



COMPREHENSIVE LAND USE PLAN 2017-2032

MANDALEÑO DISIPLINADO

GAWA HINDI SALITA

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COMPREHENSIVE LAND USE PLANNING TEAM**

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MANDALUYONG CITY
Comprehensive Land Use Plan
2017 - 2032





Republic of the Philippines
City of Mandaluyong
Office of the Mayor

MESSAGE

The formulation of the **Comprehensive Land Use Plan for 2017-2032** is another success in the pursuance of our drive to better serve our constituents. Development and progress in various forms, are the gauge of efficiency and effectiveness in governance. Like the Land Use Plan, it serves as the backbone of development in every city.

Parallel to the expertise William I. Goodman once shared, that the direction we are taking while crafting the comprehensive plan for land use, must effectively address essential requirements of time element and sustainability. The plan must cover the general populace with focus on physical development and must relate on physical design proposals to community goals and socio-economic policies.

Such policies must be directed and geared to uplift the lives of each and every constituent without compromising the preservation, protection and enhancement of the natural environment. Such and among other developments must encourage investments and competitiveness in opportunities conducive for life and business as well.

The Mandaluyong Comprehensive Land Use Plan is at tone with precision and relevance. Its significance is magnified by its huge purpose with critical considerations on local policy directions, fast paced development, digital advancements, global standards, including the effects of climate change and the environment. It is worthy to note that the classification of Mandaluyong City as a highly urbanized city, raised the intensification categories of its land uses.

Allow me to embrace the honor of commending the people behind this plan which will serve as our guiding emblem for future economic and social growth of the Tiger City and will further put governance and public service on its efficient and excellent tempo.

Our resiliency and courage will always be at the edifice of progress as we strive to be a true and genuine **"Mandaleño Disiplinado."**


CARMELITA A. ABALOS
City Mayor



Republic of the Philippines
City of Mandaluyong
Office of the Vice Mayor

The Comprehensive Land Use Plan (2017-2032) of the City of Mandaluyong is another milestone accomplishment of the Executive and Legislative Departments of the City, amending in particular the Comprehensive Development Plan (1995-2020) of Mandaluyong in compliance with the Local Government Code (RA 7160), as well as the mandates of the Climate Change Act of 2009 and Philippine Disaster Risk Reduction and Management Act of 2010.

As clearly stated in the Scope and Coverage of this plan, it "shall cover the entire 1,126 hectares of land space in Mandaluyong City, its natural waterways composed of two rivers and six creeks, and its air space. The four general land use policy areas such as Settlement, Production, Infrastructure, and Open Space and Preservation are the central focus of the plan, mainstreaming disaster preparedness and the risk reduction strategies wherever is practical."

This will result in the modernization of the urban services and facilities to compete globally. Being one of the fast-rising urban city not only in Metro Manila, it is being looked upon by other highly urbanized cities in the manner of its development, not to mention as the most business friendly city, thus, this updated plan with consultations from various stakeholders, will strengthen its importance on the types of land use which are in demand.

I certainly hope that every Mandaleno will support the implementation of this plan.


ANTONIO DS. SUVA
Vice Mayor



THE CITY OF MANDALUYONG LOGO

The **TWENTY SEVEN STARS** around the logo represent the total number of barangays in the city;

The figure of the **DOVE** is exactly the design of the arch that adorns the southern entrance to the City Hall Complex. The dove traditionally symbolizes freedom and peace. The people of Mandaluyong like the rest of the Filipinos are freedom and peace-loving people;

The **WAVE** that runs across the logo refers to the legendary Pasig River in whose crystal blue waters the Mandaluyong folk used to wash clothes, bathe and catch fish. The same blue lines also connote the “many waves” that rolled over this settlement by the Pasig hundreds of years ago. From the word MADALUYONG (which means many waves), the name MANDALUYONG had been coined;

The **FIGURES OF FACTORIES AND TALL BUILDINGS** signify industrial growth – the transformation of Mandaluyong from a vast agricultural land of long ago to a highly industrial and commercial estate. This element also symbolizes growth of this First Class municipality into a still developing city that it is today;

The **SUN** as an integral part of the logo symbolizes the main source of vigor and vitality of the city residents;

The **MULTITUDE UNDER THE GIANT DOVE** signify the courage and bravery of the many sons and daughters of Mandaluyong who participated in the bloody revolution of 1896 and the bloodless people power revolution of 1986. Many soldier sons of Mandaluyong had also met gallant deaths during the 2nd World War;

The **LAUREL LEAVES** represent the achievements and successes that the citizens of Mandaluyong have always strived for the greater honor and glory of their city.



MANDALUYONG CITY OFFICIALS



CARMELITA A. ABALOS
City Mayor



ANTHONY DL. SUVA
Vice Mayor and Presiding Officer
Chairman: Special Projects & Activities and Tourism; Youth and Sports Development

DISTRICT I COUNCILORS



CHARISSE MARIE ABALOS-VARGAS
Chairman: Trade, Commerce & Industry, and Appropriations and Ways & Means



AYLA ALIM-BALDUEZA
Chairman: Laws, Rules and Human Rights



GRACE MARIE V. ANTONIO
Chairman: Women & Children, Family Relations and Social Services



LUISITO E. ESPINOSA
Chairman: Peace and Order, Public Safety and Fire Protection



RODOLFO M. POSADAS
Chairman: Landed Estates



BRANDO P. DOMINGUEZ
Chairman: Labor Employment, Civil Service & Manpower Development

DISTRICT II COUNCILORS



ALEXANDER C. STA. MARIA
Chairman: Health, Sanitation and Public Welfare



FRANCISCO O. ESTEBAN
Chairman: Education, Arts and Culture



JESUS C. CRUZ
Chairman: Transportation, Communication and Telecommunication Services



ROEHL B. BACAR
Chairman: Public Works, Games and Amusements



CHERRY LYNN PABLO-SANTOS
Chairman: Environmental Protection & Technology and Urban Planning



FERNANDO S. OCAMPO
Chairman: Livelihood & Cooperatives and Marginalized Sectors

**Office of the President
Housing and Urban Development Coordinating Council
HOUSING AND LAND USE REGULATORY BOARD**

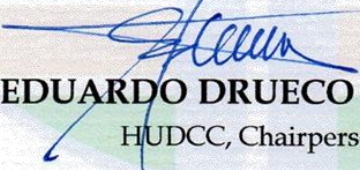
CERTIFICATE OF APPROVAL

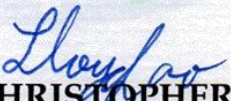
This is to certify that

**THE MANDALUYONG CITY
COMPREHENSIVE LAND USE PLAN
2017-2032**

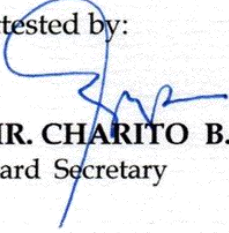
*is approved by this Board under
Resolution No. 958 S.2017
dated 27 November 2017*

*Given this 27th day of November 2017 at the
Housing and Land Use Regulatory Board
Quezon City*


HON. EDUARDO DRUECO DEL ROSARIO
HUDCC, Chairperson


HON. LLOYD CHRISTOPHER A. LAO
Chief Executive Officer and Commissioner, HLURB

Attested by:


DIR. CHARITO B. LANSANG
Board Secretary



REPUBLIKA NG PILIPINAS
TANGGAPAN NG PANGULO
Pangasiwaan Sa Pagpapaunlad Ng Kalakhang Maynila
(Metropolitan Manila Development Authority)

METRO MANILA COUNCIL

MMDA Resolution No. 17-11
Series of 2017

**FAVORABLY ENDORSING TO THE HOUSING AND LAND USE REGULATORY BOARD
(HLURB) FOR RATIFICATION THE MANDALUYONG CITY COMPREHENSIVE LAND USE
PLAN AND ZONING ORDINANCE (CLUP AND ZO) 2017-2032**

WHEREAS, Comprehensive Land Use Planning is a constitutionally-supported undertaking-- the State declares its land use policies and principles in terms of relations to national economy and patrimony as well as its police power for the promotion of public health, public safety, public interest, public order and general welfare;

WHEREAS, Section 20 (c) of Republic Act No. 7160 (Local Government Code of 1991) states that the "local government units shall, in conformity with existing laws, continue to prepare their respective Comprehensive Land Use Plans enacted through zoning ordinances which shall be the primary and dominant bases for the future use of the land resources";

WHEREAS, Executive Order No. 72, dated March 23, 2003, was issued providing for the preparation and implementation of the CLUP by the local government units and for the review and approval thereof by the HLURB and the Sangguniang Panlalawigan -- Section 1 (c) of the said EO provides that the "cities and municipalities of Metro Manila shall continue to formulate or update their respective land use plans , in conformity with the land use planning and zoning standards and guidelines prescribed by HLURB";

WHEREAS, Mandaluyong City has completed the formulation of its Comprehensive Land Use Plan and Zoning Ordinance (CLUP and ZO) 2017-2032;

WHEREAS, the Sangguniang Panlungsod of Mandaluyong City, through City Council Resolution No.2439, Series of 2017 and City Ordinance No. 664, Series of 2017, both dated 25 May 2017, has approved the Mandaluyong City Comprehensive Land Use Plan and Zoning Ordinance (CLUP and ZO) 2017-2032 respectively;

WHEREAS, the Mandaluyong City Comprehensive Land Use Plan and Zoning Ordinance (CLUP and ZO) 2017-2032 have been properly subjected to public hearings;

WHEREAS, the said CLUP and ZO serve as effective mechanisms to attain the development goals and objectives of Mandaluyong City by guiding its people in their collective and sustainable use of scarce resources to ensure a better quality of life and an improved living environment;

WHEREAS, Section 6 (e) of the Implementing Rules and Regulations (IRR) of Republic Act No. 7924 (MMDA Charter) in relation to Section 7 (a) thereof mandates the Metropolitan Manila Development Authority (MMDA) to perform planning, monitoring, coordinating and implementing functions where appropriate, and in the process, exercise regulatory and supervisory authority over the delivery of metro-wide services within Metro Manila area, and in conformity with the national government policies without diminution of the autonomy of the local government concerning purely local matters which include: formulate, coordinate and regulate the implementation of plans and programs for urban renewal, zoning, and land use planning which include the formulation, adoption and implementation of policies, standards, rules and regulations, programs and projects to rationalize and optimize urban land use within Metropolitan Manila;

WHEREAS, Section 15 of the IRR of RA 7924, states that "Cities and municipalities shall prepare their respective land use plans and zoning ordinances and submit the same for review and integration by the Authority and indorsement to HLURB in accordance with Executive Order No. 72 and other pertinent laws. In the preparation of a Metropolitan Manila Physical Framework Plan and regulations, the Authority shall coordinate with the Housing and Urban Development Coordinating Council (HUDCC), HLURB, the National Housing Authority, Intramuros Administration and all other agencies of the national government which are concerned with land use and zoning, urban renewal and shelter services";

WHEREAS, the Mandaluyong City Comprehensive Land Use Plan and Zoning Ordinance (CLUP and ZO) 2017-2032 have been technically reviewed by the MMDA and HLURB;

NOW, THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, pursuant to Section 6 and Section 7 of Republic Act No. 7924, the Council in Session duly assembled, hereby favorably endorses for ratification to the HLURB the Mandaluyong City Comprehensive Land Use Plan and Zoning Ordinance (CLUP and ZO) 2017-2032.

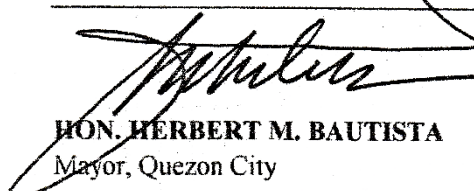
This Resolution shall take effect upon approval.

APPROVED this 23 August 2017, in Makati City, Metro Manila, Philippines.


DANILO DELAPUZ LIM
Chairman


HON. CARMELITA A. ABALOS
Mayor, Mandaluyong City


HON. IMELDA A. AGUILAR
Mayor, Las Piñas City



HON. HERBERT M. BAUTISTA
Mayor, Quezon City



HON. ANTONINO G. CALIXTO
Mayor, Pasay City



HON. MAR-LEN ABIGAIL B. CAMPOS
Mayor, Makati City



HON. MA. LILIANA CAYETANO
Mayor, Taguig City

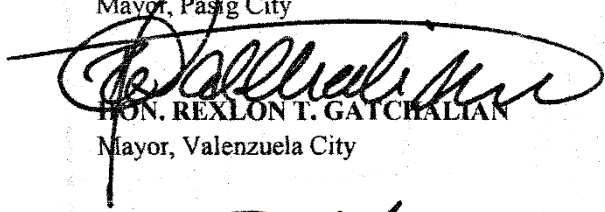


HON. JOSEPH E. ESTRADA
Mayor, City of Manila

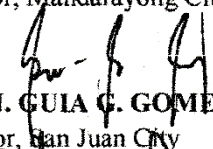
HON. ROBERT C. EUSEBIO
Mayor, Pasig City



HON. JAIME R. FRESNEDI
Mayor, Mandaluyong City



HON. REXLON T. GATCHALIAN
Mayor, Valenzuela City



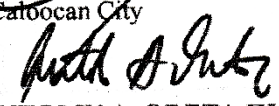
HON. GUIA C. GOMEZ
Mayor, San Juan City




HON. OSCAR G. MELAPITAN
Mayor, Caloocan City



HON. EDWIN L. OLIVAREZ
Mayor, Parañaque City



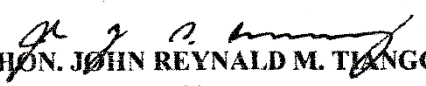
HON. ANTOLIN A. ORETA III
Mayor, Malabon City



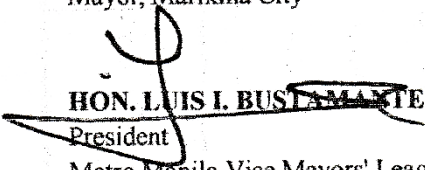
HON. MIGUEL F. PONCE III
Mayor, Municipality of Pateros




HON. MARCELINO R. TEODORO
Mayor, Marikina City



HON. JOHN REYNALD M. TINGCO
Mayor, Navotas City



HON. LUIS I. BUSTAMANTE
President
Metro Manila Vice Mayors' League



HON. CAROLYN C. CUNANAN
President, Metro Manila Councilors' League



Republic of the Philippines
SANGGUNIANG PANLUNGSOD
City of Mandaluyong

RESOLUTION NO. 2439, S-2017

RESOLUTION ADOPTING THE COMPREHENSIVE LAND USE PLAN (2017-2032) FOR THE CITY OF MANDALUYONG SUBJECT TO THE REVIEW AND ENDORSEMENT BY THE METRO MANILA DEVELOPMENT AUTHORITY TO THE HOUSING AND LAND USE REGULATORY BOARD (HLURB) FOR FINAL REVIEW AND APPROVAL

WHEREAS, the Comprehensive Land Use Plan (CLUP) is mandatorily required by the Metro Manila Development Authority (MMDA) to all Local Government Units for its necessary review and thereafter endorsement to the Housing and Land Use Regulatory Board (HLURB) for its final review and approval;

WHEREAS, submitted to the Sangguniang Panlungsod by the City Planning and Development Department, through Executive Secretary MR. VICTOR E. VICTORIA as per 1st Endorsement dated April 17, 2017, was the proposed Comprehensive Land Use Plan (2017-2032) for the City of Mandaluyong, for appropriate action;

WHEREAS, prior to the submission of the proposed Comprehensive Land Use Plan (CLUP) to the Sangguniang Panlungsod, the City Planning and Development Department has already conducted a painstaking and thorough review of the said Plan and has considered the comments and recommendations of the various stakeholders and sectors of the community during the consultation meetings;

WHEREAS, the Sangguniang Panlungsod, through the Committee on Environmental Protection and Urban Planning, to which the matter was referred, has conducted a thorough study and careful deliberation on the matter and found out that the same was crafted pursuant to the provision of the Local Government Code of 1991 (R.A. No. 7160) and finds the subject Plan in order after its final evaluation;

WHEREAS, the review and approval of the Housing and Land Use Regulatory Board will give effectivity and validity to the proposed Comprehensive Land Use Plan enacted by the Sanggunian.

NOW, THEREFORE, on motion duly seconded, the Sangguniang Panlungsod of Mandaluyong, in session assembled, RESOLVED, as it hereby RESOLVES, to adopt the Comprehensive Land Use Plan (2017-2032) for the City of Mandaluyong subject to the review and endorsement by the Metro Manila Development Authority to the Housing and Land Use Regulatory Board (HLURB) for final review and approval.

ADOPTED on this 25th day of May, 2017 in the City of Mandaluyong.

I HEREBY CERTIFY THAT THE FOREGOING RESOLUTION WAS ADOPTED AND APPROVED BY THE SANGGUNIANG PANLUNGSOD OF MANDALUYONG IN A SPECIAL SESSION HELD ON THE DATE AND PLACE FIRST ABOVE GIVEN.

ATTESTED BY:

ANTONIO DLS. SUVA
Vice Mayor &
Presiding Officer

APPROVED:

MA. TERESA S. MIRANDA
Sanggunian Secretary

CARMELITA A. ABALOS
City Mayor


Date: JUN 02 2017

Resolution No. 2439, S-2017

RESOLUTION ADOPTING THE COMPREHENSIVE LAND USE PLAN (2017-2032)
FOR THE CITY OF MANDALUYONG SUBJECT TO THE REVIEW AND ENDORSEMENT
BY THE METRO MANILA DEVELOPMENT AUTHORITY TO THE HOUSING AND
LAND USE REGULATORY BOARD (HLURB) FOR FINAL REVIEW AND APPROVAL

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CHARISSE MARIE A. VARGAS
Councilor


ALEXANDER C. STA. MARIA
Councilor

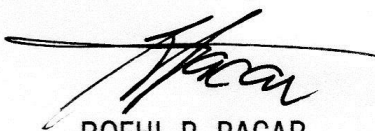

AYLA A. BALDUEZA
Councilor


FRANCISCO O. ESTEBAN
Councilor


GRACE MARIE V. ANTONIO
Councilor

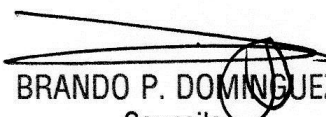

JESUS C. CRUZ
Councilor


LUISITO E. ESPINOSA
Councilor

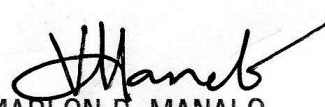

ROEHL B. BACAR
Councilor


RODOLFO M. POSADAS
Councilor


CHERRY LYNN P. SANTOS
Councilor


BRANDO P. DOMINGUEZ
Councilor


FERNANDO S. OCAMPO
Councilor


MARLON R. MANALO
LnB President

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I. INTRODUCTION

A. RATIONALE

For more than two decades since its adoption in 2001, the Comprehensive Development Plan 1995-2020 of Mandaluyong which embodies the Land Use Plan has served as the backbone of development in the city. Policy recommendations were directed towards uplifting the socio-economic wellbeing of the people, the preservation and enhancement of the natural environment, and the development of infrastructure support to encourage investments and boost competitiveness of the city as a safe and ideal place to live in and do business.

Although the Plan remains valid and in-force, fast-paced development, global technological trends and the devastating effects of Climate Change bring new challenges to re-engineer the city's physical set-up and review local policy directions. In view of these, revising the Land Use Plan is deemed appropriate. Also, it is timely for compliance to the mandates of Republic Act 9279 (Climate Change Act of 2009) and Republic Act 10121 (Philippine Disaster Risk Reduction and Management Act of 2010) on mainstreaming disaster preparedness and risk reduction to local development planning.

B. HISTORICAL TRENDS IN LAND USE

Mandaluyong used to be a forestal agricultural town with rolling terrain, vast grasslands and marshland. As road networks developed in Metro Manila, - then Greater Manila Area – connecting Mandaluyong to its neighboring localities, so did Mandaluyong with its agricultural lands transforming into urban activities such as commerce and industry as well as modern residential subdivisions.

Urbanization gradually began halfway through the 20th Century with the construction of Sevilla Bridge connecting to Manila, and EDSA, then called Highway 54, as well as the improvement of Shaw Blvd. Very few open spaces remained by late 1980's as industrial sites, commercial strips and residential subdivisions developed. By 1990, Mandaluyong was about 39.35% residential, 7.88% Commercial, 12.92% industrial, 9.50% institutional, and 30.29% open space (a combination of parks, road networks, cemetery, vacant). Now centrally located in the major transport network in Metropolitan Manila, Mandaluyong suddenly becomes an ideal location for large business and commercial establishments of global standards. This led to commercialization of land strips along prominent roads such as Ortigas Ave., Martinez, San Francisco, Sgt. Bumatay, Barangka Drive and Pioneer Streets.

Classification of Mandaluyong into a highly urbanized city in 1994 led to further intensification of land uses. While residential use remains the dominant use in the city, commercialization is in full swing that even residential and institutional structures manifest mix uses.

Planned development of the area bounded by Shaw Blvd., Mandaluyong-Pasig boundary, the Pasig River, and EDSA from a Medium Intensity Industrial Zone into a Central Business District came about in 1997 as the city's response to major redevelopment projects in prime areas in the Metropolis. Expansion of Ortigas Center and development of Fort Bonifacio CBD have the most considerable influence as these areas are in the immediate vicinity of the Mandaluyong CBD. Gradual dispersal of industries from this area to areas outside Metro Manila was manifested by the rise of towering structures such as the Pioneer Highlands, City Square Pioneer, the Legend Hotel, restaurants, furniture shops and other commercial and residential establishments.

At the turn of the century, commercial activities originally confined to strips along prominent roads appeared in random with institutions and industrial activities, within large expanse of residential areas.

With the approval of the Comprehensive Development and Land Use Plan of the city by the Housing and Land Use Regulatory Board on April 16, 2001, the city was able to regulate development through the Land Use Plan and its implementing mechanism, City Zoning Ordinance No. 238, s-2000.

The physical transformation of the city during the last two decades is summarized in Table 1.01 below.

Table 1.01. COMPARATIVE REPORT ON LAND USE

| Land Use Classification | Actual Land Use (in Has.) | | | | |
|-------------------------|---------------------------|----------|----------|----------|----------|
| | 1990 | 1995 | 2001 | 2006 | 2011 |
| Residential | 443.07 | 457.05 | 415.50 | 420.36 | 444.78 |
| Commercial | 88.76 | 132.77 | 197.44 | 222.50 | 231.63 |
| Industrial | 145.50 | 123.30 | 59.95 | 38.19 | 12.05 |
| Institutional | 106.94 | 92.68 | 80.72 | 78.66 | 75.04 |
| Open Spaces | 341.73 | 320.20 | 372.39 | 366.29 | 362.50 |
| TOTAL | 1,126.00 | 1,126.00 | 1,126.00 | 1,126.00 | 1,126.00 |

The city continues to evolve as more investors pour in. Industrial spaces are being transformed into corporate towers and high rise office-residential condominiums that now define the city's skyline. To keep up with the vertical trends and effectively manage the demand for space and the anticipated impact on the environment, the City Council adopted Zoning Ordinance No. 475, s-2011 on August 31, 2011 with special provisions on Development Charges that allow for optimum land use but with corresponding private sector share on public infrastructure support and environmental protection.

Land use survey done in 2016 further confirmed the continuously evolving physical character of the city. Table 1.02 shows a comparative land use allocation for Ordinances Nos. 238, s-2000 and 475, s-2011 vis-à-vis the actual land use as surveyed in 2016. Map representations of variances between land use allocation per Ordinance 475, s-2011 and the actual land use in 2016 are shown in *Maps 1.01, 1.02, and 1.03*.

Table 1.02 TARGET LAND USE ALLOCATION (2000 AND 2011) and ACTUAL LAND USE 2016

| Land Use Classification | Year 2000 (has.) | % | Year 2011 (has.) | % | Year 2016 (has.) |
|---------------------------------------------------------------------------|---------------------|-------------|---------------------|-------------|---------------------|
| Residential | 487.63 | 43.32 | 492.78 | 43.78 | 439.05 |
| Socialized Housing | 2.77 | 0.25 | 3.74 | 0.33 | |
| Commercial | 221.92 | 19.71 | 255.24 | 20.58 | 243.12 |
| Mixed Development | - | | - | | |
| Industrial | 19.84 | 1.76 | - | | 5.00 |
| Institutional | 35.04 | 3.11 | 35.04 | 3.11 | 77.95 |
| Others (Vacant, Roads, Parks & Playgrounds, River, Cemetery & URA) | 358.49 | 31.85 | 338.89 | 32.5 | 360.88 |
| TOTAL | 1,125.69 | 100% | 1,125.69 | 100% | 1,126 |

C. SCOPE AND COVERAGE

The Comprehensive Land Use Plan shall cover the entire 1,126 hectares of land space in Mandaluyong City, its natural waterways composed of two rivers and 6 creeks¹, and its air space. The four general land use policy areas such as Settlement, Production, Infrastructure, and Open Space and Preservation are the central focus of the plan, mainstreaming disaster preparedness and risk reduction strategies wherever is practical.

D. METHODOLOGIES

The whole planning process followed a Timeline (*See Appendix A*) approved by the Local Development Council to ensure structured approach to the project and facilitate monitoring of specific timelines and target accomplishments.

¹ Mandaluyong has Pasig and San Juan Rivers as common boundaries with adjacent cities, and creeks such as Maytunas, Maysilo, Buhangin, Ermitaño, Buayang Bato, and Mayon that serve as natural drainage

Pre-planning phase involved organizational meetings, updating of the city ecological profile and actual land use survey to ensure that database is comprehensive and up-to-date. Technical briefings on how the project will proceed and the required inputs that have to be sourced were given to various local offices and departments as well as the barangay officials to enlist their support and cooperation to make the situational analysis and program identification more comprehensive and inclusive. Ocular visits in target areas and focused group discussions with the barangays on the problems of blighted areas and other urban development issues were also conducted. A simple tool that featured guide questions was used to facilitate discussion and recording of data provided.

A series of orientation-workshops followed which focused on climate change and vulnerability analysis, and Visioning and Goal setting to ensure responsiveness of the Land Use Plan and support programs, projects and activities to the 2030 Agenda for Sustainable Development and as mandated by Republic Act 9279 and Republic Act 10121.

