoundary_Luzon_NSO2000_UTMWGS84 (Map Info Format)		
	20_NaturalConditions	N_LagunaLake_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		N_WaterBody_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
	30_Infrastructures	I_Roads_MM_MMUTIS1996_UTMWGS84 (Map Info Format)		
		I_Roads_Prov_MMUTIS1996_UTMWGS84 (Map Info Format)		
		I_RoadsPrimary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)		
		I_RoadsSecondary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)		
		I_RoadInventory_Natl_DPWH2011_UTMWGS84 (Map Info Format)		
		I_RoadCondition_Natl_DPWH2011_UTMWGS84 (Map Info Format)		
		I_Railway_SA_DOTC2012_UTMWGS84 (Map Info Format)		
		I_RailSta_SA_DOTC2012_UTMWGS84 (Map Info Format)		
		I_Ports_Natl_DPWH2011_UTMWGS84 (Map Info Format)		
		I_Airports_Natl_DPWH2011_UTMWGS84 (Map Info Format)		
		I_RoadCL_MM_MMDA_UTMWGS84.shp		
		I_RoadPoly_MM_MMDA_UTMWGS84.shp		
		99_Others	O_OutmostCordonLoc_MUCEP_2012_UTMWGS84 (Map Info Format)	
			O_StudyArea_MUCEP_2012_UTMWGS84 (Map Info Format)	
	O_Zoning_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)			
	O_ZoningMed_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)			
	O_ZoningSml_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)			
	O_Zoning_SA_MMUTIS_1996_UTMWGS84_AllOrig (Map Info Format)			
	O_ZoningMed_SA_MMUTIS_1996_UTMWGS84 (Map Info Format)			
	O_ZoningSml_SA_MMUTIS_1996_UTMWGS84_All (Map Info Format)			
	O_ZoningMed_SA_MMUTIS_1996_UTMWGS84_All (Map Info Format)			
	O_ZoningSml_SA_MMUTIS_1996_UTMWGS84 (Map Info Format)			
	O_StudyArea_MMUTIS_1996_UTMWGS84z (Map Info Format)			
	O_OutmostCordonLoc_MUCEP_2012_UTMWGS84 (Map Info Format)			
	O_NSScreenline_MM_MUCEP_2012_UTMWGS84 (Map Info Format)			
	O_EWScreenline_MM_MUCEP_2012_UTMWGS84 (Map Info Format)			
	MetroManila	MetroManilaRoad (Map Info Format)		
		MetroManilaRoad.shp		

Source: JICA Project Team

3 HOUSEHOLD INTERVIEW SURVEY (HIS) DATA

The HIS data provides a 1% sample of the 2012 total households in the study area. The data covers 29,549 households and 98,255 members. This translates into an overall average of around 3.3 members per household.

3.1 Survey Forms

The HIS consisted of four (4) forms, namely:

(i) Form 1. Household Information

The first form was for the household head or any adult household member, e.g. father or mother, who can provide reliable socio-economic information.

(ii) Form 2. Household Member Information

The Household Member Information Form was to be accomplished by each member of the household who is 5 years of age and above.

(iii) Form 3. Daily Trip Information

The Daily Trip Information form was for each member of the household, 5 years old and above, who makes trips. Information about all trips made by a trip maker was provided. The survey went for 24 hours from 3:00 a.m. of the previous day to 3:00 a.m. of the survey day.

(iv) Form 4. Perception Survey on Transportation Development

Form 4 was completed by an adult member of the household.

Figure 3.1: Household Information Form

FORM 1: HOUSEHOLD INFORMATION

Household No.

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

(2) Address of household No. Street Barangay

Municipality/City Telephone No. (optional)

(Note: Interviewers should inform interviewees that their names and addresses are needed only for follow-ups and checking of interviewer's activities and will not be part of the database.)

(3) How many members are there in your household?

	Under 5	5-59 Years Old	60 Years Old and Above	Live-in House Helper
Male				
Female				

(4) What is your total monthly household income (PHP)?
(Encircle one item)

1. No income
2. Below 5,000
3. 5,000–9,999
4. 10,000–14,999
5. 15,000–19,999
6. 20,000–24,999
7. 25,000–29,999
8. 30,000–34,999
9. 35,000–39,999
10. 40,000–49,999
11. 50,000–59,999
12. 60,000–79,999
13. 80,000–99,999
14. 100,000–149,999
15. 150,000–199,999
16. 200,000–299,999
17. 300,000–499,999
18. Above 500,000

(5) How many vehicles are owned by your household?

TYPE	NO. OF UNITS OWNED
1. Bicycle	
2. Motorcycle	
3. Car/Jeep	
4. Pedicab	
5. Tricycle	
6. Taxi	
7. Filcab	
8. UV Express/HOV	
9. Jeepney	
10. Minibus	
11. Standard Bus	
12. School/Co./Tourist Bus	
13. Pick-up/Delivery Van	
14. Truck	
15. Trailer	
16. Others	

(6) How many of your household vehicles are parked in your garage/ near your house?

TYPE	NO. OF UNITS
Bicycle	
Motorcycle	
Car/Jeep	
Pedicab	
Tricycle	
Taxi	
Filcab	
UV Express/HOV	
Jeepney	
Minibus	
Standard Bus	
School/Co./Tourist Bus	
Pick-up/Delivery Van	
Truck	
Trailer	
Others	

(7) Ownership of house and land

	Owned	Rented	PHP/Month
House	☐	☐	
Land	☐	☐	
Total			

(8) Length of stay in current residence

No. of years

(9) What is your previous residential address?

No. Street Barangay Municipality/City Province

Source: JICA Project Team

Figure 3.2: Household Member Form

FORM 2: HOUSEHOLD MEMBER INFORMATION

Household No./Seq. No.

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

(1) Name Last Name First Name M.I. Member Code

(2) Age (3) Gender ☐ Male ☐ Female

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

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

(6) Occupation (Encircle one item)	(7) Employment sector (Encircle one item)	(8) Monthly income (PHP) (Encircle one item)
1. Official of Govt. & Special Interest Org., Corporate Exec., Manager	1. Agriculture, Hunting & Forestry	1. No income
2. Professional	2. Fishing	2. Below 5,000
3. Technical & Associate Professionals	3. Mining & Quarrying	3. 5,000–9,999
4. Clerical Staff	4. Manufacturing	4. 10,000–14,999
5. Service Worker, Shop & Market Worker	5. Electricity, Gas & Water Supply	5. 15,000–19,999
6. Farmer, Forestry Worker & Fisherman	6. Construction	6. 20,000–24,999
7. Trader & Related Worker	7. Wholesale & Retail Trade; Repair of Motor Vehicles, Personal & Household Goods	7. 25,000–29,999
8. Plant & Machine Operator & Assembler	8. Hotels & Restaurants	8. 30,000–34,999
9. Laborer & Unskilled Worker	9. Transport, Storage & Comm.	9. 35,000–39,999
10. Student (Elem.)	10. Financial Intermediation	10. 40,000–49,999
11. Student (H.S. & Univ.)	11. Real Estate Development, Rental and Sale	11. 50,000–59,999
12. Housewife/Husband	12. Public Admin. & Defense; Compulsory Social Security	12. 60,000–79,999
13. Unemployed	13. Education	13. 80,000–99,999
14. Others (specify) _____	14. Health & Social Work	14. 100,000–149,999
	15. Other Community, Social & Personal Services	15. 150,000–199,999
	16. Private Households	16. 200,000–299,999
	17. Extraterritorial Organizations	17. 300,000–499,999
		18. Above 500,000

(9) State the type of driver's license held ☐ Student ☐ Non-Prof. ☐ Professional ☐ None

(10) Number of vehicles for your own use
 Motorcycle: Car/Jeep: Others (Specify;):

(11) 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.

(12) 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/Refused ☐ I have no cellular phone.

Source: JICA Project Team

Figure 3.3: Daily Trip Information Form

Form 3:
DAILY TRIP INFORMATION

Seq. No. _____

Household No. _____

Member code: _____

Trip No. 1 of _____

Type of origin		1. Home (Answered in Form 1-(2))		2. Workplace/School (Answered in Form 2-(5)/(6))		3. Others (Specify the address below)			
Origin		Landmark							
		No. _____		Street / Block					
		Barangay _____		Municipality / City					
		Province _____							
Departure time at origin and mode		Hours _____ Minutes _____		Mode code _____		If others, specify: _____			
Transfer point(s)		1st transfer point		Hours _____ Minutes _____		Mode code _____			
		Bus stop, station, landmark, etc. _____		Departure time _____		If others, specify: _____			
		2nd transfer point		Hours _____ Minutes _____		Mode code _____			
		Bus stop, station, landmark, etc. _____		Departure time _____		If others, specify: _____			
		3rd transfer point		Hours _____ Minutes _____		Mode code _____			
		Bus stop, station, landmark, etc. _____		Departure time _____		If others, specify: _____			
		4th transfer point		Hours _____ Minutes _____		Mode code _____			
		Bus stop, station, landmark, etc. _____		Departure time _____		If others, specify: _____			
		Arrival time at destination		Hours _____ Minutes _____		Mode code _____		If others, specify: _____	
		Destination		Type of destination		1. Home (Answered in Form 1-(2))		2. Workplace/School (Answered in Form 2-(5)/(6))	
				3. Others (Specify the address below)					
No. _____				Street / Block					
Barangay _____				Municipality / City					
Landmark _____				Province _____					
Trip purpose		Trip purpose code _____ If others, specify: _____							
Trip cost		PHP _____							
Type of parking facility and fee		1. Parking lot		2. On-road, authorized		3. On-road, unauthorized			
Reason for modal choice		4. Inside building or house premises		Fee paid _____		If others, specify: _____			
		1. Travel time		3. Convenience		5. Safety			
		2. Comfort		4. Cost		6. No other choice			
		Trip assessment		Travel time		1. Bad 2. Average 3. Good		SD	
				Comfort		1. Bad 2. Average 3. Good		SC	
				Convenience		1. Bad 2. Average 3. Good		SD	
				Cost		1. Bad 2. Average 3. Good		SC	
		Safety		1. Bad 2. Average 3. Good		SD			
		Overall		1. Bad 2. Average 3. Good		SD			

Travel mode

1. Walking	15. Standard Bus - w/o aircon
2. Bicycle	16. Standard Bus - w/ aircon
3. Motorcycle - driver	17. School Bus
4. Motorcycle - passenger	18. Company Bus
5. Car/Jeep - driver	19. Tourist Bus
6. Car/Jeep - passenger	20. Pick-up / Delivery Van
7. Pedicab	21. Truck
8. Tricycle	22. Trailer
9. Taxi	23. LRT / MRT
10. Filcab	24. PNR
11. UV Express/ HOV	25. Water Transport
12. Jeepney	26. Airplane
13. Minibus - w/o aircon	27. Others
14. Minibus - w/ aircon	

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

Source: JICA Project Team

Figure 3.4: Perception Survey on Transportation Development Form – Part 1

FORM 4: PERCEPTION SURVEY ON TRANSPORTATION DEVELOPMENT

INSTRUCTION: Form 4 should be completed by an adult member of the household.

