

10-YEAR SOLID WASTE MANAGEMENT PLAN

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10 YEAR SWM PLAN

1. Introduction

The 10-Year SWM Plan is about the future strategy of the city regarding its proper management of waste. Inside the report, the collection, storage, transfer and disposal of the city waste were all projected for 10 years. The project proposal was refined by a regulating board which analyses and thoroughly check the content.

2. Legal Documentation and Citation

a. Resolution No. 232 Series of 2014

CITY COUNCIL SECRETARY OFFICE
RECEIVED BY:
DATE: 8:17 am
PARAÑAQUE CITY

REPUBLIC OF THE PHILIPPINES
SANGGUNIANG PANLUNGSOD
Paranaque City
RESOLUTION No. 232
Series of 2014

PROPOSER : COUN. FLORENCIA N. AMURAO

A RESOLUTION INTENDED TO EFFECTIVELY COMPLY WITH THE REQUIREMENTS OF THE ECOLOGICAL WASTE MANAGEMENT ACT OF 2000, AND PUT ON STREAM THE PARAÑAQUE CITY TEN YEAR SOLID WASTE MANAGEMENT PLAN.

WHEREAS, The National Solid Waste Management Commission (NSWMC) through its secretariat has informed the Honorable Mayor Edwin L. Olivares, in its March 5, 2014 communication that:

- The Ten year Solid Waste Management Plan submitted by the Paranaque City has been conditionally approved;
- The plan shall be deemed approved upon submission within three (3) months of the notice, additional information required based on annotated outline for LGU Solid Waste Management Plan.

WHEREAS, Ordinances No. 17 Series of 2011, 12-03 Series of 2011, 05-018 Series of 2005 and 03-02 Series of 2003 appear to contain provisions that address the dated concerns and issues required by the National Solid Waste Management Commission for final approval of the Paranaque City's Ten Year Solid Waste Management Plan;

WHEREAS, as explained by the local Department of Interior and Local Government (DILG) office on seal of good governance, environmental management is an elective category that may give us clearance to win the seal of good governance;

WHEREAS, under this category, Paranaque City is required to submit a Ten Year Solid Waste Management Plan approved by the Sangguniang Panlungsod;

WHEREAS, we are not inclined to allow our city to be remiss in complying with RA2003 nor indifferent to the project of winning the seal of good governance.

NOW THEREFORE:

BE IT RESOLVED, AS IT IS HEREBY RESOLVED, that the Sangguniang Panlungsod in session assembled that this RESOLUTION INTENDED TO EFFECTIVELY COMPLY WITH THE REQUIREMENTS OF THE ECOLOGICAL WASTE MANAGEMENT ACT OF 2000, AND PUT ON STREAM THE PARAÑAQUE CITY TEN YEAR SOLID WASTE MANAGEMENT PLAN BE APPROVED, AS IT IS HEREBY APPROVED.

RESOLVED FURTHER, that a copy of this resolution be furnished to all offices and agencies concerned:

- The afore cited ordinances as well as other studies and relevant data be considered and made integral part of the Ten Year Solid Waste Management Plan as proposed by the Solid Waste Management and Environmental Sanitation Office (SWAESO) and the City Planning Development Office (CPDO);

b) The completed Ten Year Solid Waste Management Plan be concurred with, and submitted to the Department of Interior and Local Government (DILG) and the National Solid Waste Administration.

Done this _____ day of _____ 2014 at the City of Parañaque, Metro Manila

CERTIFIED TRUE & CORRECT:

ATTY. LINO C. SANDEL
City Council Secretary

SPONSORED BY:


FLORIANCIA N. AMURAO
City Councilor

CONCURRED BY:

Time 5/14/14 3:20 pm
RUFINO M. ALLANIGUE
City Councilor

Mañay 5-14-14
JASON P. WEBB
City Councilor

JUAN 5/14/14 3:30 PM
RICARDO L. BAKES, JR.
City Councilor

Juan 5-14-14
JOHN A. VILLAFUERTE
City Councilor

5/14/14 3:20 AM
RAQUEL GABRIEL VELASCO
City Councilor

3:20 pm 5-14-14
ALMA MORENO
City Councilor

EDIL T. CAYANON 5/14/14 3:45 PM
JOHN RYAN G. YLLANA
City Councilor

KIM 5/14/14 3:40 PM
MERLIE S. ANTIFUESTO
City Councilor

5/14/14 3:46
MERRITSS B. DE ASIS
City Councilor

Chp 5/14/14 3:35 PM
VINCENT KENNETH M. FAVIS
City Councilor

5/14/14 3:36 PM
OSWALDO E. ESPLANA
City Councilor

5/14/14 3:40
VIKTOR ERIKO M. SOTTO
City Councilor

b. NSWMC Resolution No. 125



Office of the President
NATIONAL SOLID WASTE MANAGEMENT COMMISSION
Department of Environment and Natural Resources
2nd Flr. HRDS Bldg., DENR compound, Visayas Avenue, Diliman, Quezon City, 1100
Tel. Nos. (632) 920-2262 / 920-2279



NSWMC Resolution No. 125, Series of 2015

**RESOLUTION APPROVING THE TEN YEAR SOLID WASTE MANAGEMENT
PLAN OF THE CITY OF PARAÑAQUE, METRO MANILA**

WHEREAS, the National Solid Waste Management Commission (“the Commission”) is composed of fourteen (14) members from the National Government Agencies (NGAs) and three (3) members from the private sector in accordance with the provision of Republic Act No. 9003, RA 9003, otherwise known as Ecological Solid Waste Management Act of 2000 (the “Act”);

WHEREAS, Section 10 of the RA 9003 provides that Local Government Units (LGUs) shall be primarily responsible for the implementation and enforcement of the provisions of the Act within their respective jurisdictions;

WHEREAS, Section 16 of the RA 9003 requires provinces, cities and municipalities through their local Solid Waste Management Boards, to prepare their respective 10-year Solid Waste Management Plans (SWMP) consisted with the National Solid Waste Management Framework and in accordance with the provisions of the Act and the policies set by the National Solid Waste Management Commission;

WHEREAS, Section 16, of the RA 9003 also provides that all LGU SWM plans shall be subject to the approval of the NSWMC;

WHEREAS, NSWMC Resolution 39, Series of 2009 entitled Resolution Amending NSWMC Resolution No. 8 entitled “Guidelines on the Review and Approval of the 10-year SWM Plans of LGUs” was approved on October 09, 2009 by then DENR Secretary Hon. Jose L. Atienza;

WHEREAS, after thorough review and evaluation by the NSWMC Secretariat, the NSWMC-TWG, on its February 5, 2015 meeting, has agreed to endorse, for approval by the NSWMC, the 10-year SWM plan of the City of Parañaque, Metro Manila.

NOW THEREFORE, BE IT RESOLVED, AS IT IS HEREBY RESOLVED that the 10-year SWM plan of the said LGU be approved.

This resolution takes effect upon approval.

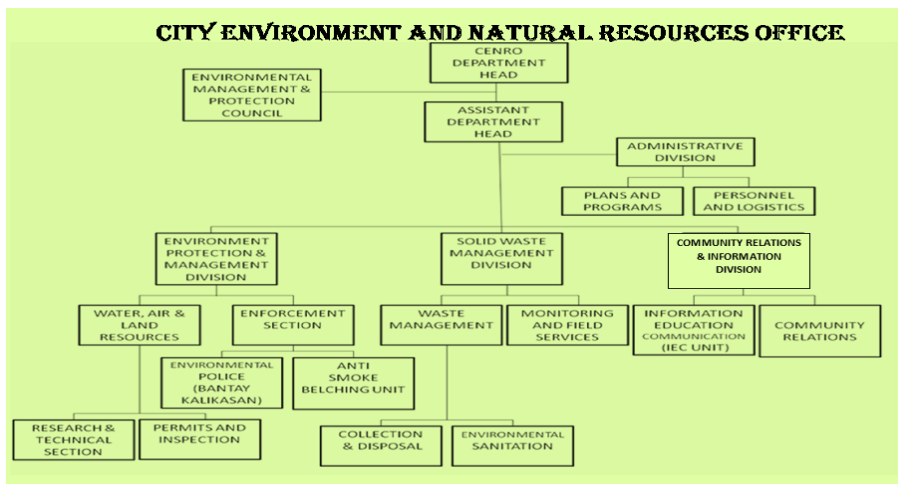
APPROVED on this 24th day of February 2015.


CRISPIAN N. LAO
Representative, Recycling Industry and
Vice-Chairman, National Solid Waste Management Commission (NSWMC)

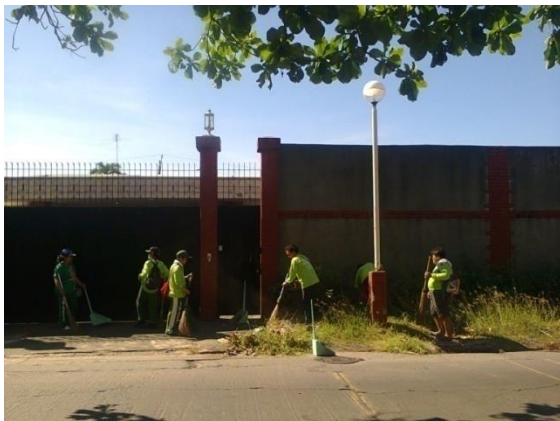
Waste No More! Waste No Time!

3. Outputs

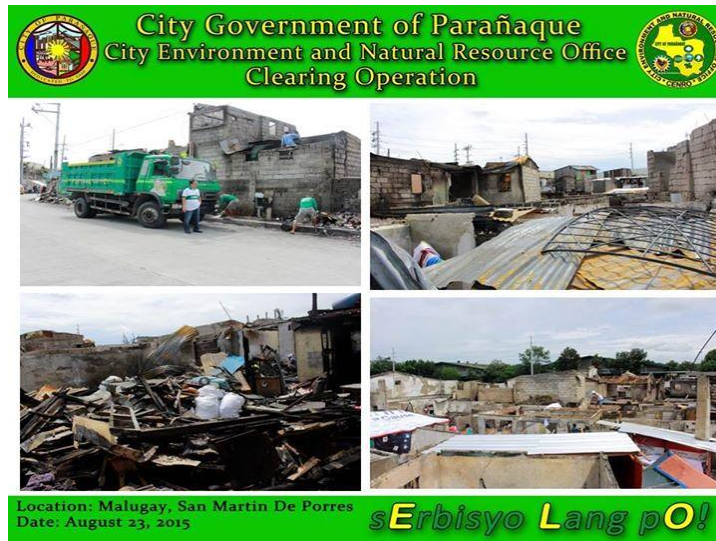
- a. Formulation of CENRO (City Environment and Natural Resources)
 - As per Ordinance No. 14-25



- b. Supervise of Garbage Contractor
- c. Formulation of EPMD (Environmental Protection and Management Division)
- d. Formulation of CRID (Community Relations and Information Division) formerly known as CAID (Community Affairs and Information Division)
 - IEC Campaign's disseminating body
- e. Source Reduction Programs
 - Management of Kitchen Waste
- f. Sidewalk Clearing Operation



- g. Clearing of Illegal commercial signage
 - Removal of illegal signage placed on prohibited area
- h. Disaster Assistance Operation
 - Wastes and debris after disaster were picked up and disposed by the City



- i. Linis Estero
 - Scheduled operation in form of manual or mechanical approach
- j. Seminar of SWM for City Highschool
 - Scheduled school to school approach in educating students about SWM
- k. Garbage Disposal Monitoring
 - Deployment of “Bantay Basura”
- l. Best Practices
 - Roll on Roll-off (RoRo)



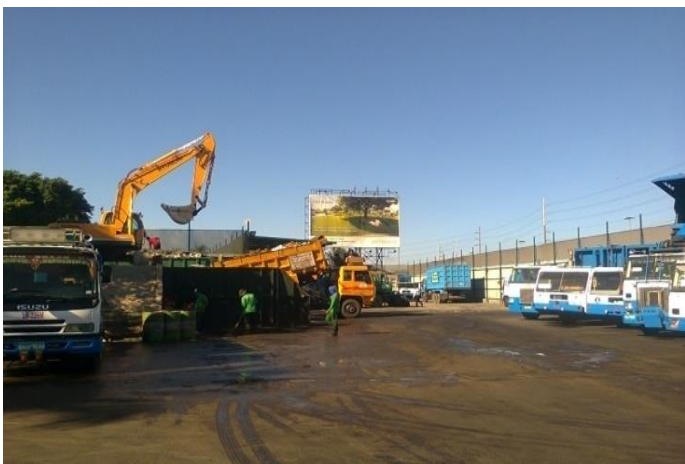
- MRFs



- Used Tire Recovery Program
- Formulation Baranggay Solid Waste Management Council and Baranggay Solid Waste Management Plan
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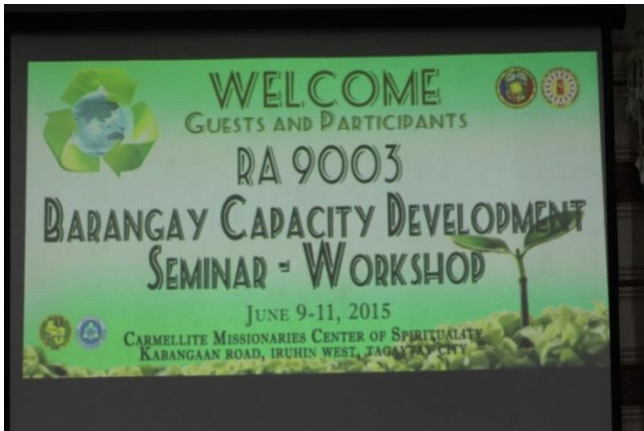
- Transfer Station



- Final Disposal



m. Information, Education and Communication Campaign



n. Waste Analysis Characterization Study (WACS)



o. Pushcart Distribution



p. Garbage Collected per Month

**PARAÑAQUE VOLUME OF COLLECTED
GARBAGE PER MONTH**

MONTH	CUBIC METERS		
	2013	2014	2015
JANUARY		55505	55000
FEBRUARY		45576	45226
MARCH		54255	50207
APRIL		52698	48589
MAY		53140	50315
JUNE		51168	48805
JULY	50312	55637	
AUGUST	51869	53286	
SEPTEMBER	49334	60015	
OCTOBER	49872	61593	
NOVEMBER	49191	51869	
DECEMBER	50893	56399	

- Data Source: LEONEL WASTE MANAGEMENT (Contractor of the City of Parañaque)

q. Strict Monitoring of Toxic and Hazardous wastes disposal

- Deployment of “Bantay Kalikasan” or Environmental Police thru Ordinance No. 06-13 Series of 2006



r. Arbor Day

- The City Has its own day Arbor Day aside from the National Arbor Day celebrated in the Philippines



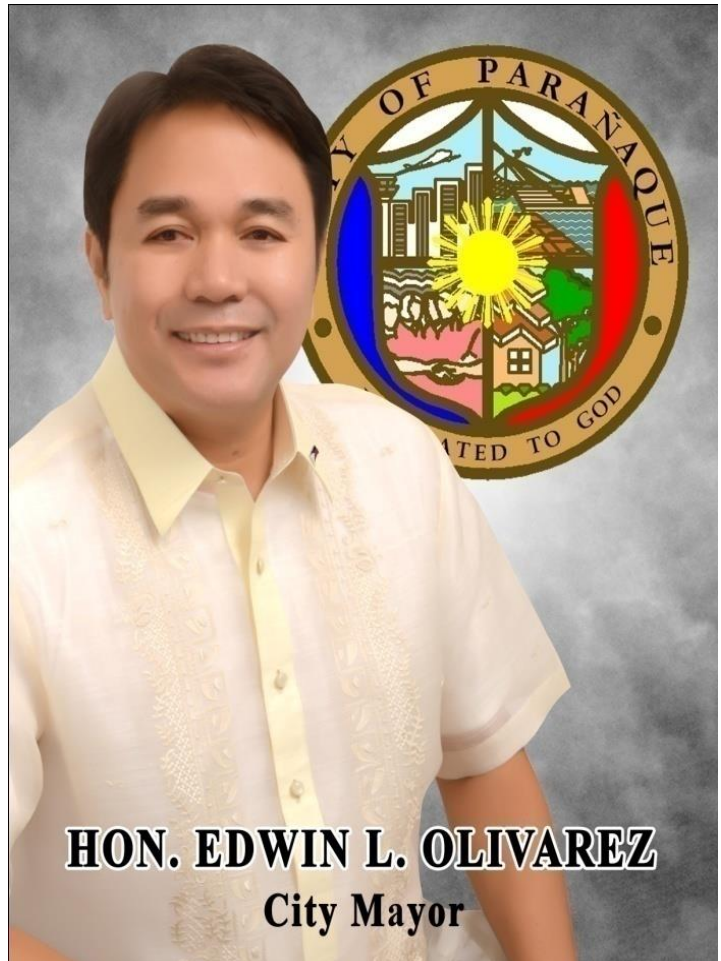
4. 10 Year Plan

Executive Summary

The City of Parañaque or simply Parañaque is one of the cities and municipalities that make up Metro Manila. It is bordered on the north by Pasay, by Taguig to the northeast, Muntinlupa to the southeast, by Las Piñas to the southwest, and by Manila Bay to the west.

The City of Parañaque is a model for academic excellence, public health and safety, environmental preservation and good governance, providing equal opportunities for all in a peaceful and business-friendly atmosphere through a God-Centered leadership.

It is the policy of the city that the promotion and protection of the health of its constituents be maintained through a clean surrounding, adequately sustained sanitation, and efficient management of solid waste - a Clean City is a Healthy City.



It is also the policy of the City to ensure the effective Implementation of R.A 9003 and Ordinance No. 05-018 through the institution of systems and mechanisms to adopt a uniform and standard method to maximize the capabilities of the Barangay officials, employees and deputized adjuncts including Homeowners' Association officers to perform their duties under the ordinance in the most effective way.

The city declared a **“No Segregation, No Collection Policy on Waste”** and enforces the law as well as institute fines and penalties for violators, including

owners/proprietors/operators of commercial and industrial establishments and/or Association officers allowing or aiding the disposal and collection of mixed wastes.

Finally, the city formulated its 10-Year Solid Waste Management Plan to abide by the stipulations in RA 9003 under Section 16 that states that all Local Government Units (LGUs) must come up with their respective 10-Year Solid Waste Management Plan in accordance with the National Framework and pursuant to the provisions of the said Act. The Plan shall identify strategies and activities that shall encourage the reduction of waste.

All of the barangays of the City of Parañaque have established their Barangay Solid Waste Management Committee (BSWMC). The BSWMC implements and enforces the Solid Waste Management Programs at the barangay level.

Furthermore, preservation and protection of the environment under the Environment-Friendly Programs of Mayor Olivarez, leads among all his programs. Waste segregation and prompt delivery of basic waste collection service was institutionalized, while cleanliness of the city's environment including waterways remains a top priority.

I. Introduction



A World class model city of the 21st century known for the quality of Education, social justice, clean and safe environment where its citizens are guided by Divine Providence thereby making them proud to be called Parañaquense!

It is the policy of the city that the promotion and protection of the health of its constituents be maintained through a clean surrounding, adequately sustained sanitation, and efficient management of solid waste - a Clean City is a Healthy City.

It is also the policy of the City to ensure the effective Implementation of R.A 9003 and Ordinance No. 05-018 through the institution of systems and mechanisms to adopt a uniform and standard method to maximize the capabilities of the Barangay officials, employees and deputized adjuncts including Homeowners' Association officers to perform their duties under the ordinance in the most effective way.

Further, the city conducts periodic consultations with appropriate Non-Governmental Organizations (NGO's) and Peoples Organization (PO's), Homeowners' Associations and inhabitants of the Barangay to enlist their cooperation and to secure their views and inputs towards a more workable environmental protection plan.

The city also declared a “**No Segregation No Collection Policy on Waste**” since 2005 and enforces the law as well as institute fines and penalties for violators, including owners/proprietors/operators of commercial and industrial establishments and/or Association officers allowing or aiding the disposal and collection of mixed wastes.

Finally, the city formulated its 10-Year Solid Waste Management Plan to abide by the stipulations in RA 9003 under Section 16 that states that all Local Government Units (LGUs) must come up with their respective 10-Year Solid Waste Management Plan in accordance with the National Framework and pursuant to the provisions of the said Act. The Plan shall identify strategies and activities that shall encourage the reduction of waste.

1.1 PURPOSE

1.1.1 THE CITY'S VISION

The City of Parañaque is a model for academic excellence, public health and safety, environmental preservation and good governance, providing equal opportunities for all in a peaceful and business-friendly atmosphere through a God-centered leadership.

1.1.2 THE CITY'S MISSION

Parañaque as the “Residential Capital and Investors' Haven of the Metro South” takes pride in moving towards full modernization and development with goals of being economically competent and able to provide a sustainable and livable environment worthy of comparison with other local and international cities. In support of this dream is a shared sense of mission.

Parañaque City will establish effective support facilities for a livable community to provide a business-friendly environment for investors and empower the citizenry in developing the city as the residential capital and investors' haven of the Metro South.

1.1.3 KEY ISSUES FACING THE COMMUNITY

The major issues facing the city is the generation of large volume of waste from the daytime population which amounts to 21% increase in volume and the high cost of hauling and disposal.

1.1.4 GOALS FOR THE PLAN AND HOW THE PLAN WILL HELP TO ALLEVIATE

The goal of the 10-Year Solid Waste Management Plan is to serve as a guide to the City in implementing its solid waste management system consistent with the National Solid Waste Management Framework in compliance to RA 9003.

1.1.5 INTENT OF RA 9003 AND ITS EFFECT ON SOLID WASTE MANAGEMENT

It is the intent of the law to adopt a systematic, comprehensive and ecological solid waste management program which shall:

- (a) Ensure the protection of public health and environment;
- (b) Utilize environmentally-sound methods that maximize the utilization of valuable resources and encourage resources conservation and recovery;
- (c) Set guidelines and targets for solid waste avoidance and volume reduction through source reduction and waste minimization measures, including composing, recycling, re-use, recovery, green charcoal process, and others, before collection, treatment and disposal in appropriate and environmentally-sound solid waste management facilities in accordance with ecologically sustainable development principles;
- (d) Ensure the proper segregation, collection, transport, storage, treatment and disposal of solid waste through the formulation and adoption of

- the best environmental practices in ecological waste management excluding incineration;
- (e) Promote national research and development programs for improved solid waste management and resource conservation techniques, more effective institutional arrangement and indigenous and improved methods of waste reduction, collection, separation and recovery;
 - (f) Encourage greater private sector participation in solid waste management;
 - (g) Retain primary enforcement and responsibility of solid waste management with local government units while establishing a cooperative effort among the national government, other local government units, non-government organizations, and the private sector;
 - (h) Encourage cooperation and self-regulation among waste generators through the application of market-based instruments;
 - (i) Institutionalize public participation in the development and implementation of national and local integrated, comprehensive and ecological waste management programs; and
 - (j) Strengthen the integration of ecological solid waste management and resource conservation and recovery topics into the academic curricula of formal and non-formal education in order to promote environmental awareness and action among the citizenry.

1.2 APPROACH

1.2.1 APPROACH IN PREPARING THE PLAN

To be able to write the 10-Year Solid Waste Management Plan of the City the following methods were used:

Literature search. Involves reviewing all readily available materials. These materials can include internal office information, relevant publications, newspapers, magazines, annual reports, on-line data bases, and any other published materials. It is a very inexpensive method of gathering information, although it often does not yield timely information. Literature searches over the web are the fastest, while library literature searches can take between one and eight weeks.

Interview. Talking with people is a good way to get information during the initial stages of preparation. It can be used to gather information that is not publicly available, or that is too new to be found in the literature. Examples might include meetings with implementing officials, environmental NGOs, seminars, and trainings. Although often valuable, the information has questionable validity because it is highly subjective and might not be representative of the population.

Focus group. is used as a preliminary research technique to explore people's ideas and attitudes. It is often used to test new approaches (such as products or procedures), and to discover stakeholders' concerns. .

Information Education Campaign. To promote awareness and stakeholder's participation, IEC is important. IEC is the process of learning that empowers people to make decisions, modify behaviors and change social conditions.

Formulation of the 10-Year Solid Waste Management Plan. Guided by the annotated Outline of the 10-Year Plan, data gathered, analysis of the existing situation, waste analysis and discussions with the different stakeholders, the City Solid Waste Management Board crafted the City's 10-Year Solid Waste Management Plan.

1.2.2 DATA SOURCES

The document sources are from the Solid Waste and Environmental Sanitation Office (SWAESO), City Planning and Development Coordinator's Office, City Engineering Office, City Health Office, Administrative Department, the Internet, National Statistics Office (NSO), National Solid Waste Management Commission (NSWMC), Department of Environment and Natural Resources (DENR), Environmental Management Bureau-National Capital Region (EMB-NCR), Metropolitan Manila Development Authority (MMDA), SWAPP, other Metro Manila LGUs, Department of Science and Technology (DOST), Department of Agriculture (DA), NGOs, Department of Public Works and Highways (DPWH), and the 10-Year Solid Waste Management Plan of the Cities of Quezon, Manila, and Las Pinas. The information gathered shall provide data for analyses and development of plans necessary in the development of the 10-Year Plan.

