

REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC DEVELOPMENT AUTHORITY (NEDA)

**FOLLOW-UP SURVEY ON
ROADMAP FOR TRANSPORT INFRASTRUCTURE
DEVELOPMENT
FOR GREATER CAPITAL REGION (GCR)**

**TECHNICAL REPORT 1
SUPPLEMENTAL TRAFFIC SURVEYS**

August 2019

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ALMEC Corporation

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JR
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1 OVERVIEW OF THE TRAFFIC SURVEYS

1.1. Background

The existing database on traffic demand forecast is mainly based on the traffic surveys conducted in 2012 during MMUTIS Update and Enhancement Project (MUCEP). Some traffic and transport surveys were also conducted recently in the previous studies and projects, but those surveys were not comprehensive (e.g., traffic count surveys only along the Mega Manila subway alignment) (Table 1.1). Therefore, to formulate a new development vision of new administration, the existing database needs to be updated based on the supplemental traffic surveys.

Table 1.1 Traffic Surveys in Previous Projects/Studies

Study/Project	Year	Survey Items/Scale	Survey Period
Metro Manila Urban Transportation Integration Study (MMUTIS)	1996-1997	• Screen line survey	October 1996
		• Cordon line survey	October–December 1996
		• HIS	August–September 1996
		• Public transport passenger interview survey	December 1996
		• Public transport operation/utilization characteristics survey	November 1996
		• Bus/Jeepney/Tricycle terminal survey	September 1996
		• Parking survey	November 1996
		• Travel speed survey	October–November 1996
		• Truck survey	October 1996
		• Bus/Jeepney/Tricycle/Taxi driver interview survey	December 1996
		• Airport survey	November 1996
		• Bus/Jeepney operator survey	August–October 1996
		• Garbage truck movement survey	September 1997
		• Willingness-to-pay survey	September–October 1997
• Water transport demand survey	October 1997		
		• Perception on the unified vehicular volume reduction program (UVVRP)	August 1997
Mega Manila Public Transport Study (MMPT)	2006	• Route Inventory Survey • License Plate Survey • Boarding and Alighting Survey	November 2007
The Study on Materplan of High Standard Highway Network Development in the Republic of the Philippines (HSH)	2010	• Traffic Count Survey • Road Side OD Survey • Travel Speed Survey • Willingness-to-pay Survey • Truck OD Survey at Port and Airport Gate • Truck Count at Port and Airport Gate • Port/Airport Official Interview Survey • Logistics/Trucking Companies Interview Survey • Ecozones Interview Survey • Manufacturing Interview Survey	May 2009
Project for the Study on Airport Strategy for the Greater Capital Region in the Republic of the Philippines	2012	• Traffic count survey, occupancy survey, OD survey: 21 survey stations • Bus user OD survey • Passenger interview survey (NAIA and CIA) • Travel time survey (NLEx and MacArthur Highway) • Stated Preference (SP) survey: users of NAIA, CIA and NLEx)	January 2011
Preparatory Survey on Metro Manila	2015	• BGC Cordon line Survey;	April 2014
		• BGC Public Transport Operator Survey	April 2014

Study/Project	Year	Survey Items/Scale	Survey Period
Central Business Districts Transit System Project in the Republic of the Philippines		• BGC Public Transport User Survey	April 2014
		• BGC Visitor Survey	April 2014
MMUTIS Update and Enhancement Project (MUCEP)	2012–2014	• Screen line survey: 50 survey stations	June–July 2012
		• Cordon line survey: 49 survey stations	June–July 2012
		• HIS	May–August 2012 (City of Manila) and October 2013–April 2014 (rest of MUCEP area)
Preparatory Survey for the Mega Manila Subway Project	2016	• Traffic count survey: 5 intersection	
		• Willingness-to-Pay (WTP) survey	
JICA's Information Collection Survey for New Manila International Airport	2015	• Traffic count survey (NAIA)	March–April 2015
		• OD survey (NAIA)	March–April 2015
		• Occupancy survey (NAIA)	March–April 2015
Detailed Design Study for North–South Commuter Railway Project (Malolos– Tutuban) in the Republic of the Philippines	2017	• Traffic count survey: 28 survey stations	

Source: JICA Study Team consolidated from the reports of each studies/projects

1.2. Outline of Supplemental Surveys Conducted

In this Study, five surveys were conducted to supplement the MUCEP database as follows (Table 1.2). The surveys were implemented from May to July 2017. Some surveys were delayed due to the delay of survey permission issues.

Table 1.2 Survey Contents

Survey	Survey contents	Survey Period
1. Cordon survey	<ul style="list-style-type: none"> • Inner Cordon Survey: Traffic count and occupancy survey 18 stations • Outer Cordon Survey: Traffic count and OD interview survey 22 stations, occupancy survey 21 stations • Expressway Survey: Traffic count and occupancy survey 18 stations 	May – July 2017
2. Screen line survey	• Traffic count 18 stations and occupancy and OD interview survey 17 stations	May 2017
3. Public transport survey	• Hearing survey 10 stations	May 2017
4. Clerk international airport survey	• Traffic count 5 stations, occupancy survey 3 stations and OD interview survey 6 stations	May 2017
5. Port traffic survey	• Traffic count, occupancy and OD interview survey 17 stations and hearing survey 28 companies	July 2017

Source: JICA Study Team

2 CORDON SURVEY

2.1. Survey Objectives, Items and Coverage

1) Survey Objectives

To update the traffic and transport database of the study area, the study team engaged a qualified local consultant to execute three cordon line surveys, namely:

- (i) outer cordon line survey;
- (ii) inner cordon line survey; and,
- (iii) expressway cordon line survey.

The objectives of the surveys are to determine the trips to and from the survey area made by residents living outside the survey area and to calibrate the distributed traffic volume obtained from existing database. To obtain such data/information, roadside origin–destination (OD) interview, traffic count, and vehicle occupancy surveys were conducted on the boundaries of the survey area.

2) Survey Items

The following surveys were conducted simultaneously at each survey station:

- (i) vehicular traffic count;
- (ii) vehicle occupancy survey; and
- (iii) OD interview survey (e.g., origin and destination, purpose, cargo items, etc.).

3) Survey Coverage

Surveys were conducted for 16-hours or 24-hours, depending on the survey stations and survey items. Surveys at the 16-hour sites were from 6:00 a.m. to 10:00 p.m. at two 8-hour shifts while the 24-hour surveys were conducted at three 8-hour or two 12-hour shifts.

(1) Outer Cordon Line Survey

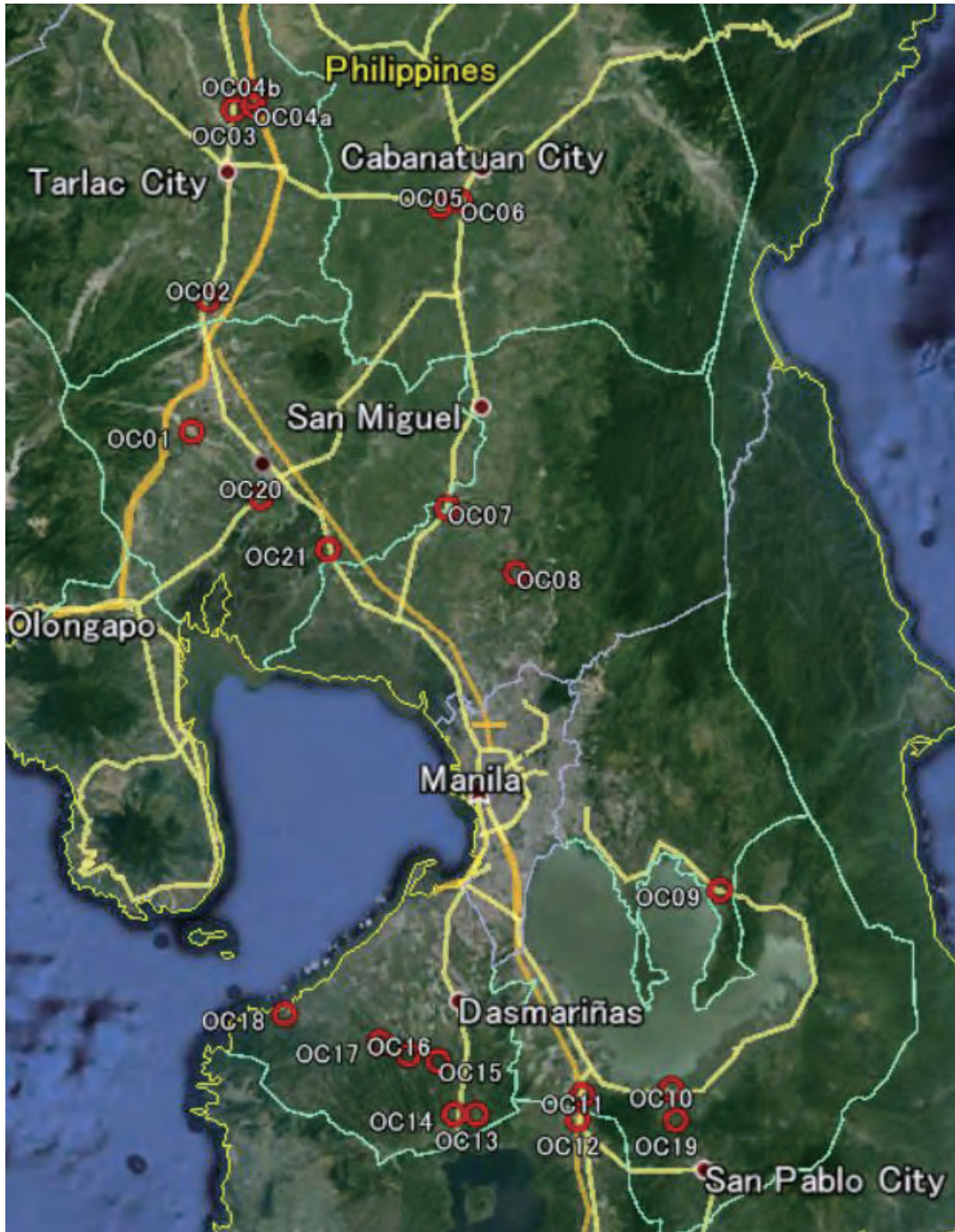
The 22 outer cordon line survey stations were along the outer boundaries of the adjoining provinces of Metro Manila (referred to as the outer cordon). Survey stations are listed in Table 2.1 including survey duration and locations. The 24-hour traffic count, vehicle occupancy, and OD interview surveys were conducted at five (5) survey stations; while the 24-hour traffic count, 16-hour vehicle occupancy, and OD interview surveys were conducted at the remaining 17 stations along the outer cordon.

Table 2.1 List of Outer Cordon Line Survey Stations

Seq.	Code	Survey Station	Location	Survey Period (hours)		
				Traffic Count	Vehicle Occupancy	OD Interview
1	OC01	Angeles–Porac	Between Angeles & Porac	24	16	16
2	OC02	Manila N Rd South	Between of Tarlac & San Fernando	24	16	16
3	OC03	Manila N Rd North	Between of Tarlac & Dagupan	24	16	16
4	OC04	Tarlac–Pangasinan Rd	Between of Tarlac & Pangasinan	24	16	16
5	OC05	Santa Rosa–Tarlac Rd	Between of Santa Rosa & Tarlac	24	16	16
6	OC06	AH26 North	Between of Santa Miguel & Cabanatuan	24	16	16
7	OC07	AH26 South	Between of San Miguel & San Idefonso	24	24	24
8	OC08	Plaridel–Angat	Boundary of Norzagaray & Angat (Bulacan)	24	16	16
9	OC09	Piililla–Mabitac	Boundary of Piililla & Mabitac (Rizal)	24	16	16
10	OC10	Los Baños–Bay	Boundary of Los Banos & Bay (Laguna)	24	24	16
11	OC11	South Luzon Expressway	Saimsim Toll Plaza	24	16	16
12	OC12	Calamba–Santo Tomas	Boundary of Calamba (Laguna) & Santo Tomas (Batangas)	24	16	16
13	OC13	Silang–Tagaytay 1	Boundary of Silang & Tagaytay City (Cavite)	24	24	24
14	OC14	Silang–Tagaytay 2	Boundary of Silang & Tagaytay City (Cavite)	24	24	24
15	OC15	Gen. Trias–Amadeo	Boundary of General Trias & Amadeo (Cavite)	24	16	16
16	OC16	Trece Martires–Indang	Boundary of Trece Martires City & Indang (Cavite)	24	16	16
17	OC17	Naic–Indang	Boundary of Naic & Indang (Cavite)	24	16	16
18	OC18	Naic–Maragondon	Boundary of Naic & Maragondon (Cavite)	24	16	16
19	OC19	College Station–San Pablo Station	Between PNR College Station–San Pablo Station	24	-	8 ^{1/}
20	OC20	Jose Abad Santos Ave.	Between Guaga–San Fernando	24	16	16
21	OC21	44 MacArthur Highway	Between Calumpit–Apalit	24	16	16
22	OC22	Jose Abad Santos Ave.	Between San Fernando -Cabanatuan	24	24	24

Source: JICA Study Team

1/ Interviewers should not disturb sleeping passengers.



Source: JICA Study Team

Figure 2.1 Locations of Outer Cordon Line Survey Stations

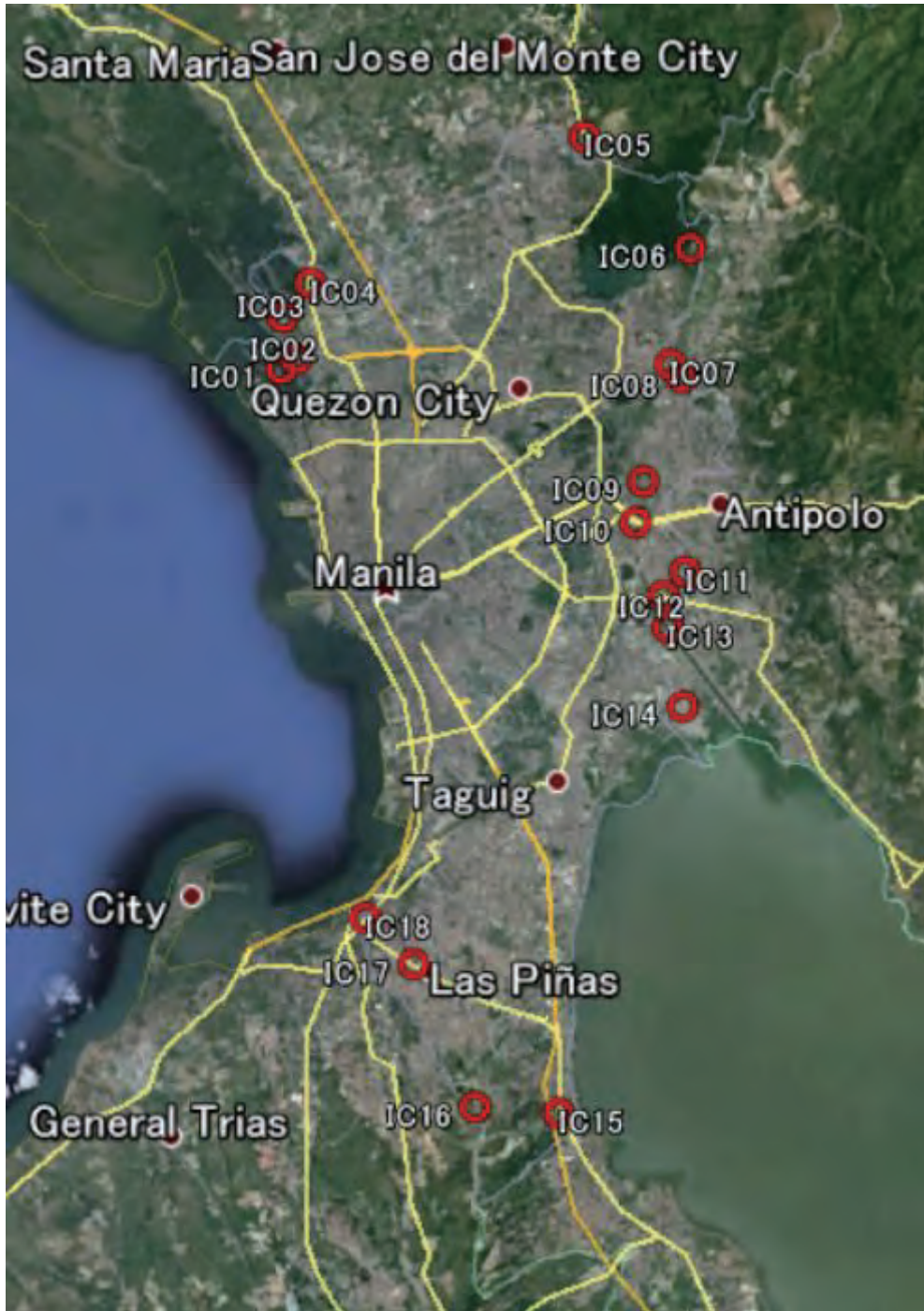
(2) Inner Cordon Line Survey

The 18 survey stations were along the boundary of Metro Manila (referred to as the inner cordon). The stations including survey duration are listed in Table 2.2 while survey locations are shown in Figure 2.2. In the roadside survey, the 24-hour traffic count and vehicle occupancy surveys were conducted at three (3) stations, while the 24-hour traffic count and 16-hour vehicle occupancy surveys were at the remaining 15 stations.

Table 2.2 List of Inner Cordon Line Survey Stations

Seq.	Code	Survey Station	Location	Survey Period (hours)	
				Traffic Count	Vehicle Occupancy
1	IC01	F. Navarette	Boundary of Malabon & Obando (Bulacan)	16	16
2	IC02	Panghulo Road	Boundary of Valenzuela & Obando (Bulacan)	16	16
3	IC03	Gen. Villilla	Boundary of Valenzuela & Obando (Bulacan)	16	16
4	IC04	McArthur Highway	Boundary of Valenzuela & Meycauayan (Bulacan)	24	24
5	IC05	Quirino Highway	Boundary of Quezon City & San Jose D.M. (Bulacan)	16	16
6	IC06	Manila Gravel Pit Road	Boundary of Quezon City & Rodriguez	16	16
7	IC07	Batasan-San Mateo Road	Boundary of Quezon City & San Mateo	16	16
8	IC08	Marikina-San Mateo Road	Boundary of Marikina & San Mateo (Rizal)	16	16
9	IC09	Marikina-Cogeo Road	Outside of intersection of Marcos & Sumulong Highway	16	16
10	IC10	Antipolo Road	Outside of intersection of Marcos & Sumulong Highway	24	24
11	IC11	Imelda Avenue	Boundary of Pasig & Cainta (Rizal)	16	16
12	IC12	Ortigas Avenue	Boundary of Pasig & Cainta (Rizal)	24	24
13	IC13	East Bank Road	Boundary of Pasig & Cainta (Rizal)	16	16
14	IC14	Afonso Sandoval Avenue	Boundary of Pasig & Cainta (Rizal)	16	16
15	IC15	San Pedro	Boundary of Muntinlupa & Laguna	16	16
16	IC16	Daang Hari	Boundary of Muntinlupa & Imus & Las Piñas	16	16
17	IC17	M. Alvarez Avenue	Boundary of Las Pinas & Bacoor (Cavite)	16	16
18	IC18	Bacoor	Boundary of Las Pinas & Bacoor (Cavite)	16	16

Source: JICA Study Team



Source: JICA Study Team

Figure 2.2 Locations of Inner Cordon Line Survey Stations

(3) Expressway Cordon Line Survey

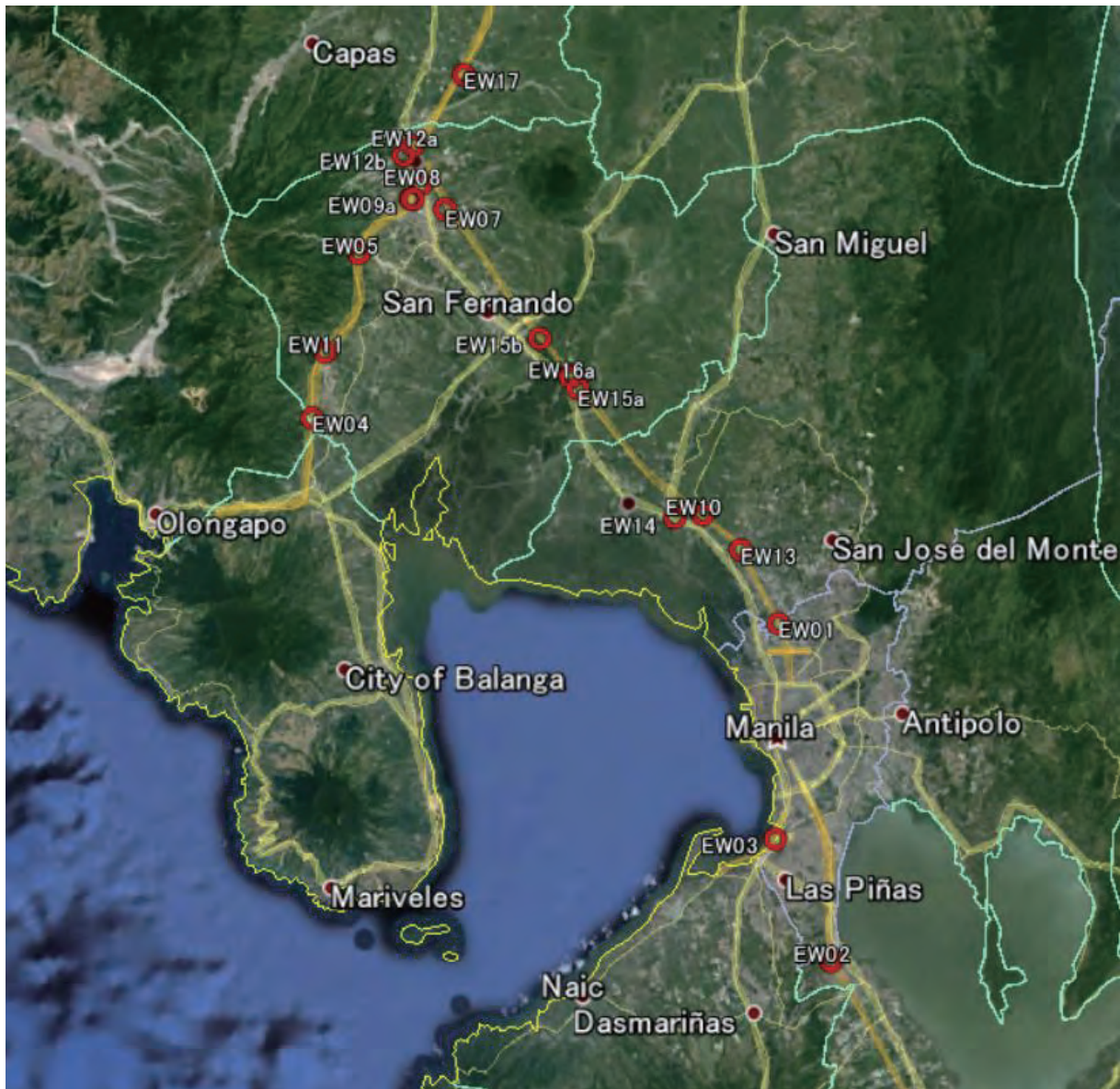
Survey stations were at 18 sites along expressways in Metro Manila and adjoining provinces (referred to as the Expressway Cordon). The survey stations including survey duration are listed in Table 2.3 while the locations are shown in Figure 2.3. The 24-hour traffic count, vehicle occupancy, and OD interview surveys were conducted at three (3) stations; while the 24-hour traffic count, 16-hour vehicle occupancy, and OD interview surveys were conducted at the remaining 15 stations.

Table 2.3 List of Expressway Survey Stations

Seq.	Code	Survey Station	Location	Survey Period (hours)		
				Traffic Count	Vehicle Occupancy	OD Interview
1	EW01	N Luzon Exp.	Boundary of Meycauyan & Valenzuela	24 ^{1/}	-	-
2	EW02	S Luzon Exp.	Between of Santa Rosa & San Pedro	24 ^{1/}	24 ^{1/}	24
3	EW03	CaviteEx	Boundary of Bacoor & Las Pinas	24	24	24
4	EW04	N Luzon W Exp.	Boundary of Dinalupihan & Floridablanca	24 ^{1/}	16 ^{1/}	16
5	EW05	N Luzon W Exp.	Porac Exit	24	16	16
6	EW06	TPLEX	Dolores Exit	24	16	16
7	EW07	N Luzon Exp.	Dau toll barrier	24	16	16
8	EW08	NLEX/SCTEX	Mabalacat Interchange	24	16	16
9	EW09	SCTEX	Clark South Interchange	24	16	16
10	EW10	Plaridel bypass Rd	Balagtas Exit toll Plaza	24	16	16
11	EW11	N Luzon W Exp.	Floridablanca Exit	24	16	16
12	EW12	SCTEX	Clark North Interchange	24	16	16
13	EW13	N Luzon Exp.	Bocaue Exit	24	24	24
14	EW14	NLEX	Tabang Exit	24	16	16
15	EW15	N Luzon Exp.	Paligui Rest area	24 ^{1/}	16 ^{1/}	16
16	EW16	N Luzon Exp.	San Simon entry ramp	24	16	16
17	EW17	R-8 No.1	Conception exit	24	16	16
18	EW18	R-8 No.2	Tarlac Central Toll Plaza	24	16	16

Source: JICA Study Team

^{1/} The vehicles running on main lane of expressways should be targeted.



Source: JICA Study Team

Figure 2.3 Locations of Expressway Survey Stations

2.2. Survey Result

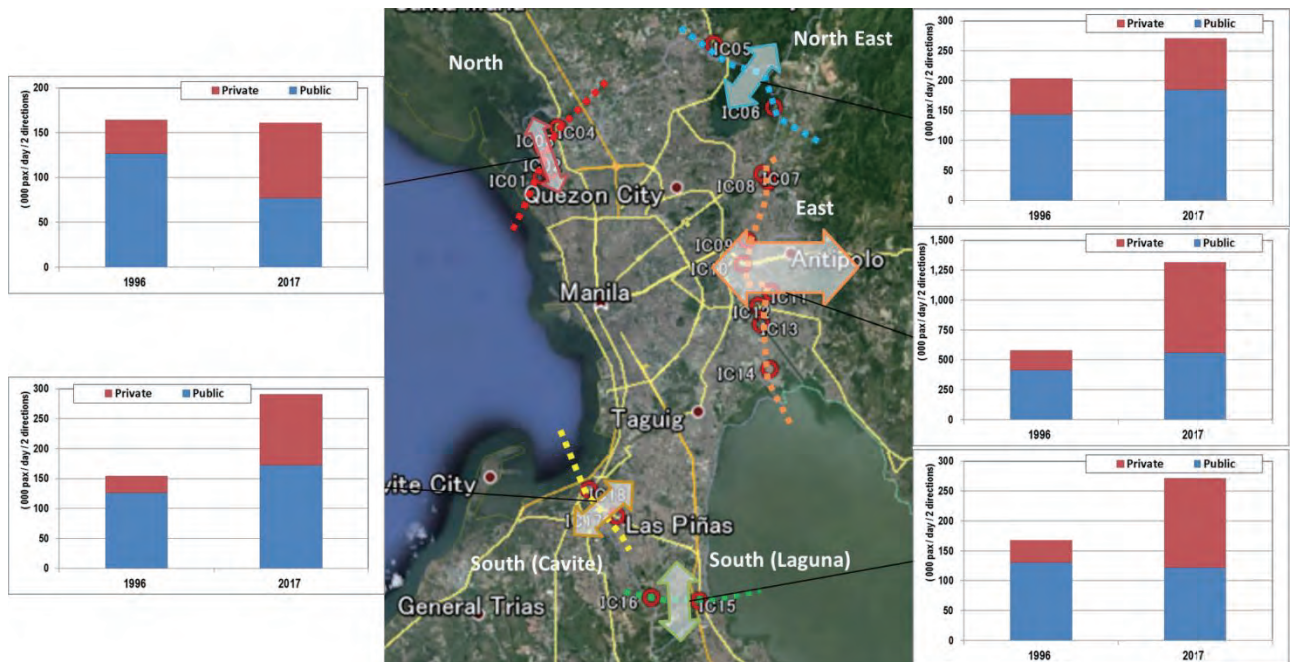
1) Inner Cordon Line Survey

(1) Changes in Metro Manila Boundary Traffic

Table 2.4 shows the number of passengers and PCU of the 18 Inner Cordon Line Survey Stations from the MMUTIS, MUCEP, and Roadmap2 studies.

The preliminary findings are as follows:

- (i) Daily Traffic through Metro Manila Boundary has been increasing from the MMUTIS (1996) survey results to the results in this study.
- (ii) The growth of traffic volume for Eastern and Southern parts of Cordon Line are significant. It shows that the expansion of urban areas is rapid at these directions.
- (iii) The survey result didn't catch the traffic volume at Expressway classified as the Expressway Cordon Survey.



Source: JICA Study Team

Figure 2.4 Changes in Metro Manila Boundary Daily Traffic

Table 2.4 Changes in Metro Manila Boundary Daily Traffic

Inner Cordon Line Stations		MMUTIS (1996)			MUCEP (2012)			Roadmap2 (2017)			
		Public	Private	Total	Public	Private	Total	Public	Private	Total	
North	1.F. Navarette	Pax No.	5,721	4,404	10,125	2,482	5,108	7,590	632	8,141	8,773
		PCU	159	2,318	2,477	269	1,863	2,132	185	3,232	3,417
	2.Panghulo Road	Pax No.	10,120	3,627	13,747	1,666	3,763	5,429	1,094	8,128	9,222
		PCU	275	1,742	2,018	306	1,339	1,646	118	2,794	2,912
	3.Gen. Villilla	Pax No.	18,517	4,852	23,369	14,854	2,216	17,070	13,869	21,763	35,632
		PCU	592	2,590	3,182	1,852	897	2,749	1,941	8,289	10,230
	4.McArthur Highway	Pax No.	92,137	24,698	116,835	55,852	19,541	75,393	61,285	45,659	106,944
		PCU	2,848	12,849	15,697	8,048	7,605	15,652	9,917	17,688	27,605
	Subtotal	Pax No.	126,495	37,581	164,076	74,854	30,628	105,482	76,880	83,691	160,571
		PCU	3,874	19,499	23,374	10,475	11,704	22,179	12,161	32,003	44,164
North East	5.Quirino Highway	Pax No.	67,136	15,413	82,549	107,962	21,286	129,248	140,337	49,000	189,337
		PCU	1,843	7,754	9,597	12,587	11,121	23,708	12,320	21,329	33,649
	6.Manila Gravel Pit Road	Pax No.	76,424	44,596	121,020	32,195	22,117	54,312	44,331	36,570	80,901
		PCU	2,127	22,398	24,525	3,480	6,602	10,082	4,250	13,197	17,447
	Subtotal	Pax No.	143,560	60,009	203,569	140,157	43,403	183,560	184,668	85,570	270,238
PCU	3,970	30,152	34,122	16,067	17,723	33,790	16,570	34,526	51,096		
East	7.Balasan-San Mateo Road	Pax No.	79,304	27,613	106,917	43,315	36,019	79,334	53,047	48,852	101,899
		PCU	1,952	15,382	17,334	4,056	17,116	21,171	4,336	24,218	28,554
	8.Marikina-San Mateo Road	Pax No.	-	-	-	88,395	61,290	149,685	64,575	89,993	154,568
		PCU	-	-	-	7,633	23,639	31,272	6,887	34,174	41,061
	9.Marikina-Cogeo Road	Pax No.	-	-	-	129,740	56,324	186,064	84,508	130,464	214,972
		PCU	-	-	-	11,829	21,936	33,765	9,278	47,341	56,619
	10.Antipolo Road	Pax No.	70,240	35,081	105,321	77,223	47,184	124,407	168,387	210,375	378,762
		PCU	1,998	18,772	20,770	7,508	23,857	31,365	13,392	99,902	113,294
	11.Imelda Avenue	Pax No.	127,882	42,183	170,065	110,035	62,167	172,202	95,617	58,192	153,809
		PCU	4,451	43,431	47,881	12,274	34,274	46,548	9,146	31,541	40,687
	12.Ortigas Avenue	Pax No.	134,773	58,339	193,112	117,316	79,241	196,557	94,802	138,320	233,122
		PCU	3,041	33,217	36,259	11,620	30,054	41,674	11,424	52,496	63,920
	13.East Bank Road	Pax No.	-	-	-	22,969	59,677	82,646	713	58,739	59,452
		PCU	-	-	-	2,285	22,301	24,586	474	19,236	19,710
	14.Afonso Sandoval Avenue	Pax No.	-	-	-	1,227	13,116	14,343	873	16,027	16,900
		PCU	-	-	-	399	4,121	4,520	319	5,175	5,494
	Subtotal	Pax No.	412,199	163,216	575,415	590,220	415,018	1,005,238	562,522	750,962	1,313,484
		PCU	11,442	110,802	122,244	57,604	177,298	234,901	55,256	314,083	369,339
	South (Laguna)	15.San Pedro	Pax No.	130,591	36,837	167,428	116,227	30,250	146,477	119,658	52,079
PCU			3,355	25,440	28,795	13,643	12,282	25,925	12,415	22,708	35,123
16.Daang Hari		Pax No.	-	-	-	4,384	51,852	56,236	2,648	96,613	99,261
		PCU	-	-	-	814	21,174	21,987	435	39,548	39,983
Subtotal		Pax No.	130,591	36,837	167,428	120,611	82,102	202,713	122,306	148,692	270,998
PCU	3,355	25,440	28,795	14,457	33,456	47,912	12,850	62,256	75,106		
South (Cavite)	17.M. Alvarez Avenue	Pax No.	-	-	-	52,468	17,090	69,558	113,976	53,256	167,232
		PCU	-	-	-	7,198	7,523	14,721	12,204	27,050	39,254
	18.Bacoor	Pax No.	126,057	27,527	153,584	81,967	35,479	117,446	58,554	64,865	123,419
		PCU	3,240	18,539	21,779	16,165	13,113	29,277	6,234	26,513	32,747
	Subtotal	Pax No.	126,057	27,527	153,584	134,435	52,569	187,004	172,530	118,121	290,651
PCU	3,240	18,539	21,779	23,363	20,636	43,998	18,438	53,563	72,001		

Source: JICA Study Team

(2) Characteristics of Traffic

Table 2.5 shows the characteristics of traffic of the 18 Inner Cordon Line Survey Stations based on pax traffic, vehicle traffic, PCU traffic, load factor, and peak hour rate. It can be observed that Antipolo Road had the highest pax traffic, vehicle traffic, and PCU traffic. On the other hand, Quirino Highway had the highest load factor at 4.61 while East Bank Road had the highest peak hour rate at 9.5%.

Table 2.5 Characteristics of Traffic

Station	Pax Traffic (pax/day)	Vehicle Traffic (veh./day)	PCU Traffic (pcu/day)	Load Factor (person/Vehicle)	Peak Hour Rate(pax) (%)
1.F. Navarette	20,591	13,361	6,881	1.54	6.5%
2.Panghulo Road	22,309	13,571	6,472	1.64	6.7%
3.Gen. Villilla	81,198	45,108	20,959	1.80	6.6%
4.McArthur Highway	119,773	49,673	36,177	2.41	7.0%
5.Quirino Highway	195,310	42,380	38,649	4.61	6.3%
6.Manila Gravel Pit Road	86,976	27,561	23,387	3.16	6.8%
7.Batasan-San Mateo Road	107,476	41,170	33,669	2.61	7.0%
8.Marikina-San Mateo Road	171,900	66,828	52,849	2.57	7.1%
9.Marikina-Cogeo Road	227,178	79,257	61,633	2.87	6.1%
10.Antipolo Road	396,941	142,440	132,230	2.79	6.6%
11.Imelda Avenue	163,614	56,822	48,088	2.88	6.5%
12.Ortigas Avenue	240,853	78,656	70,808	3.06	5.9%
13.East Bank Road	81,119	46,351	25,161	1.75	9.5%
14.Afonso Sandoval Avenue	87,493	40,658	15,232	2.15	8.0%
15.San Pedro	183,538	53,708	42,445	3.42	6.6%
16.Daang Hari	113,709	52,768	45,002	2.15	6.9%
17.M. Alvarez Avenue	173,346	49,385	42,845	3.51	5.8%
18.Bacoor	132,363	62,818	38,322	2.11	8.2%
Total	2,605,687	962,515	740,809	Ave. 2.71	6.8%

Source: JICA Study Team

2) Outer Cordon Line Survey

(1) Changes in Metro Manila Boundary Traffic

Table 2.6 shows the number of passengers and PCU of the 22 Outer Cordon Line Survey Stations from the MMUTIS, MUCEP, and Roadmap2 studies. Given the survey results from the MMUTIS, MUCEP, and Roadmap2 where the Metro Manila Boundary Traffic is available for all Outer Cordon Line Survey Stations, it can be clearly seen that total traffic is steadily increasing.

Table 2.6 Changes in Metro Manila Boundary Traffic

Outer Cordon Line Stations		MMUTIS			MUCEP			Roadmap2		
		Public	Private	Total	Public	Private	Total	Public	Private	Total
OC01.Angeles - Porac	Pax No.	-	-	-	-	-	-	10,220	32,202	42,422
	PCU	-	-	-	-	-	-	1,357	13,443	14,800
OC02.Manila N Rd south	Pax No.	-	-	-	-	-	-	33,197	41,758	74,955
	PCU	-	-	-	-	-	-	4,595	18,706	23,301
OC03.Manila N Rd north	Pax No.	-	-	-	-	-	-	90,215	47,182	137,397
	PCU	-	-	-	-	-	-	8,302	21,426	29,728
OC04.Tarlac-Pangasinan Rd	Pax No.	-	-	-	-	-	-	20,441	15,743	36,184
	PCU	-	-	-	-	-	-	1,938	6,503	8,440
OC05.Santa Rosa - Tarlac Rd	Pax No.	-	-	-	-	-	-	23,969	24,926	48,895
	PCU	-	-	-	-	-	-	2,439	12,028	14,468
OC06.AH26 north	Pax No.	-	-	-	-	-	-	29,735	20,074	49,809
	PCU	-	-	-	-	-	-	3,844	10,539	14,383
OC07.AH26 south	Pax No.	31,267	34,184	65,451	23,888	16,994	40,882	58,374	44,738	103,112
	PCU	2,211	16,787	18,998	2,830	8,154	10,984	6,014	21,035	27,049
OC08.Plaridel-Angat	Pax No.	9,753	10,475	20,228	2,895	5,481	8,376	5,320	22,649	27,969
	PCU	1,121	5,770	6,891	543	2,487	3,031	821	8,238	9,059
OC09.Pililla-Mabitac	Pax No.	7,901	5,586	13,487	2,715	4,393	7,108	7,251	14,149	21,401
	PCU	625	2,470	3,095	350	1,526	1,876	493	6,130	6,623
OC10.Los Banos-Bay	Pax No.	58,432	29,509	87,941	63,495	23,831	87,326	130,749	61,005	191,754
	PCU	5,154	11,252	16,405	7,106	10,778	17,884	12,469	28,721	41,190
OC 11. South Luzon Expressway ¹⁾	Pax No.	-	-	-	31,514	37,876	69,390	18,488	28,985	47,473
	PCU	-	-	-	2,419	16,958	19,376	1,408	14,997	16,405
OC12.Calamba-Santo Tomas	Pax No.	109,120	54,484	163,604	116,346	19,973	136,319	289,313	70,697	360,010
	PCU	6,620	26,213	32,833	13,215	10,039	23,254	25,705	28,022	53,727
OC13.Silang-Tagaytay 1	Pax No.	18,161	29,232	47,393	4,780	17,321	22,101	14,171	42,277	56,448
	PCU	1,702	5,506	7,208	883	6,896	7,780	1,512	22,900	24,412
OC14.Silang-Tagaytay 2	Pax No.	33,126	35,437	68,563	42,088	20,252	62,340	86,425	44,534	130,959
	PCU	2,146	12,280	14,426	4,941	8,600	13,541	9,064	24,702	33,765
OC15.Gen. Trias-Amadeo	Pax No.	6,852	4,487	11,339	7,571	6,037	13,608	12,346	20,819	33,164
	PCU	751	2,060	2,810	1,157	2,597	3,754	2,104	10,595	12,699
OC16.Trece Martires-Indang	Pax No.	16,724	5,972	22,696	29,334	7,108	36,442	53,096	35,568	88,664
	PCU	1,157	2,950	4,107	3,714	3,214	6,928	9,851	14,673	24,524
OC17.Naic-Indang	Pax No.	1,831	1,603	3,434	1,292	1,704	2,996	2,806	7,251	10,057
	PCU	242	748	990	189	563	752	478	2,516	2,994
OC18.Naic-Maragondon	Pax No.	19,352	7,045	26,397	10,768	8,564	19,332	1,262	12,255	13,517
	PCU	1,762	3,710	5,472	707	1,330	2,036	173	3,227	3,400
OC19.College station-	Pax No.	-	-	-	-	-	-	32,058	-	32,058
	PCU	-	-	-	-	-	-	-	-	-
OC20.San Pablo station	Pax No.	-	-	-	-	-	-	95,831	71,049	166,880
	PCU	-	-	-	-	-	-	7,728	31,810	39,537
OC21.Jose Abad Santos Ave.	Pax No.	59,147	17,328	76,475	17,939	11,668	29,607	35,345	34,268	69,613
	PCU	4,670	6,613	11,283	3,488	5,154	8,643	4,848	14,483	19,331
OC22.44 MacArthur Highway	Pax No.	-	-	-	-	-	-	14,831	15,985	30,816
	PCU	-	-	-	-	-	-	1,671	7,921	9,592

Source: JICA Study Team

(2) OD

Table 2.7 shows the origin – destination table of the Outer Cordon Survey. The preliminary findings are as follows:

- (i) Pampanga had the highest traffic as origin, while Metro Manila North had the highest traffic as destination.
- (ii) Cavite had the highest intra-region traffic.
- (iii) There is considerable traffic from Pampanga to Metro Manila North.

Table 2.7 Origin and Destination

(unit: sample)

	Region	Province	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Total
1	Region 3	Nueva Ecija	66	70	0	1,741	1,466	1,818	3,103	385	58	381	376	7	7	232	0	767	10,477
2		Zambales	713	0	0	359	11	75	1,375	64	0	36	0	3	0	0	0	0	2,636
3		Aurora	0	0	0	26	7	76	86	0	0	0	0	0	0	0	0	7	202
4		Tarlack	748	173	20	2,008	1,488	193	377	178	385	8	101	21	0	3,246	0	320	9,266
5		Pampanga	1,097	121	92	801	4,656	4,777	8,728	2	548	3	6	0	0	597	18	2,014	23,460
6		Bulacan	1,747	0	80	676	2,991	4,090	1,987	221	74	3	106	394	0	515	441	8	13,333
7	Metro	North	2,915	247	27	799	2,701	1,318	219	0	16	461	128	875	63	1,100	282	564	11,715
8	Manila	South	242	4	0	228	26	1	0	0	0	1,077	642	943	1	521	16	76	3,777
9	Region 4-A	Rizal	106	0	13	0	5	1	1	0	152	14	216	42	48	0	219	0	817
10		Cavite	20	0	54	0	1	60	1,526	443	49	11,419	876	676	134	165	0	0	15,423
11		Laguna	22	0	0	20	0	11	100	73	180	2,129	5,840	1,128	680	187	223	0	10,593
12		Batangas	12	0	0	0	0	41	303	242	22	389	2,574	2,770	0	3	129	32	6,517
13		Quezon	0	0	76	0	0	0	26	0	26	1	0	0	0	0	0	0	129
14	Others	Pangasinan	540	0	0	2,108	552	292	2,919	2,371	306	1	0	0	125	5,593	0	7	14,814
15		North Other	0	0	0	68	317	39	222	81	0	136	0	0	0	288	0	0	1,151
16		South Other	180	0	0	257	405	1,338	674	113	10	0	0	0	0	39	0	0	3,016
Total			8,408	615	362	9,091	14,626	14,130	21,646	4,173	1,826	16,058	10,865	6,859	1,058	12,486	1,328	3,795	127,326

Source: JICA Study Team

(3) Traffic Characteristics

Table 2.8 shows the characteristics of traffic of the 22 Outer Cordon Line Survey Stations based on passenger traffic, vehicle traffic, PCU traffic, load factor, and peak hour rate. The Main findings are as follows:

- (i) Calamba-Santo Tomas Station had the highest pax traffic, vehicle traffic, PCU traffic, and load factor.
- (ii) The peak hour rate ranges 7% to 9% while Naic-Maragondon shows the highest peak hour rate at 11.8%.

Table 2.8 Characteristics of Traffic

Station	Pax Traffic (pax/day)	Vehicle Traffic (veh./day)	PCU Traffic (pcu/day)	Load Factor (person)	Peak Hour Rate (pax) (%)
OC01.Angeles - Porac	59,769	32,860	25,112	1.82	7.7%
OC02.Manila N Rd south	99,465	43,998	39,493	2.26	8.6%
OC03.Manila N Rd north	185,185	57,652	51,128	3.21	6.9%
OC04.Tarlac-Pangasinan Rd	51,842	19,190	13,952	2.70	7.9%
OC05.Santa Rosa - Tarlac Rd	65,260	23,708	21,963	2.75	7.3%
OC06.AH26 north	74,135	26,710	29,844	2.78	6.3%
OC07.AH26 south	135,744	51,868	50,490	2.62	6.9%
OC08.Plaridel-Angat	49,391	25,200	16,902	1.96	7.4%
OC09.Pililla-Mabitac	33,326	13,720	11,516	2.43	7.7%
OC10.Los Banos-Bay	212,220	57,456	49,126	3.69	7.5%
OC11. South Luzon Expressway	59,551	19,335	23,896	2.49	8.7%
OC12.Calamba-Santo Tomas	386,115	68,606	74,126	5.63	8.9%
OC13.Silang-Tagaytay 1	74,409	36,512	30,895	2.04	7.9%
OC14.Silang-Tagaytay 2	142,646	40,064	40,495	3.56	6.5%
OC15.Gen. Trias-Amadeo	36,967	17,076	14,969	2.16	8.1%
OC16.Trece Martires-Indang	98,276	33,264	28,387	2.95	8.0%
OC17.Naic-Indang	16,241	7,346	4,097	2.21	8.3%
OC18.Naic-Maragondon	19,200	9,146	5,028	2.10	11.8%
OC19.College station-	32,058	0	0	-	8.1%
OC20.San Pablo station	201,292	60,420	65,933	3.33	7.2%
OC21.Jose Abad Santos Ave.	105,263	45,122	32,045	2.33	7.1%
OC22.44 MacArthur Highway	47,115	20,664	17,605	2.28	6.8%
Total	2,125,918	690,582	623,109	Ave. 3.08	7.1%

Source: JICA Study Team

3) Expressway Cordon Line Survey

(1) Traffic Volume by Survey Station

The traffic volume at each survey station is shown in Table 2.9. South Luzon expressway (EW02) had the highest total traffic, followed by Cavite Expressway (EW3) and North Luzon Expressway (EW1). They are gateways of Metro Manila (NCR).