Household No.
Seq. No.

(1) Name

Member Code

Traffic Congestion

(2) How do you feel about the traffic situation (congestion)? 2

1. Bad 2. Average 3. Good

(3) If "bad," what do you think are the causes of traffic congestion? (choose two) 3

1. Increase of 4-wheel traffic 4. Lack of enforcement
2. Increase of motorcycle traffic 5. Lack of public transportation
3. Bad driving behavior 6. Lack of parking / other reasons

(4) Compare the current traffic situation to that 5 years ago.

	Worse	Same	Better
1. Congestion	1	2	3
2. Safety	1	2	3
3. Convenience	1	2	3

4.1
4.2
4.3

Traffic Safety

(5) Were you involved in traffic accidents in the past 5 years? 1. Yes 2. No 5

(6) If yes, how many times were you involved?

1. Seriously injured 6.1
2. Slightly injured 6.2
3. Not injured 6.3

(7) How do you feel about traffic safety?

	Dangerous	Average	Safe
1. When you use a car?	1	2	3
2. When you use a motorcycle?	1	2	3
3. When you use a bicycle?	1	2	3
4. When you walk in the neighborhood?	1	2	3
5. When you walk in the city?	1	2	3
6. When you cross the road?	1	2	3

6.1
6.2
6.3
6.4
6.5
6.6

(8) How do you find the driving behavior of motorcyclists? 8

1. Bad 2. Average 3. Good

(9) What makes traffic safety poor? (choose two) 9

1. People's driving manner	4. Lack of traffic signals	7. Lack of traffic signs
2. Increase in vehicle traffic	5. Poor traffic enforcement	8. Lack of traffic safety facilities
3. Increase in traffic congestion	6. Poor road condition	9. Lack of education

Source: JICA Project Team

Figure 3.5: Perception Survey Form – Part 2

(10) What do you think is needed to improve traffic safety? (choose two) 10 ☐ ☐

1. Enhance people's awareness	6. Provide more traffic signals
2. Improve roads	7. Provide more safety facilities for pedestrians
3. Provide traffic safety education/campaign	8. Strictly enforce traffic rules
4. Control motorcycle use	9. Impose helmet use within the city
5. Control car use	10. Others (please specify _____)

Specify _____

Public Transportation

(11) How often do you use following mass public transport services? 11 ☐

	5-7 times a week	2-4 times a week	Once a week	Rarely	Never
1. Bus	1	2	3	4	5
2. LRT/MRT	1	2	3	4	5
3. PNR	1	2	3	4	5

(12) Choose one mass public transport service above which you use most frequently? (Please proceed to (14)) 12 ☐

(13) If you never use any mass public transport services in (11), please state the reason not to use. 13 ☐

1. Have own vehicle	3. Do not need to use those services
2. Not satisfied with those services	4. No opinion

(14) Please assess the services answered in (12) on the following aspects:

	Bad	Average	Good
1. Route network	1	2	3
2. Operating hours	1	2	3
3. Frequency / Headway	1	2	3
4. Punctuality	1	2	3
5. Speeds	1	2	3
6. Fares	1	2	3
7. Access to bus stops/stations	1	2	3
8. Bus stop/station facilities	1	2	3
9. Waiting conditions	1	2	3
10. Number of bus stops/stations	1	2	3
11. On-board comfort	1	2	3
12. On-board security	1	2	3
13. Driver / Conductor behavior	1	2	3
14. Convenience of transfer	1	2	3
15. Others (_____)	1	2	3

(15) From the list above, select the three (3) most important aspects to improve the services. 14.1 ☐
14.2 ☐
14.3 ☐
14.4 ☐
14.5 ☐
14.6 ☐
14.7 ☐
14.8 ☐
14.9 ☐
14.10 ☐
14.11 ☐
14.12 ☐
14.13 ☐
14.14 ☐
14.15 ☐

_____ 15 ☐

(16) Do you think public transportation services must improve and expand in the future? 16 ☐

1. Yes	2. No	3. Don't know	4. No opinion
--------	-------	---------------	---------------

(17) If your answer to (16) is "yes," what types of public transportation services must improve/be offered? (choose two) 17 ☐ ☐

1. Jeepney	3. Aircon buses	5. Elevated railway	7. Bus rapid transit
2. Bus	4. Underground railway	6. Railway	

(18) If your answer to (16) is "yes," will you pay higher fares for better public transportation services? 18 ☐

1. Yes	2. No	3. Don't know	4. No opinion
--------	-------	---------------	---------------

Source: JICA Project Team

Figure 3.6: Perception Survey Form – Part 3

Environment

(19) Please evaluate the air quality in your residential area. 19 ☐

1. Bad 2. So-so 3. Good

(20) If "bad," what do you think is the reason for this? 20 ☐

1. Vehicle traffic 2. Factories 3. Construction work 4. Other (specify: _____)

Transportation Measures

(21) Do you support the following transportation improvement measures?

	Support	No opinion	Do not support	
1. Restrict car use in the CBD	1	2	3	20.1 ☐
2. Restrict motorcycle use	1	2	3	20.2 ☐
3. Restrict pedicabs	1	2	3	20.3 ☐
4. Restrict tricycles	1	2	3	20.4 ☐
5. Restrict jeepneys	1	2	3	20.5 ☐
6. Strictly control parking	1	2	3	20.6 ☐
7. Increase charges for car use (registration, license, fuel tax, parking fees)	1	2	3	20.7 ☐
8. Increase charges for motorcycle use (registration, license, fuel tax, parking fees)	1	2	3	20.8 ☐
9. Control air pollution (e.g., fine smoke belchers)	1	2	3	20.9 ☐
10. Promote use of electric vehicles, CNG, LPG, etc.	1	2	3	20.10 ☐
11. Promote people's understanding of transportation problems and measures	1	2	3	20.11 ☐
12. Expand bus services	1	2	3	20.12 ☐
13. Impose a 40-km/h maximum bus speed	1	2	3	20.13 ☐
14. Resume the Pasig River ferry services	1	2	3	20.14 ☐
15. Install traffic signals	1	2	3	20.15 ☐
16. Keep U-turn slots	1	2	3	20.16 ☐
17. Provide more parking facilities	1	2	3	20.17 ☐
18. Improve walking conditions (e.g., improve sidewalks)	1	2	3	20.18 ☐
19. Provide bike lanes	1	2	3	20.19 ☐
20. Construct / Improve roads	1	2	3	20.20 ☐
21. Establish north and south integrated provincial bus terminals	1	2	3	20.21 ☐
22. Construct exclusive bus lanes /busways (BRT)	1	2	3	20.22 ☐
23. Construct urban railway (elevated)	1	2	3	20.23 ☐
24. Construct urban railway (underground)	1	2	3	20.24 ☐
25. Construct urban railway (at-grade)	1	2	3	20.25 ☐
26. Transfer airport from NAIA to Clark	1	2	3	20.26 ☐
27. Introduce TDM measures (e.g., park-and-ride facilities)	1	2	3	20.27 ☐

(22) From the list above, select the three (3) most important measures. 22 ☐ ☐ ☐

Source: JICA Project Team

3.2 Household Data

The Household Data consists of 55 data items as follows:

Table 3.1: Household Data Items

Item No.	Name	Description
1	Form1_ID	Unique ID Number
2	Household_No	Barangay_Code+(nnn)
3	Barangay_Code	Philippine Statistical Geographic Code (PSGC) of Barangay
4	Sample_Code	Sequence Number of Sample in Barangay
5	2_Address_Mucep_Code	Same as Barangay_Code
6	3_1_Male_<5	Number of Male Member under 5 years old
7	3_2_Female_<5	Number of Female Member under 5 years old
8	3_3_Male_5_59	Number of Male Members 5 to 59 years old
9	3_4_Female_5_59	Number of Female Members 5 to 59 years old
10	3_5_Male_>59	Number of Male Members 60 years old and above
11	3_6_Female_>59	Number of Female Members 60 years old and above
12	3_7_Male_Help	Number of Male Live-in Household Helper
13	3_8_Female_Help	Number of Female Live-in Household Helper
14	4_Monthly_HH_Income	Total Monthly Household Income
15	5_1_Vehicle_1_Owned	Number of Bicycle Owned
16	5_2_Vehicle_2_Owned	Number of Motorcycle Owned
17	5_3_Vehicle_3_Owned	Number of Car/Jeep Owned
18	5_4_Vehicle_4_Owned	Number of Pedicab Owned
19	5_5_Vehicle_5_Owned	Number of Tricycle Owned
20	5_6_Vehicle_6_Owned	Number of Taxi Owned
21	5_7_Vehicle_7_Owned	Number of Filcab Owned
22	5_8_Vehicle_8_Owned	Number of UV Express/HOV Owned
23	5_9_Vehicle_9_Owned	Number of Jeepney Owned
24	5_10_Vehicle_10_Owned	Number of Minibus Owned
25	5_11_Vehicle_11_Owned	Number of Standard Bus Owned
26	5_12_Vehicle_12_Owned	Number o School/Company/Tourist Bus Owned
27	5_13_Vehicle_13_Owned	Number of Pick-up/Delivery Van Owned
28	5_14_Vehicle_14_Owned	Number of Truck Owned
29	5_15_Vehicle_15_Owned	Number of Trailer Owned
30	5_16_Vehicle_16_Owned	Number of Other Vehicles Owned
31	6_1_Vehicle_1_Parked	Number of Bicycle Parked
32	6_2_Vehicle_2_Parked	Number of Motorcycle Parked
33	6_3_Vehicle_3_Parked	Number of Car/Jeep Parked
34	6_4_Vehicle_4_Parked	Number of Pedicab Parked
35	6_5_Vehicle_5_Parked	Number of Tricycle Parked
36	6_6_Vehicle_6_Parked	Number of Taxi Parked
37	6_7_Vehicle_7_Parked	Number of Filcab Parked
38	6_8_Vehicle_8_Parked	Number of UV Express/HOV Parked
39	6_9_Vehicle_9_Parked	Number of Jeepney Parked
40	6_10_Vehicle_10_Parked	Number of Minibus Parked
41	6_11_Vehicle_11_Parked	Number of Standard Bus Parked
42	6_12_Vehicle_12_Parked	Number o School/Company/Tourist Bus Parked
43	6_13_Vehicle_13_Parked	Number of Pick-up/Delivery Van Parked
44	6_14_Vehicle_14_Parked	Number of Truck Parked
45	6_15_Vehicle_15_Parked	Number of Trailer Parked
46	6_16_Vehicle_16_Parked	Number of Other Vehicles Parked
47	7_1_House_Ownership	Ownership of House (0=No Answer; 1-Owned; 2-Rented)
48	7_2_House_Monthly_Rent	Monthly House Rent in PhP/Month
49	7_3_Land_Ownership	Ownership of Land (0=No Answer; 1-Owned; 2-Rented)
50	7_4_Land_Monthly_Rent	Monthly Land Rent in PhP/Month
51	7_5_Total_Rent	Total Rent
52	8_Stay_Residence	Length of Stay in Current Residence
53	9_Previous_Address_Mucep_Code	Barangay_Code of Previous Residential Address
54	Zone	MUCEP Zone
55	ExpF	Expansion Factor