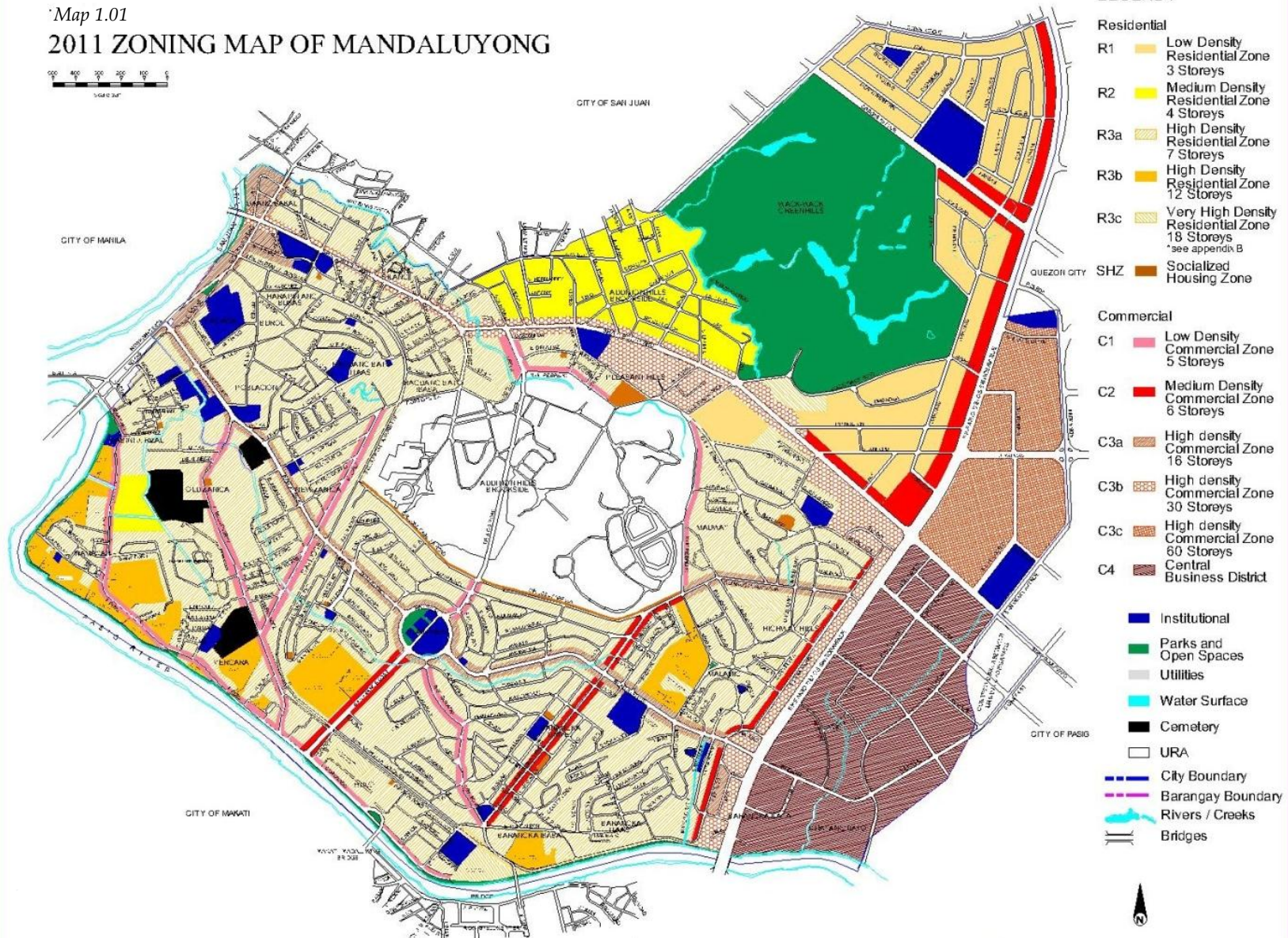
The resulting Vision Statement and sectoral goals, objectives and targets were then presented before the City Council and the offices and agencies involved for review and refinement. Adoption of the Vision Statement, sectoral goals, objectives and targets by the City Council through the Executive-Legislative Agenda 2017-2019 facilitated transition of activity to the main planning phase.

The technical aspect of formulating the structure plan was facilitated by availability of thematic maps, approved City Medium-term Development Plan 2014-2016 and the updated Local Development Investment Program 2016-2019 as well as proposals from private sector developers that strengthened impression on the types of land use in demand. The plan takes into consideration common appeals for variances from certain zoning provisions made by proponents before the Local Zoning Board of Adjustment and Appeals. Simultaneously, Zoning Ordinance No. 475, s-2011 was reviewed and new zoning regulations were identified to ensure that policy recommendations in the proposed land use plan are appropriately addressed.

A 4-day consultation with various stakeholders that followed provided confirmation and additional inputs on the desired pattern and intensity of land use for the next 15 years or so.

Map 1.01

2011 ZONING MAP OF MANDALUYONG



LEGEND :

Residential

- R1 Low Density Residential Zone 3 Storeys
- R2 Medium Density Residential Zone 4 Storeys
- R3a High Density Residential Zone 7 Storeys
- R3b High Density Residential Zone 12 Storeys
- R3c Very High Density Residential Zone 18 Storeys *see appendix B
- SHZ Socialized Housing Zone

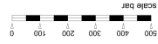
Commercial

- C1 Low Density Commercial Zone 5 Storeys
- C2 Medium Density Commercial Zone 6 Storeys
- C3a High density Commercial Zone 16 Storeys
- C3b High density Commercial Zone 30 Storeys
- C3c High density Commercial Zone 60 Storeys
- C4 Central Business District

- Institutional
- Parks and Open Spaces
- Utilities
- Water Surface
- Cemetery
- URA
- City Boundary
- Barangay Boundary
- Rivers / Creeks
- Bridges

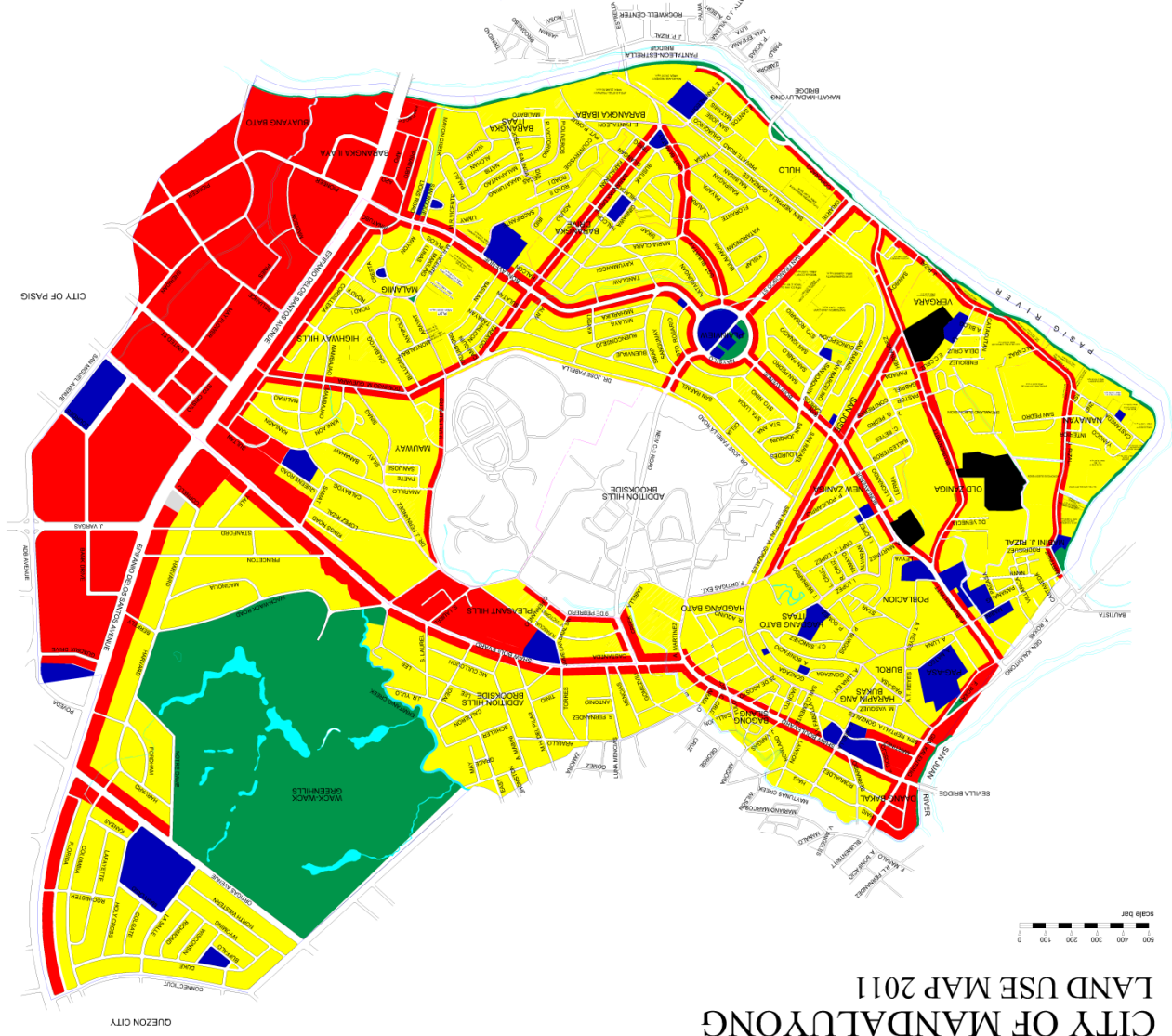


Map 1.02
CITY OF MANDALUYONG
LAND USE MAP 2011



LEGEND :

- Residential
- Commercial
- Institutional
- Water Surface
- Parks and Open Spaces
- Cemetery
- Utilities
- URA
- City Boundary
- Rivers / Creeks
- Bridges



Map 1.03

CITY OF MANDALUYONG 2016 ACTUAL LAND USE MAP

Map 1.03

LEGEND :

- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- INSTITUTIONAL
- PARKS & PLAY GROUNDS
- RIVERS / CREEKS
- CEMETERY
- UTILITY
- VACANT / IDLE PROPERTY

LEGEND :

- District Boundary
- City Boundary
- Barangay Boundary
- Rivers / Creeks
- Bridges

RESIDENTIAL
COMMERCIAL
INDUSTRIAL
INSTITUTIONAL
PARKS & PLAY GROUNDS
RIVERS / CREEKS
CEMETERY
UTILITY
VACANT / IDLE PROPERTY

District Boundary 

City Boundary 

Barangay Boundary 

Rivers / Creeks 

Bridges 

II. THE STUDY AREA

A. GENERAL OVERVIEW OF THE CITY²

1. Location

Mandaluyong City lies at the heart of Metro Manila, the 18th largest metropolitan area in the world. Being surrounded by highly-urbanized cities, business centers and service institutions (*Figure 2.0*) makes Mandaluyong an ideal place to live in and do business in. Being at the cross-roads of major transportation network such as EDSA, Shaw Blvd., Ortigas Avenue, and the Metro Rail Transit System with three stations in the city, travel time even to the farthest ends of Metro Manila is less than an hour, even less going to and from the Ninoy Aquino International Airport. Sitting on a bedrock foundation and rolling terrain gently sloping up from spot heights along Pasig River at 3.0 meters from sea level, Mandaluyong City can support heavy structures and is not prone to heavy floods and liquefaction. Climate is generally normal with the hottest temperature recorded at 36.50 °C (May 2009).



Figure 2.0 NCR Locator Map

2. Population

The latest official population count is 386,276 (NSO 2015 Census) which, during daytime swells up to about 1.5 million. Between 2010 and 2015, its population grew at an annual rate of 3.12 as compared to the growth rate of 1.67 between 2000 and 2010. Using this growth rate, the city household population for 2016 is projected at 398,328.

² For a more comprehensive description of the city, a copy of the Mandaluyong City Ecological Profile 2015 can be availed in e-copy at the City Planning and Development Department, also downloadable from the city website www.mandaluyong.gov.ph.

With a total land area of 1,126 hectares, Mandaluyong has an urban density of 354 persons per hectare (*Table 2.01*). Owing to the large variation in barangay land areas, pockets of informal settlements, commercial district and clusters of industrial establishments, barangay population densities range from 32 PPH in Barangay Wack-Wack to 1,787 PPH in Barangay San Jose, a strip of land formerly occupied by the Philippine National Railroad.

Table 2.01: PROJECTED POPULATION DENSITY BY BARANGAY: 2016

| BARANGAY | 2015 NSO Population Census | PROJECTED 2016 POPULATION | LAND AREA (Hectares) | POPULATION DENSITY (PPHa) |
|-------------------------|----------------------------------|---------------------------------|-------------------------|---------------------------------|
| Addition Hills | 99,058 | 102,149 | 120.36 | 849 |
| Bagong Silang | 5,572 | 5,746 | 13.84 | 415 |
| Barangka Drive | 13,310 | 13,725 | 21.96 | 625 |
| Barangka Ibaba | 9,540 | 9,838 | 15.43 | 638 |
| Barangka Ilaya | 17,896 | 18,454 | 44.00 | 419 |
| Barangka Itaas | 11,252 | 11,603 | 17.42 | 666 |
| Burol | 2,740 | 2,825 | 9.69 | 292 |
| Buayang Bato | 1,782 | 1,838 | 2.16 | 851 |
| Daang Bakal | 3,660 | 3,774 | 16.74 | 225 |
| Hagdang Bato Itaas | 10,314 | 10,636 | 17.12 | 621 |
| Hagdang Bato Libis | 6,962 | 7,179 | 13.83 | 519 |
| Harapin ang Bukas | 4,496 | 4,636 | 4.89 | 948 |
| Highway Hills | 28,703 | 29,599 | 116.12 | 255 |
| Hulo | 27,515 | 28,373 | 30.31 | 936 |
| Mabini-J. Rizal | 7,628 | 7,866 | 18.03 | 436 |
| Malamig | 12,667 | 13,062 | 31.65 | 413 |
| Mauway | 29,103 | 30,011 | 70.41 | 426 |
| Namayan | 6,123 | 6,314 | 28.85 | 219 |
| New Zaniga | 7,534 | 7,769 | 20.45 | 380 |
| Old Zaniga | 7,013 | 7,232 | 38.53 | 188 |
| Pag-asa | 4,053 | 4,179 | 12.95 | 323 |
| Plainview | 26,575 | 27,404 | 108.88 | 252 |
| Pleasant Hills | 5,910 | 6,094 | 21.03 | 290 |
| Poblacion | 14,733 | 15,193 | 21.78 | 698 |
| San Jose | 7,262 | 7,489 | 4.19 | 1,787 |
| Vergara | 5,910 | 6,094 | 16.74 | 364 |
| Wack-Wack Greenhills | 8,965 | 9,245 | 288.50 | 32 |
| | | | | |
| Total | | 398,328 | 1,125.86 | 354 |
| | | | ≈ 1,126 | |

Source: City Planning and Development Department

3. Economic Structure

Being a highly urbanized city with no more land left for agriculture, the most dominant economic activities are centered on commercial and service centers seconded by the industrial sector.

Major commercial strips of the city include the stretch of Boni Avenue, Shaw Boulevard, Libertad-Sierra Madre area, Kalentong, San Francisco, part of Martinez, Sgt. Bumatay towards Barangka Drive and Pinatubo towards EDSA. The city's Central Business District on the eastern portion of the city is concentrated in the EDSA-Shaw-Pasig Boundary – Pasig River Quadrangle. North of the CBD is a high density commercial area comprising of establishments such as the Megamall, Shangri-La, Podium and the San Miguel Corporation headquarters. Industrial activities are mostly concentrated within the CBD and along Pasig River. Although prominent in the manufacture of foods, medicines and laboratory equipment, these industries are gradually declining in number, opting to relocate in newly-developed industrial zones outside the Metropolitan Manila.

It is expected that the city development plan which provides business incentives and higher commercial density will attract more investors in the years to come. This is slowly being realized with the upsurge of investments especially in the development of the EDSA-Pioneer area into a major economic zone that could generate income and propel further growth and development in the entire city. Likewise, support services such as fast- food establishments, internet service providers, ICT Centers as well as financial institutions now proliferate in the city.

4. Infrastructure

As a result and in support of development, investments on physical projects have become among the priorities of the city government. Very visible is the improvement in road networks which, through the years, have undergone regular maintenance including repavement, rehabilitation of sidewalks and drainage facilities, center islands and streetlights. At present, the city is served with a total of 80.933 km of concrete and asphalt paved roads (excluding subdivision roads) giving off a total road density of 7.19 km/100 hectares of land, way above the standard ratio of 1 km/100 Ha for Metro Manila, making Mandaluyong City actually over-served with roads. Different transport modes are public utility jeepneys, tricycles and pedicabs, private cars and the rail transit system. Of these, the most popular is the jeepney, considering the income class of majority of the commuters and its economic advantage over the car in relatively short distances within and outside the city's periphery.

The city is fully served with water and power supply by the Manila Water and Manila Electric Company (MERALCO), respectively. Major players in the telecommunication industry are the Philippine Long Distance Telephone Company and Globe Telecom,



followed by Digitel, Bayantel, and Islacom. Cable television and internet connections are easy to obtain while access to internet services are readily available in computer centers, internet cafés and shopping malls most of which have WIFI connections to serve the needs of businessmen, students, and the net enthusiasts who are always on the go. The advent of call center services has put the City of Mandaluyong in the center stage of Information Communication Technology arena. To meet the demand for call center agents, seven schools have put up training centers which include the RTU – a State University located along Boni Avenue. The number of business proponents applying for a Sanggunian Resolution declaring their businesses as IT centers are increasing through the years.

Social support infrastructure include facilities for health, education, social welfare, housing, cultural activities and recreation. Hospital facilities comprise of one government and two private institutions. The Mandaluyong City Medical Center (MCMC) which is a 150-bed capacity government-owned hospital provides secondary level services while Dr. Victor R. Potenciano Medical Center and Unciano General Hospital are private owned and provide tertiary and secondary level services, respectively. A government-owned Children's Hospital and Maternity Clinic which is an extension of the Mandaluyong City Medical Center is located in Barangay Addition Hills.

At the barangay level, 27 public health centers, 3 lying-in clinics and 1 Social Hygiene clinic provide preventive health care. Private clinics with services varying from dental, pediatrics and obstetrics-gynecology, to MRI-CT scan services are scattered in the city.

For education, there are 18 public elementary schools and 11 public high schools in the city with a total of 697 and 405 academic classrooms, respectively. Ten (10) public high schools have K-12 ready facilities. Pre-school education is provided in all 18 Public Elementary Schools, while alternative learning system is supported by all schools. Special Education for the Disabled (SPED) is provided in 5 public elementary schools and 2 public high schools. Pre-school to tertiary level education are also provided by a number of private schools that include Jose Rizal University, Don Bosco Technical College, De La Salle University and Rizal Technological University which is a State University. Early childhood development needs of children 0-4 years old are provided in 52 day care centers scattered in different barangays in the city.

Housing is of varying degrees, from high end subdivisions, lease-to-own residential condominiums, private apartments and studio-type units, bed space for transients, private single and semi-detached structures to government medium-rise housing (MRH) intended to address the problem on informal settlements. Under the Home for the Homeless and Land for the Landless Program, 10 MRHs have been constructed as of 2008 and are now occupied by 1,045 family beneficiaries of the housing program. Several landed estates have been awarded to beneficiaries including those along the old PNR segment traversing the city, while others were being negotiated for the Community Mortgage Program (CMP). Gawad

Kalinga Housing Projects which are row houses constructed through combined paid labor and sweat equity from the beneficiaries have benefited 729 families.

Tourists, business functions and other special functions can be properly accommodated in the city with the presence of Five - Star Hotels such as the EDSA Plaza Hotel and the Legend Villas and other first class accommodations.

For the socially-disadvantaged, majority of which are women and children in extremely difficult circumstances, there are 10 facilities operating in the city, 6 facilities owned by the government, and 4 facilities owned by non-government organizations.

Public safety and protection services are provided by the Bureau of Fire Protection and the Philippine National Police, both with headquarters within the City hall Compound. The BFP has 4 substations and the PNP has 5 community precincts, in strategic locations in the city. These facilities are augmented by barangay-owned fire prevention facilities with 17 fire trucks in total, and tanod outposts. Crime Solution Efficiency Rate for 2014 is reported at a monthly average of 69.04% with reported annual incidences of index crime and non-index crimes at 1696 and 1126, respectively.

5. Governance

The executive branch of Mandaluyong City Government operates through 27 departments under the Office of the Mayor, supported by special bodies as mandated in the 1991 Local Government Code, with the Local Development Council supported by technical working groups and special committees. The current organizational structure and staffing pattern consist of 6,141 permanent positions based on Ordinance No-545, S-2014, approved and enacted by the Sangguniang Panlungsod pursuant to Section 76 of RA7160 (1991 Local Government Code) and Memorandum Circular No. 19, S-1992 of the Civil Service Commission. As of 4th quarter 2016, the city government is powered by 2,941 employees, with employment status a combination of regular, contractual and casual (*Table 2.02*).

The City Council, on the other hand, serves as the legislative body and is composed of 12 elected councilors, 6 from each of the two political districts of the city, and one ex-officio member : The president of the Association of Barangay Captains. From 2010 to 2015 between the 8th and 9th Council, the Sangguniang Panlungsod was able to pass a total of 167 Ordinances in support of social, economic, and environmental development as well as strengthening the local administrative machinery.

Table 2.02 **MANPOWER COMPLEMENT
by Status of Employment:
as of Q4 2016**

| STATUS OF EMPLOYMENT | NO. OF EMPLOYEES 2016 |
|----------------------|--------------------------|
| Elected | 15 |
| Regular/Permanent | 1,119 |
| Contractual/ Medical | 197 |
| Casual High Rate | 212 |
| Casual (SG 1) | 1,398 |
| Total | 2,941 |

Source: Mandaluyong City HRMD

The Mandaluyong City Government utilizes 12 buildings for office functions, 8 buildings located within the City Hall Compound and 4 buildings in separate locations within the city. Other buildings within the City Hall compound are occupied by National Government satellite agencies, the Religious Sector, and for other purposes. The New Executive Building , or sometimes referred to as the Blue Building because of its blue glass façade and modular furnishings, has been the seat of City Government since its inauguration in July 2007. Simultaneous with the transfer to the new building, the City Hall is gradually building up the required technology that will improve both Internal Management and delivery of frontline services.

Computerization is now in its various stages of implementation with the end goal of linking inter-related systems on real property, business permits and engineering fees and others. At present, the computerization program links local regulatory offices such as the City Assessor's and Treasury Departments including the Tax Mapping Division and the Information Management System. This facilitates real property tax assessment and collection and thus helps improve revenue generation.

With the present set-up with which majority of the regulatory offices are housed in a single building, establishing a one-stop-shop is not far from being realized. To accommodate the bulk of taxpayers every January, the city implements Oplan Bilis Bayad from January 2 – 22 from 8:00 AM onwards including Saturdays and Sundays at the Blue Building utilizing for the purpose the ground floor atrium and second floor hallway. In this set-up even the 27 barangays have transaction spaces to facilitate completion of requirements for payment.

Add to this the present effort of the City Government to streamline business permits application processes, local tax payers and investors can now look forward to better and more efficient transaction services from the city.

The City Government continuously strives to excel in governance. As recognition of its efforts it received the 2015 (Figure 2.02) and 2016 Seal of Good Local Governance which qualified the city for a Performance Challenge Fund of five million pesos (₱5M) and three million four hundred thousand pesos (₱3.4M), respectively, the former utilized for the establishment of a computer laboratory in public schools, and the latter allocated for the procurement of a transportation equipment for the city hall.

B. VULNERABILITY TO GEOHAZARDS

1. Earthquakes

Mandaluyong sits on an adobe bedrock covered by a thin layer of soil and is classified as within a Very Low Risk area least likely to be affected by high intensity earthquakes (*Map 2.01 Foundation Engineering Map*).

The Risk Analysis Project (RAP) of the Philippine Institute of Volcanology and Seismology shows areas in Mandaluyong City likely to experience Intensity Low 8 to Intensity Low 9 of a Magnitude 7.2 earthquake (*Map 2.02*).

2. Typhoons

Typhoons during the wet season greatly affect the city and the rest of Metro Manila. Damage to property and risk of lives are among the major effects of typhoon. Secondary to these are flash floods that severely affect the lowland areas.

Maps 2.03 and 2.04 show areas in the city with risks of liquefaction and rain-induced landslide as identified by the READY FOR GMMA PROJECT.

3. Flooding

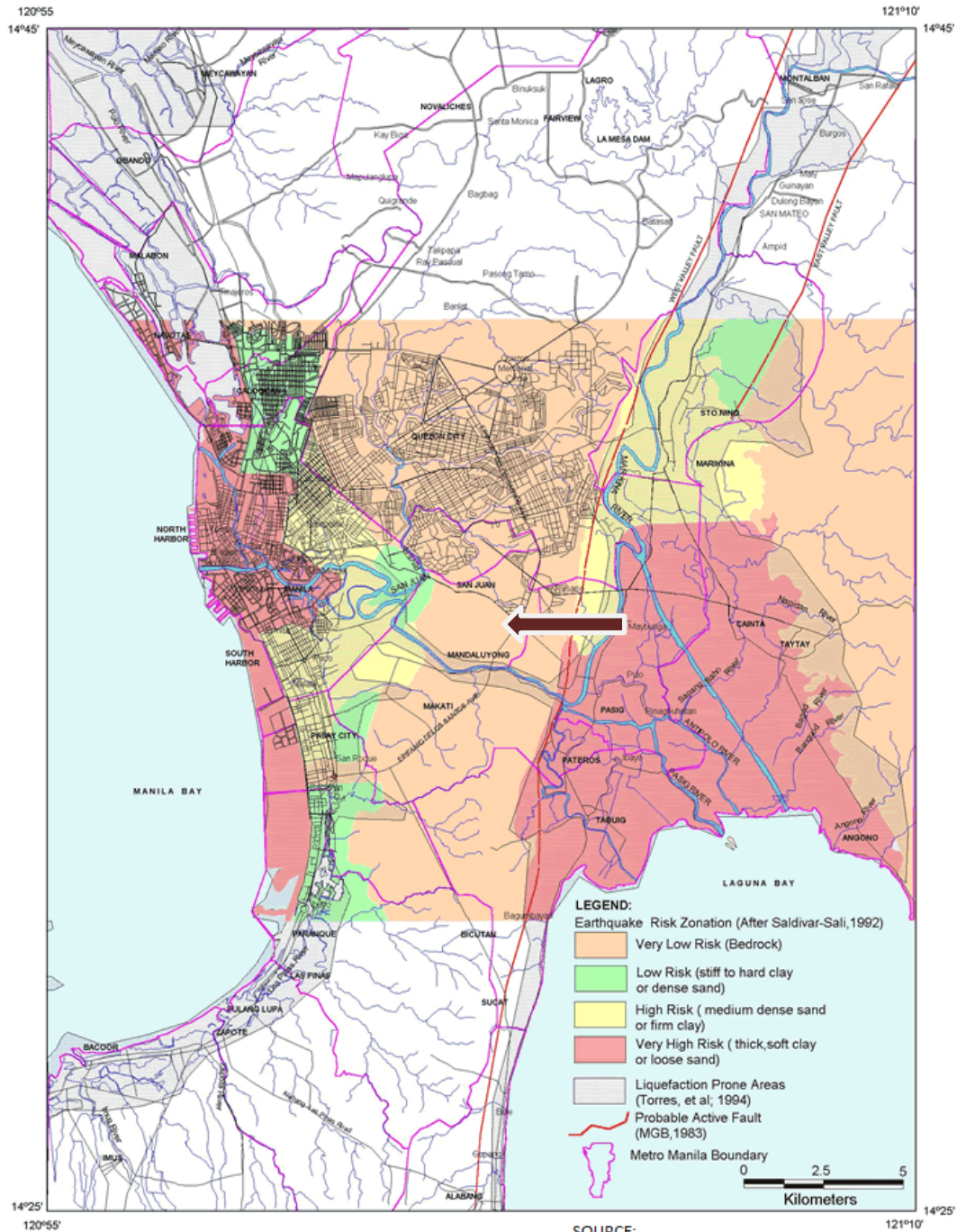
Flood prone areas in the city are generally those with lower elevation serving as catchment areas to the uplands. These areas are at random parts of the city given its natural topography where some points are even lower than the Pasig River shoreline, e.g., a spot height at Maysilo Circle fronting San Francisco Street is 2.0 meters while spot heights along Pasig



Figure 2.02 2015 SGLS Plaque received by the city and posted at the facade of the New Executive Building

River are at 3.0 meters. Streets near the creeks are mostly affected due to its point of Zero (0) slope where all the flow of water in the drainage is conveyed into creeks.