Table 2.9 Traffic Volume on Expressway Cordon Line

Expressway Cordon Line Stations			Roadmap2		
			Public	Private	Total
EW 1	N Luzon Exp.	Pax No.	8,012	80,545	88,557
		PCU	17,380	81,108	98,487
EW 2	S Luzon Exp.	Pax No.	6,391	103,055	109,446
		PCU	13,883	103,137	117,020
EW 3	CaviteExp	Pax No.	8,646	83,948	92,594
		PCU	16,761	84,846	101,607
EW 4	N Luzon W Exp.	Pax No.	91	5,626	5,717
		PCU	228	5,634	5,861
EW 5	N Luzon W Exp.	Pax No.	168	1,769	1,937
		PCU	218	1,756	1,974
EW 6	TPLEX	Pax No.	167	1,825	1,992
		PCU	418	1,825	2,243
EW 7	N Luzon Exp.	Pax No.	3,424	32,996	36,420
		PCU	7,678	33,022	40,700
EW 8	NLEX/SCTEX	Pax No.	2,406	21,652	24,058
		PCU	5,990	21,646	27,636
EW 9	SCTEX	Pax No.	103	3,644	3,747
		PCU	135	3,651	3,787
EW 10	Plaridel bypass Rd	Pax No.	39	11,265	11,304
		PCU	58	11,225	11,283
EW 11	N Luzon W Exp.	Pax No.	52	1,442	1,494
		PCU	68	1,442	1,510
EW 12	SCTEX	Pax No.	7	1,857	1,864
		PCU	10	1,660	1,670
EW 13	N Luzon Exp.	Pax No.	1,020	7,819	8,839
		PCU	2,181	7,865	10,046
EW 14	NLEX	Pax No.	1,008	8,038	9,046
		PCU	2,031	8,141	10,172
EW 15	N Luzon Exp.	Pax No.	1,015	13,931	14,946
		PCU	2,117	14,199	16,316
EW 16	N Luzon Exp.	Pax No.	3,891	37,088	40,979
		PCU	9,339	37,140	46,479
EW 17	R-8 No.1	Pax No.	537	5,978	6,515
		PCU	954	6,008	6,962
EW 18	R-8 No.2	Pax No.	1,321	2,914	4,235
		PCU	3,303	2,912	6,214
Total		Pax No.	38,830	433,413	472,243
		PCU	84,080	435,232	519,312

Source: JICA Study Team

(2) OD

Table 2.10 shows the trip distribution through TPL Ex. Tarlac had the highest traffic as origin, and destination, followed by Pampanga and Metro Manila. Among particular origin-destination pair, trips between Tarlac and Pampanga had the highest traffic.

Table 2.10 Origin and Destination (TPLEX)

(unit: sample)

	Pangasinan	Zambales	Tarlac	Nueva Ecija	Pampanga	Bataan	Bulacan	Manila North	Manila South	Rizal	Laguna	Cavite	Other North	Total
Pangasinan			2,534		1,835			4,959	2,397					11,725
Zambales			6,039											6,039
Tarlac	2,457	1,690	13,656		40,088	2,772	12,170	20,661	7,932			1,704	2,420	105,550
Aurora								65	50	21				136
Nueva Ecija	1,153		1,036		1,718	1,068	310	3,217	1,058	45	575	1,719	280	12,179
Pampanga	632		48,794	3,290	3,426			996					3,470	60,608
Bataan	756		2,091										280	3,127
Bulacan	1,519		6,744											8,263
Manila North	6,815		15,987										1,825	24,627
Manila South			2,502	1,765										4,267
Rizal	350		2,097											2,447
Laguna			364											364
Other North			4,315		996	250	1,544	1,892	2,746					11,743
Total	13,682	1,690	106,159	5,055	48,063	4,090	14,024	31,790	14,183	66	575	3,423	8,275	251,075

Source: JICA Study Team

Table 2.11 shows the trip distribution through SCTEx. Pampanga had the highest traffic as origin, and destination, followed by Tarlac.

Table 2.11 Origin and Destination (SCTEx)

(unit: sample)

	Pangasinan	Zambales	Tarlac	Nueva Ecija	Pampanga	Bataan	Bulacan	Manila North	Manila South	Rizal	Laguna	Cavite	Batangas	Quezon	Other North	Other South	Total
Pangasinan					1,799	1,818	1,791	886									6,294
Tarlac		888	2,325		72,173	903	1,791	11,820			1,804	2,357					94,061
Pampanga	22,948	56,417	418,797	50,569	361,826	52,845	8,547	86,039	46,940	8,572		6,569	883	836	36,424	4,018	1,162,230
Rizal			1,986														1,986
Other North								3,227									3,227
Other South					1,827												1,827
Total	22,948	57,305	423,108	50,569	437,625	55,566	12,129	101,972	46,940	8,572	1,804	8,926	883	836	36,424	4,018	1,269,625

Source: JICA Study Team

Table 2.12 Origin and Destination (NLEx)

(unit: sample)

	Pangasinan	Zambales	Tarlac	Nueva Ecija	Pampanga	Bataan	Bulacan	Manila North	Manila South	Rizal	Laguna	Cavite	Batangas	Quezon	Other North	Other South	Total
Pangasinan					4,252	607	4,895	14,972	11,635				1,542				37,903
Zambales	1,593		2,264		17,565		2,126	13,989	4,096		632	2,240					44,505
Tarlac		165			20,952	1,188	1,556	10,688	5,160	1,654							41,363
Aurora								1,505									1,505
Nueva Ecija		166			4,527	301	5,980	29,342	5,672	651		1,278	379				48,900
Pampanga	5,399	12,563	66,059	3,741	336,971	7,928	30,696	92,514	22,343	1,653	1,471	1,149	2,846		4,354		589,687
Bataan	261		1,060		16,535	554	2,630	11,442	7,218	648	717	1,041					42,106
Bulacan	7,568	7,060	9,544	1,540	76,828	6,249	142,838	261,494	46,070	6,503	3,083	1,011	815	938	7,009	2,165	580,715
Manila North	15,107	6,915	21,351	24,084	75,638	9,208	230,129	4,309		314	192				19,737		406,984
Manila South	10,813	2,569	8,209	11,650	11,248	1,589	38,496								8,527		93,101
Rizal	2,236		794	2,090	1,612	696	7,420		285						2,366		17,499
Laguna			3,181	1,632	3,738		2,581									293	11,425
Cavite	679	734	684	2,065	8,372		3,107								777		16,418
Batangas	2,310		1,377		3,765	803	811										9,066
Quezon								1,358									1,358
Other North					3,884	506	4,767	14,996	13,547		1,668						39,368
Other South		736			803			655									2,194
Total	45,966	30,908	114,523	46,802	586,690	29,629	478,032	457,264	116,026	11,423	7,763	6,719	5,582	938	43,063	2,165	1,984,097

Source: JICA Study Team

Table 2.13 Origin and Destination (SLEx)

(unit: sample)

	Pangasinan	Zambales	Tarlac	Pampanga	Bulacan	Manila North	Manila South	Rizal	Laguna	Cavite	Batangas	Quezon	Other North	Other South	Total
Pangasinan										292					292
Tarlac									223						223
Zambales												235			235
Nueva Ecija									602		555			273	1,430
Pampanga							7				900				907
Bulacan									502	74	840				1,416
Manila North						448			8,314	2,291	4,344	1,715	283	782	18,177
Manila South							53		6,811	1,228	5,257	669		205	14,223
Rizal									692	795	834				2,321
Cavite		94		27		1,259	1,367	331	217	79	680		71		4,125
Laguna	68		50	6	239	2,155	4,041	164	907	145					7,775
Batangas	47				12	982	904	261							2,206
Quezon						449	197	97		88					831
Other North									249		404			237	890
Other South						194	20			247					461
Total	115	94	50	33	251	5,487	6,589	853	18,517	5,239	13,814	2,619	354	1,497	55,512

Source: JICA Study Team

(3) Traffic Characteristics

Table 2.14 shows the characteristics of traffic of the 18 Expressway Cordon Line Survey Stations based on pax traffic, vehicle traffic, PCU traffic, load factor, and peak hour rate. The Main findings are as follows:

- (i) The peak hour rate mainly ranges 5% to 8% while EW9: SCTEX Clark South Interchange shows the highest peak hour rate at 12.2%.

Table 2.14 Characteristics of Traffic

Station	Pax Traffic (pax/day)	Vehicle Traffic (veh./day)	PCU Traffic (pcu/day)	Load Factor (person)	Peak Hour Rate (%)
EW1	234,271	113,642	148,535	1.58	5.2%
EW2	438,015	132,553	163,114	2.69	5.6%
EW3	417,568	99,491	115,213	3.62	6.3%
EW4	14,166	7,127	8,661	1.64	6.4%
EW5	9,832	2,923	3,923	2.51	8.4%
EW6	8,586	2,382	3,014	2.85	7.4%
EW7	191,197	44,972	57,632	3.32	5.8%
EW8	133,727	28,996	37,349	3.58	6.1%
EW9	29,974	4,176	4,599	6.52	12.2%
EW10	30,187	15,947	20,478	1.47	5.9%
EW11	4,919	1,998	2,509	1.96	7.8%
EW12	4,942	2,083	2,105	2.35	12.0%
EW13a	58,556	12,150	16,610	3.53	5.9%
EW13b	54,341	11,914	15,854	3.43	5.6%
EW14	76,128	16,977	20,250	3.76	6.5%
EW15	181,390	56,114	76,547	2.37	5.3%
EW16	27,710	8,306	10,521	2.63	6.9%
EW17	51,304	4,843	7,426	6.91	5.8%
EW18	28,094	10,017	12,258	2.29	5.8%
Total	1,994,907	576,611	726,599	2.75	6.9%

Source: JICA Study Team

3 SCREENLINE SURVEY

3.1. Survey Objectives, Items and Coverage

1) Survey Objectives

The study team engaged a qualified local consultant (hereinafter referred as “the consultant”) to execute the screen line survey.

The screen line survey aims to determine the trips over screen line and calibrate the distributed traffic volume obtained from the existing database. Traffic count and vehicle occupancy surveys were therefore conducted along the screen line to obtain the required data.

2) Survey Items

Vehicular traffic count and vehicle occupancy survey were conducted simultaneously at each survey station.

3) Survey Coverage

Survey stations were on road sections that cross, e.g., Pasig River or railway that pass the screen line. There are 18 survey stations located along bridges, PNR crossings, and other railway bridges. The survey stations are listed in Table 3.1 while locations are indicated in Figure 3.1.

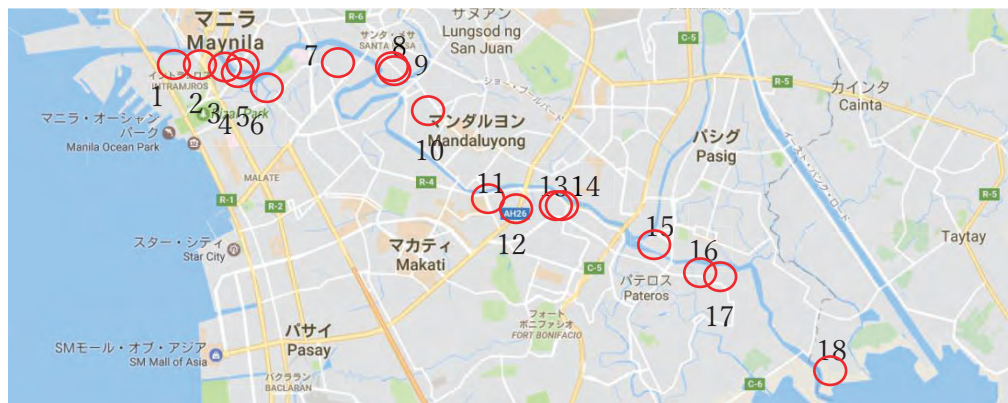
Traffic count and vehicle occupancy surveys were conducted for 24 hours at seven (7) stations and 16 hours at 11 stations. The 16-hour surveys were from 6:00 a.m. to 10:00 p.m. at two 8-hour shifts. The 24-hour surveys had no time constraints, but were conducted at either three 8-hour or two 12-hour shifts. Only the passenger count survey was conducted for the railways.

The surveys were conducted on a regular weekday with no inclement weather.

Table 3.1 List of Screen Line Survey Stations

Screen Line	Seq.	Code No.	Survey Station	Location	Survey Period (hours)	
					Traffic Count	Vehicle Occupancy
East-West Screen (Pasig River)	1	SL01	Roxas Bridge (Del Pan Bridge)	Pasig River – Bonifacio Drive	24	24
	2	SL02	Jones Bridge	Pasig River – Taft Avenue	16	16
	3	SL03	McArthur Bridge	Pasig River – Rizal Avenue	16	16
	4	SL04	Central Terminal Station–Carriedo LRT Station	Between Central Terminal Station and Carriedo LRT Station of LRT Line 1	24	-
	5	SL05	Quezon Bridge	Pasig River – Quezon Boulevard	24	24
	6	SL06	Ayala Bridge	Pasig River – Ayala Boulevard	16	16
	7	SL07	Mabini Bridge	Pasig River – Nagtahan	24	24
	8	SL08	Sta. Mesa Station–Pandacan Station	Between Sta. Mesa Station and Pandacan Station of PNR	16	-
	9	SL09	Pandacan Bridge	Pasig River – Paco-Sta. Mesa Road	16	16
	10	SL10	Lambingan Bridge	Pasig River – New Panaderos	16	16
	11	SL11	Makati-Mandaluyong Bridge	Pasig River – Makati Avenue	16	16
	12	SL12	Estrella-Pantaleon Bridge	Pasig River – Estrella	16	16
	13	SL13	Guadalupe Bridge	Pasig River – EDSA	24	24
	14	SL14	Guadalupe Station–Boni Station	Between Guadalupe Station and Boni Station of MRT Line 3	24	-
	15	SL15	C5 Bridge	Pasig River – C5	24	24
	16	SL16	Bambang Bridge	Pasig River – R. Jabson	16	16
	17	SL17	Arsenio Jimenez Bridge	Pasig River – M. Jimenez	16	16
	18	SL18	Napindan Bridge	Boundary of Pasig City & Taytay (Rizal)	16	16

Source: JICA Study Team



Source: JICA Study Team

Figure 3.1 Locations of Screen Line Survey Stations

3.2. Survey Result

1) Daily Traffic Count

Table 3.2 shows the summary result of the Screen Line Survey of the 18 survey stations listed in Table 3.1 above for MMUTIS, MUCEP, and Roadmap2. It can be seen that survey station 13, Guadalupe Bridge, consistently had the highest total traffic based on the screen line surveys for the three studies. It can also be observed that there are stations that had an increase in screen line traffic as well as stations that had a decrease in screen line traffic and that there seems to be a general redistribution of traffic along the screen lines.

Table 3.2 Screen Line Traffic

Screen Line Stations		MMUTIS			MUCEP			Roadmap2		
		Public	Private	Total	Public	Private	Total	Public	Private	Total
1	Pax No.	44,743	61,614	106,357	1,758	39,767	41,525	12,336	53,599	65,935
	PCU	4,561	29,875	34,436	278	21,647	21,925	1,930	27,471	29,401
2	Pax No.	84,163	76,685	160,848	74,339	62,391	136,730	78,419	46,791	125,210
	PCU	7,605	34,522	42,127	9,061	35,844	44,906	8,406	16,257	24,663
3	Pax No.	205,536	57,102	262,638	131,351	39,091	170,442	55,930	18,753	74,683
	PCU	17,069	22,639	39,708	15,449	18,309	33,758	7,894	8,323	16,217
4	Pax No.	-	-	-	330,353	-	330,353	84,691	-	84,691
	PCU	-	-	-	-	-	-	-	-	-
5	Pax No.	306,005	86,956	392,961	196,741	83,439	280,180	158,107	137,206	295,313
	PCU	24,666	37,068	61,734	24,101	40,687	64,789	16,900	36,099	52,999
6	Pax No.	39,656	84,013	123,669	44,636	50,146	94,782	25,706	32,418	58,124
	PCU	3,041	35,494	38,535	3,891	34,566	38,457	3,297	16,325	19,622
7	Pax No.	56,614	154,446	211,060	15,793	88,515	104,308	11,657	41,730	53,387
	PCU	4,554	67,869	72,422	1,620	51,516	53,136	1,420	20,271	21,691
8	Pax No.	-	-	-	22,673	-	22,673	7,523	-	7,523
	PCU	-	-	-	-	-	-	-	-	-
9	Pax No.	-	-	-	1,446	49,969	51,415	14	35,267	35,281
	PCU	-	-	-	230	29,109	29,339	103	19,140	19,243
10	Pax No.	72,003	55,560	127,563	36,240	37,975	74,215	26,385	36,684	63,069
	PCU	7,035	24,076	31,111	8,471	21,050	29,521	5,627	15,479	21,106
11	Pax No.	3,327	82,335	85,662	1,453	52,068	53,521	0	60,685	60,685
	PCU	399	37,772	38,170	492	35,692	36,185	0	33,426	33,426
12	Pax No.	-	-	-	834	28,653	29,487	0	65,855	65,855
	PCU	-	-	-	238	19,844	20,082	95	36,147	36,242
13	Pax No.	818,217	307,623	1,125,840	497,789	192,213	690,002	1,247,471	255,892	1,503,363
	PCU	37,965	142,360	180,325	34,860	123,807	158,667	69,954	143,689	213,643
14	Pax No.	-	-	-	385,008	-	385,008	83,077	-	83,077
	PCU	-	-	-	-	-	-	-	-	-
15	Pax No.	12,612	101,706	114,318	8,080	238,464	246,544	3,972	375,905	379,877
	PCU	1,575	40,319	41,894	964	119,611	120,575	1,476	198,615	200,091
16	Pax No.	111,481	19,302	130,783	28,337	17,295	45,632	0	18,171	18,171
	PCU	8,828	8,462	17,289	9,787	7,166	16,953	6,152	8,685	14,837
17	Pax No.	-	-	-	2,734	14,488	17,222	878	18,836	19,714
	PCU	-	-	-	1,292	5,261	6,553	695	7,286	7,981
18	Pax No.	-	-	-	329	19,106	19,435	7	18,448	18,455
	PCU	-	-	-	177	8,236	8,412	198	9,997	10,195
Total	Pax No.	1,754,357	1,087,342	2,841,699	1,779,894	1,013,580	2,793,474	1,796,173	1,216,240	3,012,413
	PCU	117,297	480,455	597,752	110,909	572,345	683,255	124,147	597,210	721,357

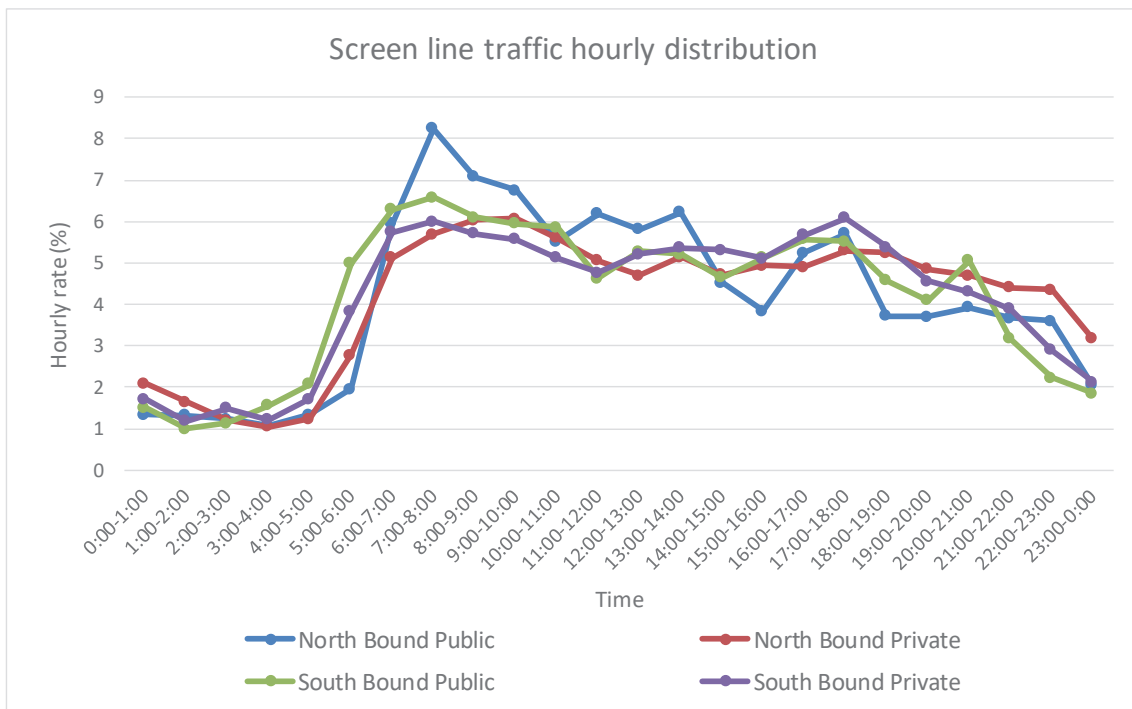
Source: JICA Study Team

2) Hourly Distribution

Table 3.3, Figure 3.2 and Table 3.4 show the hourly distribution of traffic in terms of passenger and pcu for 18 Screen Line Survey Stations for North Bound direction and South Bound direction for both Public and Private vehicles as well as for the total of both Public and Private vehicles.

Main findings are as follows:

- (i) Total traffic volume for both North Bound and South Bound direction starting at 5:00-6:00 up until 21:00-22:00 which indicates that there is no more peak hour period and that traffic volume is high for majority of the day.
- (ii) The figure clearly shows that although the highest traffic volumes are around the hours of 6:00 to 9:00, traffic volume for the rest of the day is consistently high up until 21:00.



Source: JICA Study Team

Figure 3.2 Hourly Distribution (Passenger)

Table 3.4 Hourly Distribution (No. of passenger) (2)

Screen Line Station			No. of Pax by Hourly Period																								Day Total	
Station Code	Direction	Mode	0:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00	23:00-0:00		
14	North Bound	Public	0	0	0	0	0	1,775	1,895	2,351	2,157	2,567	1,987	2,154	2,475	2,182	2,426	3,011	3,811	3,136	2,855	2,751	1,507	395	0	0	0	39,435
		Private	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	1,775	1,895	2,351	2,157	2,567	1,987	2,154	2,475	2,182	2,426	3,011	3,811	3,136	2,855	2,751	1,507	395	0	0	0	39,435
	South Bound	Public	0	0	0	0	0	0	2,947	4,141	3,454	3,063	2,827	2,701	3,255	3,113	2,670	2,606	2,287	2,275	1,844	2,613	2,134	1,712	0	0	0	43,642
		Private	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	4,141	3,454	3,063	2,827	2,701	3,255	3,113	2,670	2,606	2,287	2,275	1,844	2,613	2,134	1,712	0	0	0	0	40,695
15	North Bound	Public	2	0	1	6	5	26	0	0	0	2	96	0	0	0	0	64	417	500	339	0	100	403	6	5	1,972	
		Private	3,734	2,541	1,410	953	1,639	5,674	9,817	9,179	9,235	10,084	8,194	8,351	8,329	8,707	8,443	10,249	9,953	10,750	12,026	10,815	10,959	10,406	10,746	7,187	189,381	
		Total	3,736	2,541	1,411	959	1,644	5,700	9,817	9,179	9,235	10,086	8,290	8,351	8,329	8,707	8,443	10,313	10,370	11,250	12,365	10,815	11,059	10,809	10,752	7,192	191,353	
	South Bound	Public	0	0	2	2	8	29	0	0	0	0	216	0	0	0	0	208	487	367	277	0	180	217	7	0	2,000	
		Private	1,570	1,199	1,313	1,569	2,465	7,799	14,086	14,155	10,630	9,527	9,025	9,053	9,404	11,562	10,937	10,360	10,221	11,591	10,678	8,065	8,039	7,258	3,636	2,382	186,524	
		Total	1,570	1,199	1,315	1,571	2,473	7,828	14,086	14,155	10,630	9,527	9,241	9,053	9,404	11,562	10,937	10,568	10,708	11,958	10,955	8,065	8,219	7,475	3,643	2,382	188,524	
16	North Bound	Public	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Private	177	140	124	110	114	263	314	584	590	581	606	479	360	537	586	561	692	861	1,127	1,040	767	791	469	287	12,160	
		Total	177	140	124	110	114	263	314	584	590	581	606	479	360	537	586	561	692	861	1,127	1,040	767	791	469	287	12,160	
	South Bound	Public	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Private	60	36	34	44	76	204	350	312	258	259	280	141	254	297	344	312	378	482	460	481	334	431	106	78	6,011	
		Total	60	36	34	44	76	204	350	312	258	259	280	141	254	297	344	312	378	482	460	481	334	431	106	78	6,011	
17	North Bound	Public	5	4	3	4	8	9	50	60	117	72	35	24	30	42	28	30	25	51	20	21	0	32	10	6	686	
		Private	140	107	100	92	87	207	358	483	466	469	389	435	364	329	456	488	466	567	781	637	432	440	363	220	8,876	
		Total	145	111	103	96	95	216	408	543	583	541	424	459	394	371	484	518	491	618	801	658	432	472	373	226	9,562	
	South Bound	Public	2	1	1	1	1	3	18	12	29	18	10	9	8	16	8	6	19	15	2	6	0	5	1	1	192	
		Private	97	58	61	71	138	362	422	982	791	709	557	399	375	381	474	428	463	658	604	675	494	437	184	140	9,960	
		Total	99	59	62	72	139	365	440	994	820	727	567	408	383	397	482	434	482	673	606	681	494	442	185	141	10,152	
18	North Bound	Public	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	
		Private	138	110	95	87	84	199	821	1,215	788	548	170	325	161	275	287	282	326	607	568	310	224	157	357	223	8,357	
		Total	138	110	95	87	84	200	821	1,215	788	548	170	325	161	275	287	282	326	607	568	310	224	157	357	224	8,359	
	South Bound	Public	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	0	2	0	0	0	5
		Private	115	69	69	78	144	378	454	603	590	445	198	376	384	391	371	423	644	962	917	911	666	545	205	155	10,091	
		Total	115	69	69	78	144	378	454	603	590	446	198	376	384	393	371	423	644	962	917	911	666	545	205	155	10,096	
Total	North Bound	Public	11,868	12,256	12,024	9,212	11,530	19,026	72,662	106,565	67,620	77,607	69,837	78,692	74,039	74,847	52,286	45,575	72,247	76,332	57,433	57,242	53,235	41,533	36,819	20,103	1,210,590	
		Private	10,494	7,934	6,275	5,535	6,636	15,385	35,187	34,412	37,775	36,636	34,398	31,325	28,801	31,978	29,728	32,019	33,288	38,264	35,489	30,326	27,591	24,559	22,677	15,337	612,049	
		Total	22,362	20,190	18,299	14,747	18,166	34,411	107,849	140,977	105,395	114,243	104,235	110,017	102,840	106,825	82,014	77,594	105,535	114,596	92,922	87,568	80,826	66,092	59,496	35,440	1,822,639	
	South Bound	Public	6,120	3,845	4,878	7,119	9,695	29,151	32,365	39,549	31,942	33,972	36,494	28,174	32,690	30,354	27,852	30,988	38,320	34,748	31,611	27,058	34,365	17,592	8,950	7,751	585,583	
		Private	7,531	4,926	6,234	5,981	8,355	20,456	36,326	39,246	35,896	33,626	30,678	28,379	37,060	32,256	32,692	34,341	35,626	40,059	32,531	27,670	28,326	22,693	13,828	9,475	604,191	
		Total	13,651	8,771	11,112	13,100	18,050	49,607	68,691	78,795	67,838	67,598	67,172	56,553	69,750	62,610	60,544	65,329	73,946	74,807	64,142	54,728	62,691	40,285	22,778	17,226	1,189,774	

Source: JICA Study Team

Table 3.6 Hourly Distribution (pcu) (2)

Screen Line Station			PCU by Hourly Period																							Day Total				
Station Code	Direction	Mode	0:00-1:00	1:00-2:00	2:00-3:00	3:00-4:00	4:00-5:00	5:00-6:00	6:00-7:00	7:00-8:00	8:00-9:00	9:00-10:00	10:00-11:00	11:00-12:00	12:00-13:00	13:00-14:00	14:00-15:00	15:00-16:00	16:00-17:00	17:00-18:00	18:00-19:00	19:00-20:00	20:00-21:00	21:00-22:00	22:00-23:00		23:00-0:00			
14	North Bound	Public	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		Private	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	South Bound	Public	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Private	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
		Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	North Bound	Public	5	0	3	19	16	69	48	55	26	54	20	16	22	8	20	30	50	84	56	26	26	48	17	16	16	734		
		Private	2,317	1,688	736	542	801	2,908	3,965	4,115	4,610	4,779	4,547	4,614	4,411	4,502	4,570	5,504	5,336	5,251	5,891	5,727	6,306	6,070	6,288	4,451	99,929			
		Total	2,322	1,688	739	561	817	2,977	4,013	4,170	4,636	4,833	4,567	4,630	4,433	4,510	4,590	5,534	5,386	5,335	5,947	5,753	6,332	6,118	6,305	4,467	100,663			
	South Bound	Public	0	0	5	5	23	82	65	85	22	20	25	17	22	28	31	57	55	48	46	26	35	27	18	0	742			
		Private	895	773	786	761	1,029	3,742	6,586	5,931	5,669	5,182	4,997	4,732	4,917	5,793	6,086	5,655	6,066	6,638	5,921	4,257	4,618	4,248	2,084	1,320	98,686			
		Total	895	773	791	766	1,052	3,824	6,651	6,016	5,691	5,202	5,022	4,749	4,939	5,821	6,117	5,712	6,121	6,686	5,967	4,283	4,653	4,275	2,102	1,320	99,428			
16	North Bound	Public	39	35	23	34	66	78	225	235	261	195	194	208	147	189	211	207	192	173	192	169	187	160	87	52	3,559			
		Private	112	90	78	66	71	161	160	230	288	316	282	265	223	274	281	256	300	352	368	350	454	384	272	182	5,815			
		Total	151	125	101	100	137	239	385	465	549	511	476	473	370	463	492	463	492	525	560	519	641	544	359	234	9,374			
	South Bound	Public	42	23	27	31	18	66	185	135	161	151	114	92	112	164	163	142	176	176	179	109	152	137	21	17	2,593			
		Private	46	28	26	30	46	116	159	128	129	140	141	106	158	162	165	144	186	206	143	137	172	181	69	52	2,870			
		Total	88	51	53	61	64	182	344	263	290	291	255	198	270	326	328	286	362	382	322	246	324	318	90	69	5,463			
17	North Bound	Public	7	5	4	5	10	12	33	44	48	31	36	21	30	27	20	20	25	39	26	27	31	23	13	8	545			
		Private	67	51	46	40	40	92	136	153	173	187	160	180	156	142	174	200	167	194	236	209	161	204	158	105	3,431			
		Total	74	56	50	45	50	104	169	197	221	218	196	201	186	169	194	220	192	233	262	236	192	227	171	113	3,976			
	South Bound	Public	3	1	1	1	1	4	15	9	12	8	10	8	8	10	5	4	18	12	3	8	3	4	1	1	150			
		Private	54	32	33	35	62	156	162	295	264	262	218	156	159	150	164	157	175	234	213	278	229	208	89	70	3,855			
		Total	57	33	34	36	63	160	177	304	276	270	228	164	167	160	169	161	193	246	216	286	232	212	90	71	4,005			
18	North Bound	Public	1	0	0	0	1	4	8	13	7	3	1	4	1	3	8	4	9	10	6	4	1	1	1	4	94			
		Private	86	71	57	51	49	115	417	569	380	317	90	189	82	162	192	172	177	275	262	180	127	90	202	139	4,451			
		Total	87	71	57	51	50	119	425	582	387	320	91	193	83	165	200	176	186	285	268	184	128	91	203	143	4,545			
	South Bound	Public	1	1	1	1	0	3	4	7	3	6	7	4	3	9	3	5	8	7	1	12	13	4	1	0	104			
		Private	87	52	52	53	85	218	209	282	289	225	108	240	207	247	241	267	360	461	430	518	368	303	137	107	5,546			
		Total	88	53	53	54	85	221	213	289	292	231	115	244	210	256	244	272	368	468	431	530	381	307	138	107	5,650			
Total	North Bound	Public	1,048	1,026	971	843	1,049	1,523	4,665	6,452	5,552	5,289	4,326	4,844	4,553	4,868	3,540	3,013	4,108	4,468	2,912	2,904	3,075	2,868	2,819	1,594	78,310			
		Private	6,508	5,114	3,701	3,261	3,825	8,635	15,932	17,719	18,784	18,869	17,439	15,742	14,609	15,969	14,676	15,330	15,241	16,480	16,335	15,062	14,615	13,711	13,538	9,835	310,930			
		Total	7,556	6,140	4,672	4,104	4,874	10,158	20,597	24,171	24,336	24,158	21,765	20,586	19,162	20,837	18,216	18,343	19,349	20,948	19,247	17,966	17,690	16,579	16,357	11,429	389,240			
	South Bound	Public	688	455	518	716	950	2,284	2,888	3,014	2,800	2,725	2,686	2,125	2,417	2,390	2,130	2,353	2,555	2,528	2,096	1,881	2,320	1,450	1,022	846	45,837			
		Private	4,899	3,368	4,251	3,491	4,914	10,928	16,465	17,192	16,367	15,952	14,691	13,644	14,905	15,379	15,234	14,642	16,266	17,403	15,412	13,033	12,331	11,138	8,299	6,076	286,280			
		Total	5,587	3,823	4,769	4,207	5,864	13,212	19,353	20,206	19,167	18,677	17,377	15,769	17,322	17,769	17,364	16,995	18,821	19,931	17,508	14,914	14,651	12,588	9,321	6,922	332,117			

Source: JICA Study Team

3) Traffic Characteristics

Table 3.7 shows the characteristics of traffic of the 18 Screen Line Survey Stations based on pax traffic, vehicle traffic, PCU traffic, load factor, and peak hour rate.

The Main findings are as follows:

- (i) Guadalupe Bridge had the highest Pax traffic and Load factor (7.59) among all screen line survey stations and C5 Bridge had the highest vehicle traffic and PCU traffic. it can be considered that Guadalupe Bridge had the highest traffic volume for public transport vehicles, and C5 Bridge had the highest volume of private vehicles.
- (ii) The peak hour rate ranges 7% to 9% and the highest peak hour rate was observed at the PNR Screen Line Survey Station at 13.4%.

Table 3.7 Traffic Characteristics

Station	Pax Traffic (pax/day)	Vehicle Traffic (veh./day)	PCU Traffic (pcu/day)	Load Factor (person)	Peak Hour Rate (%)
1.Roxas Bridge	107,105	60,881	50,444	1.76	7.9%
2.Jones Bridge	131,436	31,350	25,776	4.19	9.2%
3.McArther Bridge	76,731	19,524	17,135	3.93	7.8%
4.LRT1	84,691	-	-	-	8.4%
5.Quezon	298,813	53,470	55,277	5.59	7.9%
6.Ayala	63,949	25,930	21,044	2.47	9.2%
7.Mabini	65,350	32,777	30,829	1.99	7.2%
8.PNR	7,523	-	-	-	13.4%
9.Pandacan Bridge	36,847	28,672	20,999	1.29	7.0%
10.Lambingan bridge	65,229	28,751	22,030	2.27	6.7%
11.Makati-Mandaluyong Bridge	78,347	57,060	42,685	1.37	10.1%
12.Estrella-Pantaleon Bridge	65,882	41,385	37,012	1.59	6.5%
13.Guadalupe Bridge	1,504,713	198,317	217,356	7.59	8.1%
14.MRT3	83,077	-	-	-	7.3%
15.C5 Bridge	416,970	259,903	237,172	1.60	6.0%
16.Bambang Bridge	23,547	21,335	16,905	1.10	8.5%
17.Arsenio Jimenez Bridge	40,570	24,353	12,949	1.67	7.5%
18.Napindan Bridge	23,552	20,154	15,234	1.17	8.9%
Total	3,174,332	903,862	822,847	Ave. 3.32	13.4%

Source: JICA Study Team

4 PUBLIC TRANSPORT SURVEY

4.1. Survey Objectives, Items and Coverage

1) Survey Objectives

The study team engaged a qualified local consultant (hereinafter referred as “the consultant”) to execute the public transport user survey.

This survey aims to calibrate the distributed traffic volume obtained from the existing database. An OD interview survey was therefore conducted at public transport terminals of buses, jeepneys, tricycles, UV Express/HOVs, and railway stations to obtain the required data.

2) Survey Items

An OD interview survey (e.g., origin and destination, purpose, cargo, etc.) were conducted simultaneously at each survey station.

3) Survey Coverage

Listed in Table 4.1 are the survey stations with survey duration and expected number of samples while the locations are shown in Figure 4.1. The 16-hour interview survey was conducted at ten (10) stations from 6:00 a.m. to 10:00 p.m. at two 8-hour shifts. The surveys were conducted on a regular weekday under good weather conditions.

Table 4.1 List of Public Transport User Survey Stations and No. of Tentative Samples

Seq.	Code	Survey Station	Number of Tentative Samples ^{1/}						Survey Period (hours)	
			Tricycle	Taxi	Jeepney	Bus	UV/ HOV	Railway		Total
1	PT 01	Dau Terminal	150		200	150			500	16
2	PT 02	San Fernando Terminal			200	150	150		500	16
3	PT 03	Trinoma Terminal		100	100	100	100	100	500	16
4	PT 04	Cubao Terminal		100	100	100	100	100	500	16
5	PT 05	Sampaloc Terminal	125		125	125		125	500	16
6	PT 06	Pasay Terminal	80	80	90	80	80	90	500	16
7	PT 07	Bicutan Terminal			200	150		150	500	16
8	PT 08	Alabang Terminal	100		100	100	100	100	500	16
9	PT 09	Ballibago Terminal	100		100	100	100	100	500	16
10	PT 10	Calamba Terminal	100		100	100	100	100	500	16

Source: JICA Study Team

^{1/} No. of samples per public transport mode should be in proportion with the ratio of total No. of public transport vehicles by modes.



Source: JICA Study Team

Figure 4.1 Locations of public transport User Survey Stations

4.2. Survey Results

1) No. of Samples per Survey Station by Time

Table 4.2 shows the number of samples collected per Survey Station by Time within the targeted 16-hour survey period. Relatively large samples started being collected from 6:00 and have consistently been collected up until around the time-period 21:00-22:00.

Table 4.2 No. of Samples per Survey Station by Time

Time Period of Interview		Survey Stations										Share by Period (%)	
		PT1	PT2	PT3	PT4	PT5	PT6	PT7	PT8	PT9	PT10		Total
Morning	0:00-1:00	0	2	0	3	0	0	1	0	4	2	12	0.2
	1:00-2:00	0	1	0	0	0	0	0	0	0	0	1	0.0
	2:00-3:00	0	0	0	0	0	0	0	0	0	0	0	0.0
	3:00-4:00	3	0	0	0	0	0	0	0	0	0	3	0.1
	4:00-5:00	0	0	0	0	0	0	1	0	16	7	24	0.5
	5:00-6:00	0	0	0	0	0	0	0	0	0	6	6	0.1
	6:00-7:00	17	31	27	23	26	29	32	28	34	26	273	5.4
	7:00-8:00	35	32	46	28	24	32	50	29	35	43	354	7.0
	8:00-9:00	35	34	44	27	35	31	42	34	34	36	352	6.9
	9:00-10:00	37	28	40	28	30	29	37	28	24	33	314	6.2
	10:00-11:00	34	34	39	26	23	32	34	31	29	24	306	6.0
11:00-12:00	36	29	29	22	29	30	17	32	34	33	291	5.7	
Afternoon	12:00-13:00	14	22	2	19	39	22	15	28	12	8	181	3.6
	13:00-14:00	44	23	38	16	34	25	31	29	23	22	285	5.6
	14:00-15:00	67	34	74	38	27	48	35	22	44	33	422	8.3
	15:00-16:00	34	38	50	23	29	31	48	32	40	44	369	7.3
	16:00-17:00	27	36	36	25	31	27	42	27	35	66	352	6.9
	17:00-18:00	24	25	39	34	29	39	41	44	35	36	346	6.8
Evening	18:00-19:00	28	31	37	35	21	33	33	40	31	57	346	6.8
	19:00-20:00	29	37	35	41	34	28	21	38	37	24	324	6.4
	20:00-21:00	37	29	24	35	32	31	11	26	17	16	258	5.1
	21:00-22:00	35	35	15	24	33	21	7	12	16	30	228	4.5
	22:00-23:00	0	16	0	2	0	14	2	0	0	2	36	0.7
	23:00-0:00	0	0	0	0	0	0	0	0	0	0	0	0
Total		536	517	575	449	476	502	500	480	500	548	5,083	100

Source: JICA Study Team

2) Willingness to Pay for Travel Time Reduction

Table 4.3 shows the result for Willingness to pay PHP15 for 10 minutes reduction in travel time from origin to terminal. Trinoma Terminal (PT03) and Cubao Terminal (PT04) had the most number of 100% yes responses regarding willingness to pay PHP15 for 10 minutes reduction in travel time from origin to terminal.

Table 4.3 % of yes to pay PHP15 for 10 minutes reduction (from origin to terminal)

Region	PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08	PT09	PT10
	Dau (Angeles)	San Fernando	Trinoma	Cubao	Sampaloc	Pasay	Bicutan	Alabang	Balibago	Calamba
Pampanga	83%	67%	100%	40%	0%	67%	0%	100%	-	-
Tarlac	88%	100%	-	100%	-	-	-	-	-	-
Nueva Ecija	100%	79%	0%	0%	-	-	100%	-	-	-
Zambales	82%	67%	-	100%	-	-	-	-	-	-
Aurora	-	-	-	100%	-	-	-	-	-	-
Bataan	-	-	-	-	-	-	-	-	-	-
Bulacan	86%	75%	90%	56%	0%	100%	100%	33%	-	50%
MM north	76%	76%	70%	45%	45%	54%	81%	52%	33%	88%
MM south	82%	75%	85%	62%	50%	54%	51%	53%	37%	70%
Rizal	-	-	88%	46%	100%	-	0%	-	100%	100%
Cavite	100%	-	100%	0%	100%	44%	0%	48%	52%	67%
Laguna	-	-	100%	67%	-	-	33%	52%	61%	55%
Batangas	100%	-	-	0%	-	-	100%	50%	75%	71%
Quezon	-	-	-	100%	-	-	-	67%	0%	20%
Pangasinan	70%	100%	-	100%	-	50%	-	-	-	-
North Other	90%	-	100%	25%	-	-	-	75%	100%	0%
South Other	90%	70%	100%	67%	100%	100%	-	100%	-	-

Source: JICA Study Team

Table 4.4 shows the result for Willingness to pay PHP15 for 10 minutes reduction in travel time from terminal to the destination. Dau (Angeles) Terminal (PT01) had the most number of 100% yes responses. However, Sampaloc Terminal (PT05) had relatively low yes % with only 3 regions having more than 50% yes.

Table 4.4 %of yes PHP 15 for 10 minutes reduction (from terminal to destination)

Region	PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08	PT09	PT10
	Dau (Angeles)	San Fernando	Trinoma	Cubao	Sampaloc	Pasay	Bicutan	Alabang	Balibago	Calamba
Pampanga	82%	67%	80%	0%	54%	-	-	-	-	-
Tarlac	76%	50%	-	-	50%	-	50%	-	-	100%
Nueva Ecija	50%	80%	63%	0%	-	-	100%	-	-	-
Zambales	100%	86%	-	0%	-	100%	-	100%	-	-
Aurora	-	-	-	-	-	-	-	-	-	-
Bataan	-	-	-	-	-	-	-	-	-	-
Bulacan	100%	72%	80%	100%	40%	67%	83%	25%	100%	-
MM north	86%	70%	72%	48%	43%	44%	61%	36%	66%	65%
MM south	93%	50%	78%	36%	68%	56%	47%	51%	64%	58%
Rizal	100%	100%	68%	55%	40%	67%	75%	0%	75%	67%
Cavite	67%	-	-	-	83%	59%	71%	60%	34%	38%
Laguna	-	-	-	0%	50%	-	69%	49%	56%	58%
Batangas	100%	-	-	57%	-	88%	50%	71%	67%	50%
Quezon	-	-	-	57%	-	-	-	62%	-	56%
Pangasinan	85%	100%	-	0%	67%	-	-	0%	100%	-
North Other	80%	83%	100%	25%	43%	-	50%	0%	43%	-
South Other	100%	50%	100%	39%	100%	47%	-	71%	100%	-

Source: JICA Study Team

3) Walking Distance to the Terminal

Table 4.5 shows the average walking distance to the terminal in minutes from the origin. The main findings are as follows:

- (i) Walking distances in minutes range from 2 minutes to 30 minutes.
- (ii) Cubao Terminal (PT04) had the highest walking distance to railway station of 30 minutes which comes from the Cavite region.

Table 4.5 Average Walking Distance (minutes) from Origin to Terminal

Region	PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08	PT09	PT10
	Dau (Angeles)	San Fernando	Trinoma	Cubao	Sampaloc	Pasay	Bicutan	Alabang	Balibago	Calamba
Pampanga	7	11	11	8	15	10	-	5	-	-
Tarlac	8	8	-	13	-	-	-	-	-	-
Nueva Ecija	9	17	0	11	-	-	2	-	-	-
Zambales	8	10	-	8	-	-	-	-	-	-
Aurora	-	-	-	5	-	-	-	-	-	-
Bataan	-	-	-	-	-	-	-	-	-	-
Bulacan	6	12	7	10	20	3	5	8	-	8
MM north	9	10	8	10	8	8	11	7	7	9
MM south	7	8	7	11	8	8	7	8	10	5
Rizal	-	-	6	14	11	-	5	-	18	5
Cavite	5	-	10	30	8	9	10	12	7	4
Laguna	-	-	5	10	-	-	5	6	10	7
Batangas	5	-	-	5	-	-	0	6	24	5
Quezon	-	-	-	30	-	-	-	8	10	6
Pangasinan	8	10	-	15	-	4	-	-	-	-
North Other	9	-	5	9	-	-	-	7	10	6
South Other	7	10	5	8	20	15	-	15	-	-

Source: JICA Study Team

Table 4.6 shows the walking distance from terminal to destination in minutes. The main findings are as follows:

- (i) As well as access distance, the average walking distances in minutes range from 2 minutes to 30 minutes.
- (ii) San Fernando Terminal (PT03) and Cubao Terminal (PT04) had the highest walking distance to railway station of 30 minutes which comes from the Rizal and Pampanga regions, respectively.