Source: JICA Project Team

The Monthly Household Income Codes are as follows:

Table 3.2: Monthly Income Codes

Code	Monthly Income
1	No income
2	Below 5,000
3	5,000-9,999
4	10,000-14,999
5	15,000-19,999
6	20,000-24,999
7	25,000-29,999
8	30,000-34,999
9	35,000-39,999
10	40,000-49,999
11	50,000-59,999
12	60,000-79,999
13	80,000-99,999
14	100,000-149,999
15	150,000-199,999
16	200,000-299,999
17	300,000-499,999
18	Above 500,000

Source: JICA Project Team

3.3 Household Member Data

The Household Member Data consists of 18 data items.

Table 3.3: Household Member Data

Item No.	Name	Description
1	Seq_No	Sequence Number of Household Member Data
2	Household_No	Barangay_Code+(nnn)
3	HH_Member_No	Number of Household Member
4	2_Age	Age of Household Member
5	3_Gender	Gender of Household Member (1-Male; 2-Female)
6	4_1_Work_Address_Mucep_Code	Barangay_Code of Work Address
7	5_1_School_Address_Mucep_Code	Barangay_Code of School Address
8	6_Occupation	Occupation of Household Member
9	6_Occupation_Others	Other Occupation of Household Member
10	7_Employment_Sector	Employment Sector of the Household Member
11	8_Income	Monthly Income of the Household Member
12	9_License	Type of Driver's License Held
13	10_1_Motorcycle_Use	Number of Motorcycle Used
14	10_2_Car_Jeep_Use	Number of Car/Jeep Used
15	10_31_Other_Mode	Other Mode Used
16	10_32_Other_Mode_Use	Number of Other Mode Used
17	11_Work_Hours	Works Hours (0-No Answer; 1-Fixed Time; 2-Flexible Time)
18	ExpHHM3	Expansion Factor

Source: JICA Project Team

The Occupation Codes are as follows:

Table 3.4: Occupation Codes

Code	Occupation
1	Official of Government & 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	Labor & Unskilled Worker
10	Student (Elementary)
11	Student (High School & University)
12	Housewife/Husband
13	Unemployed
14	Others

Source: JICA Project Team

The Employment Sector codes are as follows:

Table 3.5: Employment Sector Codes

Code	Employment Sector
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 & Restaurant
9	Transport, Storage & Communications
10	Financial Intermediation
11	Real Estate Development, Rental & Sale
12	Public Administration & Defense; Compulsory Social Security
13	Education
14	Health & Social Work
15	Other Community, Social & Personal Services
16	Private Households
17	Extraterritorial Organizations

Source: JICA Project Team

3.4 Member Trip Data

The Member Trip Data consists of 42 data items.

Table 3.6: Member Trip Data

Item No.	Name	Description
1	Seq_No	Sequence Number of Household Member Data
2	Household_No	Barangay_Code+(nnn)
3	HH_Member_No	Number of Household Member
4	Trip_No	Number of Trip
5	Trip_Total	Total Number of Trips
6	4_1	Type of Origin (1-Home; 2-Workplace/School; 3-Others)
7	4_2_Origin	Barangay_Code of Origin
8	5	Departure Time at Origin
9	6_1	Travel Mode at Departure
10	6_1_Others	Other Travel Mode at Departure
11	6_2	Barangay_Code of 1st Transfer Point
12	6_3	Departure Time at 1st Transfer Point
13	6_4	Travel Mode at 1st Transfer Point
14	6_4_Others	Other Travel Mode at 1st Transfer Point
15	6_5	Barangay_Code of 2nd Transfer Point
16	6_6	Departure Time at 2nd Transfer Point
17	6_7	Travel Mode at 2nd Transfer Point
18	6_7_Others	Other Travel Mode at 2nd Transfer Point
19	6_8	Barangay_Code of 3rd Transfer Point
20	6_9	Departure Time at 3rd Transfer Point
21	6_10	Travel Mode at 3rd Transfer Point
22	6_10_Others	Other Travel Mode at 3rd Transfer Point
23	6_11	Barangay_Code of 4th Transfer Point
24	6_12	Departure Time at 4th Transfer Point
25	6_13	Travel Mode at 4th Transfer Point
26	6_13_Others	Other Travel Mode at 4th Transfer Point
27	7	Arrival Time at Destination
28	8_1	Type of Destination (1-Home; 2-Workplace/School; 3-Others)
29	8_2_Destination	Barangay_Code of Destination
30	9	Trip Purpose
31	9_Others	Other Purpose
32	10	Trip Cost
33	11_1	Type of Parking Facility (1-Parking lot; 2-On-road authorized; 3-On-road unauthorized; 4-Inside Building or House Premises)
34	11_2	Parking Fee
35	13	Reason of Modal Choice (1-Travel Time; 2-Comfort; 3-Convenience; 4-Cost; 5-Safety; 6-Others)
36	14_1	Assessment of Travel Time (1-Bad; 2-Average; 3-Good)
37	14_2	Assessment of Comfort (1-Bad; 2-Average; 3-Good)
38	14_3	Assessment of Convenience (1-Bad; 2-Average; 3-Good)
39	14_4	Assessment of Cost (1-Bad; 2-Average; 3-Good)
40	14_5	Assessment of Safety (1-Bad; 2-Average; 3-Good)
41	14_6	Overall Assessment (1-Bad; 2-Average; 3-Good)
42	TripEXP	Expansion Factor

Source: JICA Project Team

The Travel Mode Codes are:

Table 3.7: Travel Mode Codes

Code	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	UN Express/HOV
12	Jeepney
13	Minibus - w/o aircon
14	Minibus - w/ aircon
15	Standard Bus - w/o aircon
16	Standad 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

Source: JICA Project Team

The Trip Purpose Codes are:

Table 3.8: Trip Purpose Codes

Code	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

3.5 Perception Survey Data

The Perception Survey Data consists of 86 data items.

Table 3.9: Perception Survey Data

Item No.	Name	Description
1	Form4_ID	Unique ID Number
2	Household_No	Barangay_Code+(nnn)
3	HH_Member_No	Number of Household Member
4	Congestion_2	Assessment of traffic situation (1-Bad; 2-Average; 3-Good)
5	Congestion_3_Choice1	Cause 1 of traffic congestion
6	Congestion_3_Choice2	Cause 2 of traffic congestion
7	Congestion_4_1	Compare with traffic situation 5 years age in terms of Congestion (1-Worse; 2-Same; 3-Better)
8	Congestion_4_2	Compare with traffic situation 5 years age in terms of Safety (1-Worse; 2-Same; 3-Better)
9	Congestion_4_3	Compare with traffic situation 5 years age in terms of Convenience (1-Worse; 2-Same; 3-Better)
10	Safety_5	Involved in traffic accident in the past 5 years (1-Yes; 2-No)
11	Safety_6_1	Number of times seriously injured
12	Safety_6_2	Number of times slightly injured
13	Safety_6_3	Number of times not injured
14	Safety_7_1	Assessment of traffic safety - When you use a car (1-Dangerous;2-Average;3-Safe)
15	Safety_7_2	Assessment of traffic safety - When you use a motorcycle (1-Dangerous;2-Average;3-Safe)
16	Safety_7_3	Assessment of traffic safety - When you use a bicycle (1-Dangerous;2-Average;3-Safe)
17	Safety_7_4	Assessment of traffic safety - When you walk in the neighborhood (1-Dangerous;2-Average;3-Safe)
18	Safety_7_5	Assessment of traffic safety - When you walk in the city (1-Dangerous;2-Average;3-Safe)
19	Safety_7_6	Assessment of traffic safety - When you cross the road (1-Dangerous;2-Average;3-Safe)
20	Safety_8	Driving behavior of motorcyclists (1-Bad;2-Average;3-Good)
21	Safety_9_Choice1	Cause 1 of poor traffic safety
22	Safety_9_Choice2	Cause 2 of poor traffic safety
23	Safety_10_Choice1	Factor 1 to improve traffic safety
24	Safety_10_Choice2	Factor 2 to improve traffic safety
25	Safety_10_Others	Other factor to improve traffic safety
26	PT_11_1	Frequency of Bus use (1-5 to 7 times a week;2-2 to 4 times a week;3-Once a week;4-Rarely;5-Never)
27	PT_11_2	Frequency of LRT/MRT use (1-5 to 7 times a week;2-2 to 4 times a week;3-Once a week;4-Rarely;5-Never)
28	PT_11_3	Frequency of PNR use (1-5 to 7 times a week;2-2 to 4 times a week;3-Once a week;4-Rarely;5-Never)
29	PT_12	Most frequently used public transport service
30	PT_13	Reason for not using public transport (1-Have own vehicle;2-Not satisfied with service;3-Do not need to use;4-No opinion)
31	PT_14_1	Assessment of Route Network (1-Bad;2-Average;3-Good)
32	PT_14_2	Assessment of Operating Hours (1-Bad;2-Average;3-Good)
33	PT_14_3	Assessment of Frequency/Headway (1-Bad;2-Average;3-Good)
34	PT_14_4	Assessment of Punctuality (1-Bad;2-Average;3-Good)
35	PT_14_5	Assessment of Speeds (1-Bad;2-Average;3-Good)
36	PT_14_6	Assessment of Fares (1-Bad;2-Average;3-Good)
37	PT_14_7	Assessment of Access to Bus Stops/Stations (1-Bad;2-Average;3-Good)
38	PT_14_8	Assessment of Bus Stops/Station Facilities (1-Bad;2-Average;3-Good)
39	PT_14_9	Assessment of Waiting Conditions (1-Bad;2-Average;3-Good)
40	PT_14_10	Assessment of Number of Bus Stops/Stations (1-Bad;2-Average;3-Good)
41	PT_14_11	Assessment of On-board Comfort (1-Bad;2-Average;3-Good)
42	PT_14_12	Assessment of On-board Security (1-Bad;2-Average;3-Good)
43	PT_14_13	Assessment of Driver/Conductor Behavior (1-Bad;2-Average;3-Good)
44	PT_14_14	Assessment of Convenience of Transfer (1-Bad;2-Average;3-Good)
45	PT_14_15	Assessment of Others
46	PT_14_15_Others	Other aspects of public transport services
47	PT_15_Choice1	Most important aspect of public transport 1