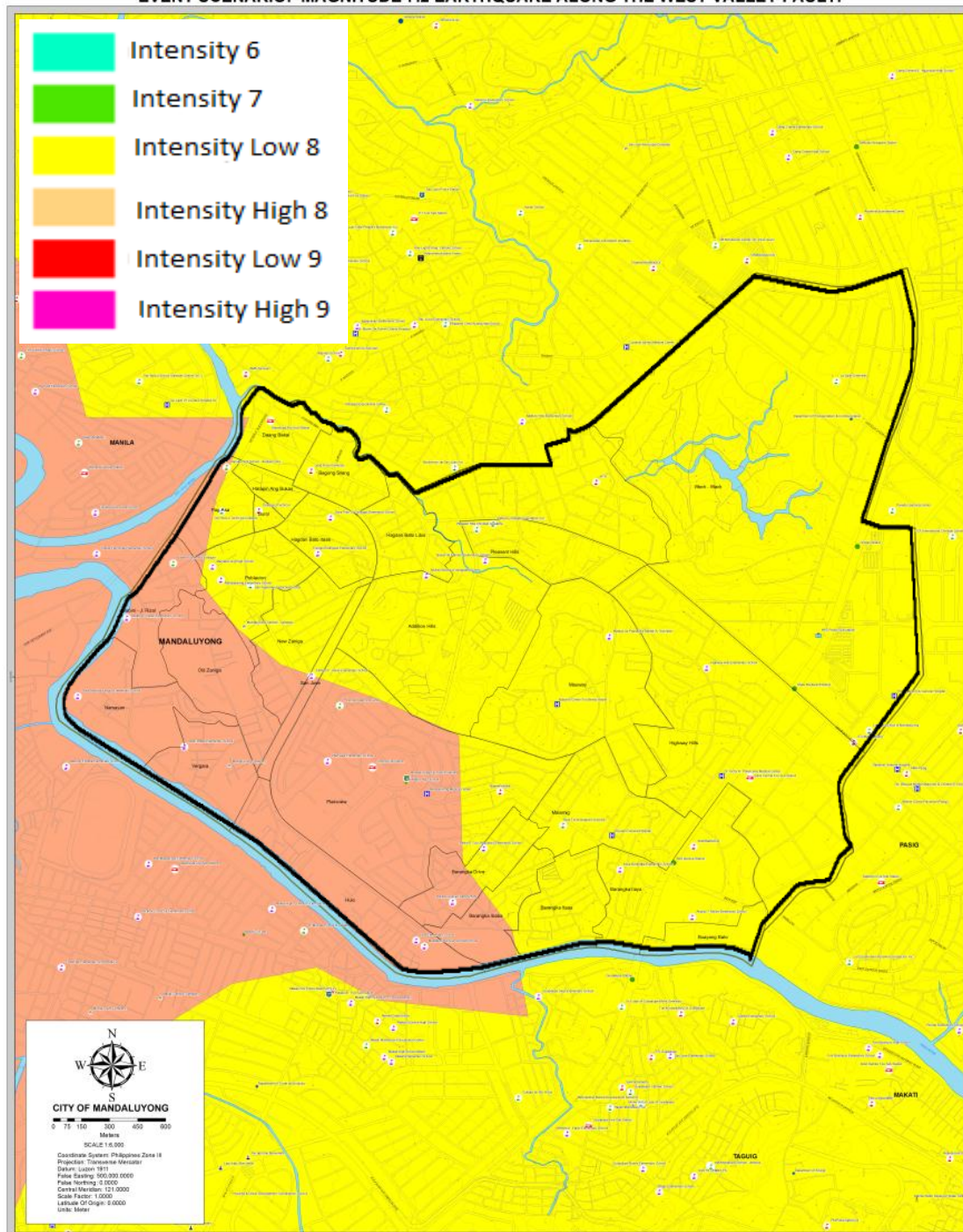
Map 2.01 . Foundation Engineering Map



SOURCE:
PRELIMINARY GEOHAZARD MAP OF M MLA
MINES AND GEOSCIENCES BUREAU
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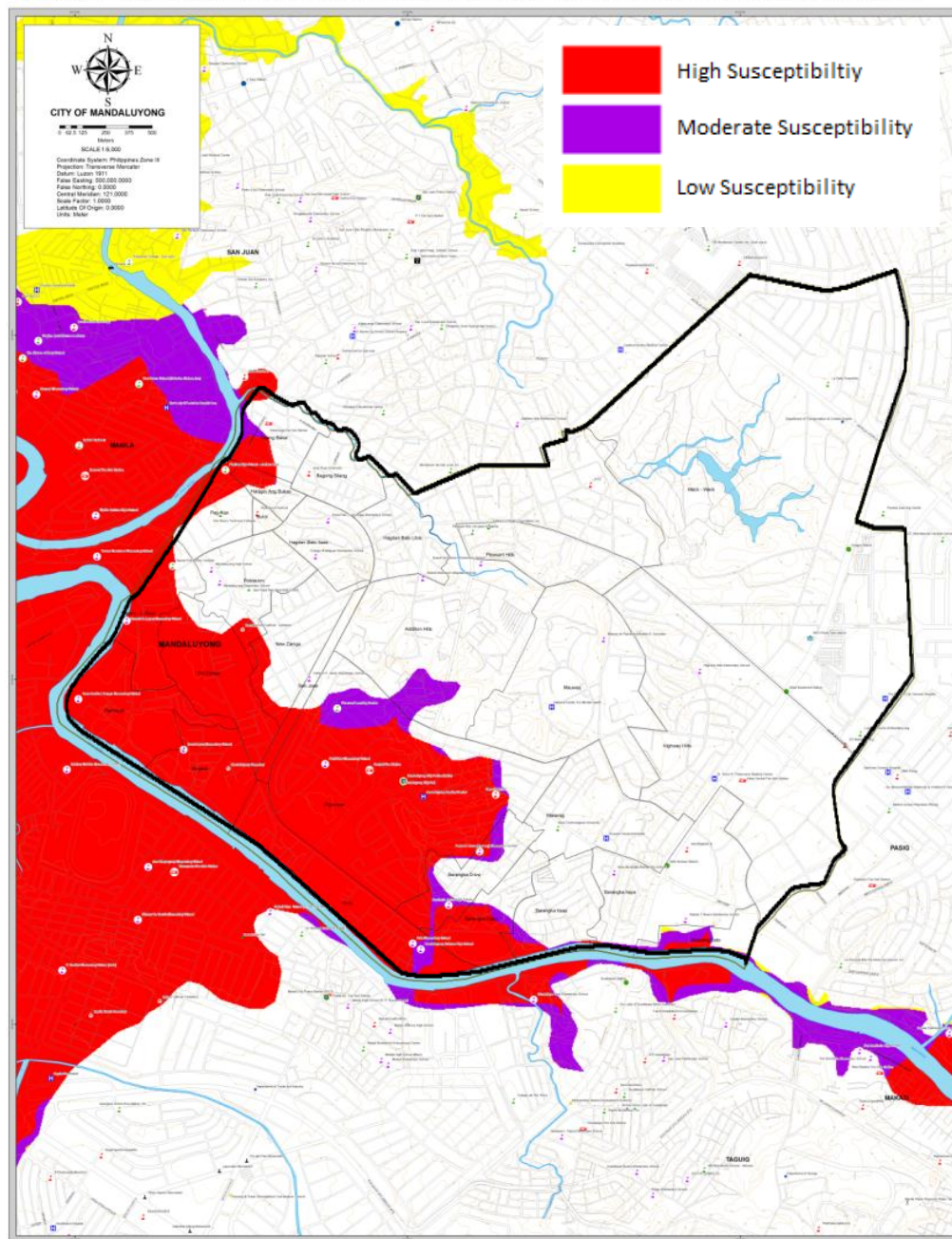
Map 2.02 **▲ RISK ANALYSIS PROJECT: GROUND SHAKING HAZARD MAP OF MANDALUYONG CITY**
EVENT SCENARIO: MAGNITUDE 7.2 EARTHQUAKE ALONG THE WEST VALLEY FAULT.



Source: Risk Analysis Project Map, Published March 2014

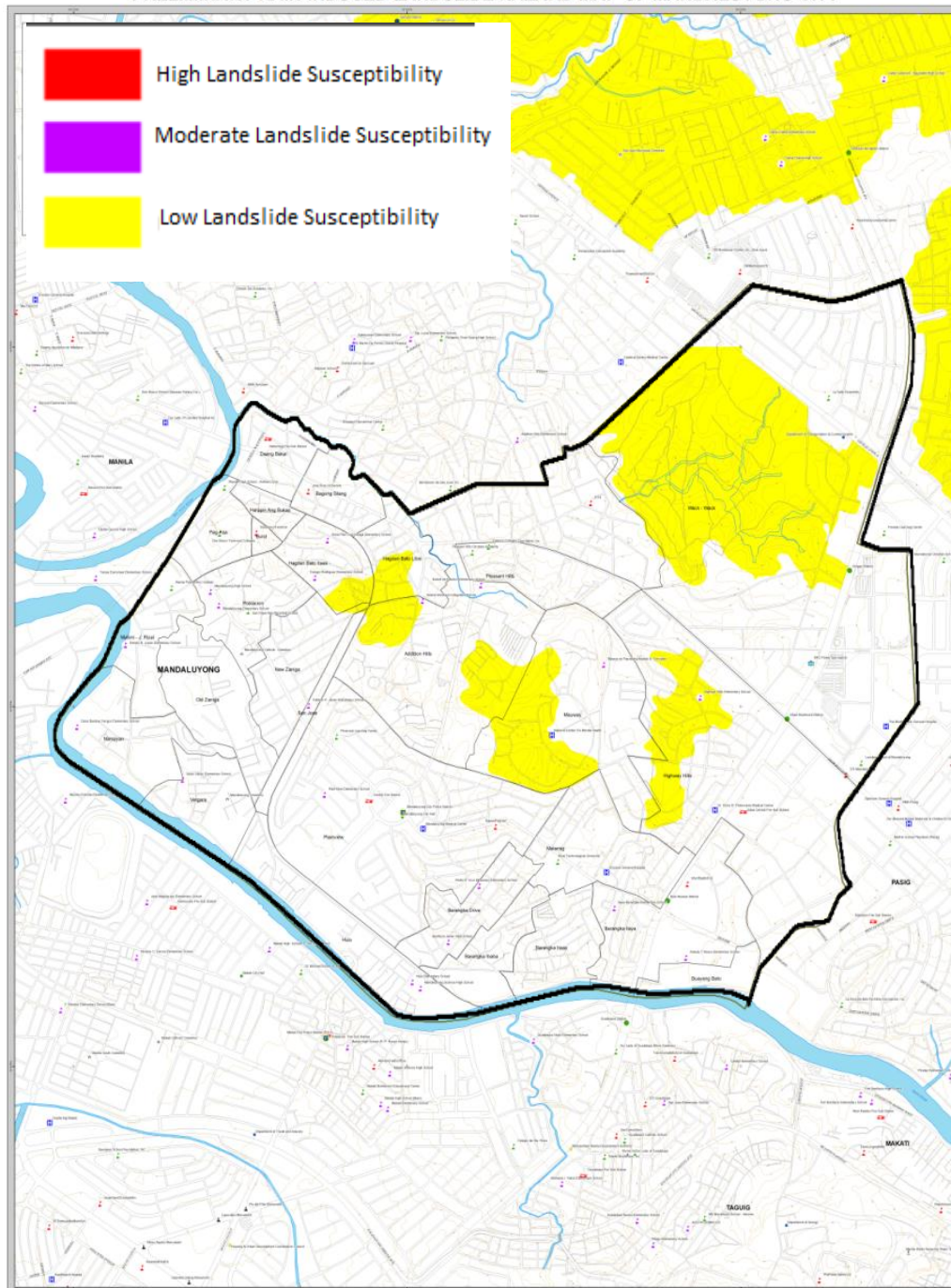
Heavy rains, even of short duration, result to flooding in some areas of Mandaluyong. Most prone to flooding are barangays Plainview along Maysilo Circle, New Zaniga along P. Cruz and Boni Ave., Hagdang Bato Ibaba along Shaw Blvd. and Acacia Lane. During stormy weather, these areas expand to cover barangays in the vicinity of Pasig and San Juan Rivers. However, there are certain areas in higher elevations identified as flood prone which point to the fact that other factors may have caused flooding, e.g., reduced capacity of natural waterways due to sedimentation.

Map 2.03  **READY FOR GMMA PROJECT : PRELIMINARY LIQUEFACTION HAZARD MAP OF MANDALUYONG CITY**



Source: GMMA Ready Project Map, Published March 2014

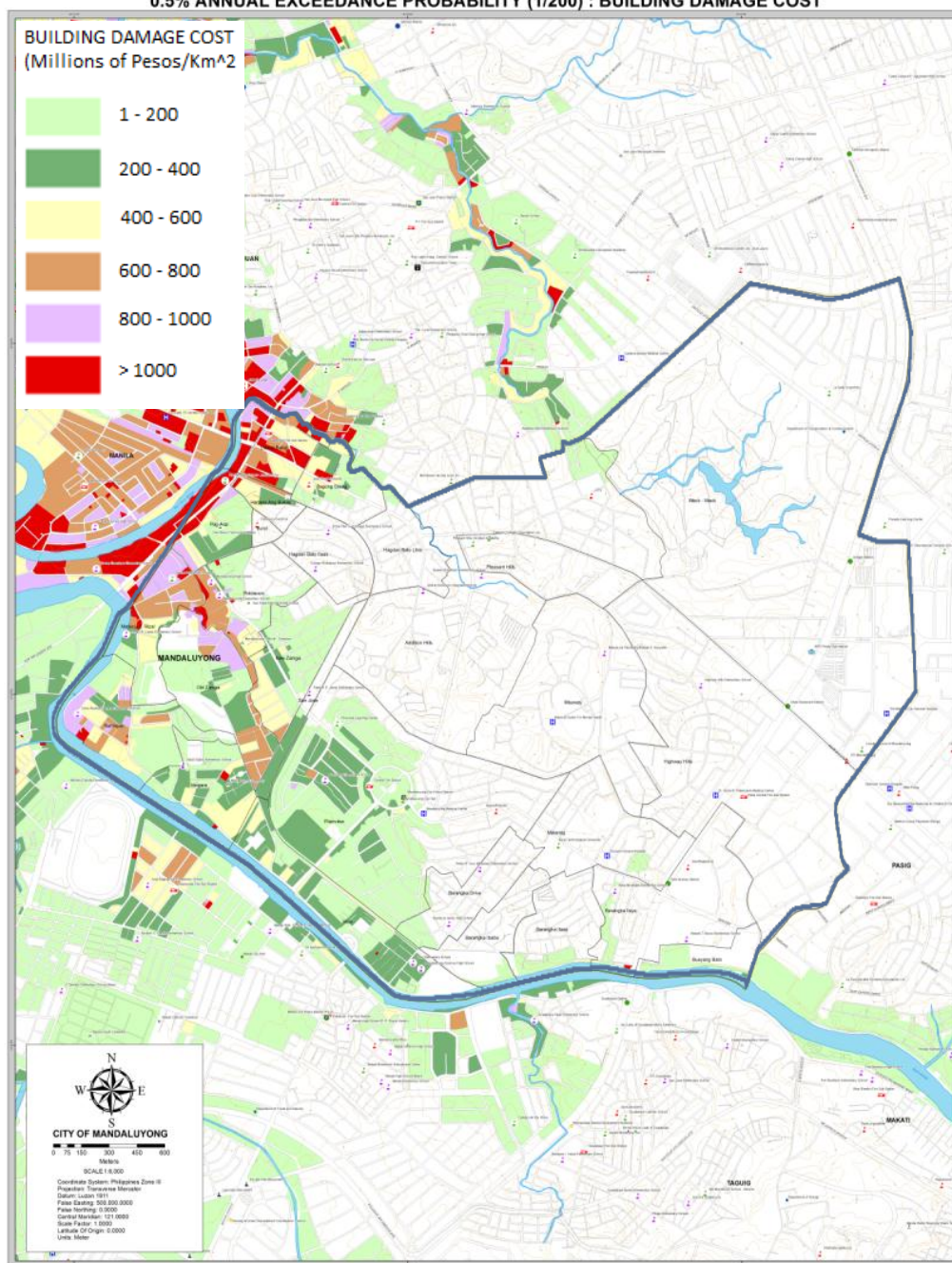
Map2.04  READY FOR GMMA PROJECT :
PRELIMINARY RAIN-INDUCED LANDSLIDE HAZARD MAP OF MANDALUYONG CITY



Source: GMMA Ready Project Map, Published March 2014

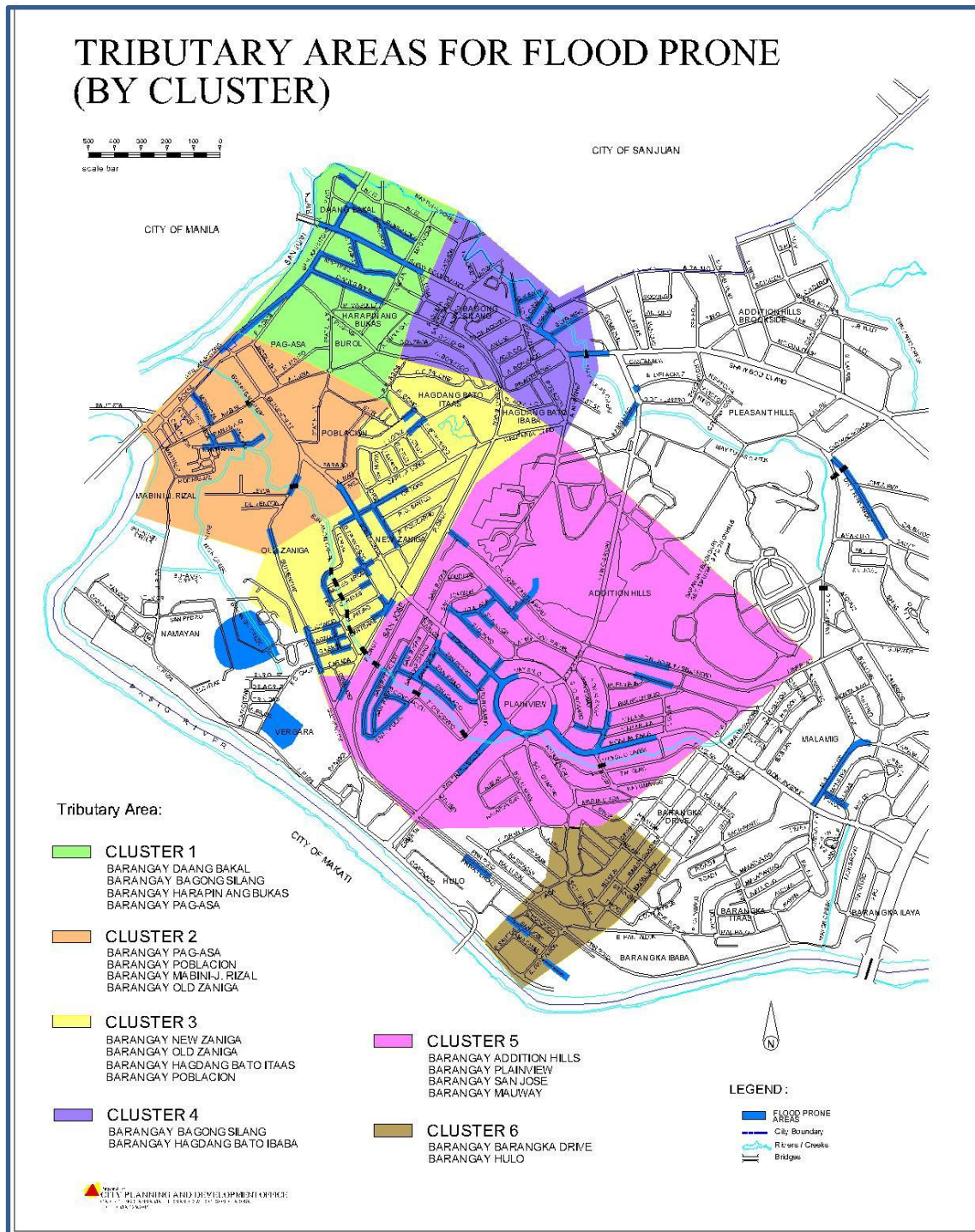
Map 2.05 from the RISK ANALYSIS PROJECT shows areas in the city with flood risk and estimated damages due to such flood. Map 2.06 shows the result of a study conducted by a local technical team from the Mandaluyong City Planning and Development Department clustering flood prone barangays based on tributary areas and common directional flow of drainage facilities existing in these barangays.

Map 2.05. **▲ RISK ANALYSIS PROJECT: FLOOD RISK MAP OF MANDALUYONG CITY**
0.5% ANNUAL EXCEEDANCE PROBABILITY (1/200) : BUILDING DAMAGE COST



Source: Risk Analysis Project Map, Published March 2014

Map 2.06 . Tributary Areas for Flood Prone (by cluster): CPDO Mandaluyong



C. EXISTING LAND USE POLICIES

The Comprehensive Land Use Plan 1995-2020 allocates areas for specific uses such as the following, subject to development regulations of Zoning Ordinance No. 475, s-2011 adopted in August 31, 2011:

- Residential Uses
- Commercial Uses
- Institutional Uses
- Government Infrastructure
- Parks And Recreation
- Linear Parks And Landscaped Development
- Urban Renewal Area (URA)
- Utilities
- Cemetery
- Waterways

1. Height Restrictions

Mandaluyong City is the first local government unit to implement the principle of Development Charges. Such Development Charges are applicable to appeals on zoning variation specifically on maximum allowable height or floor area ratio of the proposed vertical structure granted approval by the Local Zoning Board of Adjustment and Appeals. Specific development charge is applied on a 25% increment of the total additional building height or floor area ratio generated but not exceeding 50% of the original maximum allowable building height or floor area ratio.

With the adoption of the city Green Building Regulations in 2014 (Ordinance No. 535, s-2014 or Green Building Code), incentives in the form of additional building height or floor area can be availed of for buildings employing green building measures compliant to the GB Code.

Building height regulations and FAR for residential and commercial structures subject to the GB Code are summarized in *(Table 2.03)*. Structures in other zones are subject to the height restrictions and requirements of the Air Transportation Office (ATO) as well as the requirements of the National Building Code, the Structural Code as well as all laws, ordinances, design standards, rules and regulations related to land development and building construction and the various safety codes.



Table 2.03. **Building Height Limit and Floor Area Ratio for Green Buildings**

| ZONE CLASSIFICATION | BUILDING HEIGHT LIMIT/ FLOOR AREA RATIO | |
|-------------------------------------|--------------------------------------------|------------------|
| | NO. OF STOREYS | HEIGHT IN METERS |
| As per Ordinance No. 475, S-2011 | | |
| R3-A | 8 | 24 |
| R3-B | 14 | 42 |
| R3-C | 21 | 63 |
| C-1 | 6 | 18 |
| C-2 | 7 | 21 |
| C3-A | 18 | 54 |
| C3-B | 34 | 102 |
| C3-C | 65 | 195 |
| C4-FAR 3 | FAR 4 | |
| C4-FAR 10 | FAR 12 | |

Source: Mandaluyong City Ordinance No. 475, s-2011

2. Parking Regulations

Parking requirements are higher than the minimum prescribed under PD1097 (National Building Code)

3. Area Regulations

Area regulation in all zones are subject to the minimum requirements of the following statutes and regulations:

- PD 957 – The “Subdivision and Condominium Buyers “Protective Law” and its revised implementing rules and regulations.
- BP 220 – “Promulgation of Different Levels of Standards and Technical Requirements for Economic and Socialized Housing Projects” and its revised implementing rules and regulations.
- PD 1096 – National Building Code
- Fire Code
- Sanitation Code
- Plumbing Code
- Structural Code
- RA 7279 UDHA

4. Road Setback Requirements

Specific road setback or easements are required for each type of road and zone classifications.

5. Emphasis on the submission of Environmental Compliance Certificates prior to issuance of Locational Clearances for Environmentally Critical Projects and Projects located in Environmentally Critical Areas.

6. Mandatory requirement of Locational Clearance prior to issuance of all building permits and business licenses applied for in the City of Mandaluyong.