Table 4.6 Average Walking Distance (minutes) from Terminal to Destination

Region	PT01	PT02	PT03	PT04	PT05	PT06	PT07	PT08	PT09	PT10
	Dau (Angeles)	San Fernando	Trinoma	Cubao	Sampaloc	Pasay	Bicutan	Alabang	Balibago	Calamba
Pampanga	7	11	11	30	9	-	-	-	-	-
Tarlac	8	9	-	-	9	-	5	-	-	5
Nueva Ecija	10	11	9	10	-	-	2	-	-	-
Zambales	8	9	-	20	-	10	-	10	-	-
Aurora	-	-	-	-	-	-	-	-	-	-
Bataan	-	-	-	-	-	-	-	-	-	-
Bulacan	5	12	8	20	7	10	16	9	15	-
MM north	7	8	8	11	7	9	7	9	9	9
MM south	10	11	7	8	9	9	7	8	9	9
Rizal	5	30	9	11	9	8	5	8	8	7
Cavite	10	-	-	-	11	7	15	8	11	4
Laguna	-	-	-	5	11	-	11	8	12	6
Batangas	5	-	-	6	-	7	8	8	9	8
Quezon	-	-	-	9	-	-	-	9	-	6
Pangasinan	8	5	-	5	10	-	-	5	5	-
North Other	8	17	10	11	8	-	6	5	7	-
South Other	13	11	5	9	14	10	-	9	15	-

Source: JICA Study Team

5 CLARK INTERNATIONAL AIRPORT SURVEY

5.1. Survey Objectives, Items and Coverage

1) Objectives

The study team engaged a qualified local consultant (hereinafter referred as “the consultant”) to execute the Clark international Airport (CIA) Survey.

The survey aims to determine trips to and from the airport made by residents living inside or outside the survey area and calibrate the distributed traffic volume obtained from existing database. Surveys were conducted on the airport gates and the terminals.

2) Survey Items

The CIA Survey consists of four surveys:

- (i) traffic count;
- (ii) vehicle occupancy; and,
- (iii) OD Interview of airport users (air passengers, well-wisher/greeters/visitors, and airport workers).

3) Survey Coverage

The survey was conducted at the passenger and cargo terminals of CIA. Location of survey stations are as follows:

- (i) A 24-hour traffic count survey was conducted at five (5) stations at/around CIA from 6:00 a.m. to 6:00 a.m. the next day.
- (ii) A 24-hour vehicle occupancy survey was conducted at three (3) stations at/around CIA from 6:00 a.m. to 6:00 a.m. the next day.
- (iii) A 16-hour interview survey was conducted at six (6) stations at/around CIA from 6:00 a.m. to 10:00 p.m.

The survey stations including survey duration are listed in Table 5.1 while the locations are shown in Figure 5.1. The surveys were conducted on a regular weekday under good weather condition.

Table 5.1 List of CIA traffic Survey Stations

Seq.	Code	Survey Station	Survey Period (hours)		
			Traffic Count	Vehicle Occupancy	OD Interview
1	CK 01	Arrival gate	24	-	-
2	CK 02	Arrival lobby	-	-	16
3	CK 03	Departure gate	24	-	-
4	CK 04	Departure lobby	-	-	16
5	CK 05	Parking 1	-	-	16
6	CK 06	Parking 2	-	-	16
7	CK 07	Vehicle gate	24	24	-
8	CK 08	Clark international airport corporation	24	24	16
9	CK 09	Cargo gate	24	24	16

Source: JICA Study Team



Source: JICA Study Team

Figure 5.1 Locations of CIA Traffic Survey Stations

5.2. Survey Results

1) Nationality of Samples

Table 5.2 shows the distribution of nationality of the collected samples by Air Pax, Well-wishers, Workers, and Others. The main findings are as follows:

- (i) Filipinos had the highest share for all categories.
- (ii) For Air Pax, Americans followed Filipino with a total number of 161.
- (iii) For Well-wisher, Canadians followed Filipino with a total number of 138.

Table 5.2 Nationality of Samples

Nationality	Air Pax	Well-wisher	Workers	Others	Total
Filipino	5,490	5,469	1,425	2,207	14,679
American	161	60	0	87	308
British	14	25	0	0	39
Chinese	14	3	0	7	25
Fil-American	21	52	0	0	73
Fil-Canadian	33	17	0	0	50
Canadian	78	138	0	11	227
Fil-Israel	21	0	0	0	21
Australian	7	4	0	0	11
Indian	31	23	0	7	61
No Answer	4	0	0	0	4

Source: JICA Study Team

2) Origin or Destination of Airport Users

Table 5.3 shows the number of passengers per day from Origin to Airport. The main findings are as follows:

- (i) For Filipino Air Pax, Pampanga had the highest number of pax/day (188) followed by Tarlac (184) and Pangasinan (149).
- (ii) For Foreign Air Pax, only 2 regions had Air Pax surveyed namely, Pampanga (56) and Bulacan (2).
- (iii) Pampanga, Pangasinan, and Tarlac also had the highest number of well-wishers with 422, 342, and 162 pax/day, respectively.
- (iv) Pampanga also had the highest number of worker pax/day.
- (v) Generally, Pampanga had the highest rate of Total pax/day with 45.2% of the Total samples.

Table 5.3 From Origin to Airport (unit: passenger/day)

Region	Air Pax		Well-wisher	Workers	Others	Total	Rate
	Filipino	Foreigner					
Pampanga	188	56	422	524	441	1,630	45.2%
Tarlac	184	0	162	53	176	575	15.9%
Nueva Ecija	42	0	74	2	75	193	5.4%
Zambales	18	0	20	0	0	38	1.1%
Aurora	0	0	0	0	0	0	0.0%
Bataan	0	0	0	0	0	0	0.0%
Bulacan	44	2	118	1	1	166	4.6%
MM north	24	0	53	8	4	89	2.5%
MM south	13	0	13	0	0	26	0.7%
Rizal	2	0	5	0	0	7	0.2%
Cavite	0	0	0	0	0	0	0.0%
Laguna	5	0	4	0	0	8	0.2%
Batangas	0	0	0	0	0	0	0.0%
Quezon	0	0	0	0	0	0	0.0%
Pangasinan	149	0	342	0	5	496	13.8%
North Other	89	0	119	1	19	228	6.3%
South Other	63	0	11	78	1	152	4.2%
Total	822	57	1,342	667	723	3,610	100%

Source: JICA Study Team

Table 5.4 shows the number of passengers per day from Destination to Airport. The main findings are as follows:

- (i) For Filipino Air Pax, Pampanga had the highest number of pax/day (1,322) followed by North Other (623), and Pangasinan (595).
- (ii) For Foreigner Air Pax, Pamapanga still had the highest number of pax/day (141) followed by Tarlac (66), and Pangasinan (56).
- (iii) Pamapanga also had the highest number of well-wishers (1,260) followed by Tarlac (962), and Pangasinan (475).

Table 5.4 From Destination to Airport (unit: passenger/day)

Region	Air Pax		Well-wisher	Workers	Others	Total	Rate
	Filipino	Foreigner					
Pampanga	1,322	141	1,260	649	890	4,263	36.1%
Tarlac	473	66	962	40	168	1,707	14.5%
Nueva Ecija	247	0	255	3	87	591	5.0%
Zambales	125	14	106	13	15	273	2.3%
Aurora	0	0	0	0	0	0	0.0%
Bataan	0	0	0	0	0	0	0.0%
Bulacan	266	13	152	9	59	499	4.2%
MM north	339	0	316	9	52	716	6.1%
MM south	131	0	72	0	0	204	1.7%
Rizal	126	4	39	0	14	183	1.6%
Cavite	0	0	0	0	0	0	0.0%
Laguna	0	0	31	0	5	36	0.3%
Batangas	0	0	0	0	0	0	0.0%
Quezon	4	0	4	0	0	7	0.1%
Pangasinan	595	56	475	0	109	1,235	10.5%
North Other	623	21	451	5	85	1,186	10.1%
South Other	417	13	325	31	113	899	7.6%
Total	4,668	327	4,449	759	1,596	11,800	100%

Source: JICA Study Team

3) Trip Purpose

Table 5.5 shows the Trip Purpose results of the Clark International Airport Survey. The main findings are as follows:

- (i) For Filipino air passenger, trip purpose of Pleasure (1,825) and To Home (1,707) were the two highest number, followed by OFW: Overseas Foreign Worker (648) and Friends/Relatives (501).
- (ii) For Foreigner air Passenger trip, the highest trip purpose was To Home (230) followed by Pleasure (74), and To Work (66).
- (iii) As for the Total of all categories, To Home (5,584) had the highest pax/day followed by To Work (3,045), and Pleasure (2,857).

Table 5.5 No. of Airport Users by Trip Purpose (unit: passenger/day)

Purpose	Air Pax		Well-wisher	Workers	Others	Total
	Filipino	Foreigner				
1.Pleasure	1,825	74	704	11	242	2,857
2.Friends/Relatives	501	1	427	0	87	1,017
3.Convention/	122	0	117	0	5	244
4.OfficialMission	123	0	13	0	9	145
5.Health/Medical	1	0	6	0	1	8
6.OFW	648	7	1,285	15	211	2,165
7.To home	1,707	230	2,095	664	888	5,584
8.To Work	401	66	991	735	851	3,045
9.Business	93	7	39	0	7	146
10.Religion	7	0	14	0	0	20
11.Others	56	0	100	0	18	173
12.No answer	5	0	1	0	0	7
Total	5,490	385	5,791	1,425	2,320	15,410

Source: JICA Study Team

4) Reason to Use CIA

Table 5.6 shows the results of the survey asking the Reason to use Clark International Airport (CIA). The main findings are as follows:

- (i) For Filipino air Passenger, Short travel time had the highest pax/day (1,961) followed by Convenient flight schedule (803), Cheap travel cost (704), and Less transfer to go to airport (698).
- (ii) Comfort flight waiting area was the lowest (227) among the specific choices which indicates that there is room for improvement about the comfort in flight waiting areas.
- (iii) For foreign air Passenger, Short travel time (288) also had the highest pax/day followed by Less transfer to go to airport (47).

Table 5.6 Reason to Use CIA (unit: passenger/day)

	Air Pax		Well-wisher	Workers	Others	Total
	Filipino	Foreigner				
1.Short travel time	1,961	288	2,438	14	735	5,436
2.Cheap travel cost	704	7	489	0	59	1,259
3.Less transfer to go to airport	698	47	621	4	130	1,499
4.Convenient flight schedule	803	17	658	20	225	1,723
5.Cheap flight cost	314	11	281	0	54	660
6.Less crowded terminal	459	15	701	15	173	1,363
7.Comfort flight waiting area	227	0	296	0	71	594
8.Others	244	0	183	1,373	858	2,659
9.No answer	80	0	124	0	14	218
Total	5,490	385	5,791	1,425	2,320	15,410

Source: JICA Study Team

5) Willingness to Pay for Travel Time Reduction

Table 5.7 shows the willingness to pay for each trip purpose at PHP/10min. The main findings are as follows:

- (i) Samples came to the Airport for Religion had the highest willingness to pay at PHP 125.0/10min, followed by Official/ Mission (PHP98.1/10min), Business (PHP 62.4/10min).
- (ii) The lowest willingness to pay was for Convention which was at PHP 6.9/10min.

Table 5.7 Willingness to Pay for 10 minutes Reduction in Travel Time

Trip Purpose	Willingness to Pay (PHP/10min)
1.Pleasure	38.6
2.Friends/Relatives	47.9
3.Convention	6.9
4.OfficialMission	98.1
5.Health/Medical	27.8
6.OFW	30.1
7.To home	34.0
8.To Work	48.0
9.Business	62.4
10.Religion	125.0
11.Others	27.3
Total	38.7

Source: JICA Study Team

6) Walkable Distance to Railway Station

Metro Manila North-South Commuter Railway (NSCR) is on-going. Table 5.8 shows the result of the average walkable distance to/from the NSCR station from/to CIA for each trip purpose. The main findings are as follows:

- (i) Samples came to the Airport for Official/ Mission had the longest willingness to walk at 16.7 min, followed by Friends/Relatives (10.5 min), To Work (10.4 min).
- (ii) The lowest willingness to work was for Religion which was at 5.0 min.

Table 5.8 Walkable Distance to Railway Station

Trip Purpose	Willingness to Walk (mins)
1.Pleasure	8.0
2.Friends/Relatives	10.5
3.Convention	7.2
4.OfficialMission	16.7
5.Health/Medical	9.0
6.OFW	7.6
7.To home	9.2
8.To Work	10.4
9.Business	10.1
10.Religion	5.0
11.Others	8.1
Total	9.1

Source: JICA Study Team

7) Travel Mode

Table 5.9 shows the distribution of samples by travel mode used for CIA. The main findings are as follows:

- (i) For both Filipino and foreign air passenger, Private vehicle mode had the highest number at 4,492 and 327 respectively.
- (ii) Also for Well-wisher, Workers, and Others, Private vehicle mode also had the highest counts.
- (iii) For Filipino air passenger, Bus was the mode with the second most number with 960 followed by Jeepney at 695.
- (iv) For foreign air passenger, Bus was also second at 34 followed by Jeepney at 24.
- (v) Notable is the large number of count for Well-wishers for private at 5,120, Jeepney at 627, and Bus at 505.

Given the high share of private vehicles for accessing CIA, consideration must be put for parking areas. Based on the share, private vehicles dominate the traffic mode followed by either Bus or Jeepney. Thus adequate parking and improved transfers from other public transport mode must be considered.

Table 5.9 Travel Mode

		Air Pax		Well-wisher	Workers	Others	Total
		Filipino	Foreigner				
No. of Passengers/day	Non-Motorized Vehicle	126	0	148	118	13	405
	Motorcycle	1	0	1	276	16	299
	Private	4,492	327	5,120	310	1,608	11,924
	Jeepney	695	24	627	1,292	114	2,751
	Bus	960	34	505	288	120	1,907
	Taxi	126	6	67	0	22	222
	Truck	0	0	0	0	0	16
	Other	58	0	5	123	553	739
	Total	6,458	391	6,473	2,407	2,447	18,263
Modal Share by Type of Airport Users	Non-Motorized Vehicle	2%	0%	2%	5%	1%	2%
	Motorcycle	0%	0%	0%	11%	1%	2%
	Private	70%	84%	79%	13%	66%	65%
	Jeepney	11%	6%	10%	54%	5%	15%
	Bus	15%	9%	8%	12%	5%	10%
	Taxi	2%	2%	1%	0%	1%	1%
	Truck	0%	0%	0%	0%	0%	0%
	Other	1%	0%	0%	5%	23%	4%
	Total	100%	100%	100%	100%	100%	100%

Source: JICA Study Team

6 PORT TRAFFIC SURVEY

6.1. Survey Objectives, Items and Coverage

1) Objective

To update the traffic and transport database of study area, the study team engaged a qualified local consultant (hereinafter referred as “the consultant”) to execute the port traffic survey.

The port traffic survey aims to determine the trips to and from industrial establishments/parks and seaports made by other warehouse, logistics terminals, and so forth; and to calibrate the distributed traffic volume obtained from the existing database. To obtain this data, the origin–destination (OD) interview, traffic count, vehicle occupancy, and logistics interview surveys were conducted at the main logistics terminals and seaports.

2) Survey Items

The following surveys were conducted simultaneously at each survey station:

- (i) vehicular traffic count;
- (ii) vehicle occupancy;
- (iii) OD interview (e.g. origin and destination, purpose, freight, etc.); and,

3) Survey Coverage

The survey stations with survey duration are listed in Table 6.1 while the locations are shown in Figure 6.1 and Figure 6.2. The 24-hour traffic count, 16-hour vehicle occupancy, and OD interview surveys were conducted at 12 stations at the seaport terminals and industrial parks; while 16-hour traffic count, vehicle occupancy, and OD interview surveys were conducted for the remaining five (5) stations. Surveys at the 16-hour sites were from 6:00 a.m. to 10:00 p.m. at two 8-hour shifts while the 24-hour surveys were conducted at three 8-hour or two 12-hour shifts.

Table 6.1 List of Port Traffic Survey Stations

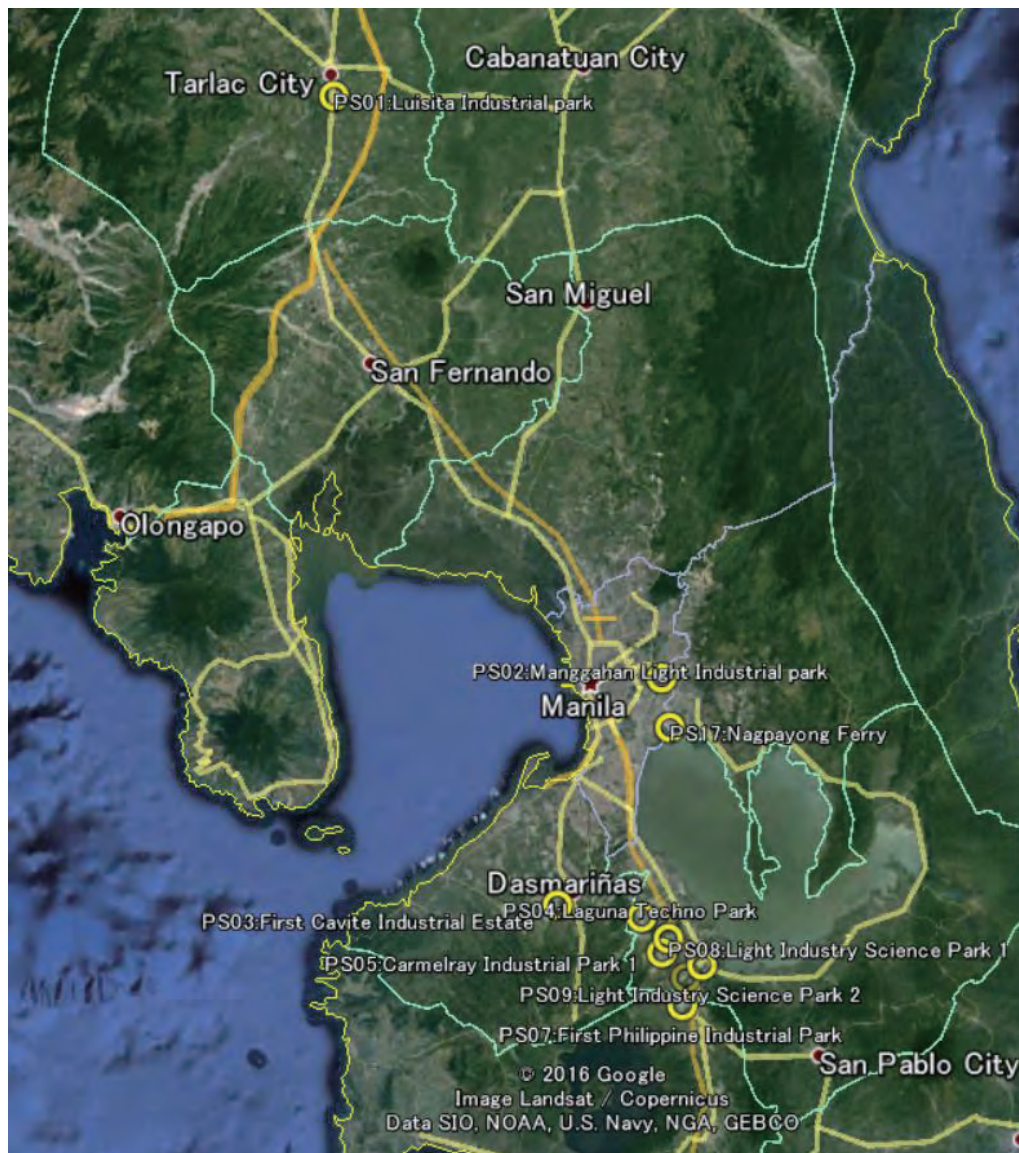
Seq.	Code	Survey Station	No. of Survey Station	Survey Period (hours)		
				Traffic Count	Vehicle Occupancy	OD Interview
1	PS 01 ^{2/}	Luisita Industrial Park	2	24	16	16
2	PS 02 ^{2/}	Manggahan Light Industrial Park	1	24	16	16
3	PS 03	First Cavite Industrial park	4	24	16	16
4	PS 04 ^{2/}	Laguna Techno Park	4	24	16	16
5	PS 05	Carmelray Industrial Park 1	4	24	16	16
6	PS 06	Carmelray Industrial Park 2	2	24	16	16
7	PS 07	First Philippine Industrial Park	2	24	16	16
8	PS 08	Light Industry Science Park1	1	24	16	16
9	PS 09	Light Industry Science Park2	1	24	16	16
10	PS 10	Ferry Terminal Pier2	1 ^{1/}	24	16	16
11	PS 11	Ferry Terminal Pier12	1 ^{1/}	24	16	16
12	PS 12	Ferry Terminal Pier15	1 ^{1/}	24	16	16

Seq.	Code	Survey Station	No. of Survey Station	Survey Period (hours)		
				Traffic Count	Vehicle Occupancy	OD Interview
13	PS 13	Escolta River Ferry	1 ^{1/}	16	16	16
14	PS 14	Pureza PUP Ferry	1 ^{1/}	16	16	16
15	PS 15	Lambingan Ferry	1 ^{1/}	16	16	16
16	PS 16	Hulo Ferry	1 ^{1/}	16	16	16
17	PS 17	Nagpayong Ferry	1 ^{1/}	16	16	16

Source: JICA Study Team

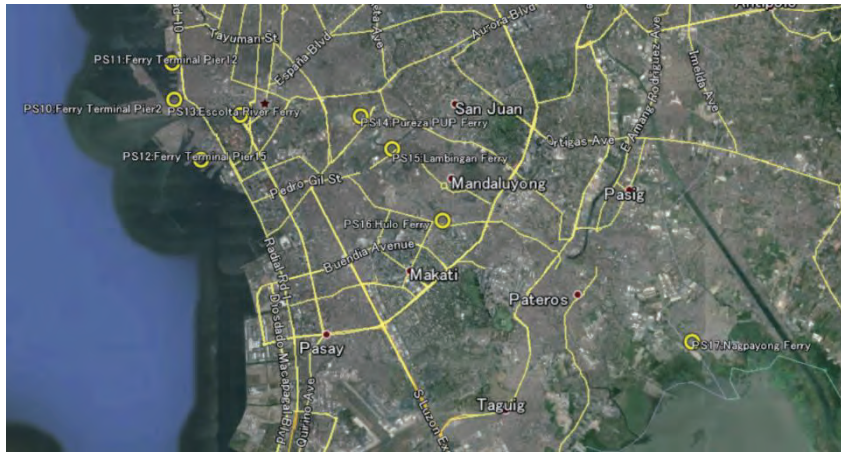
1/ No. of survey station might be more than one to capture all traffic.

2/ For PS01, PS02, and PS04, it failed because the Industrial Parks refused to give permission



Source: JICA Study Team

Figure 6.1 Locations of Port Traffic Survey Stations (1)



Source: JICA Study Team

Figure 6.2 Locations of Port Traffic Survey Stations (2)

6.2. Survey Results

1) Vehicle Traffic Count to/from Port

Table 6.2 shows the PCU vehicle traffic to/from Port for each mode and the % of Total PCU for each mode, respectively, of each survey stations of the Port Survey. Based on the summarized results of the Port Survey,

- (i) Station 5 (Carmelray Industrial Park 1) had the highest Total PCU traffic at 19,100 PCU and almost half (48%) are Car/Jeep/Vans/SUV followed by Trucks (2 axle) (14%) and Trucks (>2 axle) (14%).
- (ii) It was also noted that for Stations 6 (Carmelray Industrial Park 2), 7 (First Philippine Industrial Park), 9 (Light Industry Science Park), and 12 (Ferry Terminal Pier15), the majority of PCU traffic is Car/Jeep/Vans/SUV.
- (iii) Station 11 (Ferry Terminal Pier12) had the highest Truck (>2 axle) PCU traffic with 8,084 PCU which is 75% of the Total PCU of Station 11.
- (iv) Furthermore, it was also observed that there were considerable Motorcycle and Delivery Van/Pick up traffic for all survey stations with Station 5 having the highest Motorcycle and Delivery Van/Pick up PCU traffic.

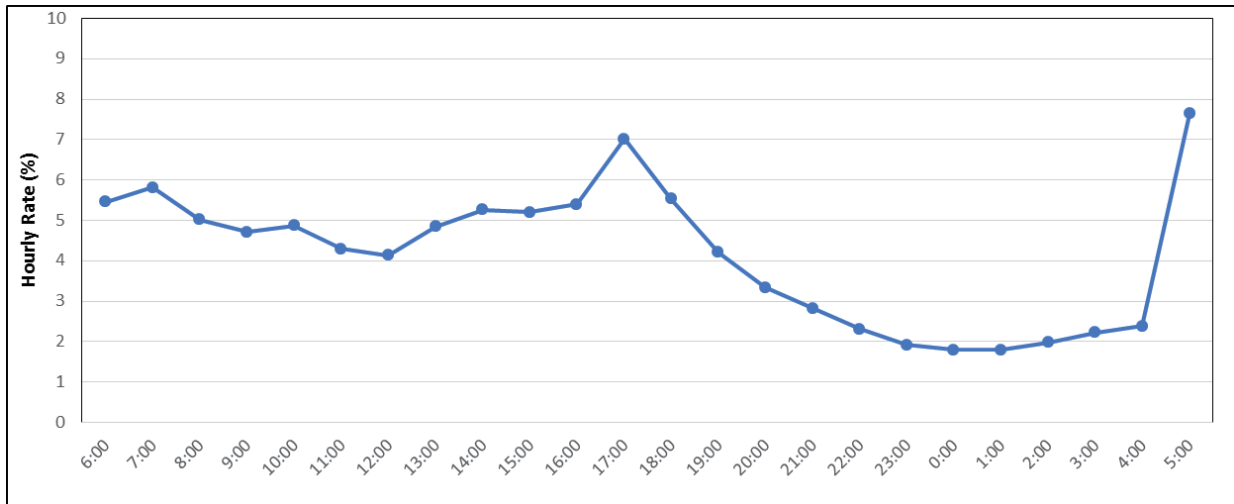
Table 6.2 Vehicle Traffic Count to/from Port (PCU)

Station	Daily Traffic Count (PCU / day)					Share by Vehicle Type (%)				
	Bicycle / MOC	Jeepney /Bus	Car / Taxi	Truck / Others	Total	Bicycle / MOC	Jeepney /Bus	Car / Taxi	Truck / Others	Total
3	1,156	55	2,290	2,098	5,599	20.6	1.0	40.9	37.5	100
5	2,158	1,424	9,218	6,300	19,100	11.3	7.5	48.3	33.0	100
6	347	362	2,932	1,500	5,141	6.7	7.0	57.0	29.2	100
7	1,053	788	8,421	3,843	14,105	7.5	5.6	59.7	27.2	100
8	1,475	626	3,342	2,335	7,778	19.0	8.0	43.0	30.0	100
9	322	40	3,001	660	4,023	8.0	1.0	74.6	16.4	100
10	595	121	1,583	3,504	5,803	10.3	2.1	27.3	60.4	100
11	680	53	925	9,172	10,830	6.3	0.5	8.5	84.7	100
12	426	4	1,671	276	2,377	17.9	0.2	70.3	11.6	100
Total	8,212	3,473	33,383	29,688	74,756	11.0	4.6	44.7	39.7	100

Source: Study Team

2) Hourly Distribution of Traffic to/from Port

Figure 6.3 shows the Hourly Distribution of Traffic to/from Port in PCU. There is a rise in PCU traffic during the early morning (~5:00).



Source: JICA Study Team

Figure 6.3 Hourly Distribution (PCU)

3) Foot Traffic at Ferry Terminal

Table 6.3 shows the Total Foot Traffic at survey stations that had a Ferry Terminal for passengers. Station 15 (Hulo Ferry) had the highest number of Foot Traffic at 16 pedestrians recorded while the other Ferry Terminals had almost negligible number of pedestrian traffic.

Table 6.3 Total Foot Traffic at Ferry Terminals

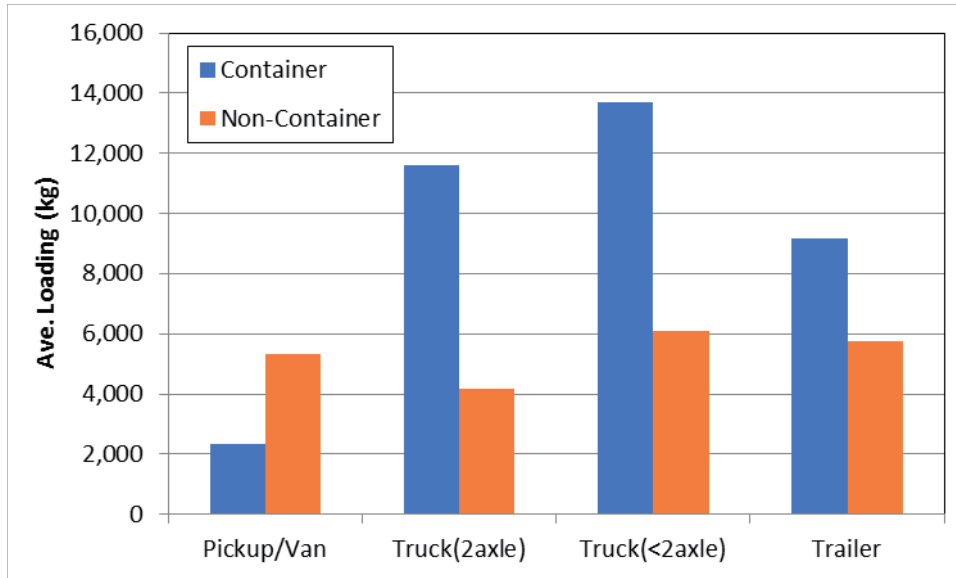
Seq.	Survey Station	Pedestrian
13	Escolta River Ferry	0
14	Pureza PUP Ferry	3
15	Lambingan Ferry	16
16	Hulo Ferry	1
17	Nagpayong Ferry	8

Source: JICA Study Team

4) Loading of Vehicles to/from Port Facilities

Figure 6.4 shows the average loading of vehicles to/from the port facilities by vehicle type, which were estimated based on the loading capacity and occupancy rate obtained from interview survey. The main findings are as follows:

- (i) Expect for pickup/van type vehicles, container vehicles shows higher loading amount than of non-container vehicles.
- (ii) Container Truck (<2 axle) shows the highest loading amount, followed by Container Truck (2 axle) and Container Trailer.



Source: JICA Study Team

Figure 6.4 Average Loading at Port Facilities by Vehicle Type

REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC DEVELOPMENT AUTHORITY (NEDA)

**FOLLOW-UP SURVEY ON
ROADMAP FOR TRANSPORT INFRASTRUCTURE
DEVELOPMENT
FOR GREATER CAPITAL REGION (GCR)**

**TECHNICAL REPORT 2
PROJECT PROFILE**

August 2019

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ALMEC Corporation

PP
JR
19-003

**REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC DEVELOPMENT AUTHORITY (NEDA)**

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JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ALMEC Corporation

1. List of Updated Roadmap Projects

Category	ID	Project Name	Cost (PHP bil.)	Funding	Implementing Agency	Schedule	Status
Railway	R1	North South Commuter Rail	149	ODA	DOTr	2016-2021	DED
	R2	PNR North 2	284	ODA/GOP/PPP	DOTr	2018-2024	Loan Agreement Signed
	R3	PNR South Commuter	345	ODA/GOP/PPP	DOTr	2018-2021	Loan Agreement Signed
	R4	PNR Commuter Rail System Operations and Maintenance	0.10	GAA	DOTr	2017-2022	ICC Evaluation, RDC Approval
	R5	Cargo Rail Line	10.0		Private		
	R6	Mega Manila Subway	356	ODA/GOP/PPP	DOTr	2017-2022	Loan Agreement Signed
	R7	LRT Line 1 Cavite Extension and Operation & Maintenance	64.9	ODA/PPP	DOTr	2017-2021	Pre-construction
	R8	LRT-1 North Extension	15.9	TBD	DOTr		Implementation
	R10	LRT Rehabilitation Projects	7.1	GAA	DOTr	2011-2019	Procurement
	R11	LRT Line 2 East (Masinag) Extension Project	9.8	GOP/ODA	DOTr	2015-2019	Implementation
	R12	Acquisition of Four (4) New Train Sets	2.1	GAA	DOTr	2018-2020	
	R13	LRT-2 East Extension (Phase II)	80.5	ODA	DOTr	Medium to Long Term	
	R14	LRT Line 2 West Extension	10.1	GOP	DOTr	2016-2019	Procurement
	R15	MRT 3 Capacity Expansion Project	8.6	GOP	DOTr	2012-2019	Implementation
	R16	MRT-3 Extension - South and West	68.6	Local	DOTr	Medium to Long Term	
	R17	MRT-3 Extension - North	68.6	Local	DOTr	Medium to Long Term	
	R18	LRT Line 4 Project	85.0	PPP	DOTr	2018-2024	F/S
	R19	Metro Manila Line 5	302	PPP	DOTr(PNR)	2018-2023	F/S
	R20	LRT Line 6	64.7	PPP	DOTr		ICC Evaluation, Unsolicited
	R21	MRT Line7	62.7	PPP	DOTr	2016-2020	Implementation
	R22	Unified Common Station	2.8	GOP/PPP	DOTr	2017-2019	Procurement
	R23	Secondary Railway (Marikina, Pasig, Alabang, Cavite)	70.5				
	R24	Comprehensive LRT/MRT Business/Commercial Development Plan/Roadmap	0.004	GAA	DOTr	2018-2019	
	R25	Performance Testing and Evaluation of Prototype Train Set	0.02	GAA	DOST	2017-2017	DED
	R26	Deploying DOST Hybrid Electric Road Train as a Mass Transport System in Urban Areas	0.19	GAA	DOST	2018-2019	
	R27	System Expansion of the 120 Passenger per Coach Capacity Automated Guide-way Transit System	0.01	GAA	DOST	2017-2017	DED
	R28	Testing for the Standardization and Optimization of Hybrid Road Train – Phase III	0.02	GAA	DOST	2017-2017	DED
	R29	Development of a Commercial Prototype Automated Guide-way Transit System in UP Diliman	0.02	GAA	DOST	2017-2017	
	R30	Development of Pilot Commercial Model Train Set	0.25	GAA	DOST	2018-2020	DED
	Road-Based Public Transport	PT1	PUV Route Rationalization Study – Metro Manila	0.07	GAA	DOTr	2017-2017
PT2		South Integrated Transport System Project	4.0	PPP	DOTr	2016-2019	
PT3		Southwest Integrated Transport System (ITS) Project	3.2	PPP	DOTr	2015-2018	Implementation
PT4		Integrated Transport System-North Terminal Project	4.0	PPP	DOTr	2017-2021	Project Dev't
PT5		NAIA Intermodal Terminal	2.0	PPP	DOTr	2019-2022	Pre-F/S
PT6		Metro manila Bus Rapid Transit – Line 1 (Quezon Avenue BRT)	4.8	GOP/ODA	DOTr	2016-2021	DED
PT7		Metro manila Bus Rapid Transit – Line 2 (Central Corridor)	37.8	ODA/PPP	DOTr	2017-2019	Loan negotiation
PT8		Metro Manila BRT – Line 3 (C-5)	31.2	ODA	DOTr	2017-2022	
PT9		Metro Manila BRT Line 4 – Roxas Blvd	19.9	ODA	DOTr	2017-2022	Project Dev't
PT10		BGC to NAIA Bus Rapid Transit (BRT) System	21.9		BCDA	2016-2021	Project Dev't
PT11		BRT Greenways	4.0	TBD	DOTr	2018-2022	

Follow-up Survey on Roadmap for Transport Infrastructure Development for Greater Capital Region (GCR)

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Category	ID	Project Name	Cost (PHP bil.)	Funding	Implementing Agency	Schedule	Status
	PT12	Ortigas Greenways	0.60	TBD	DOTr	2018-2020	Pre-F/S
	PT13	Public Transport Information Management Center	0.05	GAA	DOTr	2016-2018	F/S
	PT14	Public Transport Facility Improvement Project	0.02	PPP	DOTr	2019-2022	Pre-F/S
Traffic Management	TM1	Installation of Intelligent Transport System (Traffic Signal System Upgrading and Communication and Monitoring System)	10.0	GAA	MMDA		Implementation
	TM2	Comprehensive Traffic and Transport Management Study/Plan for Metro Manila	-	Others	MMDA	2017-2019	Implementation
Expressway	E1	NLEX Harbor Link, Segment 10	9.0	PPP	DPWH		ROW Acquisition
	E2	Skyway Stage 3	37.4	PPP	DOTr(TRB)	2015-2018	Construction
	E3	NLEX-SLEX Connector Road Project	23.3	PPP	DPWH	2017-2021	Review of DED
	E4	CAVITEX - C-5 - San Jose Del Monte (Bulacan)	92.7	Local/PPP	DPWH	Medium Term	
	E5	Pasay - Makati - BGC Expressway	66.6				Unsolicited/For Evaluation of DPWH
	E6	Sta. Mesa - Pasig (Shaw Boulevard) R-4 Expressway	23.4	Local/PPP	DPWH	Medium Term	
	E8	Metro Manila Expressway Project (C-6)	45.0		DOTr(TRB)	2018-2020	ROW Acquisition
	E9	Laguna Lakeshore Expressway Dike	76.0	PPP	DPWH	2020-2025	Evaluation of Bid Doc.
	E10	North Luzon Expressway (SJ Del Monte-Cabanatuan-San Jose)	44.6	TBD	DPWH	Medium Term	
	E11	Arterial Road Bypass Project Phase II (ARBP II)	3.7	ODA	DPWH	2018-2022	ROW Acquisition
	E12	Plaridel Bypass Phase III	5.3	GAA	DPWH	2018-2020	(Varying stages)
	E13	C6 North Section	4.3	Local/PPP	DPWH	Medium Term	
	E14	Cavite-Laguna Expressway	35.7	PPP	DPWH	2015-2020	Construction
	E15	CAVITEX Extension West to Rosario	12.7	TBD	DPWH	Medium Term	
	Bridge/Flyover	B1	Metro Manila Interchange Construction Project Phase VI (MMICP IV)	4.0	ODA	DPWH	2015-2019
B2		C-2 (Gov. Forbes St.)/R-7 (España St.) Interchange Project	2.6	GAA	DPWH	2018-2019	Implementation (ECC?)
B3		Ortigas Avenue - Santolan Road Interchange Project	0.60	GAA	DPWH	2018-2020	F/S
B4		EDSA-Taft Flyover	0.70	GAA	DPWH	2018-2020	ECC
B5		Gil Puyat Avenue/Makati Avenue-Paseo de Roxas Vehicles Underpass Project	1.1	GAA	DPWH	2015-2018	Work Suspension
B6		Metro Manila Priority Bridges Seismic Improvement Project (MMPBSIP)	4.3	ODA	DPWH	2016-2021	ROW Acquisition
B7		Pasig River-Marikina River-Manggahan Floodway Bridges Construction Project	33.4	ODA	DPWH	2020-2023	NEDA Board Approval
B8		Bonifacio Global City to Ortigas Road Link Project, Sta. Monica-Lawton Bridge and Viaduct (Phase I & II-A)	5.7	GAA	DPWH	2012-2020	Procurement
Urban Road	UR1	Circumferential Road 3 (C-3), Southern Segment from N. Domingo St. in San Juan City to Buendia Avenue in Makati City	10.5	GAA	DPWH	2020-2023	Pre-F/S
	UR2	C-5 Kalayaan-Bagong Ilong Improvement Project	8.5	GAA	DPWH	2016-2016	For NEDA Approval
	UR3	C.P. Garcia (C-5) SLEX to Coastal Road, Zapote Bound Coastal Service Road	0.10	GAA	DPWH	2017-2017	DED
	UR5	Widening of C-6	0.25	GAA	DPWH	2017-2018	DED
	UR6	C-6 Napindan-ML Quezon Ave	0.64	GAA	DPWH	2016-2018	DED
	UR7	C-6 Taguig Pateros	0.03	GAA	DPWH	2017-2017	DED
	UR8	By-Pass Road (Marcos Highway to JP Rizal St)	0.14	GAA	DPWH	2017-2018	DED
	UR9	Taguig Diversion Road to Elizco By-Pass Road (via Visitacion Street) incl. ROW	0.05	GAA	DPWH	2017-2017	DED
	UR10	Navotas/ Malabon/ Valenzuela Package	23.9	TBD	DPWH	Medium to Long Term	
	UR11	Marikina Package	8.7	TBD	DPWH	Medium to Long Term	
	UR12	Ortigas Avenue	8.9	TBD	DPWH	Medium	

Follow-up Survey on Roadmap for Transport Infrastructure Development for Greater Capital Region (GCR)

FINAL REPORT

Technical Report 2: Project Profile

Category	ID	Project Name	Cost (PHP bil.)	Funding	Implementing Agency	Schedule	Status
						Term	
	UR13	Amang Rodriguez Av. & Pres. Manuel Quezon	9.9	TBD	DPWH	Long Term	
	UR14	Alabang-Zapote Areas	0.27	TBD	DPWH	Medium to Long Term	
	UR15	Marcos-Alvares Road	0.18	GAA	DPWH	2016-2017	F/S
	UR16	Improvement/Widening of General Luis Road Project	2.9	GAA	DPWH	2017-2019	DED
	UR17	Pullilan-Baliuag Diversion Road, incl. Bridge	0.78	GAA	DPWH	2015-2017	F/S
	UR18	Candaba – San Miguel Bypass Road	0.39	GAA	DPWH	2016-2018	DED
	UR19	Western Bulacan Connector	0.39	GAA	DPWH	2017-2021	DED
	UR20	Marcos Highway	4.0	TBD	DPWH	Medium to Long Term	
	UR21	Jct. Batasan-San Mateo-Rodriguez By-pass Link Road, Phase III & IV, incl. ROW	1.5	GAA	DPWH	2014-2018	F/S
	UR22	Calamba Local Area Roads Package	0.4	TBD	DPWH	Medium Term	
	UR23	Bucal Bypass Road incl. Bride Widening	0.20	GAA	DPWH	2014-2017	DED
	UR24	Alaminos-San Pablo City Bypass incl. ROW and Bridge	1.0	GAA	DPWH	2016-2020	F/S
	UR25	Rosario Package	4.0	TBD	DPWH	Long Term	
	UR26	General Aguinaldo-Magallanes-Nasugbu Road (East-West Road) Section III, Magallanes-General Aguinaldo-Maragondon Section	1.5	GAA	DPWH	2015-2021	DED
	UR27	Malagasang-Bucandala-Alapan Road incl. ROW	0.40	GAA	DPWH	2016-2018	DED
	UR28	General Aguinaldo-Magallanes-Nasugbu Road (East-West Road), Amadeo Section	0.20	GAA	DPWH	2016-2020	DED
	UR29	General Aguinaldo-Magallanes-Nasugbu Road (East-West Road) Section II, Indang-Silang Section	0.80	GAA	DPWH	2016-2021	F/S
	UR30	Kaykulot Road connecting Tagaytay-Calamba Road to Sta Rosa Ulat Tagaytay Road	0.40	GAA	DPWH	2018--2020	F/S
Airport	A1	Sanglay Airport Development Project	0.71	GAA	DOTr	2017-2017	For ICC Review
Maritime	M1	MAPALLA Ferry System Project (Pasig River Ferry Operation Component)	5.6	GAA	DOTr	2018-2018	For ICC Review
	M2	Design and Development of an Inter-Island Maine Vessel	0.02	GAA	DOST	2018-2020	R&D with Philippine Navy
	M3	Brgy. Lumbac	0.01	GAA	DOTr	2020-2020	For ocular inspection
	M4	Construction of Maragondon Port	0.01	GAA	DOTr	2018-2018	