Item No.	Name	Description
48	PT_15_Choice2	Most important aspect of public transport 2
49	PT_15_Choice3	Most important aspect of public transport 3
50	PT_16	Public transport services must improve and expand in the future (1-Yes;2-No;3-Don't know;4-No opinion)
51	PT_17_Choice1	Public transport services that must improve/be offered 1
52	PT_17_Choice2	Public transport services that must improve/be offered 2
53	PT_18	Willingness to pay higher fares for better public transport services (1-Yes;2-No;3-Don't know;4-No opinion)
54	Environment_19	Air quality in your residential area (1-Bad; 2-So-so;3-Good)
55	Environment_20	Reason for bad air quality (1-Vehicle traffic;2-Factories;3-Construction work;4-Others)
56	Environment_20_Others	Other reason for bad air quality
57	Environment_21_1	Restrict car use in the CBD (1-Support;2-No opinion;3-Do not support)
58	Environment_21_2	Restrict motorcycle use (1-Support;2-No opinion;3-Do not support)
59	Environment_21_3	Restrict pedicabs (1-Support;2-No opinion;3-Do not support)
60	Environment_21_4	Restrict tricycles (1-Support;2-No opinion;3-Do not support)
61	Environment_21_5	Restrict jeepneys (1-Support;2-No opinion;3-Do not support)
62	Environment_21_6	Strictly control parking (1-Support;2-No opinion;3-Do not support)
63	Environment_21_7	Increase charges for car use (registration, license, fuel tax, parking fees) (1-Support;2-No opinion;3-Do not support)
64	Environment_21_8	Increase charges for motorcycle use (registration, license, fuel tax, parking fees) (1-Support;2-No opinion;3-Do not support)
65	Environment_21_9	Control air pollution (e.g. fine smoke belchers) (1-Support;2-No opinion;3-Do not support)
66	Environment_21_10	Promote use of electric vehicles, CNG, LPG, etc. (1-Support;2-No opinion;3-Do not support)
67	Environment_21_11	Promote peoples understanding of transportation problems and measures (1-Support;2-No opinion;3-Do not support)
68	Environment_21_12	Expand bus services (1-Support;2-No opinion;3-Do not support)
69	Environment_21_13	Impose a 40-km/hr maximum bus speed (1-Support;2-No opinion;3-Do not support)
70	Environment_21_14	Resume the Pasig River ferry services (1-Support;2-No opinion;3-Do not support)
71	Environment_21_15	Install traffic signals (1-Support;2-No opinion;3-Do not support)
72	Environment_21_16	Keep U-turn slots (1-Support;2-No opinion;3-Do not support)
73	Environment_21_17	Provide more parking facilities (1-Support;2-No opinion;3-Do not support)
74	Environment_21_18	Improve walking conditions (e.g. improve sidewalks) (1-Support;2-No opinion;3-Do not support)
75	Environment_21_19	Provide bike lanes (1-Support;2-No opinion;3-Do not support)
76	Environment_21_20	Construct/improve roads (1-Support;2-No opinion;3-Do not support)
77	Environment_21_21	Establish north and south integrated provincial bus terminals (1-Support;2-No opinion;3-Do not support)
78	Environment_21_22	Construct exclusive bus lanes/busways (BRT) (1-Support;2-No opinion;3-Do not support)
79	Environment_21_23	Construct urban railway (elevated) (1-Support;2-No opinion;3-Do not support)
80	Environment_21_24	Construct urban railways (underground) (1-Support;2-No opinion;3-Do not support)
81	Environment_21_25	Construct urban railway (at-grade) (1-Support;2-No opinion;3-Do not support)
82	Environment_21_26	Transfer airport from NAIA to Clark (1-Support;2-No opinion;3-Do not support)
83	Environment_21_27	Introduce TDM measures (e.g. park-and-ride facilities)
84	Environment_22_Choice1	Three most important measures 1
85	Environment_22_Choice2	Three most important measures 2
86	Environment_22_Choice3	Three most important measures 3

Source: JICA Project Team

The Cause of Traffic Congestion Codes are:

Table 3.10: Cause of Traffic Congestion Codes

Code	Cause of Traffic Congestion
1	Increase of 4-wheel traffic
2	Increase of motorcycle traffic
3	Bad driving behavior
4	Lack of enforcement
5	Lack of public transportation
6	Lack of parking/ other reasons

Source: JICA Project Team

The Cause of Poor Traffic Safety Codes are:

Table 3.11: Cause of Poor Traffic Safety Codes

Code	Cause of Poor Traffic Safety
1	People's driving manner
2	Increase in vehicle traffic
3	Increase in traffic congestion
4	Lack of traffic signals
5	Poor traffic enforcement
6	Poor road condition
7	Lack of traffic signs
8	Lack of traffic safety facilities
9	Lack of education

Source: JICA Project Team

The Factor to Improve Traffic Safety Codes are:

Table 3.12: Factors to Improve Traffic Safety Codes

Code	Factor to Improve Traffic Safety
1	Enhance people's awareness
2	Improve roads
3	Provide traffic safety education/campaign
4	Control motorcycle use
5	Control car use
6	Provide more traffic signals
7	Provide more safety facilities for pedestrians
8	Strictly enforce traffic rules
9	Impose helmet use within the city

Source: JICA Project Team

The codes for the public transport services that must be improved or be offered are:

Table 3.13: Public Transport Services That Must Be Improved/Offered

Code	Public Transport Services That Must Be Improved/Be offered
1	Jeepney
2	Bus
3	Aircon buses
4	Underground railway
5	Elevated railway
6	Railway
7	Bus rapid transit

Source: JICA Project Team

4 CORDON LINE AND SCREEN LINE SURVEY DATA

4.1 Survey Methodology

The cordon and screen line surveys were conducted in 49 stations (20 outer cordon line stations and 29 inner cordon line stations) and 50 stations, respectively. These stations are shown in Figures 4.1 to 4.3. Traffic volume, vehicle occupancy and trip information (e.g., origin and destination, purpose, freight, access/egress mode etc.) were observed in cordon line stations. On the other hand, traffic volume and vehicle occupancy only were recorded in screen line stations.

The traffic volume was recorded by every 30 minutes, vehicle type, and direction. The vehicles were classified as follows: (i) Bicycle, (ii) Motorcycle, (iii) Car/Owner-type Jeep, (iv) Pedicab, (v) Tricycle, (vi) Taxi, (vii) Filcab, (viii) Jeepney, (ix) High-occupancy vehicle (HOV)/Asian utility vehicle (AUV), (x) Minibus, (xi) Standard Bus, (xii) School/Company Bus, (xiii) Tourist Bus, (xiv) Pickup/Delivery Van, (xv) Truck, (xvi) Trailer, and (xviii) Others.

For the vehicle occupancy survey, traffic counters recorded the number of passengers of the surveyed vehicles chosen at random by hour, vehicle type, and direction. The roadside OD interview was conducted by interviewers to get trip information from private transportation drivers, public transportation passengers/drivers, and freight mode drivers. The outline of surveys is shown in Table 4.1.

4.2 Survey Data and Survey Form

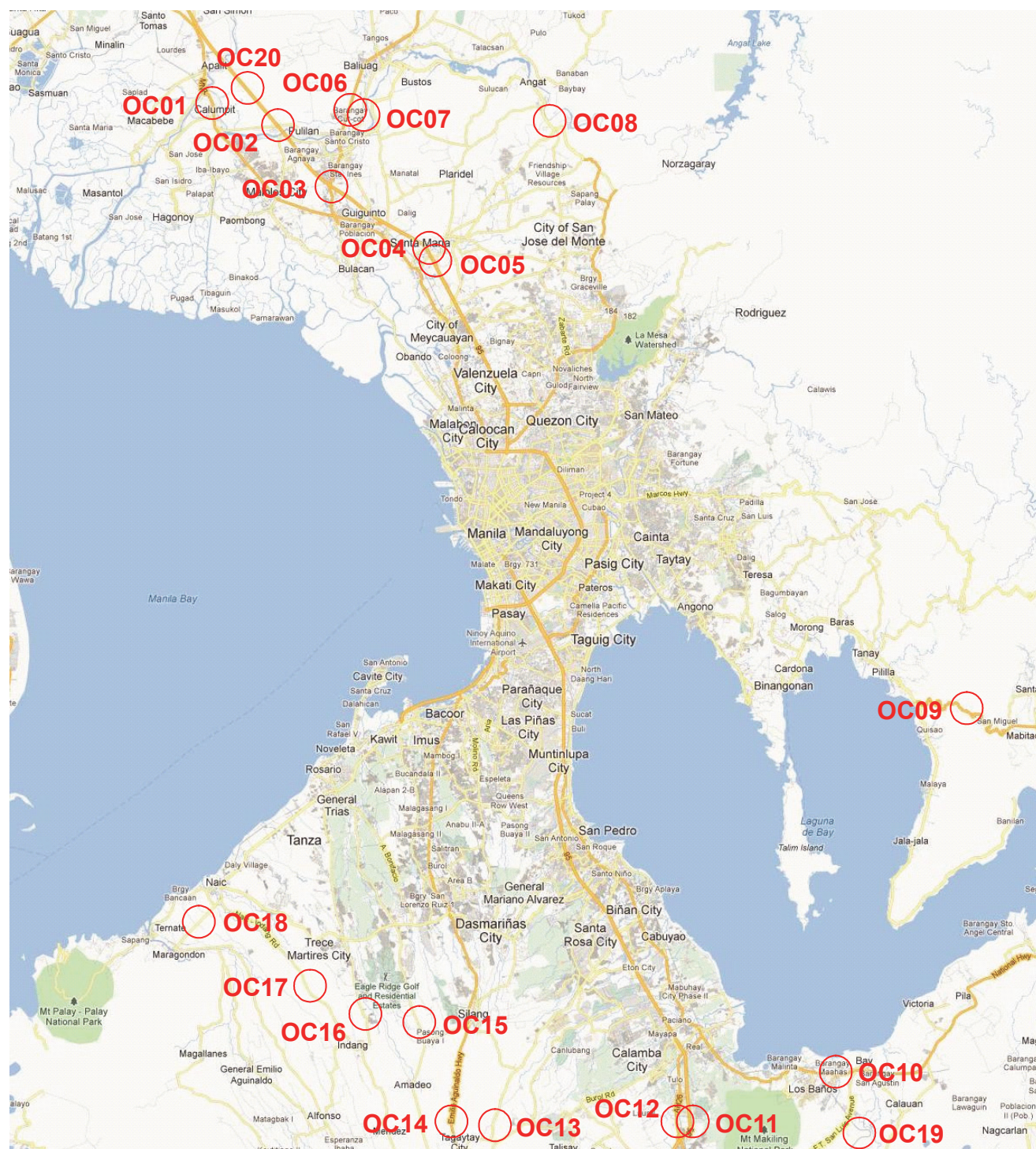
The survey data is available in Excel format. Data on traffic volume and occupancy were recorded by station, time, vehicle type, and direction. The answerer recorded the trip information. Figures 4.4 to 4.8 show the survey forms of the OD interview survey. The data code of OD data is described thereafter.