II. City Profile

The City of Parañaque or simply Parañaque is one of the cities and municipalities that make up Metro Manila. It is bordered on the north by Pasay City, by City of Taguig to the northeast, Muntinlupa City to the southeast, by the City of Las Piñas to the southwest, and by Manila Bay to the west.

The City of Parañaque was founded in 1572 by the Augustinian Missionaries. Being close to the sea, the

Paraqueños (Parañaquense) traded with the Chinese, Indonesians, Indians and Malaysians. Traditional livelihoods included salt-making, fishing, planting rice, shoemaking, slipper-making and weaving. The community was headed by cabezas de barangay, a westernization of the local chieftains and the principalia, as the local aristocrats were called. They justified and moderated the demands of the Spanish colonizers. Education was limited to the principalia since it is only they who could afford it. The recorded beginnings of Palanyag began in 1580 when Fr. Diego de Espinar, an Augustinian missionary, was appointed Prior or superior of the convent or religious house of the town. As resident priest, he established the mission house there, with its spiritual jurisdiction reaching up to Kawit in the province of Cavite. The Council of the Definitors (or conference of chiefs of the religious orders) held on May 11, 1580, accepted Palanyag as an independent town. The image of Palanyag's patroness, Nuestra Señora del Buen Suceso, was brought to St. Andrew's Church in La Huerta in



1580. Nuestra Señora del Buen Suceso is the 3rd oldest Marian Image in the Philippines.

Early Spanish census dated 1591 to 1593 also mentioned Longalo (or Dongalo) and Parañaque as two villages along Manila Bay composed of some 800 tribute-payers. Politically, Dongalo and Parañaque were then under the Provincia de Tondo.

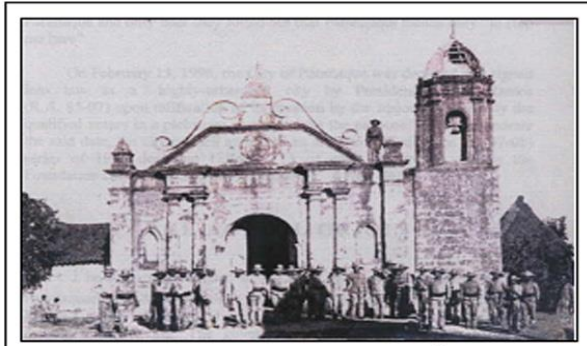
Historical accounts state that since Palanyag was located at the crossroads of Manila, the provinces of Cavite and Batangas, the town's strategic location enabled the townspeople to play an important role in Philippine history. During the invasion of the town by the forces of the Chinese pirate Limahong in 1574, Parañaque residents, particularly those from Barangay Dongalo, heroically aided in preventing the attack in Manila. This became known as the "Red Sea Incident" due to the blood that flowed as a result of the defense made by the people from barrio Sta. Monica, the barangay's former name. With the arrival of Spanish forces led by Captain Juan de Salcedo from Ilocos, Limahong was finally repulsed and the occupation of the town was prevented.

Palanyag, the old name for the city of Parañaque, loosely translated, means "my beloved", referring to the residents' affection for their hometown. Another explanation of the name comes from the combination of the terms "palayan" and "palalayag", the former meaning rice fields, which the city once abounded in, and the latter pertaining to the sailing and fishing occupation of many of its residents. This was also a sign of cooperation and goodwill between the two major working sectors of the town, the farmers and the fishermen.

Parañaque City was converted as the 11th city in Metro Manila, chartered and urbanized city, by Former President Fidel V. Ramos on February 15, 1998, also the celebration of Parañaque City's 426th Founding Anniversary.

Parañaque is composed of two congressional districts and two legislative districts which are further subdivided into 16 Barangays. Legislative District One contains eight barangays in the western half of the city, while legislative District Two contains the eight barangays in the eastern portion of the city.

2.1 LOCATION



The Spaniards founded the settlement of Parañaque in 1572, fifteen to two hundred forty-three years ahead of its neighbors. Commerce with other Asian people, however, begun long before the colonizers came to this "Village by the Sea".

AN OLD VILLAGE BY THE SEA

An Old Village By The Sea In 1572, Parañaque was said to be bounded by Ermita on the north and Cavite on the south. When the Spaniards came, Parañaque was already subdivided. It was so large that there was hardly any communication with the government. People emigrated from other places to settle here. Because their means of communication was so crude, this

migration stopped. They managed to establish their own government based on kinship and proclaimed their independence.

Part of Parañaque was Cavite. Cavite was a "kakabit" or annex of town. That is why it was called "Cabite" and later corruption of the word made it Cavite. Bacoor used to be called bakod (wall) because of wall that separated the town from mother town. Zapote became independent because the people the place cheated the people of Parañaque. Sapoti means to cheat. Piñas came from the word "pilas"

meaning to tear-off, for they tore-off their land from Parañaque. Pasay used to be ricefields and the Parañaqueños planted rice. It has been called Pasay stemming from the word "palay". The pueblo also separated itself from the mother town.

As far as the legend of Ermita is concerned, it had been told that a priest who wanted to talk to God went to a vast plain not quite far from the pueblo which became "bahay ng ermitanyo" since the priest became a hermit. From then on, the place was called Hermita and afterwards Ermita. Several years has passed, conditions changed and Ermita was cut-off from Parañaque. Some migrants settled there while others settled in Pasay and established their own independence. The boundaries of Parañaque became definite. Parañaque was said to be known as "Palanyag" , which means

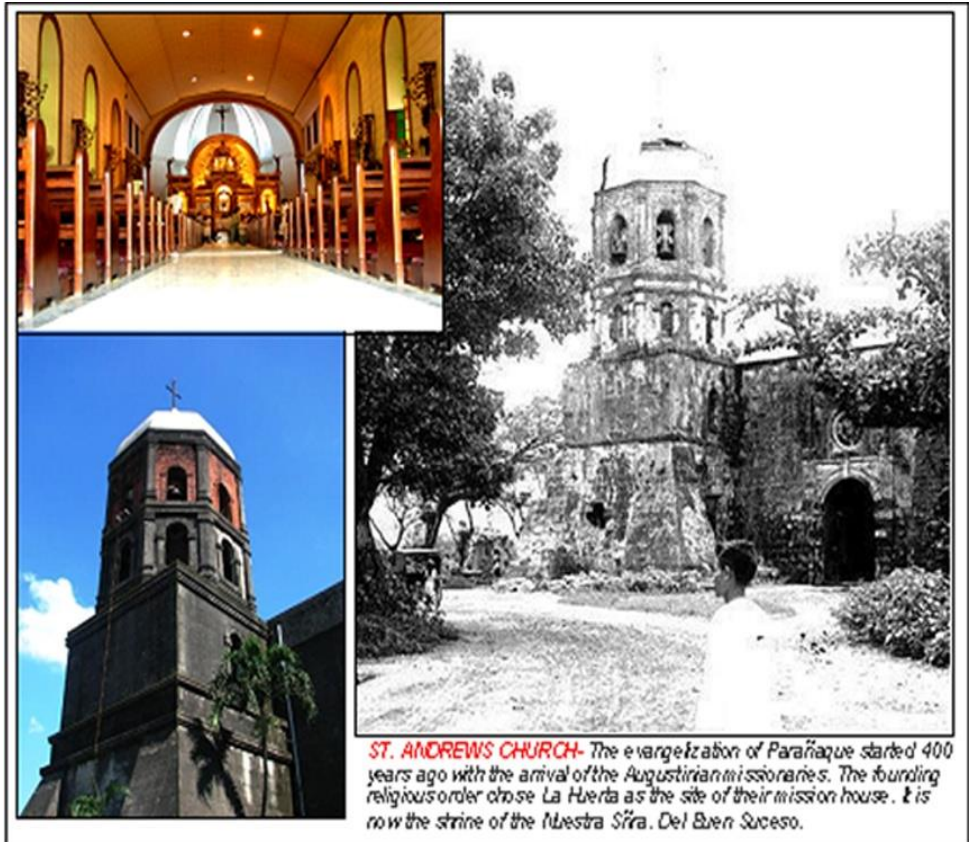


Parañaque saltbeds. A popular source of livelihood for Parañaqueños.

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embarkation. There was a story that at the mouth of Parañaque River was a tall balete tree which looked like a sail boat, where the word Palanyag originated.

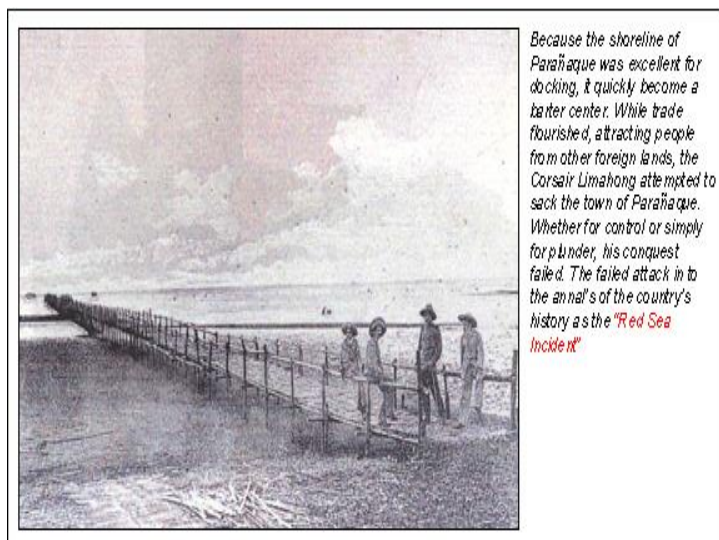
Another story has also been told about the Spaniards who came to the south and upon reaching their destination said, "para na aqui" to the rig driver of the calesa has was riding. But the rig driver did not understand him and presumed that the place as "Para-na-aqui". So, everytime he goes to the south, he kept on calling the place Paranaaqui. Later on the place was named PARAÑAQUE and only later they found out that paranaaqui means only to "stop me here".



On February 13, 1998, the City of Parañaque was declared and signed into law as a highly-urbanized city by President Fidel V. Ramos (R.A. 85-07) upon ratification of its creation for the purpose. To commemorate the said date, the city council approved an ordinance series of 1998 declaring February 13 of each and every year as the Foundation Day of the City of Parañaque.

THE ACTUAL ORIGIN

The town was founded in 1572. It lay proximate to the sea. Parañaqueños traded with the



Chinese, Indonesian, Indian and Malay. People's means of livelihood was salt making, fishing, planting rice, shoe making and weaving. The government was composed of "cabezas de barangay". The principalia was the local aristocracy. It was a durable social institution. They were the political absorbers. They justified and moderated the demands of the Spaniards. In regard to education, they were offered only to the principalia class because they were the only ones who could only afford it.

ORIGIN OF BARRIOS

Baclaran

Baclaran is at the north end of Parañaque. Because of its nearness to the seashore, the place was named after a fish cage used by fishermen called "baklad". Baklad is a rattan-fence cage for the fish in order to protect them until they are ready to be sold in the market. Many of these baklads were constructed right there at the seashore. So people started calling the place "Bakladan", corruption of the word made it into the word "BACLARAN", hence its name came to be.

Tambo

One of the original barrio in Parañaque was named after the tambo, a tall grass belonging to the bamboo family. It is collected and tied to a long handle to produce a broom. Tambo grows abundantly in the place, that anyone who needs a "walis" may easily have one. From then on, the place has been called TAMBO. Local folks started building houses in the area and when it became densely populated not even a stalk of the tall grass remain.

La Huerta

La Huerta is a Spanish word meaning "orchard", a place where young ladies and men spend their time walking or strolling around. The place seemed like a lover's lane. It is a garden of fruit trees, flowers and other trees which is a breath-taking sight.

La Huerta used to have a very colorful and beautiful garden that even the friars, Spanish señoritos and señoritas enjoyed its ambience. People who lived as far as Batangas could not resist admiring its beautiful sight. Unfortunately, since no one maintained the garden, the orchard slowly died. Hence, at present, not a single trace of the garden can be found.

Sto. Niño

Parañaque was divided into two (2) parts. The first part and the larger portion is connected to the mainland, hugging the shoreline of Manila Bay like an enormous sandbar. The second strip of land, east of the river is actually a smaller island surrounded by shallow marshes and swamps situated nearby which was then renamed after its patron saint, Santo Niño – the Holy Child Jesus.

Vitalez

On the third day of April 1978, Barangay Vitalez was created following Presidential Decree No. 1327. The following subdivisions known as Baltao, Airplane Village, Jetlane Village, Gat Mendoza and Vitalez were separated to form a distinct and independent barangay.

Don Galo

Don Galo was a former barrio called Sta. Monica. Limahong's pirates landed in Parañaque in 1574 and established a base which was launched to attack Manila. The townspeople led by an intrepid man, named Galo engaged the pirates in battle and had them retreating. The Spanish government granted Galo the title of "Don" as a reward for his heroism. Don Galo was hailed by the barrio folks of Santa Monica. After his death, the name Sta. Monica was changed to his name. From then on, this barrio was called DON GALO.

San Dionisio

San Dionisio is one of the earlier barrio in Parañaque. Following the Spanish customs of naming people and places after patron saints, the barrio was named after St. Dionysius. Saint Dionysius was a bishop who defied death in order to propagate the christianfaith. In previous years, it was a large area consisted of rice fields, salt beds and irrigable lands until they have been converted into several subdivisions.

Moonwalk

Barangay Moonwalk was created by virtue of Presidential Decree No. 1321 on April 3, 1978 signed by President Ferdinand Marcos. The subdivisions were known as Moonwalk Phase I, II, Bricktown Phase I, II and III and Multinational Village of Barangay Sto.Niño. It became an independent and distinct barangay without affecting the legal existence of Barangay Sto.Niño.

San Isidro

Barangay San Isidro was created following Presidential Decree No. 1321 on April 3, 1978. The following subdivisions such as San Antonio Valley 2, 6, 12, 15, Clarmen Village, Salvador Estate, Lopez Village, Villa Mendoza and Parañaque Greenheights was separated and detached from Barangay San Dionisio to form and constitute a distinct and independent barangay known as Barangay San Isidro.

San Antonio

Barangay San Antonio was created following Presidential Decree No. 1327 dated April 3, 1978. The following subdivisions known as San Antonio Valley 1, 3, 5, 8, 9, 10, 11, Barangay Village, Fourth Estate and Mon-El Subdivision was separated to be known as Barangay San Antonio without affecting the legal existence of the mother barangay.

BF

BF, the largest barangay in the City of Parañaque was created by virtue of P.D. No. 1320 signed by President Ferdinand E. Marcos last April 3, 1978. The barangay consists of sixteen (16) executive residential subdivisions. It has achieved a closer supervision for the execution of its development programs. Its creation as a barangay amplified the upliftment of the socio-economic well-being of its residents.

Don Bosco

For the effective implementation of the declared programs of the government, Barangay Don Bosco was created by virtue of Presidential Decree No. 1322 last April 28, 1978. The following subdivision known as: Better Living, Aero Park, Scienceville and Levitown in Barangay La Huerta were detached and separated to form and constitute a distinct and independent barangay. Its creation hastened up the pace of socio-economic development throughout the locality.

Marcelo Green

Barangay Marcelo Green was created on the third day of April 1978 following Presidential Decree No. 1328. Subdivisions known as Severina Diamond, United Parañaque Phase 4, Superville, Ireneville Subdivision and Marcelo Green Village in Barangay La Huerta were separated and became an independent barangay known as Barangay Marcelo Green.

Merville

Barangay Merville was created by virtue of Presidential Decree No. 1325 dated April 3, 1978. The following subdivisions known as Admiral Village and Merville in Barangay La Huerta was detached and separated to form and constitute a distinct and independent barangay to be known as Barangay Merville without affecting the legal existence of mother barangay.

Sun Valley

Barangay Sun Valley was created under Presidential Decree No. 1326 dated April 3, 1978. Sun Valley, Marimar, Monte Villa de Monsod, Sta. Ana and Continental Village Subdivision in Barangay La Huerta were detached and separated to form and constitute a distinct and independent barangay. It was created to be known as Barangay Sun Valley.

San Martin De Porres

Barangay San Martin De Porres was created following Presidential Decree No. 1324 dated April 3, 1978. Subdivisions known as: United Parañaque 1, 2, 3, Marian Park and Sitio de Asis in Barangay Sto. Niño were separated to form and constitute an independent barangay which shall be known as Barangay San Martin de Porres without affecting the legal existence of the mother barangay.

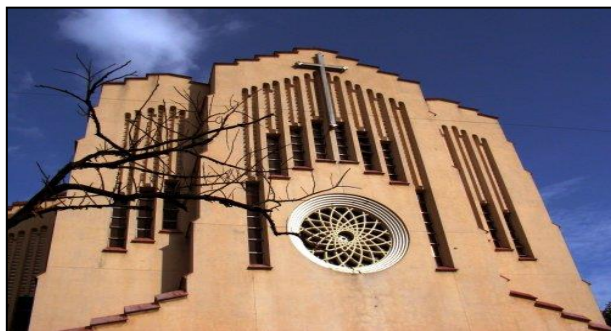
PARAÑAQUE CITY TODAY

BIRD SANCTUARY- Home of Migratory Birds from Neighboring Asian Country such as: China and as far as Siberia during Winter Season. Peak seasons from August to March.



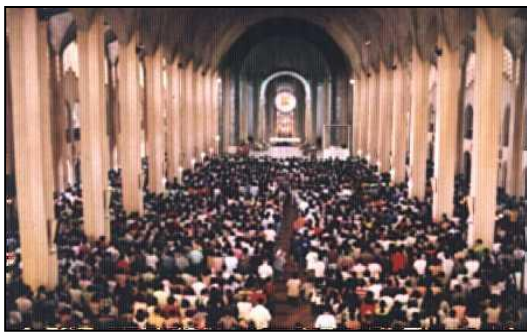
DAMPA- Seafood lovers from all over Metropolitan Manila troop to the various markets of Parañaque City. There are dozens of places to shop for the freshest crustaceans, mollusks, shellfish and other marine and freshwater catch. Courteous Parañaqueño vendors often offer to clean or debone the fish purchased, free of charge, to the delight of consumers.

REDEMPTORIST CHURCH- The Shrine of Our Lady of Perpetual Help in Baclaran continues to be



the

most attended church in Asia. It has a seating capacity of 3,000 and 9,000 for standing devotees.



SOLAIRE RESORT AND CASINO (formerly known as Solaire Manila) is a resort complex which includes a five-star hotel with 488 rooms; it was the first casino and hotel to be located in the Entertainment City complex along the Bay City area of Parañaque City, Philippines. It was opened on March 16, 2013 (492 years exactly to the day Ferdinand Magellan landed in the Philippines), and became the tallest hotel in the Manila Bay area outside Manila, a distinction previously held by Sofitel Philippine Plaza.



SM CITY SUCAT - It is located at Dr. A. Santos Avenue corner Carlos P. Garcia Avenue Extension (C5), Brgy. San Dionisio, Parañaque City, Metro Manila. It is the first SM Supermall in the city of Parañaque

- SM City Bicutan was opened in November 2002 in Brgy. Don Bosco, West Bicutan, Parañaque City. It is located at the corner of Doña Soledad Avenue and West Service Road (beside Exit 14, Bicutan Exit) in Barangay Don Bosco, Bicutan.

SM CITY BICUTAN



SM City BF Parañaque has been built to be environmentally friendly, sustainable and disaster resilient. Its design and construction features

three skylight domes in its main atrium to reduce the use of electricity by fully maximizing the use of sunlight, while air conditioning is automatically regulated to help ensure efficient energy consumption. To prevent flooding in the area, SM City BF boasts of a water catchment basin that can store up to 5,000 cubic liters of rain water which is equivalent to one Olympic-size swimming pool. Rainwater collected in the basin will be recycled to water plants, to clean the mall and to flush toilets.

DUTY FREE PHILIPPINES, PARAÑAQUE - Located a 100 meter away from NAIA 1 terminal, all incoming passengers from international flight can come and shop at Duty Free Philippines



just



NINOY AQUINO INTERNATIONAL AIRPORT Terminal 1 - is the airport serving international flights



AMVEL MANSIONS - is a medium-rise condominium component of a 13-hectare mix-use commercial expense located at Barangay San Dionisio.



RAYA GARDENS - Accessible through major thoroughfares like SLEX, EDSA and C5, it has access to 24-hour public transportation.

AVIDA TOWERS SUCAT - strategically located along Dr. A. Santos Avenue, just across SM Sucat, about 30 to 45 minutes from Makati, 10 minutes from the NAIA, Duty Free Mall and Coastal Mall



The new four-storey SUN-VALLEY ELEMENTARY SCHOOL.



New four-storey HIGH SCHOOL Building at SUN VALLEY



New four-storey High School Building at MOONWALK.



New Parañaque City Jail located at Bgy. La Huerta.

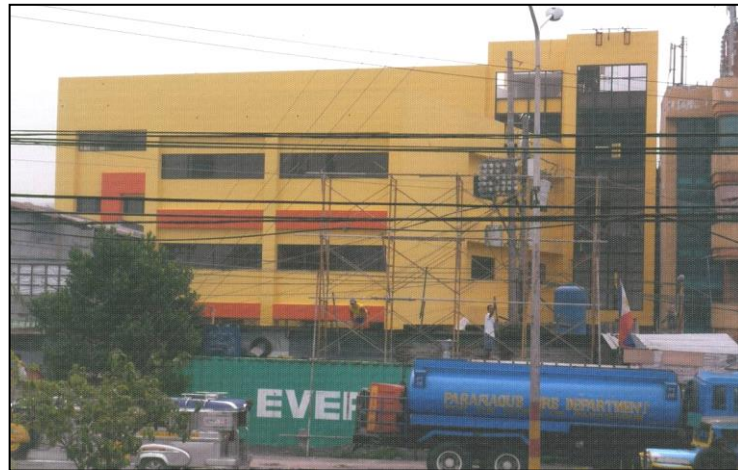


Rehabilitated Parañaque

Community Hospital situated at Bgy. La Huerta.



Rehabilitated Central Fire Station at ' Old Sucat Road', Bgy. San Dionisio.



The Parañaque City Hall during Christmas Season

A Landmark of Parañaque City located at Interchange



Sucat

2.3 DEMOGRAPHY

The projected population of Parañaque for the year 2014 is **676,935** with **152,976** households. This constitutes about 4.78% of the total population of the National Capital Region (NCR) and 0.62% of Philippine population.

The trend on population growth of the city for the past thirty (30) years is shown on the following table:

Table 1. Population Growth Trend, City of Parañaque

Census Date	Population	Growth Rate
May 6, 1970	97,214	4.52

May 1, 1975	158,974	10.37
May 1, 1980	208,552	5.58
May 1, 1990	308,236	3.98
Sept. 1, 1995	391,296	4.57
May 1, 2000	449,811	3.03
August 1, 2007	552,660	2.94
May 1, 2010	588,126	2.72

Source: City Planning & Dev't Coordinator's Office, 2013

With the growth rate of 2.72% the city is expected to double its' population in 23 years.

Table 2. Projected Population and Household Per Barangay

BARANGAY	POPULATION	NO. OF HOUSEHOLDS	HOUSEHOLD SIZE
Baclaran	32,041	7,524	3.2
Tambo	31,076	7,002	4.2
Don Galo	11,154	2,329	5.2
La Huerta	8,938	1,895	5.2
Sto. Niño	34,319	7,737	4.1
Vitalez	4,759	1,170	4.3
San Dionisio	73,707	16,065	4.2
San Isidro	73,989	17,289	4.4
San Antonio	68,249	15,234	4.4
BF	98,377	21,738	4.3
Sun Valley	43,419	9,957	4.2

Marcelo Green	34,422	8,456	3.8
Don Bosco	51,859	11,813	4.5
Merville	20,968	4,385	5.2
San Martin De Porres	28,807	7,095	3.3
Moonwalk	60,851	13,287	5.0
Total	676,935	152,976	4.3

Source: City Planning & Dev't Coordinator's Office, 2014

Table 3. Population Projection by Barangay for Ten Years(2014-2023)

Name of Brgy	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Baclaran	32,041	32,983	33,952	34,950	35,978	37,036	38,125	39,246	40,313	41,410
Tambo	31,076	31,990	32,930	33,899	34,895	35,921	36,977	38,064	39,099	40,163

Don Galo	11,154	11,482	11,819	12,167	12,524	12,892	13,272	13,662	14,034	14,415
La Huerta	8,938	9,201	9,471	9,750	10,037	10,332	10,635	10,948	11,246	11,552
Sto. Niño	34,319	35,328	36,367	37,436	38,537	39,670	40,836	42,037	43,180	44,355
Vitalez	4,759	4,899	5,043	5,191	5,344	5,501	5,663	5,829	5,988	6,150
San Dionisio	73,707	75,874	78,104	80,401	82,764	85,198	87,702	90,281	92,737	95,259
San Isidro	73,989	76,164	78,404	80,709	83,082	85,524	88,039	90,627	93,092	95,624
San Antonio	68,249	70,256	72,321	74,448	76,636	78,889	81,209	83,596	85,870	88,205
BF	98,377	101,269	104,246	107,311	110,466	113,714	117,057	120,498	123,776	127,142
Sun Valley	43,419	44,695	46,010	47,362	48,755	50,188	51,664	53,182	54,629	56,114
Marcelo Green	34,422	35,434	36,476	37,548	38,652	39,788	40,958	42,162	43,309	44,487
Don Bosco	51,859	53,383	54,953	56,568	58,231	59,943	61,706	63,520	65,248	67,022
Merville	20,968	21,584	22,219	22,872	23,544	24,237	24,949	25,683	26,382	27,099
San Martin De Porres	28,807	29,654	30,526	31,424	32,348	33,299	34,278	35,285	36,245	37,231
Moon-walk	60,851	62,640	64,482	66,378	68,329	70,338	72,406	74,535	76,562	78,645
TOTAL	676,935	696,837	717,324	738,413	760,122	782,470	805,474	829,155	851,708	874,874

The city's population density currently stands at 133.26 persons per hectare. The most densely populated barangay is Barangay Baclaran with 460.97 persons per hectare. Second is Barangay Don Galo with 440.35 persons/hectare.