Figure 1 Location of Railway Projects

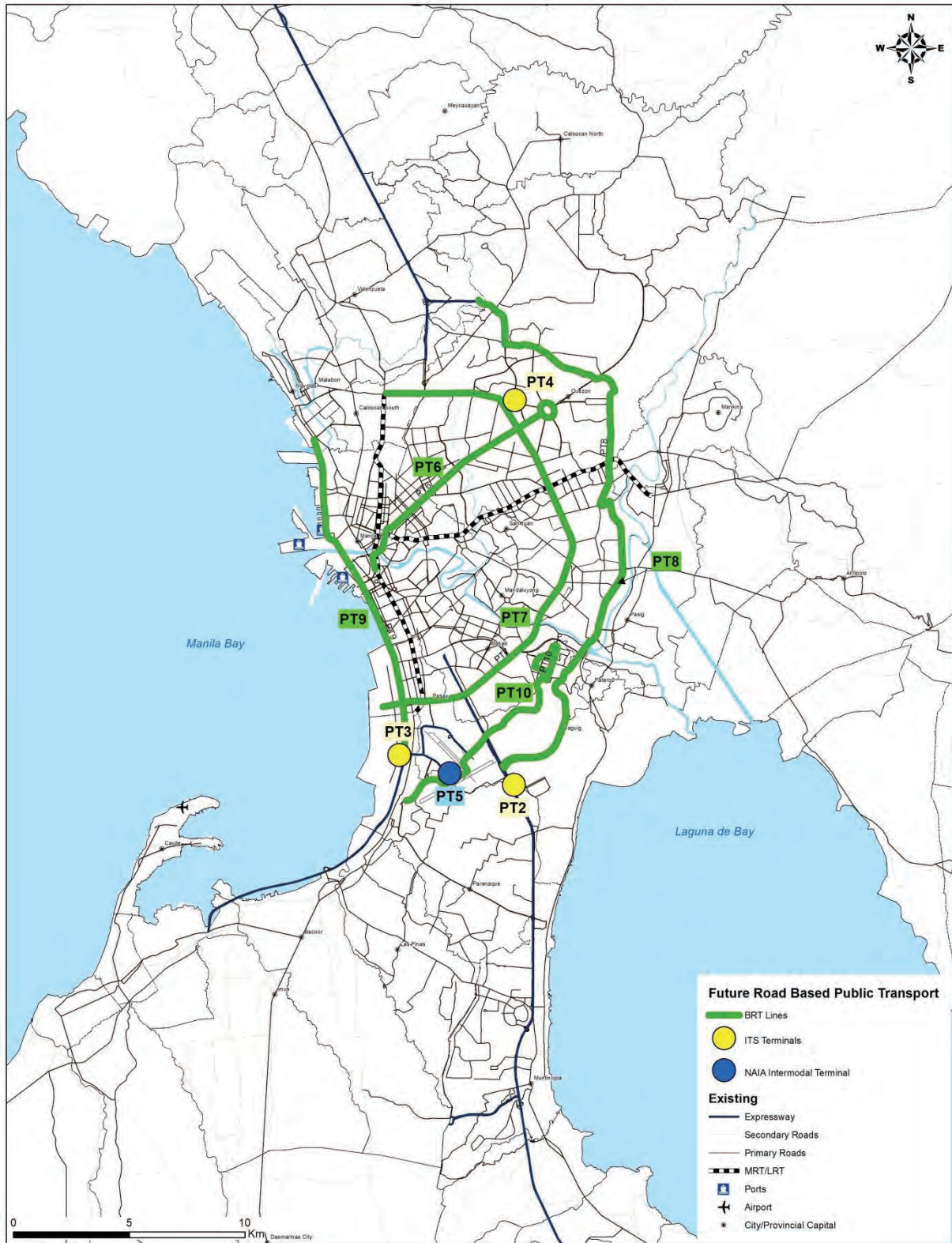


Figure 2 Location of Road-based Public Transport Projects

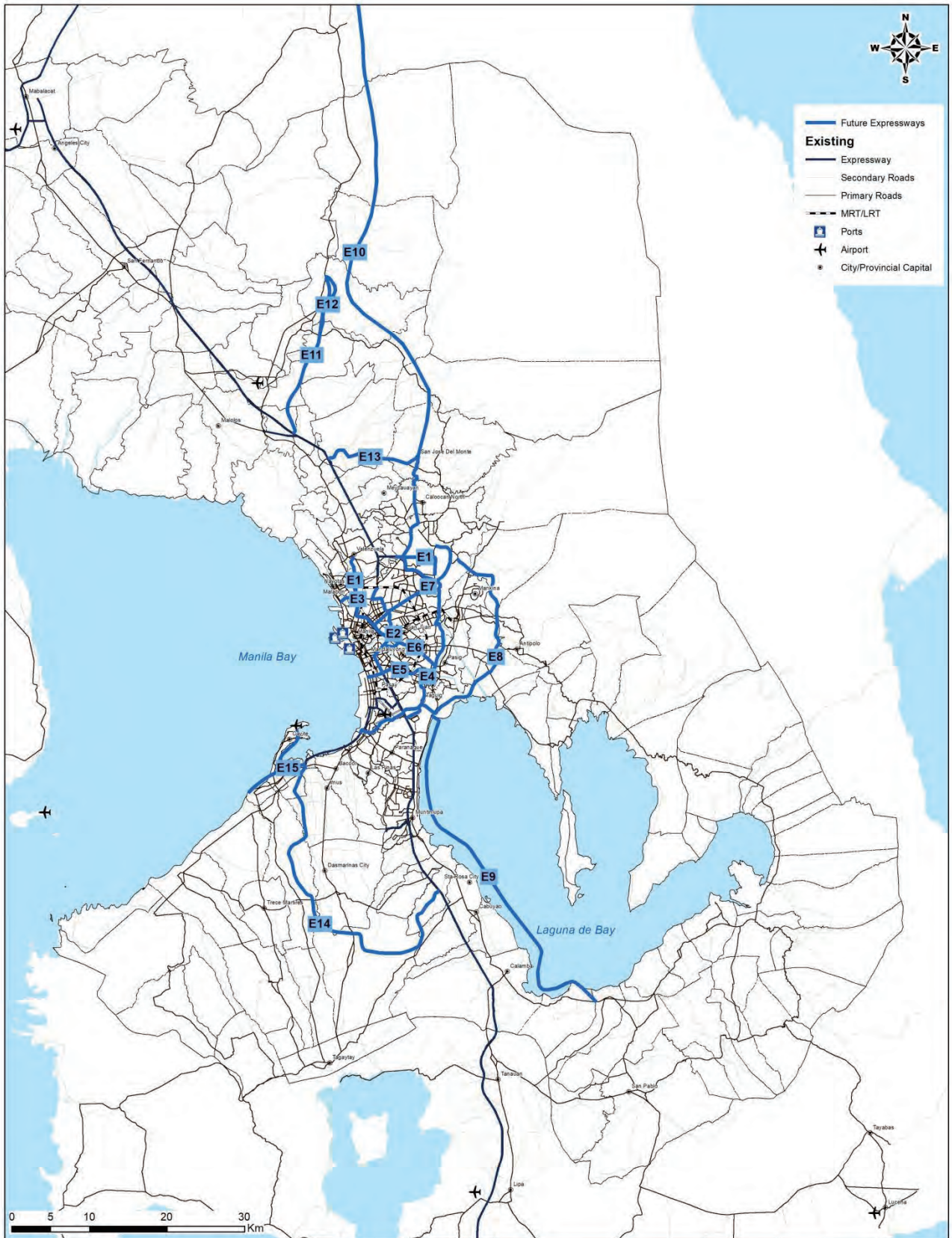


Figure 3 Location of Expressway Projects

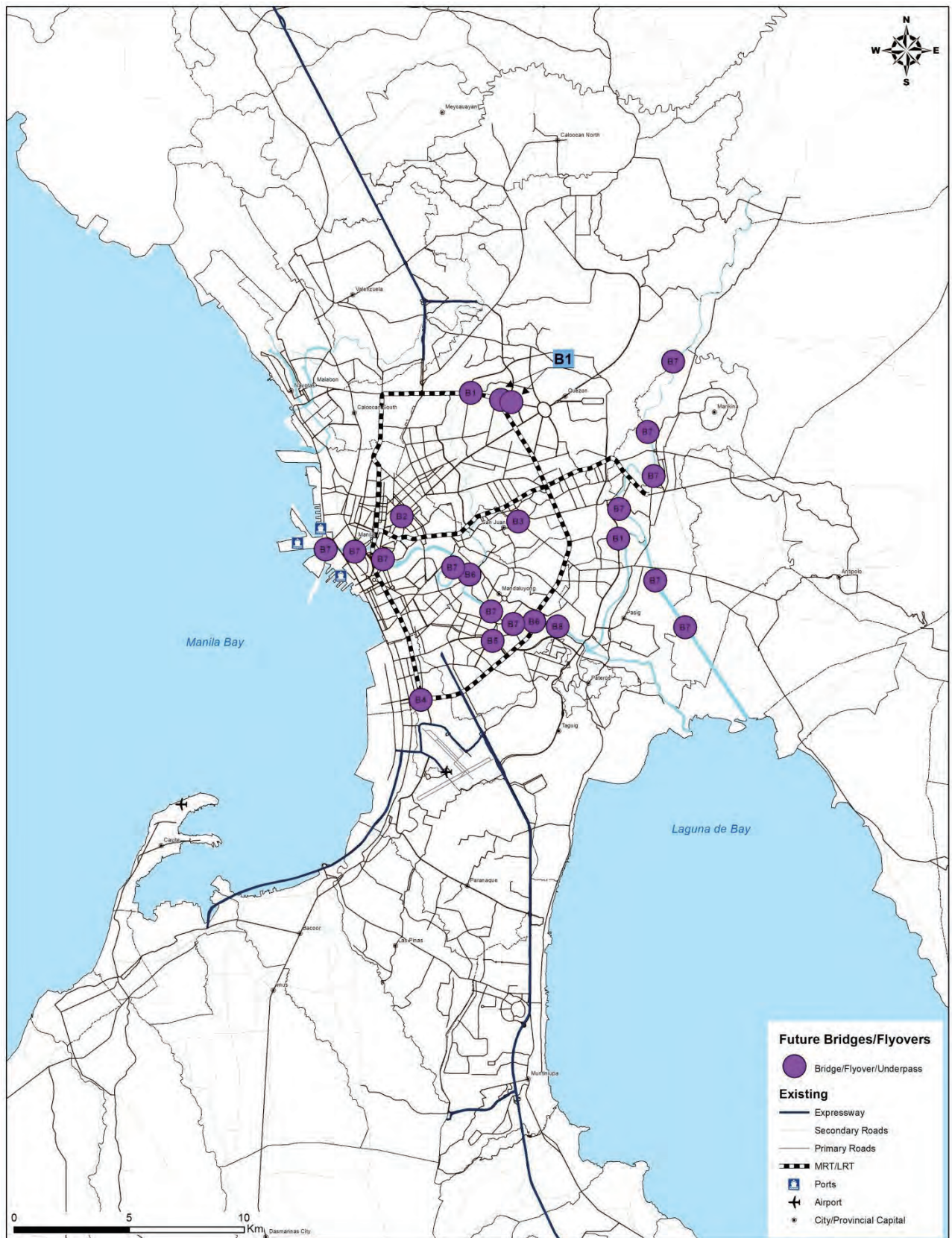


Figure 4 Location of Bridges/Flyovers/Interchanges Projects

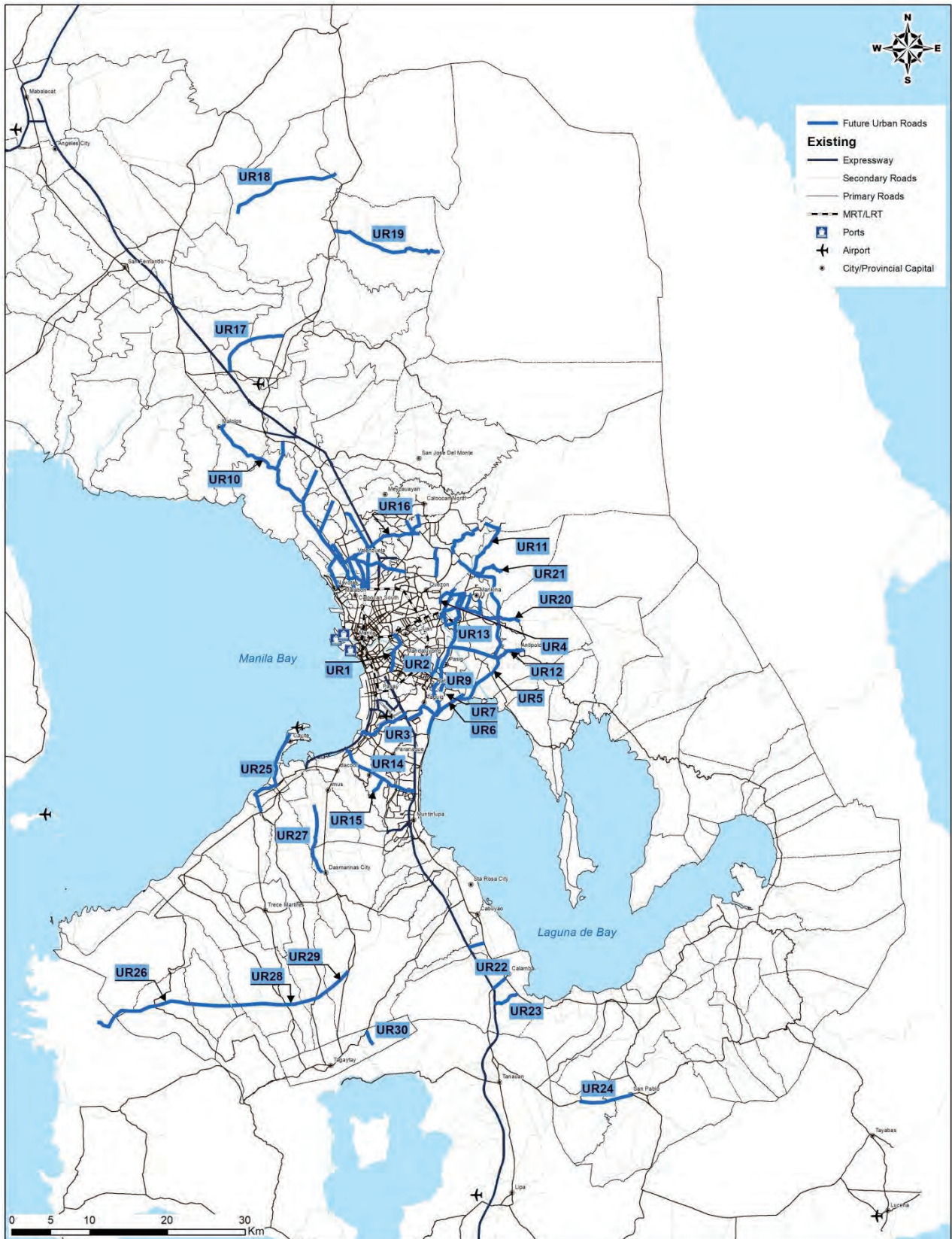

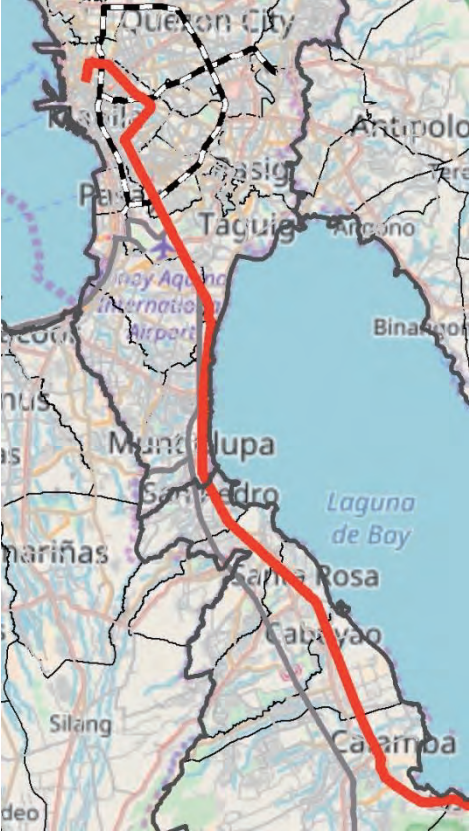


Figure 5 Location of Urban Road Projects

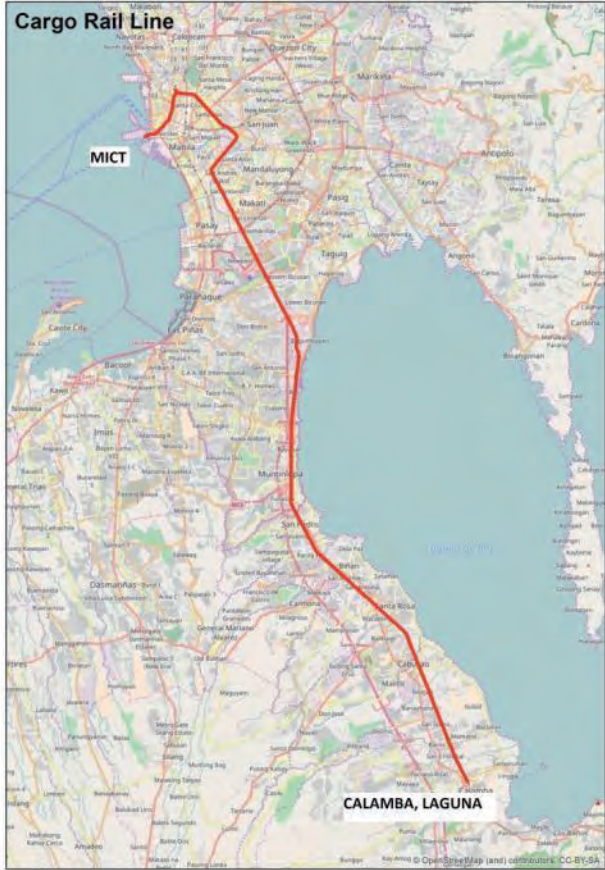
2. Railway

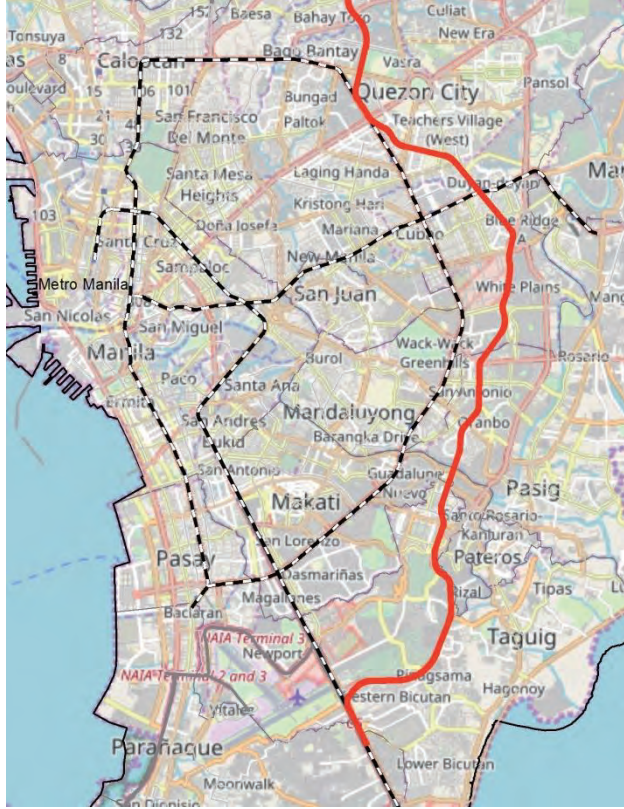
Category: Railway (R1)																	
Project Title: PNR North 1 (North South Commuter Railway Project, Phase 1)																	
Location: Malolos City, Bulacan to City of Manila, Metro Manila	<p>Project Alignment</p> <p>Figure 1.1 Location Map of the NSCR Project (Malolos to Tutuban) Source: JICA Study Team</p>																
Description: This is a 38-kilometer mass transportation railway that will connect Malolos, Bulacan with NCR. It will reduce travel time between these two areas from over 1 hour 30 minutes today to 35 minutes once the railway is fully operational. The PNR North 1 is expected to serve over 300,000 passengers daily in its opening year in 2021. It will be seamlessly integrated with PNR North 2 and PNR South Commuter, forming one integrated commuter rail system serving commuters travelling to, from, and within NCR, Region III, and Region IV-A. Using the legacy PNR right-of-way, the project will also restore historical station buildings.																	
Project Cost: PHP149 billion																	
Funding: ODA																	
Implementing Agency: DOTr																	
<p>Status – Schedule:</p> <p>DED & ROW acquisition: on-going</p> <p>Construction: 2018-2021</p>																	
<p>Project Readiness:</p> <table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Feasibility Study</td> <td>(Year) 2014</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Detailed Design</td> <td>(Year) On-going</td> </tr> <tr> <td><input checked="" type="checkbox"/> NEDA Board Approval</td> <td>(Year) Feb. 2015</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ROW</td> <td>(Year) On-going</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table>	<input type="checkbox"/> Business Case Study	(Year)	<input checked="" type="checkbox"/> Feasibility Study	(Year) 2014	<input type="checkbox"/> Concept and Basic Design	(Year)	<input type="checkbox"/> Detailed Design	(Year) On-going	<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Feb. 2015	<input type="checkbox"/> ECC	(Year)	<input type="checkbox"/> ROW	(Year) On-going	<input type="checkbox"/> Others	(Year)	<p>Remarks</p> <ul style="list-style-type: none"> In order to ensure seamless interoperability for the entire Philippines, PNR North 1 will be a dual-track, electrified, fully elevated, standard-gauge railway.
<input type="checkbox"/> Business Case Study	(Year)																
<input checked="" type="checkbox"/> Feasibility Study	(Year) 2014																
<input type="checkbox"/> Concept and Basic Design	(Year)																
<input type="checkbox"/> Detailed Design	(Year) On-going																
<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Feb. 2015																
<input type="checkbox"/> ECC	(Year)																
<input type="checkbox"/> ROW	(Year) On-going																
<input type="checkbox"/> Others	(Year)																
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>																	

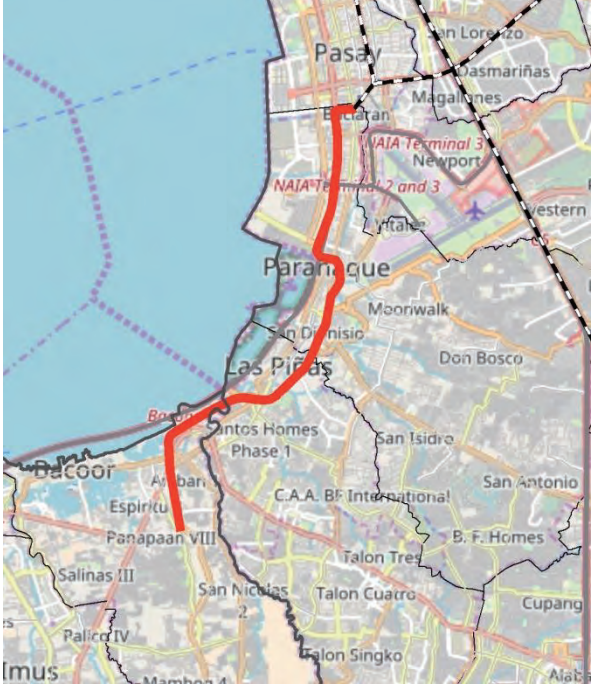
Category: Railway (R2)	
Project Title: PNR North 2	
Location: Clark Green City, Tarlac Province to Malolos City, Bulacan Province	<p>Project Alignment</p> 
<p>Description: This is a 69.5 kilometer mass transportation railway that will extend PNR North 1, connecting NCR with Clark International Airport and New Clark City. The project will enable a one-way travel time of 56 minutes between Manila and Clark International Airport (CIA), supporting the development of CIA as a major air transport hub. PNR North 2 will be seamlessly integrated with PNR North 1 and PNR South Commuter.</p> <p>It is composed of 2 Phases:</p> <p>Phase I: Malolos to CIA (50.5km)</p> <p>Phase II: CIA to Clark Green City (19km)</p>	
Project Cost: PHP284 billion	
Funding: GAA/ODA/PPP	
Implementing Agency: DOTr	
<p>Status – Schedule: D/D will start in Dec. 2017</p> <p>Phase I: 2019 – 2022</p> <p>Phase II: 2022 - 2024</p>	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year) 2017</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) June 2017</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks</p> <ul style="list-style-type: none"> PNR North 2 will be an electrified, fully elevated, standard-gauge railway. In order to ensure seamless interoperability for the entire Philippine rail.
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	

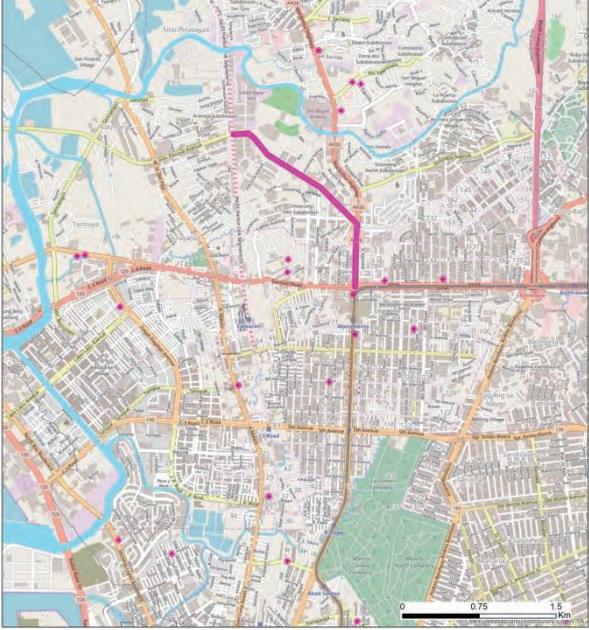
Category: Railway (R3)	
Project Title: PNR South Commuter	
Location: City of Manila, Metro Manila to Los Banos, Laguna Province	<p>Project Alignment</p> 
<p>Description: This is a 72-km mass transportation railway from City of Manila to Los Banos, Laguna Province. It is expected to have a daily ridership of over 300,000 in its opening year. It will cut travel time between City of Manila and Calamba City, Laguna Province by more than half, reducing it from over two hours today to less than one hour once the railway is fully operational. PNR South Commuter will be seamlessly integrated with PNR North 1, PNR North 2, and PNR South Long Haul. This integrated commuter rail network will distribute growth across the entire Greater Capital Region (NCR, Regions III & IV-A) and also to other regions in Luzon. Provisions have also been made for freight rail services to operate.</p>	
Project Cost: PHP345 billion	
Funding: GAA/ODA/PPP	
Implementing Agency: DOTr	
Status – Schedule: 2018-2021	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year) 2014</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2017</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks</p> <ul style="list-style-type: none"> PNR South Commuter will be a dual-track, electrified, standard-gauge railway with elevated, at-grade, and depressed sections. In order to ensure seamless interoperability for the entire Philippine railway network, ETCS signaling standards will be adopted for PNR South Commuter and for all railway projects integrated with the network.
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	

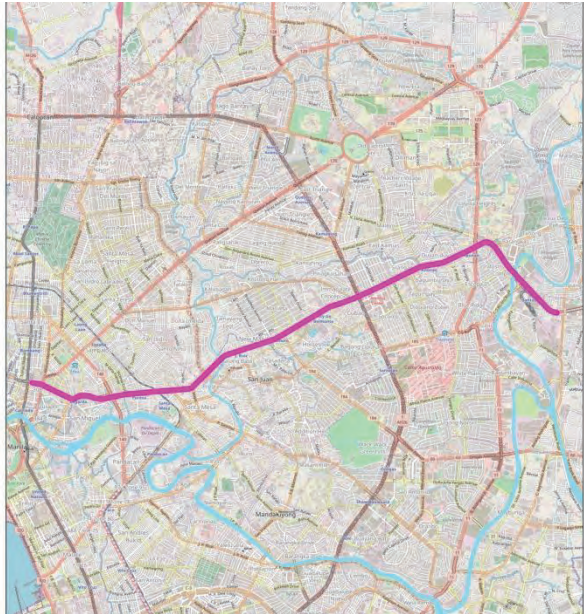
Category: Railway (R4)	
Project Title: PNR Commuter Rail System Operations and Maintenance	
Location: Metro Manila, Region III, Region IVA	Project Alignment
Description: Seamless and integrated Operations and Maintenance of the PNR Commuter Rail System (PNR North 1, PNR North 2, PNR South Commuter) from Clark, Pampanga to Los Banos, Laguna. There is no capital expenditure.	
Project Cost: PHP0.1 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2017-2022	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2014 <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOTr	

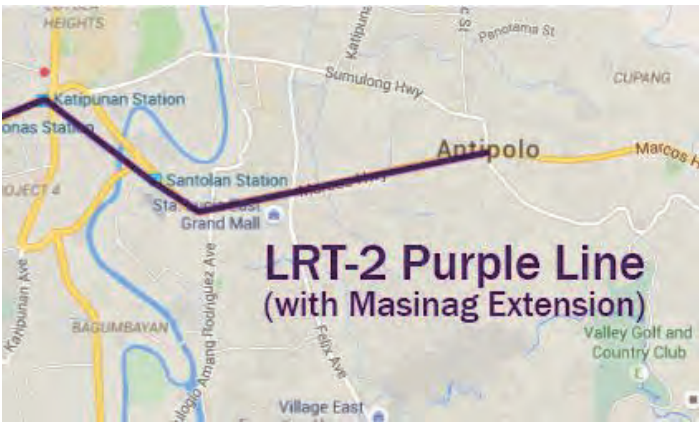
Category: Railway (R5)		
Project Title: PNR Freight Line		
Location: City of Manila, Metro Manila to Calamba City, Laguna Province	<p>Project Alignment</p> 	
<p>Description: This is a 57-km cargo rail system with using the existing PNR line. New tracks will be built inside the Manila International Container Terminal (MICT) inside the Manila port area to connect to the Tutuban Station in the existing PNR line.</p> <p>A freight train service will run 24 hours daily with a minimum of 8 round trips daily and an average daily container transfer of 600 TEUs from the Laguna Gateway Inland Container Terminal (LGICT) to MICT, and vice versa.</p> <p>The project will be undertaken in 3 phases:</p> <ul style="list-style-type: none"> Phase 1: PHP 2.7 billion that will cover the cost of 8 locomotives, 120 flat wagons, and construction of depots and tracks inside the ports and will connect Manila Port to Calamba, Laguna; and, Phase 2 and Phase 3: PHP 7.3 billion that will connect the Manila Port to Clark and Subic. <p>Once operational, it is expected to reduce the number of trucks on the road by at least 200 trucks daily.</p>		
Project Cost: PHP10 billion		
Funding: ODA		
Implementing Agency: DOTr		
Status – Schedule: 2018 – 2022 Pre-F/S was completed.		
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>		
Information Source: Philippine ANALYST, June 2016		<p>Remarks</p> <ul style="list-style-type: none"> A non-exclusive Track Usage Agreement (TUE) between the PNR and MRail was signed in January 2015 that will ensure no interference in the PNR commuter service plying the Tutuban to Alabang route. MRail, a subsidiary of Manila Electric Co. (MERALCO), has partnered with Enrique Razon, Jr.'s International Container Terminal Services, Inc. (ICTSI) for the cargo rail project.

Category: Railway (R6)	
Project Title: Mega Manila Subway	
Location: Pasay City to Quezon City, Metro Manila	<p>Project Alignment</p> 
<p>Description: This is a 25-km underground mass transportation system connecting major business districts and government centers. It is expected to serve around 370,000 passengers daily in its opening year.</p> <p>The Phase 1 of the MMSP involves the construction of a 25.3 kilometer subway with 13 stations which starts from Mindanao-Quirino and ends at FTI.</p>	
Project Cost: PHP356 billion (Phase 1)	
Funding: ODA	
Implementing Agency: DOTr	
Status – Schedule: 2018-2027 (Phase 1) Partial Operation: 2025	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2017</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	Remarks
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	


Category: Railway (R7)																	
Project Title: Manila Metro Line 1 Cavite Extension (LRT 1 Cavite Extension Project)																	
Location: Paranaque City, Metro Manila to Bacoor City, Cavite Province	<p>Project Alignment</p> 																
<p>Description: This is an 11.7-km extension of the LRT Line 1 with eight stations from Baclaran Station in Paranaque City, Metro Manila to Niyog Station, Bacoor City, Cavite Province. Of 11.7-km extension, approximately 10.5 km will be elevated and 1.2 km will be at-grade. The extension will initially include 8 new passenger stations.</p> <p>A satellite depot for light rail vehicle (LRV) storage and light maintenance will be located at the southern end of the proposed line. Intermodal facilities will also be installed at high-demand stations, namely, Niyog, Zapote and Dr. Santos Stations.</p> <p>The project also includes the procurement of 120 light rail vehicles (LRVs).</p>																	
<p>Project Cost: PHP64.9 billion (ODA:PHP25.4 billion, Private: PHP39.6 billion)</p>																	
Funding: ODA/PPP																	
Implementing Agency: DOTr																	
<p>Status – Schedule: On-going</p> <p>Construction: 2017 – 2021</p> <p>LRV Procurement: 2020 - 2022</p>																	
<p>Project Readiness:</p> <table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Feasibility Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Detailed Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> NEDA Board Approval</td> <td>(Year) June 2014</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> ROW</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table> <p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	<input type="checkbox"/> Business Case Study	(Year)	<input checked="" type="checkbox"/> Feasibility Study	(Year)	<input type="checkbox"/> Concept and Basic Design	(Year)	<input checked="" type="checkbox"/> Detailed Design	(Year)	<input checked="" type="checkbox"/> NEDA Board Approval	(Year) June 2014	<input type="checkbox"/> ECC	(Year)	<input checked="" type="checkbox"/> ROW	(Year)	<input type="checkbox"/> Others	(Year)	<p>Remarks</p> <ul style="list-style-type: none"> • Procurement Mode: Solicited • PPP Structure: Build-Transfer-and-Operate (BTO) • Cooperation Period: 32 years inclusive of construction • Ongoing soft renovation and upgrades of LRT Line 1 existing system and other pre-construction activities.
<input type="checkbox"/> Business Case Study	(Year)																
<input checked="" type="checkbox"/> Feasibility Study	(Year)																
<input type="checkbox"/> Concept and Basic Design	(Year)																
<input checked="" type="checkbox"/> Detailed Design	(Year)																
<input checked="" type="checkbox"/> NEDA Board Approval	(Year) June 2014																
<input type="checkbox"/> ECC	(Year)																
<input checked="" type="checkbox"/> ROW	(Year)																
<input type="checkbox"/> Others	(Year)																

Category: Railway (R8)	
Project Title: LRT-1 North Extension	
Location: Metro Manila	Project Alignment 
Description: This was proposed by the previous Transport Roadmap. The project is to extend the LRT 1 from Monumento to North to Malabaon with about 2.7km extension.	
Project Cost: PHP15.9 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: Medium-term	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks:
Information Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)	

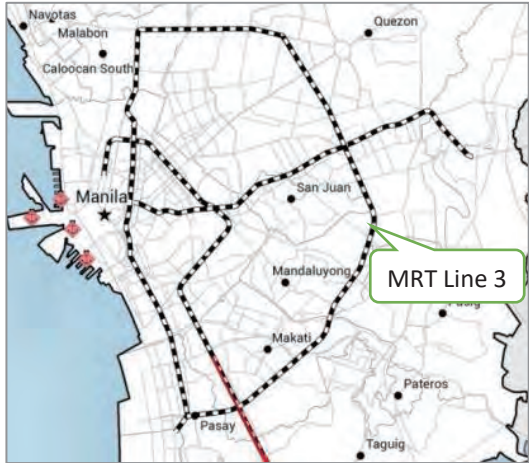
Category: Railway (R10)	
Project Title: LRT 2 Rehabilitation Projects	
Location: Metro Manila	Project Alignment 
Description: The rehabilitation project consists of various projects designed to address the problems of deteriorating rolling stocks, signaling, power and catenary, tracks and facilities within the medium term to improve and enhance the safety, reliability and efficiency of LRT Line 2 equipment, systems and facilities within the medium term.	
Project Cost: PHP7.1 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2011-2019	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOTr	Remarks <ul style="list-style-type: none"> The other Rehabilitation Projects are still under procurement process (LRTA BAC & PS-DBM) and/or for preparation/review and approval of Terms of Reference (TOR) and Work Program.


Category: Railway (R11)	
Project Title: LRT Line 2 East (Masinag) Extension Project	
Location: Pasig City, Metro Manila to Antipolo City, Rizal Province	<p>Project Alignment</p> 
Description: This is a 3.9-km extension of the LRT Line 2 with two stations from Santolan Station to Masinag.	
Project Cost: PHP9.8 billion	
Funding: ODA	
Implementing Agency: DOTr	
Status – Schedule: 2017 – 2019 (on-going)	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year) 2011</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input checked="" type="checkbox"/> Detailed Design (Year) 2015</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2012</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	Remarks
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Build!Build!Build!: http://build.gov.ph</p>	


Category: Railway (R12)	
Project Title: Acquisition of Four (4) New Train Sets	
Location: Metro Manila, Region IVA	Project Alignment
Description: The project covers the supply, delivery, testing and commissioning of brand new four (4) train sets to replace the heavily cannibalized train set numbers 5, 6, 10 and 12. It aims to increase capacity and train availability as well as flexibility in Rolling Stock maintenance for the safety and convenience of passengers. It would enable the proper scheduling of train sets maintenance and meet the passenger demand once the LRT Line 2 East Extension Project and the proposed LRT 2 West Extension Project are operational.	
Project Cost: PHP2.1 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2018-2020	
<p>Project Readiness:</p> <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks <ul style="list-style-type: none"> Feasibility Study is not applicable.
<p>Information Source:</p> <p>DOTr</p>	

Category: Railway (R13)	
Project Title: LRT-2 East Extension (Phase II)	
Location: Metro Manila, Rizal Province	<p>Project Alignment</p> 
Description: This entails two extensions for the existing LRT 2 line. The first is the extension farther east from Cainta (Masinag) to Antipolo with 3 kms of underground rail and 6 kms elevated.	
Project Cost: PHP80.5 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: Medium to Long Term	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks:</p> <ul style="list-style-type: none"> A precursor to this project is the Phase 1 east extension of the line from Santolan to Cainta (Masinag).
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Railway (R14)	
Project Title: LRT Line 2 West Extension	
Location: City of Manila, Metro Manila	<p>Project Alignment</p>
Description: This involves the design and construction of the extension for the existing LRT Line 2, a total length of approximately 3.02kms from Recto Station extending westward to the Pier 4 area including the turnback truck. Three proposed additional stations are Tutuban Station, Divisoria Station and Pier 4 Station.	
Project Cost: PHP10.1 billion	
Funding: GOP	
Implementing Agency: DOTr	
Status – Schedule: 2018 - 2021	
<p>Project Readiness:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2015 <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) May 2015 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year) 	<p>Remarks</p> <ul style="list-style-type: none"> • Under procurement
<p>Information Source:</p> <p>List of NEDA Board Approved Projects (From June 2010 to June 2016)</p>	


Category: Railway (R15)																	
Project Title: MRT 3 Capacity Expansion Project																	
Location: City of Manila to Pasig City, Metro Manila	<p>Project Alignment</p> 																
<p>Description: - The project involves the acquisition of a total of fifty-two (52) light rail vehicles (LRVs), and required ancillary works under Phases 1 and 2 to enable operating the MRT3 system at a 4-car train configuration include the following:</p> <ul style="list-style-type: none"> • Upgrade of the power supply to accommodate the additional train cars in operation; • Upgrade of the North Turnback and Taft Pocket Track to accommodate a 4-car train configuration; • Upgrade of the depot facilities and signaling system; and • Other ancillary works necessary to safely operate the desired parameters. 																	
Project Cost: PHP8.6 billion																	
Funding: GAA																	
Implementing Agency: DOTr																	
Status – Schedule: 2012-2019 (on-going)																	
<p>Project Readiness:</p> <table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Feasibility Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Detailed Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> NEDA Board Approval</td> <td>(Year) Sep. 2012</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ROW</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table>	<input type="checkbox"/> Business Case Study	(Year)	<input type="checkbox"/> Feasibility Study	(Year)	<input type="checkbox"/> Concept and Basic Design	(Year)	<input type="checkbox"/> Detailed Design	(Year)	<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Sep. 2012	<input type="checkbox"/> ECC	(Year)	<input type="checkbox"/> ROW	(Year)	<input type="checkbox"/> Others	(Year)	<p>Remarks</p> <ul style="list-style-type: none"> • 48 new train coaches arrived in Manila in early 2017, but cannot be used due to the lack of automatic train protection (ATP) signals which should be equipped for the safety operation. Besides, the power supply for MRT3 needs to be improved.
<input type="checkbox"/> Business Case Study	(Year)																
<input type="checkbox"/> Feasibility Study	(Year)																
<input type="checkbox"/> Concept and Basic Design	(Year)																
<input type="checkbox"/> Detailed Design	(Year)																
<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Sep. 2012																
<input type="checkbox"/> ECC	(Year)																
<input type="checkbox"/> ROW	(Year)																
<input type="checkbox"/> Others	(Year)																
<p>Information Source:</p> <p>NEDA</p>																	


Category: Railway (R16)	
Project Title: MRT-3 Extension - South	
Location: Metro Manila	<p>Project Alignment</p> 
Description: This was proposed by the previous Transport Roadmap. The project is extending the existing MRT3 to the south from the junction of Taft and EDSA up to the Reclamation Area by underground length of 2.2 kms.	
Project Cost: PHP68.6 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: Medium Term	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks:</p> <ul style="list-style-type: none"> The extension to the south can start in the Medium Term implementation.
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	


Category: Railway (R17)	
Project Title: MRT-3 Extension - North-West	
Location: Metro Manila, Bulacan Province	Project Alignment 
Description: This was proposed by the previous Transport Roadmap. The project is extending the existing MRT3 to the west side from Monumento to Malabon by about 7.2 kms.	
Project Cost: PHP68.6 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: Long Term	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks: <ul style="list-style-type: none"> The extension to the west extension is for the long-term implementation.
Information Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)	


Category: Railway (R18)	
Project Title: LRT Line 4 Project	
Location: City of Manila to Taytay City, Rizal Province	<p>Project Alignment</p>
Description: This is a 19 kilometer long railway line from Taytay, Rizal in Region IV-A to Manila City in NCR. The proposed alignment runs along Ortigas Avenue, Shaw Boulevard. LRT Line 4 will have interconnections with LRT Line 2, MRT Line 3 and 5 and PNR South Commuter.	
Project Cost: PHP85.0 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2018 – 2024	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2015</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks</p> <ul style="list-style-type: none"> • Under conceptualization/development • Over a concession period of 34 years including design/ construction period of 4 years
<p>Information Source:</p> <p>NEDA, DOTr</p>	

Category: Railway (R19)	
Project Title: Metro Manila Line 5 (Mass Transit System Loop)	
Location: Makati City to Pasay City, Metro Manila	Project Alignment
<p>Description: The objective of the project is to provide commuters along a heavily trafficked corridor with fast, reliable, convenient, and safe transportation. It also aimed to provide a high-capacity rail line to reduce road vehicle traffic in and between Pasay, Makati, and Taguig, thereby also reducing noise and air pollution.</p> <p>This is a 20-km subway system with 11 stations connecting Makati Central Business District, the Mall of Asia (MOA) in Pasay City, and Bonifacio Global City (BGC) in Taguig City, Metro Manila. The entire system will consist of a 16-km tunnel and a 4-km elevated railway.</p>	
Project Cost: PHP302 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2018-2023	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	Remarks
Information Source: NEDA, DOTr	For NEDA ICC Evaluation and Regional Development Council(RDC) Approval


Category: Railway (R20)	
Project Title: Manila Metro Line 6	
Location: Bacoor City to Dasmariñas City, Cavite Province	<p>Project Alignment</p> 
<p>Description: The project involves financing, design, construction, operations and maintenance, including procurement of the rolling stocks and systems, of a new 19-km light rail line with seven stations ((i) Niyog (transfer station between LRT Line 6 and LRT Line 1) (ii) Tirona, (iii) Imus, (iv) Daang Hari, (v) Salitran, (vi) Congressional Ave., and (vii) Governor's Dr.) along Aguinaldo Highway from Niyog, Bacoor City (the terminus of the LRT Line 1 Cavite Extension Project) to Dasmariñas City in Cavite Province.</p> <p>This project, as an extended rail system from LRT Line 1, will provide a cost-effective and efficient mode of transport for people travelling within Cavite Province and to/from Metro Manila. The project will also provide an incentive to the public to relocate to the suburbs of Metro Manila (specifically Cavite Province), thus lessening the burden on Metro Manila infrastructure.</p>	
Project Cost: PHP64.7 million	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2016 – 2021	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2015</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	
<p>Information Source:</p> <p>NEDA, PPP Center</p>	<p>Remarks</p> <ul style="list-style-type: none"> • Procurement on hold • Procurement Mode: Solicited • PPP Structure: Build-Gradual Transfer-Operate-and-Maintain (BGTOM) / Build-Transfer + Operations & Maintenance (BT+O&M) • Cooperation Period: 30 years (inclusive of 5 years construction)


Category: Railway (R21)	
Project Title: Metro Rail Transit Line 7	
Location: Quezon City, Metro Manila to San Jose Del Monte City, Bulacan Province	<p>Project Alignment</p> 
<p>Description: This is a 22-kilometer mass transportation railway system from the North Avenue Station in EDSA, Quezon City, passing through Commonwealth Avenue, Regalado Avenue, and Quirino Highway, up to the proposed Intermodal Transport Terminal (ITT) in San Jose del Monte, Bulacan province with fourteen stations.</p> <p>The ITT is part of the project scope of works, including the construction of a 22-km, 6-laneroad from the Bocaue Interchange of North Luzon Expressway (NLEx) up to the ITT.</p>	
Project Cost: PHP62.7 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2016-2019	
As of 20 October 2017: On-going civil works; 10.35% complete	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Feb. 2014</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	
<p>Information Source:</p> <p>NEDA, DOTr</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	<p>Remarks</p> <ul style="list-style-type: none"> • PPP Structure: Build-Gradual Transfer-Operate and Maintain (BGTOM)


Category: Railway (R22)	
Project Title: Common Station for LRT1, MRT3 and MRT7	
Location: Quezon City, Metro Manila	<p>Project Location</p> 
<p>Description: This is a 13,700-sqm common station connecting three railway lines (LRT Line1, MRT Line 3 and MRT Line 7) for ease of passenger transfer and interconnectivity with road-based transportation systems. It is expected to serve 478,000 passengers daily in 2020.</p>	
Project Cost: PHP2.8 billion	
Funding: GAA/PPP	
Implementing Agency: DOTr	
Status – Schedule: 2017- 2019	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input checked="" type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Mar. 2017</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks</p> <ul style="list-style-type: none"> • Signing of Memorandum of Agreement was done on January 2017. • Groundbreaking ceremony was hold on September 2017.
<p>Information Source:</p> <p>DOTr, NEDA</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	


Category: Railway (R23)	
Project Title: Secondary Line	
Location: Metro Manila, Rizal and Cavite Provinces	Project Alignment 
Description: There are five secondary lines. Three in Metro Manila and one in Cavite. - Marikina Line (Marikina area) - Pasig Monorail (Ortigas area) - Alabang Line (Alabang – Zapote) - Cavite Line (Zapote – Cavite – Gen. Trias)	
Project Cost: PHP70.5 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: Medium – long term	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks:
Information Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014) MUCEP	


Category: Railway (R24)	
Project Title: Comprehensive LRT/MRT Business/Commercial Development Plan/Roadmap	
Location: Metro Manila	Project Alignment
Description: This project involves the procurement of contract for consulting services for the formulation/development of a comprehensive business/commercial development plan/roadmap. It aims to improve the revenue generation capacity of LRTA through the development of financially-viable commercial business and the identification of potential non-rail business ventures on all LRTA-managed lines.	
Project Cost: PHP0.004 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2018-2019	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	Remarks
<p>Information Source:</p> <p>DOTr</p>	
<ul style="list-style-type: none"> Feasibility Study is not applicable. 	