D. DEVELOPMENT CONSTRAINTS: ISSUES AND CONCERNS³

The Comprehensive Land Use Plan defines the role the city of Mandaluyong as envisioned to pursue in relation with other local government units in Metro Manila and the whole country. Such must be adhered to in identifying future developments for the city. However, certain situations such as urban blight, increasing environmental awareness, the bid for global competitiveness vis-a-vis the paradigm shift in disaster management and climate change adaptation that calls for risk-sensitive land use planning cannot be ignored. Listed below are development concerns for consideration in formulating programs and policies for the next few years:

1. Presence of vulnerable population such as 3,852 persons with disabilities, 45,000 senior citizens, and 24,600 informal sector families scattered in all 27 barangays who are most at risk of being affected in times of extreme events such as disasters and calamities.
2. Potential devaluation of real property as a result of perennial flooding as caused by the following:
 - a. Rubbish unconscionably discarded on streets and other public places eventually find its way to manholes and drainage pipes and canals, thereby clogging the system.
 - b. Old drainage system not properly maintained for lack of access to manholes, right-of-way encroached by structures

³ A separate document entitled “**Report on Existing Issues and Concerns in Mandaluyong City (October 2015)**” details land use and other urban development issues identified as a result of Activity 5.1 of the Program Implementation Plan for updating the Mandaluyong CLUP.

- c. Interconnectivity of old and new drainage facilities is lost due to the difference in elevations when the new facility is level with the new road which, typically, is constructed on top of the old road. Flooding occurs when the new drainage facility serves as a collector line leaving behind drain water from lower drainage lines that backflows to the source.
 - d. Design capacity of old drainage systems is no longer appropriate to carry considerable increase in the volume of surface runoffs due to lower infiltration rate as area of soil surface gives way to paved surface accompanying urban development.
 - e. Reduced capacity of natural waterways due to sedimentation
3. Despite the presence of a two-pronged housing program, the city has limited space to effectively implement a Comprehensive Shelter Plan on a short to long-term basis which includes both socialized and open market housing.
4. Welfareville Property, being the largest squatter colony in the country, is owned by the National Government. Its disposition and development are governed by RA5260 and Terms of Reference such that city government cannot fully undertake planning for the property's development including housing for its squatter occupants.
5. Having more access roads to adjacent cities which are often used as alternate routes worsens the traffic situation which also results to losses in business opportunities.
6. Decreased capacity of roadways due to Illegal parking as a result of increase in vehicle ownership without the necessary open space for parking
- a. Some roads have portions utilized as parking space for dilapidated/unusable vehicles
 - b. Owners of parked vehicles have clear disregard of the minimum distance requirement from street corners
7. Proliferation of Encroached Setbacks particularly sidewalks for the purpose of expanding one's business area or simply to generate a home front yard where the lot parcel is fully occupied by the main residential structure
- a. Small services like vulcanizing shops, car wash and even canteens and flea market stalls have become rampant even on secondary and main roads such as Boni Avenue, F. Blumentritt St., P. Oliveros St., and Barangka Drive among others
 - b. Another cause of obstruction on sidewalks are utility boxes of telecommunication companies, another likely spot for dumping wastes

E. COMPARATIVE ADVANTAGES AND COMPETITIVE EDGE

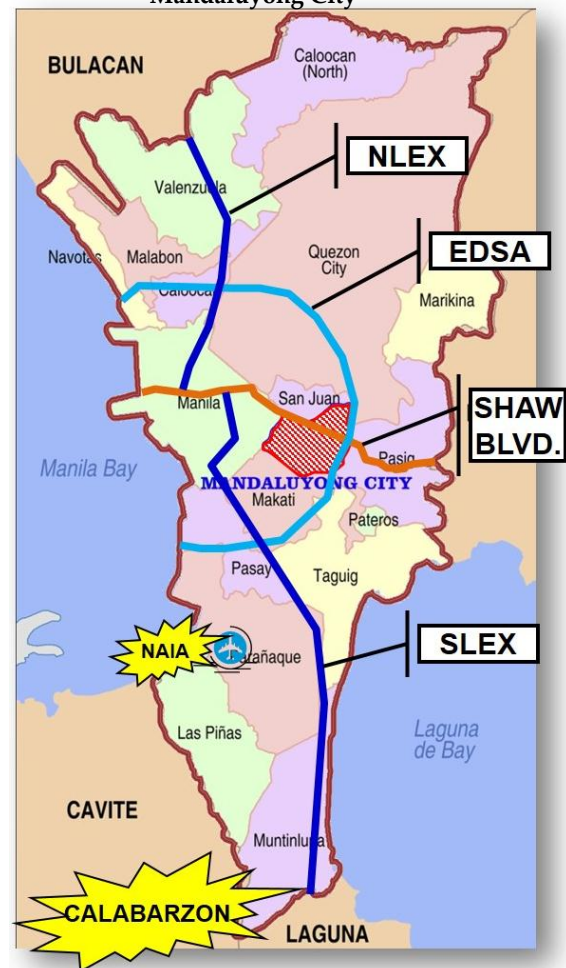
As is the popular slogan in marketing real estate, Mandaluyong has the three main advantages of location, location, and location (*Figure 2.02*):

1. being at the crossroads of major transportation arteries that makes the city most accessible to growth areas and economic centers in the four directions, North, East, South and West;
2. being located on the Guadalupe plateau with soil characteristics of adobe or hard rock which is ideal for heavy structures and large development;
3. being on a decent distance from the international and local airports that increases accessibility of the city and opportunities to maximize vertical development without compromising air traffic regulations for the advancement of the principle of highest and best use of the land.

In addition, the presence and continued improvement of urban infrastructure and support utilities serve as a strong magnet for large-scale investors as manifested by rapid conversion of the area east of EDSA from industrial uses to commercial uses of regional in scope. The Central Business District as defined in City Ordinance No. 164, s-1997 bounded by the EDSA, Pasig River, the Mandaluyong-Pasig City boundary, and Shaw Blvd. is rapidly transforming to super blocks closing the gap between Ortigas Center in the northeast portion of Mandaluyong City and the Bonifacio Global City located across Pasig River.

Furthermore, having the Pasig River as a common boundary with other highly urbanized cities is a natural advantage. Approximately 4,968 m of shoreline has potential for development converting a once waterfront-entrance-turned- backyard into a plush frontyard development that will give a strong visual hint of what the interior part of the city can offer.

Figure 2.02 Locational Advantages of Mandaluyong City



More so, official recognitions for its various innovative programs and projects locally by various awards-giving entities and internationally by no less than the United Nations Division for Public Administration and Development Management have placed Mandaluyong City among the top choices to locate not only one's business but one's residence as well.

F. FUNCTIONAL ROLE OF THE CITY

"From Joke Town to Boom Town" is a catch phrase often used to describe the transformation of Mandaluyong City. The city used to be referred plainly as the location of the Boys' Town, the National Center for Mental Health then known as the Mental Hospital, and the Correctional Institute for Women. These are national government institutions for the delinquents and mentally ill patients.

With the development of Ortigas Center in the early part of the 1990s, the city became host to SM Megamall (then the largest mall in the country), the EDSA Plaza and Shangrila Mall (a high-end hotel and shopping mall), and corporate headquarters such as the Asian Development Bank and San Miguel Corporation. Proving that the city is a strategic location for business attracting potential markets and clients from nearby cities and those in the eastern and northern periphery of Metro Manila, competitors in the hotel and supermall business began to locate in Mandaluyong City.

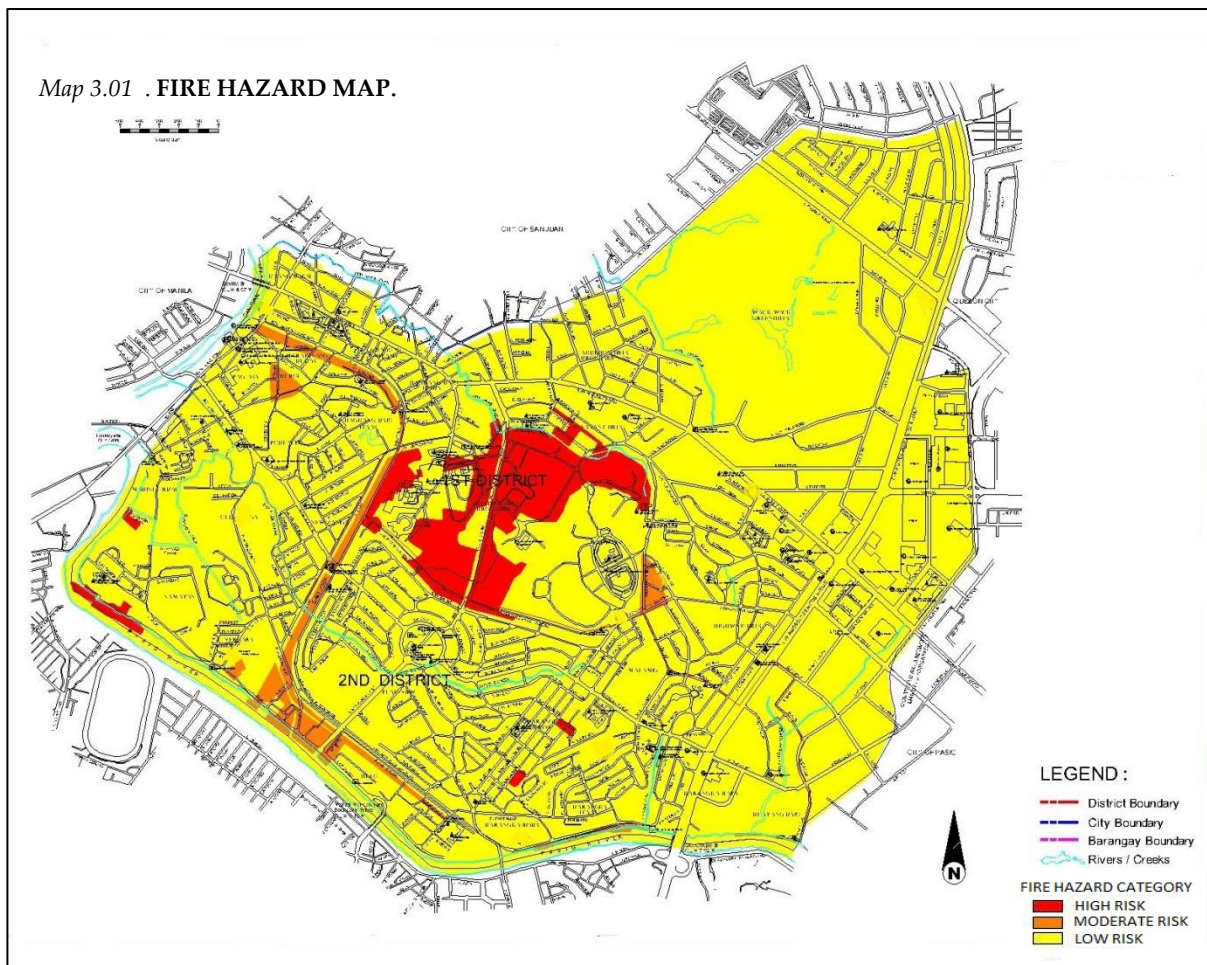
Such created a *Ripple effect* that continuously influences the proliferation of retail services, residential and office condominiums, large mixed use developments, and Information Communication Technology locators not only in the city but also in neighboring localities. These establishments generated a lot of employment opportunities for the entire national capital region and its periphery that brought in transient population and migrants from other parts of the country which, in turn, further boosts market demands for services and facilities.

Dubbed as the Tiger City in the Philippines because of its remarkable transformation, and being at the core of development, Mandaluyong serves as the nexus among major economic growth areas in Luzon and paradigm of good governance and innovation among local government units in the country. The city is now a favourite learning destination for other local government units, other government and non-government institutions whether local or international, and even the academe in search of best practices in governance for possible replication and knowledge sharing.

III. MAINSTREAMING DISASTER PREPAREDNESS AND RISK REDUCTION TO LOCAL DEVELOPMENT PLANNING

A. DISASTER PREPAREDNESS AND RISK MANAGEMENT CAPABILITY⁴

The city is fortunate to be located on a solid rock foundation that the risks from earthquakes and liquefaction are very minimal. Severe flooding rarely occurs with the improved drainage systems that flush out rain water to the collecting Pasig and San Juan Rivers. The most common disaster occurring in the city is conflagration. Of the 27 barangays in Mandaluyong, 16 are considered fire prone, these being high density residential areas (*Map 3.01*) wherein informal communities and socialized housing projects are located.



Source: Mandaluyong City Planning and Development Department

⁴ DRRM capabilities of the city are presented in a report during the 2016 SGLG Assessment. In 2016, the city received its second consecutive year Seal of Good Local Governance wherein Disaster Preparedness is one of the CORE areas for assessment.

On November 21, 2013, City Ordinance No. 524, s-2013 was approved creating the Mandaluyong City Disaster Risk Reduction and Management Office pursuant to RA No. 10121, who shall be responsible for setting the direction, development, implementation and coordination of all DRRM programs in the city. The DRRMO also has the mandate to organize, train and directly supervise all city/local emergency response teams and Accredited Disaster Volunteers.

As early as October 2013, the Mandaluyong Disaster Volunteer Center was launched whose main goals are to facilitate the establishment of volunteer desk in every barangay, enhance the skills and capabilities of volunteers through proper training, network with all volunteer groups in the city and uphold their rights and welfare by providing appropriate support. Community Action for Disaster Response (CADRE) training is done by batch or by barangay to promote active citizen participation in disaster mitigation and response.

The DRRMO also maintains a directory of contact persons in every vulnerable groups, e.g. senior citizens associations, disabled persons associations, out-of-school youth, etc. to facilitate communication and ensure timely response during disaster. Memorandum of Agreement with various non-government organizations and private sector for volunteers and supply of food, medicines, transportation and necessary equipment are entered into to ensure continued operation during emergencies. Hazard mapping and inventory of evacuation centers are regularly updated in coordination with other offices/members of the City DRRM Council for better preparedness and identification of problem areas and appropriate response.

Specific areas in the city most likely to be affected by particular types of hazards are shown in *Table 3.01*. An inventory of public and private school facilities, gymnasiums and covered courts, barangay halls and other facilities as evacuation centers per type of disaster/calamity is presented in *Table 3.02*.

Table 3.01. Type of Hazard by Specific Areas

| Type of Hazard | Barangay/Areas Most Likely to be Affected |
|-------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Earthquake | All 27 barangays |
| 2. Flooding | Old Zaniga, New Zaniga, Pag-asa, Hulo, San Jose, Bagong Silang, Addition Hills, Vergara, Daang Bakal, Hagdan Bato Libis, Harapin ang Bukas, Mabini – J. Rizal, Plainview, Poblacion, Namayan |
| 3. Fire | All 27 Barangays |
| 4. Explosion | All 27 Barangays |
| 5. Strong Wind/ Tornado | Barangka Ilaya |
| 6. Chemical Spill | Highway Hills, Wack-Wack, Buayang Bato, Barangka Ilaya, Malamig |

Source: CDRRMO (2014 City Profile 101), BFP 2016

Table 3.02. Inventory of Evacuation Areas/Centers by type of Hazard: Mandaluyong CDRRMO

| PUBLIC SCHOOL FACILITIES: | LOCATION | TOTAL CAPACITY (individuals) | TYPE OF CALAMITY |
|---------------------------------|--------------------------------------------|------------------------------|------------------|
| Nueve de Pebrero E.S. | 9 de Pebrero, Addition Hills | 1610 | FR/FL |
| Jose Fabella Memorial School | Welfareville Cmpd., Addition Hills | 1330 | FR/FL |
| Doña Basilica Yangco E. S. | C. Castañeda St, Namayan | 595 | FL |
| Doña Pilar C, Gonzaga E. S. | M. Gonzaga St., Hagdan Bato Itaas | 770 | FR |
| Eulogio Rodriguez Integ. S. | Cavo F. Sanchez St., Hagdan Bato Itaas | 3115 | FL/FR |
| Highway Hills Integ. S. | Calbayog St., Highway Hills | 3290 | FR |
| Mandaluyong E. S. | 67 Aglipay St., Poblacion | 1925 | FR/FL |
| Mandaluyong High School | Rev. Aglipay St., Poblacion | 1645 | FR/FL |
| MPNAG | 9 de Pebrero, Mauway | 3220 | FR/FL |
| Pleasant Hills E. S. | 9 de Pebrero, Pleasant Hills | 840 | FR/FL |
| Amado T. Reyes E. S. | Sheridan, Buayang Bato | 245 | FR |
| Barangka Ilaya E. S. | Lions Rd., Barangka Ilaya | | FR/FL |
| Filemon Javier E. S. | Sitio 2, San Jose | 455 | FR/FL |
| Hulo E. S. | E. Pantaleon St., Hulo | 2205 | FR |
| Mandaluyong Science H. S. | E. Pantaleon St., Hulo | 1085 | FR |
| Isaac Lopez Integ. School | Elino Cruz St., Vergara | 2485 | FR/FL |
| Plainview E. S. | San Joaquin St., Plainview | 910 | FR |
| Pedro P. Cruz E. S. | Maria Clara St., Barangka Drive | 3010 | FR/FL |
| Renato Lopez E. S. | J.P. Rizal St., Mabini J. Rizal | 350 | FR |
| GYMNASIUM: | | | |
| Mauway Gym | 800 9 de Pebrero, Mauway | 500-700 | FR/FL |
| Jose Rizal University | San Jose St., Hulo | | FR/FL |
| Highlander Covered Court | A. Luna cor. Pag asa | 200-250 | |
| Buayang Bato Covered Court | Buayang Bato | 60 | FR |
| San Jose Covered Court | San Jose St., Hulo | 350-500 | FR/FL |
| Saniboy Covered Court | Saniboy St., Hulo | 300 | FR |
| Vergara Covered Court | 23 Elino St., Vergara | 500 | FR |
| Mandaluyong City Gymnasium | Maysilo Circle, Plainview | 700 | FR/FL |
| Barangka Ibaba Covered Court | Pvt. P. Cruz St., Kaliwa, Barangka Ibaba | 300-350 | FR |
| Barangka Itaas Covered Court | MRR Track, Barangka Itaas | 500 | FR |
| Mabini J. Rizal Covered Court | J.P. Rizal St., Mabini J. Rizal | 180 | FR |
| Malamig Covered Court | 555 Cresta St., Malamig | 300-500 | FR/FL |
| Old Zaniga Covered Court | L. Parada St., Old Zaniga | 300-500 | FR |
| Bagong Silang Covered Court | J. Luna Extension, Bagong Silang | 100-200 | FR/FL |
| A. Luna Basketball Court | 285 A. Luna St., Buroi | 500 | FR/FL |
| Daang Bakal Covered Court | Magalona St., Daang Bakal | 150 | FR |
| BRGY. HALL: | | | |
| Harapin ang Bukas | 2 N. Gonzales St., Harapin ang Bukas | 100 | FR |
| Wack-Wack | 1509 Princeton , Wack-Wack | 50 | FR/FL |
| OTHERS: | | | |
| Nat'l. Center for Mental Health | 9 de Pebrero St., Mauway | | FR/FL/E |
| DBTC (Open Field) | Gen. Kalentong St., Pag-asa | | FR/FL |
| Wack-Wack Golf & Country Club | Wack-wack Rd., Wack-wack | | FR/FL/E |
| Barangka Ilaya Mini Park | Pinatubo St. Cor. Ilaya St., Bgy. B. Ilaya | | FR |
| Botanical Garden | Martines St., Addition Hills | | FR |

Note: FR- Fire FL – Flood E- Earthquake

B. ASSESSMENT OF SECTORAL RISKS AND VULNERABILITIES

Recent fire incidences in the city and news coverage of devastating super typhoons and earthquakes elsewhere have strengthened the city's determination towards preparedness, recognizing that a longer-term approach was required in reducing disaster risk and building community resilience. In response to the national call to update or formulate land use plans integrating risk reduction and following the paradigm shift of addressing challenges of disasters from hazard to vulnerabilities, the city undertook the process of assessing sectoral risks and vulnerabilities using as bases the following:

- Hazard and Risk Maps provided by the Risk Analysis Project and the Ready for GMMMA Project
- Popular knowledge of disasters and calamities that occurred in the city shared by workshop participants who are Mandaleños or have stayed in Mandaluyong to have actually witnessed or experienced such occurrences.
- Records from the City Planning and Development Department based on results of ocular inspection and reports from various local agencies and offices

1. Vulnerability against Fire

All 27 barangays in the city can be affected by fire. Fire incidence reports within the last 10 years can attest to the fact that even areas in the city that are predominantly low – medium density have experienced fire. Common cause of fire is accidental or unintentional.

A small fire can easily transform into a major conflagration with the introduction of oxygen or worse, presence of explosives or highly combustible materials. Apart from the presence of gasoline stations and LPG retail outlets in the city, Mandaluyong is adjacent to the south-eastern part of Manila City (*Figure 3.01*) wherein flammability is the identified vulnerability

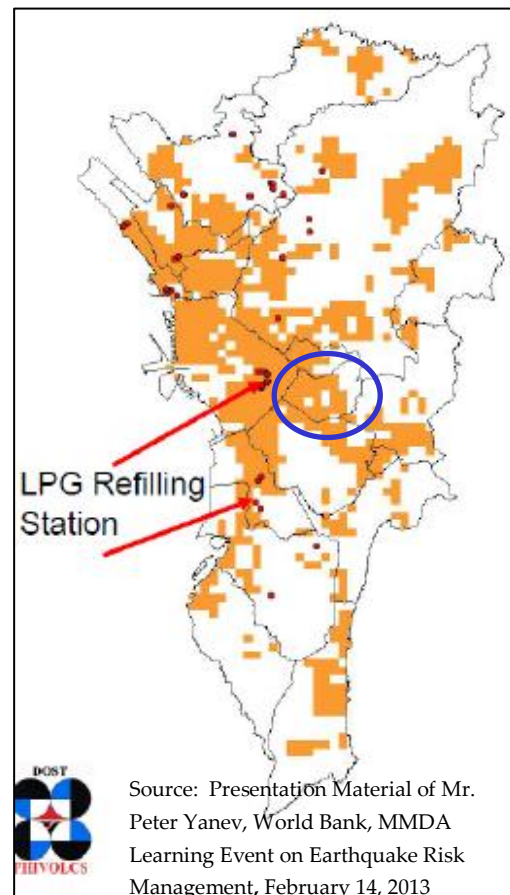


Figure 3.01 . MMEIRS : Possible Areas for Fire Spreading

based on the scenario earthquake of 2004 Metro Manila Earthquake Impact Reduction Study (MMIERS).

As a highly urbanized city in Metro Manila, Mandaluyong is highly built-up and with mixed use developments such that population concentration is random owing to the proliferation of high-rise residential condominiums and low to medium-rise housing. Most prone to conflagration are highly dense pockets of structures of substandard materials which are commonly occupied by informal settlers (*Figure 3.02*).

The Welfareville Compound in Barangays Addition Hills and Mauway which is the largest informal settlement in the city is home to approximately 89% of the 24,801 ISFs in the city. The remaining 11% are scattered in 5 other barangays, namely, Plainview, Highway Hills, Barangka Drive, Barangka Ilaya, and Barangka Ibaba. These ISFs along with 3,852 persons with disabilities, 45,000 senior citizens, with the addition of pregnant women and children are most at risk of being affected in times of extreme events.

Based on the reports of the CDRRMO and the Mandaluyong Bureau of Fire Protection, five barangays traversed by EDSA which is used by oil tankers and large delivery trucks are potentially at risk of chemical spill which may also lead to fire and explosion.



Figure 3.02 November 27, 2015 Fire at Blks. 15, 22, 23, 24, 25 & 32, Welfareville Compound

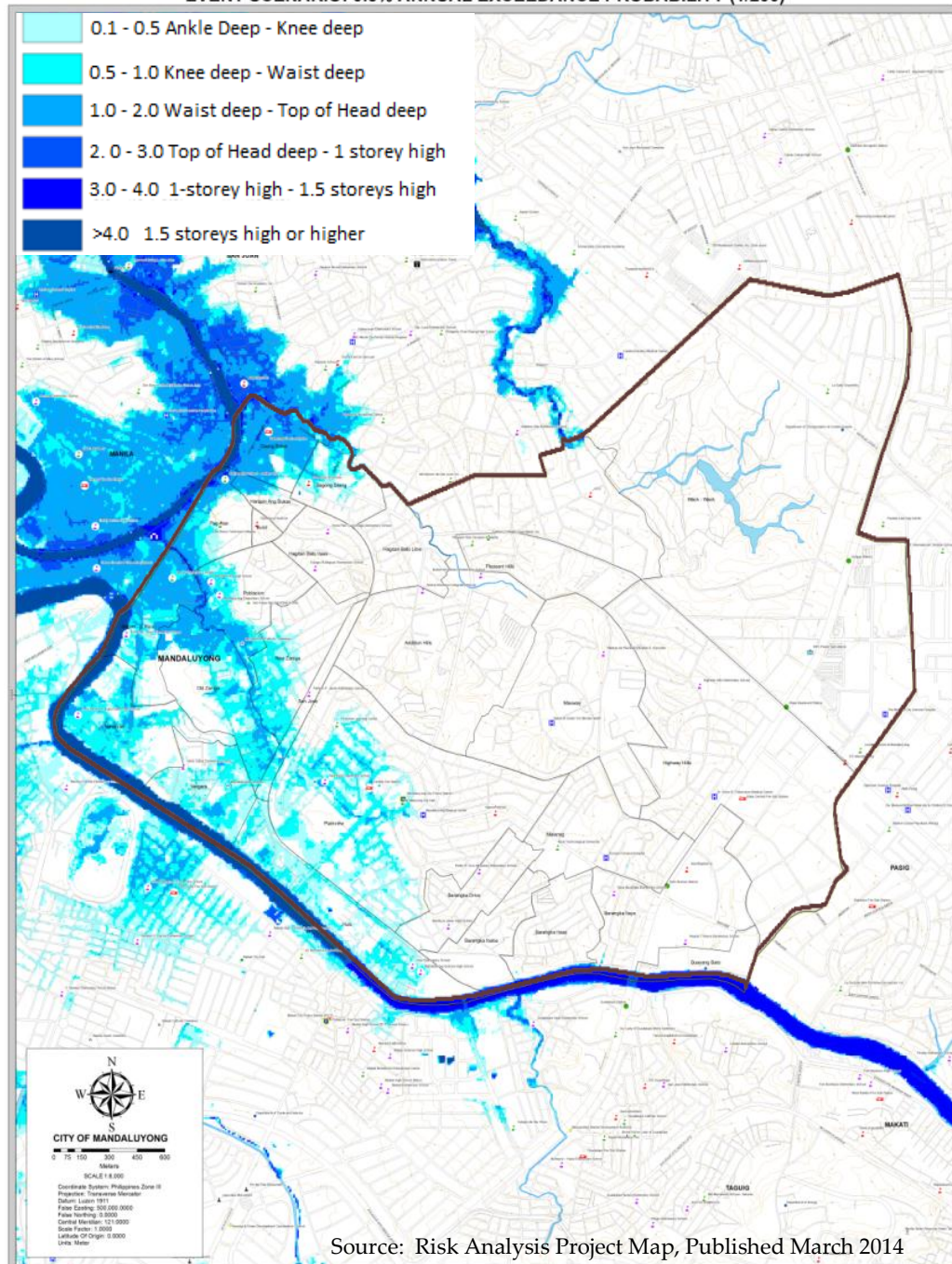
Source: Mandaluyong Public Information Office

2. Vulnerability to Flood

The Flood Hazard Map of Mandaluyong developed by the Risk Analysis Project (*Map 3.02*) based on Event Scenario 0.5% Annual Exceedance Probability (1/200) shows that there are parts of the city that are susceptible to flooding from ankle deep (0.1m) to 1.5 storeys high or higher (>4.0 m) depending on proximity to water bodies. Barangays specifically identified are Bagong Silang (Maytunas Creek), Daang Bakal (Maytunas Creek/San Juan River), Harapin ang Bukas (San Juan River), Pag-asa (San Juan River/Buhangin Creek), Mabini – J. Rizal (Pasig River/Buhangin Creek), Old and New Zaniga/Poblacion (Buhangin Creek), Namayan/Vergara/Hulo/Barangka Ibaba (Pasig River), and Plainview (Maysilo Creek), which also serves as catch basin for Barangay Addition Hills.