Table 4. Projected Population and Population Density per Barangay**City of Parañaque, CY 2014**

BARANGAY	POPULATION	AREA (Ha)	POPULATION DENSITY (Pop/Ha)
Baclaran	23,749	63.72	372.71
Tambo	29,179	309.69	94.22
Don Galo	12,054	23.22	519.12
La Huerta	9,784	53.72	182.13
Sto. Niño	31,434	245.97	127.80
Vitalez	5,030	57.20	87.94
San Dionisio	67,858	662.56	102.42
San Isidro	76,858	365.22	210.44
San Antonio	66,629	287.19	232.00
BF	92,919	769.50	120.75
Sun Valley	41,845	177.75	235.41
Marcelo Green	32,032	306.19	104.61
Don Bosco	53,018	384.75	137.80
Merville	22,702	304.40	74.58

BARANGAY	POPULATION	AREA (Ha)	POPULATION DENSITY (Pop/Ha)
San Martin De Porres	23,310	155.65	149.76
Moonwalk	66,369	377.28	175.91
Undeclared Area	-	152.99	-
Total	654,770	4,657.00	140.60

Source: Research and Statistics Division City Planning and Development Coordinators Office

AGE COMPOSITION BY GENDER DISTRIBUTION

City of Parañaque, CY 2014

AGE GROUP	MALE	FEMALE	POPULATION	% DISTRIBUTION
Under 1	4757	2117	6874	1.05
1 - 4	28,475	26,631	55,106	8.42
5 - 9	31,662	28,233	59,895	9.15
10 - 14	31,662	29,074	60,736	9.27
15 - 19	30,380	32,214	62,594	9.56
20 - 24	31,053	35,509	66,562	10.16
25 - 29	30,773	34,358	65,131	9.95
30 - 34	27,665	29,783	57,448	8.77
35 - 39	23,667	25,344	49,011	7.48
40 - 44	20,516	22,919	43,435	6.63
45 - 49	17,277	19,371	36,648	5.60
50 - 54	14,465	15,909	30,374	4.64

55 - 59	10,516	11,512	22,028	3.36
60 - 64	7,329	8,460	15,789	2.41
65 - 69	3,890	4,951	8,841	1.35
70 - 74	2,777	3,837	6,614	1.01
75 - 79	1,658	2,447	4,105	0.63
80 - over	1,094	2,485	3,579	0.54
Total	319,616	335,154	654,770	99.98

PROJECTED CHILDREN POPULATION (0-17) BY BARANGAY

City of Parañaque, CY 2014

BARANGAY	CHILDREN POPULATION	UNDER 1 YEAR	AGES 1-6 YEARS	AGES 7-12 YEARS	AGES 13-17 YEARS
Baclaran	10,420	326	3,015	3,310	3,194
Tambo	10,107	316	2,924	3,211	3,098
Don Galo	3,628	113	1,050	1,152	1,112
La Huerta	2,908	91	841	924	891
Sto. Niño	11,162	348	3,230	3,546	3,421
Vitaleza	1,547	48	448	492	474
San Dionisio	23,972	748	6,936	7,615	7,347
San Isidro	24,065	751	6,963	7,644	7,376
San Antonio	22,198	694	6,422	7,051	6,804

BF Homes	31,997	999	9,258	10,164	9,806
Sun Valley	14,122	441	4,086	4,486	4,328
Marcelo Green	11,195	349	3,239	3,556	3,432
Don Bosco	16,867	526	4,880	5,358	5,169
Merville	6,818	212	1,973	2,166	2,090
SMDP	9,369	294	2,711	2,976	2,871
Moonwalk	19,792	618	5,726	6,287	6,066
Total	220,167	6,874	79,064	69,938	67,479

Prepared by:

Research , Evaluation and Statistics Division

City Planning & Dev't Coordinator's Office

2.4 ECONOMIC PROFILE/LAND USE

2.4.1 AGRICULTURE RESOURCES

1. Farming

Annual production of vegetables which consists of pechay, mustard, kinchay, spring onion, lettuce, spinach and camote reached up to 20.996 MT. These urban farming is in small scale since it only utilizes the vacant lots in Barangay BF and Barangay Moonwalk. Urban farming was slowly introduced to households in mission areas and public elementary schools to mitigate hunger, ensure food for every family, and reduce malnutrition of children. The local Agriculture Office provided fifteen (15) kilos of seeds given to households in mission areas, to teachers who conduct supplemental feedings, school children and city employees for them to start receptacle gardening of vegetables.

2. Fishing

Fishing is the source of livelihood for two hundred nineteen (219) fishermen which are confined along coastal areas of Manila Bay. In 2009, the average catch of banak, salinyasi, buging, kapak, alimasag, galunggong, dilis, kitang, bangus and hipon reached to 70.755 MT. While fifty kilos of Bangus on each harvest by four operators on the fishpond production.

Other fishing activities like safrahan, mussel and oyster culture, and manual hook and bait (long range) are also available. There are 23 safrahan owners and 15 mussel and oyster culture owners in the city coastal waters. All fish caught in the city waters and other fishes from nearby coastal cities are sold by bulk called "banyera" in our Parañaque Fisherman's Wharf (Bulungan). It was called bulungan because prices of banyera with fish are bid in whisper. This would allow the seller to give the banyera to the highest bidder.

There are 180 registered municipal fishing boats that move around the coastal waters with 100 motorized boats and 80 non-motorized boats. Twenty five (25) commercial fishing vessels are based on the coastal waters of Parañaque. All banca owners are required to register their banca (tonnage of 3 and below).

The Local Agriculture Office spearheaded the surveillance operations against illegal fishing guided by the City Ordinance on Fisheries Conservation and Law Enforcement. The establishment of Bantay Dagat in our coastal waters is a big step towards conservation of the fishes in our municipal waters.

Table 5. City Fish Production (MT/Year)

Municipal Fisheries Production (MT/Year)	
YEAR	PRODUCTION (MT)
2000	133.850
2001	124.663

YEAR	PRODUCTION (MT)
2002	217.952
2003	103.765
2004	115.862
2005	155.725
2006	125.730
2007	104.940
2008	163.180
2009	172.500
2010	809.525
2011	713.256
2012	1,103.60

Source: City Agriculture Office

3. Livestock and Poultry

Livestock and poultry business is still the main source of living of 58 farmers in Parañaque. They are mostly swine, goat, duck and poultry. During inventory and inspection of livestock, there are 383 swine, 520 poultry, 61 ducks, and 58 goats provide income to livestock growers. The Agriculture Office provides information dissemination trainings/seminars, and home visits.

2.4.2 INDUSTRIAL AND COMMERCIAL ESTABLISHMENTS

2.4.2.1 Commercial and Industrial Development

Barangay Baclaran remains the principal central business district while the corridors of Ninoy Aquino Avenue and Dr. A. Santos (formerly Sucat Rd.) are the sites of the fast growing business and commercial activities like motor shops and fine dining restaurants. There is also an emergence of banking and financial rows along Barangay BF, Don Bosco, San Isidro, San Antonio and Moonwalk. Light industries are concentrated along the South Superhighway beginning Barangays Sun Valley, Merville and San Martin de Porres.

2.4.2.2 Bay City Development Project

Part of the Public Estate's Authority (PEA) integrated framework plan in the development of the 1,500 hectares reclamation area known as Bay City Development Project. The project stretches from Roxas Boulevard in Manila from the Cultural Center of the Philippines (CCP) all the way to the Coastal Road, Las Piñas section covering four cities and a municipality. These are the cities of Manila, Pasay, Parañaque, Las Piñas and Municipality of Bacoor. The project aims to create a new skyline for the Metropolis and develop the Manila Bay waterfront to international standards. There are seven (7) components of the program using the "development by island" approach. The components are Mixed Use Development, Green Zone and Sea Front Promenade, Integrated Movement Networks, adequate Waterways and efficient drainage system, Phase Development District Urban Design and efficient Environmental Management.

2.4.2.3 The Asia World City

Barangay Don Galo and Tambo are host to the 200 hectares Asia World City. This is considered to be the largest Island Development Project in the country. Its sixteen multi-storey structured (30-storey high) forms the centerpiece of the urban center development.

The 183 Marina Properties is divided into four sections: the low density residential areas of Marina East and South, mixed use high density residential/commercial area and low rise townhouse development. It is conceived as a prime residential subdivision complete with a neighborhood shopping center, pocket parks, recreational center, schools, 5-star hotel and financial district.

2.4.2.4 New Central Business District of Parañaque

Local and foreign consortiums together with the Public Reclamation Authority (PRA) will spearhead the large-scale development period and transform a 204-hectare area into an institutional trading center envisioned as the New Central Business District into a tourist oriented business neighborhood using international standards.

2.4.2.5 Business Permits

There are 14,942 business and commercial establishments that have been issued with business permits and licenses in 2013. Out of 14,942 establishments 12,994 are renewals, 1,836 are new business and 112 closed their establishments. With the registered businesses 131 are Banking Systems, one hundred and twenty five (125) are commercial banks; two (2) savings banks; two (2) rural banks; and two (2) other banks. There are also one hundred and forty nine (149) manufacturers, one hundred fifty three (153) wholesalers , two hundred thirteen (213)

importers, six hundred thirty six (636) services , forty (40) real estate developers, sixty six (66) distributors, fifty four (54) holding company, twenty eight (28) exporters , one hundred fifty three (153) pawnshops, one hundred twenty one (121) laundry, forty four (44) eatery/ refreshments and 1,169 registered sari-sari stores in the city.

Table 6. Business Permits Issued, 2013

BARANGAY	NEW	RENEWED	CLOSED	TOTAL
1. Baclaran	154	1,215	7	1,376
2. BF	308	2,089	17	2,414
3. Don Bosco	223	1,508	11	1,742
4. Don Galo	41	210	1	252
5. La Huerta	50	250	2	302
6. Marcelo Green	84	657	8	749
7. Merville	37	294	4	335
8. Moonwalk	115	663	9	787
9. San Antonio	189	1,061	14	1,264
10. San Dionisio	188	1,520	13	1,721

11. San Isidro	198	1,231	16	1,445
12. San Martin de Porres	24	230	1	255
13. Sto. Niño	54	638	3	695
14. Sun Valley	61	541	3	605
15. Tambo	96	685	2	783
16. Vitalez	14	193	1	208
Project Site-Pque	0	1	0	1
Within Pque. City	0	8	0	8
GRAND TOTAL	1,836	12,994	112	14,942

Source of Data: EDP

Table 7. List of Commercial Banks, 2013

BARANGAY/COMMERCIAL NAME	ADDRESS
BACLARAN	
1. Land Bank of the Philippines	714 Roxas Blvd., Baclaran
2. Union Bank of the Phils.	2/F Baclaran Supermall, F.B.Harrison St.
3. Bank of the Phil. Islands	Unit 7 A Power Station Aseana, Bus. Park, Macapagal Blvd., Baclaran
4. METROBANK	Quirino Ave., Baclaran
5. METROBANK	Quirino Ave. cor. Taft Ave., Baclaran
6. Allied Banking Corp.	119-A Quirino Ave., Baclaran
7. United Coconut Planters Bank	4010 Airport Rd., Baclaran
8. Banco de Oro	Cor. Airport Rd., & Quirino Ave., Baclaran
9. City State Savings Bank	260 Protacio Bldg., Quirino Ave., Baclaran
10. RCBC Savings Bank	3916 cor. Quirino Ave. & Aragon St., Bac.
11. Banco de Oro UniBank	Redemptorist Rd., Baclaran
12. Rizal Commercial Banking Corp.	21 Taft Ave. Ext., Baclaran
13. ASIATRUST Bank	Grnd Flr., Buenavista Bldg., Quirino

	Ave.Bac
TAMBO	
1. Rizal Commercial Banking Corp.	411 Quirino Ave., Tambo
2. METROBANK	Roxas Blvd., Bayview, Tambo
3. Bank of the Phil. Islands	# 7 MIA Rd., Tambo
4. Bank of the Phil. Islands	Uniwide Coastal Mall, Roxas Blvd., Tambo
LA HUERTA	
1. Union Bank of the Phils.	Cor. Medina St. & Quirino Ave., La Huerta
2. Banco de Oro Unibank	422 Quirino Ave., La Huerta
3. Phil. Savings Bank (PS Bank)	Quirino Ave. cor. M. Rodriguez, La Huerta
4. May Bank Phils.	1070 Quirino Ave., La Huerta
5. RCBC Savings Bank	Quirino Ave., Public Market, La Huerta
6. Bank of the Phil. Islands	Courtyard Mall, Public Market, La Huerta
7. GSIS Family Bank	0452 Quirino Ave., La Huerta
VITALEZ	
1. Bank of the Phil. Islands	IPT Bldg. NAIA Terminal I, Vitalez
2. Phil. National Bank	Arrival Area IPT I, NAIA Complex, Vitalez

STO. NIÑO	
1. Bank of Commerce	IPT Bldg., Terminal I Arrival Area, Sto. Niño
2. Phil. Trust Bank	Departure Level, NAIA, Sto. Niño
3. United Coconut Planters Bank	Skyfreight Bldg., Aquino Ave., Sto. Niño
4. Export and Industry Bank	Unit 707-3 Columbia Bldg. Ninoy Ave. Sto N.
5. China Trust Phils. Commercial Bank	Units N&O Columbia Airfreight 707 NAIA, SN

6. Banco de Oro Universal Bank	Skyfreight Bldg. II Unit 4 & 5 Sto. Niño
7. Banco de Oro Unibank	Units 1 & 2 JJM Bldg. II, Unit 4 & 5 Sto. Niño
8. Banco de Oro Universal Bank	Arrival Lobby, NAIA Terminal I, Sto. Niño
9. Rizal Commercial Banking Corp.	JJM Bldg., Ninoy Aquino Ave., Sto. Niño
10. Phil. National Bank	Pagcor Casino PIRC, Sto. Niño
11. Bank of the Phil. Islands	Columbia CPLX Ninoy Aquino Ave., Sto. N.
12. Land Bank of the Phils.	Deplaning Level IPT Bldg. NAIA Arrival, S.N.
SAN DIONISIO	
1. METROBANK	Quirino Ave., Kabihasanan San Dionisio
2. Banco de Oro Unibank	147 C/F SM City Sucat Bldg., D.A.S.A., S. D.
3. METROBANK	Dr. Santos Ave., EVACOM, San Dionisio
4. Allied Banking Corp.	Oyster Plaza Bldg., NAIA, San Dionisio
5. Banco de Oro Unibank	1 st Flr., SM City, San Dionisio
6. RCBC Savings Bank	8138 Dr. A. Santos Ave., San Dionisio
7. Bank of the Phil. Islands	0648 Dr. A. Santos Ave Kabihasanan Rd.SD
8. Bank of the Phil. Islands	Virra Mall Unit 5 G/Flr., D.A.S.A., San D.
9. Allied Banking Corp.	Departure Level, NAIA, San Dionisio
10. Bank of the Phil. Islands	G/Flr., Oyster Plaza Bldg., NAIA, San D.
11. Union Bank of the Phils.	Ber-Vil Market, Dr. A. Santos Ave., San D.

SAN ISIDRO	
1. Phil. National Bank	D.A.S.A., San Isidro
2. Union Bank	8200 Dr. A. Santos Ave., San Isidro
3. Union Bank of the Phils.	JAKA Plaza, Dr. Santos Ave., San Isidro
4. Security Bank Corp.	Dr. Santos Ave., San Isidro
5. China Banking Corporation	MTF Bldg., Dr. Santos Ave., San Isidro
6. United Coconut Planters Bank	8281 LT Bldg., Dr. Santos Ave., San Isidro
7. Land Bank of the Phils.	8260 Dr. Santos Ave., San Isidro
8. Allied Banking Corp.	8193 AC Raftel Bldg., DASA

9. Phil. Veterans Bank	GF RIDC Bldg., Sucat Rd. cor. Lopez San I.
10. Bank of the Phil. Islands	8171 Dr. Santos Ave., San Isidro
11. Banco de Oro Unibank	8320 cor. DASA & Villa Mendoza San Isidro
12. PREMIER Dev't. Bank	Dr. Santos Ave., San Isidro
13. China Banking Corp.	Kingsland Bldg., DASA, San Isidro
14. Phil. Bank of Communications	3 & 4 Kingsland Bldg., DASA, San Isidro
15. BPI Family Bank	Lot 9 Blk. 1 Greenheights DASA
16. Bank of the Phil. Islands	Cor. Dr. Santos Ave. & Kabesang Seg. S. I.
17. East-West Banking Corp.	LE LURIEL Bldg., Dr. Santos Ave., San I.
SAN ANTONIO	
1. Bank of Commerce	8281 Dr. Santos Ave., San Antonio
2. Phil. Savings Bank	8787 Dr. Santos Ave., San Antonio
3. Rizal Commercial Banking Corp.	2 nd Flr. Santana Grove, DASA Soreena St
4. METROBANK	Dr. Santos Ave., San Antonio Valley I
5. Banco de Oro Unibank	Dr. Santos Ave. Branch, San Antonio
6. Planters Dev't. Bank	JAKA Plaza, San Antonio
7. BPI	Dr. Santos Ave., & Mon-El Subd., San A.
8. Traders Royal Bank	South Super Hi-way, San Antonio
9. Banco de Oro Unibank	8385 Dr. Santos Ave., San Antonio

BF	
1. Bank of the Phil. Islands	8366 Dr. Santos Ave., BF
2. Citibank Savings	Aurora Commercial Bldg., Pres. Ave., BF
3. METROBANK	Dr. Santos Ave., Ireneville, BF
4. Union Bank of the Phils.	55 Pres. Ave., BF
5. HSBC Savings Bank	Pres. Ave., BF
6. Phil. Savings Bank	11 Pres. Ave. cor. Elizalde St., BF
7. METROBANK	Aguirre Ave., El Grande, BF
8. United Coconut Planters Bank	UCPB Bldg. cor. Sucat Rd. & SSH, BF

9. Metropolitan Bank & Trust Co.	Aguirre Ave., BF
10. Rizal Commercial Banking Corp.	Unit 101 Centermall Bldg., Pres. Ave., BF.
11. Security Bank Corp.	Pres. Ave., BF
12. East-West Banking Corp.	Cor. Pres. Ave. & Marcos St., BF
13. Allied Banking Corp.	43 Pres. Ave., BF
14. Banco Filipino	Cor. Elizalde & Elsie Gaches St. BF
15. Banco de Oro Unibank	J. Elizalde St. cor. Pres. Ave., BF
16. Export & Industry Bank	GF Aurora Bldg. #30 Aguirre Ave.
17. BPI Family Savings Bank	Cor. LIRAG St., BF, Dr. Santos Ave & Pres.
18. BPI Family Savings Bank	Cor. Pres. Ave. & Cabarrus St., BF
19. BPI Family Savings Bank	Cor. El Grande St. & Aguirre Ave., BF
20. Phil. Trust Bank	Dr. Santos Ave. cor. Sta. Ritra St., BF
21. Banco de Oro Universal Bank	65 Pres. Ave. cor. Aguirre Ave., BF
22. ASIA united Banking Corp.	GF Pergola Mall Aguirre Ave. cor. Gatches
23. Banco de Oro Unibank	8406 Dr. Santos Ave., Sucat BF
24. China Banking Corp.	Aguirre Ave. cor. Elsie Gatches St., BF
25. Bank of the Phil. Islands	L4 Pres. Ave., BF
26. Bank of the Phil. Islands	BPI Bldg., Aguirre cor. E. Gatches St., BF
27. Banco de Oro Unibank	326 RGM Bldg. Aguirre Ave., BF
28. China Banking Corp.	A. Aguirre Ave. cor. El Grande Ave. BF
29. Bank of the Phil. Islands	Max Rest. Complex, Dr. Santos Ave., BF
MARCELO GREEN	
1. Union Bank of the Phils.	Rodeo Bldg. Km. 18 West Service Rd., M. G.
2. Banco de Oro Unibank	Columbian Motors Compd Km.16 W Serv Rd
3. BPI Family Bank	REDITO Bldg., Marcelo Green

DON BOSCO	
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1. Union Bank of the Phils.	28 Doña Soledad Ave., Don Bosco
2. Bank of Commerce	Doña Soledad St., Bicutan, Don Bosco
3. Security Bank Corp.	Blk. 13 Lot 4 & 5 Doña Soledad, BLS, Don B
4. METROBANK	Doña Soledad, Bicutan, Don Bosco
5. RCBC Savings Bank	133 Doña Soledad Ave., BLS., Don Bosco
6. Banco de Oro Unibank	43 Doña Soledad Ave. BLS, Don Bosco
7. BPI Family Savings Bank	51 Doña Soledad Ave., BLS, Don Bosco
8. Allied Banking Corp.	# 50 ABC Bldg. Doña Soledad Ave., BLS, DB
9. Banco de Oro Universal Bank	Doña Soledad Ave. cor. France St., BLS
10. Rizal Commercial Banking Corp.	14 Doña Soledad Ave cor. Argentina St. BLS
11. East West Banking Corp.	100 Doña Soledad Ave., BLS, Don Bosco
12. Banco de Oro Unibank	LGP Doña Soledad Ave., SM City Bicutan
13. Bank of the Phil. Islands	Doña Soledad cor. Nigeria St., BLS
14. Bank of the Phil. Islands	32 Doña Soledad St., Bicutan, Don Bosco
15. China Banking Corp.	Bldg. A SM Bicutan, Don Bosco
16. Phil. National Bank	32 Doña Soledad St., Bicutan, Don Bosco
17. Bank of the Phil. Islands	177 Doña Soledad Ave., BLS
18. CHINA Bank Corp.	Doña Soledad Ave., Bicutan
SAN MARTIN DE PORRES	
1. Allied Banking Corp.	2110 Iba St., East Service Rd., SMDP
2. METROBANK	East Service Rd., Bicutan, San Martin de P.
MOONWALK	
1. Banco de Oro Unibank	Seal I Bldg. Armstrong Ave., Moonwalk
2. BPI Family Savings Bank	129 Armstrong Ph. I, Moonwalk

Source of Data:

Table 8. Real Estate developers, 2013

BARANGAY/COMMERCIAL NAME	ADDRESS
BACLARAN	
1. Star Builders Realty	1081 Lapu-Lapu St., Baclaran
TAMBO	
1. Bay Resources & Dev't. Corp.	Tambo, Parañaque
2. Asia World Properties Phil. Corp.	Unit 2D Washington Tower Aguinaldo Blvd
3. Granview Realty & Dev't. Corp.	Roxas Blvd., Tambo
4. Buensuceso DLMP & Realty	502 Quirino Ave., Tambo
5. Agritruccion, Incorporated	0211 Quirino Ave., Tambo
6. Reylark Dev't. Corp.	2712 MIA Rd., Tambo
LA HUERTA	
1. Berrod Dev't. Corp.	0421 Quirino Ave., La Huerta
STO. NIÑO	
1. Gly Dev't. Corp.	KLG Bldg., Del-Bros Ave. cor V. De Leon, SN
2. Pacific Ace Mgt. Corp.	3F, Pamcor Bldg., Pascor Drive, Sto. Niño
3. Twin Mountain Realty Corp.	#35 Pacific Drive Pacific Grand Villa, Pascor Drive, Sto Nino
4. Jupiter's Real Estate Ventures	8410 Gomburza St., Ilaya, Sto. Niño
SAN DIONISIO	
1. Avida Land Corp.	Dr. Santos Ave., San Dionisio
2. Robert Gatchalian Realty	RG Eng'g. Bldg. Dr. Santos Ave., San D.
3. Dela Cerna's Agape Prop.	7259 A. Bonifacio St., San Dionisio
SAN ISIDRO	
1. PHINMA Prop. Holdings	Lombos Ave. (near PATTS) DASA, S. I.
2. D.O. Plaza Estates Inc. (DOPEI)	Unit 15 3F Legaspi Towers 3001, Roxas Blvd., Manila/Plaza Crest San Isidro

SAN ANTONIO	
1. TAO MAO HOLDINGS CORP.	L3 & B15 Nuestra Señora de Lourdes St.SAV I, San Antonio
2. Canlas-Genova Realty Inc.	269 San Pancrasio St., San Antonio

BF	
1. Landco Pacific Corp.	51 Centermall Bldg., Presidents Ave., BF
2. Landco Leisure Dev't. Inc.	3F Centermall Bldg., #51 Pres. Ave., BF
3. Landco Pacific Ctrs. Inc.	51 Centermall Bldg. Pres. Ave. BF
4. Fuego Dev't. Corp.	2 nd Flr. Centermall Bldg., Pres. Ave., BF
5. Great City Dev't. Corp.	Elsie Gatches St. cor. Gil Puyat St.
6. Tera Prime Realty & Dev't. Inc.	76 B Altarejo's Bldg., W. Vinzon St., BF
7. Marcon Properties Corp.	#12 A. Andaya St., BF
DON BOSCO	
1. SM Synergy Properties Holdings Corp.	Chateau Elysee Doña Soledad Ave. BF
2. J & W Construction & Dev't. Co.	148 Don Bosco St., BLS, Don Bosco
3. Rosewind Dev't. Co.	24 Argentina St., BLS, Don Bosco
4. Realcor Inc.	24 Argentina St., BLS, Don Bosco
SUN VALLEY	
1. City and Land Developers	Parkview Homes Subd., Sun Valley
2. CDC Realty Inc.	Sta. Ana Drive, Sun Valley
MOONWALK	
1. Luxure Prop. & Dev't. Corp.	Matthew St., Multinational Village, Moonwalk
2. Rafeli Realty & Dev't. Corp.	Doña Soledad Ave. Ext. Moonwalk
3. East West Home Realty & Dev't. Corp.	L4 B4A John Paul St. Multinational Vill M.