Category: Railway (R25)	
Project Title: Performance Testing and Evaluation of Prototype Train Set	
Location: Taguig City, Metro Manila	Project Image 
Description: The project aims to test and evaluate the developed Prototype Train Set prior to commercialization.	
Project Cost: PHP0.02 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2017 (on-going)	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOST	

Category: Railway (R26)	
Project Title: Deploying DOST Hybrid Electric Road Train as a Mass Transport System in Urban Areas	
Location: Taguig City, Metro Manila	<p>Project Image</p> 
<p>Description: The project aims to design and fabricate a Pilot Commercial Hybrid Electric Road Train for commercialization, certification and to demonstrate the Hybrid Electric Road Train as an alternative mass transport system in urban areas.</p> <p>The project aims to demonstrate the Pilot Commercial Model of Hybrid Electric Road Train as a mass transport system which is environmental friendly, energy efficient and cost effective.</p>	
Project Cost: PHP0.19 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2018-2019	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	Remarks
<p>Information Source:</p> <p>DOST</p>	

Category: Railway (R27)	
Project Title: System Expansion of the 120 Passenger per Coach Capacity Automated Guide-way Transit System	
Location: Taguig City, Metro Manila	Project Image 
Description: This project aims to continue upgrading, performance and material testing/evaluation of the AGT system while a full blown feasibility study is being conducted.	
Project Cost: PHP0.01 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2017	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks
Information Source: DOST	


Category: Railway (R28)	
Project Title: Testing for the Standardization and Optimization of Hybrid Road Train – Phase III	
Location: Taguig City, Metro Manila	<p>Project Image</p> 
Description: This project aims to standardize the testing of hybrid road train and to design a commercial road train.	
Project Cost: PHP0.02 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2017	
<p>Project Readiness:</p> <ul style="list-style-type: none"> <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year) 	Remarks
<p>Information Source:</p> <p>DOST</p>	

Category: Railway (R29)	
Project Title: Development of a Commercial Prototype Automated Guide-way Transit System in UP Diliman	
Location: Taguig City, Metro Manila	Project Image 
Description: This project aims to improve safety and convenience and functionality of existing AGT system and to design and develop a commercial prototype AGT system.	
Project Cost: PHP0.02 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2017-2017	
Project Readiness: <input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOST	Remarks

Category: Railway (R30)	
Project Title: Development of Pilot Commercial Model Train Set	
Location: Taguig City, Metro Manila	Project Image
<p>Description: Development of Pilot Commercial Model Trainset can augment the existing number of trainsets presently in service in the country. This will cover establishing design and material selection as well as fabrication and manufacturing of every part making up the whole trainset. Its effects could open opportunities of local manufacturing of some spare parts which can be used for the current units.</p> <p>The Pilot Commercial Model Trainset can also serve as a solution for the government’s long term program of decreasing traffic congestion caused by various modes of transportation currently being utilized. Furthermore, the existence of local manufacturers of train components would result to the growth of facilities and subsidiary industries that supply machines, tools and service providers that is linked with the railway industry. And if the Philippines would like to stay competitive in the Asian and global markets, it should establish its capability to develop its own railway system that is locally manufactured and maintained to increase efficiency and usability of our current rail transport systems and realize the economic benefits on having such rail systems.</p>	
Project Cost: PHP0.25 billion	
Funding: GAA	
Implementing Agency: DOST	
Status – Schedule: 2018-2020	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOST	

3. Road-based Public Transport

Category: Road-based Public Transport (PT1)	
Project Title: PUV Route Rationalization Study – Metro Manila	
Location: Metro Manila	Project Image
Description: Identification and rationalization of routes and related information in intra-city, inter-city, and inter-province areas.	
Project Cost: PHP0.07 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2017-2017	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOTr	

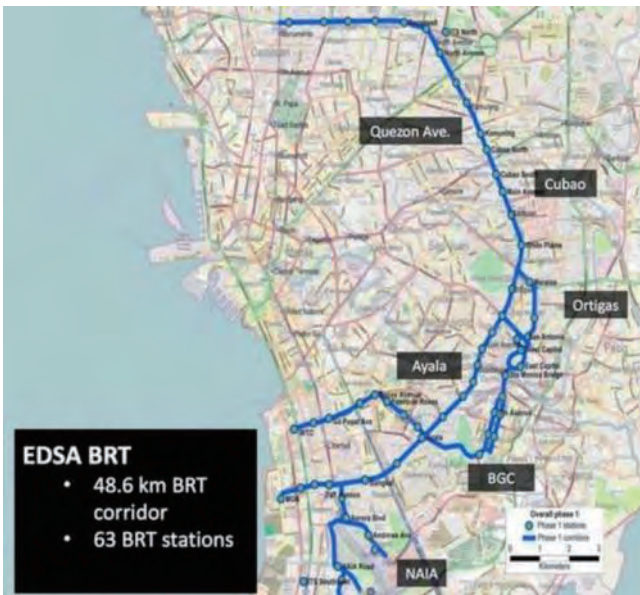
Category: Road-based Public Transport (PT2)	
Project Title: South Integrated Transport System Project	
Location: Taguig City, Metro Manila	<p>Project Image</p> 
Description: This is a Public-Private Partnership (PPP) Project, which aims to establish an intermodal terminal for provincial buses. It will provide safe and convenient transfer facilities to passengers in the Laguna/Batangas side, while maximizing road usage within Metro Manila by reducing vehicle volume and improving traffic flow along major thoroughfares, particularly EDSA.	
Project Cost: PHP4.0 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2016 - 2019	
Project Readiness:	Remarks
<input checked="" type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2013 <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) 2013 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>DOTr, NEDA</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p> <p>PPP Center Web-site (as of 18 May)</p>	
<ul style="list-style-type: none"> • Procurement Mode: Solicited Mode; Two-stage bidding • PPP Structure: Build-Transfer-and-Operate (BTO) • Cooperation Period: 35 years inclusive of construction period 	

Category: Road-based Public Transport (PT3)	
Project Title: Southwest Integrated Transport System (ITS) Project	
Location: Paranaque City, Metro Manila	<p>Project Image</p>
Description: The Public-Private Partnership (PPP) Project aims to establish an intermodal terminal for provincial buses and provide safe and convenient transfer facilities to passengers in the Cavite side. This is seen to maximize road usage within Metro Manila by reducing vehicle volume and improving traffic flow along major thoroughfares, particularly EDSA.	
Project Cost: PHP3.2 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2015- 2018 (Construction as of 11 February 2017: 1.87% completed)	
Project Readiness:	Remarks
<input checked="" type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2013 <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) 2013 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: Web-site of Build!Build!Build!: http://build.gov.ph PPP Center Web-site (as of 18 May)	
<ul style="list-style-type: none"> • Procurement Mode: Solicited Mode; Single-Stage Bidding • PPP Structure: Build-Transfer-and-Operate (BTO) • Cooperation Period: 35 years inclusive of construction period 	

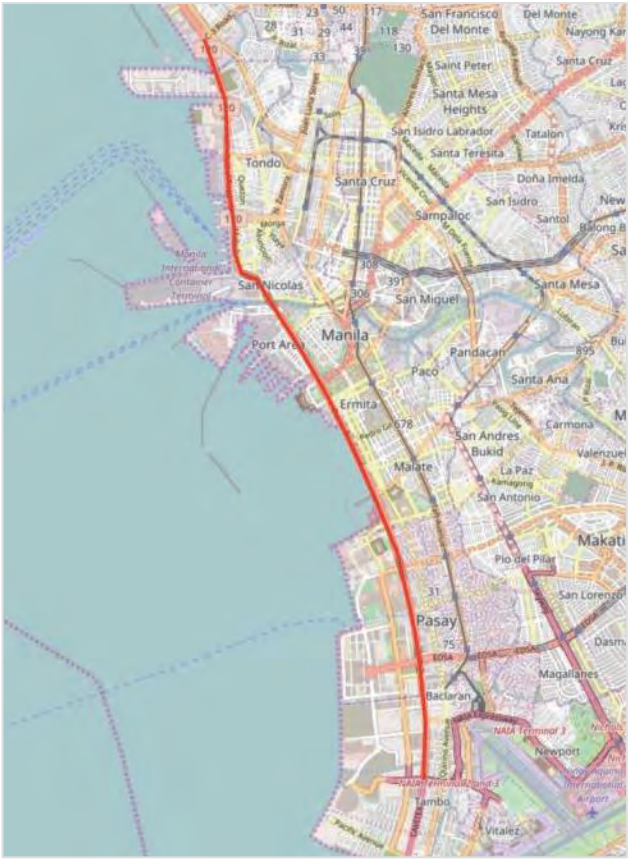
Category: Road-based Public Transport (PT4)	
Project Title: Integrated Transport System-North Terminal Project	
Location: Quezon City, Metro Manila	<p>Project Image</p>
<p>Description: The project involves the financing, design, construction, operations and maintenance of a mass transportation intermodal terminal in the north of EDSA that will maximize road usage by reducing vehicle volume and improving traffic flow along Metro Manila's major thoroughfares, particularly along EDSA.</p> <p>It will connect passengers coming from Northern Luzon to other transport system such as city bus, taxi and other public utility vehicles that are serving inner Metro Manila. The project will include passenger terminal buildings, arrival and departure bays, public information systems, ticketing and baggage handling facilities and park-ride facilities.</p>	
Project Cost: PHP4.0 billion	
Funding:	
Implementing Agency: DOTr	
Status – Schedule: Under development	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>PPP Center Web-site (as of 18 May)</p>	Remarks

Category: Road-based Public Transport (PT5)	
Project Title: NAIA Intermodal Terminal	
Location: Metro Manila	Project Image
Description: The project aims to provide intermodal transport terminal in NAIA.	
Project Cost: PHP2.0 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2019-2022	
Project Readiness:	Remarks <ul style="list-style-type: none"> • Pre-feasibility study
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source:	

Category: Road-based Public Transport (PT6)	
Project Title: Metro manila Bus Rapid Transit – Line 1 (Quezon Avenue BRT)	
Location: City of Manila to Quezon City, Metro Manila	<p>Project Image</p>
<p>Description: This is a 12.3-km bus rapid transit (BRT) system with 17 bus stops, connecting Quezon Memorial Circle (QMC), Quezon City to Manila City Hall via Elliptical Road, Quezon Avenue, and Espana Boulevard.</p> <p>It is expected to serve 291,500 passengers daily in its first year of operations. The line mainly adopts a closed system with service lanes at the center, with convenient interchanges with MRT-3, PNR, LRT1, and the MRT-7 currently undergoing construction.</p>	
Project Cost: PHP4.8 billion	
Funding: GOP/ODA	
Implementing Agency: DOTr	
Status – Schedule: 2015 - 2018	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Under project procurement • Loan signing for World Bank loan agreement was done on March 2017.
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2013 <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Dec. 2015 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>DOTr, NEDA</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	

Category: Road-based Public Transport (PT7)	
Project Title: Metro manila Bus Rapid Transit – Line 2 (Central Corridor)	
Location: Caloocan City to Pasay City, Metro Manila	Project Image 
Description: This is a 48.6-km high-quality bus-based mass transportation system with 63 bus stops and a corresponding pedestrian and bicycle greenway network. The system consists of four corridors; namely, a main corridor along EDSA, and spur corridors along Ayala Ave. to World Trade Center, Ortigas to Bonifacio Global City, and NAIA terminals.	
Project Cost: PHP37.8 billion	
Funding: ODA/PPP	
Implementing Agency: DOTr	
Status – Schedule: Under loan negotiation Implementation: 2017 - 2019	
Project Readiness:	Remarks <ul style="list-style-type: none"> • Procurement of the consultant for Detailed Engineering and Design will be finalized in December 2017. • Civil works is targeted to commence in the first quarter of 2019.
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) 2015 <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2016 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOTr List of NEDA Board Approved Projects (From June 2016 to February 28, 2017) Web-site of Build!Build!Build!: http://build.gov.ph	

Category: Road-based Public Transport (PT8)	
Project Title: Metro Manila BRT – Line 3 (C-5)	
Location: Metro Manila	Project Image
Description: A BRT Line passing through the cities of Taguig, Makati, Pasig, Mandaluyong, and Quezon City.	
Project Cost: PHP31.2 billion	
Funding: ODA	
Implementing Agency: DOTr	
Status – Schedule: 2017-2022	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source:	

Category: Road-based Public Transport (PT9)	
Project Title: Metro Manila BRT Line 4 – Roxas Blvd	
Location: Metro Manila	<p>Project Image</p> 
Description: A BRT Line connecting Navotas and South Caloocan via Pres. F. Marcos Highway (R10), Roxas Boulevard (R1) and Bonifacio Drive to the cities of Manila, Pasay, and Paranaque	
Project Cost: PHP19.9 billion	
Funding: ODA	
Implementing Agency: DOTr	
Status – Schedule: 2017-2022	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source:	

Category: Road-based Public Transport (PT10)	
Project Title: BGC to NAIA Bus Rapid Transit (BRT) System	
Location: Taguig City to Pasay City, Metro Manila	<p>Project Image</p>
Description: This is a mass transport system that will traverse through the Bonifacio Global City, Bonifacio South, Villamor Air Base, NAIA Terminal (1-3) up to Ninoy Aquino Station of the proposed LRT-1 Extension Project. This is part of the Metro Manila BRT System that will help ease traffic congestion.	
Project Cost: PHP21.9 billion	
Funding:	
Implementing Agency: BCDA	
Status – Schedule: 2016 - 2021	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Under project development
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	


Category: Road-based Public Transport (PT11)	
Project Title: BRT Greenways	
Location: Metro Manila	Project Image
Description: Construction and maintenance of green walkways and bikeways connected to Metro Manila BRT Lines	
Project Cost: PHP4.0 billion	
Funding: TBD	
Implementing Agency: DOTr	
Status – Schedule: 2018-2022	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source:	

Category: Road-based Public Transport (PT12)		
Project Title: Ortigas Greenways		
Location: Pasig, Metro Manila	Project Image	
Description: Provision of a high-quality and universally accessible pedestrian corridor within Ortigas Center		
Project Cost: PHP0.6 billion		
Funding: TBD		
Implementing Agency: DOTr		
Status – Schedule: 2018-2020		
Project Readiness:		Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> • Pre-feasibility study 	
Information Source: Web-site of Build!Build!Build!: http://build.gov.ph		

Category: Road-based Public Transport (PT13)	
Project Title: Public Transport Information Management Center	
Location: Metro Manila	Project Image
Description: A monitoring system for PUBs in Metro Manila composed of a command center that monitors and manages PUBs within Metro Manila and uploads to a central database.	
Project Cost: PHP0.05 billion	
Funding: GAA	
Implementing Agency: DOTr	
Status – Schedule: 2016-2018	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks
Information Source: DOTr	

Category: Road-based Public Transport (PT14)	
Project Title: Public Transport Facility Improvement Project	
Location: Metro Manila	Project Image
Description: The project aims to provide modern and effective public transport facilities such as bus stops, jeepney stops, loading and unloading along major thoroughfares of Metro Manila	
Project Cost: PHP0.02 billion	
Funding: PPP	
Implementing Agency: DOTr	
Status – Schedule: 2019-2022	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DOTr	

4. Traffic Management

Category: Traffic Management (TM1)																	
Project Title: Installation of Intelligent Transport System (Traffic Signal System Upgrading and Communication and Monitoring System)																	
Location: Metro Manila	<p>Project Image</p> 																
<p>Description:</p> <p>This project scope includes mainly renewal and upgrade of the existing Metro Manila Traffic Signal System and related facilities and equipment and associated works into the latest cutting-edge technology in Intelligent Transportation System (ITS).</p>																	
Project Cost: PhP10 billion																	
Funding: GAA																	
Implementing Agency: MMDA																	
<p>Status – Schedule:</p> <table border="0"> <thead> <tr> <th>Module A</th> <th>Module B</th> </tr> </thead> <tbody> <tr> <td>Phase 1 - 96.89%</td> <td>1 - Completed</td> </tr> <tr> <td>Phase 2 - 97.14%</td> <td>2 - Completed</td> </tr> <tr> <td>Phase 3 - 80%</td> <td>3 - Completed</td> </tr> <tr> <td>Phase 4 - 95%</td> <td>4 - Completed</td> </tr> <tr> <td>Phase 5 - Bidding</td> <td></td> </tr> <tr> <td>Phase 6 - Re-bid</td> <td></td> </tr> </tbody> </table>		Module A	Module B	Phase 1 - 96.89%	1 - Completed	Phase 2 - 97.14%	2 - Completed	Phase 3 - 80%	3 - Completed	Phase 4 - 95%	4 - Completed	Phase 5 - Bidding		Phase 6 - Re-bid			
Module A	Module B																
Phase 1 - 96.89%	1 - Completed																
Phase 2 - 97.14%	2 - Completed																
Phase 3 - 80%	3 - Completed																
Phase 4 - 95%	4 - Completed																
Phase 5 - Bidding																	
Phase 6 - Re-bid																	
Project Readiness:	Remarks																
<table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Feasibility Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Detailed Design</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> NEDA Board Approval</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ROW</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table>	<input type="checkbox"/> Business Case Study	(Year)	<input type="checkbox"/> Feasibility Study	(Year)	<input type="checkbox"/> Concept and Basic Design	(Year)	<input type="checkbox"/> Detailed Design	(Year)	<input type="checkbox"/> NEDA Board Approval	(Year)	<input type="checkbox"/> ECC	(Year)	<input type="checkbox"/> ROW	(Year)	<input type="checkbox"/> Others	(Year)	<p>Module A:</p> <p>Phase 1 - 96.89% completed and the remaining percentage is allotted for the warrant and contractual maintenance simultaneous for three years as part of the contract.</p> <p>Phase 2 - 97.14% completed with the remaining works for system integration and some rectification works.</p> <p>Phase 3 - 80% completed and suspended due to location changes of some of the signalized intersection.</p> <p>Phase 4 - 95% completed and on-going implementation.</p> <p>Phase 5 - Under bidding process</p> <p>Phase 6 - For rebidding</p> <p>Module 2:</p> <p>Phase 1 - 100% completed on April 2013</p> <p>Phase 2 - 100% completed on April 2014</p> <p>Phase 3 - 100% completed on March 2016</p> <ul style="list-style-type: none"> Phase 4 - Completed on March 2017
<input type="checkbox"/> Business Case Study	(Year)																
<input type="checkbox"/> Feasibility Study	(Year)																
<input type="checkbox"/> Concept and Basic Design	(Year)																
<input type="checkbox"/> Detailed Design	(Year)																
<input type="checkbox"/> NEDA Board Approval	(Year)																
<input type="checkbox"/> ECC	(Year)																
<input type="checkbox"/> ROW	(Year)																
<input type="checkbox"/> Others	(Year)																
Information Source:																	
MMDA																	

Category: Traffic Management (TM2)	
Project Title: Comprehensive Traffic and Transport Management Study/Plan for Metro Manila	
Location: Metro Manila	Project Image
Description: The purpose of the study is to come up with a Comprehensive Transportation and Traffic Management Plan for Metro Manila and its nearby localities, a plan that is timely for the short to long term to address the worsening traffic congestion and improve mobility, accessibility, public and environmental safety. Reduced traffic congestion is also expected to further improve public transportation services and the overall local traffic and transportation environment for pedestrians and users of non-motorized vehicles.	
Project Cost: -	
Funding: ODA	
Implementing Agency: MMDA	
Status – Schedule: 2017-2019	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: MMDA	


5. Expressway

Category: Expressway (EX1)	
Project Title: NLEX Harbor Link, Segment 10	
Location: City of Manila, Metro Manila	Project Image
<p>Description: This is a 6-lane (2x3), 5.58-km elevated expressway connecting McArthur Highway and C-3. It will utilize the existing PNR ROW that cuts across Valenzuela City and Malabon City.</p> <p>This will decongest Metro Manila by providing access to NLEX without passing through EDSA or Balintawak Toll Plaza and improve movement of cargo between NLEX and Radial Road 10 (R10). It will reduce travel time from Valenzuela City to C-3 Caloocan City from more than 1 hour to just 5 minutes and will benefit 20,000 motorists daily.</p>	
Project Cost: PHP9.0 billion	
Funding: PPP	
Implementing Agency: DPWH	
Status – Schedule: Project Development	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: Web-site of Build!Build!Build!: http://build.gov.ph	

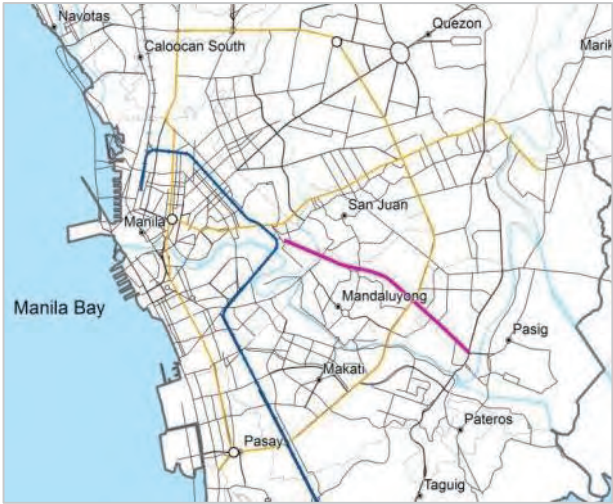
Category: Expressway (EX2)	
Project Title: Metro Manila Skyway Stage 3 (MMSS-3)	
Location: Quezon City to Makati City, Metro Manila	Project Image
<p>Description: This is a 4-6 lanes, 14.82km elevated expressway with 22 on/off ramps connecting Buendia, Makati City to Balintawak, Quezon City. This also includes improvement works in selected at-grade sections.</p> <p>It is designed to pull in and ease traffic and access through eight (8) strategically located interchanges: these being at Buendia, Pres. Quirino Avenue, Plaza Dilao and Nagtahan, Aurora Boulevard, E. Rodriguez Avenue, Quezon Avenue, Sgt. Rivera and Balintawak with a total of fourteen (14) Toll Plazas. It will be the motorists choice corridor servicing Metro Manila intercity travelers.</p>	
Project Cost: PHP37.4 billion	
Funding: PPP	
Implementing Agency: DOTr(TRB)	
Status – Schedule: 2015 – 2018 (accomplishment: 22.83%)	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Expressway (EX3)	
Project Title: North Luzon Expressway(NLEX)–South Luzon Expressway(SLEX) Connector Road Project	
Location: Makati City to Quezon City, Metro Manila	<p>Project Image</p>
<p>Description: This involves construction and operation and maintenance (O&M) of a 4-lane, 8-km long elevated expressway with two interchanges (C3 Road, Caloocan City and España, City of Manila), which starts from C3 Road in Caloocan traversing the City of Manila, crossing España towards PUP, Sta. Mesa connecting Metro Manila Skyway Stage 3 (MMSS3). This will be located along the Philippine National Railway (PNR) right-of-way (ROW).</p> <p>Once completed, the NLEX-SLEX Connector road is expected to cut the travel time between NLEX and SLEX to 15-20 minutes that currently takes more than an hour.</p>	
Project Cost: PHP23.3 billion	
Funding: PPP	
Implementing Agency: DPWH	
<p>Status – Schedule:</p> <p>(i) 1st Quarter 2017 — Detailed engineering Design by MPTDC</p> <p>(ii) 3rd Quarter 2017 — Start of ROW Acquisition</p> <p>(iii) April 2021 — Construction completion</p>	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Notice of Award was issued to Manila North Tollways Corporation (MNTC). Coordination meeting for the Design Phase is currently being conducted.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) 2014 <input checked="" type="checkbox"/> NEDA Board Approval (Year) Dec. 2015 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>DPWH</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	

Category: Expressway (EX4)	
Project Title: CAVITEX - C-5 - San Jose Del Monte (Bulacan)	
Location: Metro Manila, Bulacan Province	<p>Project Image</p>
Description: A major new North/South dual-2 46.7 km expressway from existing CAVITEX expressway in Cavite to above existing C-5 to North and end at San Jose Del Monte in Bulacan.	
Project Cost: PHP92.7 billion	
Funding: TBD – Likely to be Local/PPP	
Implementing Agency: DPWH	
Status – Schedule: Medium Term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> The expressway is an essential component of the 2030 master plan and is needed to be built by mid-late in this decade, to provide the additional highway capacity required to decongest the existing C-4 and C-5.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Expressway (EX5)	
Project Title: Manila – Taguig Expressway	
Location: City of Manila to Taguig City, Metro Manila	<p>Project Image</p>  <p>The map shows the proposed Manila-Taguig Expressway (MTE) route in red, starting from the Pasig River area in Manila and extending east through Makati and Mandaluyong to Taguig. Key landmarks like the Pasig River, Manila Bay, and various city centers are labeled. A legend in the bottom left corner identifies the MTE alignment, existing expressways, missing links, and bridge projects.</p>
<p>Description: This is a 4-lane, 17.71-km elevated expressway connecting Rizal Province through Metro Manila Expressway (C-6) to the city centers of Pasig, Makati and Manila. This will be built mainly along Pasig River which shall serve as another radial road in Metro Manila.</p> <p>Phase 1A – from C3 to C6</p> <p>Phase 1B – from C5 to C6</p> <p>Phase 2 – from Intramuros to C3</p>	
Project Cost: PHP66.6 billion	
Funding: PPP (Unsolicited)	
Implementing Agency: DPWH	
Status – Schedule:	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


- The unsolicited proposal was submitted by CLGP Philippine Holdings, Inc. and PT Citra Persada Infrastructure to DPWH on November 28, 2016
- Comments from DPWH (BOD, ESSD and PPPS) are forwarded to the Private Proponent.

Category: Expressway (EX6)	
Project Title: Sta. Mesa - Pasig (Shaw Boulevard) R-4 Expressway	
Location: Metro Manila	<p>Project Image</p> 
Description: A dual 2 lane elevated expressway from SLEX-NLEX connector expressway near Sta. Mesa, over Shaw Boulevard (R-5) through Pasig to connect with C-5.	
Project Cost: PHP23.4 billion	
Funding: TBD – Likely to be Local/PPP	
Implementing Agency: DPWH	
Status – Schedule:	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> The expressway is scheduled to be built in the medium term (around 2020). However, it is advised that its interchange with the SLEX-NLEX connector road should be built at the same time the connector road is built, which is scheduled to be built in the near future. The interface between the committed project R-8 is essential from the launch of connector road project.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Expressway (EX8)	
Project Title: Metro Manila Expressway Project (C-6)	
Location: Quezon City to Pasay City, Metro Manila	<p>Project Image</p>
<p>Description: This is a 6-lane, 34.024-km expressway connecting Skyway/FTI in Taguig City to Batasan Complex in Quezon City. The project is divided into six sections:</p> <p>SEGMENT 1</p> <p>1. SECTION 1: Skyway/FTI – C5/Diego Silang (L = 4.049 kms.)</p> <p>Section 1A: Skyway to FTI</p> <p>Section 1B: FTI to C5/Diego Silang</p> <p>2. SECTION 2: C5/Diego Silang – C6/Taguig (L = 2.125 kms.)</p> <p>3. SECTION 3: C6/Taguig – Ortigas Ave. Ext (L = 12.000 kms.)</p> <p>SEGMENT 2</p> <p>4. SECTION 4: Ortigas Ave. Ext. – Marcos Highway (L = 5.000 kms.)</p> <p>5. SECTION 5: Marcos Highway – Tumana Bridge (L= 8.336 kms.)</p> <p>6. SECTION 6: Tumana Bridge to Batasan Complex (L = 2.514 kms)</p>	
Project Cost: PHP45.0 billion	
Funding:	
Implementing Agency: DPWH	
Status – Schedule: 2016 - 2020	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input checked="" type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>DPWH</p>	

- Section 1A: FED Drawing approved by TRB
- Section 1B: ROW Acquisition activities ongoing.
- Section 2: Parcellary/ROW Reference Plan approved by TRB
- Section 3, 4, 5 & 6: Certified partial FED Drawings for all sections are being submitted continually to TRB.

Category: Expressway (EX9)	
Project Title: Laguna Lakeshore Expressway Dike (LLED)	
Location: Quezon City to Pasay City, Metro Manila	<p>Project Image</p>
<p>Description: This is a 6-lane, 34.024-km expressway connecting Skyway/FTI in Taguig City to Batasan Complex in Quezon City. The project is divided into six sections:</p> <p>SEGMENT 1</p> <p>1. SECTION 1: Skyway/FTI – C5/Diego Silang (L = 4.049 kms.)</p> <p>Section 1A: Skyway to FTI</p> <p>Section 1B: FTI to C5/Diego Silang</p> <p>2. SECTION 2: C5/Diego Silang – C6/Taguig (L = 2.125 kms.)</p> <p>3. SECTION 3: C6/Taguig – Ortigas Ave. Ext (L = 12.000 kms.)</p> <p>SEGMENT 2</p> <p>4. SECTION 4: Ortigas Ave. Ext. – Marcos Highway (L = 5.000 kms.)</p> <p>5. SECTION 5: Marcos Highway – Tumana Bridge (L= 8.336 kms.)</p> <p>6. SECTION 6: Tumana Bridge to Batasan Complex (L = 2.514 kms)</p>	
Project Cost: PHP76.0 billion	
Funding:	
Implementing Agency: DPWH	
Status – Schedule: 2016 - 2020	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2015</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	<p>Remarks</p> <ul style="list-style-type: none"> • The bidding process on 28 March 2016 failed as qualified bidders did not submit offers citing the project's risk profile and complexity. • Letter to Asian Development Bank (ADB) seeking for Transaction Advisory assistance on project restructuring was submitted on October 7, 2016. • ADB is currently conducting a scoping study on the project.
<p>Information Source:</p> <p>DPWH Web-site</p> <p>List of NEDA Board Approved Projects (From June 2010 to June 2016)</p>	

Category: Expressway (EX10)	
Project Title: North Luzon Link Expressway East (NLEE), Phases 1 & 2	
Location: Norzagaray, Bulacan Province to Cabanatuan City, Nueva Ejica Province	<p>Project Image</p>  <p>The map displays the NLEX East (NLEE) project route in red, divided into four segments. Segment 1 is from Bigte-San Miguel to Biak na Bato (30.91 kms). Segment 2 is from San Miguel to Gapan City (30.56 kms). Segment 3 is from Gapan City to Palayan City (17.64 kms). Segment 4 is from Cabanatuan City to Palayan City (11.99 kms). The map also shows major roads and cities in the region, including Norzagaray, Cabanatuan City, Gapan City, and Palayan City.</p>
<p>Description: The project is a 91.10-km long, 4-lane expressway which consists of 4 segments:</p> <p>Segment 1: Bigte-San Miguel-Jct. Biak na Bato Road 30.91 kms.</p> <p>Segment 2: San Miguel-Jct. Biak na Bato Road-Gapan City- Jct. Fort Magsaysay Road 30.56 kms.</p> <p>Segment 3: Gapan City-Jct. Fort Magsaysay Road- Cabanatuan City-Jct. Palayan City Road 17.64 kms.</p> <p>Segment 4: Cabanatuan City-Jct. Palayan City Road-Central Luzon Link Expressway (CLLEX Ph 2) 11.99 kms.</p>	
Project Cost: PHP44.6 billion	
Funding:	
Implementing Agency: DPWH	
Status – Schedule:	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source:	
DPWH	

Category: Expressway (EX11)																
Project Title: Arterial Road Bypass Project Phase II (ARBP II)																
Location: Plaridel, Bulacan Province	<p>Project Image</p>															
<p>Description: This is a 24.61-km arterial road with 11 bridges that will link the North Luzon Expressway (NLEX) with Maharlika Highway in San Rafael, Bulacan.</p> <p>Construction is ongoing for contract packages 3 and 4 under Phase II of the Plaridel Bypass Road, which will link Central Luzon provinces to NLEX and is expected to cut travel time from Manila to Bulacan by 45 to 50 minutes.</p> <ul style="list-style-type: none"> Package 3: a total length of 2.22 km with 2 bridges <p>Package 4: a total length of 7.74 km</p>																
Project Cost: PHP3.7 billion																
Funding: ODA																
Implementing Agency: DPWH																
Status – Schedule: 2012-2017																
Project Readiness:	Remarks															
<table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Feasibility Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Detailed Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> NEDA Board Approval</td> <td>(Year) Nov. 2011</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ROW</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table>		<input type="checkbox"/> Business Case Study	(Year)	<input type="checkbox"/> Feasibility Study	(Year)	<input type="checkbox"/> Concept and Basic Design	(Year)	<input type="checkbox"/> Detailed Design	(Year)	<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Nov. 2011	<input type="checkbox"/> ECC	(Year)	<input type="checkbox"/> ROW	(Year)	<input type="checkbox"/> Others
<input type="checkbox"/> Business Case Study	(Year)															
<input type="checkbox"/> Feasibility Study	(Year)															
<input type="checkbox"/> Concept and Basic Design	(Year)															
<input type="checkbox"/> Detailed Design	(Year)															
<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Nov. 2011															
<input type="checkbox"/> ECC	(Year)															
<input type="checkbox"/> ROW	(Year)															
<input type="checkbox"/> Others	(Year)															
Information Source: NEDA	<ul style="list-style-type: none"> Though most of the Permits to Enter (PTEs) were already secured from Project Affected Persons (PAPs), payments of improvements and lots could not be done expeditiously because of the tedious documentations and COA requirements such as detailed as-built drawings of affected structures. 															

Category: Urban Road (EX12)	
Project Title: Plaridel Bypass Phase III	
Location: Bulacan, Region III	Project Image
Description: The Toll Road design includes the construction of 11 bridges, 2 interchanges, 5 overpasses, 1 intersections and 3 toll plazas	
Project Cost: PHP5.3 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2018-2020	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input checked="" type="checkbox"/> ECC (Year) <input checked="" type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

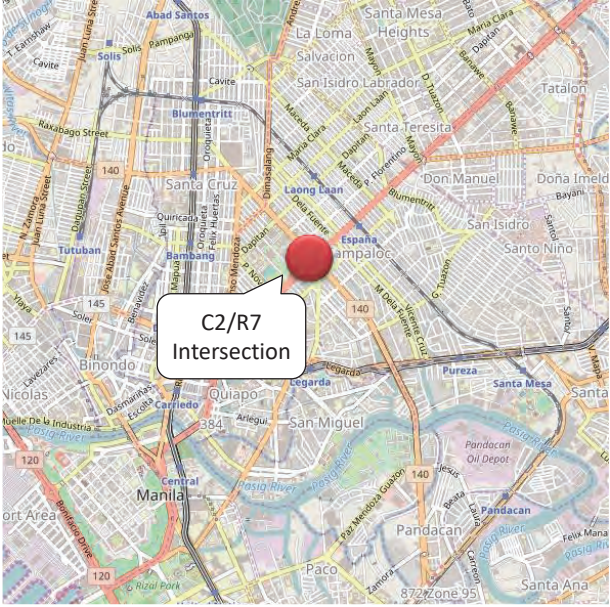
Category: Expressway (EX13)	
Project Title: C6 North Section	
Location: Bulacan Province	<p>Project Image</p>
Description: A dual 2 lane 10.5 km east-west elevated expressway in the north of Metro Manila to connect NLEX with the MRT-7 northern terminus and also to the newly proposed Expressway E-11.	
Project Cost: PHP4.3 billion	
Funding: TBD – Likely to be Local/PPP	
Implementing Agency: DPWH	
Status – Schedule: Medium Term	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<p>Remarks</p> <ul style="list-style-type: none"> The expressway is scheduled to be built in the medium term (around 2020), because it would provide direct east west connection between the existing NLEX and newly proposed med expressways (E-11).
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Expressway (EX14)	
Project Title: Cavite-Laguna Expressway	
Location: Cavite Province to Laguna Province	<p>Project Image</p>
<p>Description: This is a 4-lane 44.20 km expressway connecting CAVITEX and SLEX. The project will start from the CAVITEX in Kawit, Cavite and end at the SLEX-Mamplasan Interchange in Biñan, Laguna.</p> <p>This will have interchanges in 8 locations namely; Kawit, Open Canal, Governor's Drive, Aguinaldo Highway, Silang East, Sta. Rosa-Tagaytay Road, Laguna Blvd, and Technopark.</p>	
Project Cost: PHP35.7 billion	
Funding: PPP	
Implementing Agency: DPWH	
Status – Schedule: 2015 - 2020	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Ongoing review of draft Detailed Engineering Design and other pre-construction activities.
<input checked="" type="checkbox"/> Business Case Study (Year) 2012 <input checked="" type="checkbox"/> Feasibility Study (Year) 2012 <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) 2013-2014 <input checked="" type="checkbox"/> NEDA Board Approval (Year) Feb. 2015 <input checked="" type="checkbox"/> ECC (Year) <input checked="" type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>List of NEDA Board Approved Projects (From June 2010 to June 2016)</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p>	


Category: Expressway (EX15)	
Project Title: CAVITEX Extension West to Rosario	
Location: Cavite Province	<p>Project Image</p>
Description: From the southern end of CAVITEX in Kawit, Cavite to Tanza/Rosario. Construction of 10.5-kilometer expressway with 4-lanes. Alighment of CAVITEX extension follows Antero Soriano Highway.	
Project Cost: PHP12.7 billion	
Funding: TBD	
Implementing Agency: DPWH	
Status – Schedule: Long Term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • A natural extension of CAVITEX as the demand builds up in the long-term future.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

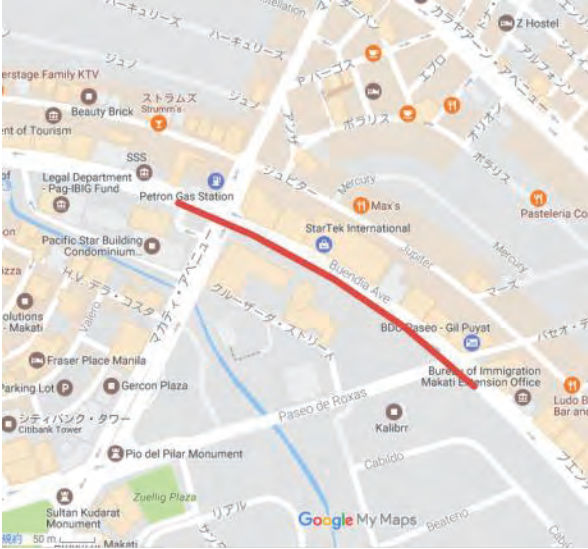
6. Interchange/Flyover/Underpass/Bridges

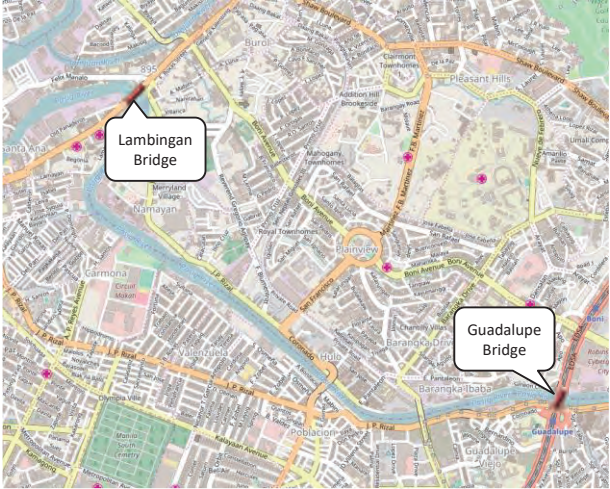
Category: Bridge/Interchange (B1)																	
Project Title: Metro Manila Interchange Construction Project Phase VI (MMICP IV)																	
Location: Quezon City, Metro Manila	<p>Project Image</p>																
<p>Description: This is a 2nd level flyover at: (a) EDSA-West Avenue - North Avenue Interchange (661.0m); (b) EDSA-Roosevelt Avenue - Congressional Interchange (573.5m); (c) C-5 Libis - Greenmeadows - Acropolis - Calle Industria Interchange (1,374.4m); (d) North Avenue - Mindanao Avenue Interchange (951.9m).</p>																	
Project Cost: PHP4.0 billion																	
Funding: ODA																	
Implementing Agency: DPWH																	
Status – Schedule: 2015 – 2019	<p>Remarks</p> <ul style="list-style-type: none"> • The Loan Agreement was signed on 26 March 2015 and became effective on 01 July 2015. • Detailed Engineering design ongoing. • Construction not yet undertaken. 																
<p>Project Readiness:</p> <table border="0"> <tr> <td><input type="checkbox"/> Business Case Study</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Feasibility Study</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Concept and Basic Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> Detailed Design</td> <td>(Year)</td> </tr> <tr> <td><input checked="" type="checkbox"/> NEDA Board Approval</td> <td>(Year) Oct. 2014</td> </tr> <tr> <td><input type="checkbox"/> ECC</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> ROW</td> <td>(Year)</td> </tr> <tr> <td><input type="checkbox"/> Others</td> <td>(Year)</td> </tr> </table>		<input type="checkbox"/> Business Case Study	(Year)	<input checked="" type="checkbox"/> Feasibility Study	(Year)	<input type="checkbox"/> Concept and Basic Design	(Year)	<input checked="" type="checkbox"/> Detailed Design	(Year)	<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Oct. 2014	<input type="checkbox"/> ECC	(Year)	<input type="checkbox"/> ROW	(Year)	<input type="checkbox"/> Others	(Year)
<input type="checkbox"/> Business Case Study		(Year)															
<input checked="" type="checkbox"/> Feasibility Study		(Year)															
<input type="checkbox"/> Concept and Basic Design	(Year)																
<input checked="" type="checkbox"/> Detailed Design	(Year)																
<input checked="" type="checkbox"/> NEDA Board Approval	(Year) Oct. 2014																
<input type="checkbox"/> ECC	(Year)																
<input type="checkbox"/> ROW	(Year)																
<input type="checkbox"/> Others	(Year)																
Information Source:																	
<p>List of NEDA Board Approved Projects (From June 2010 to June 2016)</p> <p>Web-site of Build!Build!Build!: http://build.gov.ph</p> <p>DPWH</p>																	

Category: Bridge/Interchange (B2)	
Project Title: C-2 (Gov. Forbes St.)/R-7 (España St.) Interchange Project	
Location: City of Manila, Metro Manila	<p>Project Image</p> 
Description: This is a 4-lane, 1,600-m long 3rd level flyover (685 meters) along Gov. Forbes St. crossing R7 with a proposed MRT at the 2nd level along España Blvd.	
Project Cost: PHP2.6 billion	
Funding: GOP	
Implementing Agency: DPWH	
Status – Schedule: 2018-2019 (Accomplishment: 4.55%)	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Oct. 2014 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Bridge/Interchange (B3)	
Project Title: Ortigas Avenue – Santolan Road Interchange Project	
Location: Metro Manila	Project Image
Description: Construction of Flyover	
Project Cost: PHP0.6 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2018-2020	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> • For Inclusion in the FY 2018 NEP
Information Source: DPWH	

Category: Bridge/Interchange (B4)		
Project Title: EDSA-Taft Flyover		
Location: Pasay City to Makati City, Metro Manila	<p>Project Image</p> 	
Description: This is a 4-lane, 1.44-km long flyover (0.96km without ramps) along EDSA spanning Malibay Bridge from Makati City to F.B. Harrison Street in Pasay City. This will use a combination of pre-stressed girders, steel girders and steel truss system.		
Project Cost: PHP0.7 billion		
Funding: GOP		
Implementing Agency: DPWH		
Status – Schedule:		
Project Readiness:	Remarks	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input checked="" type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) 2013 <input checked="" type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)		<ul style="list-style-type: none"> Monitoring of the progress of NAIA Expressway, Phase II. The ICC approval already lapsed, for re-submission to NEDA-ICC.
Information Source: DPWH		


Category: Urban Road (B5)	
Project Title: Gil Puyat Avenue/Makati Avenue-Paseo de Roxas Vehicles Underpass Project	
Location: Makati City, Metro Manila	Project Image 
Description: This is a 4-lane, 880m-long underpass along the innermost lanes of Senator Gil Puyat Avenue passing through Paseo de Roxas and Makati Avenue intersections including the restoration, widening and improvement of the existing at-grade road. A tunnel will span 570m.	
Project Cost: PHP1.1 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2015-2018 (Accomplishment: 1.99%)	
Project Readiness:	Remarks <ul style="list-style-type: none"> • DPWH implementing unit issued work suspension effective 28 Oct. 2015 due to the requirement of Makati City LGU for payment of Cash Bond equivalent to 25% of the total project cost prior to issuance of excavation permit in accordance with City Ordinance No. 2005-018.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Oct. 2014 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

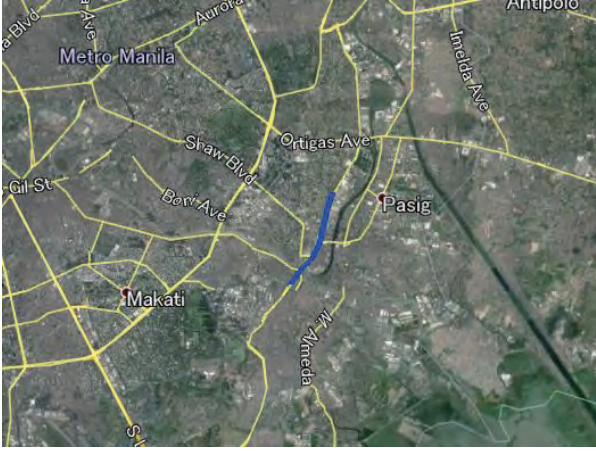
Category: Bridge/Interchange (B6)	
Project Title: Metro Manila Priority Bridges Seismic Improvement Project (MMPBSIP)	
Location: Cities of Manila, Makati and Mandaluyong, Metro Manila	<p>Project Image</p> 
Description: The project scope includes: (a) replacement of outer bridges and replacement of substructure including foundation of inner bridge of Guadalupe Bridge (0.19km), and; (b) replacement of Lambingan Bridge (0.13km) with vertical geometry improvement of approach roads on both sides.	
Project Cost: PHP4.3 billion	
Funding: ODA	
Implementing Agency: DPWH	
Status – Schedule: 2016 – 2021	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) May 2015 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> NEDA Board approved by ad referendum.
Information Source: NEDA, DPWH	


Category: Bridge/Interchange (B7)	
Project Title: Pasig River-Marikina River-Manggahan Floodway Bridges Construction Project	
Location: Metro Manila	<p>Project Image</p>
Description: Supply and Construction, including design and engineering studies thirteen (13) bridges in Metro Manila crossing Pasig River (6), Marikina River (5) and Manggahan Floodway (2).	
Project Cost: PHP33.4 billion	
Funding: ODA	
Implementing Agency: DPWH	
Status – Schedule: 2020-2023 beyond	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Sep. 2017 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	
<ul style="list-style-type: none"> • Pre-Feasibility Study was done. • Two bridges (Binondo-Intramuros Bridge and Estrella – Pantaleon Bridge) with total cost of PHP5,974 million are approved by NEDA Board. <ul style="list-style-type: none"> - Binondo-Intramuros Bridge: 30 months - Estrella – Pantaleon Bridge: 23 months 	

Category: Bridge/Interchange (B8)																							
Project Title: Bonifacio Global City to Ortigas Road Link Project, Sta. Monica-Lawton Bridge and Viaduct (Phase I & II-A)																							
Location: Makati City to Pasig City, Metro Manila	Project Image																						
<p>Description: This is a 4-lane bridge across Pasig River and a 4-lane viaduct structure along Lawton Avenue. The total length of the project is 961.427 meters.</p> <ul style="list-style-type: none"> Phase I: Construction of a 613.77-meter, 4-lane, 2-way bridge structure across Pasig River from Sta. Monica St. to Lawton Street Phase II-A: Extending the south end of Phase I via the construction of a 337-meter, 4-lane, 2-way viaduct that will cross over J.P. Rizal Street and Kalayaan Avenue and terminate inside BGC. <p>Phase II-B: Construction of a 1,490-meter, 2-lane north bound underpass from Sta. Monica St. to West Capitol Dr. crossing Shaw Blvd. and terminating at Meralco Avenue; and the construction of a 600-m, 2-lane south bound viaduct from Meralco Avenue across Shaw Blvd. and terminating at United Avenue; and an 890-m, 2-lane at-grade road facility from United Avenue to Sta. Monica.</p>	<table border="1"> <thead> <tr> <th colspan="2">Phase I: Lawton-Sta. Monica Bridge</th> </tr> </thead> <tbody> <tr> <td colspan="2">Bridge Length : 557 linear meter consisting 4-span temporary steel ramp, 6-span PC Box Girder and 3-span PCDG.</td> </tr> <tr> <th colspan="2">Bridge</th> </tr> <tr> <td>Civil Works</td> <td>1.6 B</td> </tr> <tr> <td>Right of Way</td> <td>0.4 B</td> </tr> <tr> <td>Total</td> <td>2.0 B</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Phase II: Elevated Access</th> </tr> </thead> <tbody> <tr> <td colspan="2">Fly-over</td> </tr> <tr> <td>Civil Works</td> <td>0.7 B</td> </tr> <tr> <td>Right of Way</td> <td>0.5 B</td> </tr> <tr> <td>Total</td> <td>1.20 B</td> </tr> </tbody> </table> <p>Legend: — Phase I Sta. Monica-Lawton Bridge — Phase II (Global City to Ortigas Center Link Road Project)</p>	Phase I: Lawton-Sta. Monica Bridge		Bridge Length : 557 linear meter consisting 4-span temporary steel ramp, 6-span PC Box Girder and 3-span PCDG.		Bridge		Civil Works	1.6 B	Right of Way	0.4 B	Total	2.0 B	Phase II: Elevated Access		Fly-over		Civil Works	0.7 B	Right of Way	0.5 B	Total	1.20 B
Phase I: Lawton-Sta. Monica Bridge																							
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Bridge																							
Civil Works	1.6 B																						
Right of Way	0.4 B																						
Total	2.0 B																						
Phase II: Elevated Access																							
Fly-over																							
Civil Works	0.7 B																						
Right of Way	0.5 B																						
Total	1.20 B																						
Project Cost: PHP5.7 billion																							
Funding: GOP																							
Implementing Agency: DPWH																							
Status – Schedule: 2012 - 2020 Project Procurement (by May 2017)																							
Project Readiness:	Remarks																						
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Dec. 2015 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> Detailed Engineering Design ongoing for Phase I and Phase II-A. 																						
Information Source: List of NEDA Board Approved Projects (From June 2010 to June 2016) Web-site of Build!Build!Build!: http://build.gov.ph																							