Based on the city experience during the **Hagupit ng Habagat 2012**, parts of Bgy. Hagdan Bato Libis (M. Yulo St.), Bgy. Addition Hills (Welfareville Compound Blks 37-38, Freedom Park and Fabella), and Bgy. Barangka Drive (vicinity of Sgt. Bumatay) and Barangka Itaas (SCI compound) were also submerged in severe flooding indicating that factors other than overflowing of water bodies may have caused such flooding.

Map 3.02. **▲ RISK ANALYSIS PROJECT: FLOOD HAZARD MAP OF MANDALUYONG CITY**
EVENT SCENARIO: 0.5% ANNUAL EXCEEDANCE PROBABILITY (1/200)



Guided by these reports, the CPDO study from June to October 2015 on flooding focused mainly on the actual condition of existing drainage facilities and the reported extent of flooding experienced in 2014 and first half of 2015, although records during the time of **typhoon Ondoy** and **Habagat 2012** served as additional references. In Barangay New Zaniga, the combined team of CPDO and Engineering staff aided by local personnel from the barangay were able to conduct hands on inspection, opening manholes and gutter grills, and actually observe the capacity of the drainage facility. In other known areas of flooding, the study was limited to windshield and foot survey, opening of manholes whenever possible, interview with local people knowledgeable in the area, and use of existing reports and maps.⁵ Common findings were reduced capacity of drainage pipes due to siltation and wastes, damaged structures, and old age. Drainage flows were then clustered according to slope and networking.

Comparing the clustering of drainage flow to the flooding scenario during the **August 6-8, 2012 Hagupit ng Habagat** monitoring report by the City Disaster Risk Reduction and Management Office, barangays on the Northwest quadrant of the city were the most affected by flooding up to neck deep for more than 12 hours before gradually subsiding, leaving considerable damages to properties. Drainage rehabilitation efforts that followed significantly reduced the risk of extreme flooding in those barangays as manifested by low to moderate cases of flooding during the **2013 Habagat** season.⁶

Still, **Climate Risks of Wetter Rainy Season** are most felt during the first term of the school year when announcements for class suspension are now localized and mostly based on the flooding situation whether or not a certain typhoon signal is raised over the region. Disruption of school classes often called for makeup classes which entail additional costs to the affected families and students in both monetary and time forms. Disruption of business operations resulted not only to loss of income to both proprietor and employees but additional burden to consumers who have to look for their needed items elsewhere, often with added costs on transportation and travel time.

Overlaying the location of critical facilities on the identified flood prone areas, the following are most vulnerable:

- a. At least 1,455 students, teachers and staff of Plainview Elementary School (at risk of having health and hygiene issues, with potential damages to properties, both personal and school facilities)
- b. Approximately 1,000 patients, watchers of patients, and hospital staff of the Mandaluyong City Medical Center and Annex along Boni Avenue, Bgy. Plainview

⁵ For details, see **Report on Existing Development Issues and Concerns in Mandaluyong City: October 2015** done as part of Activity 5 of the Mandaluyong CLUP Updating Program Implementation Plan

⁶ Ibid.

- c. Approximately 548 vendors and administrative staff and consumers of Market Place I along General Kalentong St.

3. Vulnerability to Ground Shaking

For the past 30 years or so, the city has no record of building collapse or damages due to ground shaking. The 1990 M7.7 earthquake in Central Luzon with approximate epicenters near the Digdig and Philippine Faults (*Figure 3.03*)⁷, although strongly felt in the city, left no alarming damages as well. The Risk Analysis Project: Ground Shaking Hazard Map of Mandaluyong City, Event Scenario: Magnitude 7.2 Earthquake (*Map 3.03*) along the West Valley Fault locates the city in the Low intensity 8 scale with Low Fatality Density (1 – 200 count per sq. km of barangay area) in most parts and Moderate Fatality Density (201 – 500 count per sq. km of barangay area) in Barangays Harapin ang Bukas, Burol, San Jose, Barangka Ibaba and Mauway.

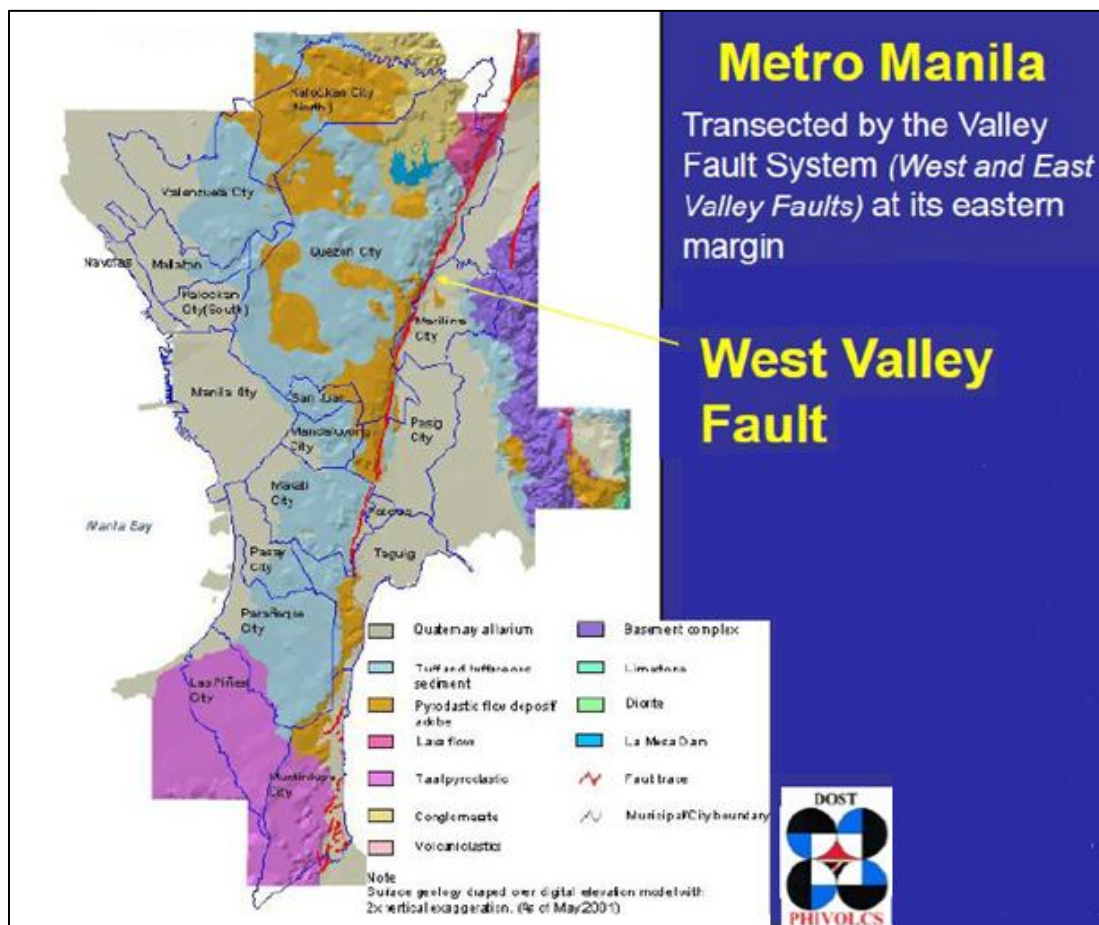
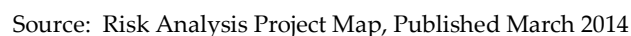


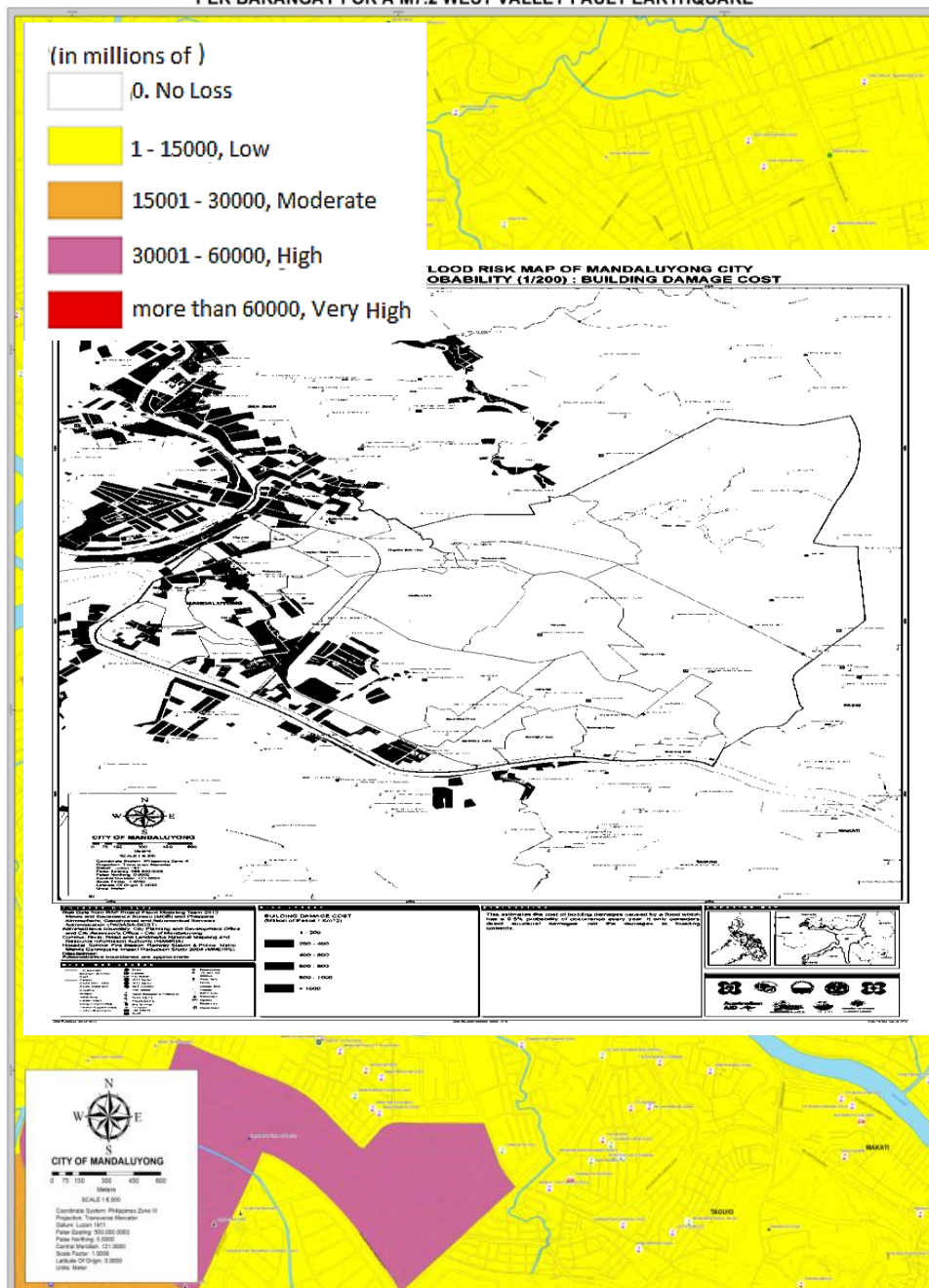
Figure 3.03 Alignment of the West Valley Fault System in Metro Manila

⁷ Presentation Material of Mr. Peter Yanev, World Bank, MMDA Learning Event on Earthquake Risk Management, February 14, 2013

Map 3.03. RISK ANALYSIS PROJECT: ESTIMATED NUMBER OF FATALITIES PER BARANGAY FOR A M7.2 VALLEY FAULT EARTHQUAKE

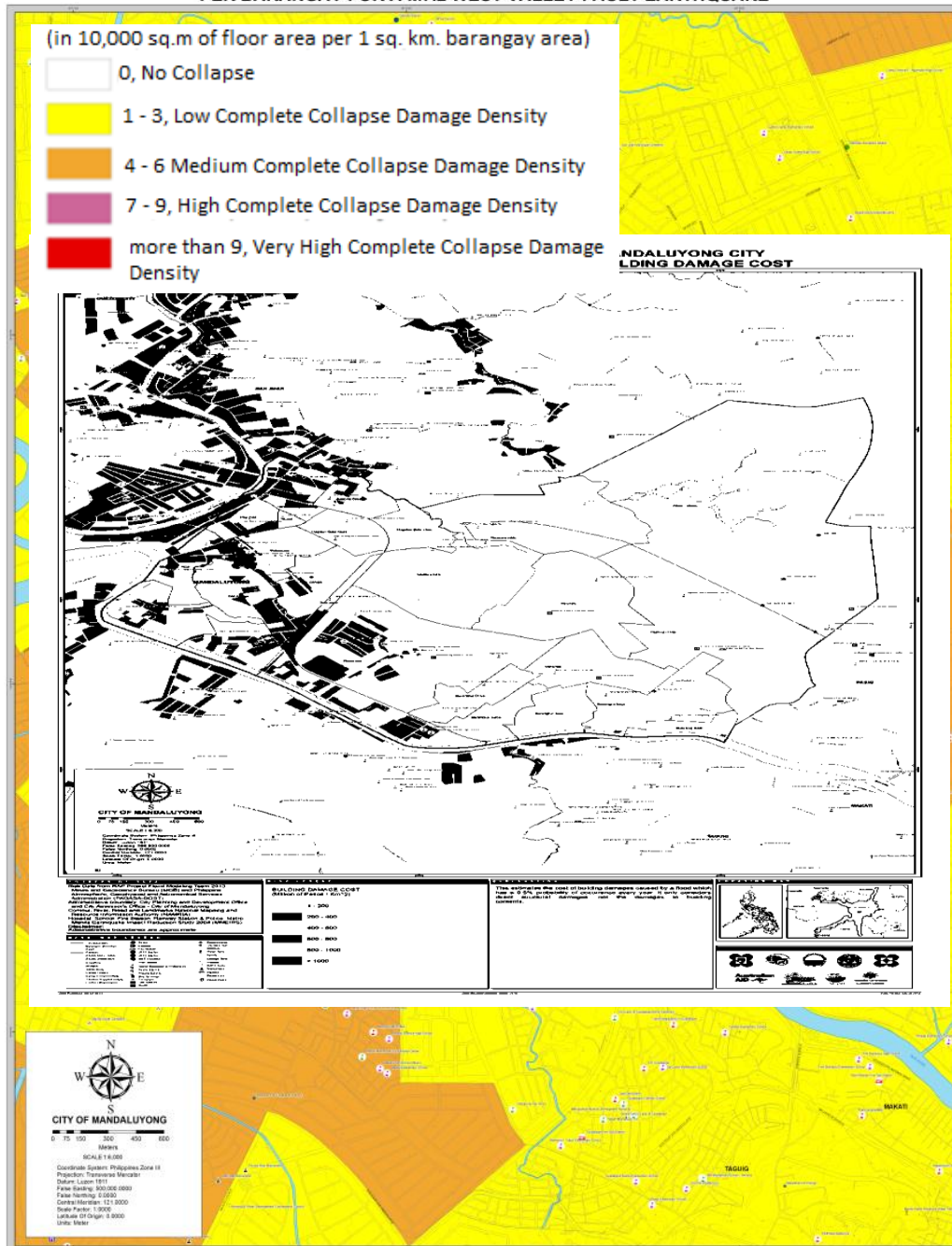


Map 3.04. **RISK ANALYSIS PROJECT: ESTIMATED ECONOMIC LOSS
PER BARANGAY FOR A M7.2 WEST VALLEY FAULT EARTHQUAKE**



Source: Risk Analysis Project Map, Published March 2014

Map 3.05. **▲ RISK ANALYSIS PROJECT: TOTAL FLOOR AREA IN COLLAPSED DAMAGE STATE PER BARANGAY FOR A M7.2 WEST VALLEY FAULT EARTHQUAKE**



Source: Risk Analysis Project Map, Published March 2014

4. Climate Risk of Drier Summer

Mandaluyong City experiences the same climatic conditions prevailing over the whole of Metro Manila which are being monitored by Station 430 of the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA) located at Science Garden in Quezon City.

There are two pronounced seasons: one dry from November to April, the other wet during the rest of the year. PAGASA observations covering the period 1961-2014 reveal that the months of June to October normally had the most number of rainy days, with the month of September 2009 having the highest amount of daily rainfall at 455 mm. Temperature was highest in May 1987 and lowest in March 1963 at 38.5°C and 14.9°C, respectively. Normal values as observed between 1981 to 2010 place on the average the annual maximum and minimum temperatures as 32.2°C and 23.1°C, respectively.

A summary of climatological observations recorded by PAGASA from 1961 to year 2014 is shown in *Table 3.03*.

Table. 3.03. Climatological Extremes: As of Year 2014⁸

| Month | TEMPERATURE (°C) | | | | GREATEST DAILY RAINFALL (MM) | |
|------------------|------------------|------------|------|------------|------------------------------|------------|
| | High | Date | Low | Date | Amount | Date |
| JAN | 34.7 | 01-17-1998 | 15.5 | 01-27-1987 | 55.8 | 01-16-1988 |
| FEB | 35.6 | 02-24-1967 | 15.1 | 02-04-1987 | 61.7 | 02-22-2013 |
| MAR | 36.8 | 03-26-1983 | 14.9 | 03-01-1963 | 65.0 | 03-31-2012 |
| APR | 38.0 | 04-25-1998 | 17.2 | 04-05-1963 | 47.2 | 04-23-1985 |
| MAY | 38.5 | 05-14-1987 | 17.8 | 05-03-1962 | 166.0 | 05-20-1966 |
| JUN | 38.0 | 06-02-1993 | 18.1 | 06-27-1961 | 334.5 | 06-07-1967 |
| JULY | 36.2 | 07-20-1998 | 17.7 | 07-23-1961 | 246.4 | 07-07-2002 |
| AUG | 35.8 | 08-10-1962 | 17.8 | 08-23-1964 | 391.4 | 08-07-2012 |
| SEP | 35.4 | 09-04-1988 | 20.0 | 09-08-1964 | 455.0 | 09-26-2009 |
| OCT | 35.4 | 10-09-2003 | 18.6 | 10-31-1967 | 209.3 | 10-18-1975 |
| NOV | 35.0 | 11-01-2001 | 15.6 | 11-12-1962 | 169.9 | 11-20-1966 |
| DEC | 34.7 | 12-15-1997 | 15.1 | 12-13-1988 | 87.2 | 12-22-1994 |
| ANNUAL | 38.5 | 05-14-1987 | 14.9 | 03-01-1963 | 455.0 | 09-26-2009 |
| Period of Record | 1961 - 2014 | | | | 1961 – 2014 | |

STATION : SCIENCE GARDEN, QUEZON CTIY

LATITUDE : 14°38'41.35"N

Prepared by: CAD/CADS/PAGASA

LONGITUDE : 121°02'40.45"E

ELEVATION : 43M

For comparison, Normal Values for the period 1981 – 2010 recorded from the same observation station are presented in *Table 3.04*.

⁸ Excerpt from PAGASA Report on **Climatological Extremes as of year 2014** which includes data on Highest Wind (MPS) and Sea Level Pressure (MBS) as presented in the Mandaluyong City Ecological Profile 2016

Table 3.04. Climatological Normal Values: 1981 - 2010⁹

| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) |
|---------|-------------|-----------|-------------|----------|-----------|---------------|---------------|--------------|----------------------|------------|
| Month | Rainfall | | Temperature | | | | | | Vapor Pressure (mbs) | Rel. Hum % |
| | Amount (MM) | No. of RD | Max (°C) | Min (°C) | Mean (°C) | Dry Bulb (°C) | Wet Bulb (°C) | Dew Pt. (°C) | | |
| JAN | 18.5 | 4 | 30.6 | 20.8 | 25.7 | 25.3 | 22.2 | 20.9 | 24.6 | 76 |
| FEB | 14.6 | 3 | 31.7 | 20.9 | 26.3 | 26.0 | 22.3 | 20.8 | 24.4 | 73 |
| MAR | 24.8 | 4 | 33.4 | 22.1 | 27.8 | 27.6 | 23.2 | 21.5 | 25.4 | 69 |
| APR | 40.4 | 5 | 35.0 | 23.7 | 29.4 | 29.2 | 24.4 | 22.7 | 27.2 | 67 |
| MAY | 186.7 | 12 | 34.7 | 24.7 | 29.7 | 29.3 | 25.3 | 23.9 | 29.5 | 72 |
| JUN | 316.5 | 18 | 33.1 | 24.6 | 28.8 | 28.4 | 25.5 | 24.5 | 30.6 | 79 |
| JUL | 493.3 | 22 | 31.9 | 24.1 | 28.0 | 27.5 | 25.2 | 24.4 | 30.5 | 83 |
| AUG | 504.2 | 23 | 31.3 | 24.2 | 27.8 | 27.3 | 25.2 | 24.5 | 30.6 | 84 |
| SEP | 451.2 | 22 | 31.6 | 24.0 | 27.8 | 27.2 | 25.1 | 24.4 | 30.4 | 84 |
| OCT | 296.6 | 18 | 31.6 | 23.5 | 27.6 | 27.0 | 24.7 | 23.9 | 29.5 | 83 |
| NOV | 148.8 | 14 | 31.4 | 22.7 | 27.1 | 26.5 | 24.1 | 23.2 | 28.4 | 82 |
| DEC | 78.7 | 8 | 30.5 | 21.6 | 26.0 | 25.5 | 22.8 | 21.7 | 25.9 | 79 |
| AN NUAL | 2574.4 | 153 | 32.2 | 23.1 | 27.7 | 27.2 | 24.2 | 23.0 | 28.1 | 78 |

STATION : SCIENCE GARDEN, QUEZON CTIY
Prepared by: CAD/CADS/PAGASA

LATITUDE : 14°38'41.35"N
LONGITUDE : 121°02'40.45"E
ELEVATION : 43M

Another report from DOST-PAGASA presented climate projections for three scenarios: A2 (high-range emission scenario), A1B (medium-range emission scenario), and B2 (low-range emission scenario). The three scenarios are described as follows:

“The high-range emission scenario connotes that society is based on self-reliance, with continuously growing population, a regionally-oriented economic development but with fragmented per capita economic growth and technological change. On the other hand, the mid-range emission scenario indicates a future world of very rapid economic growth, with the global population peaking in mid-century and declining thereafter and there is rapid introduction of new and more efficient technologies with energy generation balanced across all sources. The low-range emission scenario, in contrast, indicates a world with local solutions to economic, social, and environmental sustainability, with continuously increasing global population, but at a rate lower than of the high-range, intermediate levels of economic development, less rapid and more diverse technological change but oriented towards environment protection and social equity.”¹⁰

⁹ Excerpt from PAGASA Report on **Climatological Normal Values: 1981 – 2010** which includes data on Wind and Days with Thunderstorms and Lightning as presented in the Mandaluyong City Ecological Profile 2016

¹⁰ DOST-PAGASA: “Chapter 1: Introduction,” *Climate Change in the Philippines*, February 2011, page 7

The following projections apply for the periods from 2006-2035 centered on year 2020 and 2036-2065 centered on year 2050. As shown in *Table 3.05*, temperature increase in °C in NCR in the mid-range scenario for 2020 and 2050 are estimated to reach a maximum of 1.1 and 2.1, respectively, both during the MAM season. This means that for an observed baseline temperature of 28.8°C, MAM in 2020 will experience a temperature of 29.9°C, while 2050 will have 30.9°C. For the same scenario, MAM seasons in 2020 and 2050 are projected to have decreased rainfall by 33.3% and 38.5%, respectively (*Table 3.06*). This means that for an observed baseline rainfall of 198.5mm, MAM in 2020 and 2050 will have 132.4mm and 122.08mm, respectively.