MERVILLE	
1. DMCI Project Developers, Inc.	Km. 138 West service Rd., Merville
2. Robinsons Land Corp.	Edison Ave. cor. W. Service Rd., Merville
3. VAY Dev't. Corp.	64 Vienna St., Merville
4. Transnational Dev't. Corp.	4 Jordan St., Merville

Source of Data: EDP

Table 9. List of Industries/Manufacturers, 2013

BARANGAY/COMMERCIAL NAME	Address
TAMBO	
1. Industron, Inc.	4522 Bataan St., Tambo
2. Jaytee Lighterage & Services Co.	Goodwill Subd., Tambo
3. Yotolvo Corp.	2712 MIA Rd., Tambo
4. Mercelles Corp.	603 Quirino Ave., Tambo
DON GALO	
1. WellKnit Manufacturing Corp.	3410 Factor Compound, Don Galo
LA HUERTA	
1. Eddie's Lumpia Wrapper	Parañaque Market, La Huerta
SAN DIONISIO	
1. San Miguel Corp.	Bernabe Subd., San Dionisio
2. Consolidated Wood Products	Dr. Santos Ave., San Dionisio
3. Chelson's Manufacturing Int.	0675 Quirino Ave., San Dionisio
4. TMI Food Processing Inc.	8526 J. De Leon St., San Dionisio
5. New Creation Manufacturing Inc.	1435 Quirino Ave., San Dionisio
6. KN Industries, Inc.	8163 Dr. Santos Ave., San Dionisio
7. Leilani International Inc.	8106 Dr. Santos Ave., San Dionisio
8. Fitline Mfg.	6564 J. De Leon St., Gatchalian, San D.
9. Secure Cosmetics Mfg.	8128 Old Sucat Rd., San Dionisio

10. Beleron Enterprises	183 Canaynay Ave., Bernabe Ph. 3, San D.
11. Leilili International Inc.	8107 Dr. Santos Ave., Sucat, San Dionisio
12. Ultra Design Mfg. Co.	8525 Juanita de Leon St., San Dionisio
13. EPSM Manufacturing	5532 Salvador St., San Dionisio
SAN ISIDRO	
1. CEO Advertising & Mfg. Corp.	7572 Cruz Compd., San Isidro
2. FUCHS Lubricants Phils. Inc.	8280 Dr. Santos Ave., San Isidro
3. PPLM Industrial Corp.	5 Emilia St., Eddie Boy Compd., San Isidro
4. M/V King Mfg. Corp.	8183 Sucat Rd., San Isidro
5. INDAB Trading	8842 Dr. Santos Ave., San Isidro
6. Premium Articles Inc.	L8 B2 R. Diaz St., Fortunata Vill., San Isidro
7. GKL Trading	#1 Narra St., Dr. Santos Ave., San Isidro
8. Genuino Ice Co., Inc.	San Leonardo St., Vitalez Compd., San I.
9. JTC Pallet Inc.	Dr. Santos Ave., San Isidro
10. KS Plastic Industrial Corp.	7568 Cruz Compd., San Isidro
STO. NIÑO	Address
1. Tire World Sales and Retreading Inc.	Access Rd., Multinational Village, Sto. Niño
2. Gen. Parts Mfg. Corp.	Access Rd., Multinational Village, Sto. Niño
SAN ANTONIO	
1. GTVL Mfg. Industries Inc.	7000 A. Santol St., Mon-El Subd., San A.
2. SCICI Industrial Corp.	L-2 8 PSD San Antonio
3. Manly Plastics, Inc.	Dr. Santos Ave., San Antonio
4. A Greeting Card	L2 B2 M. Espiritu Subd., San Antonio
5. Gartech Mfg. Inc.	Dr. Santos Ave., San Antonio

6. Golden Harvest Knitting Corp.	L6 Richill Industrial Compd., Espiritu Subd.,
7. CB Phil. Manufacturing Corp.	Philcor Drive, Dr. Santos Ave., San Antonio
8. Best Drug Industrial Inc.	768 Ma. Susafe St., SAV I, San Antonio
9. SIGMA Food Products	9647 San Pancrasio St., SAV 1 , S.A.
10. Markling Home Furniture & Decors	Filway Dev't. Corp. Comp., DASA, S.A.
11. JUDEA Enterprises	G/F Unit G 8361 DASA, San Antonio
12. Gen-Sen Int'l. Systems Technologies Co.	81 Dr. A. Santos Ave., Sucat, San Antonio
13. Ting-Ting's Bird & Animal Cages Center	#8 San Antonio Valley I, San Antonio
14. AMDP Controls Sales and Services	6 Aguinaldo St., San Antonio
BF	
1. Kraft Foods Phils., Inc.	8378 Dr. A. Santos Ave., BF
2. Basic Box Industrial Corp.	8426 Dr. A. Santos Ave., BF
3. BIO Research, Inc.	8362 Dr. A. Santos Ave., BF
4. Stoneworks Specialist Int'l. Corp.	8358 Dr. A. Santos Ave., BF
5. Non-Woven Fabric Phils. Inc.	8404 Dr. A. Santos Ave., BF
6. Uniwin Computerized	21 Doña Irena St., BF
7. Hapihouse of Concepts Corporation	15-4 Blue St., Goodwill II Subd., BF
8. Remedios Manufacturing Corp.	48 Henares St., BF
9. Horizon Business Group Inc.	414 El Grande Ave., BF
10. Mutual Paper Board Box Corp.	8426 Dr. A. Santos Ave., BF
11. Ultimate Comfort Food Products	Pergolla Mall cor. E. Gaches St., Aguirre Ave
12. Albertito's From Tuyo Foods	80 T. Evangelista St., BF
13. Funminds	3 rd Flr. 8428 Dr. Santos Ave., BF
SUN VALLEY	Address
1. Lamoian Corp.	Km. 15 West Service Rd., SouthSuperhiway
2. Classic Character Inc.	38 Sta. Ana Drive, Sun Valley Subd.
3. Everbright Net & Twine Mfg. Corp.	Edison Ave., Km. 14 SS Hi-way, Sun Valley

4. H & E Mfg. Corp.	6032 cul de sac St., Sun Valley
5. Aloha Plastic Products Inc.	L. Marquez St., Edison Ave., SSH, Sun V.
6. Peers Industrial Corp.	330 SSH Sun Valley
7. Vibrant Manufacturing Co. Inc.	Moral Bldg. Km. 14 Edison Ave., SSH, S. V.
8. Golden Maple Industrial Corp.	41 Sta. Ana Drive, Sun Valley
9. A Le Paul Inc.	Sta. Ana Drive, Sun Valley Subd.
10. Guess Label & Weaving Corp.	Sta. Ana Drive, Sun Valley Subd.
11. Lacto Asia Pacific Corporation	8469 Km. 15 West Service Rd., Sun Valley
12. Golden South Enterprise	Sun Valley Subd., Sun Valley
13. Slovenia Asia Pacific	043 Poblete Comp. 14 Service Rd., S. V.
14. Far Eastern Knitting Corp.	Sta. Ana Drive, Sun Valley
15. Art of Gold Enterprises Inc.	322 Benedictine St., Sta. Ana Village, S. V
16. EMB Natures Mfg. Corp.	Sta. Ana Drive, Sun Valley
17. Fancy W/V Manufacturing Co.	Sta. Ana Drive, Sun Valley
18. Phil. Parts Feeding Technologies Inc.	Gate & Warehouse #5 Km. 15 West Service Rd., SSH, Bicutan, Sun Valley
19. Quality Panels Inc.	Poblete Compd. 343 Int. West Service Road
20. ICE Corp. Inc.	8012 Edison/Leviste Ave., Sun Valley
21. Diamant Boart Phils. Inc.	345 South Super Hi-Way, Sun Valley
DON BOSCO	
1. Globe Mallow Int'l. Ent. Corp.	A 223 2F SM City Bicutan, Don Bosco
2. SHATO MARA Corp.	B 3 L 3 & 4 Doña Soledad Ext., BLS, Don B.
3. Hayden Mate & Mfg. & Trading Corp.	Unit 3 JDP Bldg., 76 Doña Soledad Ave BLS
4. DOLIE Personal Care Products	L 37 & 38 B 9 Albania St., Annex 40, BLS
5. Miraculous Medal Enterprises	#19 Redwood St., Levitown Ph. 6, Don B.
6. AYN Corporate Wears Int'l. Inc.	Cyber Bldg., 101 Doña Soledad Ave.,

	Don B.
MARCELO GREEN	Address
1. Columbian Auto Car Corp.	Km. 16 West Service Rd. Marcelo Green
2. Leslie Corporation	#4 Dama de Noche St., UPS IV, Marcelo G.
3. Fortune Packaging Corp.	20 Main Ave. Severins Industrial, Marcelo G.
4. MHE DEMAG Inc.	Acsie Rd., Severina Industrial, Marcelo G.
5. Asian Chemical Corp.	1 UPS IV Sampaguita St., Marcelo Green
6. CLOROX Int'l. Inc.	Mindanao Textile Acsie Ave., Km. 16 West Service Rd., Marcelo Green
7. Tradesphere Industrial Comm'l. Inc.	12 Main Ave. Severina Indt'l. Estate, M. G
8. KOPPEL Inc.	ACSIE Km. 16 South Super Hi-way, M. G.
9. Autocarpets	B14 L4 Sampaguita Ave., UPS IV, M. G
10. Problend Food Corp.	Km. 19 Sampaguita Ave., UPS IV, M. G.
11. Dhunwell Corporation	8 UPS IV Dama de Noche St., M. G
12. HOLCIM Phils. Inc.	Severina Indt'l. Estate Km. 16 SSH Bicutan
13. Design Packaging Industries	Km. 17 South Super Highway, M. G.
14. Columbian Manufacturing Corp.	Km. 19 West Service Rd., Bicutan, M. G.
15. VARI Coat Inc.	Km. 16 Severina Industrial Complex, SSH,
16. Globe Plastic Inc.	No. 6 Industrial St., Km. 16 SSH, M. G.
17. Phil. Chemical Lab. Inc.	Km. 18 United Parañaque Subd., SSH, M.G.
18. KOLOR Industries Inc.	Km. 16 Severina Marcelo Green
19. PHILPRIME Global Corp.	17 Main Ave. Km.16 Severina Subd.
20. Varitech Design &	Km. 16 Severina Industrial Estate SSH, M.G.
21. EJ Metals and Allied Products	Km. 17 Cervantes St. SSH, Marcelo

	Green
22. BETISE, Inc.	LDC Comp. Cervantes St. Km. 17 SCEX, West Service Rd., Marcelo Green
23. EC Soft Packaging Corp.	Cervantes Drive Bormacheco Compd. Km. 17 West Service Rd., Marcelo Green
24. BOFARLU Inc.	MINTEX CPD Acsie Km. 16 SSH, Marcelo G
25. American Packaging Corp.	Severina Ave., Severina Diamond Subd. MG
26. Hyper Pack Manufacturing Inc.	9-B Dow Jones Int'l. Compound, Km. 19
27. A. C. Hernandez & Co. Inc.	3 Acsie Ave., Severina, Marcelo Green
28. OPTIFLEX Manufacturing Inc.	#1 Dama de Noche cor. Sampaguita M. G.
29. New World Label Mfg. Corp.	Champaca St. Ext. UPS IV, Marcelo Green
30. Phil. Burners Mfg. Corp.	Champaca St. UPS IV, Marcelo Green
31. Polynum International Inc.	W-9 Km. 19 West Service Rd., Marcelo G.
32. Rainchem International Inc.	Bay II, Cervantes Compd., West Service Rd.
33. Montanes Agri-Commodities Inc.	#2 Dama de Noche St. UPS IV, Marcelo G.
34. Island Industrial Powder Corp.	840 South Super Hi-way Marcelo Green
35. RTI System Automation Inc.	3 rd Row C Cervantes St., Bormacheco Comp., West Service Rd., Marcelo Green
36. Good Name Prints & Supplies Inc.	7620 Chestnut St., Marcelo Green
37. Road Markers International Inc.	L4B1 BChampaca Rd. UPSIVIndustrial Subd
38. West Bee Concrete Products Inc.	1740 West Service Rd., SSH , M. G.
39. United Defense Manufacturing Corp.	Km. 19 West Service Rd., Marcelo Green

MERVILLE	
1. MFT International Corp.	M. Greenfield Merville Access Road, Merville
2. Qualitech Electronics	Km. 14 West Service Rd., SSH Merville
3. Minipack Phils. Inc.	3 Panama St., Merville Park Homes, Merville
4. World Power Multi-Products Inc.	Edison Ave., Merville
5. Golden Sun Farm Inc.	40 Palmspring St., Merville
6. Strings Unlimited Inc.	Km. 14 Edison Ave., Merville
MOONWALK	
1. Metro Index Garments Inc.	Ph. 3 Thomas St., Multinational Village M.
2. Dessert Station Corp.	15420 E. Rodriguez, Moonwalk
3. M.M. Guanzon Inc.	23 Saint Anthony St., CRC Multinational Vill.
4. Metro Arms Corp.	4821 Daang Batang St., Moonwalk
5. Chang BTC Knitting Mills Corp.	16 D3 Jerusalem St., Multinational Village
6. ALPATRI Mfg. Inc.	426 Cooper St., Moonwalk
SAN MARTIN DE PORRES	
	Address
1. American Wire & Cable Co. Inc.	8508 Km. 16 SSH, San Martin de Porres
2. Green Cross Inc.	2150 Iba St., UPS I, San Martin de Porres
3. Solid Laguna Corp.	2000 East Service Rd., Bicutan, San Martin
4. Alvace Corporation	Km. 16-17 East Service Rd., San Martin dePorres
5. Eltupak Phils. Inc.	#17 Le Marian Road 2, San Martin de Porres
6. Gonzalo int'l. Inc.	3 Marian Rd II East Service Rd., San Martin de porres
7. Soon To Be Famous Ent.	220 Lanao Lake Rd., Marian Lakeview Park
8. New Mayon Adhesive Mfg. Co.	Km. 18.5 SSH UPS, San Martin de Porres
9. Philtec Label Corp.	8 Dama de Noche St., UPS IV, San

	Martin P
10. Pinesbel Mfg. & Trading Corp.	#8 Felix Baes St., Perpetual Village, SMDP
11. MACHUCA Tile Inc.	Rd. I Marian Park Subd., San Martin de Porres
12. HI GRITS INC.	Rd. I, Marian Park 2 East Service Rd.
13. Año Shoe Factory	B 1 L 7 Marian Rd., Marian Park Subd., San Martin de Porres

Source of Data: EDP

2.4.3 MARKETS

There are eighty-five (85) markets catering the consumer needs of the population. Of this number, eighty-four (84) are private markets located at different barangays and only one (1) public market situated at Barangay La Huerta.

2.4.4 INFORMAL SETTLEMENTS

There are approximately two hundred thirty two (232) areas in the City of Parañaque, which are considered Urban Mission Areas. Four (4) areas are considered Areas for Priority Development (APD) and fourteen (14) others are undergoing Community Mortgage Program (CMP).

Barangay Moonwalk has the most number of informal settlers, thirty five (38) followed by Barangay San Antonio with thirty three (33), Barangay Don Bosco with twenty two (23) and Barangay Sto. Nino with twenty two (22) clustered settlements. Household population in each settlement ranges from 50 to 1,700 families.

The city is home to 25,073 informal settler families, covering an estimated 45.131 hectares land area. Informal settlers in danger areas are approximately 3,320

families, in government lands are 3,763 families , in areas declared APD are 2,460 families and those located in private lands are 15,428 families. Majority of informal settler dwellings are made of light materials; only a few are made of concrete and semi-concrete materials. Monthly income of these families fall below the minimum wage.

2.4.5 INFRASTRUCTURE

Table 10. Total Road Network

BARAN-GAY	CATE-GORY	TOTAL ROAD NETWORK (km)	LENGTH OF ROAD FOR CONCRETING AND REHABIL-ITATION	NATIONAL ROAD	BARAN-GAY ROAD
SAN ANTONIO	National	3,325		3,325	
	Local	28,826	8,522		28,826
	Sub Total	32,151			
BF	National				
	Local	105,299	150		105,299
	Sub Total	105,299			

BARAN-GAY	CATE-GORY	TOTAL ROAD NETWORK (km)	LENGTH OF ROAD FOR CONCRETING AND REHABIL-ITATION	NATIONAL ROAD	BARAN-GAY ROAD
MERVILLE	National	930	500	930	10,230
	Local	10,230			
	Sub Total	11,160			
SUN VALLEY	National		11850		18,596
	Local	18,596			
	Sub Total	18,596			
SAN MARTIN DE PORRES	National		600		12,540
	Local	12,540			
	Sub Total	12,540			
MARCELO GREEN	National		5,360		21,820
	Local	21,820			
	Sub Total	21,820			
DON BOSCO	National	366		366	45,987
	Local	45,987	14,070		
	Sub Total	46,353			
MOON-WALK	National		2,789		38,097
	Local	38,097			
	Sub Total	38,097			
BACLARAN	National	1,505	825	1,505	11,255
	Local	11,255			
	Sub Total	12,760			
TAMBO	National	4,501	590	4,501	6,131
	Local	6,131			

BARAN-GAY	CATE-GORY	TOTAL ROAD NETWORK (km)	LENGTH OF ROAD FOR CONCRETING AND REHABIL-ITATION	NATIONAL ROAD	BARAN-GAY ROAD
	Sub Total	10,632			
DON GALO	National	630		630	
	Local	4,824	655		4,824
	Sub Total	5,454			
STO. NIÑO	National	1,370	440	1,370	
	Local	6,087			6,087
	Sub Total	7,457			
LA HUERTA	National	496		496	
	Local	3,646	825		3,646
	Sub Total	4,142			
SAN DIONISIO	National	4,947	825	4,947	12,813
	Local	12,813			
	Sub Total	17,760			
SAN ISIDRO	National	2,200	4,082	2,200	8,655
	Local	8,655			
	Sub Total	10,865			
VITALEZ	National				
	Local	3,100	440		3,100
	Sub Total	3,100			
TOTAL		430,356	50,950	35,719	393,538

Source: City Engineering Office

Table 11. Major and Secondary Roads, 2013

MAJOR ROADS	SECONDARY ROADS
1. Roxas Boulevard	1. Edison Avenue
2. Coastal Road	2. Sun Valley
3. Redemptorist Road	3. Marcelo Avenue
4. Airport Road	4. Severina Avenue
5. Seaside Drive	5. Sampaguita Avenue
6. NAIA Road	6. Greenheights Avenue
7. Quirino Avenue	7. Filipinas Avenue
8. Ninoy Aquino Avenue	8. Press Drive
9. Dr. A. Santos Ave. (Sucat Rd.)	9. San Pedro St.
10. Kabihasanan Medina	10. Palanyag St.
11. Doña Soledad Avenue	11. J. Elizalde St.
12. Armstrong Avenue	
13. Merville Access Road	
14. Iba St.	
15. East/West Service Road	
16. South Super Hi-Way	
17. President Avenue	
18. El Grande Avenue – Lopez Avenue	
19. France St.	
20. Aguirre Avenue	
21. San Antonio Avenue	
22. Canaynay Avenue	

Source: City Engineering Office

Table 12. List of Inaccessible Streets/ Alleys

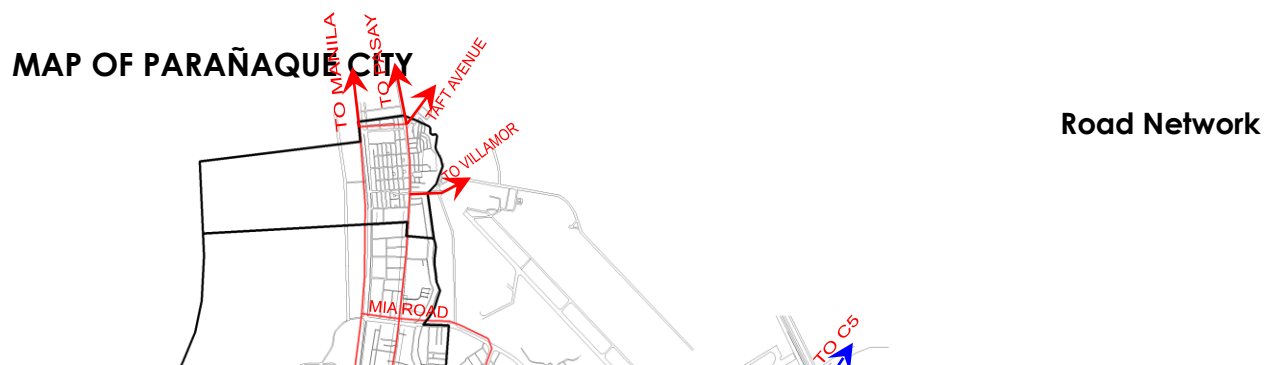
DISTRICT I		DISTRICT II	
Baclaran	50	San Antonio	42
Tambo	30	BF Homes	13
Don Galo	17	Don Bosco	4
Sto. Niño	20	Sun Valley	8
La Huerta	15	Merville	3
San Dionisio	60	Moonwalk	7
San Isidro	30	Marcelo Green	11
Vitalez	4	San Martin	35

Source: City Engineering Office

Table 13. Traffic Congested Area, 2013

AREA	BARANGAY
Bicutan Interchange	Barangay San Martin de Porres
Sucal Interchange	Sucal Road
Canan3.1ay Avenue/EVACOM	Along Sucal Road, Bgy. San Dionisio
Kabihasanan Road	Barangay San Dionisio
MIA Road	Quirino Avenue, Barangay Tambo
Mia Road	Along Coastal Road
Baclaran Rotonda	Barangay Baclaran

Source: City Engineering Office



LEGEND:


	
	BRGY.
	BOUNDARY

Table 14. Fire Prone Areas, 2013

BARANGAY	LOCATION		
BF	Target I Villonco Mangga Site	Sampaloc II & II-B Clinic Site Target II	Sucat Silangan Estrada Masville
Baclaran	Sitio Maligaya Sta. Rita	Santiago Ext. De Julio	Sitio San Jaun Mactan St.
Don Bosco	Kawayanan France Phodesia Section I Annex 22 New 2 Annex Scotland Levitown Ave. Indonesia BLS Denmark Ethiopia	Ferrer Dulo Manggahan-St. Joseph Switzerland Santos Compound Texas Scotland Dulo Peru St. Thailand St Indonesia St.	Egypt St. Vatican St. Sarmiento Moroco St. Manggahan-Levitown India St. St. Joseph Levitown Singapore Valle Vista St.
Don Galo	Regalado J. Gabriel	Sto. Niño de Coastal Dimatimbangan	Coastal
Marcelo Green	Aroma Assn.	Kawayanan	Sunta

			Compound
	Manggahan Assn.	Cervantes Compound	
	Daang Hari Blk I & II	Armela Compound	
Merville	All Top	Sitio Tuyuan	Cubic Site
	Edison Ave.	Manggahan	
	Sitio Malay	Merville Access Rd	

Moonwalk	San Agustin	Haise St.	St. Paul St.
	Sitio Aldrin	Bagong Ilog (libho)	Plaza 99
	Velarde	Bricktown	
San Antonio	Creek Drive SAV 8	Lino Type 4th Estate	Bodoni 4 th
	Creek Drive I	Creek Drive II	Estate Area I
	Lower Barangay	Reyes Compound	Malacañang
	Fatima Valley	4 th Estate Area II	Seacom
San Dionisio	Lim Compound	Isla de Camia	Fresh Food
	Tramo Line (wakas)	Kuliglig	
	Tramo II	Patay na Ilog	
San Isidro	Silverio Compound	Lower Fatima	Gulayan
	Sitio Nazareth	Napoleon Compound	Creekside Valley
	Sitio Fatima	Espiritu Compound	Sitio Dilar
	Lower Matatdo	Sito San Roque	

San Martin de Porres	Bicutan Market	Sitio Malugay	Sampaloc Compound
	Sitio Sto. Niño	Sitio de Asis	
	Sitio Bagong Pag-asa	PNR	
Sto. Niño	Perukaril	Santos Compound	Cupid Compound
	Yagit	P. de Leon	19th St.
	Kaingin I & II	Halik Alon	
	Manukan	Y.C.B.	
Sun Valley	Kingfisher Manggahan	Sitio Cul de Sac	Villa Paraiso I & II
	Lower Sta. Ana A & B	I.P.C.	
	Passionist	Cherry East	
	Monte Villa Monsod	Bagong Pag-asa	
Tambo	Seaside Square	Puyat Compound	Riverside I & II
Vitalez	Banana Compound	Gat Mendoza	