Table 4.1: Outline of Cordon Line and Screen Line Survey

Item	Cordon Line Survey		Screen Line Survey
	Outer	Inner	
Boundary/ Line	MUCEP Area	Metro Manila	Rasig River, Sanjuan River/ PNR
Survey Type	-Traffic Count -Vehicle Occupation -OD Interview (except inner station)		-Traffic Count -Vehicle Occupation
Survey Stations	Total=20 stations -6 on roads -13 on expressways -1 on rail	Total=29 stations -18 on roads -3 on expressways -3 at ferry terminals -4 at airports -1 on railway	Total=50 stations -18 on EW (Pasig River) -17 NS (San Juan River) -15 NS (PNR)
Survey Period	24 h (3 stations) 16 h (17 stations)	24 h (10 stations) 16 h (19 stations)	24 h (16 stations) 16 h (34 stations)
Vehicle Type	17 types		
Field Survey	June-July 2012		

Source: JICA Project Team

Figure 4.1: Location of Cordon Line Survey – Outer Cordon



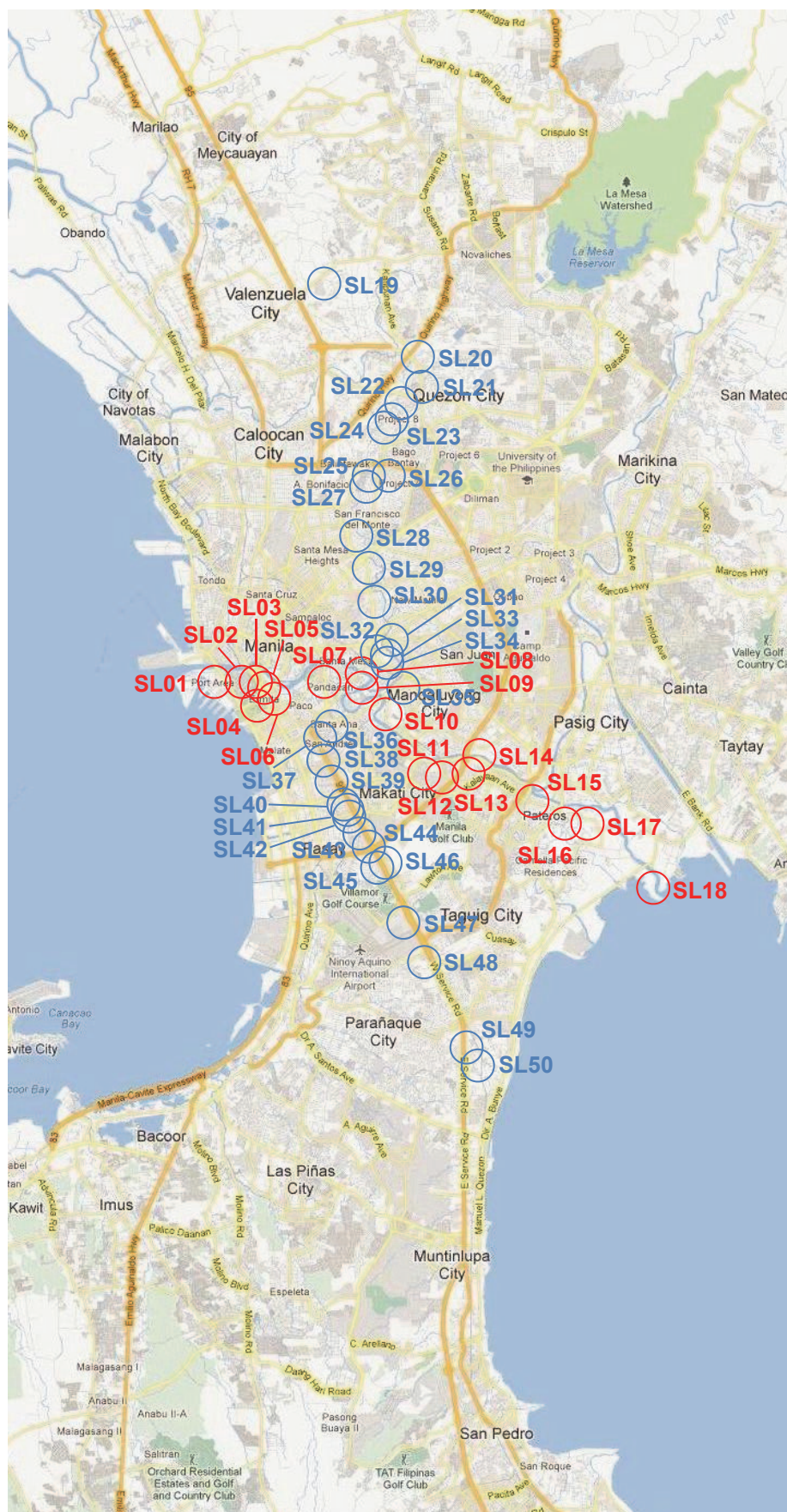
Source: JICA Project Team

Figure 4.2: Location of Cordon Line Survey – Inner Cordon



Source: JICA Project Team

Figure 4.3: Location of Screen Line Survey



Source: JICA Project Team

Figure 4.4: Form A: Cordon Line OD Interview Survey

Cordon Line OD Interview Survey Form A: <i>Driver – Private Mode</i>	PROJECT FOR CAPACITY DEVELOPMENT ON TRANSPORTATION PLANNING AND DATABASE MANAGEMENT	Department of Transportation and Communications
--	--	--

Control Data:	
Station No.: _____ Direction : _____ Interviewer: _____ Shift ☐ 1 st ☐ 2 nd ☐ 3 rd	No.: _____ Date: _____ Time: _____ Weather: _____

Survey Data:	1	2
1. MODE OF TRAVEL 1. Bicycle 5. Truck 2. Motorcycle 6. Trailer 3. Car/Jeep 7. Others 4. Utility Vehicle (specify: _____)		
2. ORIGIN Street / Barangay City / Municipality / Province		
3. DESTINATION Street / Barangay City / Municipality / Province		
4. TRIP PURPOSE 1. To Home 4. Private 2. To Work 5. Business 3. To School 6. Others (specify: _____)		
5. NO. OF PASSENGERS (including driver)		
6. SEATING CAPACITY		
7. MUNICIPALITY OF RESIDENCE		

Source: JICA Project Team

Figure 4.5: Form B: Cordon Line OD Interview Survey

Cordon Line OD Interview Survey Form B: Driver – Public Mode	PROJECT FOR CAPACITY DEVELOPMENT ON TRANSPORTATION PLANNING AND DATABASE MANAGEMENT	Department of Transportation and Communications
---	--	--

Control Data:	
Station No.: _____ Direction : _____ Interviewer: _____ Shift ☐ 1 st ☐ 2 nd ☐ 3 rd	No.: _____ Date: _____ Time: _____ Weather: _____

Survey Data:		1	2
1. PLATE NO.			
2. VEHICLE TYPE 1. Pedicab 2. Tricycle 3. Jeepney 4. Filcab 5. Taxi 6. HOV	7. Minibus 7.1 Aircon 7.2 Ordinary 8. Standard Bus 8.1 Aircon 8.2 Ordinary		
3. Use of vehicle 1.business 2.Private			
4. ROUTE FIELD	1) ORIGIN Street/Mun./City	_____ _____ 	_____ _____
	2) DESTINATION Street/Mun./City	_____ _____ 	_____ _____
	3) NOT FIX		
5. NO. OF PASSENGERS (including driver)			
6. SEATING CAPACITY			

Source: JICA Project Team

Figure 4.6: Form C: Cordon Line OD Interview Survey

Cordon Line OD Interview Survey Form C: Passenger – Public Mode	PROJECT FOR CAPACITY DEVELOPMENT ON TRANSPORTATION PLANNING AND DATABASE MANAGEMENT	Department of Transportation and Communications
--	--	--

Control Data:	
Station No.: _____	No.: _____
Direction : _____	Date: _____
Interviewer: _____	Time: _____
Shift ☐ 1 st ☐ 2 nd ☐ 3 rd	Weather: _____

Survey Data:	1	2
1. PLATE NO.		
2. VEHICLE TYPE 1. Pedicab 2. Tricycle 3. Jeepney 4. Filcab 5. Taxi 6. HOV 7. Minibus 7.1 Aircon 7.2 Ordinary 8. Standard Bus 8.1 Aircon 8.2 Ordinary		
3. ORIGIN Street / Barangay City / Mun. / Prov.		
4. DESTINATION Street / Barangay City / Mun. / Prov.		
5. TRIP PURPOSE 1. To Home 2. To Work 3. To School 4. Private 5. Business 6. Others (specify: _____)		
6. MUNICIPALITY OF RESIDENCE		

Source: JICA Project Team

Figure 4.7: Form D: Cordon Line OD Interview Survey

Cordon Line OD Interview Survey <i>Form D: Freight Mode</i>	PROJECT FOR CAPACITY DEVELOPMENT ON TRANSPORTATION PLANNING AND DATABASE MANAGEMENT	Department of Transportation and Communications
---	--	--

Control Data:	
Station No.: _____ Direction : _____ Interviewer: _____ Shift ☐ 1 st ☐ 2 nd ☐ 3 rd	No.: _____ Date: _____ Time: _____ Weather: _____

Survey Data:	1	2
1. VEHICLE TYPE 1. Pick-up / delivery van 2. Truck 3. Trailer 4. Other (specify: _____)		
2. ORIGIN Street / Barangay City / Municipality / Province	_____ _____ 	_____ _____
3. DESTINATION Street / Barangay City / Municipality / Province	_____ _____ 	_____ _____
4. LOADING CAPACITY		
5. MAJOR COMMODITY		
6. LOAD FACTOR 1. full 2. 3/4 3. 1/2 4. 1/4 5. 1/4> 6. Empty		
7. PACKING TYPE		
7.1 For Container 1) Type of Container 1. Dry 2. Reefer 3. Other (specify: _____)		
2) Size 1. 20 feet 2. 40 feet 3. Other (specify: _____)		
7.2 For No Container 1. Pallet 2. Bag 3. Carton 4. Case 5. Drum 6. Bulk 7. Other (specify: _____)		