Table 3.05: Seasonal temperature increases (in °C) in 2020 and 2050 under medium-range emission scenario in provinces in NCR¹¹

| | OBSERVED BASELINE (1971-2000) | | | | CHANGE IN 2020 (2006-2035) | | | | CHANGE IN 2050 (2036-2065) | | | |
|--------------|----------------------------------|------|------|------|-------------------------------|-----|-----|-----|----------------------------|-----|-----|-----|
| | DJF | MAM | JJA | SON | DJF | MAM | JJA | SON | DJF | MAM | JJA | SON |
| NCR | | | | | | | | | | | | |
| METRO MANILA | 26.1 | 28.8 | 28.0 | 27.4 | 1.0 | 1.1 | 0.9 | 1.0 | 2.0 | 2.1 | 1.8 | 1.9 |

Table 3.06: Seasonal rainfall change (in %) in 2020 and 2050 under medium-range emission scenario in provinces in NCR¹²

| | OBSERVED BASELINE (1971-2000) | | | | CHANGE IN 2020 (2006-2035) | | | | CHANGE IN 2050 (2036-2065) | | | |
|--------------|----------------------------------|-------|--------|-------|-------------------------------|-------|-----|-----|-------------------------------|-------|------|-----|
| | DJF | MAM | JJA | SON | DJF | MAM | JJA | SON | DJF | MAM | JJA | SON |
| NCR | | | | | | | | | | | | |
| METRO MANILA | 107.5 | 198.5 | 1170.2 | 758.7 | -12.8 | -33.3 | 8.5 | 0.0 | -17.3 | -38.5 | 21.3 | 3.7 |

Note: The seasonal variations presented above are described as

DJF (December, January, February) – Northeast Monsoon or Amihan Season

MAM (March, April, May) – Summer Season

JJA (June, July, August) - Southwest Monsoon or Habagat Season

SON (September, October, November) – transition from Southwest to Northeast Monsoon Season

¹¹ DOST-PAGASA: "Chapter 3: Climate Change Projections in the Philippines," *Climate Change in the Philippines*, February 2011, page 35

¹² Ibid. 35

Table 3.07: Frequency of Extreme Events in 2020 and 2050 under medium-range emission scenario in provinces in NCR¹³

| Provinces | Stations | No. of Days w/ Tmax >35°C | | | No. of Dry Days | | | No. of Days w/ Rainfall >200mm | | |
|---------------------|----------------|---------------------------|------|------|-----------------|------|------|--------------------------------|------|------|
| | | OBS (1971-2000) | 2020 | 2050 | OBS | 2020 | 2050 | OBS | 2020 | 2050 |
| METRO MANILA | Port Area | 299 | 1176 | 2118 | 7380 | 6445 | 6382 | 12 | 12 | 13 |
| | Science Garden | 1095 | 1984 | 3126 | 7476 | 6302 | 6220 | 9 | 13 | 17 |

Note: For Kalookan North, Quezon City, Marikina, Pasig, Taguig, San Juan, Mandaluyong, use values of Science Garden
For Navotas, Kalookan South, Malabon and Valenzuela, use values of Port Area

Table 3.07 shows that extreme events will be more frequent in 2020 and 2050 compared to the observation period from 1971-2000. For days with maximum temperature > 35°C, 2020 and 2050 are projected to have 889 and 2,031 more days, respectively, than the observation period. Days with rainfall >200mm will be greater by 4 and 8 days in 2020 and 2050, respectively, than in the observation period.

Such climatological extremes were already experienced in the period 1961 – 2014, although extreme events are projected to be more frequent in 2020 and 2050 scenarios indicating hotter and drier summer and wetter rainy seasons.

While rainy seasons are commonly associated with flooding and increased pressure to urban drainage systems, hotter and drier summer brings about negative effects such as drought, cardiovascular and pulmonary health implications and cases of water-borne and vector-borne diseases. Initial reports from the City Health Department shows that in 2016, Respiratory diseases, hypertension, skin diseases and diarrheal disease are among the top ten leading causes of morbidity (Table 3.08) while cardiovascular (323/1st), pneumonia (156/3rd) and other forms of heart diseases (95/5th) are among the top ten leading causes of mortality. In the same year, a total of 686 cases of dengue were reported, with 673 cases treated in local medical and health facilities, with one death in Barangay Bagong Silang. Barangays Addition Hills, Hulo, and Mauway had the most number of dengue cases at 91, 50 and 51, respectively.

¹³ Ibid.

Table 3.08. Ten Leading Causes of Morbidity: 2016
(Morbidity Rate: 7527.75/100,000 pop'n.)

| DISEASES | NUMBER | RATE |
|----------------------------------------------------------|--------|----------|
| 1. Upper Respiratory Tract Infection | 14,210 | 3,996.16 |
| 2. Acute Lower Respiratory Tract Infection and Pneumonia | 4,286 | 1,205.32 |
| 3. Hypertension | 4,020 | 1,130.51 |
| 4. Skin Diseases | 2,493 | 701.09 |
| 5. Bronchitis | 1,191 | 334.94 |
| 6. Diarrheal Disease | 1,048 | 294.72 |
| 7. Diabetes Mellitus | 1,000 | 281.22 |
| 8. Urinary Tract Infection | 885 | 248.88 |
| 9. Influenza | 723 | 203.32 |
| 10. TB All Forms | 497 | 139.77 |

Source: City Health Department

C. ANALYSIS OF CAUSAL LINK BETWEEN DISASTER RISK AND DEVELOPMENT: The Case of Mandaluyong City

The workshop on vulnerability and risk assessment allowed the stakeholders to internalize the links between disaster and development. Three types of land use were set as focus of discussion:

- Settlement/Housing Development (*Figure 3.04*)
- Infrastructure/Road Development (*Figure 3.05*)
- Production/Central Business District Development (*Figure 3.06*)

Each land use was analyzed based on deemed primary impacts which may have secondary impacts leading to identification of potential hazards and risks. The following Causal Models sum up the causal links between disaster risks and development as viewed by the stakeholders:

| Figure 3.04. LAND USE: SETTLEMENT/Housing Development | | | |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|
| PRIMARY IMPACT | SECONDARY IMPACT | HAZARD | LAND USE POLICY OPTIONS |
| a. Environment and Natural Resources | | | |
| <ul style="list-style-type: none"> ↓ Increased waste generation ↓ Increased water consumption and power requirements ↓ Water, air and noise pollution | <ul style="list-style-type: none"> ↓ Clogged drainage ↓ Water shortage ↓ Electrical pilferage | <ul style="list-style-type: none"> ↓ Flood ↓ Water/Vector-borne diseases ↓ Fire | |
| b. Socio-economic Conditions | | | |
| <ul style="list-style-type: none"> ↓ Increased Population | <ul style="list-style-type: none"> ↓ Traffic Congestion ↓ Increased demand for educational and health facilities and services ↓ Increased demand for safety and security services | <ul style="list-style-type: none"> ↓ Road accidents ↓ Health Condition ↓ Classroom shortage leading to OSYs ↓ Crime Incidences | |
| c. Physical Infrastructure | | | |
| <ul style="list-style-type: none"> ↓ Increased requirement for water and power supply facilities ↓ Increased demand for telecommunication facilities | <ul style="list-style-type: none"> ↓ Excavation for pipe laying causing traffic congestion and damages to roads ↓ Electrical posts loaded with tangled/sagging telecommunication cables and wires | <ul style="list-style-type: none"> ↓ Damaged/leaning poles ↓ Fire | |
| d. Institutional/ Governance | | | |
| <ul style="list-style-type: none"> ↑ Increase revenue collection | <ul style="list-style-type: none"> ↑ Availability of funds for services | | |

Source: Social Sector Output, 3-day Orientation-Workshop on the Formulation of the Mandaluyong City Comprehensive Land Use Plan 2017-2032, July 13-15, 2016

| Figure 3.05. LAND USE: PRODUCTION/Central Business District | | | |
|--------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-------------------------|
| PRIMARY IMPACT | SECONDARY IMPACT | HAZARD | LAND USE POLICY OPTIONS |
| a. Environment and Natural Resources | | | |
| ↓ Increased waste generation ↓ Increased water consumption and power requirements ↓ Increased smoke emission | ↓ Clogged drainage ↓ Increased demand for water and energy ↓ Air Pollution/GHG emission | ↓ Flood ↓ Health Hazard ↓ Climate Change | |
| b. Socio-economic Conditions | | | |
| ↓ Increased Population ↑ Increased private investments | ↓ Traffic Congestion ↑ Increased employment opportunities ↓ Security risks ↑ Improved lifestyle | ↓ Economic losses due to delays in travel ↓ Crime Rate increase | |
| c. Physical Infrastructure | | | |
| ↑ Increased high-rise developments/land development | ↓ Reduced unpaved open spaces ↓ Increased surface runoff | ↓ Flood | |
| d. Institutional/ Governance | | | |
| ↑ Increase revenue collection | ↑ Availability of funds for Services ↓ Increased demand for safety and security services | | |

Source: Economic Sector Output, 3-day Orientation-Workshop on the Formulation of the Mandaluyong City Comprehensive Land Use Plan 2017-2032, July 13-15, 2016

| Figure 3.06. LAND USE: INFRASTRUCTURE/Road Development | | | |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-------------------------|
| PRIMARY IMPACT | SECONDARY IMPACT | HAZARD | LAND USE POLICY OPTIONS |
| a. Environment and Natural Resources | | | |
| ↓ air and noise pollution | ↓ GHG emission | ↓ Climate Change | |
| b. Socio-economic Conditions | | | |
| ↑ Increased Circulation/ Mobility ↓ Displacement of people | ↑ Decrease in economic losses ↑ Increased investments ↓ Increased vehicular traffic ↓ Loss of jobs/livelihood ↓ Safety risks from proximity to road | ↓ Road accidents ↓ Crime Rate increase | |
| c. Physical Infrastructure | | | |
| ↓ Displacement of buildings/structures ↓ Reduced open space/easement | ↓ Disruption of business operation | | |
| d. Institutional/ Governance | | | |
| ↑ Increase revenue collection ↑ Higher competitiveness | ↑ Availability of funds for services ↓ Increased pressure on traffic management | ↓ Opposition lawsuits and violent collective action | |

Source: Infrastructure Sector Output, 3-day Orientation-Workshop on the Formulation of the Mandaluyong City Comprehensive Land Use Plan 2017-2032, July 13-15, 2016

1. Settlement/Housing Development

Housing, which is a basic need and a predominant use in the city, is a major cause of environmental problems such as increased demand for water, telecommunication services and power supply, solid waste generation and traffic congestion.

The pictures on the right (*Figure 3.07*) are shot in random parts of the city during the ocular inspection as part of mapping activities for problematic areas in the city. As shown, overhead cables use the same posts as electrical posts and often crisscross creating not only eyesores but potential secondary hazard during ground shaking or conflagration. Mismanagement of solid wastes often resulted in clogged drainage and waterways thus increasing the risks of flooding and flood-related accidents and illnesses. Congested housing areas may hamper efficient evacuation in times of disaster, thus may aggravate the impact of such disaster. Increased ownership of vehicles vis-à-vis lack of parking space often put more pressure on the road carrying capacity causing traffic congestion and delays in travel time leading to business and other opportunity losses.

Availability of housing and the prospect of socialized housing also factor in the increase of population which also adds to the demand on services and facilities on safety and security, welfare, education and health services. Displacement of people in times of heavy flooding or fire put pressure on evacuation centers where health and sanitation services are critical. The November 27, 2015 and November 13, 2016 fire occurrences within the Welfareville Compound that affected 596 and 641 structure owners, respectively, who have to endure at least 4 months of hardships in temporary shelters are testaments to this kind of situation.

Figure 3.07. Random Problematic Areas in the City



Source : City Planning and Development
Department, *Report on Existing
Development Issues and Concerns in
Mandaluyong City*, October 2015

2. Production/Central Business District

While development of a high density commercial area will have positive impact on the economy in the forms of job generation, improved lifestyle, and increase in local revenues, among others, the resulting increase in population and activities have corresponding needs that will put more pressure to existing facilities, resources and the environment.

Referring to a study on building-related energy use (2002)¹⁴, buildings are the biggest contributors (43% MMTC)¹⁵ to CO₂ emissions from fossil fuel combustion, with Residential Use accounting for 21%, Commercial Use for 17%, and Industrial Use at 5%. CO₂, along with other Greenhouse Gases (GHGs) in the atmosphere are the main culprit in the rising global crisis of climate change.

In addition, buildings with large area of floor space and large population consume more water for operation and maintenance. Increased water demand vis-à-vis depleted water resources is an ugly situation that can be further aggravated by human abuse and neglect.

In Mandaluyong City, the defining character of the Central Business District is the proliferation of high rise high density mixed use buildings, a combination of residential condominiums and commercial activities. Between 2009 and 2016, 53 major investments in the form of buildings up to as high as 60 storeys and with a total investments of ₱179.89 Billion have risen in the city, mostly situated in the vicinity of EDSA and in the vicinity of Shaw Blvd. (Figure 3.08)

Figure 3.08. Some of the Major private Investments: 2009-2012



¹⁴ PGBI Technical Seminars 2012 Slide Presentations, "Sustainability and Green Buildings"

¹⁵ MMTC refers to Million Metric Tons of Carbon

With the implementation of the Mandaluyong Green Building Regulations (MGBR) in 2014¹⁶, at least 7 of these buildings within the scope of the MGBR have a total estimated savings of 22.79% in annual energy consumption (Kw-Hr) with the use of energy efficient measures compared to that of the “business as usual” operation. Similarly, upon introduction of water efficient measures, the same group of buildings has a projected annual water savings totaling

47.82% in liters/year. This is one proof that government regulations can bring about efficiency in building performances e.g. in energy and water use, thus minimizing potential negative impacts to the environment.

More so, buildings with bigger capacity for human activities have higher potential as waste and traffic generators.

In addition, most people coming to these buildings or areas are consumers, usually with money in their persons and thus, are potential targets for criminals.

As identified by the PNP-Mandaluyong, crime prone areas in the city are along both sides of EDSA traversing Barangays Barangka Ilaya, Malamig, Highway Hills, and Wack-Wack East Greenhills, and along Shaw Blvd. traversing Barangays Addition Hills and Hagdan Bato Libis. Where Shaw Blvd. crosses EDSA is popularly known as “Crossing” in which corners stand Shangrila Mall, Greenfield District, Starmall, and Parklea-Cityland Development. Common crimes reported in these areas are robbery or theft, or what is called “budol-budol”, “tutok” or “salisi”.¹⁷

| NO | PERSPECTIVE | PROJECT NAME / LOCATION | PROJECT DESCRIPTION |
|----|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| 6 |  | Data Land Inc. The Olive Place Shaw Boulevard Bgy. Addition Hills | * 50 & 48-Storey Mixed-use Bldg. With 8-Level Parking & Pocket Gardens * Total Floor Area: 97,651.50 sq.m |
| 7 |  | DMCI Homes Valenia Residences F. Blumentritt St. Bgy. Old Zaniga | * 15 & 12 Storey Residential Bldgs. * 2 Towers with 596 Units * Total Floor Area: 55,149.11 sq.m. |
| 8 |  | SM Keppel Land Inc. BDO Building ADB Avenue cor. J. Vargas St. Bgy. Wack-Wack | * 47-Storey Mixed-Use Building with 6 Level Basement Parking * Total Floor Area: 259,977.17 sq.m |
| 9 |  | Dept. of Education (DepEd) 4-Storey 42-Classroom Bldg. Martinez St. (C-3 Rd.) Bgy. Addition Hills | * 4-Storey 42-Classroom Bldg. * Total Floor Area: 5,031.70 sq.m. |
| 10 |  | Rockwell Land Corp. Rockwell United Sheridan cor. United St. Bgy. Highway Hills | * Two (2) Tower – Fifteen (15) Storey Mixed-Use Building with Podium and Basement Level * Total Floor Area: 92,458.64 sq.m |

Figure 3.09. Projects Granted Green Building Pre-Compliance Certificate

¹⁶ As of March 2017, a total of 23 projects were granted Green Building Pre-Compliance Certificate. This certificate is granted to projects that have complied to the provisions of the Mandaluyong Green Building Regulations of 2014, Section 12: Green Building Pre-Compliance Certificate in Building Design.

¹⁷ Mandaluyong City Planning and Development Department: “Report on Existing Development Issues and Concerns in Mandaluyong City,” October 2015 Page 20.

The change in people's lifestyle is manifested by daytime and nighttime activities that tend to overlap with the proliferation of 24-hour call centers, internet cafes and al fresco dining, bars, convenience stores with dining, and even 24-hour supermarkets. While on the positive side these establishments create employment, it also cause people to be out in the streets late in the evening and even in the wee hours, risking personal health and safety, thus adding pressure to protective services.

3. Infrastructure/Road Development

Good quality roads indicate a locality's status of economic development. Additional access roads bring forth potential market which attracts investments that translate into increased local government revenues and budget to carry out mandated services. While new roads decongest traffic, a widened road caused displacement of structures and reduced usable space for habitation or business operation (*Figure 3.10*).



Figure 3.10
San Jose and Fabella Sts.
Connecting Road,
Welfareville Compound

Left: before

Right: After

For informal settlers occupying road right-of-ways, road development may be viewed as relocation and displacement from established communities, school and livelihood, instead of removal from danger zones. Such condition may incite opposition and confrontation that, when treated poorly, oftentimes lead to violence.

For fire victims of the 2015 Fire in Blocks 15, 22, 23, 24, 25 and 32 in Welfareville Compound, the road development (*Figure 3.11*) that followed brings security, moral upliftment and opportunity for an improved quality of life (*Figure 3.12*).

Still, an area open to vehicular traffic is prone to pollution and accidents, creating health and safety risks to people, unless appropriate policy regulations are imposed.



Figure 3.11 .

Left: Site Development: Blocks 15, 22, 23, 24, 25 and 32, Welfareville Compound

Top: Model Housing unit (perspective)

Below: Aerial image before the fire



Figure 3.12 . As built/On-going development of Blks 15,22,23,24 and 25, Welfareville Compound

Left: along Martines St.

Right: Interior

IV. THE COMPREHENSIVE LAND USE PLAN 2017-2032

A. RELEVANT NATIONAL AND REGIONAL FRAMEWORK PLANS

The plan conceptualization is guided by the following national and subnational level plans:

1. The National Physical Framework Plan 2001-2030 adopting the principles as follows:

- Food Security
- Environmental Stability and Ecological Integrity
- Rational Urban Development
- Spatial Integration
- Equitable Access to Physical and Natural Resources
- Private-Public Sector Partnership
- People Empowerment
- Recognition of the Rights of Indigenous People¹⁸
- Market Orientation

2. The Metro Manila Greenprint 2030 that aims for a globally competitive Metro Manila, extending its urban development campaign to its neighboring provinces within the context of a Mega Manila and setting developmental priorities with connectivity, inclusiveness, and resiliency as key strategic approaches.

B. DEVELOPMENT FRAMEWORK 2017-2032¹⁹

1. Vision Statement

As a result of the consultative workshops for the formulation of the City Comprehensive Land Use Plan 2017-2032, the new Vision Statement was conceived, looking inward and outward of the five descriptors – people, natural and built environment, economy and governance:

“A world-class city of God-centered, responsible and resilient society living secured in a well-planned, sustainable and peaceful environment that nurtures inclusive economic growth towards global competence, under a leadership that is visionary, dynamic and pro-active.”

¹⁸ Being highly urbanized and centrally located in the premier metropolis in the country, Mandaluyong has no area declared as ancestral domain for indigenous people. However, a portion of the local population has their mother tongue traceable to indigenous groups in the country.

¹⁹ This Development Framework 2017-2032 was presented in the **City Executive-Legislative Agenda 2017-2019** formulated as an offshoot of the CLUP Planning Workshop done in July 2016 and adopted through Sanggunian Resolution No. 2380, s-2016 .

A world-class city of God-centered, responsible and resilient society

Mandaluyong is inhabited by people of diverse culture and beliefs who can co-exist harmoniously and are willing to work together for a common good. Through constant information campaign, its people recognizes the rights of and challenges faced by the disadvantaged sectors e.g. children, women, differently-abled individuals, senior citizens, and the urban poor. With 'Mandaleño Disiplinado' as a popular slogan even among children, the people are becoming more conscious of the laws and practices of the city, maintaining the image of a child-friendly city and bearer of the Seal of Good Local Governance.

Intensive campaign on disaster preparedness through regular information education in schools, business establishments and the grassroots, organizing community volunteers and forming alliances with various sectors who can provide emergency services and provisions, and procuring emergency equipment and supplies are among the priorities of the city government to mitigate likely impacts of and facilitate recovery from disasters and calamities that the city is prone to experience.

Living secured in a well-planned, sustainable and peaceful environment

With the increasing awareness on the impacts of climate change – typhoons Yolanda and Ondoy and the 2012 Habagat are real eye-openers – the people are now internalizing the meaning of eco-friendly and environment-friendly activities, equipment, structure and materials. Ordinances on solid waste and septage management as well as the responsible use of plastic materials are strictly implemented. The city as provider of infrastructure support is busy on improving roads and drainage systems to ease traffic and minimize flood occurrences. Dengue Patrol and the 'Tapat Ko Linis Ko' concept of community activities are continuously mobilized in response to the health sector's fight against dengue and other vector-borne and water-borne diseases.

Regular and emergency coordination meetings among members of the Peace and Order Council are being observed to keep tract of the peace and order situation of the city as well as the implementation of ordinances such as the Riding-in Tandem Ordinance and Code of Parental Responsibility. A constant agenda of each meeting include briefings and updates from the PNP, BFP, BJMP and the Mandaluyong Anti-drug Abuse Council.

Nurturing inclusive economic growth towards global competence

To be globally competitive is to raise the economic status not only of the city in terms of facilities and revenue generation but also of its constituents for them to enjoy a good quality of life and standard of living in which services and opportunities are available and accessible

to all. Making Mandaluyong as a destination city at par with those in developed countries is a specific direction to follow.

Educational subsidies and building capabilities from entrepreneurial to training manpower befitting employment in the global industry are only two of the programs that the city continuously implements for its constituents including the economically disadvantaged and the differently-abled.

Quoting from the 2030 Agenda for Sustainable Development, *“No one must be left behind.”*

Streamlining construction and business permit processes and improving utility services and infrastructure support while embracing the advent of modern communication and information technology have greatly improved the city’s image as an ideal place to do business.

A leadership that is visionary, dynamic and pro-active

A leadership that commands respect because of inspiring visions and remarkable achievements is branded by the *“Gawa Hindi Salita”* slogan that easily sticks in the minds of people. Strong public support is easily acquired by diligently practicing transparency and promoting community participation. The various awards and recognitions received by the city for outstanding performance in governance encapsulate the leadership qualities of a true Tiger City.

Hence, as an organization,

*“It is the **mission** of the city government of Mandaluyong to continuously perform efficiently in the areas of governance, administration, social services, economic development, and environmental management, instilling among its citizenry the values of collective action and maintaining competence towards self-reliance and sustainable development.”*

2. Sectoral Goals, Objectives and Targets

Having stated the new vision for the city, and in consideration of the commitments to the 2030 Agenda for Sustainable Development, sectoral goals, objectives and targets were identified, clustered into social, economic, environment, and governance. The plan also adheres to the purposes as stated in existing zoning ordinances and the Green Building Code of the city:



- Guide, control and regulate future growth and development of the City of Mandaluyong in accordance with its Comprehensive Development Plan
- Protect the character and stability of residential, commercial, institutional, open space and other functional areas within the locality and promote the orderly and beneficial development of the same
- Promote and protect the health, safety, peace, comfort, convenience and general welfare of the inhabitants in the locality
- Promote and ensure the sustainable growth of the city as a premier commercial, business, financial and residential center of Metro Manila
- Resource conservation and management and the reduction of Green House Gas Emissions;

a. Social Sector

1) Goal

By 2030, the citizens of the City of Mandaluyong are all registered at birth, have an inclusive and full access to quality education, health, living in a secured, socially protected and resilient community.

2) Objective

To improve the quality of life through increased availability of basic goods and services such as food, shelter, clothing, health, education and protection to life and property and ensure accessibility thereof.

3) Targets

- Provide legal identity for all through 100% birth registration, ensuring that all children are registered at birth;
- Have a responsive community towards the attainment of a safe place to live, work, invest and do business;
- Ensure healthy lives of our citizenry and or promote the well being of our constituents by reducing maternal and child mortality rate, decreasing the incidence of communicable and non-communicable diseases, and to sustain and maintain the nutritional status of children;
- Have a resilient City in times of extreme events (disasters/calamities);

- e) Improved if not advanced the social standing/status of all people by reducing and or eliminating all forms of violence and abuses against women and children, and decrease the number of children in conflict with the law
- f) Continuously implement and update as necessary the City Comprehensive Shelter Plan 2009 – 2020²⁰ with the ultimate aim of minimizing, if not totally remove informal settlers²¹ taking into consideration the following:
 - o Increase Socialized Housing Stock for in-city resettlement
 - o Off-city resettlement for ISFs living in danger zones
 - o Collaboration with national agencies for funding of in-city and off-city resettlement
 - o Purchase of property presently occupied by ISFs
 - o Redevelopment of Welfareville as New Town Development to address the concern of security of tenure of ISFs
 - o Establishment of housing facilities for city workers and employees
- g) Empowered citizens thru education by way of giving scholarships to less fortunate but deserving students, ensuring 100% graduation rate in the tertiary level, and to have an equal access to manpower development training (for 15 years old and above);
- h) Provide sustainable programs for the elderly such as but not limited to free check up and medicines, social pension, and provision of employment to willing and capable Senior Citizens;
- i) Sustain availability of potable drinking water with adequate pressure.
- j) Ensure that PWDs have equal access to all levels of education and early intervention, have gainful employment with equal pay for work of equal value, enhanced access to the physical environment, public transportation, health care services, information and communication, and inclusion in the disaster risk management planning.

²⁰ The Mandaluyong City Comprehensive Shelter Plan 2009-2020 is the output of orientation of local key officials and employees on Local Shelter Planning on May 26-27, 2008 conducted by the HUDCC as part of the technical assistance under the Metro Manila Urban Services for the Poor –Investment Program (MMUSP-IP) aided by the Asian Development Bank. The CSP 2009-2020 is being targeted for updating since most of the issues identified were already addressed and with the issuance of new guidelines and plan format by the HUDCC.

²¹ As reported by the Mandaluyong Housing and Development Board, between August 2009 and May 2017, a total of 383 ISFs were relocated in either Bulacan and Cavite.

b. Environment Sector

1) Goal

To conserve, protect and preserve a balance healthy environment towards a progressive urbanization for its inhabitants to enjoy a healthful balance ecology, through sustainable environment quality management, systematic in its operation for effective and efficient delivery of environmental services.

2) Objectives

- a) Adhere to the mandate of RA9003 on the formulation and implementation of a Ten-year Solid Waste Management Plan²², and other applicable pertinent laws.
- b) To formulate guidelines in the preparation of Environmental Management plans, programs, projects and activities that mainstream measures on disaster risk reduction and climate change adaptation as mandated by Republic Act 9279 (Climate Change Act of 2009) and Republic Act 10121 (Philippine Disaster Risk Reduction and Management Act of 2010).
- c) To realign, amend and standardize city and barangay environment-related ordinances and resolutions.
- d) To enhance and improve the city environment structure functions in addressing environment problems, issues and concerns including air, noise and solid waste pollution and greenhouse gas emission.
- e) To conduct research and studies in developing sustainable and adaptable environment management plan

3) Targets

- a) Collaboration of City and Barangay Level Environmental Management Plans.
- b) Coordination with National Agencies, Non-Government Offices, City Departments and Barangay Level directly involved in environment issues and concerns.
- c) Implementation of City plans, programs & activities down to barangay level for continuity, maintenance and sustainability.