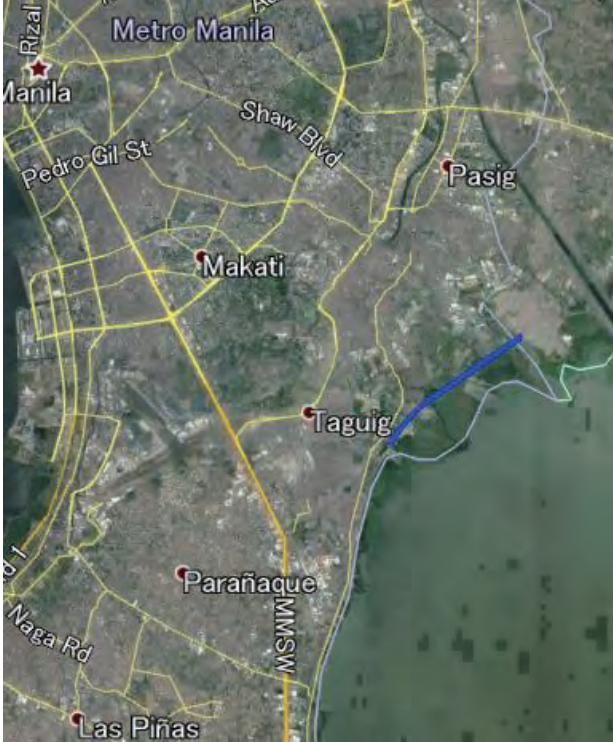
7. Urban Road

Category: Urban Road (UR1)	
Project Title: Circumferential Road 3 (C-3), Southern Segment from N. Domingo St. in San Juan City to Buendia Avenue in Makati City	
Location: San Juan City and Makati City	<p>Project Image</p> 
<p>Description: C-3 Missing Link will have substantial impact improving the circumferential road network in Metro Manila</p> <p>Starts from N. Domingo Street in San Juan City and passing through cities of Manila, Mandaluog and ends at the junctions of Buendia and Ayala Avenue in Makati City</p>	
Project Cost: PHP10.5 billion	
Funding: GAA	
Implementing Agency: DPWH	
<p>Status – Schedule:</p> <p>2020-2023 beyond</p>	
<p>Project Readiness:</p> <p><input type="checkbox"/> Business Case Study (Year)</p> <p><input type="checkbox"/> Feasibility Study (Year)</p> <p><input type="checkbox"/> Concept and Basic Design (Year)</p> <p><input type="checkbox"/> Detailed Design (Year)</p> <p><input type="checkbox"/> NEDA Board Approval (Year)</p> <p><input type="checkbox"/> ECC (Year)</p> <p><input type="checkbox"/> ROW (Year)</p> <p><input type="checkbox"/> Others (Year)</p>	
<p>Information Source:</p> <p>DPWH</p>	<p>Remarks</p> <ul style="list-style-type: none"> • Pre-feasibility study

Category: Bridge/Interchange (UR2)	
Project Title: C-5 Kalayaan-Bagong Ilong Improvement Project	
Location: Metro Manila	<p>Project Image</p> 
Description: Construction of a 2 lane each North Bound/South Bound flyover from Kalayaan intersection up to existing Pasig Bridge then with separate lanes along Bagong Ilog Flyover that merge after the existing flyover and terminating beyond Lanuza intersection.	
Project Cost: PHP8.5 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2016	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Pre-feasibility study • Final design concept for submission to NEDA-ICC
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

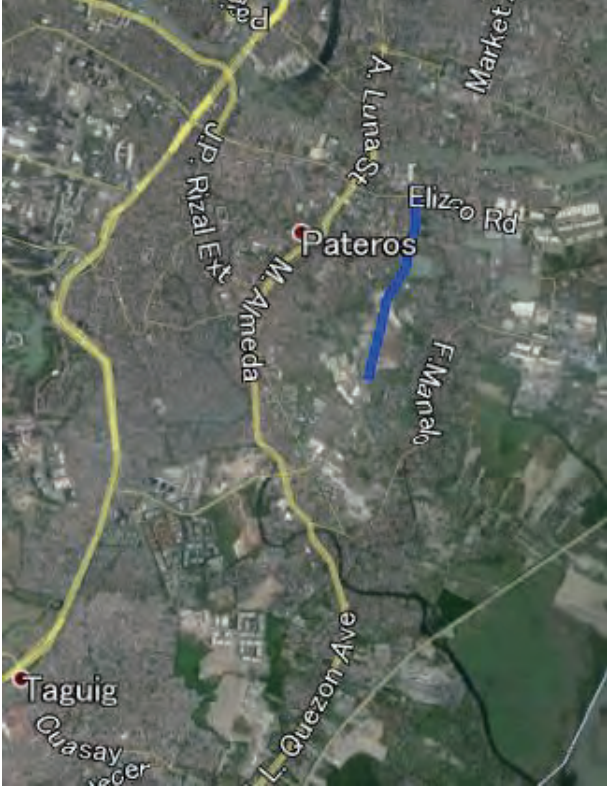
Category: Urban Road (UR3)	
Project Title: C.P. Garcia (C-5) SLEX to Coastal Road, Zapote Bound Coastal Service Road	
Location: Las Piñas City, Metro Manila	Project Image 
Description: Construction of Bridge across Zapote River and its Approaches and Construction / Extension of C-5 Road including drainage connecting Las Pinas City and Bacoor	
Project Cost: PHP0.10 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017	
Project Readiness:	Remarks <ul style="list-style-type: none"> • Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Urban Road (UR5)	
Project Title: Widening of C-6	
Location: Taytay, Rizal, Region IVA	Project Image
Description: First phase of project includes a total of 1.9 km of road widening with varying widths to match the widened road of NCR and a 4.5 m-wide, 230 mm thick and 2.281 km long bike lane with shoulder. Phase 2 will include slope protection at road portions near Ilog Tapayan and provision of 800 m long bike lane. The main objective of widening the C-6 Extension is to accommodate the additional traffic travelling to and from Manila and Rizal.	
Project Cost: PHP0.25 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017-2018	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR6)	
Project Title: C-6 Napindan-ML Quezon Ave	
Location: Metro Manila/Taguig City	Project Image 
Description: Construction of a Bypass/Diversion Road to Reduce travel time along National Road Network that Traverse Central Business Districts	
Project Cost: PHP0.64 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2018	
Project Readiness:	Remarks <ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR7)	
Project Title: C-6 Taguig Pateros	
Location: Metro Manila/Taguig City	<p>Project Image</p>
Description: The project will provide the approaches necessary for the bridge connecting F. Manalo and Col. M. Estacio St. and the new road with drainage system leading to C-6.	
Project Cost: PHP0.03 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017-2017	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR8)	
Project Title: By-Pass Road (Marcos Highway to JP Rizal St)	
Location: Metro Manila/Marikina City	Project Image
Description: Construction of a Bypass/Diversion Road to Reduce travel time along National Road Network that Traverse Central Business Districts	
Project Cost: PHP0.14 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017-2018	
Project Readiness:	
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Information Source: DPWH	


Category: Urban Road (UR9)	
Project Title: Taguig Diversion Road to Elizco By-Pass Road (via Visitacion Street) incl. ROW	
Location: Metro Manila/Pasig City	<p>Project Image</p> 
Description: Widening of existing 2-lane road to 4 lanes and acquisition of necessary road right of way for the road widening.	
Project Cost: PHP0.05 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Urban Road (UR10)	
Project Title: Navotas/ Malabon/ Valenzuela Package	
Location: Metro Manila, Bulacan Province	<p>Project Image</p>
<p>Description: Upgrade of 41.2km of local single carriageway 2 or 4 lanes roads to 4 or 6 lane roads.</p> <p>Addition of a new 10.6km link roads 1) North/South road from A. Bonifacio road through Tarong area across Marikina River (with new bridge) and connect with JP Rizal near its intersection with Lapu-Lapu Road in the north; and 2) a new link road between Marcos Highway (near LRT-2 Santolan Station) and Evangelist Avenue.</p>	
Project Cost: PHP23.9 billion	
Funding: TBD Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium to Long term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • The addition of Segment 9 & 10 expressways in the area would add road capacity, which would suffice for the short-term need. However, in the long run further road capacity expansion is required in the north/south corridor to relieve MacArthur Highway and NLEX - as no further capacity expansion of these roads would be possible. Local roads would also need major capacity expansion as population
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Urban Road (UR11)	
Project Title: Marikina Package	
Location: Metro Manila	<p>Project Image</p> 
<p>Description: Upgrade of 41.2km of local single carriageway 2 or 4 lane roads to 4 or 6 lane roads.</p> <p>Addition of a new 10.6km link roads 1) North/South road from A. Bonifacio road through Tarong area across Marikina River (with new bridge) and connect with JP Rizal near its intersection with Lapu-Lapu Road in the north; and 2) a new link road between Marcos Highway (near LRT-2 Santolan Station) and Evangelist Avenue.</p>	
Project Cost: PHP8.7 billion	
Funding: TBD – Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium to Long term	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

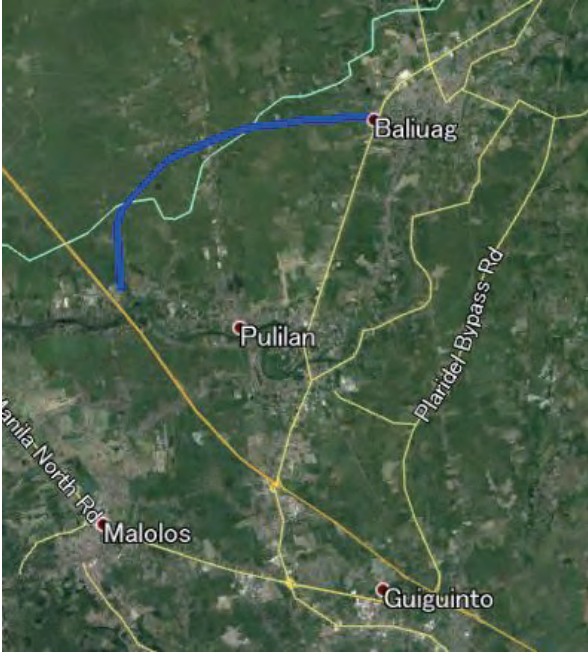
Category: Urban Road (UR12)	
Project Title: Ortigas Avenue	
Location: Metro Manila, Rizal Province	<p>Project Image</p> 
Description: Upgrade of 9.5 kilometer local single carriageway 1 or 2 lane roads to 3 - lane roads.	
Project Cost: PHP8.9 billion	
Funding: TBD – Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium term	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks
Information Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)	

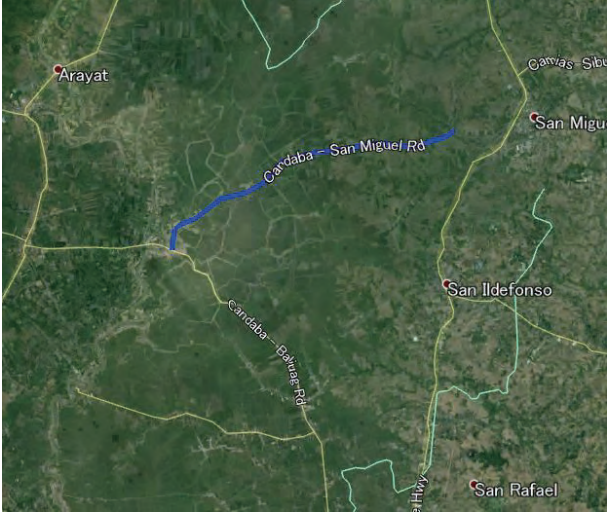
Category: Urban Road (UR13)	
Project Title: Amang Rodriguez Av. & Pres. Manuel Quezon	
Location: Metro Manila	<p>Project Image</p> 
<p>Description: Upgrade of 41.2 km of local single carriageway 2 or 4 lane roads to 4 or 6 lane roads.</p> <p>Addition of new 10.6 km link roads 1) N/S road from A. Bonifacio road through Tarong area across Marikina River (with new bridge) and connect with JP Rizal near its intersection with Lapu-Lapu Road in the north; and 2) a new link road between Marcos Highway (near LRT-2 Santolan Station) and Evangelist Avenue.</p>	
Project Cost: PHP9.9 billion	
Funding: TBD - Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Long term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> This is the only North/South link east of C-5 that would be congested despite the addition of C-5 expressway (Project E-11). Upgrade of this existing road would improve the traffic condition in this North/South corridor and would eliminate the need for a new and expensive major North/South road link C-6.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

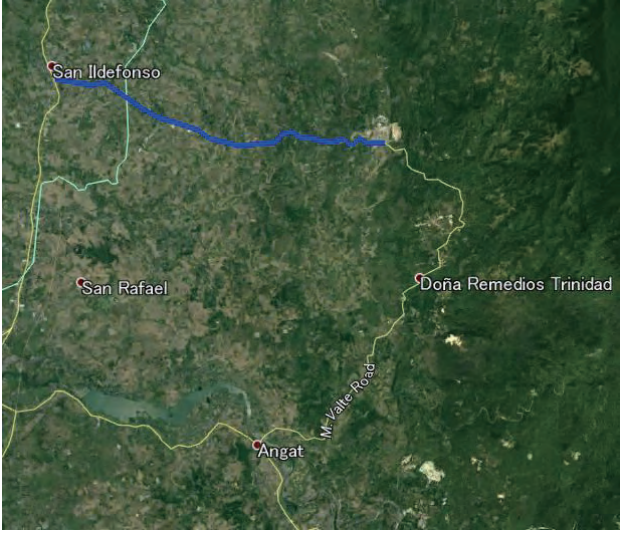
Category: Urban Road (UR14)	
Project Title: Alabang-Zapote Areas	
Location: Metro Manila and Cavite Province	Project Image 
Description: Upgrade of 41.2 km of local single carriageway 2 or 4 lane roads to 4 or 6 lane roads. Addition of new 10.6 km link roads 1) North/South road from A. Bonifacio road through Tarong area across Marikina River (with new bridge) and connect with JP Rizal near its intersection with Lapu-Lapu Road in the north; and 2) a new link road between Marcos Highway (near LRT-2 Santolan Station) and Evangelist Avenue.	
Project Cost: PHP0.27 billion	
Funding: TBD – Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium to Long term	
Project Readiness:	Remarks <ul style="list-style-type: none"> • Even with CALA expressway there is a need for good primary roads for east-west travel north of CALA. Such upgrades are necessary for short distance travel to be at economical speeds of around 30 kph in sub-urban areas.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)	

Category: Urban Road (UR15)	
Project Title: Marcos-Alvares Road	
Location: Las Piñas City, Metro Manila	<p>Project Image</p>
Description: Road Widening including ROW and Construction / Replacement of Drainage Pipes	
Project Cost: PHP0.18 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2017	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

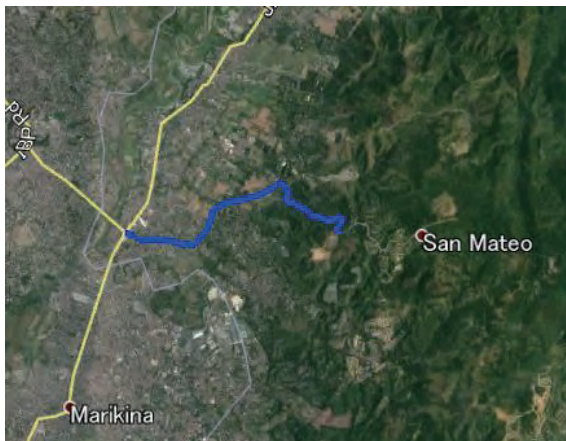
Category: Urban Road (UR16)	
Project Title: Improvement/Widening of General Luis Road Project	
Location: Quezon City to Valenzuela City, Metro Manila	<p>Project Image</p>
<p>Description: This is a road project that will widen existing 2 lanes to 4 lanes, and to 6 lanes at 4 major intersections of General Luis – Kaybiga – Polo – Novaliches Road. The road project extends from Quirino Highway (R-7) in Quezon City to Gen. MacArthur Avenue (R-9) in Valenzuela City. The total length of road to be improved or widened is 8.98km. The project intends to expand the carriageways of the road network, and also intends to rehabilitate three short bridges along the road network which are located in Malinta, Paseo de Blas, and Maysan in Valenzuela City.</p>	
Project Cost: PHP2.9 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2018 – 2019	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input checked="" type="checkbox"/> NEDA Board Approval (Year) Nov. 2016 <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source: NEDA, DPWH</p>	


Category: Urban Road (UR17)	
Project Title: Pulilan-Baliuag Diversion Road, incl. Bridge	
Location: Bulacan/Pulilan, Region III	<p>Project Image</p> 
Description: The construction of new roads will divert traffic from built-up area. It also facilitates the transportation of goods in case of calamities.	
Project Cost: PHP0.78 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2015-2017	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR18)	
Project Title: Candaba – San Miguel Bypass Road	
Location: Bulacan/San Miguel, Region III	<p>Project Image</p> 
<p>Description: "Road Upgrading (Gravel to Concrete) Construction of Bypass Road Candaba-San Miguel Road, Province of Bulacan, including Road Right of Way and Stone Masonry, with a estimated total length of 3.816 km.</p> <p>To connect Pampanga and San Miguel, Bulacan. To reduce transport costs/time and vehicle operation cost. To improve access to potentially productive areas especially agricultural lands and to provide alternative route."</p>	
Project Cost: PHP0.39 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2018	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks
<p>Information Source: DPWH</p>	

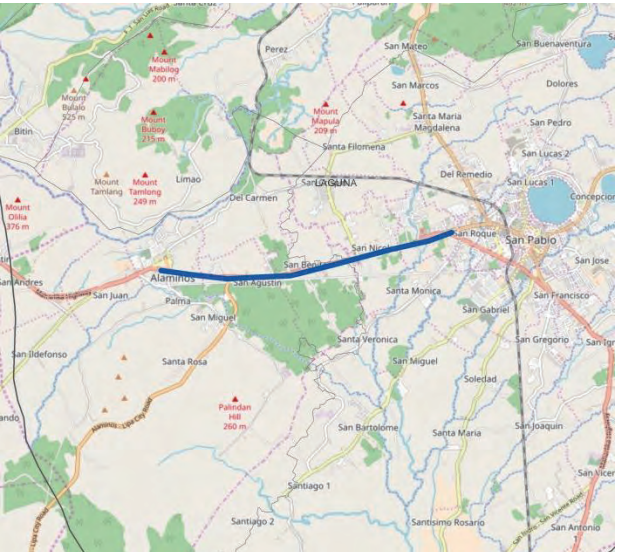
Category: Urban Road (UR19)	
Project Title: Western Bulacan Connector	
Location: Bulacan/San Ildefonso, Region III	Project Image
Description: This is to connect Daang Maharlika Road to Eastern Bulacan Road; to improve access to potentially productive areas especially agricultural lands; to reduce transport costs/time and vehicle operation cost; to provide alternative route; to reduce the percentage of traffic accidents.	
Project Cost: PHP0.39 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2017-2021	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
Information Source: DPWH	

Category: Urban Road (UR20)	
Project Title: Marcos Highway	
Location: Rizal Province	<p>Project Image</p>
Description: Upgrade of 6.9 km section of Marcos Highway from Masingag to Antipolo to be a single six lane carriageway.	
Project Cost: PHP4.0 billion	
Funding: TBD – Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium to Long term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • This road is a south-east extension of Marcos highway, which is a dual 3-lane up to Masingag up to the edge of Metro Manila boundary. Beyond that the road is a single carriageway of 2/4 lanes, which is inconsistent for a primary road to be of such standard by 2030.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

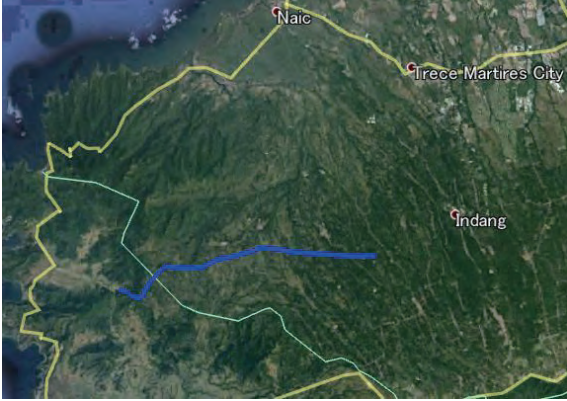
Category: Urban Road (UR21)	
Project Title: Junction Batasan-San Mateo-Rodriguez By-pass Link Road, Phase III & IV, incl ROW	
Location: Rodriguez, Montalban, Rizal, Region IVA	Project Image
<p>Description: "The proposed bypass road has a total length of 10.20 km divided into four (4) phases. Phase I starts at Km 21+057.5 and ends at Km 22+859.5. It is a non-existing road that will traverse urbanized residential and commercial areas: Phase II is the continuing link of Phase I at Km 22+859.5 and ends at Km 24+359.5. It is an existing 2-lane PCC pavement constructed in 2001 which needs rehabilitation. Phase III is the continuing link of Phase II at Km 24+359.5 and ends at Km 26+359.5. It is an existing road with a combination of PCC pavement and gravel surface that traverses an agricultural land. Phase IV starts at Km 26+359.5 until it reaches a mountainous and winding area where the project road terminates at Km 31+259.5. The proposed bypass road would require the acquisition of a 20-meter Road-Right of Way (RROW) and the conduct of the topographic survey to determine the horizontal and vertical alignments of the proposed bypass road, which will be undertaken during the detailed engineering design phase.</p> <p>Project Objectives are the following:</p> <ol style="list-style-type: none"> 1. Compliment with the proposed circumferential road (C-6) project. 2. To enhance economic development of Rizal and the neighboring provinces. 3. Traffic decongestion" 	
Project Cost: PHP1.5 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2014-2018	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> • Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
Information Source: DPWH	

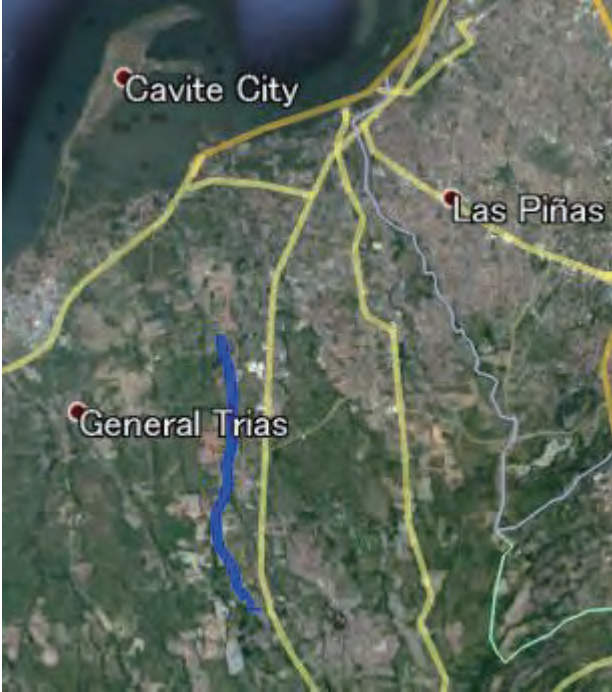
Category: Urban Road (UR22)	
Project Title: Calamba Local Area Roads Package	
Location: Laguna Province	Project Image 
Description: Upgrade of 12.4 km of various sections of secondary roads around Calamba City from 2 lane single carriageways to six lanes.	
Project Cost: PHP0.4 billion	
Funding: TBD – Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Medium Term	
Project Readiness:	
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	Remarks <ul style="list-style-type: none"> The whole of the secondary roads around Calamba city area needs upgrade, and a comprehensive traffic management study is required to improve access to Calamba station and the North/South expressways.
Information Source:	
Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)	


Category: Urban Road (UR23)	
Project Title: Bucal Bypass Road incl Briding Widening	
Location: Laguna/Calamba City, Region IVA	<p>Project Image</p> 
Description: The proposed bypass road's primary objective is to decongest heavy traffic along Calamba-Sta. Cruz- Famy Junction Road and Daang Maharlika.	
Project Cost: PHP0.2 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2014-2017	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR24)	
Project Title: Alaminos-San Pablo City Bypass incl ROW and Bridge	
Location: Laguna/San Pablo City, Region IVA	<p>Project Image</p> 
Description: Construction of a Bypass/Diversion Road to Reduce travel time along National Road Network that Traverse Central Business Districts	
Project Cost: PHP1.0 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2020	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	


Category: Urban Road (UR25)	
Project Title: Rosario Package	
Location: Cavite province	<p>Project Image</p>
<p>Description: Upgrade of 41.2 km of local single carriageway 2 or 4 lane roads to 4 or 6 lane roads.</p> <p>Addition of new 10.6 km link roads 1) North/South road from A. Bonifacio road through Tarong area across Marikina River (with new bridge) and connect with JP Rizal near its intersection with Lapu-Lapu Road in the north; and 2) a new link road between Marcos Highway (near LRT-2 Santolan Station) and Evangelist Avenue.</p>	
Project Cost: PHP4.0 billion	
Funding: TBD - Likely to be Local	
Implementing Agency: DPWH	
Status – Schedule: Long term	
Project Readiness:	<p>Remarks</p> <ul style="list-style-type: none"> • This isolated road in the Single peninsula would benefit from the upgrade of this single 2 lane road to improve traffic conditions in the future.
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
<p>Information Source:</p> <p>Roadmap for Transport Infrastructure Development for Metro Manila and Its Surrounding Areas (JICA, 2014)</p>	

Category: Urban Road (UR26)	
Project Title: General Aguinaldo-Magallanes-Nasugbu Road (East-West Road) Section III, Magallanes-General Aguinaldo-Maragondon Section	
Location: Cavite, Region IVA	<p>Project Image</p> 
Description: The primary objective of this project is to provide the missing links of national roads to address critical bottlenecks as well as provide easy access to tourism designated areas.	
Project Cost: PHP1.5 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2015-2021	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	
<ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Missing Gaps 	

Category: Urban Road (UR27)	
Project Title: Malagasang-Bucandala-Alapan Road incl ROW	
Location: Cavite/Imus, Region IVA	Project Image 
Description: This project aims to minimize and control traffic along Aguinaldo Highway and motorists coming from MCTEX and coming from Alabang to Cavite.	
Project Cost: PHP0.4 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2018	
Project Readiness:	Remarks <ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Bypasses/Diversion Roads
<input type="checkbox"/> Business Case Study (Year) <input type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Urban Road (UR28)	
Project Title: General Aguinaldo-Magallanes-Nasugbu Road (East-West Road), Amadeo Section	
Location: Cavite, Region IVA	Project Image 
Description: Construction of an East-West Lateral Road traversing the municipalities of General Aguinaldo, Magallanes, and Nasugbu	
Project Cost: PHP0.2 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2020	
Project Readiness:	Remarks <ul style="list-style-type: none"> • Funded Under MFO-1-Network Development-Construction of Missing Gaps
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input checked="" type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

Category: Urban Road (UR29)	
Project Title: General Aguinaldo-Magallanes-Nasugbu Road (East-West Road) Section II, Indang-Silang Section	
Location: Cavite, Region IVA	Project Image
Description: The project has a total length of 14.164 km which includes 13.72 kilometers of road opening/construction with finished pavement width of 6.70 meters portland cement concrete and 10 bridges with a total length of 440 linear meters .	
Project Cost: PHP0.8 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2016-2021	
Project Readiness:	Remarks
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	<ul style="list-style-type: none"> Funded Under MFO-1-Network Development-Construction of Missing Gaps
Information Source: DPWH	

Category: Urban Road (UR30)	
Project Title: Kaykulot Road connecting Tagaytay-Calamba Road to Sta Rosa Ulat Tagaytay Road	
Location: Cavite, Region IVA	Project Image 
Description: Road Rehabilitation and Improvement/Widening with Construction of Bridge and approaches	
Project Cost: PHP0.4 billion	
Funding: GAA	
Implementing Agency: DPWH	
Status – Schedule: 2018-2020	
Project Readiness:	Remarks <ul style="list-style-type: none"> • For consideration under FY 2018
<input type="checkbox"/> Business Case Study (Year) <input checked="" type="checkbox"/> Feasibility Study (Year) <input type="checkbox"/> Concept and Basic Design (Year) <input type="checkbox"/> Detailed Design (Year) <input type="checkbox"/> NEDA Board Approval (Year) <input type="checkbox"/> ECC (Year) <input type="checkbox"/> ROW (Year) <input type="checkbox"/> Others (Year)	
Information Source: DPWH	

REPUBLIC OF THE PHILIPPINES
NATIONAL ECONOMIC DEVELOPMENT AUTHORITY (NEDA)

**FOLLOW-UP SURVEY ON
ROADMAP FOR TRANSPORT INFRASTRUCTURE
DEVELOPMENT
FOR GREATER CAPITAL REGION (GCR)**

**TECHNICAL REPORT 3
NEW TOWN DEVELOPMENT**

August 2019

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

ALMEC Corporation

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JR
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1 BACKGROUND

In June of 2014, NEDA approved the Transport Infrastructure Roadmap Study for Mega Manila, (also referred to as Roadmap 1) that laid down a long-term plan for the integrated development of Central Luzon, Metro Manila, and CALABARZON founded on a transport backbone which includes the North-South Commuter Railway (NSCR) and Mega Manila Subway Project (MMSP). Its major objectives included:

- the decongestion of Metro Manila through planned urban expansion and transport-oriented infrastructure development; and
- the provision of affordable housing to accommodate low-income households including those who are in urgent need to be relocated from disaster-prone areas and other high danger zones in Metro Manila.

Some components of this plan have been started and are on-going, while others are in the pipeline. One of the projects that is about to begin construction is the NSCR Phase 1 (Malolos – Tutuban) which will be implemented through Official Development Assistance (ODA) from the Government of Japan. The construction of the NSCR Phase 1, similar to other mass rapid transit systems, is expected to catalyze further urban growth along its route, especially around and near its stations.

This opens up great opportunities for large scale new urban development integrated with the NSCR Phase 1, particularly to pursue actions toward achieving the objectives mentioned above especially those that focus on addressing the three core urban issues facing Metro Manila, namely:

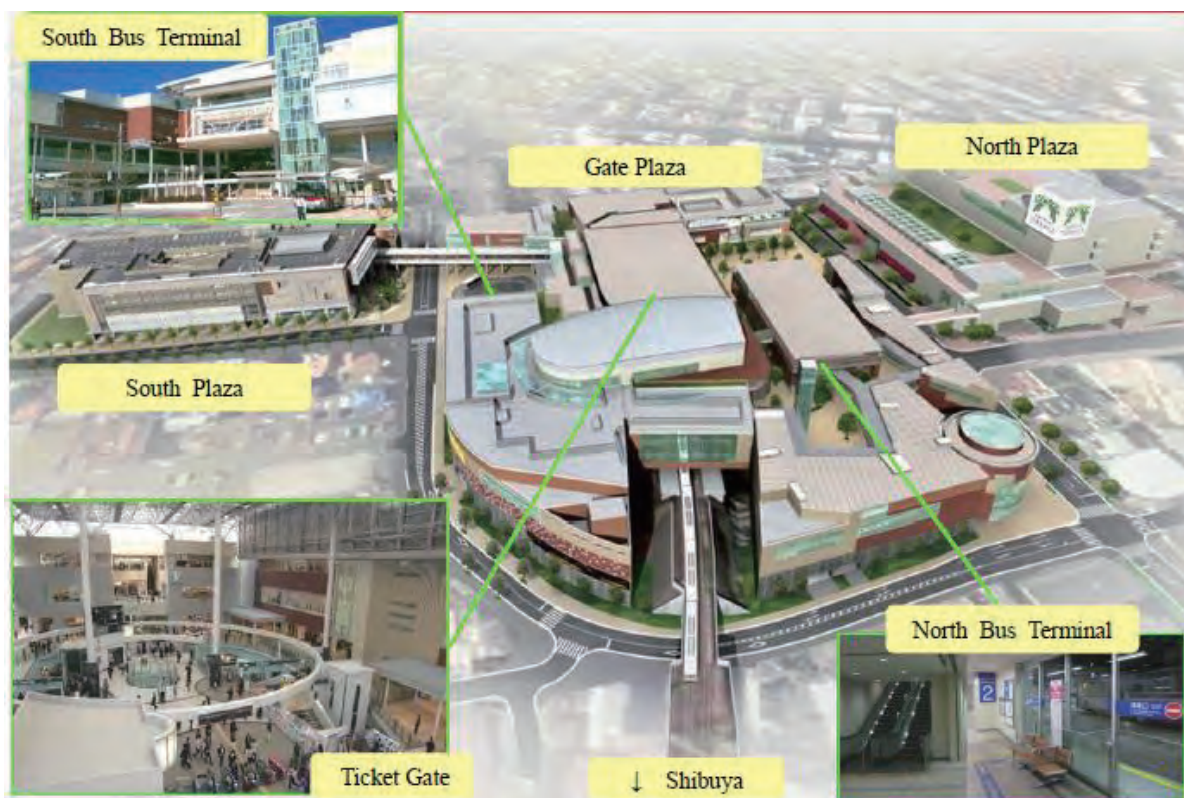
- **traffic congestion and the need for improved accessibility** – 30% of private vehicles occupy 70% of road space; peak hour is continuous between 6am to 8pm;
- **relocation of families living in high hazard areas** – the number of households living in high hazard areas in Metro Manila is 0.7 million and 1.5 million in Mega Manila; and
- **provision of affordable housing** – in 2010, the housing backlog in Metro Manila was 500,000 while households needing resettlement was 560,000.

This paper analyzes these opportunities, the factors influencing these, and defines the alternative strategies that can be taken to address the core urban issues.

2 TRANSIT INDUCED URBAN DEVELOPMENT

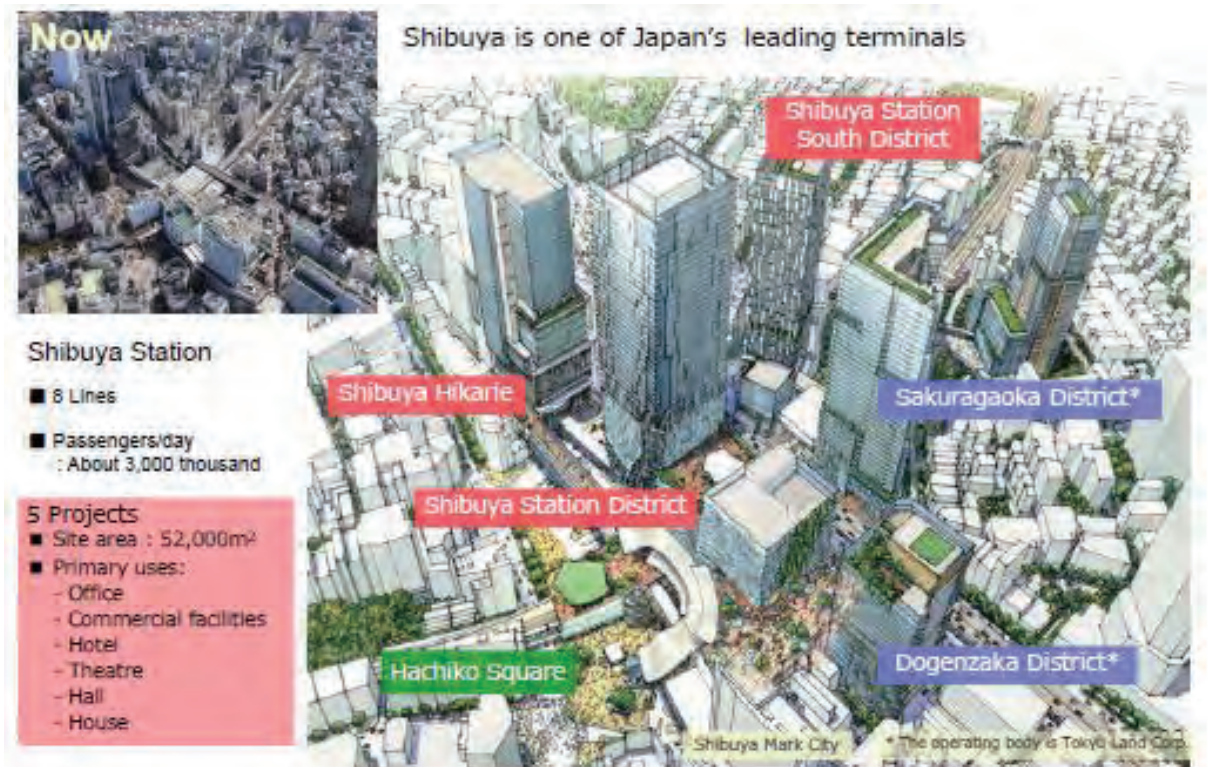
Railways, expressways, highways, and other transport systems catalyze urban development especially around major intersections, transit stations and transport terminals. These transport nodes generally attract a large number of riders which, in turn, generate a wide range of commercial and other land uses around these nodes. In a number of countries, such as Australia, Canada, China, Japan, South Korea, USA, and United Kingdom, specific policies, rules, regulations and standards have been adopted to guide such transit-induced development with the objective of enhancing patronage of the transport system, optimizing the potentials of these transport nodes and bring about smart urban growth.

These have given rise to the concept and practice of Transit Oriented Development (TOD). The TOD has evolved and become recognized as a real estate development strategy that takes advantage of the concentration of passengers in stations and/or terminals of mass public transport systems, especially railway, to promote smart urban growth. Because of the large volumes of pedestrian traffic in and around the stations, the area surrounding them are specially designed as TODs to accommodate a variety of land uses to take advantage of the business and commercial opportunities that this pedestrian traffic generates. Additionally, the development of TODs enhances the ridership of the railway transport system.



Source: [http://www.japantransport.com/seminar/\(2\)%20Mr.%20Tomoo%20Kimura%20\[Tokyu\].pdf](http://www.japantransport.com/seminar/(2)%20Mr.%20Tomoo%20Kimura%20[Tokyu].pdf)

Figure 2.1 Plan of Tama-Plaza Station in Japan



Source: [http://www.japantransport.com/seminar/\(2\)%20Mr.%20Tomoo%20Kimura%20\(Tokyu\).pdf](http://www.japantransport.com/seminar/(2)%20Mr.%20Tomoo%20Kimura%20(Tokyu).pdf)

Figure 2.2 2027 Plan for Shibuya

TODs have been implemented in several countries around the world. They cover areas ranging from around 2 hectares immediately surrounding transit stations, to larger areas within short walking distance of the station building, to more than 10 hectares within commuting distance via other modes of public transport. They are normally initiated by government, but their actual construction and management often involves partnerships with private landowners and businesses.

TODs usually accommodate a wide range of land uses and building types depending on the economic potentials of the station area and the volume of passengers that the station concerned generates. Where the economic potentials are significant and the volume of passengers is large, the wider the range of land uses, and the bigger the land area of the TOD. For example, it can accommodate the following facilities:

- Hotels and related lodging facilities
- Commercial establishments
- Offices (especially Business Process Outsourcing offices)
- Small and medium manufacturing enterprises / light industries
- Residential communities and condominiums



Figure 2.3 Rosslyn Bolston Corridor

The Rosslyn Ballston Corridor in Arlington, VA, illustrates how TOD can accommodate tremendous development in a livable community that provides benefits to both new and existing residents. This was a declining low-density commercial corridor 30 years ago when the local government decided to focus development around five closely spaced rail stations. Despite the enormous amount of development that has occurred, single-family neighborhoods have been preserved just a short walk away.

The Philippines has no laws, policies, rules or standards for TOD. The existing laws that are closest to relating to TOD are focused on housing, land use, subdivision and building construction and as such tend to produce separate, unrelated projects. They do not enable large, mixed-use, integrated developments such as TODs, townships or new towns unless the land parcels involved are first purchased and consolidated.

3 ASSESSMENT OF EXISTING LAWS, REGULATIONS AND STANDARDS

Although the country has no laws explicitly promoting the development of TODs or other large, integrated developments, there are laws, regulations and standards on housing and land development which can be used as reference for the planning of the development that transit systems, such as the NSCR and MMSP, are expected to catalyze.

Based on R.A. 7160 (Local Government Code) and R.A. 7279 (Urban Development and Housing Act), LGUs have the powers to plan, guide, implement and regulate housing and urban development projects through their Comprehensive Land Use Plan (CLUP), Comprehensive Development Plan (CDP), and Zoning Ordinance. They also have the authority to approve or disapprove proposed residential subdivision and other private sector projects, provided they comply with the requirements of PD 957 (Standards for Open Market Housing), or BP 220 (Standards for Economic and Socialized Housing), and PD 1096 (National Building Code). A critical aspect of this power of LGUs is the enforcement of the 20 percent Balanced Housing requirement of R.A. 7279 (which is now 15 percent for subdivisions and 5 percent for condominiums, as recently promulgated under R.A. No. 108841: Strengthening the Balanced Housing Program). However, many LGUs have not implemented the actions required of them under R.A. 7279. They also often lack the capacity to undertake planning at the project level and to implement major infrastructure and land development projects. Most LGUs still rely on the national government for the planning and construction of roads and other major infrastructure even if the provision of these has been devolved to them under the Local Government Code of 1991.

The Housing and Urban Development Coordinating Council (HUDCC) is responsible for the implementation of Republic Act No. 7279 and Republic Act No. 7835 (The Comprehensive and Integrated Shelter Finance Act). HUDCC's mandates include powers to:

- Formulate national goals and strategies for housing and urban development, and recommend necessary legislation and amendments to existing laws for the attainment of government's objectives in housing and urban development;
- Supervise the operations of the key shelter agencies namely Home Development Mutual Fund (HDMF), National Home Mortgage Finance Corporation (NHMFC), Social Housing Finance Corporation (SHFC), Home Guaranty Corporation (HIGC), National Housing Authority (NHA) and Housing and Land Use Regulatory Board (HLURB);
- Formulate policies that encourage maximum private sector participation in all aspects of housing and urban development; and
- Formulate policies, guidelines, and implementing mechanisms for the disposal or development of acquired or existing assets of key shelter agencies under its jurisdiction.

Based on the powers vested in them by the Local Government Code as well as Republic Act No. 7279, LGUs are able to identify and define areas for urban development through

their Comprehensive Land Use Plan (CLUP) and its accompanying Zoning Ordinance. Specifically, RA 7279 empowers LGUs to:

- Determine the appropriate land uses within their respective territories, including the identification of sites for Socialized Housing; and
- Acquire lands for Socialized Housing through such modes as land swapping, joint venture agreements, land assembly and consolidation, land banking, negotiated purchase, and expropriation.

In spite of these powers, LGUs' interventions in urban growth and development are rather passive and largely reactive. While they prescribe land uses (through the CLUP) and enforce this through their Zoning Ordinance, it is the private landowners and/or developers who decide what specific type of development to implement, where these developments will be, and when such developments are implemented. Even for Socialized Housing, LGUs may identify sites for it, but will not be able to implement it unless they acquire the properties concerned, which is very rarely done by most LGUs. Moreover, private housing developers have found several ways to comply with the Balanced Housing requirement without necessarily building these housing units within the LGU's territory that issued them the development permit. In fact, many if not most private housing developers claim they implement Socialized Housing only because they are required by law to comply. Hence, they treat it as a necessary but unprofitable part of the cost of doing business.

Both the Local Government Code and UDHA prescribes what actions must be done to accomplish certain outcomes, but their Implementing Rules and Regulations (IRR) do not explicitly define how these actions can be carried out. For example, a LGU may designate the land use of a specific land parcel to be "Industrial" or "commercial" but cannot force the landowner to comply with this unless the LGU purchases the land and implements the prescribed land use. Therefore, these laws are not fully effective in achieving their development objectives.

The other laws on housing, real estate development, and building construction (such as PD 957, BP 220, and the National Building Code) focus on individual projects such as residential subdivisions, industrial estates, and condominiums. With such an orientation, they tend to produce individual, piece-meal, unrelated projects, except when different land uses and building types are within a contiguous, large, master-planned developments that are owned and developed by a single entity, which could be a private real estate developer or government. Below is a list of some major real estate developments, referred to as "townships," that have been implemented under the abovementioned laws.

All of these townships were either private properties or former government-owned lands that were sold (through bidding) to private developers. Common to all of them is that the land was OWNED by one or just a few owners prior to their development as townships.

While they are all referred to as "townships," they vary in size and function. They are also referred to as mixed-use developments, referring to their having a wide mix of land uses. However, none of them include socialized housing, even those that were previously owned by the national government, despite the requirements of the Urban Development & Housing Act (RA 7279). They really are real estate development projects, whereby the raw

land was originally privately owned or bought by private developers who also developed, marketed, and now manage the completed project.