Source: City Engineering Office

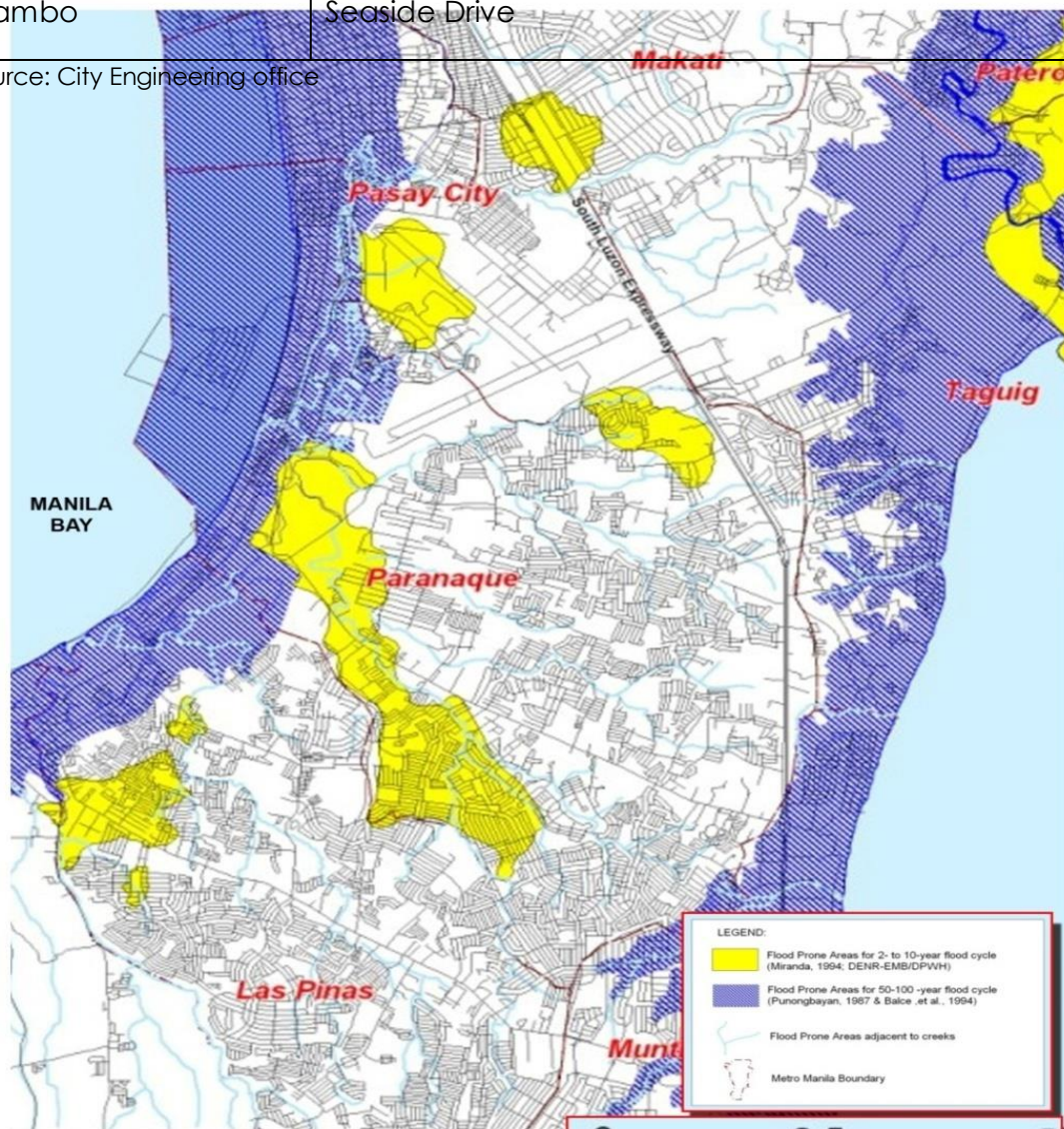
Table 15. Flood-Prone Areas, 2013

BARANGAY	LOCATION
Baclaran	a portion of F.B. Harrison cor. Aguarra St. (clogged

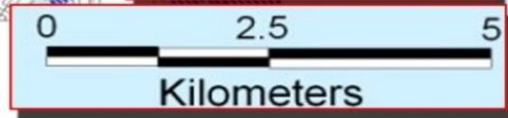
	<p>drainage)</p> <p>Bagong Lipunan Site (overflow of creek) Redemptorist Road – Quirino Ave. (clogged drainage)</p>
BF	Clinic Site
Don Bosco	France St. and Guatemala St. (overflow of creek)
Don Galo	Coastal Area
La Huerta	Perpetual
Marcelo Green	<p>Marcelo Green (overflow)</p> <p>Landscape</p> <p>Ilang-ilang (low-lying area)</p> <p>Sampaguita</p>
Merville	Sitio Wella
Moonwalk	<p>Daang Batang (low-lying area)</p> <p>Cecilia Village</p>
San Antonio	<p>Equity Homes (Meliton)</p> <p>Fourth Estate (low-lying area)</p> <p>Monte Carlo (Fatima St.) (clogged drainage)</p> <p>San Antonio Valley 3</p> <p>Maria Susafe SAV I (overflow of creek)</p>
San Dionisio	<p>Evacom</p> <p>vicinity of Parañaque NHS</p> <p>Sitio Kuliglig</p> <p>Villanueva Village</p>
San Isidro	<p>San Antonio Valley 6 (low-lying area)</p> <p>Lopez bridge</p>

	Sitio Nazareth Papa Pio San Felipe
Sto Niño	Sitio Kaingin Sitio Libho Isarog Multinational cor Ninoy Aquino Ave.
Sun Valley	Countryside Village Ph. 5 (overflow of creek) Dandelion St. (overflow of creek)
Tambo	Seaside Drive

Source: City Engineering office



FLOOD PRONE AREAS



Flood map Source: Mines and Geosciences Bureau
Prepared by: City Planning & Development Coordinator's Office

2.4.6 LAND USE

The City of Parañaque, through the Sangguniang Bayan, then passed Ordinance No. 07-027 series of 2007, more commonly known as the Comprehensive Land Use Plan and Zoning of Parañaque. It has adapted this legal tool in implementing its land use goals and objectives in its all-out support to develop the city.

Under Section 19 of the Zoning Ordinance 07-027, all land development and building constructions/renovations/alterations of residential, commercial and industrial structures are required to secure the necessary zoning/location clearance prior to the implementation of the project.

The ordinance will guide, control, and regulate the future growth and development of Parañaque City while protecting public health, safety, peace, comfort and convenience of its constituents.

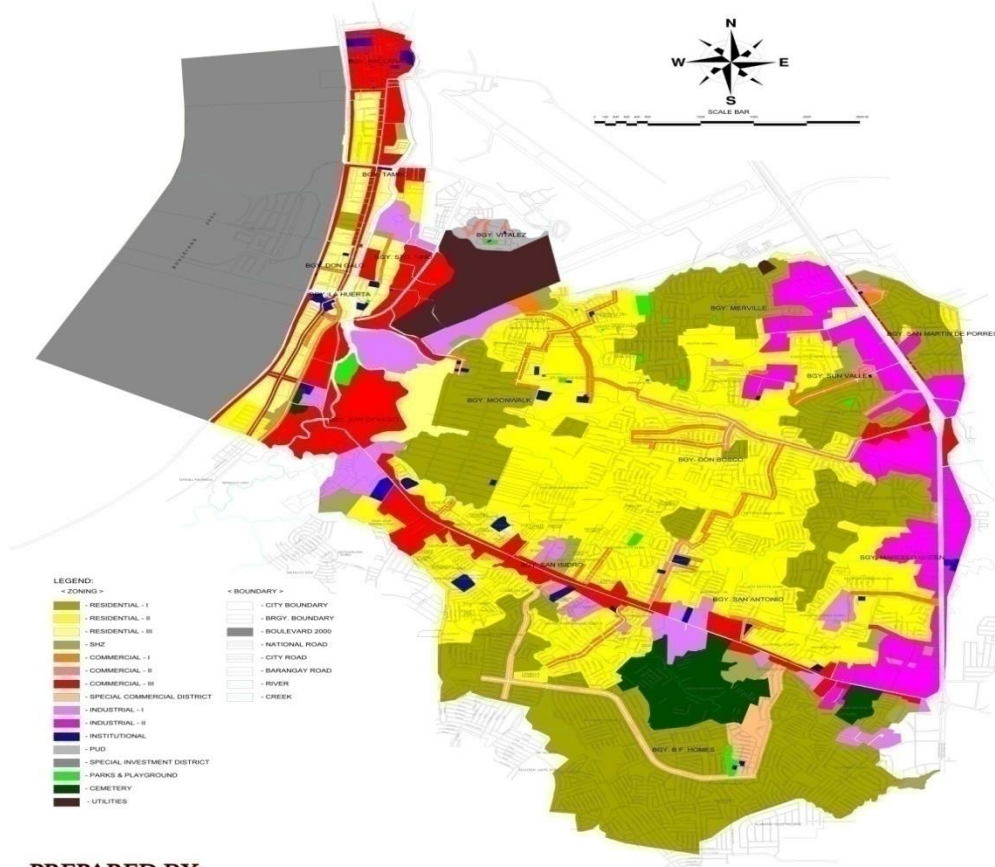
As of this calendar year 2010, the following are the land uses in Parañaque City.

Table 16. Land Use

Land Use	AREA (Square Meter)	AREA (Hectare)	Percentage (%)
Residential 1	169,558	16.956	0.36
Residential 2	20,726,783	2,072.687	44.51
Residential 3	1,120,864	112.086	2.41
Residential 4	356,165	35.617	0.76
Commercial 1	1,029,943	102,994	2.21

Land Use	AREA (Square Meter)	AREA (Hectare)	Percentage (%)
Commercial 2	1,182,597	118,260	2.54
Commercial 3	3,921,896	392.190	8.42
Industrial 1	1,667,278	166.728	3.58
Industrial 2	3,700,851	370.085	7.95
Institutional	578,099	57.810	1.24
Parks & Playground	1,227,480	122.748	2.64
Cemetery	1,246,150	124.615	2.68
Utilities	1,031,536	103.154	2.22
Creeks & Rivers	340,800	34.080	0.73
PUD	8,270,000	827.000	17.76
TOTAL	46,570,000	4,657.000	100

MAP OF PARAÑAQUE CITY 2007 LAND USE & ZONING MAP



2.5

PREPARED BY:
CITY PLANNING & DEVELOPMENT COORDINATOR'S OFFICE

PHYSICAL CHARACTERISTICS

2.5.1 TOPOGRAPHY

The city is relatively flat and situated along the coastline areas of six (6) barangays namely: Baclaran, Tambo, Don Galo, Sto. Niño, La Huerta and San Dionisio. The other barangays such as Moonwalk, Vitalez, San Isidro, BF, Don Bosco, Marcelo Green, Merville, Sun Valley, San Antonio, San Martin de Porres have an elevation ranging from 10° to 35° above water level.

2.5.2 SOIL

The soil in Parañaque is classified under Guadalupe soil. It is a volcanic eject that produces a loam to clay loam texture that can hold more water. The soil contains more clay than silt. Its permeability is low with high swelling capacity.

2.5.3 CLIMATE

Parañaque experiences the same climate weather condition with other cities in Metro Manila. Two distinct seasons: wet season from July to September and dry season for the rest of the year. The city enjoys an annual rainfall of 1,822 mm and 34.4°Celsius temperature, a relative humidity of seventy six percent (76%) and a three (3) mile/sec. speed of southeast wind.

III. Current Solid Waste Management Conditions

3.0 2013- 2016 ACTION PLAN - PARAÑAQUE CITY

RA 9003 clearly states that barangays shall be the prime implementers of solid waste management policies and programs of the City Government. They shall be responsible for the strict compliance in every household on segregation at source, separate collection and proper waste disposal. They must create their Solid Waste Management Committees in order to formulate and have a barangay SWM plan. Although they are responsible solely for the management of biodegradable and recyclable wastes, which ideally should no longer leave their barangay, they must also supervise the proper disposal of residual wastes and provide an action plan and institutionalize a doable system for their barangay.

In conformity to the Ten Year SWM plan, the new administration of Mayor Edwin I. Olivarez on Parañaque City's thrust on solid waste management shall initially focus on massive information campaign to re-educate the populace on the importance and salient provisions of RA 9003. A series of educational lectures and distribution of information materials shall be conducted to all barangays to include residential areas, schools, commercial and business establishments. Implementation at 16 barangays shall be closely monitored to ascertain citywide efficiency and attain national goals of compliance. A period of one year shall be programmed in conducting these activities to ensure wider understanding and gaining knowledge on SWM practices. After which strict implementation and enforcement proceedings shall be initiated to guarantee compliance with RA 9003.

The present organizational structure with the Solid Waste and Environmental Sanitation Office (SWAESO) falling under the Office of the Mayor posed problems on continuous SWM implementation at every change of administration. Hence the operationalization of the proposed City Environment and Natural Resource Office (CENRO) is seriously considered by the new administration of Mayor Olivarez as a priority. The CENRO shall be operational by the fiscal year 2015. It will play an important role in the success of implementation of RA 9003 and other environmental laws in Parañaque City. The continuity of policies and SWM strategies as well as its delivery of services can be better dispense by this CENRO independent from political changes.

After all the foregoing are instituted, hiring and training of the Environmental Police Personnel, authorized under Ordinance No.06-13, can be deployed citywide to enforce RA 9003 vigorously and apprehend violators. Thus strict implementation can be enforced and penalties applied under ordinances and national laws when necessary.

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City ordinances on Environment Protection shall be reviewed simultaneously and amended if necessary, coordination with the Sanggunian Council shall be strengthened to result in more efficient enforcement. Every Barangay Council shall update or formulate their respective SWM plans and policies.

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3.1 INSTITUTIONAL ARRANGEMENTS

Management of solid in the City of Parañaque shall be CENRO through the Waste and Environmental Sanitation Office (SWAESO)



waste
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Solid

3.1.1 GENERAL FUNCTIONS

- Responsible for maintaining the cleanliness of city roads and major thoroughfares.
- In-charge of delivering basic collection of domestic residual wastes.
- Educate citizens on laws and ordinances relating to solid waste management and environment.



service

the

3.1.2 DUTIES OF SOLID WASTE MANAGEMENT DIVISION (SWAESO) HEAD

- Manage the operation of street sweepers and garbage pick-up stations.
- Supervise garbage contractor's performance under the prescribed terms and conditions of the contract.
- Oversee the maintenance of cleanliness and assist in the beautification of city sidewalks in removing obstructions, commercial streamers and posters in violation of provisions of laws and ordinances.

- Conduct removal and collection of debris from sidewalks, creeks, rivers and coastal areas.
- Perform other duties and functions deemed required of service.

3.2 INVENTORY OF EQUIPMENT AND STAFF

3.2.1 GARBAGE TRUCKS

QUANTITY	UNIT	EQUIPMENT
Two (2)	Units	10-Wheeler Trucks
Two (2)	Units	6-Wheeler Trucks
One (1)	Unit	Payloader
Two (2)	Units	Spider Backhoe
One (1)	Unit	Vactor (drainage cleaning truck)
Two (2)	Units	Grass Cutters
Two (2)	Units	Chain Saw
Two (2)	Units	Small trash Boats
Three (3)	Units	Service Vehicles
One (1)	Unit	Water Tanker

3.2.2 NUMBER OF CENRO PERSONNEL

Consultant - 3
Permanent (detailed) - 3
Casual - 108

Job Order:

<i>Bantay Basura</i>	-	30
<i>Metro Aide I</i>	-	1,148
<i>District I</i>	-	465
<i>District II</i>	-	<u>683</u>
<i>Total Personnel</i>	-	1,178

3.3 City Environment and Natural Resources Office (CENRO)

Responsible for managing the preservation and protection of natural resources and city environment, conduct research and development, management of coastal waters and rivers, mineral and land resources, enforcement of laws and ordinances, including formulation of policies, plans and programs on control, clearances, violations, rehabilitation and preservation.

Coordinate with government agencies and non-government organizations in the implementation of measures to prevent and control land, air and water pollution.

LINE DIVISIONS

3.3.1 Administrative and Support Services Division

Perform staff function and duties on general office administration and prepare reports and formulation of CENRO Plans and Programs.

Responsible for the evaluation of personnel performance and provide administrative support, logistics and procurement, provide maintenance of office facility, properties and equipments.

3.3.1.2 Environmental Protection and Management Division

Headed by a Pollution Officer, shall be responsible for the research and assessment of Land, Water and Air quality. Responsible for environmental protection, safety and pollution protection and management in Parañaque City.

Provide research and periodically publish results of studies made on impact of public works and infrastructure projects.

Responsible for the conduct of field investigation on pollution generators and on the implementation of CENRO policies on environment protection and rehabilitation and recommend appropriate action.

Responsible for the enforcement of laws and ordinance pertaining to environment protection and apprehend violators and recommend administrative actions.

Responsible for Coastal Resources and River Waters Management to include flora, aquatic resources and fisheries protection and preservation.

3.3.1.3 Solid Waste Management Division

Responsible for the maintenance of cleanliness and sanitation of roads and all thoroughfares, sidewalks and walkways, waterways, deployment and supervision of street sweepers.

Responsible for the supervision and deployment of garbage trucks and monitoring of waste collection in the City of Parañaque.

3.3.1.4 Community Affairs & Information Division

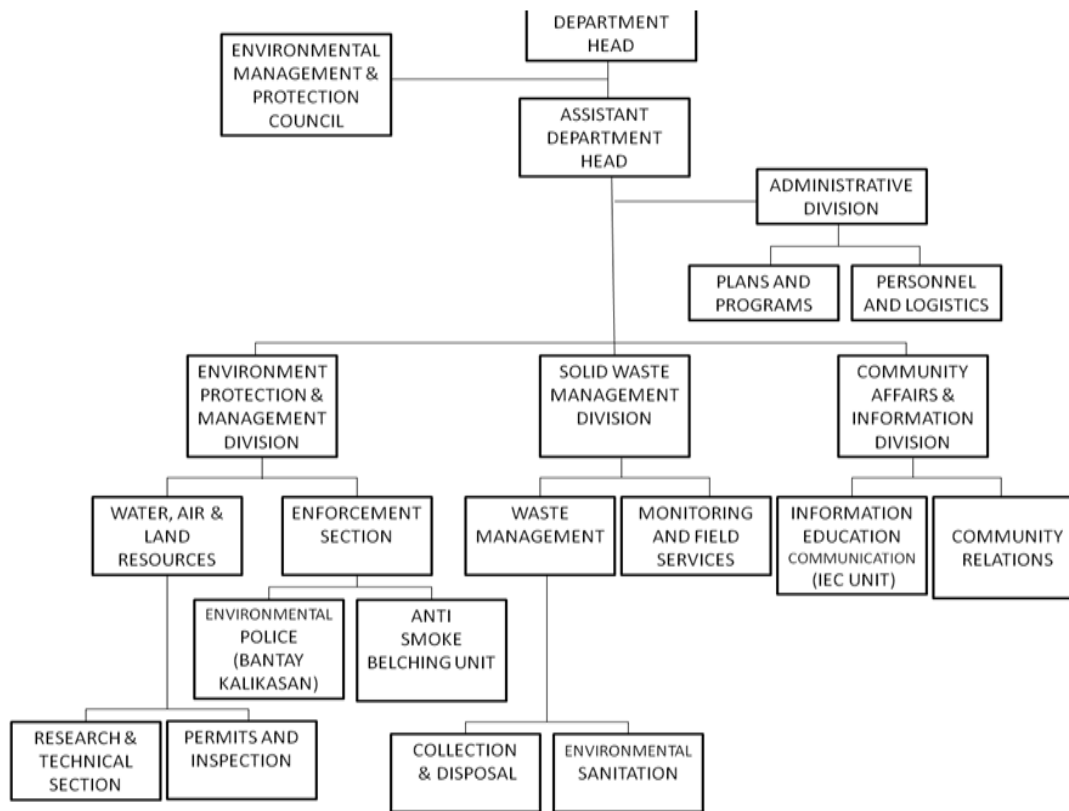
Responsible for Information, Education and Communication (IEC) on the environmental plans and programs of the City Government and National Government Agencies.

Responsible for the conduct of trainings, lectures and seminars for residential communities, schools and the business sector.

Responsible for organizing community cooperation, participation and action plans for the different programs of the City Government.

Responsible for liaisons with barangays and all sectors including NGOs on city program implementation for the protection and management of environment.

CITY ENVIRONMENT AND NATURAL RESOURCES OFFICE



3.4 SOURCE REDUCTION

3.4.1 SOURCE REDUCTION PROGRAMS

Kitchen wastes, generated by residential households is no longer collected. Instead, the same is brought to the Neighborhood Center for composting. In case such facility is not available in the area, then the kitchen wastes are composted by the individual household concerned.

3.4.2 COMPLEMENTARY PROGRAMS ON SWM

3.4.2.1 SIDEWALK CLEARING OPERATION

1. Clearing of Debris and Garbage

An on-going project SWAESO is the removal of assorted construction debris thrown indiscriminately on sidewalks by contractors and builders. Pieces of rocks and wood trimmings along major thoroughfares and roads are gathered to keep the sidewalks orderly and clean.



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2. Clearing of Illegal Commercial Signage

As a rule, a permit to put up commercial tarpaulins and signage are required. Hence, all signs without permit or with expired permit on sidewalks, center islands and meralco posts is in violation of the city ordinance, thus, are removed by the city monitoring team.

3. Disaster Assistance Operations

Clearing and disposal of fire debris along sidewalks and burnt areas is one of the assistance programs in keeping disaster areas ready for house demolition and reconstruction.

After each typhoon, SWAESO assists barangays devastated by typhoons through collection of uprooted trees and other debris.

3.4.2.2 Linis Estero and Sidewalk Clearing Operations

A team composed of twenty (20) personnel is assigned to two (2) trucks & one (1) boat conduct regular clean up of esteros, creeks, canals and other waterways. SWAESO is providing assistance to different barangays and homeowners associations requesting for the de-clogging of waterways along sidewalks augmenting the similar MMDA flood control programs.



This team likewise conducts regular garbage collection the Bulungan FishPort Barangay La Huerta and various areas requiring special attention.



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Painting of sidewalk walls and curbs along major roads particularly defaced by vandals are also being done by this team.

3.4.2.3 Seminar on Solid Waste Management for Homeowners

Associations and Schools

The SWAESO team of lecturers conducts SWM seminars for HOAs and schools. The parents particularly the mother of the student is required to attend the seminar. A total of 11,546 students and 66 HOAs have attended the SWM seminar. The children were taught the basic segregation concept. It is envisioned that these students will help in reminding elders the need for segregation.

3.4.2.4 Seminar on Solid Waste Management for City High School

A project of SWAESO aimed to conduct seminar on solid waste management for city high schools was launched on September 8, 2008. The project aims to disseminate the importance of waste segregation at household level by



enjoining students to help promote SWM program of the City Government in their respective Barangays. It is estimated that about 24,746 households can be reached through this project.

3.4.2.5 Bantay Parañaque

Bantay Ilaw Operations

A team formed in July 2013 is responsible for patrolling major thoroughfares to watch and run after crooks stealing electrical wires of city owned street lights. This team is composed of 29 personnel of SWAESO. The team has consequently filed 10 cases at the Regional Trial Court of Parañaque City of which five (5) cases were already decided and the corresponding punishment enforced by the court.

Garbage Disposal Monitoring

A night shift team is composed of ten (10) responsible for monitoring and collection of garbage disposed along major roads. They are tasked to apprehend those illegally disposing garbage. They are likewise directed to disseminate information on proper waste disposal and the schedule of bringing garbage to collection points. They serve as guides to waste haulers to insure mopping operations are performed in accordance with the prescribed routes.

This team has made several apprehensions resulting to confiscation of push carts, pedicabs and tricycles from violators.

3.4.2.6 Best Practices – City of Parañaque

A. Roll-on Roll-off Waste Depository Container

Inaccessible areas mostly covering Informal Settler Family (ISF) residential areas has poised waste collection problems in as much that garbage trucks cannot perform the usual door to door collection. Normally collection are done daily by pushcarts catering to residents who pays for a sum of money the door to door collection service rendered and these wastes are finally disposed at duly designated pickup points along major roadways.



Sixty Six (66) pickup points along sidewalks of major and secondary roads all over Parañaque City were designated and where pushcarts collectors can deposit or lined up their collected wastes into waiting garbage trucks or left at pickup points during the designated hours. This method though a necessity gives an image of unsightly garbage piled along major roads especially during night time rush hours.

An innovative concept of using a 19-cubic meter capacity garbage containers which were stationed initially at six (6) pick-up points along major roads. These mobile containers receives wastes during daytime and pulled out by truck tractors at midnight using the roll on roll off system. The unsightly garbage along these roads were

eliminated and thus provided a system of orderliness and improved area sanitation. The city plans to deploy next year additional ten (10) Roll On Roll Off containers on other major roads and further plans to fabricate more containers until full service have been provided at other remaining pickup points.