²² The Mandaluyong Ten-Year Solid Waste Management Plan 2015-2024 was approved by the Department of Environment and Natural Resources – National Solid Waste Management Commission by virtue of NSWMC Resolution No. 256 series of 2016.

- d) Strict implementation of Environment Laws and Ordinances
- e) Mass awareness of new laws through trainings, seminars, promotions, advocacy campaign, education

4) Strategies

- a) Creation of City Environmental Management Board task to develop a long term Integrated Environmental Management Plans, Programs and Activities.
- b) Codification of environmental related national law, city and barangay laws resolution and ordinances.
- c) Strict implementation of environmental plans, programs and activities of environment composition such as water quality management, air quality control, solid waste management, energy conservation and utilization.

c. Economic Sector

1) Goal

To make Mandaluyong City the center of Metro Manila at promoting equitable, sustainable and integrated development, maximizing social and economic growth.

2) Objectives

- a) To streamline business process
- b) To generate employment for Mandaluyong constituents
- c) To empower Micro-Businesses (Barangay Micro-Business Enterprise)
- d) To encourage Business Investments
- e) To promote Local Tourism Industry
- f) To improve traffic system & waste management

3) Targets

- a) Reduced business process time by 50%
- b) Increased employment rate by 80%
- c) Increased registration of micro-business thru BMBE
- d) Formulated and adopted a Market Code
- e) Increased revenue by 15%
- f) Created Cultural Mapping & Tourism Code
- g) Reduced travel time and increase productivity
- h) Formulated and adopted a Local Environmental Code

4) Strategies

- a) Streamlining of business regulatory requirements by forging a MOA with BFP and synchronizing with other line departments/offices via computer network linkages (i.e., Treasury Dept., Assessors' Dept., Engineering Dept., & Health Dept.)
- b) Provision of basic household infrastructure & support services , promoting social development through functions such as arts & culture & empowering of marginalized and disadvantaged groups
- c) Establishment of data profiling and registration of micro-businesses
- d) Provision of a cost-effective marketing & investment support services
- e) Implementation of Affirmative procurement policies and exemptions
- f) Capacity building for Tourism Office on Tourism Planning and addressing its deficiencies
- g) Establishing an effective traffic scheme and strict zoning ordinance
- h) Codification of existing environmental ordinances

d. Governance

1) Goal

To effectively administer social, economic and environmental programs in an atmosphere of harmony, equity and peace.

2) Objectives

- a) To instill among Mandaleños mutual trust and respect and enable them to develop innovative partnerships, exchange information about best practices and emerging issues in withstanding the changing environment.
- b) To deter city employees/officials to engage in graft and corrupt practices.
- c) To increase the percentage of population being able to avail of the needed affordable, essential drugs and medicines.
- d) To strengthen the systematic application of and maximize availability of ICTs in support of sustainable socio-economic growth and progress.
- e) To maximize the use and accessibility of the recreational facility for the elderly and public library.

3) Targets

- a) Community organizations and schools as LGU partners and venue in the conduct of continuing advocacy campaign on waste management, reduction and disposal.
- b) Conduct of values formation training and similar activities and impose Lifestyle Check or financial investigation among cash-bonded city government employees and those in the positions prone to fraud and corruption
- c) Design of a systematic and continuous program implementation in partnership with major government agencies that will benefit indigent families, the sick and the elderly
- d) Provide wide-range educational and training programs to qualified ICT and knowledge workers in all sectors, as well as provision of computers and internet access per barangay for use of residents.

- e) Upgraded and retrofitted center for the elderlies and seniors located in Barangay Addition Hills to enable this sector of the population to attain the highest standard of mental and physical health relative to aging, as well as conversion of the library to serve as focal point of education

C. LAND USE PLAN

Guided by the Vision Statement, sectoral goals, objectives, and targets, the Land Use Plan is laid out according to the four general land use policy areas of Settlement, Production, Infrastructure, and Open Space Preservation. Where these areas intersect or overlap, such as the actual scenario in a highly urbanized city with limited land area, regulatory measures shall be strictly enforced to maintain harmony and preserve identity and character of each land use classification. Surface Waters and Air Space are also treated as policy areas with potential impacts on the Land Use Plan. Being a highly developed city and with modern structural engineering practices, the Land Suitability (*Map 4.01*) is mostly defined by open space preservation areas and areas for development.

The Land Use Plan is illustrated in *Map 4.02*, and further detailed in *Table 4.01* providing a comparative allocation in land uses as targeted in 2011 and 2017. Changes in land use allocation are based on the following:

- Decrease in residential areas due to conversion of some residential areas into mixed development zone
- Increase in SHZ due to new housing projects
- Increase in commercial areas due to introduction of new commercial zone and conversion of portion of URA into new CBD
- Increase in institutional area due to construction of government facilities
- Decrease in Other Land Uses due to conversion of URA into new CBD and identification of New Town Development zone

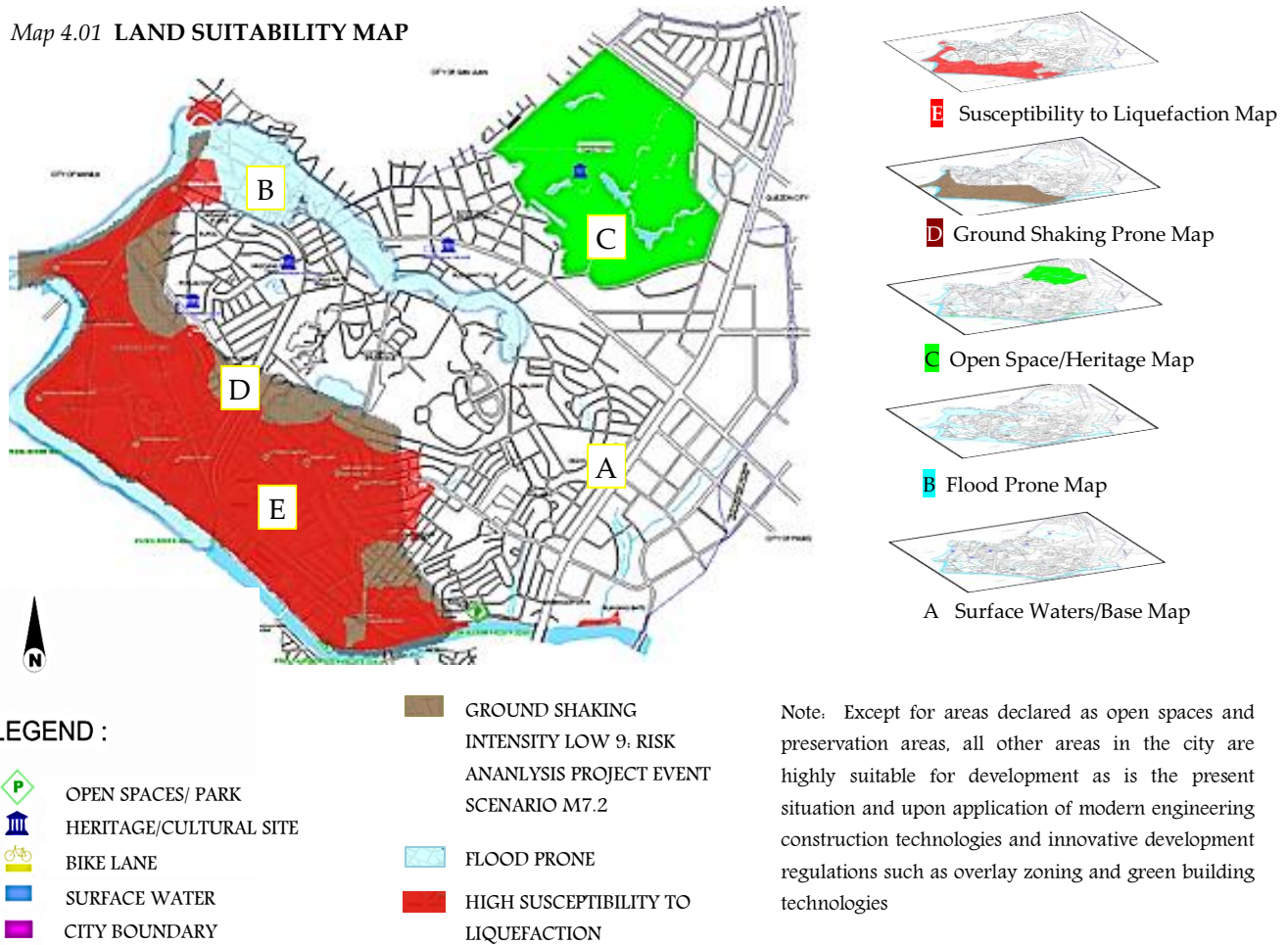
Zone regulations to implement the plan are shown in *Map 4.03*.

1. Physical Development Goals

- a. Mandaleño Disiplinado moving towards a clean, safe and sustainable city
- b. Mandaluyong City as a paradigm of good governance and convergence of business investments i.e. shopping mall complexes, BPO's, corporate and multinational headquarters, hotels and lifestyle haven , mixed use condominiums
- c. Infrastructure development for greater connectivity and mobility

- d. Spreading economic growth in the Southwestern section of the city
- e. Pasig River Waterfront development as gateway to the city
- f. Shelter for all and proper land management of key areas

Map 4.01 LAND SUITABILITY MAP



RISK AND SUITABILITY ANALYSIS MATRIX

| INDICATOR | URBAN | DEVELOPMENT SUITABILITY |
|---------------------|----------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Protected Area | All identified surface waters and potential heritage sites | Regulated development limited to preservation and rehabilitation |
| Land Classification | Highly urbanized and presently regulated by a Zoning Ordinance | Highly suitable considering existing coverage of highly built-up areas |
| GeoHazard | Partially within | highly suitable for development as is the present situation and upon application of modern engineering construction technologies and innovative development regulations such as overlay zoning and green building technologies |

2. Policy Interpretation

Each development shall adhere to the allowable uses in each land use classification. Inconsistencies in the pattern shall be concluded as allowed variation for the following reasons:

- a. Due to difficulty encountered because of the unique character of the land that the owner cannot obtain a reasonable return on the property.
- b. Innovations in response to climate change adaptation and disaster risk management
- c. Compliance to new policies and standards set forth in international commitments and national laws issued after the adoption of this Comprehensive Land Use Plan

A significant number of requests for variances shall signify the time to review, amend or modify the land use plan.

3. Policy Areas

a. Settlement Areas

1). General Policy

Residential areas shall be characterized by subdivisions, single-detached homes, townhouses, medium to high-rise condominiums with minimal personal and commercial services and recreation spaces. Development shall be guided by the following:

- a) Height regulations as the major defining character of the various residential zones
- b) Specific areas shall be allocated for socialized and government housing development to accommodate relocatees from in-city informal settlement areas and government employees
- c) Areas for community gardening shall be encouraged
- d) Areas for neighborhood disaster risk reduction and command centers and materials recovery facility shall be established
- e) Areas for religious congregation on a neighborhood scale shall be allowed

- f) Office spaces shall be limited for the conduct of one's profession or livelihood activity that is not labor intensive and utilizes popular communication technology
- g) Wherever applicable, mixed use development shall be encouraged.
- h) The city hall compound as the main seat of government remains in its existing location at Maysilo Circle. The twenty seven barangays will continue to operate their own barangay and multi-purpose halls as government centers. Government center compounds shall be open to accommodate special events such as Christmas season, business week and other cultural celebrations and official events.

2). Land Use Classifications

- a) **Low Density Residential** - Characterized mainly by single family, single detached dwellings with the usual community ancillary uses on a neighborhood scale, such as executive subdivisions and relatively exclusive residential communities which are not subdivisions.
- b) **Medium-Density Residential** - Characterized mainly as a low-rise single-attached, duplex or multi-level building/structure for exclusive use as multiple family dwellings.
- c) **High Density Residential** - Characterized mainly as high-rise building/structure for exclusive use as multiple family dwellings with mixed housing types, may include low, medium or high rise residential condominium buildings that are already commercial in nature or scale. It may also include medium to high rise buildings predominantly used for residential purposes and with limited provisions for commercial use.
- d) **Very High Density Residential** - Characterized mainly as high-rise building/structure for exclusive use as multiple family dwellings with mixed housing types, may include low, medium or high rise residential condominium buildings up to 18 storeys (*as defined in Table 7.2 page 82 of the National Building Code Implementing Rules and Regulations*) that are already commercial in nature or scale.
- e) **Mixed Development** - Characterized by mixed residential, retail shops, offices, leisure industry and support commercial activities allowing opportunities for the extension of economic growth outside the dominant business relief allowed for R3 zones.

- f) **Socialized Housing** - Characterized mainly by socialized housing/dwelling purposes for the underprivileged and homeless as defined in Republic Act 7279.
- g) **Government Housing** - housing/dwelling purposes exclusively for employees of the city government of Mandaluyong including those who have reached retirement from service within the planning period for this Land Use Plan.
- h) **Government Center** - convergence zone for executive, legislative and judiciary functions of the government either city or barangay level

b. Production Areas

1). General Policy

Production areas shall be characterized mainly by commercial and business activities zoned according to level of services from neighborhood level to regional in scope. Road and traffic capacities shall define the operational scope of offices, banks, personal and professional services, commercial stores and supermalls, hotels and accommodation services as well as recreational and sports facilities.

- a) Where industrial areas exist, activities shall be maintained to existing industrial operations and intensity.
- b) Tourism activities that would help generate employment and support marketing of local products shall be encouraged.
- c) Wherever possible, and in observance of the principle on highest and best use of the land, mix development shall be allowed provided that the character and overall image of the community are preserved and the development shall benefit a larger part of the community.
- d) To regulate the pressure of more commercial developments on the circulation system, the plan shall endeavour to evaluate the effectivity, improve and institutionalize the 2017 Traffic Management Plan of the city.²³

2). Land Use Classifications

- a) **Low Density Commercial** - A neighborhood or community level of commercial use or occupancy, characterized mainly as a low-rise building/structure for low

²³ See Traffic Management Plan for 2017 developed by the Mandaluyong City Traffic and Parking Management Department.

intensity commercial/trade, service and business activities, e.g. 1 to 5 storey shopping centers, small offices or mixed-use/occupancy buildings and the like

- b) **Medium Density Commercial** - A city level of commercial use or occupancy, characterized mainly as a medium-rise building/structure for medium to high intensity commercial/trade, service and business activities e.g. 3 to 6 storey shopping centers, medium to large office of mixed use/occupancy buildings/structure and the like.
- c) **High Density Commercial** - A metropolitan level of commercial use/occupancy, characterized mainly as a medium-rise to high-rise building/structure for high to very high intensity commercial/trade, service and business activities, e.g. large to very large shopping malls, very large office or mixed use/occupancy buildings and the like.
- d) **Central Business District** - Convergence areas for large-scale commercial, business, financial, and high-rise residential and related uses, corporate and multinational headquarters, lifestyle and entertainment industry
- e) **Mixed Development** - Characterized by mixed residential, retail shops, offices, leisure industry and support commercial activities allowing opportunities for the extension of economic growth outside the dominant business relief allowed for C-1 zones.

c. Infrastructure Areas

1). General Policy

The Land Use Plan shall endeavor to preserve the location of social services institutions such as schools and training centers, health facilities, protective services, social welfare institutions.

- a) Where physical space is limited, vertical densification shall be an option of development to increase capacity and maximize usage.
- b) Where locations are prone to identified hazards such as flood and fire, if relocation is impractical, retrofitting and appropriate disaster mitigating measures shall be prioritized.

2). Land Use Classifications

- a) **Institutional** - Government and protective uses as well as institutional and social services for the entire community and shall be characterized further by specialized

governmental agencies providing institutional, protective, security and social services for the region or the country as a whole, and which are governed by specialized regulations, including mental hospitals, rehabilitation and training centers and security services.

- b) **Government Infrastructure** - Physical projects by the government in support of socio-economic development such as road networks including widening, reopening and recovery, bridges, structures for education, health, welfare, police and fire protection, recreation, housing, flood control and drainage, water impoundments, river bank stabilization and similar structures for the protection of the environment and reduction of vulnerability to disasters and calamities.
- c) **Urban Utilities and Services** - Infrastructure and facilities dedicated for water supply and sewerage, information and communication technology, power supply distribution, and solid waste management

d. Open Spaces and Preservation Areas

1). General Policy

The plan shall develop and maintain open spaces as urban breathing spaces and for purposes of recreation, emergency evacuation, public assembly and related activities including those with improvements valued as historical or with cultural significance and, in the case of cemetery, for burial and remembrance of the dead.

- a) For areas classified as environmentally sensitive or with hazardous features, development shall be regulated with reference to Presidential Proclamation 2146 dated December 14, 1981 or its latest version.
- b) Interstitial spaces shall be developed as urban forestry areas, wherever practical.
- c) For public cemeteries, development and activities shall be in conformance to City Ordinances Nos. 391, s-2008 (14-year Development Plan) or its latest version, 445, s-2010 (Omnibus Ordinance and IRR), 634, s-2016 (Disposal through cremation of remains)

2). Land Use Classifications

- a) **Linear Parks and Landscaped Development Areas** - A division of an area designed for the maintenance of ecological balance and characterized by scenic areas and parks facilities but not necessarily with playground and other sports facilities.

- b) **Parks and Recreation** - A division of an area designed for diversion/amusements and for the maintenance of ecological balance of the community.
- c) **Road Right-of-ways, rotundas** - That part over which vehicles pass with a total width measured from curb to curb inclusive of any center island. Rotundas are open spaces not necessarily round and typically landscaped in place where two or more roads intersect to facilitate vehicular mobility.
- d) **Buffer Area.** These are linear open spaces designed to separate incompatible elements or uses, to control pollution/nuisance and for identifying and defining development area or zones.
- e) **Easement** - Open space imposed on any land use/activities sited along waterways, road-right-of-ways, cemeteries/memorial parks and utilities.
- f) **Tourism Area** – sites within cities endowed with natural or manmade physical attributes and resources that are conducive to recreation, leisure, and other wholesome activities
- g) **Cemetery** - Open space and facility dedicated as depository for the remains and remembrance of the deceased persons.

e. Surface Waters

These are natural waterways within the city's area of responsibility (*Map 4.04*). Uses of these waterways other than as natural drainage shall be subject to developmental regulations of the Department of Environment and Natural Resources (DENR) and the provisions of the Water Code of the Philippines.

- 1) Pasig River
- 2) San Juan River
- 3) Maysilo Creek
- 4) Maytunas Creek
- 5) Buhangin Creek
- 6) Ermitanio Creek
- 7) Buayang Bato Creek
- 8) Mayon Creek

f. Air Spaces

These are air spaces above streets traversing superblocks or coordinated development of adjacent properties and air spaces above individual buildings or land improvements.

- 1) For streets or roadways, a portion of such air spaces may be used for elevated walkways or bridgeways to connect buildings on both sides of the street. Provided, such portion of streets affected shall remain as public street or road, well lighted and properly ventilated and maintained (Figure 4.01).
- 2) For potential use of air spaces above buildings or land improvements, this Land Use Plan shall design a system of utilizing air spaces through swapping of open spaces for air spaces.

Figure 4.01. Sample Bridgeways



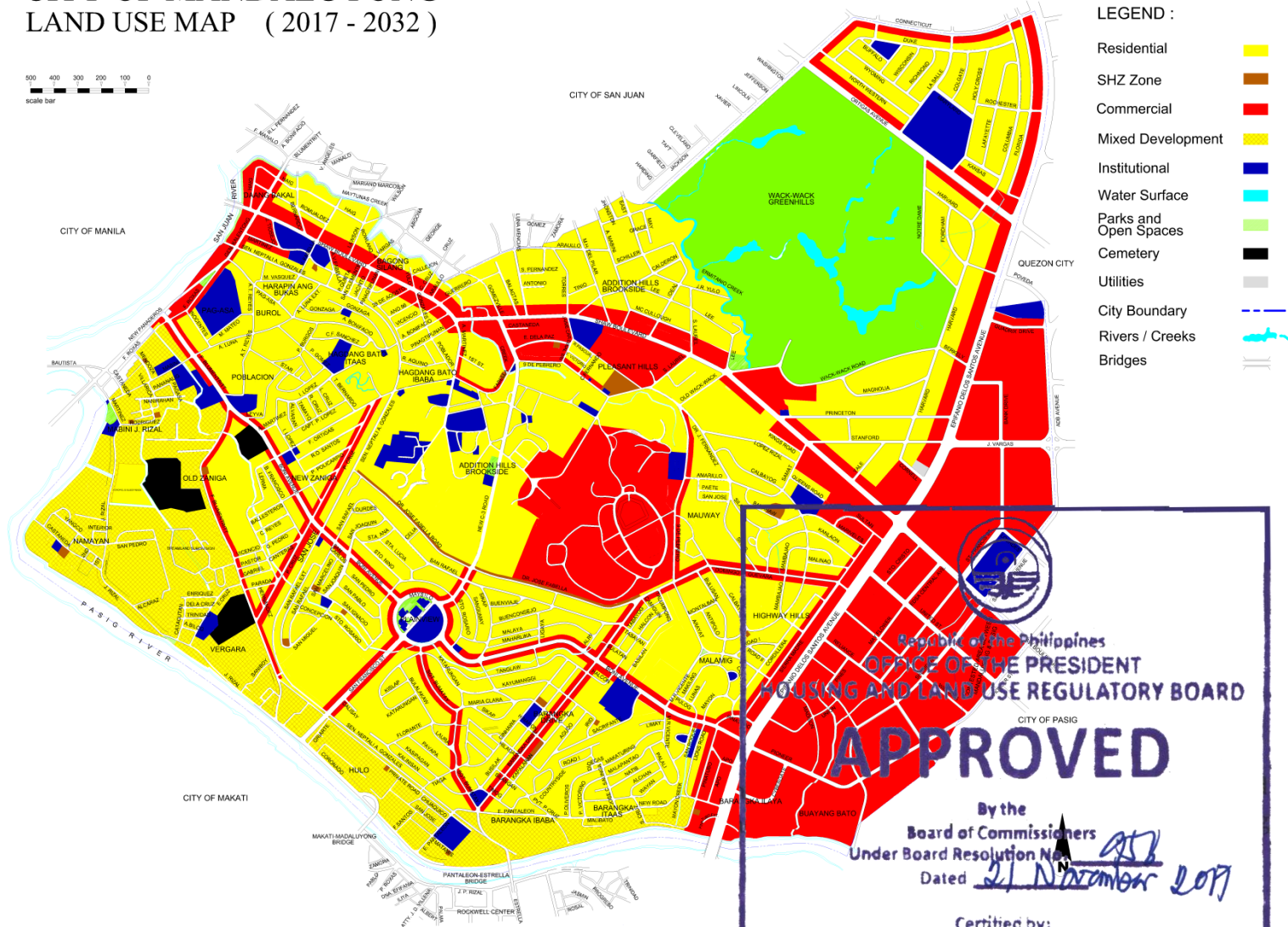
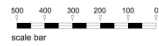
SM Megamall Bridgeway above Julia Vargas St., Mandaluyong City (4-level commercial

Table 4.01. TARGET LAND USE ALLOCATION (2011 AND 2017)

| Land Use Classification | Year 2011 (has.) | % | Year 2017 (has.) | % | Difference |
|---------------------------------------------------------------------|---------------------|-------------|---------------------|-------------|------------|
| Residential | 492.78 | 43.78 | 455.04 | 39.47 | -4.30% |
| Socialized Housing | 3.74 | 0.33 | 4.20 | 0.36 | 0.03% |
| Commercial | 231.63 | 20.58 | 274.28 | 23.79 | 3.21% |
| Mixed Development | - | | 97.00 | 8.41 | |
| Industrial | - | | - | | |
| Institutional | 35.04 | 3.11 | 39.02 | 3.38 | 0.27% |
| Others (Vacant, Roads, Parks & Playgrounds, River, Cemetery & URA) | 362.50 | 32.5 | 283.27 | 24.57 | -7.93% |
| TOTAL | 1,125.69 | 100% | 1,152.81 | 100% | |

Map 4.02

CITY OF MANDALUYONG LAND USE MAP (2017 - 2032)



LEGEND :

- Residential
- SHZ Zone
- Commercial
- Mixed Development
- Institutional
- Water Surface
- Parks and Open Spaces
- Cemetery
- Utilities
- City Boundary
- Rivers / Creeks
- Bridges

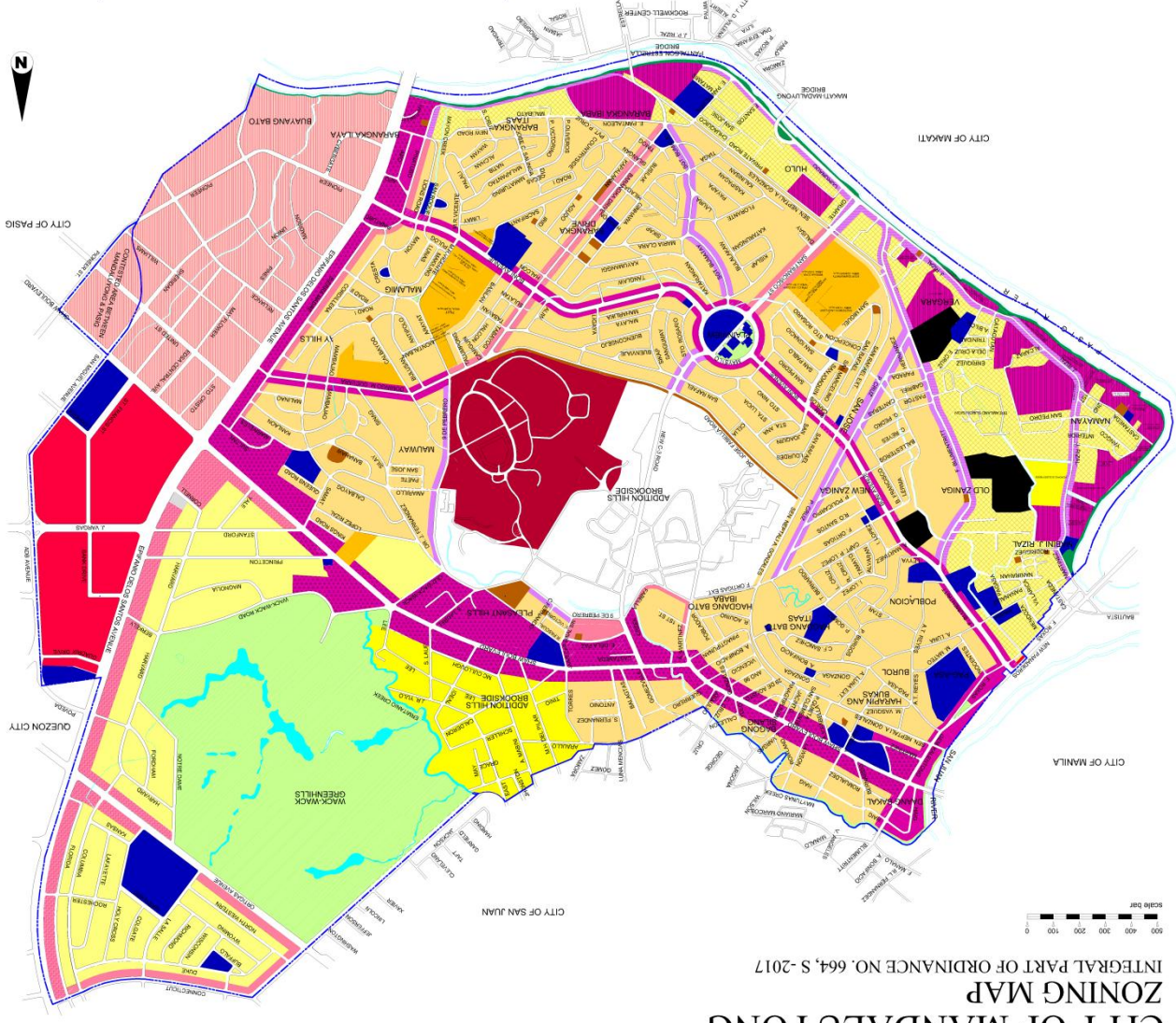
Republic of the Philippines
OFFICE OF THE PRESIDENT
HOUSING AND LAND USE REGULATORY BOARD
CITY OF PASIG