Table 3.1 Townships in the Philippines

Township	Location	Land Area (Hectares)	Developer	Remarks
Metro Manila (Established) <ul style="list-style-type: none"> • Makati-Ayala • Araneta Center • Greenhills 	Makati City Cubao, Quezon City San Juan City	35	Ayala Corporation Araneta Family Ortigas and Company	Privately owned, developed and managed Privately owned, developed and managed Privately owned, developed and managed
Metro Manila (New) <ul style="list-style-type: none"> • Bonifacio Global City • Newport City • Alabang Town Center 	Taguig City Pasay City Muntinlupa City		Ayala Land Megaworld Filinvest	Former military base; sold to private sector Former military base; sold to private sector
Metro Manila (Under Development) <ul style="list-style-type: none"> • Arca South • South Park District • Woodside City • Circuit Makati • Uptown Bonifacio • Veritown Fort 	Paranaque City Muntinlupa City Pasig City Makati City Taguig City Taguig City	74	Ayala Land Ayala Land Megaworld Ayala Land Megaworld Federal Land	Former government land; sold to private sector Former government land; sold to private sector Former government land; sold to private sector Former government land; sold to private sector Former privately-owned industrial site Former privately-owned horse racetrack Inside Bonifacio Global City Inside Bonifacio Global City
Outside Metro Manila <ul style="list-style-type: none"> • Altaraza • Iloilo Business Park • Atria Park • Mactan Newtown • Davao Park District • Nuvali • Sta. Elena City • South Forbes Golf City • Greenfield City • Laguna Bel-Air • Eton City • Alegria Dos Rios 	San Jose del Monte Iloilo City Iloilo City Lapu-Lapu City Davao City Sta. Rosa, Laguna Canlubang, Laguna Silang, Cavite Canlubang, Laguna Canlubang, Laguna Canlubang, Laguna Canlubang, Laguna	41 72 21 28.8 11 7,200 300	Ayala Land Megaworld Ayala Land Megaworld Megaworld Ayala Land Vista Land Cathay Land Greenfield Dev. Corp. Megaworld Eton Properties Moldex Realty	Private land; joint venture with landowner Former airport; sold to private sector Former saltbeds; joint venture with landowner Former golf course Former privately-owned sugarcane hacienda Private land; Joint venture with landowners Private land; joint venture with landowners

Source: Derived from ABS-CBN News

4 TRANSIT INDUCED URBAN GROWTH MODELS

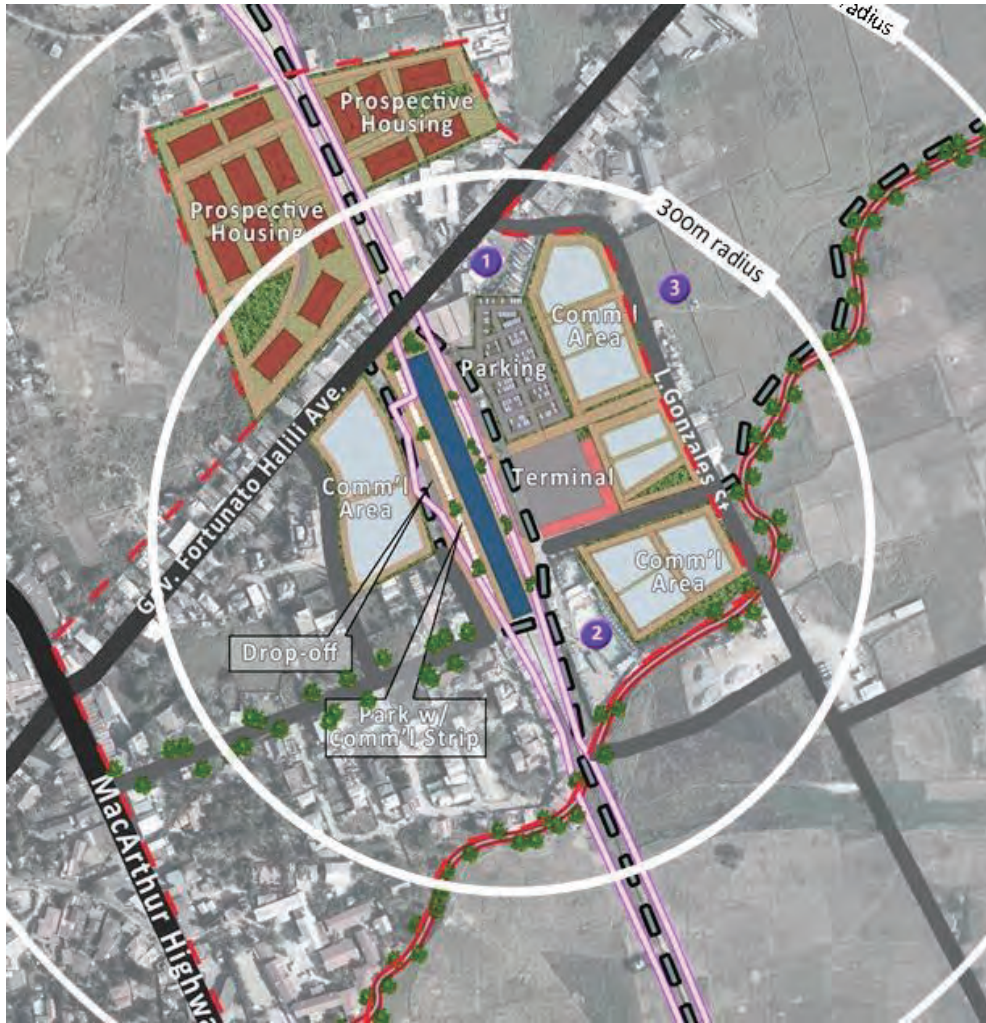
For the purpose of this paper, three models of urban growth induced by the establishment of mass transit systems, such as the NSCR and MMSP, are analyzed: 1) Micro Growth -- the urban growth that occurs immediately adjacent to or surrounding the transit station; 2) Intermediate Development -- the growth that occurs up to one (1) kilometer radius of the transit station; and 3) Macro Development -- the growth that occurs up to five (5) kilometers of the transit station.

1) Micro Growth

This growth model is generally characterized by land uses, buildings and activities that take advantage of the foot traffic going in and out of the transit stations. Convenience stores, retail shops and fast food outlets can be expected in these areas immediately surrounding and along the access ways to and from the station. Ambulant vendors are generally attracted to these areas. Public transport vehicles such as jeepneys, tricycles, and pedicabs are likely to congregate on the streets adjacent to the station. It can be expected that land values in these areas are high because of the active commercial activities. The dominant land use and overall character of these areas will be retail commerce.

The development of these areas as TODs to optimize their economic potentials in terms of generating jobs and livelihood opportunities as well as a source of increased revenue for the local government unit (LGU) will entail a mix of actions by the private building and business owners and the LGU. The private sector can be expected to attend to the development or improvement and cleanliness of their properties, while the LGU will take responsibility for improvements, sanitation, and general administration of the public realm (eg, streets, sidewalks, street lights, drainage, etc.) including traffic management and parking regulations. For these actions by the LGU, the applicable laws and regulations include the Local Government Code, the CLUP, Zoning Ordinance, and the Building Code.

At this level, it is necessary for the LGU to formulate and enforce a micro area development plan and program, detailing such features as infrastructure improvements (eg, sidewalk improvements, street lights, etc.), traffic management measures (eg, loading/unloading zones, jeepney and/or tricycle queuing areas, parking regulations, etc.), and related regulations on the use of sidewalks, for example, by ambulant vendors. Below is a plan that shows the proposed improvements and development within a 300-meter radius of the Bocaue station of the NSCR Phase 1.



Source: JICA Study Team

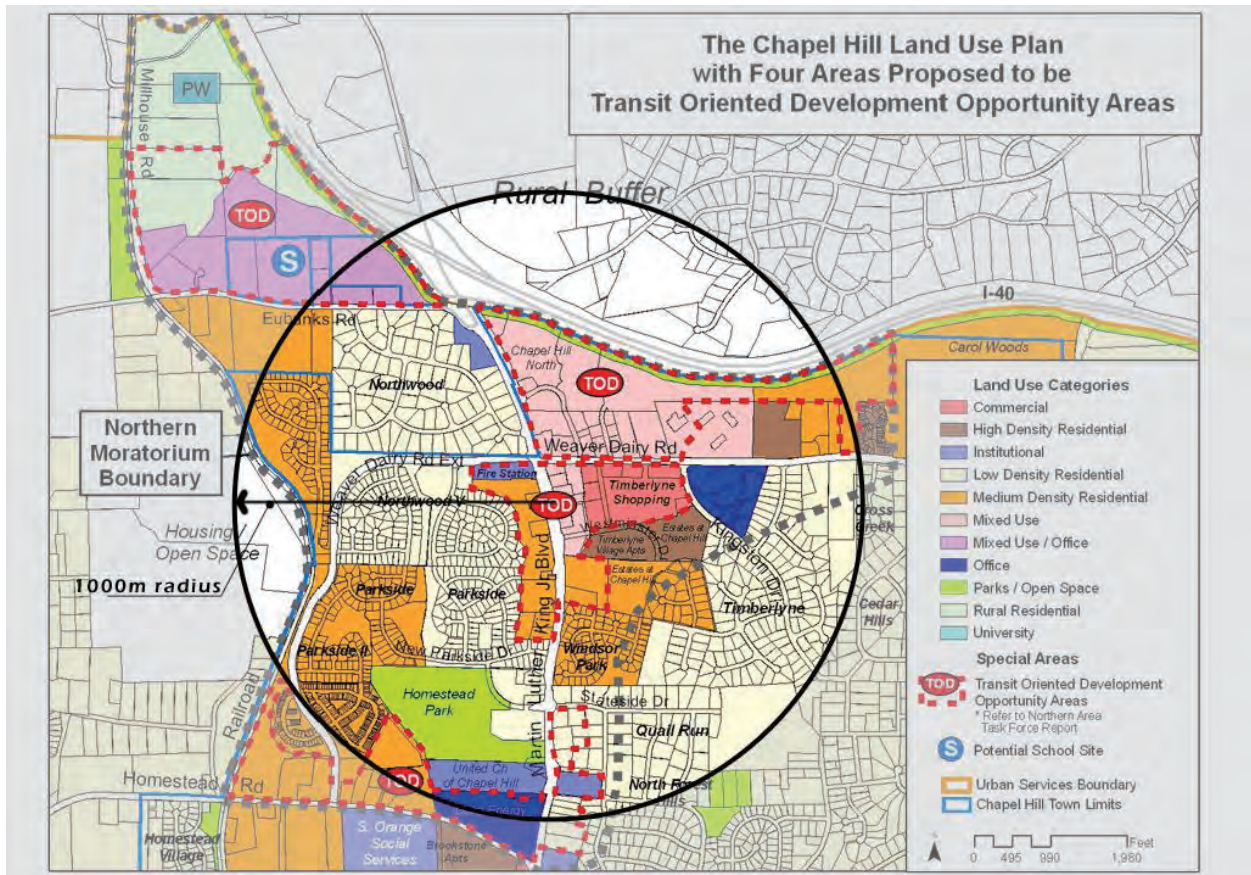
Figure 4.1 Bocaue Station

2) Intermediate Development

Transit stations can be expected to induce urban growth up to one kilometer away or even farther from the transit station, although the intensity of development especially commercial facilities will tend to decrease with distance from the station. Public transport routes leading to and from the stations will tend to have more intensive development. The farther the properties are, the lower will be their land values, and hence will be attractive to land users requiring large areas, such as residential communities, condominiums and Business Process Outsourcing (BPO) offices. Hence, compared with the Micro Growth model, this model will have a wider mix of land uses and may even include such uses as parking lots, parks and community facilities such as day-care centers, health clinics, police stations, etc.

To optimize the potentials of the NSCR and MMSP as well as to achieve the objectives of providing Socialized Housing in Intermediate Development areas, it would be beneficial for the LGU where a station is located to formulate an integrated area development plan that would define the mix of land uses, improvements in the public realm, and guidelines for improvements of private properties and buildings. The LGU will need to coordinate with the landowners concerned for the formulation of an integrated spatial plan and

implementation program for the area's development. This program will need to include the same items mentioned above for the Micro Growth Model, but will have a wider geographic or spatial coverage. Additionally, the program may need to include improvements to drainage and flood control systems, as well as provisions for public parking and measures to promote safety and security. The laws and regulations relevant to the Intermediate Development model include those that apply to the Micro Growth model mentioned above, as well as the Urban Development and Housing Act, PD 957, and BP 220. Below is an example of a TOD plan for the intermediate development model covering a 1-kilometer radius.



3) Macro Development

In order to fully optimize the benefits arising from the operations of the NSCR and MMSP, and address the core issues facing Metro Manila mentioned earlier, it is ideal to acquire, consolidate, plan and develop large areas as mixed use communities with substantial provision of affordable housing. These do not necessarily have to totally be “greenfield” (i.e. vacant, unutilized or unproductive farm areas) areas and thus can be integrated with existing developments. The integrated community can have a wide range of land uses, including light manufacturing, BPO offices, food processing industries, commercial enterprises, community and recreational facilities, schools, hospitals, parks and playfields, and a mix of housing types for different income groups.

The rationale behind the Macro Development model is derived from its advantage over suburban sprawl from the standpoint of environment, fiscal management, and quality of life.

Because they are master-planned, the resultant community is able to avoid the lack of overall unity, a transportation system lacking in hierarchy, non-existent pedestrian links, lack of open spaces, and little sense of community life. These master-planned communities are envisioned to have the following features:

- A wide mix of land uses including residential, commercial, institutional, industrial, recreational, and a network of parks and public open spaces;
- Located within easy access from stations of the NSCR and MMSP (within 5 kilometers) in order to enhance these communities' connectivity and accessibility to other communities, employment hubs, and larger urban centers;
- A mix of housing types, with different forms of housing tenure and pricing including especially Socialized Housing units;
- A range of essential community facilities, such as schools, health centers, public markets, sports facilities, etc.;
- An efficient network of pedestrian footpaths, bicycle paths and vehicular roads, together with an affordable public transport system;
- Adequate and reliable water supply, drainage and sewerage system, and power distribution system; and
- Safe from risks of natural disasters.

The planning for this model of development is discussed in the following section.

5 DEVELOPING THE MACRO TRANSIT ORIENTED COMMUNITY

The planning and development of the macro transit oriented community in the context of the NSCR and MMSP has to consider specific factors in order to achieve the desired outcomes.

1) Land Acquisition

The site to be developed as an integrated community is presumably composed of several individually owned private land parcels. If the development of this community is to be fast-tracked, these individual land parcels need to be purchased and consolidated either by government or by a private developer. However, because of the many landowners involved, private real estate developers are generally not attracted to such areas. Hence, in order to achieve the development objectives for the area within a shorter period of time, specifically the provision of affordable housing, government may have to acquire and consolidate these parcels. It may be easier for government to acquire and consolidate the land parcels located farther away from the transit stations because of their lower land values. Additionally, land parcels in areas with low economic productivity will likely be easier to acquire, such as marginal agricultural areas and fishponds. It will probably be the national government that has to acquire the land, with the local government concerned assisting in identifying the landowners concerned and helping negotiate the selling price. Or, the national government can provide some funding support to the LGU concerned for land acquisition purposes.

However, it may not be necessary for government to purchase and consolidate the individual land parcels if the development is not expected to be completed immediately. Under this alternative, land acquisition for Socialized Housing can be provided through the enforcement of the Balanced Housing requirement. However, for the acquisition of land for other land uses, the LGU and national government agencies concerned will need to take a number of actions to enable and support the private landowners and developers to implement the desired development. (See below for further details.)

Aside from the direct purchase of land by government, there are existing government programs that could be explored to acquire the land for the Transit Oriented Community (TOC), such as the Community Mortgage Program (CMP), the Local Community Mortgage Program (LCMP), and the High Density Housing Program (HDHP) that are all managed by the Social Housing Finance Corporation (SHFC). These three housing finance and development programs have originally been designed to cater to low income and informal settler families (ISF) through the provision of low-interest, long-term housing loans. The CMP and LCMP are both slum improvement strategies focused on the regularization of land tenure and on-site or near-site construction of housing units for the beneficiaries who occupy the sites. On the other hand, the HDHP was specifically established to provide housing for ISF occupying waterways in Metro Manila and other Highly Urbanized Cities. If any of these programs are to be used to acquire land for the TOC, their implementing policies, rules and regulations will need to be modified to accommodate the specific circumstances of the TOC.

2) Provision of Socialized Housing

This is a fundamental objective of the transit oriented communities along the NSCR and MMSP. There are three possible types of socialized housing that can be developed in these communities. One is the type that is developed by private housing developers in compliance with the Balanced Housing requirement of Republic Act 7279 (UDHA) and Batas Pambansa No. 220 (Socialized Housing Standards). The other type is developed by the LGU as part of its Local Shelter Program, which also uses the housing design standards provided by BP 220. The third type is developed by SHFC through the modified CMP, LCMP and/or HDHP.

The former can be implemented by either the private housing developers themselves or by the National Housing Authority (NHA) through an arrangement with the LGU concerned. It is a rather straightforward private real estate development project whereby the completed housing units are usually disposed of through freehold, often with financing from either PAG-Ibig, the Social Housing Finance Corporation (SHFC), or NHA.

The LGU option involves the provision of the housing units by the LGU itself in line with its local shelter program. The LGU can partner with SHFC to implement the housing projects through the LCMP, which is a co-sharing arrangement with LGUs for CMP implementation. The LGU can also legislate the turn-over by private housing developers of the required 20% socialized housing to the LGU which, in turn, awards the completed housing units to qualified households.

The third option involves the use of the CMP, LCMP or HDHP by SHFC, which can partner with national government agencies (ie, NHA), or the LGU, or private landowners. SHFC's three programs are designed to support the entire process of housing development for low income families, starting with the purchase of the land, followed by site development and housing improvements. The CMP/LCMP loan amount to a beneficiary is P250,000, with an interest rate of 6% per annum, over a 25-year maximum term. The HDHP loan package ceiling for each beneficiary is P450,000 inclusive of land acquisition, building construction and site development, with an interest payment of 4.5% per annum and payable up to 30 years.

It is most likely that many ISF cannot afford to avail of the housing units even with the loans mentioned above. For those who cannot afford, some of the housing units can be rented out through fixed term leasehold of, say, 10 years. After this period, the tenant-family could "graduate" to a higher-level housing facility and the government takes possession of the rental housing unit to either lease out to another household or to redevelop the structure into a higher-use facility. If it were the LGU that acquired the land and developed the rental housing units, it retains ownership of the land and benefits from the appreciation in land value as well as income from the higher-use facility.

3) Provision of Jobs and Livelihood Opportunities

This is a critical challenge that is directly related to the resettlement of households presently occupying high hazard areas. It implies that if these households are to accept relocation to the transit oriented communities, these need to contain or at least be easily accessible to jobs and livelihood opportunities. This means investors and businesses need to be enticed to locate in the communities. This can be achieved through the targeting and application of existing programs of the Board of Investments (BOI) relating to mass

housing and of the Philippine Economic Zone Authority (PEZA) relating to incentives for investors and business locators.

The Board of Investments (BOI) has identified mass housing as one of the preferred activities in the 2017 Investment Priorities Plan (2017 IPP). Fortunately, mass housing projects outside Manila are the preferred project location based on the 2017 IPP, hence automatically qualifying mass housing projects in Bulacan that will meet the required project scale. Qualified projects are entitled to avail Income Tax Holidays (ITH) and donations based on the scale of the project (Refer to Annex 3 for the BOI Guidelines on Mass Housing and In-City Low Cost Housing). On another hand, the Philippine Economic Zone Authority (PEZA) encourages investments for Ecozone Development by entitling qualified projects to ITH, tax exemptions and deductions. The PEZA Guidelines on Ecozone Development explicitly mentions that one of the requirements for developers is to make sure the availability of land for residential areas for ecozone workers (Refer to Annex 2 for relevant sections of PEZA Guidelines on Ecozone Development).

The BOI and PEZA Guidelines mentioned above seem to be complimentary in the provision of both job/livelihood-generating developments and mass housing projects. Combining these activities and complying with the guidelines can be an option for local governments, which may yield not only to job/livelihood opportunities in TOCs/TOD areas, but also provision of residential areas for the future working population.

4) Estate Management

The management system of the completed community, including its operations and maintenance, and especially the socialized housing units, has to be clearly defined together with the community's development plan. Experience from the BLISS Housing projects that were built during the Marcos administration show that these project's homeowners associations are too fragile and prone to mismanagement especially when there is a change in government and operations are disrupted. Estate Management, particularly for the Socialized Housing component of the TOC, will most likely be directly linked with the system of housing finance and loan amortization. Whoever will provide the housing loans will likely need to be directly involved. However, the LGU concerned will have a role to play considering that the TOC is within its territorial jurisdiction.

It is best that the operations and maintenance of the other individual components of the completed TOC be with the private sector, except the socialized rental housing and other facilities in the public realm which the LGU should be responsible for. In any case, it would be beneficial if some form of association of building and business owners within the community were organized -- similar to the associations in the Makati Commercial Center, Ortigas Center, Araneta Center, and the Bonifacio Global City -- as a unified voice to liaise with the LGU and the national government, as well as a platform for the provision of common services and resolution of issues and concerns.

6 IMPLEMENTING THE MACRO TRANSIT ORIENTED INTEGRATED COMMUNITY

Two consultations were conducted with the major stakeholder groups of NSCR Phase 1: (i) the national government agencies and real estate developers, in July 25, 2017; and (ii) the LGUs traversed by the NSCR Phase 1, in August 18, 2017. These consultations explored the possible alternative strategies to implement the envisioned transit-oriented integrated communities with the key features described in the preceding sections – easily accessible to a NSCR Phase 1 station, large, mixed-use, includes Socialized Housing, provides jobs and livelihood opportunities, and integrated with the host community. From the two consultations, the following are the most promising alternative implementing strategies.

1) Implementation by the National Government

In this alternative, an inter-agency Task Force composed of the national agencies and LGU concerned is established to plan, implement and manage the transit-oriented community. The functions of the Task Force include:

- Acquisition and consolidation of the properties to be developed as the transit-oriented community;
- Formulation of the development master plan and construction details;
- Development of the Socialized Housing delivery system, to include development and end-user financing;
- Development of the implementing strategies to attract investors and business locators to the TOC;
- Construction of the infrastructure, utilities, Socialized Housing units, and all other facilities of the community

In addition to the host LGU, the other members of the Task Force should include SHFC, PEZA, BOI, DPWH, and HDMF. Based on their mandates, their suggested roles are:

- SHFC: Acquisition of lands, and financing for socialized housing through the enforcement of Balanced Housing requirement, in partnership with LGU.
- HDMF: Support for housing finance, mostly through loans for Pag-IBIG members.
- BOI and PEZA: Provision of jobs and livelihood opportunities through the promotion of economic activities such as establishment of ecozones, and provision of incentives to investors.
- DPWH: Planning of infrastructure such as roads, flood control, water resources projects and other public works.

2) Implementation by the Host Local Government

Existing laws and development programs provide LGUs with powers that they can use to take the lead in implementing the TOC. The Local Government Code empowers an LGU to establish a local development corporation that can enter into partnerships with private landowners and national government agencies for the implementation of the TOC – from

land acquisition to site development, housing finance to housing construction, to estate management. This will require the passage of a local ordinance for the purpose. Furthermore, they may secure funding for the TOC from both their local budget and through application of grants, as authorized by Section 23 of the 1991 LGC (Refer to Annex 5 for pertinent provisions of LGC of 1991).

7 TOD Potentials in the Bulacan LGUs to be Traversed by NSCR PHASE 1

Based on the results of the field visits and interviews of local government units (LGUs) in the province of Bulacan which will be traversed by NSCR Phase 1, the following are the overall findings:

- (i) There are vacant or under-utilized lands surrounding the proposed stations in most of the LGUs covered by the survey. These can be considered developable, and are in fact, most likely to be developed by their owners even without a TOD plan.
- (ii) The proposed station areas in most of the LGUs are not easily accessible, even though they are located along major roads. This is due to the lack of secondary or collector roads connecting the existing major roads, which can serve as alternative routes.
- (iii) Related to the item above, the proposed station areas in almost all of the LGUs are characterized by heavy traffic. This is due to the stations being located on or near major roads which are often congested, especially when schools dismiss their students.
- (iv) Almost all the LGUs reported the presence of informal settler families within their jurisdictions, particularly along rivers and creeks. Some of them have resettlement sites developed by NHA, and have recommended the expansion of some of these sites in order to accommodate more settlers.
- (v) Related to the preceding item, only one LGU (Bocaue) has an identified site for Socialized Housing. None of the LGUs have an operational Shelter Plan.
- (vi) While all the LGUs claim to have updated CLUPs, these do not provide detailed guidelines for the development of the station areas. Neither have any of the LGUs initiated any planning for the station areas within their jurisdictions.

It can be concluded from the above that if the benefits of NSCR Phase 1 are to be optimized and, at the same time, avoid the negative effects of unbridled development around the transit stations, such as worsened traffic congestion and conflicting land uses, well thought out spatial plans and development guidelines need to be formulated for the areas surrounding the stations. The Local Government Code mandates the LGUs concerned to do this, and to integrate these plans with their CLUPs and CDPs.

In order to optimize the benefits from NSCR Phase 1, including the increase in revenue that the LGUs can derive from the businesses and investments that NSCR Phase 1 is expected to attract, it is advisable for the LGUs concerned to prepare plans for the three transit-induced growth models mentioned in Section IV of this report: a) Micro Development; b) Intermediate Development; and c) Macro Development.

The Micro Development Plan will cover the area immediately surrounding the transit station, roughly 50 meters to 100 meters around the station building. It should specify:

- The desirable site development layout and design of the public realm – streets, sidewalks, loading/unloading bays, queuing areas for jeepneys and tricycles, parking

areas, no-parking zones, planting strips and/or street trees, parks, plazas, other public open spaces;

- The mix of allowable land uses and appropriate development guidelines for the private properties surrounding the station – building setbacks, character and treatment of the building façade or store-fronts, signages, and related restrictions.

The Intermediate Development Plan will cover an area within roughly 500-meter radius of the station. It will include the area covered by the Micro Development Plan and, therefore, its plan specifications. But in addition to these, it should also specify:

- Proposed new roads, in order to increase the accessibility of the station aside from the existing roads. Ideally, the roads within the 500-meter radius of the station should form a network and not be more than 300 meters apart;
- Sidewalk improvements, in order to encourage and make it more convenient for people to walk to the stations; and
- The allowable land uses for the properties within the area, which should include public facilities, such as schools, health centers, parks and public open spaces wherever possible.

The Macro Development Plan will cover an area within roughly 5-kilometer radius of the station. It will include the areas covered by and the specifications of both the Micro and Intermediate Development Plans. In addition to these, it should also include:

- the allowable land uses for the properties within the area, which should include affordable/Socialized Housing sites, additional proposed roads, and sites for public/community facilities; and
- an Implementation Strategy that would cause the realization of the plan, identifying the development partners and delineating their roles and responsibilities.

8 CONCLUSIONS AND RECOMMENDATIONS

The transit oriented integrated communities along NSCR and MMSP are a nationally significant undertaking. They have a great impact in addressing the most critical problems that have plagued Metro Manila in the last four decades. Their potentials to provide integrated, sustainable living and working environments for a very large number of low income and disadvantaged households that offers not only affordable housing but jobs and livelihood opportunities as well, are of major significance not only to Metro Manila but to the entire country. This can only be realized through a concerted effort involving a meaningful partnership between the LGUs concerned, national government, and the private sector.

These opportunities as well as existing conditions suggest that the national government should take the lead in planning and implementing the integrated communities. A special task force comprising of national agencies and LGUs concerned should be established specifically to implement these communities, with a national agency chairing the multi-agency task force. The national government's responsibilities will include: a) acquisition of the land (if development is to be fast-tracked); b) construction of major infrastructure and utilities such as major roads, water supply, power supply, drainage and sewerage system; c) provision of investment incentives to business enterprises; and d) targeting of housing loans for socialized and economic housing.

The responsibilities of the LGUs concerned include: a) assistance in the acquisition of the land; b) integration of the community's development plan and program in the CLUP and CDP; c) facilitation of the issuance of development permits; d) construction of community facilities; and e) governance of the Socialized Housing component of the completed development.

The private sector's role will be defined in the community's implementation program, and will include investments in the community's development, construction of infrastructure and buildings, and management of specified completed facilities.

The special task force should be empowered to plan, implement and manage the transit oriented communities. It is recommended that there be a Cabinet-level Project Steering Committee (PSC) to set the policy and provide the direction and oversight. The composition of the Task Force is recommended as follows:

Project Steering Committee (Cabinet-level representatives)

- HUDCC – Chair
- LGUs concerned – Co-Chair (Mayors of the LGUs where the TOCs are to be located)
- DPWH
- LWUA
- DTI / BOI / PEZA
- HLURB
- Home Development Mutual Fund (PAG-Ibig)
- Social Housing Finance Corporation

- Others as required

Technical Working Group – The PSC should be supported by a Technical Working Group (TWG) to attend to the day-to-day operations of the Task Force. The TWG is proposed to be composed of the same agencies as the national agencies in the PSC but composed of Undersecretary- or Assistant Secretary-level representatives. The LGUs will be represented by their Planning & Development Coordinators. The TWG should be manned with a full-time dedicated staff housed under lead national agency.

In order to facilitate the establishment of the Task Force and to ensure the participation and inputs of the national agencies and LGUs involved, it is recommended that an Executive Order for the purpose be issued by the President.

ANNEXES

1. CMP, LCMP, HDHP Guidelines
2. PEZA Incentives Guidelines
3. BOI Incentives for Socialized Housing
4. Balanced Housing as a Means to Balancing the Socialized Housing Scenario
5. Pertinent Provisions of the Local Government Code

ANNEX 1 CMP, LCMP, HDHP GUIDELINES

1) COMMUNITY MORTGAGE PROGRAM FAST FACTS

(1) CMP Overview and Objectives

The Community Mortgage Program (CMP) aims to improve the living conditions of homeless and underprivileged citizens by providing them affordable financing with which they can secure tenure on the land they occupy.

The CMP is a mortgage financing program which assists legally organized associations of residents of blighted or depressed areas to own the lots they occupy, providing them security of tenure and eventually improve their neighborhood and homes to the extent of their affordability.

Revised Loan Entitlement Amounts applicable for both Metro Manila and highly urbanized cities, and other areas, without distinction, have been increased as follows:

Table 1.1 Revised Loan Entitlement Amounts

Purpose	Maximum Loan Amount (PHP)	Monthly Amortization (PHP)
Land Acquisition	100,000.00	685.30
Site Development/Community Upgrading	30,000.00	205.59
House Construction	120,000.00	834.60
Loan Package	250,000.00	1,725.49

Source: Community Mortgage Program

Note: The determination of final loan amount shall be subject to existing CMP guidelines

The CMP loan will bear 6% interest per year based on the outstanding balance and will be payable over a maximum period of 25 years in equal monthly amortizations.

Table 1.2 CMP Project Classification

ON-SITE	OFF-SITE
<ul style="list-style-type: none"> • Members of the Community Association (CA) are already living/residing in the project site • The community has been in existence for five (5) years; 85% of the total number of members should have a residency of 5 years; • at least 85% occupancy rate at the time of application and 100% after two (2) years from loan release • Maximum of 200 beneficiaries • 100% appraisal 	<ul style="list-style-type: none"> • Homogenous group living outside the project area but has to be relocated due to any of the following reasons: • Beneficiaries living in danger zones/areas; • Beneficiaries affected by government infrastructure project; and, • Beneficiaries with threat of eviction or actual ejection thru a case/court order • Maximum of 200 beneficiaries • 100% appraisal

(2) CMP Loan Collateral

The land to be acquired by the Community Association (CA) shall serve as the CMP loan collateral, and will be acceptable if the following criteria are met:

- (i) The title to the land is free from all liens and encumbrances at the time of release of the CMP loan;
- (ii) The land is not classified as agricultural;
- (iii) The land is not within environmentally-constrained/ hazardous or high-risk areas as certified by the DENR and the concerned local government unit;
- (iv) The land has a road right of way or an access road lot to a city, municipal or barangay road; and
- (v) The landowner should have the legal capacity to sell or transfer the subject property for loan collateral under the CMP.

(3) Borrowers

Tenants/beneficiaries shall form and register a CA, which entity shall borrow and initially own and mortgage the land. Individual beneficiaries' right over the land and eventual ownership of the lot is achieved through a Lease Purchase Agreement (LPA) with the CA.

(a) Eligibility of CMP Borrowers

- (i) Filipino citizen, of legal age (18) at the time of the loan application and shall not be more than 60 years old upon loan release;
- (ii) Certifies under oath that he/she has not been a recipient of any CMP loan or other govt. housing programs. Does not own or co-own a real property and is not a professional squatter as defined in RA 7279;
- (iii) Must be a structure owner, a renter or a sharer at the site.

(b) Delinquency/Default

A CA account is considered in default if it is not up to date with its loan amortization payments equivalent to three months.

(c) Penalties

In case of non-payment of monthly amortizations on the due date (one month after release of the loan), the CA shall pay a penalty equivalent to delay.

(d) Insurance

For the duration of the loan, there shall be a Mortgage Insurance on the lives of the principal borrowers as identified in the Master List of Members on a yearly renewable term basis. The insurance premiums shall be included in the monthly amortizations of the members.

(e) Substitution of Beneficiaries/Foreclosure

The Master list of members submitted as part of the CMP loan application are deemed final and may not be subject to substitution during loan application processing period.

A member may be substituted due to the following:

- (i) A member is in default in the payment of his/her share in the monthly amortization of the CA loan; and
- (ii) A member voluntarily waives his/her rights to the allocated lot/property in favor of the

CA.

Renters or sharers in the project sites shall be preferred or prioritized in the substitution process.

The CA shall be responsible for the substitution of the member without prejudice to the right of SHFC to disqualify substitute members if they fail to meet the qualifications of a member or if there is proof of misrepresentation by the CA officers.

(4) Community Mobilizers (CMP-M)

Accredited CMP-Ms are tasked to assist informal settlers in organizing themselves into CAs.

CMP-Ms may either be any government entity, non- government organizations (NGO) and People's Organizations (PO) and must possess the needed skills to organize communities, document CMP project applications and provide access to other government agencies involved in the program.

CMP-Ms shall be entitled to a service fee equivalent to two percent (2%) of the loan amount or P1,000.00 per member, whichever is higher.

Requirements

ON-SITE

I. Project Enrollment/Program Participation

A. Originator Accreditation (For New Applicants)

- Application Letter (CMP-001)
- Originator's Information Sheet (CMP-003)

For Private Originators:

- SEC/CDA Registration and Articles of Incorporation/Code by Laws
- Bio-Data of Officers indicating past and present positions held in relation to involvement in community based economic/social development projects. (Pls. include references)
- Board Resolution or Secretary's Certificate (RE: Origination of the project)
- Track record in CMP and/or social housing. The Officer has been involved in at least one (1) successful CMP project and/or has completed/accomplished a social housing project.

For LGU-Originator:

- Council/Sangguniang Bayan Resolution
- Permanent Unit/Department who will handle processing of CMP

For Other Government Entity:

- Copy of Charter (if entity is not involved in Housing)
- Authority from Board/Head of Office to Originate

B. Project Accreditation

- Project Basic Information Sheet (CMP-002)
- Landowner Letter of Intent to Sell
- HLURB Zoning Classification Certificate/DAR Conversion (if classification is other than residential)
- Preliminary Approval and Locational Clearance (PALC) with supporting documents, viz:
 - Subdivision Plan with home lot area
 - Lot Plan
 - Vicinity Map
- Present Title(s) and three (3) back titles

C. Community Association/Cooperative

- HLURB Registration and Incorporation/Code of By-Laws and list of current officers and members of the Board of Directors of CA signed by Originator.
- Master list of beneficiaries
- CA's Board Resolution/Secretary's Certificate
 - to purchase property (description and owner/s)
 - to obtain loan from SHFC-CMP to finance the acquisition of property
 - to mortgage the property as security for the loan to be obtained
- Memorandum of Agreement/Contract between Community Association and Mortgagee/ Assignee or MOA among Originator, CA and SHFC.

II. For Loan Examination

- Master list of beneficiaries with Loan Apportionment signed by CA President and Originator (prescribed form)
- Proof of pre-payment of MRI/Documentary Stamp Tax
- Cash deposit in favor of SHFC equivalent to two (2) months amortization for existing originator or six (6) months amortization for new originator
- Lease Purchase Agreement (LPA)

III. For Mortgage Examination for Issuance of Letter of Guaranty (LOG):

- Proof of Road Right of Way
- Real Estate Mortgage (REM)
- Deed of Assignment of LPA from CA to SHFC
- Promissory Note;
- Collection Agreement between CA and SHFC
- Deed of Assignment of Loan Proceeds from CA to Landowner
- Loan Agreement

For Take-Out:

- Deed of Sale with Register of Deeds stamp received
- TCT in the name of CA with annotation of the REM and the Secretary's Certificate issued by CA to its representative

- CA's Secretary's Certificate with Registry of Deeds (RD) stamp received
- Real Estate Mortgage duly stamped by RD
- TCT in the name of the Landowner with annotation of Deed of Absolute Sale stamp received by RD

OFF-SITE

I. Project Enrollment/Program Participation

A. Originator Accreditation (for New Applicants)

- Application Letter (CMP-001)
- Originator's Information Sheet (CMP-003)

For Private Originators:

- SEC/CDA Registration and Articles of Incorporation/Code by Laws
- Bio-Data of Officers indicating past and present positions held in relation to involvement in community based economic/social development projects. (Pls. include references)
- Board Resolution or Secretary's Certificate (RE: Origination of the project)
- Track record in CMP and/or social housing. The Officer has been involved in at least one (1) successful CMP project and/or has completed/accomplished a social housing project.

For LGU-Originator:

- Council/Sangguniang Bayan Resolution
- Permanent Unit/Department who will handle processing of CMP

For Other Government Entity:

- Copy of Charter (if entity is not involved in Housing)
- Authority from Board/Head of Office to Originate

B. Project Accreditation

- Project Basic Information Sheet (CMP-002)
- Landowner Letter of Intent to Sell
- DAR Conversion (if classification is other than residential)
- Preliminary Approval and Locational Clearance (PALC) with supporting documents, viz:
 - Subdivision Plan with home lot area
 - Lot Plan
 - Vicinity Map
- Present Title(s) and three (3) back titles
- Certification from concerned authorized agency that the beneficiaries are any of the following homogenous groupings:
 - Living in danger areas;
 - Affected by government infrastructure projects; and

- With threat of eviction or actual ejection through a case/court order

C. Community Association/Cooperative

- HLURB Registration and Incorporation/Code of By-Laws and list of current officers and members of the Board of Directors of CA signed by Originator.
- Master list of beneficiaries
- CA's Board Resolution/Secretary's Certificate
 - to purchase property (description and owner/s)
 - to obtain loan from SHFC-CMP to finance the acquisition of property
 - to mortgage the property as security for the loan to be obtained
- Memorandum of Agreement/Contract between Community Association and Mortgagee/Assignee or MOA among Originator, CA and SHFC.

II. For Loan Examination

- Master list of beneficiaries with Loan Apportionment signed by CA President and Originator (prescribed form)
- Proof of pre-payment of MRI/Documentary Stamp Tax
- Cash deposit in favor of SHFC equivalent to two (2) months amortization for existing originator or six (6) months amortization for new originator
- Lease Purchase Agreement (LPA)
- Warranty Undertaking to occupy site by 70% of the beneficiaries within one (1) year after take-out

III. For Mortgage Examination

For Issuance of Letter of Guaranty (LOG):

- Proof of Road Right of Way
- Real Estate Mortgage (REM)
- Deed of Assignment of LPA from CA to SHFC
- Promissory Note
- Collection Agreement between CA and SHFC
- Deed of Assignment of Loan Proceeds from CA to Landowner
- Loan Agreement

For Take-Out:

- Deed of Sale with Register of Deeds stamp received
- TCT in the name of CA with annotation of the REM and the Secretary's Certificate issued by CA to its representative
- CA's Secretary's Certificate with Registry of Deeds (RD) stamp received
- Real Estate Mortgage duly stamped by RD
- TCT in the name of the Landowner with annotation of Deed of Absolute Sale stamp received by RD

2) Localized Community Mortgage Program Fast Facts

The LCMP is a modified community mortgage program which extends financial assistance for the acquisition of the land occupied by the constituents of the local government unit or the land where they will be relocated through the concept of community ownership, with the land primarily mortgaged to SHFC.

(1) Eligible Partners

- (i) Cities
- (ii) Municipalities

Provinces are encouraged to extend assistance to their respective cities and municipalities.

Under this program, a qualified Local Government Unit is accredited by SHFC as partner-LGU and as such shall perform all pre take-out functions of SHFC such as;

- (i) Accreditation of CMP Mobilizers;
- (ii) Background Investigation of projects;
- (iii) Site Inspection and appraisal of projects;
- (iv) Loan examination; and
- (v) Mortgage Examination.

The LGU is subsequently provided with an Omnibus Commitment Line (OCL) not to exceed P50 Million, with one (1) year validity on projects identified by the partner-LGUs.

As partners in this undertaking, the LCMP will serve as a vehicle that will enable the LGUs to maximize their limited budget.

Ninety percent (90%) of the project cost for 5th and 6th class cities and all municipalities.

The remaining equity of the LGU can come in any of the following form:

- (i) land owned by the partner-LGU;
- (ii) cash financing to pay-off the lot price; or
- (iii) site development.

(2) Details of the CMP Loan

Types of projects:

- (i) **On-site Projects** – for the purpose of acquiring the land occupied by informal settlers of the partner-LGUs.
- (ii) **Off-site projects** – for the purpose of acquiring and developing the land where informal settlers will be relocated through the concept of community ownership.

Loan Amount: A beneficiary can avail of a maximum loan amounting to P100,000 for lot acquisition loan; P30,000 for site development loan; and P120,000 house construction loan; for a maximum total loan of P250,000.

Table 1.3 Loan Amount of CMP

Loan Purpose	Amount (PHP)	
	Loan Amount	Monthly Amortization
Lot Acquisition	100,000.00	685.30
Site Development	30,000.00	205.59
House Construction	120,000.00	834.60
Total Package	250,000.00	1,725.49

Source: LCM Program

Interest Rate: 6% per annum

Maximum Term: 25 years

Loan Repayment: one (1) month after the release of the loan proceeds who shall assume the obligation of the defaulting member.

(3) Benefits from the LCMP

The partner-LGU shall be entitled to 1/6 of actual amount of interest collected from the CA monthly loan amortization as incentive for collection services rendered if the Collection Efficiency Rating (CER) of the project reaches 90%-100% rating, provided further that they have assisted SHFC in its collection campaign. The 1/6 interest incentive shall however be released only after the issuance of post-audit clearances from SHFC.

(4) Security for the OCL/CA Loan

The partner-LGU shall put up a refundable cash deposit to SHFC equivalent to six (6) months amortization of the CA loan as a performance warranty to cover the projects enrolled under the OCL to be paid prior to issuance of LOG.

The CA, on the other hand, with the assistance of the partner- LGU, shall be responsible for the payment of advance payment equivalent to three (3) months amortization of the CA loan and one (1) year Mortgage Redemption Insurance (MRI) to be paid prior to loan release. This payment maybe applied to the CA loan in case of default.

(5) Eligibility Requirements

(a) Local Government Units [LGUs] (Cities, Municipalities)

- Updated Local Housing backlog inventory;
- Updated Comprehensive Land Use Plan (CLUP) and updated Comprehensive Shelter Plan (CSP) approved by the Local Housing Board (LHB);
- Functioning LHB;
 - Creation of LHB should be at the Local level with equitable multi sectoral representation and must have a Non- Government Organization (NGO)/People's Organization (PO) representative involved in housing and urban development
- Functioning unit in charge of social housing/housing programs;
- Budget allocation approved by Sanggunian;
- Has not exceeded allowable 20% credit carrying capacity;

- Approved Annual Investment Plan (AIP) with LCMP project/s; and
- An updated list of present and previous beneficiaries of National and local Government Housing Programs (e.g. National Housing Authority housing programs, etc.).

(b) Community Association [CA]

- Registered with Housing and Land Use Regulatory Board (HLURB);
- Prioritized target as reflected in the CSP and AIP;
- Financially Stable; and
 - Show at least one (1) year historical statement of bank account
- Open a savings account to be called the Community Fund.
 - Balance Equivalent to six (6) months amortization of the LCMP loan

(c) Member-Beneficiaries [MB]

- Bonafide resident of LGU and member of CA;
- Has not yet availed any housing loan;
- Do not own or co-own any housing unit; and
- Eligible under Community Mortgage Program (CMP) guidelines:
 - Legal age (18-60 yrs. Old);
 - Husband and Wife (1 loan);
 - No lot/housing loan; and
 - Earning.

(6) Program Availment Process

- (i) Application for Omnibus Commitment Line (OCL)
 - Application for OCL backed up by a list of households covered by census and tagging and schedule of line availment.
- (ii) AVAILMENT OF THE APPROVED OCL
 - Sanggunian Ordinance stipulating the following:
 - Authorizing the Local Chief Executive to assign the Internal Revenue Allotment (IRA) or other forms of acceptable Guaranty [Local Government Unit Guarantee Corporation (LGUGC), Home Guarantee Corporation (HGC)] in favor of SHFC as well as sign, negotiate and transact with SHFC and other LCMP partners to fully operationalize and implement LCMP in the locality;
 - Specifying the amount and period of IRA assignment and detailing the terms and conditions of partner-LGUs
 - Ratifying the MOA executed by and between SHFC and the DILG; and
 - Furnishing Land Bank of the Philippines (LBP)/Development Bank of the Philippines (DBP) a copy of subject resolution and authorizing partner-LGU's execution of agreements with LBP/DBP as stipulated in the LCMP MOA.
 - Certification of existence of a Community Fund by the CA;
 - Title to the property; and

- Submission of copy of all authentic, valid binding and enforceable loan documents and appraisal of project site.

3) High Density Housing Program Fast Facts

(1) Overview and Objectives

The High Density Housing (HDH) project is the Social Housing Finance Corporation's (SHFC) participation to the informal settler families' (ISFs) Housing Program being implemented by the incumbent administration with an allocated budget of P50 - billion for five (5) years. The ISFs' Housing Program aims to ensure safe and flood-resilient permanent housing solutions for the ISFs living in danger areas of the National Capital Region (NCR).

The SHFC, through the HDH project as its flexible, affordable, innovative, and responsive (FAIR) shelter solution to address the housing and shelter needs of the ISFs, will be offering a near site relocation or in-city high density housing facilities of ISFs who have been organized by civil society organizations and adopting the Community Mortgage Program's (CMP) community-driven approach in setting the people's plan.

(2) What is the HDH Project?

HDH project refers to a slum redevelopment strategy wherein a significant number of ISFs are accommodated in multi-storey buildings. This may be implemented either by an in-city or near site relocation or a land sharing arrangement.

(3) Who are the SHFC partners implementing the HDH project?

- National Government Agencies and Local Government Units
- Community Associations
- Civil Society Organizations
- Private Sector

(4) Who are eligible to become beneficiaries of the HDH project?

The beneficiaries of this financial assistance program are community associations of informal settlers who are living in danger areas and along the waterways in highly urbanized cities of the NCR.

(5) What are the responsibilities of the Community Association (CAs)?

- Identification of ISF beneficiaries of the project
- Community profiling survey
- Mobilization of community resources that will respond to project needs
- Loan documentation
- Project planning and project management
- Estate management that will include collections of payments, maintenance of building and enforcement of community rules and regulations
- Payment of taxes and permits relative to project implementation and management
- Organizational maintenance

(6) What are the loan purposes?

Loan and building construction

Loans for land may involve land acquisition and/or site development. However, site development may be financed only if the loan entitlement can cover the loan or through a two-phased line availability.

Building construction only

The CA may avail of loan for a building construction only if the land has either been donated, lease to, or subject to a usufruct arrangement with the CA. the lease contract or usufruct arrangement shall be for a period of at least 30 years.

(7) How much is the loan entitlement?

The maximum amount of a loan a community member can avail is P450,000.00. The amount may be increased based on the loan ceiling for social housing as approved by the Housing and Urban Development Coordinating Council (HUDCC).

Interest rate and loan term:

The interest rate is 4.5% per annum for a maximum period of 30 years.

Repayment Scheme:

Modes of Amortization: 30 years - graduated amortization in the first 10 years (10% annual increase); fixed amortization for the 11 h year-onwards.

Table 1.4 Sample Graduated Amortization Scheme

LOAN (PHP)		450,000.00		
INTEREST		4.50%		
TERM (Years)		30		
GRADUATED INCREASE		10.00%		
YEAR	MONTHLY AMORTIZATION	MRI (Monthly)	FIRE INSURANCE (Monthly)*	TOTAL MONTHLY AMORTIZATION
1	1,097.24	184.50	38.25	1,319.99
2	1,206.97	184.50	38.25	1,429.72
3	1,327.66	184.50	38.25	1,550.41
4	1,460.43	184.50	38.25	1,683.18
5	1,606.47	184.50	38.25	1,829.22
6	1,767.12	184.50	38.25	1,989.87
7	1,943.83	184.50	38.25	2,166.58
8	2,138.21	184.50	38.25	2,360.96
9	2,352.04	184.50	38.25	2,574.79
10	2,587.24	184.50	38.25	2,809.99
11 - 30	2,845.96	184.50	38.25	3,068.71

Source: JICA Study Team

- A grace period of one (1) month to pay the initial amount of amortization, reckoned from the time of occupancy of the building shall be granted to the CA.