Strategic locations of six (6) Roll-on & Roll-off and its servicing sitios and barangays:

- | | | |
|--|---|----------------------------------|
| 1. Dr. A. Santos Ave. (Sucat High-way) | - | Masville & Estrada |
| 2. Dr. A. Santos Ave. (Sampaloc) | - | Sampaloc & Hontiveros |
| 3. Dr. A. Santos Ave. (San Isidro) | - | Silverio & San Antonio Valleys |
| 4. Inside the Compound Brgy Sto. Niño | - | Brgy Sto. Niño |
| 5. Quirino Ave. infront of Shell Sta. | - | Brgy Baclaran |
| 6. Airport Rd.
& its vicinity | - | Roxas.Blvd., Redemptorist Church |

B. Materials Recovery Facility

**Sunflower Green MRF, Annex
Subdivision, Brgy. Don Bosco**

A privately owned MRF operated by the Annex 1618 Homeowners' Association,



1618



catering to their 300 homeowners. Established in the year 2000 and now has attained a considerable success in solid waste management. The MRF owns various equipment and an Isuzu Elf truck to process and

collect segregated waste. Biodegradable or kitchen waste are processed using vermicomposting to produce high quality compost. The revenue derived from sale of high-grade compost and recyclable items are more than enough to pay the salaries of MRF employees and security guards of their subdivision. This MRF operation is one of the most successful in the City of Parañaque in terms of efficiency and sustainability.

Brgy. Sto. Niño,

Pascor Drive

A UNDP funded MRF run the Barangay Cooperative engaged in collection of recyclable materials and composting of biodegradable wastes. Organized in 2005, initially under the supervision of MMDA and DENR, have been in the forefront of waste segregation and segregated collection utilizing accredited out of school youths. The success of their system will be replicated to other areas of Barangay Sto Niño to improve the coverage of the program.



Brgy. Merville Park

Barangay Merville was a recipient of an MRF EMB-NCR, the barangay bestowed the operation Merville Park Homeowners Association which to the Our Lady of Beautiful Love Parish in support to the



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Scholarship and Livelihood Program of the parish.

The MRF started operations on July 14, 2014 and being manage by the Catholic Womens League (CWL) who hired seven workers coming from the informal sector.



the parish bought a utility vehicle and the barangay donated two pushcarts to collect recyclables from the 1,500 households of the subdivision. The parish has been sending twenty scholars to vocational and college courses for marginalized families of the three ISFs sitios under the parish and the net income are remitted to the scholarship fund of the parish.

This 100 square meter MRF was an example of a community working together, the barangay recognizing the need under RA 9003 to have a barangay MRF while the association supporting the MRF through the conduct of SWM seminars for house helpers and issuing information materials to homeowners regularly. The management of the MRF by the church provided an opportunity of providing employment and establish a worthy project to support its scholars. It is can prove also that an MRF can be beneficial whether for business operation or for beneficial use of one community.

C. Used Tire Recovery Program

The City Government of Parañaque, as lead proponent, is continuously gathering



discarded used tires along main thoroughfares and different barangays. Started in 2006, a system of collection in coordination with the 16 Barangays was established and brought to a processor of used tires in Cavite to be converted for garbage receptacles, road humps, flowers pots, and other household rubber products and in San Pedro, Laguna for the

production of bunker oil and combustible gases for fuel.

The City allowed private haulers to clean-up of our roads of used tires that eventually processed by a contractor that was contacted by SWAESO to accept these collected tires. This tire recovery program has eliminated the improper disposal of used tires and help in lessening the proliferation of disease-carrying mosquitoes that may breed on these tires. Truckloads of used tire are either delivered directly to Cavite and San Pedro, Laguna by the Barangay concerned or by SWAESO to assure the continuity of the program.

3.5 COMPLIANCE TO R.A. 9003

3.5.1 CONSTITUTION OF THE BARANGAY SOLID WASTE MANAGEMENT COMMITTEE (BSWMC)

All of the barangays of the City of Parañaque have established their Barangay Solid Waste Management Committee (BSWMC). The BSWMC implements and enforces the Solid Waste Management Programs at the barangay level.

3.5.2 FORMULATION OF THE BARANGAY SOLID WASTE MANAGEMENT PLAN

The barangay swm committees have formulated their individual Barangay Solid Waste Management Plans which serves as a guide in the implementation of their solid waste management programs and in formulating the city's 10-year swm plan.

3.5.3 ESTABLISHMENT OF BARANGAY MATERIALS RECOVERY FACILITY (MRF)

All of the barangays have established their MRFs for the final sorting of recyclable wastes and composting.

Table 17. Barangays with Solid Waste Management Committee

DISTRICT I		DISTRICT II	
1.	Baclaran	1.	San Antonio
2.	Tambo	2.	B.F.
3.	Vitalez	3.	Marcelo Green
4.	Don Galo	4.	Sun Valley
5.	Sto. Niño	5.	San Martin De Porres
6.	La Huerta	6.	Don Bosco
7.	San Dionisio	7.	Merville
8.	San Isidro	8.	Moonwalk

Source: SWAESO

3.6 COLLECTION

3.6.1 EXISTING SYSTEM



The City Government is operating under the policy of "No Segregation No Collection," in compliance with the provisions of RA 9003 since 2005. As mandated only domestic or residential residual wastes are collected. Door to door collection of wastes within the City of Parañaque is regularly conducted. Residual waste are disposed properly in sealed plastic bags and loose garbage and/or mixed wastes will not be accepted by garbage collectors. Households are required to bring out their garbage only on the scheduled day and at the appointed time of collection by the city garbage contractor. Disposal of waste by residents and collection by the garbage contractor at duly designated pick-up points are strictly observed from 8:00 o'clock P.M. up to 3:00 o'clock A.M.

3.6.2 Service Area / Routes / Frequency of Collection

The barangays shall determine the appropriate time and day for the collection of each type of waste in its area. Such being the case, the authorized collectors/haulers of Eco-Aides shall be required to coordinate with the barangay for the proper collection scheduling.

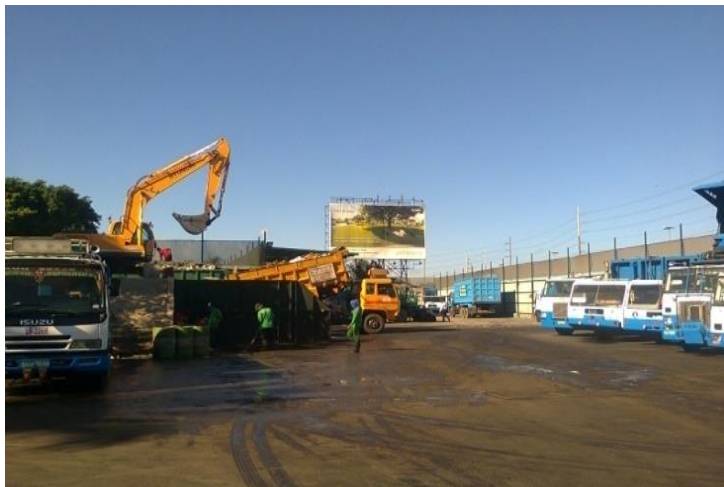
Where there are no separate schedule or trucks to be used for different types of solid wastes, the vehicles used for the collection and transport of solid wastes have the appropriate compartments to facilitate efficient storing of sorted wastes while in transit. The waste compartment shall have a cover to ensure the containment of solid wastes while in transit.

Collection schedule for residential areas is twice-weekly and daily for mainroads and pick up points. Time of collection is 8:00 PM to 3 A.M. There are collection points in major thoroughfares.



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3.7 TRANSFER STATION



The Kabihasan Transfer Station located at Kabihasan, San Dionisio, Parañaque City is being managed by the private hauler. Residual waste from smaller collection vehicles are transferred to bigger trucks prior to final disposal at the Rizal Provincial Sanitary Landfill.

3.8 PROCESSING FACILITIES

MRF were established in every barangay, where bio-degradable waste for composting and mixed non-biodegradable wastes for final segregation, re-use and recycling is being conducted. Such facility is set- up in a barangay-owned or leased land or any suitable open space determined by the barangay thru its Sanggunian.

The MRF is designed to receive, sort, process and store compostable and recyclable materials efficiently and in an environmentally sound manner. In addition the MRF has likewise made provisions for adequate storage for composts and recyclables, and act as a composting depot for those generated by households and neighborhood associations.

In cases where a barangay has no area to construct an MRF. The Barangay shall formulate a plan and develop a system for Materials Recovery Facility or MRF.

3.9 FINAL DISPOSAL



The Rizal Provincial Sanitary Landfill, owned and operated by International Solid Waste Integrated Management Specialists Inc. (ISWIMS, INC), a Filipino owned company, was established in response to the increasing pollution and

degradation of the environment and the mounting concern for sustainable technology to handle management and disposal of solid wastes, including industrial and hazardous wastes.

The almost 12-hectare facility is located at Rodriguez, Rizal, SLF. It is recognized by the different Local Government Units in the Province of Rizal and other adjacent cities and municipalities.

The disposal facility being utilized by the city is at Rodriguez Sanitary Landfill. The Rodriguez SLF is a non-hazardous waste disposal facility located in Rodriguez, Rizal. Rodriguez is approximately 50 kilometers northeast of Manila. The SLF is based on an area 14 hectares in size, receives approximately 3,000 tonnes of solid waste per day.



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3.10 HOSPITAL, HAZARDOUS AND INDUSTRIAL WASTES AND SPECIAL WASTES

Collection of hazardous wastes such as but not limited to medical waste, used batteries, used engine oil, solvents, pesticides, flammables, dead animals, explosives, and dangerous chemicals shall be done in accordance with Republic Act 6969 and only by those collectors and haulers, duly authorized and accredited for such purpose.

However, used diapers may be collected by the City's authorized collector or hauler provided that the same had been properly segregated placed in a separate container or plastic bag, sealed with appropriate markings and identification.

3.11 BULKY WASTE

Upon the request of residents, only then will bulky waste, like household fixtures and appliances, tree trunks, are collected provided they are properly bundled and tree trunks cut in a size that can be easily tied for convenient loading on collection vehicle.

3.12 MARKETS FOR RECYCLABLES

The recyclable materials are usually sold by the households either to junkshops or recyclers. The types of recyclable materials recovered are the following:

1. Paper –white, newspaper, boxes, magazine
2. Plastics - PET, hard plastics, PVC
3. Metals – aluminum, tin, iron, bronze
4. Bottles - clear, colored, crushed/broken

3.13 LIST OF JUNKSHOPS

Table18. List of Junkshops

MASTER LIST OF JUNK SHOPS WITH BUSINESS PERMITS

BARANGAY	OWNER'S NAME	OWNER'S ADDRESS	BUSINESS NAME	BUSINESS ADDRESS	
MOONWALK	BANTE B. RAMOS	Fast Truck Moonwalk Parañaque City, M. Mla	RJJ JUNKSHOP	Fast Truck Moonwalk Parañaque City, M. Mla	JUNKSHOP
BACLARAN	OSCAR INIGO PEREDO	2074 Santiago St. Baclaran, Parañaque City, M. Mla	VILLAFLORES GENERAL MERCHANIDISE	2074 Santiago St. Baclaran, Parañaque City, M. Mla	JUNKSHOP
SMDP	VIRGINIA AREVALO	2329 Santiago Exit Baclaran, Parañaque City, M. Mla.	MDSJ GENERAL MERCHANDISE	2329 Santiago Exit Baclaran, Parañaque City, M. Mla.	JUNKSHOP
	FELMA GESMUNDO	0920 Iba St. San Martin Parañaque City, M. Mla	KEAN KEAN AUTO REPAIR SHOP	0920 Iba St. San Martin Parañaque City, M. Mla	JUNKSHOP
	EUMARIO B. GO	2518 Iba St. San Martin Parañaque City, M. Mla	E.B. GO JUNKSHOP & GEN. MERCHANDISE	2518 Iba St. San Martin Parañaque City, M. Mla	JUNKSHOP
	ELMARIO B. GO	Marian Road II, San Martin Parañaque City, M. Mla	E.B. GO JUNKSHOP & GEN.	Marian Road II, San Martin Parañaque City, M. Mla	JUNKSHOP
SUN VALLEY	BASILIO M. ELBANBUENA	3776 Sun Valley Drive, Sun Valley Parañaque City, M. Mla	ELBANBUENA TRADING	3776 Sun Valley Drive, Sun Valley Parañaque City, M. Mla	JUNKSHOP
SAN ANTONIO	ANASTACIA O. GEROY	557 St. Jude St. SAV-I, San Antonio Parañaque City, M. Mla	GEROY JUNKSHOP	557 St. Jude St. SAV-I, San Antonio Parañaque City, M. Mla	JUNKSHOP
	ELSA ALON BULALAUQUE	8463 Dr. A. Santos Ave., Sucat San Antonio Parañaque City M. Mla	JAN AND DEX JUNKSHOP	8463 Dr. A. Santos Ave., Sucat San Antonio Parañaque City M. Mla	JUNKSHOP
	ALEX B. QUILALA	8349 Dasa Fourth Estate Subd., San Antonio Parañaque City, M. Mla	BAQAM TRADING	8349 Dasa Fourth Estate Subd., San Antonio Parañaque City, M. Mla	JUNKSHOP
	JAMES CHENG	L20 B20 Valley 1 San Francisco St. San Antonio Parañaque City, M. Mla	CHENG, JAMES C.	L20 B20 Valley 1 San Francisco St. San Antonio Parañaque City, M. Mla	JUNKSHOP
	REYNALDO M. MARTICIO	81 Dr. A Santos Ave. San Antonio Parañaque City, M.	JANGAN JUNKSHOP	81 Dr. A Santos Ave. San Antonio Parañaque City, M.	JUNKSHOP

		Mla		Mla	
TAMBO	CORAZON L. CHUA	1 First St. Villamar Court Tambo Parañaque City, M. Mla	CORA'S SECOND HAND STORE	1 First St. Villamar Court Tambo Parañaque City, M. Mla	JUNKSHOP
	MEMVILUZ ABERIA	590 Quirino Ave. Tambo Parañaque City, M. Mla	JOHN RAINE JUNKSHOP	590 Quirino Ave. Tambo Parañaque City, M. Mla	JUNKSHOP
	JOSE T. SALVO	Sampaguita Ave., UPS-IV Marcelo Green, Parañaque City, M. Mla	SALVO JUNKSHOP/GENERAL MERCHANDISE	Sampaguita Ave., UPS-IV Marcelo Green, Parañaque City, M. Mla	JUNKSHOP
SAN ISIDRO	SHIELA J. UY	Sampaguita St. Vitalez Cmpd. San Isidro, Parañaque City M. Mla	MIRR JUNKSHOP	Sampaguita St. Vitalez Cmpd. San Isidro, Parañaque City M. Mla	JUNKSHOP

3.14 MARKETS FOR COMPOSTABLES

The composts produced from the barangay MRFs are either given to the residents or sold at a very low price. However, the SWAESO in coordination with the Department of Agriculture is trying to identify a bigger market for the compostables that will be produced by the barangays. The identified market would serve as an incentive for those producing compost from waste.

3.16 INFORMATION, EDUCATION AND COMMUNICATION CAMPAIGN (IEC)

The City government recognizes the important role of teachers as partners in molding consciousness among the youth and to develop advocacy practices. The Parañaque in coordination



of youth DepEd with

the City Government through SWAESO conducts regular seminars for teachers to update for the Eco-Saver's Program them on the issues of solid waste so that they may institute to their students ample protection of the environment and the need to improve



compliance to RA 9003 in recognition of solid waste as a major pollutant to the environment. Trainings and seminars are also given to waste haulers, households, commercial establishments, and other agencies. SWAESO also distributes information materials on proper garbage disposal and segregation.

3.17 COSTS AND REVENUES

Programmed Appropriation and Obligation by Object of Expenditure for Calendar Year 2014:

Personnel Services:

P 19,713,004.44

<i>Salaries and Wages-Casual</i>	11,823,462.00
<i>Salaries and Wages-Part Time</i>	29,051,721.60
<i>Honoraria (SWM Board)</i>	684,000.00

The rest of the appropriation was used in payment of Life and Retirement, Additional Compensation, Clothing Allowance, Year End Bonus, Cash Gift, GSIS, PhilHealth and Pag-Ibig Contributions, and Productivity Incentive Benefits.

Maintenance and Other Operating Expenses: P 429,790,000.00

<i>Rental, Hauling and Disposal of Garbage</i>	366,240,000.00
<i>Oplan Bantay Basura</i>	30,000,000.00
<i>Repair & Maintenance, Training, & Other Miscellaneous Expenses</i>	33,550,000.00

The rest of the MOOE allocation is for Gasoline, Oils and Lubricants, Communications, Repair and Maintenance of Construction and Heavy Equipment and other expenses.

Revenues earned are from garbage fees collected from commercial and industrial establishments

Table 19. Garbage Fees Collected

Month	2012	2013
January	32,760,124.96	38,244,327.50
February	1,535,307.50	1,086,907.61
March	961,775.00	1,283,573.75
April	4,105,968.75	4,210,756.25
May	617,347.50	511,155.00
June	721,055.00	554,325.00
July	4,757,852.50	4,878,203.75
August	679,285.00	534,000.00
September	2,139,281.25	482,258.13
October	3,706,502.50	4,322,337.50
November	301,412.50	926,577.50
December	238,740.00	310,872.50
TOTAL	52,524,652.46	57,345,294.49

Other revenues are from Environmental Protection Management Charges from residents amounting to PhP8,019,000.00 in 2009 and PhP17,324,400.93 in 2010.

3.15 KEY ISSUES

The following are the key issues in solid waste management facing the City:

1. High daytime population resulting to almost 21% increase in waste volume.
2. High tipping fee of disposal area.
3. High cost of operation and maintenance for collection and disposal.
4. Inadequate technical manpower.

IV. Waste Characteristics

4.1 DISPOSED WASTE (FROM WACS)

On September 16 to 22, 2011, Waste Analysis and Characterization Study (WACS) was conducted in city. Based on the WACS, the biodegradable/organic type waste has the highest percentage contributing to of the total solid waste generated. The least amount waste generated is the hazardous type having a 0.8% the total weight of generated waste.



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Waste Analysis Characterization Study

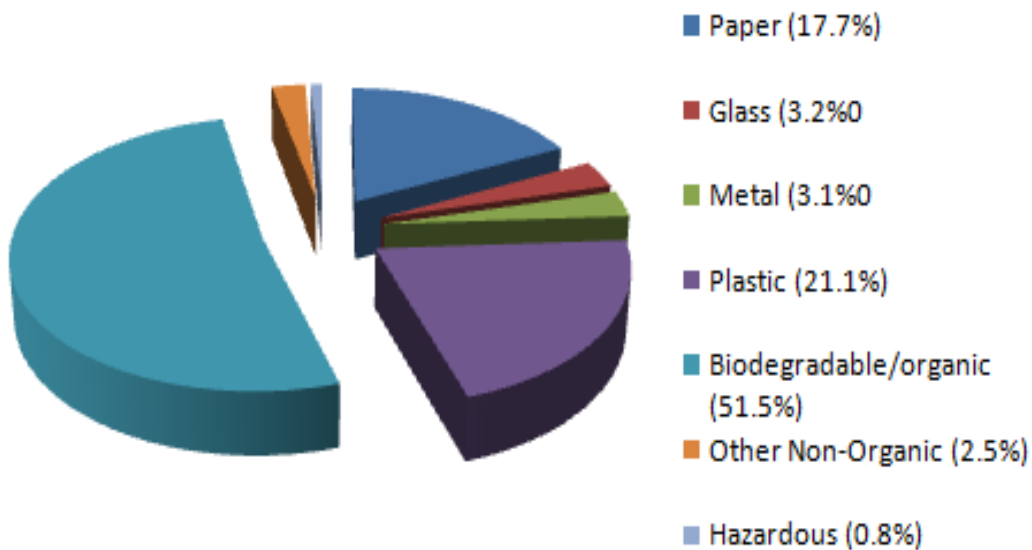


Table 20. Waste Composition Percentage

Type	Material	Percentage
Paper	Cardboard, Paper, Newspaper, Office Paper	17.7
Glass	Bottles, containers and other composites	3.2
Metal	Tin metal cans, other ferrous metal, aluminum cans, other non-ferrous, other composites	3.1
Plastic	PET, film plastic, LDPE	21.1
Biodegradable/organic	Food waste, yard waste, market	51.5

Type	Material	Percentage
	waste	
Other Non-Organic	Rock, concrete, ceramics, bricks, stone, asphalt, soil, sand, ash, fines (other composites)	2.5
Hazardous	Paint, oil, oil litters, small batteries	0.8

Table 21. Waste Composition (tons/day)

Type	Waste Volume
Paper	84.2
Glass	15.2
Metal	14.8
Plastic	100.3
Biodegradable	244.7
Other Non-organic	12
Hazardous	3.8
TOTAL	475.0

Table 22. Percentage of Waste Composition by Source

Type	Residential			Market	Com- mercial	Indus- trial	Institu- tional
	High Income	Med- ium Income	Low Income				
Paper	13.9	13.1	12.6	11.0	25.0	17.8	30.6
Glass	4.4	4.6	3.4	0.8	2.1	4.6	2.6

Type	Residential			Market	Com- mercial	Indus- trial	Institu- tional
	High Income	Med- ium Income	Low Income				
Metal	3.3	4.1	2.9	1.2	4.2	4.5	1.6
Plastic	21.1	20.8	24.5	15.1	24.3	23.2	18.8
Biodegr adable	54.2	54.6	51.8	71.3	40.3	45.1	43.4
Other Non- organic	2.6	2.5	3.6	0.6	3.4	2.4	2.2
Hazard ous	0.5	0.3	1.2	0.0	0.7	2.4	0.8

An estimate of the overall waste composition of the City of Parañaque is shown in Table 21. The estimate is based on the results of the composition analysis for each



generator sector, with the weighted average calculated using the results of analyses as well as population data. The data in the figure show that the components with the highest concentrations are: biodegradable waste (51.5%), plastic (21.1%), and paper (17.7%). Collectively these three

components constitute 90.3% of the waste stream. Should this be managed well and taken out of the waste stream, the required diversion rate of RA 9003 will have been complied with greatly.

The projected population of Parañaque for the year 2014 is 676,935 with 152,976 households. However, the large volume of daily waste generation of the City which is 565 tons/day is because of the increase in daytime population. Parañaque is home to

the Ninoy Aquino International Airport, Duty Free Philippines, Entertainment City, Baclaran Church, big malls and other commercial establishments, schools and offices.

Based on the study, the per capita generation per day of the City is 0.69 kg.

4.2 DIVERTED WASTE

The City's waste diversion rate is about 33% of the total waste generated through recycling, waste minimization, re-use and composting.

4.3 GENERATED WASTE

Based on the projected 2014 population of 676,935 and at 0.69 per capita generation, the generated waste would be about 565 tons per day. Actual volume of waste collected daily amounts to 678 tons or averages at 247,381 tons per year. However, based on the WACS conducted in the year 2011, the city's waste volume is 475 tons/day. This can be attributed to the increase in daytime population. Parañaque is home to the Ninoy Aquino International Airport, Duty Free Philippines, Casinos, Baclaran Church, big malls and other commercial establishments, schools and offices.

V. Legal/ Institutional Framework

5.1 LOCAL LAWS AND REGULATIONS

Table 23. City Ordinances Related to Solid Waste Management

Ordinance No.	Description
City Ordinance No. 14-25 Series of 2014	An Ordinance amending Ordinance No. 08-02, Series of 2007 entitled: "An Ordinance establishing the City Environment and Natural Resources Office (CENRO), providing for its functions and staffing pattern and appropriating funds therefor.
City Ordinance No. 06-13 series of 2006	An Ordinance Authorizing the Hiring of Environmental Police under the Solid Waste Management and Environmental Sanitation Office (SWAESO), Defining their Duties And Function And For Other Purposes.
City Ordinance No. 10-05 series of 2009	An ordinance adopting the environmental management code of the city of Parañaque.
City Ordinance No. 05-018 Series of 2000	An ordinance providing for the standard method of mandatory waste segregation at source in the City of Parañaque.

Table 24. City Executive Orders

E.O. No.	Description
Executive Order No. 14-005 Series of 2014	An Executive Order Amending Executive Order 13-011 on the Composition of the City Solid Waste Management Board.
Executive Order No. 14-001 Series of 2014	An order creating the special action team as mandated in executive order No.13-014 entitled, "Creating the Parañaque City Task Force on Manila Bay Clean-up, Rehabilitation and Preservation"
Executive Order No. 13-011 Series of 2013	An Executive Order Providing for the for the Organization of the Solid Waste Management Board of Parañaque City.

Existing City ordinances pertaining to Environment Protection shall be reviewed simultaneously and amended if necessary, close coordination with the Sanggunian Council shall be strengthen to result in more efficient ordinances. Every Barangay Council shall be required to update and/or formulate their respective SWM plans and policies.

5.1.1 ENFORCEMENT AND COMPLIANCE

RA 9003 and city ordinances are implemented and enforced in the city. These ordinances included mandating of residents, owners and operators of institutions to clean their surroundings and prohibiting the throwing of waste in any drainage canals and/or waterways, rivers, lakes and any water body.