Source: JICA Project Team

Figure 4.8: Form E: Cordon Line OD Interview Survey

Cordon Line OD Interview Survey Form E: Public Transportation Terminal	PROJECT FOR CAPACITY DEVELOPMENT ON TRANSPORTATION PLANNING AND DATABASE MANAGEMENT	Department of Transportation and Communications
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Control Data:	
Station No.: _____ Direction : _____ Interviewer: _____ Shift ☐ 1 st ☐ 2 nd ☐ 3 rd	No.: _____ Date: _____ Time: _____ Weather: _____

Survey Data:	1	2
1. ACCESS / EGRESS MODE TO /FROM TERMINAL (INSIDE METRO MANILA) 1. Walking 2. Bicycle 3. Motorcycle 4. Car/Jeep 5. Pedicab 6. Tricycle 7. Filcab 8. Taxi 9. HOV 10. Jeepney 11. Minibus w/o aircon 12. Minibus w/ aircon 13. Standard Bus w/o aircon 14. Standard Bus w/ aircon 15. Other (specify: _____)		
2. ORIGIN Street / Barangay _____ City / Municipality / Province _____		
3. DESTINATION Street / Barangay _____ City / Municipality / Province _____		
4. TRIP PURPOSE 1. To Home 4. Private 2. To Work 5. Business 3. To School 6. Others (specify: _____)		
5. MUNICIPALITY OF RESIDENCE		

Source: JICA Project Team

4.3 Code of OD Interview Data

The Form A of OD interview survey consists of 19 items.

Table 4.2: Form A Data Items

Item No.	Name	Description
1	New_Seq_No	Unique ID Number
2	Seq_No	Unique ID Number by surveyed station
3	Station	Station code
4	Station_Name	Station name
5	Direction	Traffic movement (1: Inbound, 2: Outbound)
6	From	Road name of upstream of traffic flow
7	To	Road name of downstream of traffic flow
8	Date	Surveyed date
9	Weather	Weather of surveyed date
10	Hour	Interviewed time (Hour)
11	Min	Interviewed time (Minutes)
12	Mode	Travel mode (See table below)
13	Origin	MUCEP Barangay code of origin
14	Destination	MUCEP Barangay code of destination
15	Purpose	Trip purpose (See table below)
16	Porpose_Other	Other travel purpose
17	Occupancy	No. of passengers
18	Capacity	Seating capacity
19	Residence	MUCEP Barangay code of residence

Source: JICA Project Team

Table 4.3: Travel Mode Codes for Form A

Code	Mode
1	Bicycle
2	Motorcycle
3	Car/ Jeep
4	Utility Vehicle
5	Truck
6	Trailer
7	Others

Source: JICA Project Team

Table 4.4: Travel Purpose Codes

Code	Purpose
1	To Home
2	To Work
3	To School
4	Private
5	Business
6	Others

Source: JICA Project Team

The Form B of OD interview survey consists of 19 items:

Table 4.5: Form B Data Items

Item No.	Name	Description
1	New_Seq_No	Unique ID Number
2	Seq_No	Unique ID Number by surveyed station
3	Station	Station code
4	Station_Name	Station name
5	Direction	Traffic movement (1: Inbound, 2: Outbound)
6	From	Road name of upstream of traffic flow
7	To	Road name of downstream of traffic flow
8	Date	Surveyed date
9	Weather	Weather of surveyed date
10	Hour	Interviewed time (Hour)
11	Min	Interviewed time (Minutes)
12	Plate	Plate number of vehicle
13	Mode	Vehicle type (See table below)
14	Origin	MUCEP Barangay code of origin
15	Destination	MUCEP Barangay code of destination
16	Route Fix	0: Route is fixed, 1: Not fixe
17	Vehicle Use	1: Business, 2: Private
18	Occupancy	No. of passengers (including driver)
19	Capacity	Seating capacity

Source: JICA Project Team

Table 4.6: Vehicle Type Codes for Form B and Form C

Code	Vehicle Type
1	Pedicab
2	Tricycle
3	Jeepney
4	Filcab
5	Taxi
6	HOV
7	Minibus
7.1	Minibus (Aircon)
7.2	Minibus (Ordinary)
8	Standard bus
8.1	Standard bus (Aircon)
8.2	Standard bus (Ordinary)

The Form C of OD interview survey consists of 17 items.

Table 4.7: Form C Data Items

Item No.	Name	Description
1	New_Seq_No	Unique ID Number
2	Station	Station code
3	Station_Name	Station name
4	Direction	Traffic movement (1: Inbound, 2: Outbound)
5	From	Road name of upstream of traffic flow
6	To	Road name of downstream of traffic flow
7	Date	Surveyed date
8	Weather	Weather of surveyed date
9	Hour	Interviewed time (Hour)
10	Min	Interviewed time (Minutes)
11	Plate	Plate number of vehicle
12	Mode	Vehicle type (See Table 4.6)
13	Origin	MUCEP Barangay code of origin
14	Destination	MUCEP Barangay code of destination
15	Purpose	Trip Purpose (See Table 4.4)
16	Purpose Others	Other travel purpose
17	Residence	MUCEP Barangay code of residence

Source: JICA Project Team

The Form D of OD interview survey consists of 22 items.

Table 4.8: Form D Data Items

Item No.	Name	Description
1	New_Seq_No	Unique ID Number
2	Seq_No	Unique ID Number by surveyed station
3	Station	Station code
4	Station_Name	Station name
5	Direction	Traffic movement (1: Inbound, 2: Outbound)
6	From	Road name of upstream of traffic flow
7	To	Road name of downstream of traffic flow
8	Date	Surveyed date
9	Weather	Weather of surveyed date
10	Hour	Interviewed time (Hour)
11	Min	Interviewed time (Minutes)
12	Mode	Vehicle type (1: Pick-up/ delivery van, 2: Truck, 3: Trailer, 4: Other)
13	Origin	MUCEP Barangay code of origin
14	Destination	MUCEP Barangay code of destination
15	Load_Weight	Loading capacity
16	Load_Unit	Unit of loading capacity
17	Commodity_Code	Commodity code
18	Commodity_Type	Commodity type
19	Load_Factor	Load factor code (1: full, 2: 3/4, 3: 1/2, 4: 1/4, 5: 1/4>, 6: Empty)
20	Container_Type	Container type code (0: not container, 1: Dry, 2: Reefer, 3: Other)
21	Container_Size	Container size code (0: not container, 1: 20 feet, 2: 40 feet, 3: Other)
22	Non_Container_Type	Packing type code for not container (0: Container, 1: Pallet, 2: Bag, 3: Carton, 4: Case, 5: Drum, 6: Bulk, 7: Other)

Source: JICA Project Team

The Form E of OD interview survey consists of 14 items.

Table 4.9: Form E Data Items

Item No.	Name	Description
1	New_Seq_No	Unique ID Number
2	Seq_No	Unique ID Number by surveyed station
3	Station	Station name
4	Direction	Traffic direction
5	Date	Surveyed date
6	Weather	Weather of surveyed date
7	Hour	Interviewed time (Hour)
8	Min	Interviewed time (Minutes)
9	Mode	Access/ Egress mode (See table below)
10	Origin	MUCEP Barangay code of origin
11	Destination	MUCEP Barangay code of destination
12	Purpose	Trip purpose (See Table 4.4)
13	Porpose_Other	Other travel purpose
14	Residence	MUCEP Barangay code of residence

Source: JICA Project Team

Table 4.10: Mode Codes for Form E

Code	Mode
1	Walking
2	Bicycle
3	Motorcycle
4	Car/ Jeep
5	Pedicab
6	Tricucle
7	Felicab
8	Taxi
9	HOV
10	Jeepney
11	Minibus w/o aircon
12	Minibus w/ aircon
13	Standard bus w/o aircon
14	Standard bus w/ aircon
15	Other

Source: JICA Project Team

5 DEMAND FORECAST DATA

The socio economic data, OD tables, zoning systems, networks, and assignment parameters were included in MUCEP database for the demand forecast data. OD tables, networks, and assignment parameters were prepared by JICA in STRADA format and Cube format. The following table includes data explanations. In addition, the Manual on Travel Demand Forecast describes details of the demand forecast model and data.

Table 5.1: Demand Forecast Data

Folder and File Name				Remarks
05_Socio_Frame	Socio_Frame.xlsx			It includes population in 2014, 2020, 2025, 2030 and 2035.
11_OD	CUBE	2014	MUCEP_Trp2014_Lnk_MD14_z432.mat	OD table by 14 modes by CUBE format.
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.mat	OD table by 5 modes for highway assignment by CUBE format.
			MUCEP_Trp2014_Lnk_PP05_z432.mat	OD table by 5 purposes for highway assignment by CUBE format.
		2020	MDL2020_interpolation.mat	OD table in 2020 by 5 modes and CUBE format. Its mode classification is not same as assignment mode. It was prepared based on 2014 and 2025 OD.
		2025	MDL2025.mat	OD table in 2025 by 5 modes and CUBE format. Its mode classification is not same as assignment mode.
		2035	MDL2035.mat	OD table in 2030 by 5 modes and CUBE format. Its mode classification is not same as assignment mode.
	STRADA	2014	MUCEP_Trp2014_Lnk_MD14_z432.aod	OD table by 14 modes by STRADA format.
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.aod	OD table by 5 modes for highway assignment by STRADA format.
			MUCEP_Trp2014_Lnk_PP05_z432.aod	OD table by 5 purposes for highway assignment by STRADA format.
		2020	MDL2020_interpolation.aod	OD table in 2020 by 5 modes and STRADA format. Its mode classification is not same as assignment mode. It was prepared based on 2014 and 2025 OD.
		2025	MDL2025.aod	OD table in 2025 by 5 modes and STRADA format. Its mode classification is not same as assignment mode.
		2035	MDL2035.aod	OD table in 2030 by 5 modes and STRADA format. Its mode classification is not same as assignment mode.
		Transit	MUCEP_Trp2014_Lnk_Public_z432.aod	OD table in 2014 for transit assignment by STRADA format.
12_Zoning	A007	Area007-035_Index.xlsx		Zoning system of 7 zones.
		Zone_List-Modify.xlsx		
		CenU07 (Map Info format)		
		Zoning_MUCEP_Area7 (Map Info format)		
		Area7.pzn		
	A008	Area008-035_Index.xlsx		Zoning system of 8 zones (Large zone).
		Zone_List-Modify.xlsx		
		CenU08 (Map Info format)		
		Zoning_MUCEP_Area8 (Map Info format)		
		Area8.pzn		
	A009	Area009-035_Index.xlsx		Zoning system of 9 zones.
		Zone_List-Modify.xlsx		
		CenU09 (Map Info format)		
		Zoning_MUCEP_Area9 (Map Info format)		
		Area9.pzn		
	A035	Area035_Index.xlsx		Zoning system of 35 zones.
		MUCEP_Area35 (Map Info format)		
Muni-CenU35 (Map Info format)				
Area035.pzn				
Z082(Municipality)	A_CityMunBoundary_SA_MUCEP2012_UTMWG S84 (Map Info format)		Zoning system of 82 zones.	
	Muni-Cen(Map Info format)			
	Area432-082.pzn			
Z089(Municipality a	Zone_List-Modify2.xlsx		Zoning system of 89 zones (Medium Zone).	
	A_CityMunPlusBoundary_StudyA (Map Info			