Option to avail of Rent-to-own Scheme:

- The CA, or any of its members duly registered as a beneficiary hereof, may, at the onset avail of the rent-to-own scheme entitling the availee/s to the right-of-possession

and enjoyment over the building or unit.

- The rent-to-own scheme shall last up to five (5) years only, after which it shall be the legal obligation of the avalee/s either to enter into a contract to sell with SHFC or voluntarily vacate the premises without the need of any demand to do so.

Other important information:

- The CMP policy guidelines for land acquisition shall be adopted with the subdivision plan and the building permits as additional requirements for building construction loans.
- Building standards shall be complied with.
- Contractor or developer shall be required to submit a Performance Bond as a security for the completion of the construction work.
- A retention fee equivalent to 10 % of the contract price shall be imposed and shall only be released after a Certificate of Completion and Acceptance from the CA has been received and validated by the SHFC. The validation process shall be within maximum period of 15 calendar days after receipt of the Certificate of Completion and Acceptance.
- SHFC shall have the option to acquire/purchase the land and retain ownership of the same while allowing qualified families to acquire and pay only for the cost of the building.
- SHFC may also opt to co-own the land, including the building, and implement a public rental scheme to be adopted in projects wherein a significant number of families may not be able to afford the monthly amortization.

(8) Checklist of Required Documents:

1. Land Acquisition

A. Background Investigation (BI)

Certificate of Compliance from LE and BI Manager

- a. Master list of Beneficiaries with socio-economic profile (HDH 01 Form)
- b. Certificate of Registration of Incorporation and Bylaws (HLURB/CDA)
- c. Project Management Structure
- d. DILG Certificate

B. Site Investigation (SI) and Appraisal

Certificate of Compliance from TSD Manager

- a. TCT
- b. Vicinity/ Location Map
- c. Zoning Certificate
- d. Appraisal Report (if any)
- e. Conceptual Plan/ People's Proposal

C. Mortgage Examination (ME)

Certificate of Compliance from Legal Department

- a. CTC of present title and two titles back
- b. MOA/Letter of Intent to Sell (HDH 02 Form)

- c. If landowner is an organization/corporation: Board Resolution
- d. SPA
- e. If HOA/Cooperative: resolution to buy and authorized signatory (HDH 03)
- f. Tax clearance

2. Site Development Loan: (if covered by loan entitlement) (2sets)

A. Plans and Specifications (2 sets)

- Subdivision Plan
- Road Networks Plan
- Drainage System
- Electrical System
- Water System
- Earthworks

B. Cost estimates

- Bill of Materials
- Indirect Costs
- Work program and cash flow indicating drawdown schedule
- Development permit

3. Building Construction Loan (2 sets)

a. Plans and Specifications

- Perspectives
- Set of Building Plans

b. Cost Estimates

- Bill of Materials
- Indirect Costs
- Work program and cash flow indicating drawdown schedule

c. Building Permit

4. Contractor's Eligibility (2 sets)

- a. Accreditation Papers
- b. List of Projects undertaken (completed and ongoing)
- c. Company Profile
- d. Audited Financial Statement - 2 years
- e. Contract between ISFHOA and Contractor

(9) FOR LOAN RELEASE:

A. Land Acquisition

1. Partial payment (50%)

- a. Loan Agreement (HDH 04 Form)
- b. Real Estate Mortgage (HDH 05 Form)
- c. Promissory Note (HDH 06 Form)

- d. Letter of Guarantee Signed (HDH 07 Form)
- e. Owner's Copy of Title
- f. Deed of Absolute Sale
- g. 2 valid IDs

2. If full take-out

- a. loan agreement (HDH 04 Form)
- b. Real Estate Mortgage (HDH 05 Form)
- c. Promissory Note (HDH 06 Form)
- d. Letter of Guarantee Signed (HDH 07 Form)
- e. Title in the name of HOA/Cooperative and annotated
- f. Tax declaration in the name of HOA/Cooperative

B. Building construction (for site development)

(Five (5) tranches based on work accomplishment):

Mobilization (15%) of project cost

- a. Contract between ISFHOA and contractor
- b. Development permit (for site development) building permit (building construction)
- c. Work program and cash flow indicating drawdown schedule
- d. Project Profile

Table 1.5 Example of HDH Project: Goldmine Interior HOAI

Name of Project	Goldmine Interior HOAI	
No. of Mortgage Backed Security	104	
Relocation Site	Brgy. Nagkaisang Nayon, Novaliches, Quezon City	
Date of Approval	October 21, 2013	
Phase 1:	October 21, 2013	
Phase 2:	October 21, 2013	
Project Cost/ Loan Per ISF	PhP 41,600,000.00/ PHP 400,000.00	
Date Started	4/11/2015	
No of Buildings	6	
No. of MBs per Building	Varies	
Amortization Fee	PHP 1,692.97	
Floor Area	28.0 square meters	
Type of Building	Two Storey with provision for loft	
Status	100% Completed; Members paying monthly amortization since May 17, 2016 with 96.40% CER as of August 2016	

Source: Social Housing and Finance Corporation

ANNEX 2 RELEVANT GUIDELINES FROM PEZA

1) Economic Zone in the Philippines

This section provides a quick overview of the relevant guidelines on the establishment of Ecozones in the Philippines based on references from the Philippine Economic Zone Authority.

Ecozones or Special Economic Zones pertain to areas with potential or developed for “agri-industrial, industrial, tourist, recreational, commercial, banking, investment and financial centers whose metes and bounds are fixed or delimited by Presidential Proclamations”. An ecozone may contain a mix or all of the following services/industries:

- (i) **Industrial estate:** a tract of land subdivided and developed according to a comprehensive plan under a unified continuous management and with provisions for basic infrastructure and utilities, with or without pre-built standard factory buildings and community facilities for the use of a community of industries.
- (ii) **Export processing zone:** a specialized industrial estate located physically and / or administratively outside the customs territory and predominantly oriented to export production. Enterprises located in export processing zones are allowed to import capital equipment and raw materials free from duties, taxes and other import restrictions.
- (iii) **Free trade zone:** an isolated policed area adjacent to a port of entry (such as a seaport) and / or airport where imported goods may be unloaded for immediate transshipment or stored, repacked, sorted, mixed, or otherwise manipulated.
- (iv) **Tourist/Recreational center:** an area within the ECOZONE where tourist accommodation facilities such as hotels, apartelles, tourist inns, pension houses, resorts, sports and / or recreational facilities are provided to render tourism services for both local and foreign tourists, travellers and investors in accordance with the guidelines issued by the PEZA.

There are different guidelines for the establishment of each type of ecozones which can be downloaded from the PEZA website:

<http://www.peza.gov.ph/index.php/pezaissuances/10-issuances/ecozone-development>

The application form and checklist for each type of ecozone can be downloaded from <http://www.peza.gov.ph/index.php/pezadownloads/25-downloads/ecozone-development>

Some of the criteria for the establishment of an ecozone in an area are listed below, while the complete list of requirements for the establishment of ecozones is available in the links given above.

- (i) The area should be within an identified regional growth center in the Medium-Term Philippine Development Plan or by the Regional Development Council.
- (ii) Required infrastructure should be present such as roads, railways, telephones, ports, airports, etc., and the suitability and capacity of the proposed site to absorb such improvements.
- (iii) Water source and electric water supply for the use of the ecozone should be available.

- (iv) Availability of vacant lands for industrial and commercial development and future expansion of the ecozone, as well as of lands adjacent to the ecozone available for development of residential areas for ecozone workers.

2) Incentives to Ecozone Developers/Operators

- (i) Ecozone developers/operators are exempted from national internal revenue taxes, all local taxes, fees and licenses which are composed of but not limited to the following:
- Internal revenue taxes such as gross receipts tax, Value Added Tax, ad valorem and excise taxes; and
 - Franchise, common carrier or value added taxes and other percentage taxes on public and service utilities and enterprises.
- (ii) The ecozone developers shall pay a five percent (5%) final tax on gross income (3% of which shall proceed to the national government and 2% to the municipality or city where the ecozone is located).
- (iii) Aside from the above incentives, ecozones may deduct 50% of human resource training expenses (skilled/unskilled, managerial and other management development programs) from the 5% final tax, but not to exceed 3% of the national government share.
- (iv) Ecozone developers/operators are also eligible to the incentives under the BOT Law - Incentives provided under R.A. 6957 as amended by R.A. 7718, otherwise known as the Build-Operate-and Transfer Law, subject to such conditions as may be prescribed by the Board.
- (v) Other Incentives are mentioned in Republic Act 7916, as may be determined by the Board subject to the conditions provided under Sections 3 and 5 of Rule XII of these Rules.

Ecozones with export and free trade enterprises have supplementary incentives in the form of Income Tax Holiday (ITH). New registered pioneer firms may avail of the ITH six (6) years from commercial operations, new registered non-pioneer firms may avail four (4) years from commercial operations, and expanding firms may avail after three (3) years from commercial operations.

References:

Republic Act 7916 – Special Economic Zone Act of 1995

Philippine Economic Zone Authority website: <http://www.peza.gov.ph>

ANNEX 3 BOI INCENTIVES FOR MASS HOUSING AND IN-CITY LOW COST HOUSING

Mass housing has been identified as one of the preferred activities in the 2017 Investment Priorities Plan of the Board of Investments. Qualified mass housing projects shall be eligible for incentives including income tax holidays (ITH)¹. Memorandum Circular 2017-004 outlines the general policies and specific guidelines for the implementation of the 2017 Investment Priorities Plan.

This covers the development of mass housing units based on a price ceiling of PHP2 million. This also covers in-city low-cost housing projects for lease. Except for in-city low-cost housing for lease, only projects located outside Metro Manila may qualify for registration.

1) Economic and Low Cost Housing

The following are the qualifications for registration:

- (i) The selling price of each housing unit shall be more than PHP450,000.00 but not exceeding PHP2.0 million;
- (ii) The project must be located outside Metro Manila;
- (iii) Minimum of 20 livable dwelling units in a single site or building;
- (iv) Must be new or expanding economic/low-cost housing project;
- (v) For residential condominium projects, at least 51% of the total gross floor area must be devoted to housing units.

In cases of un-incorporated joint venture and similar arrangements between landowner and developer wherein the sharing scheme is in terms of the number of lots or units built, only the share of the developer may qualify for registration.

Projects that have already been completed (with HLURB certificate of completion) and have incurred sales of any housing unit prior to the date of Contract to Sell shall not qualify for registration.

Any of the following may be considered as an expansion project:

- (i) Construction of additional floors or annexes intended for housing units;
- (ii) If the project will locate adjacent or contiguous to an existing housing project owned by the same entity and shall share common facilities including access to the existing project.

All economic/low-cost housing projects must comply with the socialized housing requirement (SHR) by building socialized housing units in an area equivalent to at least 20% of the total registered project area or total BOI registered project cost for subdivision housing and 20% of the total floor area of qualified saleable housing units for residential condominium projects.

¹ A government incentive program that offers a tax reduction or elimination to businesses. Tax holidays are often used to reduce sales taxes by local governments, but they are also commonly used by governments to help stimulate investment.

The SHR compliance may be any or a combination (i.e., cost recoverable and non-recoverable modes) of any of the following modes:

- (i) Development of a new settlement directly undertaken by the registered entity or affiliate or other related enterprise of the BOI-registered entity;
- (ii) Development of a new settlement through joint venture arrangements with any of the following:
 - a. Social Housing Finance Corporation's (SHFC) Community Mortgage Program (CMP) or High Density Housing (HDH) for in-city, on-site, or near-city socialized housing developments;
 - b. Local Government Unit;
 - c. Developer or NGO accredited by the HLURB.

In the case of joint venture projects, the BOI-registered entity shall be required to provide proof of funds transferred or assessed value of the land, where applicable, to the implementing entity.

- (iii) Development of a new settlement through donation of land with basic infrastructure facilities (roads, water system, etc.) and/or construction materials (preferably locally produced) in partnership with relevant LGU, key shelter agency, or with BOI/HLURB-accredited NGO in any of the following:
 - a. Comprehensive rural community housing development with provisions for social services (e.g., education, healthcare, recreation/sports) and livelihood programs;
 - b. To benefit families in calamity-stricken or armed conflict areas as declared by relevant government agencies and/or endorsed by HUDCC that housing assistance is extremely needed in the area.

For residential condominium projects, the amount to be donated shall be equivalent to 30% of (20% of the building construction cost based on the actual number or equivalent total floor area of qualified saleable low cost housing units) or 40% of the estimated ITH. Equivalent total floor area refers to the sum total of the floor area of all the registered low-cost housing units.

For purposes of ITH availment, compliance with the 20% SHR shall be computed based on the actual units sold during the ITH availment period. Failure to submit proof of compliance shall result to forfeiture of ITH for that particular taxable period.

Non-compliance with the 20% SHR on previous registrations using the ITH-based Compliance (IBC) shall result in denial of applications for registration for succeeding projects.

Interest income arising from in-house financing shall not be entitled to ITH.

Application for registration must be accompanied by a copy of the Development Permit issued by HLURB or concerned LGU.

Prior to registration, subdivision project applicant must submit copies of License to Sell (LTS) and Certificate of Registration (CoR) issued by HLURB. For condominium projects, applicant may submit a copy of its temporary LTS provided that the copies of the final LTS and CoR shall be submitted prior to start of commercial operation.

2) In-City Low Cost Housing for Lease

This covers newly constructed, low to medium-rise and dormitory-type housing projects including those located in Metro Manila.

The following are the qualifications for registration.

- (i) Minimum of 20 livable dwelling units for lease in a single building
- (ii) Within 4 kilometer radius from an economic zone, industrial parks/complex or business districts
- (iii) Monthly lease price shall not exceed the threshold of the Rent Control Law (R.A. No. 9653) covering all private residential units with monthly rent of PHP10,000.00.

Only developers shall be entitled to ITH and as such, purchasers of housing units with the intention of leasing out shall not be qualified for registration.

Registered enterprise shall not be required to comply with the SHR.

ANNEX 4 BALANCED HOUSING AS A MEANS TO BALANCING THE SOCIALIZED HOUSING SCENARIO

1) Introduction

Republic Act 7279 or the Urban Development and Housing Act of 1992 was established to “uplift the conditions of underprivileged and homeless citizens in urban areas and in resettlement areas by making available decent and affordable housing” (RA 7279, Sec.2). The **Balanced Housing Development** is a strategy included in RA 7279 to address the lack of housing for the less privileged and low income families. It requires developers to allocate **at least 20%** of the total project cost or project area for socialized housing². In July 2016, some sections pertaining to the balanced housing development under RA 7279 have been repealed by **RA 10884** which sets forth the balanced housing development program amendments stating the revised requirements for socialized housing (Sec. 18) to at least **15%** of the total area/total project cost for subdivision developments and at least **5%** for condominium developments.

Despite the provisions of RA 7279 and similar efforts of the government, there remains to be a huge gap between housing demand and supply in the Philippines, especially for the lower income brackets. In an analysis of housing demand and supply from 2001 to 2011 for each market segment, socialized, economic and low cost housing have a total deficit of 3,087,520.00, while mid cost and high end housing has a total surplus of 474,414 units. For households with annual income of PHP 78,000 and below, it appears that no housing supply is available leading to the deficit of 832,046 units (UA&P, 2013)³.

Table 4.1. Housing Demand and Supply Profile, 2001-2011

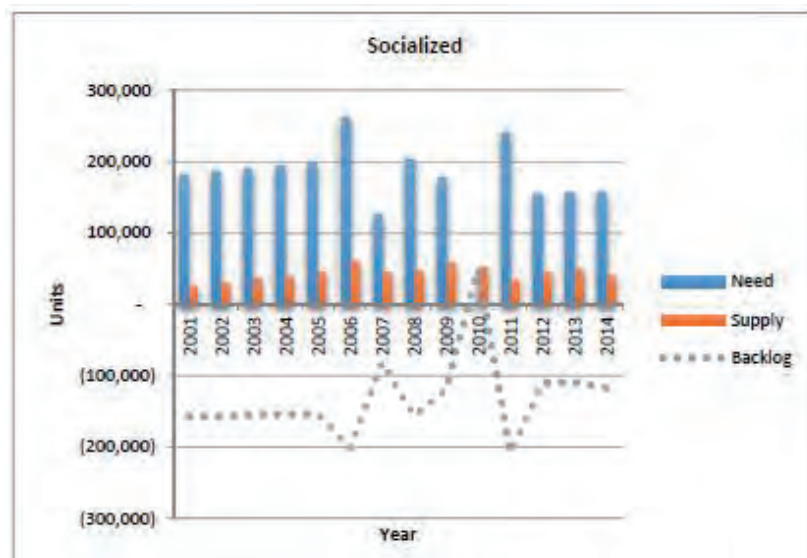
Market Segment	Housing Demand (Households)	Housing Supply	(Deficit)/Surplus
Cannot afford	832,046	0	(832,046)
Socialized housing	1,143,048	489,765	(663,283)
Economic housing	2,503,990	541,913	(1,962,077)
Low cost housing	704,406	242,246	(462,160)
Mid cost housing	72,592	322,995	250,403
High end housing	18,235	242,246	224,011

Source: SHDA (2013). Note: Cannot afford are households with annual income of PHP 78,000 and below.

² “Socialized Housing” refers to housing programs and projects covering houses and lots or homelots only undertaken by the government or the private sector for the underprivileged and homeless citizens which shall include sites and services development, long-term financing, liberalized terms on interest payments, and such other benefits in accordance with this Act (Urban Development and Housing Act (UDHA), RA 7279)

³ As cited from the Social Inclusion and Housing: Evidence from the Philippines by Marife M. Ballesteros And Gilberto M. Llanto, Philippine Institute for Development Studies (PIDS). Senior Research Fellow and PIDS President, respectively. For each market segment, the price range of units are: Php 400,000 and below for both socialized and those who cannot afford; Php 400,000 to Php 1.25M for economic; Php 1.25 – 3M for low cost housing, Php 3M – 6M for mid-cost housing and Php 6M and above for high end housing. Based on HLURB Memorandum Circular 2 Series of March 4, 2014, the adjusted price ceiling for socialized housing is Php 450,000 per unit.

From 2001-2014, there was a very short supply of socialized housing relative to its demand/needs (Fig. 4.1). The deficit continues to increase through time. Hence, balanced housing approach is not sufficient to address the gap between the demand and supply for socialized housing (Ballesteros & Llanto, nd).



Source: (Ballesteros & Llanto, nd) Source of basic data: SHDA Housing Industry Roadmap (2013); HLURB LTS (2012-2013) Note: socialized housing defined as units priced at PHP 400,000 or less

Figure 4.1 Housing Annual Backlog, 2011-2014: Socialized Housing

Concerns among private developers regarding the implementation of balanced housing are also surfacing. This includes being overburdened with the responsibility of providing socialized housing and poor compliance of the government and its agencies on the incentives of socialized housing development.

These situations lead to the following questions on the enforcement of the balanced housing: (1) if there is a fair apportioning on the counterparts and roles of the government and private developers in socialized housing provision; and, (2) what else can be done to improve the system of socialized housing provision with respect to the balanced housing strategy.

2) Laws on Balanced Housing: from RA 7279 to RA 10884

In July 2016, some sections pertaining to the balanced housing development under RA 7279 have been repealed by **RA 10884** which sets forth the balanced housing development program amendments. Republic Act 10884 states the revised requirements for socialized housing (Sec. 18) to at least **15%** of the total area/total project cost for subdivision developments and at least **5%** for condominium developments. Section 18 of the same law also states that HUDCC and NEDA shall jointly determine and set separate socialized housing price ceilings for socialized subdivision and socialized condominium projects. On May 3, 2012, HLURB released the IRR for RA 10884 under HLURB Board Resolution 946. Below are the guidelines on incentives and manner of compliance from BR 946:

(1) Incentives (from BR 946, Section 9)

- (i) Creation of one-stop offices in the different regions for the processing, approval and issuance of clearances, permits, and licenses;
- (ii) Simplification of financing procedures; and,
- (iii) Exemption from payment of the ff:
 - Project-related income tax
 - Capital gains on raw lands used for the project
 - Value-added tax for the project contractor concerned
 - Transfer tax for both raw completed projects
 - Donor's tax for lands certified by the LGUs to have been donated for socialized housing purposes

(2) Manner of compliance (from BR 946, Section 4)

- (i) Development of socialized housing in a new settlement
- (ii) Joint-venture projects for socialized housing with any of the following:
 - Development of socialized housing program or socialized housing project (with local government units, any housing agencies, private developer and NGO engaged in the development of socialized housing)
 - The development of basic services that will benefit a socialized housing program or socialized housing project of any of the housing agencies, such as the provision of educational or health facilities and other basic amenities and facilities mentioned in Section 21 and productivity or livelihood centers mentioned in Section 22 of UDHA project (with local government units, any housing agencies, private developer and NGO engaged in the development of socialized housing)
 - Rehabilitation of non-performing socialized housing assets of any of the housing agencies (with any of the housing agencies)
 - The purchase or subscription of socialized housing bonds or socialized asset-backed securities issued or conveyed by any of the housing agencies
- (iii) Participation in a new project under the community mortgage program, such as but not limited to the following:
 - Provision of a parcel of land to a CMP project;
 - Land development of housing or building construction in a CMP project;
 - Provision or development of right-of-way or access to roads or public transportation lines, or provision of upgrading of amenities, facilities or other forms of development in a CMP project.

Compared with the similar IRR for RA 7279-HLURB BR 890, the manner of compliance in BR 946 does not include slum upgrading or renewal of areas for priority development either through zonal improvement programs or slum improvement and resettlement programs of NHA.

3) General Requirements and Process

The section below outlines the general process for balanced housing as interpreted from Memorandum Circular 1 of 2013⁴ from HLURB. It should be noted that there are other **guidelines, requirements and process for each compliance manner** that are specified in their respective MCs.

Step 1: Secure preliminary approval and location clearance (PALC) and development permits (DP) from LGU. Requirements for preliminary approval and location clearance (PALC) and development permit (DP) shall be submitted to LGU thru the Local Planning and Development Office

Step 2: Publication (notice of filing of registration statement and posting of billboard notices). This shall be done upon receipt of notice to publish from Regional Field Office of HLURB. *(MC 1-2013 Sec. 16-18)*

Step 3: Certificate of completion from LGU through the engineering office/building official

Step 4: Issuance of compliance certificate shall be issued by HLURB to the developer of the main subdivision project upon submission of proof of completion of the compliance project. *(MC 1-2013 Sec. 21)*

Step 5: Submit requirements for Certificate of Registration/License to Sell. The main subdivision and compliance project shall be issued separate CR/LS under procedures and documentary requirements under IRRs of PD 957 or BP 220. Compliance Project shall be completed within one (1) year from the issuance of its LS *(MC 1-2013 Sec.11)*. **Application of CR and LS of main subdivision project** should be accompanied by the CR/LS of the compliance project. Another option is to utilize a previously declared compliance project *(MC 1-2013 Sec. 12 & 13)*. **Application for CR/LS of compliance project to be developed by a subsidiary for future subsequent utilization** can also be done. *(MC 1-2013 Sec. 15)*

Step 6. Annotations and issuance of CR/LS of main subdivision and compliance projects by the HLURB Regional Field Office (RFO) *(MC 1-2013 Sec. 19 & 20)*

Step 7. Monitoring, sanctions and remedies by HLURB RFO *(MC 1-2013 Sec. 22-25)*

As a response to the housing development in areas affected by calamities, HLURB released **Memorandum Circular 1 Series of 2014**, highlighting the manner by which socialized housing can be complied in calamity stricken areas. For housing projects that are intended to help areas affected by calamities, the developer can be issued an **initial compliance certificate to expedite the issuance of CR/LS**. Requisite to this is the development of a socialized housing project with an area equivalent to **at least 5%** of the main subdivision area or project cost. Full compliance of the 20% requirement for balanced housing can be done later on.

⁴ This memorandum circular is pursuant to Section 7 of the HLURB BR No.890 or the old IRR for Balanced Housing, and not yet the RA 10884-HLURB BR No.946.

Box 4.1. Enforcement of Balanced Housing: The Case of Davao City

*From Assessing the Compliance of Balanced Housing Policy in the Philippines: The Case of Davao City
(Pampanga et. al, 2015)*

The study was done before RA 10884 was enacted. It assessed the compliance of Davao city to the balanced housing policy based on **a)** 20% land area or cost allocation requirement; **b)** mode of compliance specifically on the location of compliance project; and, **c)** regulatory functions of the local government.

On 20% land area or cost allocation requirement

- Most of the interviewed subdivision developers preferred 20% land allocation compliance including high-end residential developers. They find this as a less inexpensive option considering the following: (a) the availability of least-priced lands outside prime locations or outside Davao territory; (b) joint venture arrangements with compliance subdivisions are more economical in terms of gross project development cost; and, (c) availability of company-owned real properties as a result of land-banking
- Compliance on 20% project cost allocation is less preferred due to the developers' avoidance for additional cash outflow.

On the mode of compliance

- Due to ambiguous regulations on balanced housing policy such as in the phrase "... at the option of the developer within the same city or municipality, whenever feasible..." (Section 18, RA 7279). Davao City was not able to optimize the 20% land area allocation compliance of developers **to address its housing backlog** by locating the socialized housing project within the city.
- Construction of **new settlement** is the most preferred option. Most of the developers opted to locate the socialized housing project away from the main subdivision. Only 13% chose to develop their socialized housing project beside or within their main subdivision project. The simplified siting categories and developers' reasons why they prefer each are discussed in Box 2.

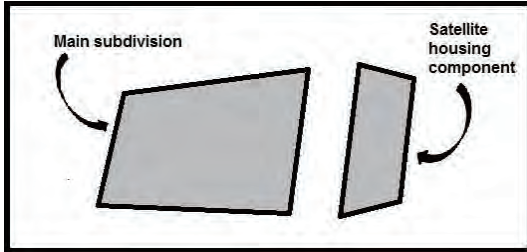
On regulatory and monitoring functions of the city government

- One of the vital functions devolved to the city was the administration and regulation of the issuance of preliminary approval and location clearance (PALC) and the development permit (DP) which was formerly exercised by HLURB. In the case of Davao, the chairperson of the Committee on Housing of the city legislative council **does not consider the requirements of the balanced housing policy on its approval of PALC/DP.**
- There is **confusion whether HLURB of LGU should perform the monitoring** aspect. According to interviewed developers in Davao, both the HLURB and CHLURO conduct irregular monitoring. They also observed the **absence of uniform monitoring standards**, which are, according to them, proof of lack of coordination between CHLURO and HLURB.

Box 4.2 Siting Categories of Socialized Housing

• **Off-site Location Option**

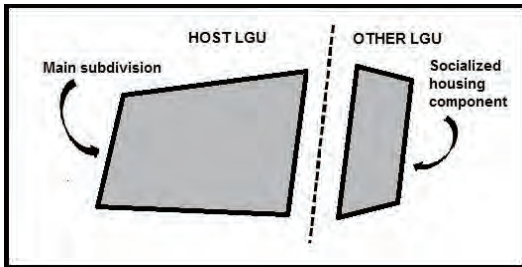
Socialized housing component is developed distant apart from the main subdivision but located within the host LGU.



High end subdivision developers choose to have their socialized housing component in separate locations within Davao City through company-owned initiative, or joint venture agreement with other private developers.

• **Satellite Location Option**

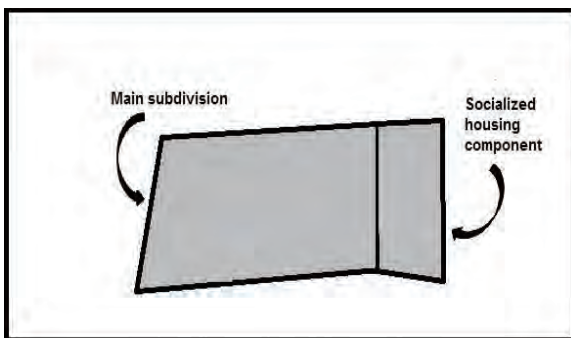
Socialized housing component is located and developed in other local government units, while the main subdivision is located in the host LGU. Came from the loose translation of phrase “.. whenever possible,”.



Foothills Realty Corporation opted to develop their socialized housing component outside the territorial jurisdiction of Davao City, or through ‘satellite location’ since the corporation has its own land, hence there is no additional cash outflow for the purchase of the land.

• **On-site Location Option**

Socialized housing component is developed on the same location where the main subdivision is situated within the host LGU.



A senior staff of the Santos Land Development, Inc. said “the development of socialized component within our main subdivision project is a standard operating procedure of our company and has always developed subdivision projects side by side with economic and socialized housing.” Meanwhile, the operations manager of the Uraya Land Development, Inc. claimed that “while socialized housing have low profit margin, it was easier and faster to dispose the units.”

4) Roles on the Implementation of Balanced Housing

Upon the approval of UDHA, both the LGUs and HUDCC were given responsibilities to implement the law. UDHA is explicit that LGUs are the main implementers of UDHA, while HUDCC shall provide support to LGUs, in coordination with other government agencies, private sector and NGOs Section 39, Article 10, R.A. 7279). Presented in Table 4.2 are the responsibilities of HUDCC and LGUs in implementing UDHA at the local level. From a journal by the Philippine Institute of Development Studies or PIDS, the key issue in the implementation of UDHA at the local level is the readiness and political will of LGUs to undertake these roles. Most LGUs lack the capacity and resources for shelter and urban management and have different priorities (Ballesteros, 2009).

Table 4.2. Main Actors in the Implementation of Balanced Housing

LGUs	HUDCC	Private Developers
<ul style="list-style-type: none"> ▪ Identification of socialized housing beneficiaries; ▪ Identification and provision of land for socialized housing in the locality; ▪ Curtailment of activities of professional squatters and squatting in danger areas; ▪ Ensure mandatory requirements for eviction and demolition; ▪ Preparation and implementation of shelter and land use plans; and ▪ Raising of funds from real estate taxes for UDHA funding. 	<ul style="list-style-type: none"> ▪ Design a system for beneficiary registration to assist LGUs ▪ Provide LGUs with the following support: <ul style="list-style-type: none"> - Technical support in the preparation of town and land use plans - In coordination with NEDA and NSO, provide data and information on population projections, development trends, and necessary investment programs - Assistance in obtaining funds and other resources needed in the urban development and housing programs in their respective areas of responsibility. 	<ul style="list-style-type: none"> ▪ Development of socialized housing in compliance with relevant laws

Source: <http://www.hudcc.gov.ph/mandates> and Ballesteros (2009).

5) Issues in enforcing balanced housing

Using the case of Davao city, below are some of the identified problems in the enforcement of balanced housing program at the LGU level. The private developers too have observations and concerns on the enforcement of balanced housing as cited from a CREBA presentation.

LGU: Case of Davao City

- **The common practice of some private sector developers to outsmart the city government.** Inclusion of developers' prior arrangement to develop a socialized housing with the National Housing Authority (NHA) defeats the provisions of UDHA and should not be acknowledged as compliance project.
- From the case of Davao City, there is LGUs' **lack of knowledge to strictly enforce and optimize balanced housing** to the advantage of addressing their housing backlog. This is shown in the lack of consideration of the requirements of balanced housing policy in Davao's legislative council's approval of PALC/DP
- **Ambiguity of monitoring body and absence of compliance monitoring standards.** Based on the 2012 IRR for balanced housing, HLURB Regional Field Offices should

perform regular monitoring of the project. From the case of Davao City, this issue was raised by developers because according to them, both the local government and HLURB conduct irregular monitoring with no uniform monitoring standards.

- **Lack of local shelter plan to direct and dictate future housing projects.** From the experience of Davao City, they realized that an updated local shelter plan is important to check how socialized housing projects can be directed to their advantage. Had the developers been pointed to areas and populations that requires additional housing, Davao city could have enforced off-site and on-site location options rather than locating these projects in other LGUs, decreasing the benefits for homeless Davao City population.

Private Developers: CREBA

- The private sector has borne more than its share of helping solve this national problem. Provision of socialized housing is and should be the primary role of the government, with support/secondary role from the private sector
- It has been observed by most developers that the government and its agencies have not complied with provision of incentives to socialized housing developers. They also believe that HLURB has no rationale for imposing administrative requirements and punitive sanctions against developers who are non-compliant, considering that the government, too, is non-compliant.
- The current permitting process, through its myriad of requirements, seems to be curtailing the production of housing units.

The succeeding figure summarizes the general process for balanced housing development in terms of requirements and activities indicated in the relevant IRR, specifically HLURB MC 1-201. The figure is for further improvement upon gathering of information on the complete process, the actors, inputs and outputs for each step. This should also be supplemented by experiences from other LGUs, private developers and national agency such as HUDCC.

6) Recommendations

Enticing the private sector to invest in socialized housing is seen as one of the strategies to increase housing for the poor. This strategy is supported by the presence of incentives such as tax exemptions and financing window under the HDMF for socialized housing acquisition (Ballesteros, 2009). The Board of Investment also provides incentives for socialized housing in new townships. These incentives however are still inadequately provided and monitored as mentioned in the previous section. From the references gathered, below are the common recommendations to improve the implementation not only of balanced housing but also for socialized housing provision:

- Adopt a national resettlement policy to ensure a common framework for resettlement approaches, housing packages, and entitlement.
- Develop a public-private partnership as a key strategy to resettlement projects, specifically for resettlement in “new towns.”

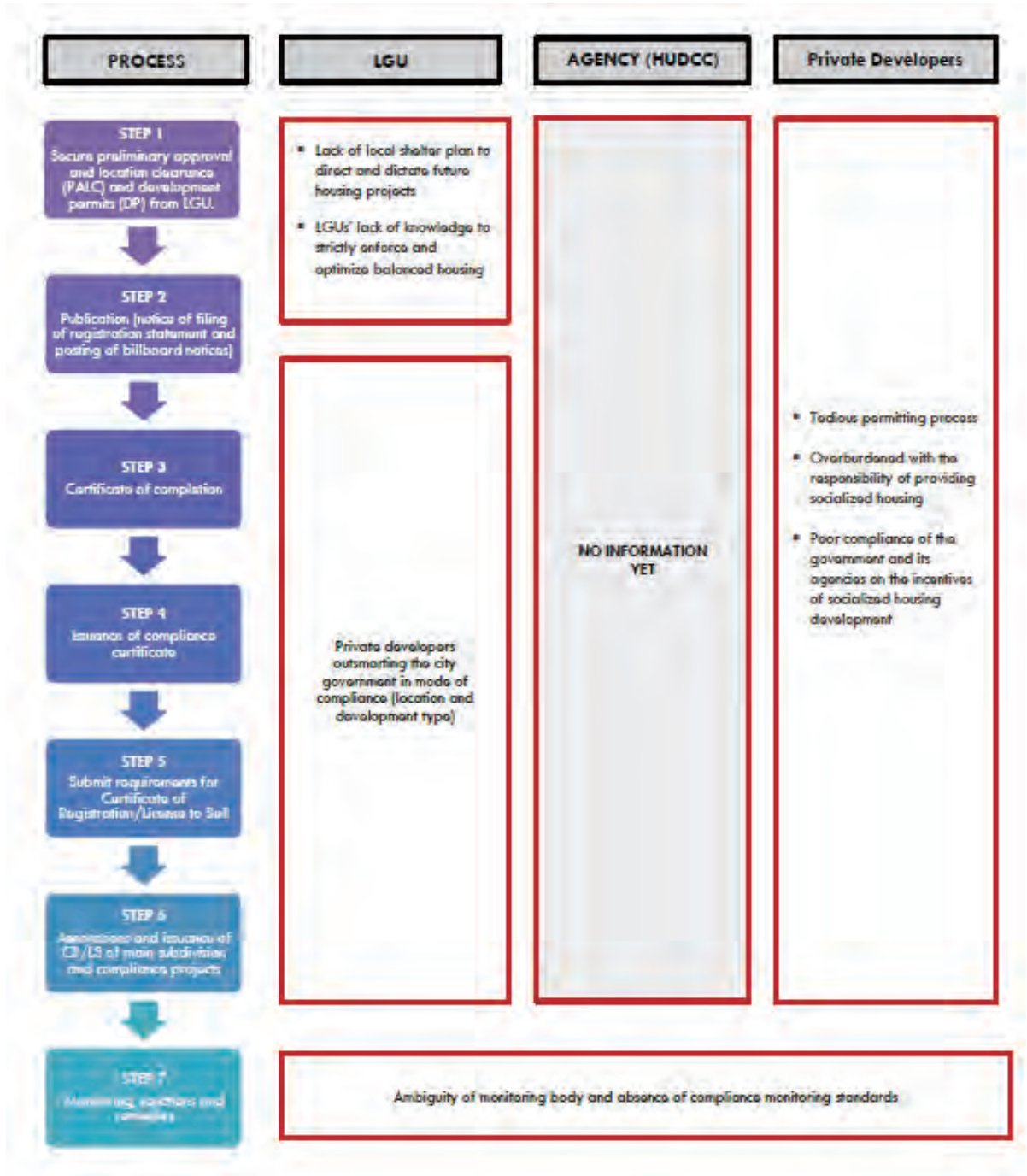


Figure 4.2 General Process for Balanced Housing Compliance and Issues

Proof of Concept for PPP Approach to Balanced Housing: Korea's Joint Redevelopment Program

The Joint Redevelopment Program is one of Korea's successful housing programs. The major stakeholders include the resettler cooperative (formed by slum dwellers organized into a cooperative by the government), construction companies and the government as the key coordinator. The government sells public lands to residents of informal settlements (organized into a cooperative) at lower prices. The construction companies finance the construction of houses/buildings and facilities in the lands purchased by the resettler cooperative. When the units are finished, some are sold to the resettler cooperative and to the open market.

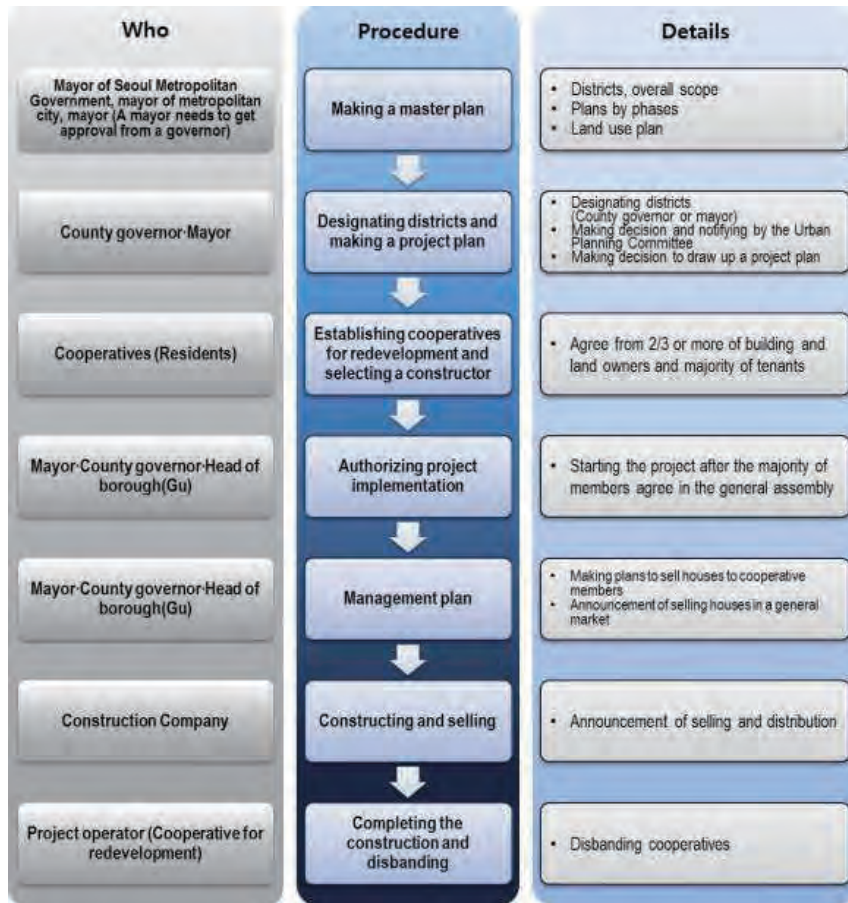


Figure 4.3 General procedures of the Joint Redevelopment Program

A remarkable benefit of the Joint Redevelopment Program is the minimal need for public investment in the construction phase which is the responsibility of the private sectors. In this arrangement, most of the profits are returned to the stakeholders.

Source: Overview of Slum Upgrading and Renewal Programs in South Korea; accessed from: World Bank Open Learning Campus https://wbgsabacloud.com/Saba/Web_spf/NA1PRD0002/common/resources/resourcedetail/simrs00000000004064

ANNEX 5 PERTINENT PROVISIONS OF THE LOCAL GOVERNMENT CODE OF 1991 TO THE DEVELOPMENT OF TRANSIT ORIENTED COMMUNITIES

One of the salient features of the Local Government Code of 1991/Republic Act 7160 is the devolution of national agency functions to the grass roots level, thereby increasing participation of local government units. With these, local governments are given stronger authority in the decision-making, territorial management, and resource generation in their locality, likewise, they are also given more responsibility in the advancement and development of their area. Taking into account the powers and responsibilities granted to the local governments through RA 7160, this section looks into pertinent provisions that point out the role of LGUs in being an initiator, partner and implementer of TOD-related activities and projects.

1) Identification and Prioritization of Areas Suitable for TOD

LGUs have the powers to plan, guide, implement and regulate housing and urban development projects through their Comprehensive Land Use Plans (CLUP), Comprehensive Development Plans (CDP), and Zoning Ordinance (ZO). Likewise, LGUs should be able to identify and define areas for urban development through their CLUP and its accompanying Zoning Ordinance.

Section 20 (c)

“The local government units shall, in conformity with existing laws, continue to prepare their respective comprehensive land use plans enacted through zoning ordinances which shall be the primary and dominant bases for the future use of land resources.”

Section 447 (a) (2) (vi)

“Prescribe reasonable limits and restraints on the use of property within the jurisdiction of the municipality.”

Given these, LGUs may identify and prioritize areas suitable for TOD within their jurisdiction. These areas can be demarcated by prescribing allowable/preferred uses through the ZO. LGUs also have the authority to approve or disapprove proposed developments through the ZO and local permitting systems such as locational clearance and building permits. However, an LGU cannot force a landowner to develop areas based on the LGU’s preference, but there can be ways to encourage landowners to do so, through but not limited to, incentives and taxation, and even eminent domain. Activities and projects in the identified TOD may also be prioritized in the development plans and public investment programs of the LGU.

Section 109. Functions of Local Development Councils. -

(a) The provincial, city, and municipal development councils shall exercise the following functions:

(1) Formulate long-term, medium-term, and annual socio-economic development plans and policies;

(2) Formulate the medium-term and annual public investment programs;

(3) *Appraise and prioritize socio-economic development programs and projects;*

(4) *Formulate local investment incentives to promote the inflow and direction of private investment capital;*

Section 19. Eminent Domain

“A local government unit may, through its chief executive and acting pursuant to an ordinance, exercise the power of eminent domain for public use, or purpose or welfare for the benefit of the poor and the landless, upon payment of just compensation, pursuant to the provisions of the Constitution and pertinent laws: Provided, however, That the power of eminent domain may not be exercised unless a valid and definite offer has been previously made to the owner, and such offer was not accepted: Provided, further, That the local government unit may immediately take possession of the property upon the filing of the expropriation proceedings and upon making a deposit with the proper court of at least fifteen percent (15%) of the fair market value of the property based on the current tax declaration of the property to be expropriated: Provided, finally, That, the amount to be paid for the expropriated property shall be determined by the proper court, based on the fair market value at the time of the taking of the property.”

2) **Planning and Funding for TOD-related Projects and Programs**

Aside from the identification of suitable areas, LGUs may also spearhead the planning and funding of TOD-related activities/projects, with technical assistance from national agencies/departments (DOTr, DPWH, NEDA, PEZA, etc.) and private sector. The Local Government Code of 1991 is also explicit in designating to the local government the provision of basic services and facilities supportive to various development projects (Please refer to Section 17 of RA 7160 for the list of basic services and facilities designated to the barangay, municipality/city, and province).

Funding for TOD-related projects and programs may be secured locally through budget allocations by incorporating such projects and programs in the annual investment plan. Likewise, funds may also be augmented by collecting a special benefit levy from landowners whose properties may benefit from the TOD project (see pertinent section below). Formulation and publication of ordinance, determination of levy amount and other relevant actions on imposing the special benefit levy are mentioned in Sections 241 to 245 of the Local Government Code of 1991.

Section 240. Special Levy by Local Government Units

“A province, city or municipality may impose a special levy on the lands comprised within its territorial jurisdiction specially benefited by public works projects or improvements funded by the local government unit concerned: Provided, however, That the special levy shall not exceed sixty percent (60%) of the actual cost of such projects and improvements, including the costs of acquiring land and such other real property in connection therewith: Provided, further, That the special levy shall not apply to lands exempt from basic real property tax and the remainder of the land portions of which have been donated to the local government unit concerned for the construction of such projects or improvements.

They may also secure grants to avail assistance from private sectors, and to fund the detailed planning for the TOD area.

Section 23. Authority to Negotiate and Secure Grants.

“Local chief executives may, upon authority of the sanggunian, negotiate and secure financial grants or donations in kind, in support of the basic services or facilities enumerated under Section 17 hereof, from local and foreign assistance agencies without necessity of securing clearance or approval therefor from any department, agency, or office of the national government or from any higher local government unit: Provided, That projects financed by such grants or assistance with national security implications shall be approved by the national agency concerned: Provided, further, That when such national agency fails to act on the request for approval within thirty (30) days from receipt thereof, the same shall be deemed approved.

The local chief executive shall, within thirty (30) days upon signing of such grant agreement or deed of donation, report the nature, amount, and terms of such assistance to both Houses of Congress and the President.”

3) Management of TOD

The establishment and management of a TOD may not be bound by territorial jurisdictions; furthermore, may be better implemented in cooperation with surrounding LGUs and national agencies. The Local Government Code of 1991 authorizes LGUs to create a special body among local government, hence a coordinating body/technical working group, etc. may be established for the purpose of the establishing, managing/implementing TOD-related activities and projects.

Section 33. Cooperative Undertakings Among Local Government Units.

“Local government units may, through appropriate ordinances, group themselves, consolidate, or coordinate their efforts, services, and resources for purposes commonly beneficial to them. In support of such undertakings, the local government units involved may, upon approval by the sanggunian concerned after a public hearing conducted for the purpose, contribute funds, real estate, equipment, and other kinds of property and appoint or assign personnel under such terms and conditions as may be agreed upon by the participating local units through Memoranda of Agreement.”

Given the above-stated powers and responsibilities of local governments, it may be said that they are authorized enough to be initiators, partners and implementers of TOD-related activities and projects. One aspect of interest is their capability to undertake such roles. Without the sufficient capacity to perform the above roles, the authorities granted on local governments may not be translated into actions, hence defeating the purpose of devolutions. However, it is noteworthy that LGUs are not the sole actors in the establishment and implementation not only of TODs but of any development undertakings; the Local Government Code grants more authority, functions and powers to local governments, but does not make these exclusive to them.