To ensure compliance to the ordinances, SWAESO has assigned continuous roving, fix positioning and night operations personnel. When apprehended, violators may opt to either pay the corresponding fine or render community service.

5.2 ROLES

The roles of the City Solid Waste Management Board and Barangay Committees are clearly defined in RA 9003 as well as the involvement of the private sector, NGOs, community, citizens, etc. for integrated solutions on waste management.

The City Solid Waste Management Board (CSWM Board) – The Board shall convene as a body and shall be tasked with specific duties and responsibilities.

The City -Will also be responsible for the efficient collection of waste and shall provide regular collection schedule. IEC campaigns shall also be done to provide awareness on new developments to its constituents.

The Barangay – The Barangay shall be responsible for the collection of biodegradable and recyclable wastes. The Barangay with established MRF shall be responsible for further processing and storage of waste prior to the collection of the City waste hauler. The Barangay shall also prepare its own SWM plan in accordance with the plans set by the City.

Barangays shall be given periodic capability development orientations in order to enhance their solid waste management compliance and meet the requirements of RA 9003.

The Private Entities and Institutions – Private companies and institutions shall ensure that segregation of wastes shall primarily be conducted at the source. They shall also provide their respective storage receptacle for at least four (4)

types of solid waste (biodegradable, recyclable, special waste & residual). If possible, composting of biodegradable wastes must be done also at source.

The Citizens – The Citizens shall be responsible for segregating their waste and if possible composting of biodegradable waste be done at source. Waste shall be brought out only during collection day and time of the City or of the Barangay.

The NGOs – The NGOs shall assist the City in the intensive IEC Campaigns and in introducing livelihood programs to the informal sector and waste pickers.

The Recycling Companies – Recycling companies shall support the segregation program of the City by buying the collected recyclables. They shall also help in promoting awareness on the benefits of segregation and recycling.

5.3 CITY SOLID WASTE MANAGEMENT BOARD

The City Solid Waste Management Board has been created by Executive Order No. 13-011 Series of 2013 on July 2013 identifying all the key members and their duties.

Chairman : City Mayor

Vice Chairman : City Administrator

Members : Chairman-Sanggunian Committee on Garbage & Waste Management

President, Liga ng mga Barangay

President, Sangguniang Kabataan

Head-Solid Waste and Environmental Sanitation Office

City Planning Officer

City Health Officer

NGO Representative-Concerned Citizens of Parañaque
(2)
NGO Representative-Recycling Industry (1)
Legal

5.3.1 DUTIES AND RESPONSIBILITIES OF THE SWM BOARD

In accordance with Section 12 of RA 9003, the SWMB shall exercise the following functions, duties and responsibilities:

- a. In consultation with the various sectors of the community, develop the City's Solid Waste Management Plan that shall ensure the long-term management of solid waste, as well as integrate the various solid waste management plans and strategies of Barangays in Parañaque City's area of jurisdiction;
- b. Adopt measures to promote and ensure the viability and effective implementation of solid waste management programs in the barangay level;
- c. Monitor the implementation of the City's Solid Waste Management Plan through its various political subdivisions and in cooperation with the private sector and the NGOs;
- d. Adopt specific revenue-generating measures to promote the viability of the City's Solid Waste Management Plan;
- e. Convene regular meetings for purposes of planning and coordinating the implementation of the solid waste management plans of the component barangays in the City;
- f. Oversee the implementation of the City's Solid Waste Management Plan;

- g. Review every two (2) years or as the need arises the City's Solid Waste Management Plan for purposes of ensuring its sustainability, viability, effectiveness and relevance in relation to local and international developments in the field of solid waste management;
- h. Develop the specific mechanics and guidelines for the implementation of the City's Solid Waste Management Plan;
- i. Recommend to appropriate local government authorities specific measures or proposals for franchise or build-operate-transfer agreements with duly recognized institutions, pursuant to Republic Act 6957, to provide either exclusive or non-exclusive authority for the collection, transfer, storage, processing, recycling or disposal of the City's solid waste. The proposals shall take into consideration appropriate government rules and regulations on contracts, franchises and build-operate-transfer agreements;
- j. Provide the necessary logistical and operational support to its component cities and municipalities in consonance with subsection (f) of Section 17 of the Local Government Code;
- k. Recommend measures and safeguards against pollution and for the preservation of the natural ecosystem; and
- l. Coordinate the efforts of the City's component barangays in the implementation of the City's Solid Waste Management Plan.

5.3.2 MEETINGS AND QUORUM

The SWM Board shall meet every 1st Friday monthly or as often as may be necessary to carry out the above-mentioned functions, duties and responsibilities. A majority of the members of the board shall constitute a quorum, but the Chairman or Vice-chairman must be present during meetings where budgetary proposals are being prepared or considered. The affirmative vote of all the majority of the members shall be necessary to approve any proposal.

5.4 BARANGAY SOLID WASTE MANAGEMENT COMMITTEES

The barangays have created their own Resolutions for the creation of the Barangay Solid Waste Management Committee. To date 100% of the City's barangays have formed their BSWMCs, which essentially would be the driving force in implementing Solid Waste Management Programs at the barangay level.

The composition of the BSWMC was based on the provisions of RA 9003 which are as follows:

- a) Chaired by the Barangay Captain
- b) One (1) kagawad
- c) SK chair
- d) President of Home Owners Association
- e) Public/private school principal or representative
- f) One (1) Parents and Teachers Association president or representative
- g) One (1) Religious organization representative
- h) One (1) Business community representative
- i) One (1) environmental NGO representative
- j) President of Market Vendors Association
- k) One (1) representative from junkshop owners' association

5.5 STAKEHOLDERS PARTICIPATION

All stakeholders or all sectors are doing their own share in the implementation of the law, particularly segregation at source. Segregated collection is also imposed by having separate schedule of collection for the different kinds of waste. The academe,

SWAESO and Barangay Committees concentrate on intensive IEC programs. The Barangay Committees also monitors compliance in their area of jurisdiction.

VI. Plan Strategy

6.1 TARGETS

Table 24. Projected Waste Diversion and Disposal Targets

PROJECTED WASTE DIVERSION AND DISPOSAL TARGETS									
Year	Projected Population	Projected Waste Generation (@ 0.69 kgs/person)	WG of 21% Daytime Population (kgs/day)	Total DWG (with 21% Daytime Population) (tons/day)	Waste Diversion Target Percentage	Target Vol. to be Diverted tons/day	Target Vol. for Disposal	WACS	
								Bio	Non-Bio
								51.50%	48.5%
2014	676,935	467,085	98,087.88	565.17	33	186.51	378.67	291.06	274.11
2015	696,837	480,818	100,971.68	581.79	35	203.63	378.16	299.62	282.17
2016	717,324	494,954	103,940.25	598.89	37	221.59	377.30	308.43	290.46
2017	738,413	509,505	106,996.04	616.50	40	246.60	369.90	317.50	299.00
2018	760,122	524,484	110,141.68	634.63	42	266.54	368.08	326.83	307.79
2019	782,470	539,904	113,379.90	653.28	45	293.98	359.31	336.44	316.84
2020	805,474	555,777	116,713.18	672.49	48	322.80	349.69	346.33	326.16
2021	829,155	572,117	120,144.56	692.26	51	353.05	339.21	356.51	335.75
2022	851,708	587,679	123,412.49	711.09	54	383.99	327.10	366.21	344.88
2023	874,874	603,663	126,769.24	730.43	57	416.35	314.09	376.17	354.26

6.3 STRATEGIES

6.3.1 GENERAL DESCRIPTION OF COORDINATION WITH BARANGAYS TO IMPLEMENT SEGREGATED COLLECTION, MRFS AND COMPOSTING FACILITIES

Trainings for barangay officials on solid waste management shall be regularly conducted to update them on new developments for them to be able to increase the awareness of their constituents. Further, imposition of fines and penalties shall be implemented to those who fail or would not want to comply. Also, the **No Segregation, No Collection policy** on waste shall be practiced.

6.3.2 GENERAL DESCRIPTION OF COLLECTION AND TRANSFER

The city will still continue to implement the “No Segregation, No Collection” scheme. Continuous trainings shall also be provided to the private hauler for proper implementation of solid waste management. Should the private hauler fail to implement the scheme, a fine shall be imposed on the hauler.

6.3.3 OVERVIEW OF PLANS FOR DISPOSAL

The city will continue to dispose at the Pilotage Sanitary Landfill until its lifespan or until the MMDA has designated a new disposal area.

VII. SWM System

7.1 SOURCE REDUCTION

In order that social responsibility and advocacy may be developed, the education system shall be tapped. Integration in the school curricula shall be encouraged that the practice of waste segregation in school shall be carried out at their respective households.

Also, segregation and reduction at source shall be strictly enforced.

Should the biodegradable waste be managed properly, a very big reduction from the waste stream shall have been achieved. The SWAESO shall impose mandatory segregation of the following:

- Biodegradable
- Non biodegradable or Factory Returnable
- Hazardous or Special Waste
- Bulky wastes

7.1.1 CAPABILITY AND ECONOMIC VIABILITY OF THE CITY IN IMPLEMENTING THE PROGRAM FOR THIS COMPONENT

The SWAESO, the implementing Office of the City, has a regular approved budget for the implementation of the solid waste programs.

7.1.2 TECHNICAL REQUIREMENTS FOR THE ORDINANCES AND OTHER FORMAL ACTIONS TO BE TAKEN BY THE CITY

Ordinances on proper solid waste management have already been enacted, however, should there be a need to amend the ordinances to attune to the needs or circumstances of the present time, the city will do so.

7.1.3 SOCIAL IMPACTS ON STAKEHOLDERS INVOLVED OR AFFECTED

The following are the foreseen impacts to the stakeholders:

- ❖ Lesser volume of waste to be disposed
- ❖ Cleaner surroundings
- ❖ Less incidence of sickness
- ❖ Increase per capita earning derive from the sales of recyclables
- ❖ Incentives from proper implementation of RA 9003
- ❖ Aesthetic effect

7.2 COLLECTION

The collection of segregated recyclable and compostable materials will be the responsibility of the barangay as mandated by RA 9003. Collection of residuals will be the responsibility of the city.

The strategy for collection shall involve the constitution and activation of the Barangay Solid Waste Management Committees that will take charge of the solid waste management of their respective barangay in coordination with SWAESO. Each barangay shall then be required to impose segregation at source. The recyclables and compostables shall be collected by the barangay eco-aides. This is in compliance with Section 6, Rule VI of the Implementing Rules and Regulations of RA 9003. These collected recyclables and compostables shall be brought to the MRF for further segregation and composting. The residuals shall be collected by the City Private Hauler and brought to a sanitary landfill identified by MMDA.

7.2.1 OVERVIEW

7.2.1.1 Description of the Strategy for Collection, based on the Projected Quantities of Segregated Biodegradables, Recyclables and Residual Wastes

In compliance with Section 6, Rule VI of the Implementing Rules and Regulations of RA 9003, collection of solid wastes shall be segregated. The Barangays shall identify the type of collection vehicles that shall be needed depending on the volume of segregated waste to be collected.

7.2.1.2 Description of Collection Process for Each Type of Waste

Barangays shall provide a schedule on the collection of biodegradables and non-biodegradable waste to impose the segregated collection scheme. All wastes that will not be collected by the barangays shall be regarded as residual wastes.

7.2.1.3 Types of Collection Vehicles, Collection Frequency, Collection Points, and Types of Containers

The different types of vehicles, ranging from 10-wheeler dumptruck to smaller ones will be utilized depending on the area of collection.

There shall be daily collection of segregated wastes along the main thoroughfares and markets. A twice-weekly collection shall be instituted for households or residences. For stationary sources like government offices and other institutional entities, a three times a week collection shall be provided. Further, for bulky and yard wastes generated within the barangay, collection shall be when asked. In cases of excessive waste generated because of social activities or natural calamities, additional dumptrucks shall be allocated.

Door to door collection of solid waste shall still be utilized on accessible areas. However, for inaccessible areas, push carts and pedicabs shall be used and shall be disposed at stationary roll on-roll off bins located at some pick up points.

7.2.1.4 Entity Responsible for Providing Collection for Each Type of Waste and for each Sector

The City SWAESO shall handle the collection of residual wastes coming from households/barangays. The City shall collect from the main thoroughfares and stationary sources. In residential areas, collection shall be the responsibility of the barangay except for residual wastes.

7.2.2 COLLECTION EQUIPMENT AND ROUTES

Collection of residual waste generated by the city will basically be managed by SWAESO. Each truck shall be issued a work assignment ticket daily and then proceed to collect from their assigned area.

For inaccessible areas, the “door-to-door” system shall be employed using pushcarts. When one of the pushcarts is already full, it shall be loaded into a waiting dump truck on the main road.

Collection schedule of barangays for biodegradables and recyclables shall be in coordination with the SWAESO to compliment the collection of residuals.

7.2.3 COLLECTION SERVICE

The City shall maintain the services of a private hauler. As what is being practiced, the barangays will determine the appropriate time and day for the collection of each type of waste in its area of jurisdiction in coordination with the private hauler.

Where there are no separate schedule or trucks to be used for different types of solid wastes, the vehicles used for the collection and transport of solid wastes shall have the appropriate compartments to facilitate efficient storing of sorted wastes while in transit. The waste compartment shall have a cover to ensure the containment of solid wastes while in transit.

7.2.4 SERVICE AREAS

Collection schedule for residential areas shall be twice a week and daily for main roads and pick up points. Time of collection is from 8:00 PM to 3 AM. There are 66 collection points in major thoroughfares.

7.2.5 BASIC TERMS OF CONTRACT

- ❖ The contractor/hauler shall undertake the collection, hauling and disposal of residual waste except industrial and hospital wastes within the territorial jurisdiction of the City comprising of 16 barangays.
- ❖ The city shall not be responsible nor held liable for any injury sustained by third parties arising out of or through the negligence of the contractor or any of its personnel. For this purpose, the contractor shall always maintain his trucks in good working condition particularly its bodies, engines, lighting, signaling devices and tires. In addition, the contractor shall ensure that in the transport and hauling of waste materials to the final disposal facility, no littering and spillage shall occur.
- ❖ The contractor shall maintain four (4) "paleros" per truck.
- ❖ The contractor shall ensure that the wastes are brought to a legitimate final disposal area.
- ❖ The contractor shall ensure the cleanliness of the City.

7.2.6 STORAGE AND SETOUT

Segregated recyclables can be stored at the MRF until a saleable volume is reached. Biodegradables will either be processed as animal feed or compost.

7.3 SEGREGATION, RECYCLING, AND COMPOSTING

The SWAESO shall introduce a strict segregated collection program. This program aims to encourage the practice of waste segregation and recycling by implementing a “No Segregation, No Collection” scheme.

An assigned staff from the SWAESO shall go around and check the needs of the barangays. Since all of the barangays have established their own Committees, coordination will not be difficult. Training to further strengthen the capacity of the committees shall be conducted.

Barangay deputized enforcers shall impose the penalty system for violators.

Recyclables shall be collected by the eco-aides once a week. Eco-aides shall carry a checklist and note down which household surrendered their recyclables.

Biodegradables can be composted at individual household's backyard. For those without an area for composting can bring their biodegradables to the MRF for composting.

The city collection trucks which are supposed to collect only residual waste shall go to the barangays only once a week.

7.3.1 MARKETING

The markets for recyclables are the junkshops organized within the City. Compost shall be sold to residents or private garden contractors. For barangays with large vacant area, the compost shall be used for their urban garden and organic vegetable production.

Livelihood from recyclables shall also be introduced to the barangay like bag making, decorative items, place mats, etc. from paper, plastics, doypacks, aluminum, etc.

Tile making from residual wastes shall also be introduced. The tiles could be used by green contractors for pavement, decoration and the like.

7.4 TRANSFER (IF APPLICABLE)

Because of the distance of the final disposal facility from the collection points, the need for the transfer station is still necessary. The management of the transfer station will abide by the mandates of RA 9003.

7.5 DISPOSAL

The disposal area of the city for the next 10-years will still be in accordance to the instructions of the Metropolitan Manila Development Authority (MMDA). The City does not have any available area for the construction of its own SLF.

7.6 SPECIAL WASTE

Special waste especially health care waste will still not be collected by the City. Treatment and disposal will be the responsibility of the generator.

7.7 INFORMATION, EDUCATION AND COMMUNICATION (IEC)

7.7.1 INTRODUCTION

The main purpose of this section is to enhance people's awareness, knowledge and understanding and to promote active participation of all stakeholders in the program by adopting the desired waste management practices such as segregation and reduction through reuse, recycling and composting. This is based on the premise that an informed constituency is the key to public acceptance.

SWMD deemed it more effective to start with the children. Thus, CENRO in coordination will continue to coordinate with the DepEd to facilitate inclusion of solid waste management into the school curricula. Inculcating the importance of solid waste management into the young minds of the students will somehow bring the practice even in their own homes.

The Community Affairs and Information Division of CENRO will intensify its IEC efforts and will be complemented by putting in place an effective and efficient method of collection, transport storage and disposal.

Further, this will also be strengthened with the help of information materials around the barangay and households.

7.7.2 CORE MESSAGES

Generally the IEC materials that will be developed shall follow the fundamentals of the waste management hierarchy. These are as follows: source reduction and minimization of wastes generated at source; resource recovery, recycling and reuse of wastes at the barangay; efficient collection, proper transfer and transport of wastes by the City and; efficient management of residuals wastes.

Linkage to other partners such as but not limited to media groups, socio-civic organizations, POs, NGOs shall be established. To ensure the support of these groups in the IEC campaign, it shall be formalized through a Memorandum of Agreement (MOA) defining the roles of each agency/organizations involved. Regular feed backing and assessment will be conducted with the partners.

7.7.3 APPROACH

The first phase of the campaign will be the coordination with the DepEd. Series of meetings, trainings and lectures will be conducted. Champions will also be identified among the teachers and students. At the same time, the same method will be applied to barangay officials as well as city officials. The barangay officials shall be requested to influence their constituents to practice waste segregation and management.

Specifically, to ensure participation of the general public for integrated solutions for waste management, the City shall implement the following IEC projects:

- Household with best SWM practice (Brgy. level contest)
- Barangay with best SWM practice (City-wide contest)
- Barangay with the highest percentage household compliance on waste segregation contest (City-wide)
- Well organized barangay in the implementation of SWM contest (City-wide)
- Cleanest and Greenest Barangay Contest (City-wide)
- Poster Making Contest on SWM and environmental concern (City-wide)

Advertisements through tri-media will be done in the conduct of the contests.

For the educational program to be successful, the City shall develop different ways to sustain the program in order to encourage, draw and sustain interest among the people. The following strategies shall be provided:

- For TV, Film clips demonstration on waste management. The City shall allocate annual funds for the payment of airtime in the showing of the demo system. The film clips will show the benefits in practicing ecological waste management system in terms of money, health and cleanliness of the surrounding and love of nature.
- For the proposal to include in the school curricula. The City thru the Board and SWAESO shall formulate a subject module on waste management. This will be indorsed to the Department of Education for the inclusion of the same as one subject or sub-subject to the primary and secondary school.
- For movie advertisement on waste management. The movie ads on proper waste management will be shown in all movie houses in the City as intermission to regular movies. The City shall allocate annual funds for the production and showing of the movie advertisement on waste management.
- For billboard advertisement. The billboards to be installed will be large enough to catch the attention of the general public and to be placed in strategic places.

7.8 MARKET DEVELOPMENT

The 16 barangays spread over two (2) districts of the City have established recycling activities but only those with available areas for a composting facility and collection system will process biodegradable wastes. These facilities are potential economic enterprises that shall generate revenues and help sustain the operation of the solid waste management program.

The following are the levels of marketing:

Street trading. Door to door practice of buying of recyclables from the households done by pushcart traders. Prices of recyclables are cheap in this level.

Junkshops/buyback centers – junkshop trading usually involves the trading of recyclables between the pushcart traders and the junkshop owners. In this level, the prices of recyclables are higher compared to street trading. Push cart traders earn as much as 80-100% of their revolving capital.

Junk warehouses – The third level of trading wherein recyclables are bought in huge quantities. Usually the clients here are big junkshop traders.

Recycling plants – Most recycling plants buy recyclables usually in bulk and on a regular basis from storage.

Through a program to standardize junkshops, the City hopes to integrate the operations of junkshops to the City's SWM Program. This would ensure proper monitoring and documentation of the materials being traded between the households and the junkshops.

With regards to biodegradable waste, small to medium-scale marketing of compost is only possible in barangays with highly-intricate composting equipment. The City will help in identifying market for the compost produced by the barangays.

VIII. Implementation Strategy

8.1 FRAMEWORK

The ten year solid waste management plan covers all sectors and addresses problems especially in the implementation of environmental laws. The thrust of the plan is waste reduction/diversion through recycling and composting activities in the Barangay level. Waste reduction and diversion will be focused on the residential areas because they contribute the bulk of the solid waste generated by the City. The City shall require all barangays or cluster of barangays to set up their own MRFs. Waste Management Committees shall also be formed and activated in every barangay. The Committee may form Cooperatives for the program to be self-sustaining. Incentives and awards program shall also be part of the approaches to encourage stakeholders particularly the barangays for the effective implementation of the Solid Waste Management.

8.2 DIVERSION PROJECTIONS

The City has already complied with the minimum diversion requirement of 33% of the total accumulated waste. For the next ten (10) years, the SWAESO will see to it that barangays and in the City will conform with the targets set in this Plan including its implementation. If the segregation at source will be fully implemented, even the targeted diversion will be surpassed.

The following quantity of waste will be diverted within 2014 to 2023 through re-use, recycling and composting activities.

Table 25. Diversion Projections

Year	Daily Waste Generation (ton)	Target Diversion	
		%	Volume (ton)
2014	565	33	186

2015	582	35	204
2016	599	37	222
2017	617	40	247
2018	635	42	267
2019	653	45	294
2020	672	48	323
2021	692	51	353
2022	711	54	384
2023	730	57	416

8.3 MONITORING PROGRAM

The following monitoring programs shall be implemented to ensure that all the projects and activities are being implemented in accordance with this Plan:

❖ Regular Board Meeting of the City Solid Waste Management Board

The Board shall convene once a month to discuss the implementation and development of the solid waste management plan. The board must see to it that all the projects and activities are implemented as scheduled. A monitoring chart of activities will be devised which will serve as a guide for the implementation of the plan.

❖ Monitoring of the MRF Projects in the Barangay

All the MRFs will be monitored by SWAESO at least once a month to ensure that the implementation is sustained. A monitoring form will be devised to keep track of the system especially the data of the waste diverted thru recycling and composting activities.

❖ **Monitoring of the Waste Segregation Compliance by the Stakeholders**

In connection with the IEC programs, surveys will be conducted in all sectors to monitor the compliance of the stakeholders with regards to the segregation and storage of wastes. A survey form will be devised for the purpose. Information and data that will be gathered thru these surveys will serve as the basis for future planning and operation.

❖ **Monitoring of the Collection and Transport of Wastes**

The monitoring of the collection and transport of waste will be in accordance with the existing monitoring activities being undertaken by the City. However, the present system can still be improved to cope with the developments in solid waste management as a whole.

Monitoring forms to be devised by SWAESO shall be distributed to the individual trucks at each collection period and has to be signed by the Barangay Captain of the area being collected. This form has to be certified by the barangay captain that proper waste collection was conducted.

To further ensure that proper collection of waste by the private haulers is being done, area monitors on motorcycles will be deployed to check if the area covered by the collection is clean and garbage –free. Penalties are charged against the Contractors if the area is found to be dirty and/or uncollected of garbage.

❖ **Monitoring of the Quantity of Waste Collected**

For an accurate monitoring of the quantity of waste, the City will provide a weigh bridge which will be used to weigh the amount of waste collected by each truck

before the processing of waste will take place. The system will enable the City to acquire an accurate baseline data on the quantity of waste in a given period. The system will also provide information of the waste generation of each sector or source of the collected waste. The data will be added in the work assignment ticket for easy monitoring.

❖ **Monitoring of Processed Wastes**

The barangay shall be required to submit to the board and to SWAESO a regular monitoring report which shall contain the following information:

- Quantity of raw biodegradable waste
- Quantity of compost produced
- Quantity of recyclable materials per classification
- Sales of recyclable materials and compost
- Quantity of residual wastes
- Operational Expenses

❖ **Monitoring of the Disposal of Waste and of the Disposal Facility**

A weigh bridge at the disposal site will be a requirement in choosing a disposal facility, to quantify the amount of waste disposed. The person in-charge of the disposal facility shall be required to submit to the Board and to the SWAESO a regular monitoring report which shall contain the following information:

- Quantity of incoming waste to the facility
- Existing conditions of the facility
- Basic recording data

8.4 ALTERNATIVE ANALYSIS

The City will consider other options for the diversion of waste materials from disposal other than the MRF. In case the turn-out of the waste diversion in the MRF will be low or when the amount of disposal will be very expensive, other systems and technologies will be adopted such as:

- Pyrolysis
- Plasma Conversion Technology
- Autoclave (for health care wastes)
- Sterilization (for health care wastes)
- Waste to Energy System
- Other technologies which could be used to properly process biodegradable, recyclable and residual wastes which may either be developed by the private sector or the government through the Department Of Science and Technology (DOST).

Technologies that will be utilized shall be in conformity to the ESWM Plan.