Folder and File Name				Remarks
	nd_Division)	format)		
		Muni-Cen (Map Info format)		
		Area432-089.pzn		
	Z432	Zoning_MUCEP.xlsx		Zoning system of 432 zones (Small Zone/ TAZ).
		Zoning_MUCEP (Map Info format)		
13_Network_and_PARR	CUBE	2015	NET2015.net	Road and rail network in 2014 by CUBE format.
		2025	NET2025.net	Road and rail network in 2025 by CUBE format.
		2035	NET2035.net	Road and rail network in 2035 by CUBE format.
		Tranist	Pub_2014.lin	Transit line in 2014 by CUBE format.
		CUBE_Model	Assignment_MUCEP.zip	CUBE assignment model including highway assignment model and transit assignment model.
	STRADA	2015	Network2015.int	Road and rail network in 2014 and assignment parameter by STRADA format.
			2015.par	
			Run_2015.acn	
			Net2015 (Map Info Format)	
		2025	Network2025.int	Road and rail network in 2025 and assignment parameter by STRADA format.
			Network2025.csv	
			2025.par	
		2035	Network2035.int	Road and rail network in 2035 and assignment parameter by STRADA format.
			Network2035.csv	
			2035.par	
		Transit	Net2012-2_Z432_rev2-D_Pub-2.int	Transit line in 2014 and assignment parameter by STRADA format.
Pub2014-Capa2.tnt				
2014_for_rev2.tpa				

Source: JICA Project Team

6 GIS DATA

The GIS data was prepared in Map Info format and included data on administrative (barangay/city/municipality boundary), natural condition, infrastructure (road and rail), and others such as the MUCEP zoning system. Details of the GIS data are shown in following table.

Table 6.1: GIS Data

Folder/Sub-folder	Filename	Description	Coverage	Data Type	Source	Year	Revision/Update	Remarks
10_Administrative	A_BarangayBoundary_SA_MUCEP2012_UTMWGS84	Barangay Boundaries	Study Area	Polygon	NSO/LGU GIS	2000	2012	Barangay Boundaries are originally from MMEIRS for Metro Manila and NSO for outside Metro Manila. Some barangays were updated based on the LGU maps. Check Bgy tab for details
	A_BarangayCenter_SA_MUCEP2012_UTMWGS84	Point file of all barangays	Study Area	Points	NSO/LGU GIS	2000	2012	Processed from the barangay boundary
	A_BarangayBoundary_SA_MMUTIS1996_UTMWGS84	Barangay Boundaries	Metro Manila	Polygon	MMUTIS	1996		Original data from MapInfo tab of MMUTIS database
	A_CityMunBoundary_SA_MUCEP2012_UTMWGS84	Municipal Boundaries in the Study Area	Study Area	Polygon	NSO/LGU GIS	2000	2012	
	A_CityMunBoundary_MM_MMUTIS1996_UTMWGS84	Municipal Boundaries in the Study Area	Metro Manila	Polygon	MMUTIS	1996		Original data from MapInfo tab
	A_ProvBoundary_SA_MUCEP2012_UTMWGS84	Provincial Boundaries	Study Area	Polygon	NSO/LGU GIS	2000	2012	
	A_RegionBoundary_Luzon_NSO2000_UTMWGS84	Regional boundaries	Luzon	Polygon	NSO	2000		
20_NaturalConditions	N_LagunaLake_SA_MUCEP2012_UTMWGS84	Laguna Lake boundary	Laguna lake	Polygon		2012		Delineated based on the latest administrative boundaries
	N_WaterBody_SA_MUCEP2012_UTMWGS84	Laguna lake, Pacific Ocean, West Philippine Sea	Study Area	Polygon		2012		Delineated based on the latest administrative boundaries
30_Infrastructures	I_Roads_MM_MMUTIS1996_UTMWGS84	Metro Manila Roads	Metro Manila	Lines	MMUTIS	1996		Original data from MapInfo tab
	I_Roads_Prov_MMUTIS1996_UTMWGS84	Provincial Roads	Provinces covered by the MMUTIS	Lines	MMUTIS	1996		Original data from MapInfo tab
	I_RoadsPrimary_SA_MMUTIS1996_UTMWGS84	Primary Roads	MMUTIS Study area	Lines	MMUTIS	1996		Original data from MapInfo tab
	I_RoadsSecondary_SA_MMUTIS1996_UTMWGS84	Secondary Roads	MMUTIS Study area	Lines	MMUTIS	1996		Original data from MapInfo tab
	I_RoadInventory_Natl_DPWH2011_UTMWGS84	National Roads Inventory	Philippines	Lines	DPWH		2011	Original Data from DPWH was slightly off from the correct position. Rectification was done to perfectly overlay the DPWH road data with other layers
	I_RoadCondition_Natl_DPWH2011_UTMWGS84	National roads with road condition attributes	Philippines	Lines	DPWH		2011	Original Data from DPWH was slightly off from the correct position. Rectification was done to perfectly overlay the DPWH road data with other layers

Folder/Sub-folder	Filename	Description	Coverage	Data Type	Source	Year	Revision/ Update	Remarks
	I_Railway_SA_DOT C2012_UTMWGS84	Railway alignment	MUCEP Study area	Lines	DOTC		2012	
	I_RailSta_SA_DOTC 2012_UTMWGS84	Railway stations	MUCEP Study area	Points	DOTC		2012	
	I_Ports_Natl_DPWH 2011_UTMWGS84	National ports	Philippines	Points	DPWH			
	I_Airports_Natl_DP WH2011_UTMWGS 84	National airports	Philippines	Points	DPWH			
	I_RoadCL_MM_MM DA_UTMWGS84.sh p	Metro Roads Manila	Metro Manila	Lines	MMDA			
	I_RoadPoly_MM_M MDA_UTMWGS84.s hp	Metro Roads Manila	Metro Manila	Polygon	MMDA			
99_Others	O_OutmostCordonL oc_MUCEP_2012_U TMWGS84	Outermost cordon line locations	Study area	Point	Study Team	2012		
	O_StudyArea_MUC EP_2012_UTMWGS 84	MUCEP study area based on the updated barangay boundaries	Study area	Polygon	Study Team	2012		Based on the administrative boundaries
	O_Zoning_SA_CTII HSH_2009_UTMWG S84	Zones with data from the covered barangay	Study area	Polygon	CTII - HSH	2009	2012	created new zoning using the new barangay boundaries
	O_ZoningMed_SA_ CTIIHSH_2009_UT MWGS84	Medium zones	Study area	Polygon	CTII - HSH	2009	2012	created new zoning using the new barangay boundaries
	O_ZoningSml_SA_C TIIHSH_2009_UTM WGS84	Small zones	Study area	Polygon	CTII - HSH	2009	2012	created new zoning using the new barangay boundaries
	O_Zoning_SA_MMU TIS_1996_UTMWG S84_AllOrig	Small and medium zones with bgy names and codes	Study area	Polygon	MMUTIS	1996	2012	created new zoning using the new barangay boundaries
	O_ZoningMed_SA_ MMUTIS_1996_UT MWGS84	Medium zones	MMUTIS Study Area	Polygon	MMUTIS	1996	2012	created new zoning using the new barangay boundaries
	O_ZoningSml_SA_ MMUTIS_1996_UT MWGS84_All	Small zones	Study area	Polygon	MMUTIS	1996	2012	created new zoning using the new barangay boundaries
	O_ZoningMed_SA_ MMUTIS_1996_UT MWGS84_All	Medium zones	Study area	Polygon	MMUTIS	1996	2012	created new zoning using the new barangay boundaries
	O_ZoningSml_SA_ MMUTIS_1996_UT MWGS84	Small zones	MMUTIS Study Area	Polygon	MMUTIS	1996	2012	created new zoning using the new barangay boundaries
	O_StudyArea_MMU TIS_1996_UTMWG S84	MMUTIS study area	MMUTIS Study Area	Polygon	MMUTIS	1996		
	O_OutmostCordonL oc_MUCEP_2012_U TMWGS84	Outmost cordon locations	MUCEP Study area	Points	Study Team	2012		
	O_NSScreenline_M M_MUCEP_2012_U TMWGS84	North to south screenline	MUCEP Study area	Polylines	Study Team	2012		
	O_EWScreenline_M M_MUCEP_2012_U TMWGS84	East to west screenline	MUCEP Study area	Polylines	Study Team	2012		

Source: JICA Project Team

7 DATABASE MANAGEMENT AND UPDATE

7.1 Database Management

MUCEP database has been created for reasons stated in the previous chapters. The database was handed over to the Department of Transportation and Communications (DOTC) by the MUCEP Project Team in October 2015.

The database becomes valuable when it is used widely, efficiently, and effectively by concerned government agencies. However, it must be used under a common rule for the indicated reasons:

- (i) The HIS database includes personal data deemed private and confidential. Actually, the HIS was conducted under the government declaration that the obtained data would be used only for public purposes and individual data would never be disclosed.
- (ii) If a private investor uses the database privately, for example, it would be unfair for other potential competitors because the database is a public asset.
- (iii) If numerous users of the database create their own transportation planning data such as OD matrices (present or future) and claim that the source is MUCEP, confusion and controversy may be caused.

Therefore, the database must be properly managed. The record of usage should be kept by DOTC and database management shall be the responsibility of the TPU of the RTPD, DOTC.

The MUCEP Project Team has prepared a database usage application form (refer to Figures 7.1 to 7.6). The application form must be submitted to the Assistant Secretary for Planning and Finance of DOTC. DOTC shall thoroughly review and decide upon each application.