8.5 INCENTIVE PROGRAMS

To further encourage the implementation of the law and ordinances on ESWM, the City will be devising incentive programs for the barangays or households, commercial establishments, academe and other stakeholders that implement segregation at source and segregated collection.

IX. Institutional Aspect

9.1 ROLES

9.1.1 ESWM BOARD

The City Solid Waste Management Board(CSWM Board) - The Board shall convene as a body and shall be tasked with the following duties and responsibilities:

- a) Update the City Solid Waste Management Plan that shall ensure the long-term management of solid waste, as well as integrate the various solid waste management plans and strategies of the barangays in their respective area of jurisdiction;
- b) Develop the specific mechanics and guidelines for the implementation of the City Solid Waste Management Plan;
- c) Adopt and implement revenue-generating measures to ensure the sustainability of the City Solid Waste Management Plan;
- d) Adopt measures to promote and ensure viability and sustainability on effective implementation of solid waste management programs;
- e) Provide the necessary logistical and operational support to the Barangays/Agencies/Departments that shall undertake activities/programs to promote the implementation and enforcement of the City Laws and Ordinances in consonance/compliance with RA 9003;
- f) Monitor the implementation of the City Solid Waste Management Plan through the collective effort of the Board members in coordination with the private sector and NGOs;

- g) Recommend measures and safeguards against pollution and for the Preservation of the natural eco-system;
- h) Review/recommend specific measures or proposals for franchise on build-operate transfer agreements with duly recognized institutions, pursuant to R.A. 6957, to provide either exclusive or non-exclusive authority for the collection, transfer, storage, processing, recycling or disposal of municipal solid waste. The proposals shall take into consideration appropriate government rules and regulations on contracts, franchises and build-operate transfer agreement;
- i) Convene regular meetings for planning purposes relative to the implementation of the Solid Waste Management Plan of the component barangays and the City;
- j) Review every two (2) years or as the need arises the City Solid Waste Management Plan for purposes of ensuring its sustainability, viability, effectiveness and relevance in relation to local and international developments in the field of ecological waste management.

9.1.2 BARANGAY SOLID WASTE MANAGEMENT COMMITTEES

The City shall intensify its efforts to oblige all its barangays to organize/activate its Barangay Solid Waste Management Committee. The said Barangay SWM Committee shall be composed of the barangay captain as chair with the following as members: One (1) kagawad, SK chair, president of Home Owners Association, Public/private school principals or representatives, one (1) parents and teachers association president or representative, one (1) religious organization representative, one (1) business sector representative, one (1) environmental NGO representative, president of market vendors association, and a representative from the junkshop owner's association.

The Barangay Solid Waste Management Committee shall have the following functions and responsibilities:

- Update the ESWM program consistent with the updated City Solid Waste Management Plan;
- Segregate and collect biodegradable, compostable, reusable waste;
- Manage/operate Materials Recovery Facility;
- Allocate barangay funds and look for sources of funds;
- Organize core coordinators;
- Submit SWM monthly reports

9.1.3 CIVIL SOCIETY/NON-GOVERNMENT/PRIVATE SECTOR ORGANIZATIONS

NGO's and other civic organizations are expected to support and participate in SWM activities of the City.

Business establishments are expected to comply with existing rules and regulations of the City on solid waste management. Further solid waste management related agreements can be done with the City

Public and private schools are also expected to abide by the Ecological Solid Waste Management Act of 2000 by the introduction of school-based SWM program and the integration of ecological solid waste management in its curriculum.

9.1.4 NATIONAL AGENCIES

Coordination with the following national agencies shall be strengthened:

- The Department of Environment and Natural Resources (DENR) shall be tapped for technical assistance in the conduct of studies, site evaluation, establishment of MRFs and other related activities;
- The Department of Trade and Industry (DTI) for information on potential markets for recyclables;

- The Department of Agriculture (DA) for assistance in the promotion of compost and fertilizers produced in MRFs;
- The Department of Science and Technology (DOST) for information and technical assistance on recycling and composting technologies and training on waste material processing/livelihood projects;
- Department of Education (DepEd) for the integration of SWM topics in the curriculum of related subjects and the integration of school-based programs.

9.2 LEGAL

The City of Parañaque and the CSWMB together with the SWAESO will impose the penalty provisions specified in the Implementing Rules and Regulations of RA 9003 such as:

- Section 48. Prohibited Acts
- Section 49. Fines and Penalties
- Section 50. Administrative sanctions
- Chapter VII. Miscellaneous Provisions

City Ordinances concerning environmental protection and waste management will be enacted to conform to the provisions of RA 9003 and amended to conform to present situation/needs in order that the City be compliant to the law.

As such, the following prohibited Acts with corresponding fines and penalties as stipulated in the RA 9003 shall be considered:

Table 26. Prohibited Acts

<p>SPECIFIC VIOLATIONS (under Section 49 of the Act)</p>	<p>FINES</p>	<p>PENALTIES</p>
<p>Paragraph 1. Littering, throwing, dumping of waste matters in public places, such as roads, sidewalks, canals, esteros or parks, and establishment, or causing or permitting the same</p>	<p>Payment in the amounts not less than Three hundred pesos (P300.000) but not more than One thousand pesos (P1,000.00) <u>or</u></p>	<p>Rendering of community service for not less than one (1) day to not more than fifteen (15) days to an LGU where such prohibited acts are committed <u>or both</u></p>
<p>Para 2. Undertaking activities or operating, collecting or transporting equipment in violation of sanitation operation and other requirements or permits set forth in or established pursuant to the Act</p> <p>Para 3. The open burning of solid waste</p>	<p>Payment in the amounts not less than Three hundred pesos (P300.000) but not more than One thousand pesos (P1,000.00) <u>or</u></p>	<p>Imprisonment of not less than one (1) day to not more than fifteen (15) days <u>or both</u></p>

SPECIFIC VIOLATIONS (under Section 49 of the Act)	FINES	PENALTIES
<p>Para 4. Causing or permitting the collection of non-segregated or unsorted waste</p> <p>Para 5. Squatting in open dumps and landfills</p> <p>Para 6. Open dumping, burying of biodegradable or non-biodegradable materials in flood-prone areas</p> <p>Para 7. Unauthorized removal of recyclable material intended for collection by authorized persons</p>	<p>Payment in the amounts not less than One thousand pesos (P1,000.00) but not more than Three thousand pesos (P3,000.00) <u>or</u></p>	<p>Imprisonment of not less than fifteen (15) days to not more than six (6) months <u>or both</u></p>
<p>Para 8. The mixing of source-separated recyclable material with other solid waste in any vehicle, box, container or receptacle used in solid waste collection or disposal</p> <p>Para 9. Establishment or operation of open dumps as enjoined in the Act, or closure of said dumps in violation of Sec. 37 of the Act</p> <p>Para 10. The manufacture, distribution or use of non-</p>	<p>For the first time, shall pay a fine of Five hundred thousand pesos (P500,000.00) plus an amount not less than five percent (5%) but not more than ten percent (10%) of his net annual income during the previous year</p>	<p>The additional penalty of imprisonment of a minimum period of one (1) year, but not to exceed three (3) years at the discretion of the court, shall be imposed for second or subsequent violations of Sec. 48 of the Act, paragraphs (9) and (10)</p>

SPECIFIC VIOLATIONS (under Section 49 of the Act)	FINES	PENALTIES
<p>environmentally acceptable packaging materials</p> <p>Para 11. Importation of consumer products packaged in non-environmentally acceptable materials</p>		
<p>Para 12. Importation of toxic wastes misrepresented as “recyclable” or “with recyclable content”</p> <p>Para 13. Transport and dumping in bulk of collected domestic, industrial, commercial and institutional wastes in areas other than centers of facilities prescribed under the Act</p>	<p>Payment in the amounts not less than Ten thousand pesos (P10,000.00) but not more than Two hundred thousand pesos (P200,000.00) <u>or</u></p>	<p>Imprisonment of not less than thirty (30) days but not more than three (3) years, <u>or both</u></p>
<p>Para 14. Site preparation, construction, expansion or operation of waste management facilities without an Environmental Compliance Certificate required pursuant to Presidential Decree No. 1586 and the Act and not conforming with the Comprehensive Land Use Plan of the LGU</p> <p>Para 15. The construction of any establishment within two</p>	<p>Payment in the amounts not less than One hundred thousand pesos (P100,000.00) but not more than One million pesos (P1,000,000.00) <u>or</u></p>	<p>Imprisonment of not less than one (1) year but not more than six (6) years, <u>or both</u></p>

SPECIFIC VIOLATIONS (under Section 49 of the Act)	FINES	PENALTIES
<p>hundred (200) meters from open dump or controlled dumps or sanitary landfills</p> <p>Para 16. The construction or operation of landfills or any waste disposal facility on any aquifer, groundwater reservoir or watershed area and/or any portion thereof.</p>		

X. Social and Environmental Aspects

10.1 SOCIAL ASPECTS

One of the greatest setbacks in the implementation of projects on solid waste management especially in the establishment of MRFs is the acceptability aspect of the project by the general public. This is due to the fact that solid wastes, particularly biodegradable wastes emanates odor while it is being processed. The public's clamor on the health concern is always given importance and priority over the SWM system being implemented.

It is in this light that the project site for the establishment of any solid waste facility should be located in a remote area far from human communities especially for large scale infrastructures like transfer stations and sanitary landfills.

10.1.1 ACCEPTABILITY OF PLAN PROPOSALS

Solid waste management projects for the community draw both positive and negative impacts from the residents. This depends on the system to be implemented, the attitudes and characteristics of the people living in the community and the quality of leaders implementing the system.

Several barangays have adopted and practiced ecological solid waste management like segregation, recycling and composting. Some barangays have done it on their own initiative, while others were given technical and financial assistance by the City. Some were successful and some were not. The success and failure depends on the three factors mentioned above.

10.1.2 WASTE PICKERS

The informal waste sector is defined as individuals, families, groups or small enterprises engaged in the recovery of waste materials with revenue generation as the motivation either on a full-time or part-time basis. They are classified as: itinerant waste buyers, jumpers at collection trucks, garbage crew, waste reclaimers and small and illegal junkshops.

In support to the National Framework Plan for the Informal Sector in Solid Waste Management, the City shall be guided by the four interventions that is based on the systems approach: Scheinberg, et. al. (2006) as cited by Wilson (2007)

1. Supporting waste reclaimers to enter new service roles and niches in separate collection and recycling;
2. Assuring waste reclaimers access to sorting space at transfer stations, controlled and sanitary landfills;
3. Supporting better market leverage and/or diversification of activities through cooperatives and associations; and
4. Opening channels of communication with formal stakeholders and decision-makers into the planning process.

Table 27. The Following Proposed Interventions and Strategies shall be implemented in the City if applicable:

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
Supporting waste reclaimers to enter new service roles and niches in separate collection, recycling and composting;	<ul style="list-style-type: none"> • Conduct entrepreneurship trainings for livelihood options • Provide skills training on value adding strategies/low cost technologies in waste recovery and recycling and composting • Facilitate linkages of informal sector and recycling cooperatives to professionals with expertise in product design • Organize job fairs for the informal sector • Facilitate scholarship programs or access to alternative learning system programs • Conduct health and occupational safety seminars for the informal waste sector • Intensify the dissemination on the importance of protective equipment and apparel 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues) • NGAs (TESDA, DTI, CDA, DOST-ITDI, DOLE) • NGOs
Assuring structural access to sorting space at transfer stations, materials recovery facilities, composting facilities and sanitary landfills;	<ul style="list-style-type: none"> • Integrate the informal waste sector in the transfer stations and materials recovery facilities of LGUs • Tapping of informal waste sector in commercial scale composting projects 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues) • Private companies
Supporting better market leverage and/or diversification of activities through	<ul style="list-style-type: none"> • Organize informal waste sector into associations or cooperatives • Formulate of National 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues) • NGAs (DENR-NSWMC,

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
cooperatives and associations	<p>Guidelines on transfer and transport of recyclable materials to avoid harassment of transporters of recyclable materials and facilitate efficient movement of materials</p> <ul style="list-style-type: none"> • Provide business incentives for junkshops/consolidators • Link the informal waste sector to microfinance institutions • Provide market support such as price information and monitoring 	<p>DTI, DILG, PIA, Cooperative Dev. Authority)</p> <ul style="list-style-type: none"> • National Legislators (Senate and Congress) • Media
Opening channels of communication with formal stakeholders and decision-makers and into the planning process.	<ul style="list-style-type: none"> • Formulate National Guidelines on the accreditation/integration of informal waste sector in the SWM system • Include an informal sector waste management plan in the Ten Year Strategic SWM Plan and Yearly Action Plans of LGUs • Conduct Capacity Building activities for LGUs on integrating the informal waste sector in their SWM Planning Process • Include the informal waste sector in the planning and monitoring of SWM systems through its associations or cooperatives 	<ul style="list-style-type: none"> • Informal waste sector • LGUs (including the Leagues); SWM boards • NGAs (DSWD, TESDA, DepED, DILG, UDHA, NHA, PIA) • Media
Improving the work conditions through the implementation of	<ul style="list-style-type: none"> • Formulate Code of Practice for materials recovery facilities and Junkshops that 	<ul style="list-style-type: none"> • NSWMC • DOLE • LGUs

Proposed Interventions	Proposed Strategies	Critical Actors & Partners
environmental and occupational safety practices and systems	ensures environmental and occupational safety <ul style="list-style-type: none"> • Conduct occupational safety seminars for the informal waste sector • Adhere strictly to the enforcement of Child Labor Law 	

10.2 ENVIRONMENTAL ASPECTS

In the implementation of this ten-year plan, all the necessary measures and requirements to protect the environment shall be taken into consideration especially in the processing and disposal of solid waste. Solid wastes create pollution and become a nuisance to the general public and the environment if not properly managed. Therefore, its effect to the environment and human being has to be controlled and remedied.

In the performance of the solid waste management system, each element from generation to final disposal has to be properly handled. The following requirements and measures in handling solid wastes will be considered:

On waste generation – Everyone should practice waste management. The City's IEC plan includes advisory to the public to reduce and avoid waste and to do the following measures as a consumer:

- ❖ Avoid over-packaged goods.
- ❖ Avoid disposable goods and other throwaways
- ❖ Buy food in bulk. Patronize products with refillable contents.
- ❖ Compost yard or garden wastes. Do not burn it for smoke only contributes to air pollution.
- ❖ Patronize recycled and recyclable goods.

- ❖ Patronize community “curbside” recycling programs.
 - ❖ Eliminate household toxic wastes from the garbage stream.
 - ❖ Patronize products that are made from renewable, rather than non-renewable resources.
-
- ✚ On on-site storage – Waste must be stored properly prior to collection.

 - ✚ On Collection and transport – RA 9003 provides for the proper collection of solid wastes and the required equipment for its collection.

 - ✚ On Processing and recovery – These shall include the establishment of materials recovery facilities and transfer stations.

 - ✚ On Final Disposal – The disposal site's maintenance plan must consider the following: functional rainwater diversion, gas collection system, leachate treatment, and soil covering.

XI. Cost Estimates / Financial Aspects

11.1 INVESTMENT COST

Section 10 of the Ecological Solid Waste Management Act of 2000 specifically stipulates that the local government units have the primary responsibility to provide solid waste management services. Local governments must rely on a variety of financial resources to fund the services. A mixture of resources may be used for financing the various components of waste management system such as collection, transfer, resource recovery and residual waste management.

The City's Solid Waste Management Plan may include capital investments on alternative technologies to reduce waste.

11.2 FUNDING OPTIONS

Financial arrangements and investments to effect the implementation of the 10-year solid waste management plan are sought, taking into account potential funds from banks and other financing institutions who are investing on environmental concerns. In as much as there is a need to augment funds to finance the program of the SWM, it is envisioned that the income generated from fees in managing the waste should be break-even or should even reach a level that it will become sustainable.

Congressional funds could also be sourced for the solid waste management projects of the city.

XII. Plan Implementation

12.1 Proposed City Materials Recovery Facilities (MRF) Project

The city MRF shall augment the lack of capability of some barangays to build and operate an MRF. The city plans to build MRFs for both Districts I & II. These MRFs shall support barangay SWM activities and will be the central processing area for mass composting, recycling and development of livelihood crafts to produce products using waste as raw materials. Various type of wastes otherwise disposed in the garbage mainstream can thus be eliminated and be processed and/or utilized in developing beneficial livelihood products.

These MRF shall also function as a training center for solid waste management and shall showcase the environmental plans and programs of the city government. As a venue for the conduct of seminars and on site trainings, transfer of information and technology to all barangays, homeowners' associations and institutional establishments can be easily learn and replicated to concerned barangays.

The city MRF for District I will be located in a 1,500 square meter government property and funded with 15 Million Pesos for the construction of a building and purchase of equipments and targeted for construction in 2015.

12.2 Information Education Communication Campaign

The City plans to intensify its information campaign citywide under its continuing program under the newly created CENRO department. A Community Relations and Information Office was formed as a division of CENRO and will be tasked to perform liaisons to all barangays, residential, schools, commercial and business establishments and other entities. This division shall also conduct seminars and lectures on environmental concerns. Solid Waste Management shall be a priority topic considering that wastes are the number one cause of pollution and remains a problem particularly at informal settlements especially those bordering along waterways.

Under this permanent program a lot of issues and concerns can be tackled and improve waste disposal and management at all sector levels. Awareness on SWM practices can be achieved through this campaign necessary for strict enforcement of RA 9003. Several teams in different barangays was created composed of Community Relations Officers and was tasked to assess total environment conditions of every community visited. Homeowners' associations (HOAs) shall be assisted to organize Solid Waste Management Systems and monitor its implementation and help achieve targeted compliance ratings. A yearly budget shall be earmarked to fund seminars, information dissemination activities including publication of info materials and production of visual aids.

Under the CENRO ordinance, a Community Relations and Information Division was created to principally conduct IEC on CENRO programs on environment protection and management by which among others shall focus on solid waste management and compliance with RA 9003. Sixteen barangays for both District I and II are targeted for the saturation drive. An Information team was already formed as of December 2014 and is currently conducting regularly IECs on four barangays in District II and extend the campaign to the rest of D-II barangays. By 2015 another set of teams shall be organized for District I to conduct the same assignment.

With these two District Teams, an intensified information campaign can be launched simultaneously reaching a majority of the population and SWM compliance can be monitored regularly.

12.3 Cooperatives for Waste Recovery Project

This project was envisioned to provide income opportunity for out of school youths and residents from marginal areas of Parañaque City. Targeting 16 barangays and providing a citywide system to collect recyclable materials. The sale proceeds shall be the source of funds to benefit these EcoAides and receive membership dividends and other earnings. Livelihood Cooperatives shall be formed in all barangays and members shall be trained on waste management and accredited as members to enjoy its benefits.

A cooperative federation among these barangay cooperatives shall be organized to provide assistance and assurance of better prices of recyclable materials through a system of consolidation and direct selling to manufacturers. Members or EcoAides shall be recruited from the 16 barangays. EcoAides shall be provided pushcarts which shall be supplied for their use in this project. A budget for the fabrication of pushcarts was already incorporated in the 2015 CENRO plans and programs to fund this activity. This cooperative shall be arm of the city MRF in the collection and recovery of recoverable wastes.

This project aims to improve recovery of recyclables and increase the volume of segregation of wastes at barangay level. Recovery of more recyclable wastes can be achieved and create widespread awareness among residential areas. A more accurate report on the volume of recovered items can be easily recorded and improve data on Waste Diversion.

12.4 Junkshop Integration Program

RA 9003 calls for every barangays to build its MRF however, Parañaque City being a highly urbanized city, causes some barangays to comply with this requirement for lack

of a suitable site to construct a MRF. We recommended that a Materials Recovery System (MRS) be formulated within a barangay in order to develop a separate collection of wastes and by establishing an existing junkshop to function as their processing area (Barangay MRF) for waste recovered through waste segregation and collection.

The program shall be guided by a Memorandum of Agreement (MOA) between a barangay and junkshop chosen for the project. Under this program waste segregation can be optimized and guarantee implementation compliance with the provisions of law as well as monitoring through submission of sales report can determine the level of efficiency of a barangay.

12.5 Environmental Police Units

The creation of CENRO can help enforce the campaign for an effective waste disposal in the City of Parañaque. Under this department the deployment of Environmental Police Units locally named as Bantay Kalikasan, shall be responsible for enforcing the laws, ordinances and policies on solid waste management. This group shall police violators and provide monitoring, maintenance of orderliness.

Created under Ordinance No. 06-13 Series 2006 and shall be integrated within the define functions of CENRO, Bantay Kalikasan aims principally to deal with improper waste disposal and dumping of wastes and littering on our streets, vacant lands and waterways like creeks, rivers and the Manila Bay coastal waters. They shall help police cleanliness and shall prescribed fines and penalties for their apprehensions thereby instill order and improve SWM implementation and sanitation citywide.

The Bantay Kalikasan units shall be deployed on the second quarter of 2015. Trainings were conducted on November 4, 5 & 6, 2014 and final training for Apprehending Officers shall be given during the first quarter of 2015.

12.6 WASTE TO ENERGY & POWER PLANT PROJECT

A local company plans to invest a plant in Parañaque City. They plan to construct a Power Plant capable of using wastes as fuel. They shall build on 3.5 hectares of land in Parañaque City. Their proposal ultimately shall absorb about 400 tons of wastes collected daily by the city and that instead of disposing into a sanitary landfill in Rodriguez, Rizal, waste will be process on site to produce energy power. They claim that their machinery is pollution free and have passed Government Standards abroad which they vouched are way within acceptable Philippine standards. With a heating capacity of 1,200 – 1,700 Degrees Centigrade using pyrolysis technology which assures a much higher rate of lesser chemical or toxic particulates emitting the environment.

12.7 PHASES AND RESPONSIBILITIES

The implementation of this plan will be divided into three (3) phases:

Phase 1 (Year 1-Year 3)

- + Year 1 -Strengthen the City SWM Board so that it will be a Working Committee through holding of regular meetings.
- + Year 2 - Strengthen SWM operations of barangays.
Capacity Development Program for Barangay Councils

to improve MRF/MRS Operations - 2015

- + Year 2 -New Disposal site scouting and conduct of studies for alternative technologies - 2014

Proposed Waste to Energy Project

Construction period will commence in the middle of year 2016 shall be within eighteen months and target date of completion on the 3rdquarter of year 2017.

- + Implement IECs January 2014 - December 2023
Creation of Community Relations and Information Division - 2014

Fielding of Information Officers- 2014 – 2023

- + Improve Segregated Collection & Waste Recovery Program
Establishment of SWM Cooperatives to improve waste recovery through barangay cooperatives.

Barangay Cooperative Formation

- A. Recruitment and accreditation of cooperative members
March – May 2015
- B. Training and deployment of EcoAides/members June 2015 –
- C. Creation of Cooperative SWM Federation October 2016
- D. Junkshop Integration Program – Second quarter of 2015
- E. Construction of City MRF District I - 2015
Construction of City MRF District II- 2016

- ✚ Modification/adjustment of collection areas
- ✚ Strict implementation of "No segregation No collection "policy on Littering, waste Transport and Disposal
 - A. Creation and deployment of Environmental Police – January 2015
- ✚ Proper documentation of waste volume
- ✚ Continuous use of a sanitary landfill outside of the city

Phase 2 (Year 4 – Year 6)

- ✚ Processing of incentive claims on waste reduction initiatives
- ✚ Implement alternative disposal for domestic and special wastes
- ✚ Implementation of identified alternative technologies

Phase 3 (Year 7 – Year 10)

- ✚ Re-evaluation of alternative technologies
- ✚ Updating of the 10-year plan

12.8 MILESTONES

The following are the highlights of the plan's implementation:

- The Board is the decision making body in the implementation of the City's Solid Waste Management Plan. Hence, they will review and decide its final context.
- Specific plans and projects that need the approval of the general public shall be subjected to public hearings.
- Financing capital investments for the City's Solid Waste Management Projects shall be identified as soon as the Board approves the plan.
- Massive IECs using tri-media

References

City of Parañaque Socio-Economic Profile, 2014

National Census and Statistics, 2007

Metro Manila Council. *MMDA Regulation No. 96-009:*

Prohibiting Littering/Dumping/Throwing of Garbage, Rubbish or Any Kind of Waste in Open or Public Places, and Requiring All Owner's, Lessees, Occupants of Residential, Commercial Establishments, Whether Private or Public to Clean and Maintain the Cleanliness of Their Frontage and Immediate Surroundings and Providing Penalties for Violation Thereof. Makati City: August 22, 1996.

"Solid Waste Management in the Philippines." *Water and Sanitation Forum*. Vol. 2 Issue No. 2 1997.

Beede, David and D. E. Bloom. "Economics of the Generation and Management of Municipal Solid Waste." 1995 (Internet).

Metro Manila Council. *MMDA Regulation No. 99-004: Regulation*

Governing Proper Refuse Management at Source in Metro Manila Area and for Other Purposes. Makati City: February 25, 1999.

Metro Manila Development Authority & Japan International "Cooperation Agency. SWM Study for Metro Manila Concludes."

Metro Manila Solid Waste Management Bulletin. Vol. 1 No. 7 January 1999.

Quiñones, Nelia C. "Updates on Municipal Solid Waste Management in the Philippines: It's Implication on National R & D Agenda." *Canopy International*. Vol. 24 (1-6) January-February

- Ordinance No. 14-25