Figure 7.1: Database Usage Application Form – Part 1

Letterhead of Organization/ School/ Firm

(Date of Application)

ATTY. SHERIELYSSE REYES-BONIFACIO

Assistant Secretary for Planning and Finance

DEPARTMENT OF TRANSPORTATION AND COMMUNICATIONS

Unit 169, The Columbia Tower, Ortigas Avenue

Barangay Wack-Wack, Mandaluyong City 1555 Philippines

Subject: **Request for a Copy of the MUCEP Database**

Dear Ma'am / Assistant Secretary Reyes-Bonifacio,

(Body of letter)

Sincerely yours,

(Signature)

(NAME)

(Position)

(Organization/ School/ Firm)

(Contact information, if letter is not printed on a letterhead)

Figure 7.2: Database Usage Application Form – Part 2

Letterhead of Organization/ School/ Firm

Application Form

Applicant's Name ¹
Contact Person's Name
Organization/ School/ Firm
Business Address
Business Phone Numbers
Business Fax Number
Contact Person's E-mail Address
Purpose for Requesting the MUCEP Database
Explain why you will not be able to achieve your purpose without the MUCEP Database

¹ Signatory of letter.

Figure 7.3: Database Usage Application Form – Part 3

Letterhead of Organization/ School/ Firm

CERTIFICATE OF CONSENT

The Applicant hereby agrees to the DOTC regulations stated below with regard to the use of the MUCEP Database:

- The Applicant must acknowledge in reports, articles, presentations, and other documents where the data was used that the source of the data is the DOTC;
- The Applicant must NOT use the database for any purpose other than the one specified in the Applicant's application form;
- The Applicant must NOT share the database to a third party/person under any circumstance; and
- The Applicant must NOT tamper with the database.

Date: _____

Applicant's Name: _____

Signature: _____

Figure 7.4: Database Usage Application Form – Part 4

Letterhead of Organization/ School/ Firm

MUCEP Database Structure¹

Folder and File Name				
00_Manual	Manual on Traffic Survey.docx			
	Manual on Demand Forecasting.docx			
	Manual on Policy Formulation.docx			
	Manual on PT Planning.docx			
	Manual on Database Management.docx			
01_Survey_Form	HIS_forms.pdf			
	OD_Interview_Survey_Forms.doc			
	Traffic_Count_Survey_Form.xls			
	Veh_Occupancy_Survey_Form.xls			
02_HIS	Results	1_HH.xlsx		
		2_HHM.xlsx		
		3_Trip.xlsx		
		4_Frm.xlsx		
	Zone	Zone_List-MUCEP.xlsx		
		Zone-Barangay(MUCEP).xlsx		
03_Cordon	Count	OC_Occ1hr.xlsb		
		OC_TV01hr.xlsb		
	Interview	FormA.xlsx		
		FormB.xlsx		
		FormC.xlsx		
		FormD.xlsx		
		Airport.xlsx		
		Ferry_PNR.xlsx		
04_Screen	SLS_Occ1hr_V17.xlsx			
	SLS_TV01hr.xlsx			
05_Socio_Frame	Socio_Frame.xlsx			
11_OD	CUBE	2014	MUCEP_Trp2014_Lnk_MD14_z432.mat	
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.mat	
			MUCEP_Trp2014_Lnk_PP05_z432.mat	
		2020	MDL2020_interpolation.mat	
		2025	MDL2025.mat	
		2035	MDL2035.mat	
	STRADA	2014	MUCEP_Trp2014_Lnk_MD14_z432.aod	
			MUCEP_Trp2014_Lnk_MD05_z432_forHighwayASG.aod	
			MUCEP_Trp2014_Lnk_PP05_z432.aod	
		2020	MDL2020_interpolation.aod	
		2025	MDL2025.aod	
2035		MDL2035.aod		
Transit	MUCEP_Trp2014_Lnk_Public_z432.aod			
12_Zoning	A007	Area007-035_Index.xlsx		
		Zone_List-Modify.xlsx		
		CenU07 (Map Info format)		
		Zoning_MUCEP_Area7 (Map Info format)		
		Area7.pzn		
	A008	Area008-035_Index.xlsx		
		Zone_List-Modify.xlsx		

¹ Please put a check on the space beside the requested data.

Figure 7.5: Database Usage Application Form – Part 5

Letterhead of Organization/ School/ Firm

Folder and File Name				
		CenU08 (Map Info format)		
		Zoning_MUCEP_Area8 (Map Info format)		
		Area8.pzn		
	A009	Area009-035_Index.xlsx		
		Zone_List-Modify.xlsx		
		CenU09 (Map Info format)		
		Zoning_MUCEP_Area9 (Map Info format)		
		Area9.pzn		
	A035	Area035_Index.xlsx		
		MUCEP_Area35 (Map Info format)		
		Muni-CenU35 (Map Info format)		
		Area035.pzn		
	Z082(Muni_City)	A_CityMunBoundary_SA_MUCEP2012_UTMWGS84 (Map Info format)		
		Muni-Cen(Map Info format)		
		Area432-082.pzn		
	Z089(Muni_City_and_Division)	Zone_List-Modify2.xlsx		
		A_CityMunPlusBoundary_StudyA (Map Info format)		
		Muni-Cen (Map Info format)		
		Area432-089.pzn		
	Z432	Zoning_MUCEP.xlsx		
		Zoning_MUCEP (Map Info format)		
13_Network_and_PAR	CUBE	2015	NET2015.net	
		2025	NET2025.net	
		2035	NET2035.net	
		Tranist	Pub_2014.lin	
		CUBE_Model	Assignment_MUCEP.zip	
	STRADA	2015	Network2015.int	
			2015.par	
			Run_2015.acn	
			Net2015 (Map Info Format)	
		2025	Network2025.int	
			Network2025.csv	
			2025.par	
		2035	Network2035.int	
			Network2035.csv	
			2035.par	
		Transit	Net2012-2_Z432_rev2-D_Pub-2.int	
			Pub2014-Capa2.tnt	
			2014_for_rev2.tpa	
	21_GIS	DataDocumentation_MUCEP_GIS.xls		
		10_Administrative	A_BarangayBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)	
			A_BarangayCenter_SA_MUCEP2012_UTMWGS84 (Map Info Format)	
			A_BarangayBoundary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)	
A_CityMunBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)				
A_CityMunBoundary_MM_MMUTIS1996_UTMWGS84 (Map Info Format)				
A_ProvBoundary_SA_MUCEP2012_UTMWGS84 (Map Info Format)				
A_RegionBoundary_Luzon_NSO2000_UTMWGS84 (Map Info Format)				
20_NaturalConditions		N_LagunaLake_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
		N_WaterBody_SA_MUCEP2012_UTMWGS84 (Map Info Format)		
30_Infrastructures	I_Roads_MM_MMUTIS1996_UTMWGS84 (Map Info Format)			

Figure 7.6: Database Usage Application Form – Part 6

Letterhead of Organization/ School/ Firm

Folder and File Name		
		I_Roads_Prov_MMUTIS1996_UTMWGS84 (Map Info Format)
		I_RoadsPrimary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)
		I_RoadsSecondary_SA_MMUTIS1996_UTMWGS84 (Map Info Format)
		I_RoadInventory_Natl_DPWH2011_UTMWGS84 (Map Info Format)
		I_RoadCondition_Natl_DPWH2011_UTMWGS84 (Map Info Format)
		I_Railway_SA_DOTC2012_UTMWGS84 (Map Info Format)
		I_RailSta_SA_DOTC2012_UTMWGS84 (Map Info Format)
		I_Ports_Natl_DPWH2011_UTMWGS84 (Map Info Format)
		I_Airports_Natl_DPWH2011_UTMWGS84 (Map Info Format)
		I_RoadCL_MM_MMDA_UTMWGS84.shp
		I_RoadPoly_MM_MMDA_UTMWGS84.shp
	99_Others	O_OutmostCordonLoc_MUCEP_2012_UTMWGS84 (Map Info Format)
		O_StudyArea_MUCEP_2012_UTMWGS84 (Map Info Format)
		O_Zoning_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)
		O_ZoningMed_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)
		O_ZoningSml_SA_CTIHSH_2009_UTMWGS84 (Map Info Format)
		O_Zoning_SA_MMUTIS_1996_UTMWGS84_AllOrig (Map Info Format)
		O_ZoningMed_SA_MMUTIS_1996_UTMWGS84 (Map Info Format)
		O_ZoningSml_SA_MMUTIS_1996_UTMWGS84_All (Map Info Format)
		O_ZoningMed_SA_MMUTIS_1996_UTMWGS84_All (Map Info Format)
		O_ZoningSml_SA_MMUTIS_1996_UTMWGS84 (Map Info Format)
		O_StudyArea_MMUTIS_1996_UTMWGS84z (Map Info Format)
		O_OutmostCordonLoc_MUCEP_2012_UTMWGS84 (Map Info Format)
		O_NSScreenline_MM_MUCEP_2012_UTMWGS84 (Map Info Format)
		O_EWScreenline_MM_MUCEP_2012_UTMWGS84 (Map Info Format)
	MetroManila	MetroManilaRoad (Map Info Format)
		MetroManilaRoad.shp

7.2 Update of the Database

The basis year of the MUCEP database is 2014. Although it includes the forecast results for 2025 and 2035 (and partially 2020), the forecast is based on past trends and should be understood as the reference. Each database user should carry out their own forecast if land use change should be taken into account, particularly, in the case of transportation project of a specific area.

In general, the life of this type of database is 10-15 years even if the basis year result is updated by conducting supplementary OD surveys and traffic counts because after 10-15 years the change in land use and transportation technology becomes significant.

Then how should the MUCEP database be updated? Getting OD information in the context of an urban area has been a difficult, expensive, and time-consuming process as it involves the collection of trip activity surveys of thousands of households complemented by extensive analysis of socio-economic data. It also involves the conduct of labor-intensive traffic count data and public transport surveys at strategic points on major roadways and transit routes to calibrate the results. These large-scale surveys are not recommendable for the TPU.

The MUCEP Project Team recommends the following periodic updates for the TPU:

- (i) Road/Rail Network: Change the condition of road or rail links in the Cube and STRADA network files. This is needed when a major road or rail project is completed. Close coordination with Department of Public Works and Highways (DPWH), Metropolitan Manila Development Authority (MMDA), etc. is required.
- (ii) Traffic Volume: Collect new traffic count data from DPWH and MMDA every year. The data can be compiled in any form (even printouts).
- (iii) Socio-economic data: Update the file "Socio_Frame.xlsx" in the database when census result is disclosed (every five years).
- (iv) PUV Route Data: Update the transit route data of the database every year. The file in the database is "Pub_2014.lin" (CUBE).