APPROVED

By the
Board of Commissioners
Under Board Resolution No. 257
Dated 21 November 2017

Certified by:
Norica L. Ilag
Policy Development Group

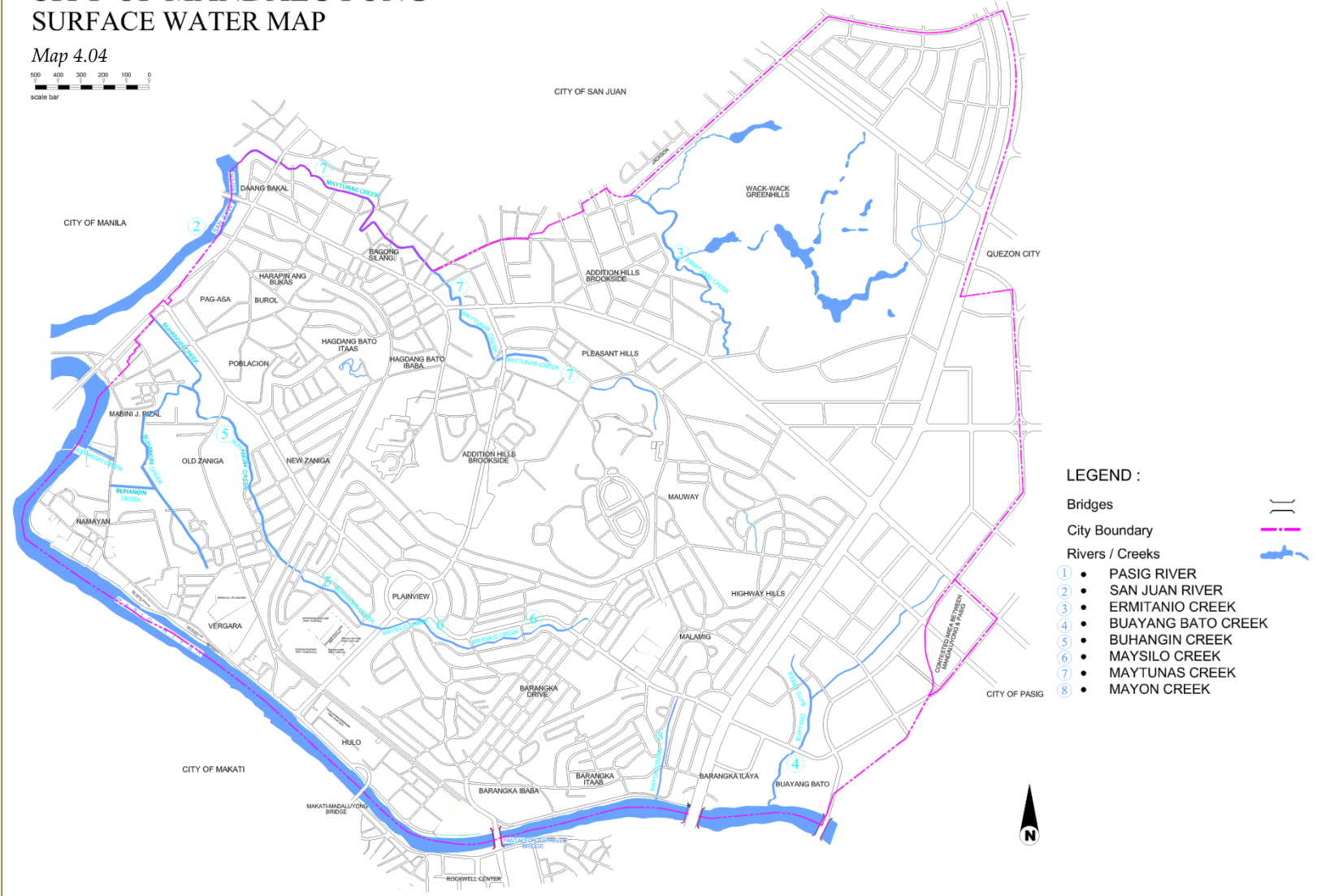
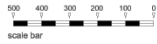
CITY OF MANDALUYONG ZONING MAP INTEGRAL PART OF ORDINANCE NO. 664, S -2017



- LEGEND :**
- Residential
 - R-1 Zone
 - R-2 Zone
 - R-3A Zone
 - R-3B Zone
 - SHZ Zone
 - Commercial
 - C-1 Zone
 - C-2A Zone
 - C-2B Zone
 - C-3A Zone
 - C-3B Zone
 - MO-CBD Zone
 - MP-CBD Zone
 - N-CBD Zone
 - MD-1 Zone
 - MD-2 Zone
 - MD-3 Zone
 - URA NTD
 - Institutional
 - Water Surface
 - Parks and Open Spaces
 - PASIG RIVER WFZ
 - Cemetery
 - Utilities
 - City Boundary
 - Rivers / Creeks
 - Bridges

CITY OF MANDALUYONG SURFACE WATER MAP

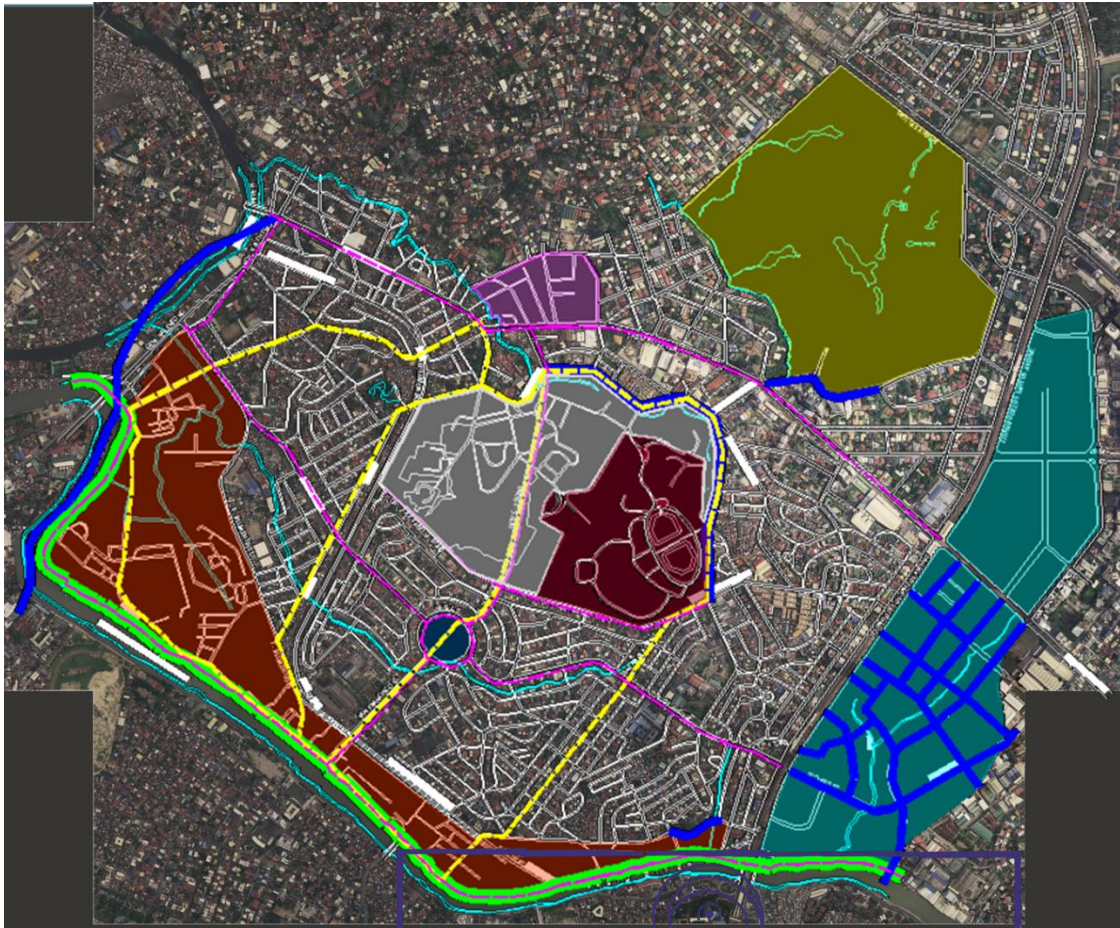
Map 4.04



D. THE STRUCTURE PLAN

Existing major land uses shall be maintained but with a few changes in strategic locations as shown in the map to continuously support the growing demand for residential and commercial spaces while improving connectivity and mobility, and with provision for business continuity even in times of calamities and bad weather.

Figure 4.02. The Proposed Structure Plan 2017-2032



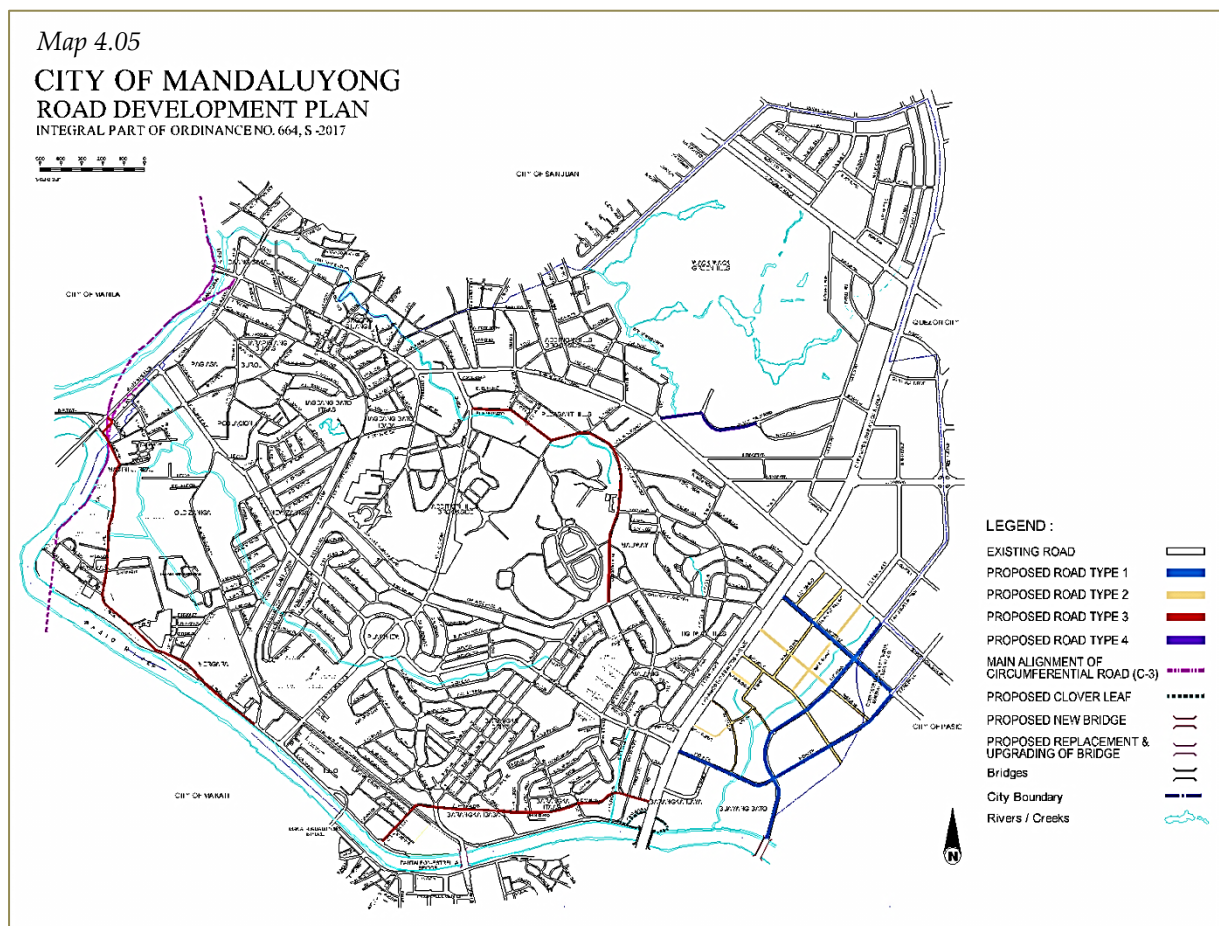
1. Road Network Expansion.

The various roads for improvement, new roads to be developed, retrieval and opening of road lots, and indicative alignment of a regional circumferential road linking the city to adjacent cities. (Map 4.05)



Road development plan shall take as opportunity new bridges planned by the Department of Public Works and Highways, specifically:

- Alignment of C-3 Road missing link with on and off ramps in the vicinity of General Kalentong St.
- Bridge replacement and upgrading for Barangka Drive-Estrella St. Bridge
- J.P. Rizal – Sheridan Bridge
- Clover leaf at the east and west side of Guadalupe Bridge



2. Main Roads as Walkable City Corridors

These shall include

- Gen. Kalentong St.
- Shaw Blvd.
- Boni Avenue
- Fabella St.
- San Francisco – Maysilo – Martines – 9 de Febrero Route

3. Southwest Development

Mixed use development of formerly industrial areas southern part of Barangays Barangka Ibaba and Hulo, and Barangays Namayan and Vergara

4. New Central Business District

Urban renewal of Welfareville Compound with conversion of institutional zone (NCMH/CIW) into high density mixed use development zone

5. Higher Densities and Smart Traffic Management Scheme

Provision for higher development ceilings in the central business district north (CBD-Ortigas) of Shaw Blvd. and implementation of intelligent traffic management scheme in both CBD-Ortigas and CBD-Pioneer (south of Shaw Blvd.)

6. Densification of northern Shaw Blvd.

Introduction of graduated height ceilings in Barangay Addition Hills north of Shaw Blvd. from Torres St. to Maytunas Creek for the promotion of optimal residential land use

7. Water Front Development

Pasig River Water Front Innovation to include the Walkable City Park Development Concept, graduated height ceilings and thematic designs concept

8. Redevelopment of the City Hall Complex

9. Evacuation scheme for heavy flood occurrences and major conflagration, and the GMMA Project Event Scenario

The plan shall endeavour to utilize Pasig River as alternate route for emergency support activities through partnership with owners of properties with vacant spaces nearest the river. Wherever possible, spaces shall be allocated for stockyard of equipment and emergency amphibious vehicles.

10. New Town Development

Development of the remaining part of Welfareville Compound other than the part occupied by NCMH and CIW into a New Town Development, preserving the low-rise residential density to maintain the “open space” character of the area

This concept capitalizes on latest infrastructure developments, on-going and planned social support infrastructure in the area (*Figure 4.03*). Being at the central part of the city at high elevation, the New Town shall incorporate urban forestry to serve as breathing space amidst high rise and high density developments in the city.

Map 4.06 illustrates the indicative land use for the New Town Development.

Figure 4.03. Photos of some of the existing and on-going construction of facilities within the Welfareville





E. DESIGN PRINCIPLES AND DEVELOPMENT GUIDELINES

Implementation of the Land Use Plan shall be guided by the following principles:

1. Shelter for All and Squatter-free City

With the end view of a squatter-free Mandaluyong City, the plan shall adhere to the mandates of Section 18 of RA 10884 , An Act Strengthening the Balanced Housing Development Program, Amending for the Purpose RA No. 7279, as amended, otherwise known as the Urban Development and Housing Act of 1992:

a. Requiring mandatory development of an area for socialized housing equivalent to at least fifteen percent (15%) of the total subdivision area or total subdivision project cost and at least five percent (5%) of condominium area or project cost, at the option of the owner and/or developer, in accordance with the standards provided by law;

b. Compliance by concerned owners and/or developers may also be through any of the following manner:

1.) Development of Socialized Housing in a new settlement

2.) Joint-venture projects for socialized housing with either the local government or any of the housing agencies, or with another private developer or non-government organization engaged in the provision of socialized housing and duly accredited by the Housing and Land Use Regulatory Board

3.) Participation in a new project under the community mortgage program

2. Reducing Green House Gas (GHG) emissions and minimizing impact of buildings on health and environment

Recognizing that buildings contribute to the build-up of Green House Gases in the atmosphere, the plan shall adhere to the mandates of Ordinance No. 535, s-2014 Mandaluyong Green Building Regulations and its IRR or its latest version, if already available, on adopting Building Efficiency Measures aimed at improving performance in the following areas for buildings covered under Article IV of said Ordinance or its latest version:

a. **Energy Efficiency** through the adoption of efficient practices, designs, methods and technology that reduce energy consumption resulting in cost-savings as well as reduced consumption of non-renewable energy

- b. **Water Efficiency** through the adoption of practices, design, materials, fixtures, equipment and methods that reduce water consumption, resulting in cost savings as well as reduced consumption of potable water, maximizing its use through reuse and recycling
- c. **Materials and Waste Management** through the adoption of efficient waste management practices and use of materials that are environment-friendly and locally available
- d. **Site Sustainability** through the adoption of design, construction and operation practices that minimize the impact of buildings on ecosystems and water sources
- e. **Indoor Environment Quality** through the adoption of design, construction and operation practices that take into consideration the improvement of the occupants' health, productivity, safety and quality of life

3. Promoting Mandaluyong as a Walkable City

Making Mandaluyong a walkable city will not only minimize vehicular traffic and its consequences to the environment but also promote walking as a healthy option for recreation, cultivate social awareness on cleanliness and disciplined use of sidewalks, pathwalks and parks and open space amenities, creating opportunities for local tourism industry.

This concept shall make use of the following approaches (*Figure 4.04*):

- a. Facilitating pedestrian circulation by establishing scenic view corridors along main roads and the Pasig Riverbank
- b. Placing in strategic locations amenities such as benches and rest stations easy to maintain against weather and vandalism. Where snack kiosks are allowed, such shall be of uniform material and built, with provision for water supply, drainage and waste management.

Figure 4.04 Sample Concepts of Scenic View Corridors



- c. Installation of CCTV cameras and security outposts to promote safety, peace and order
- d. Improving visual character of pedestrian crossings to discourage jaywalking
- e. Landscaping of center islands shall have at least 5 meters clearance from both ends to increase visibility of both pedestrians and approaching vehicles.
- f. Designation of the river front as bike lane (*Map 4.07*)

4. Standardized Road Fixtures, Furniture, Signages and Streetlights

Designs of road fixtures such as but not limited to waiting sheds, plant boxes, sidewalk railings, welcome arches, boundary markers, street lights, sidewalk pavers or textured concrete shall be in accordance with the standards set by the city to prevent chaotic view of transport corridors.

To prevent monotonous view of secondary and interior roads, the barangays are encouraged to employ designs on roads within their boundaries that will highlight their respective individuality and functional role in the city's development. Design for main roads shall be determined at the city level.

In spots where installation of utility fixtures cannot be avoided, such fixtures must be screened from road view with decorative enclosures conforming to the theme of the view corridor. Furniture such as litter/recycling bins shall be screened accordingly. To soften the concrete jungle and still maintain the urban look, use of natural stones and greeneries as screen or protective cover shall be prioritized.

Communication disks and antennae that cannot be covered shall be installed in the parts of the building screened from road view such as rooftops, sides or rear.

Where bollards line the sidewalks in lieu of railings, such may be designed to feature solar lamps for accent illumination and as emergency lights in event of street light malfunction or blackouts. Parking meters (if applicable) shall be positioned and painted to adapt harmoniously to the bollard line.

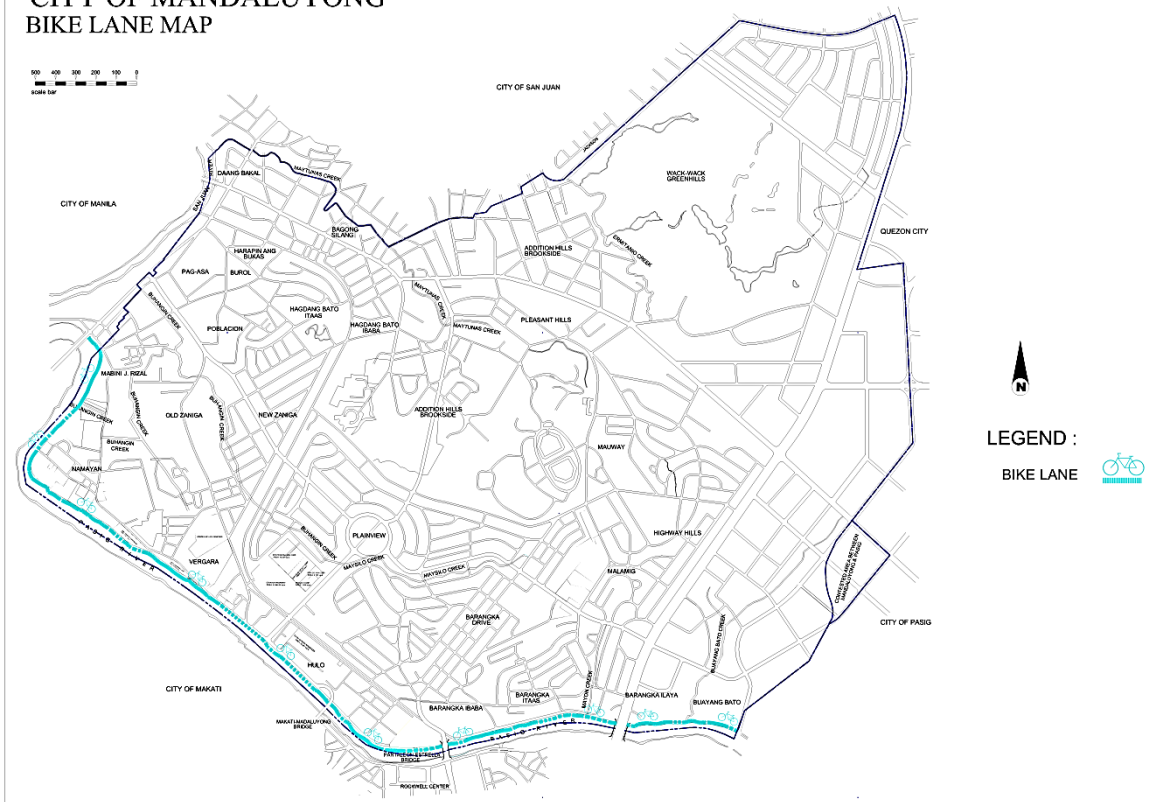
5. Smart City Concept

Embracing the advent of technological advances in communication and information management, the plan shall provide for the development of infrastructure that will facilitate information exchange, permitting processes, and responding to emergencies.



CITY OF MANDALUYONG

BIKE LANE MAP



- a. Smart streetlights shall be installed in strategic street corners. Such structures shall have provisions for CCTV cameras, vehicular speed detectors, emergency call boxes, flood markers in areas identified as flood prone, heat sensors and/or smoke detectors in areas identified as fire prone with a horizontal range of at least 500 meter radius that can trigger automatic shutdown of power lines and gas lines within the range. Provision for greenhouse gas trackers shall be considered.
- b. For new developments such as superblocks and CBDs, there shall be provisions for below grade spaces and right-of-ways for network cabling systems, fiber optics, distribution lines and control boxes for utilities and materials recovery facilities.
- c. The Land Use Plan shall provide for a government database center where alignments and locations of utility lines and other support infrastructure are registered in a geographic information system along with other city database. Accessibility of such information can help avoid disruption of utility services in areas in the vicinity of excavation or construction sites.

6. Regulated Spaces for the Promotion of Micro-business Enterprises and Informal Sectors

The plan shall adhere to the general principle that sidewalks shall be for public use.

- a. It shall endeavour to identify spaces where informal sectors such as 'sidewalk' vendors can utilize for their livelihood.
- b. Queuing lines for tricycles and PUJs shall be off-street, with designated waiting areas for passengers. As recommended in the Traffic Management Plan 2017, strict regulation of terminals, parking, and loading and unloading zones shall be observed. Map 4.08 illustrates existing location of motorized tricycle terminals and routes in the city.

7. Mainstreaming Disaster Preparedness and Climate Change Adaptation

Identified hazards that usually affect the city are flood commonly in low lying areas, and fire in which informal settlements are prone to. For these occurrences, the plan establishes traffic rerouting scheme and evacuation routes leading to identified evacuation areas. The scheme shall expand to link the city to the Pre-designated Emergency Assembly Area for the East Quadrant of Metro Manila which is the Ultra Sports Arena under OPLAN Metro Yakal. Wherever possible, Pasig River shall be accessed as alternative route for emergency vehicles and stations that would require support facilities e.g. provision of ramp for amphibian boats.

A space for the establishment of a warehouse for stockpiling of emergency supplies and equipment shall be allocated. The plan also prioritizes roads and drainage for improvement as listed in the Executive-Legislative Agenda 2017-2019.

The plan also designates open spaces such as parks and open sports facilities, public or private, as potential evacuation sites as may be required in extreme circumstances.

In the event of massive death toll in such extreme cases, the reserve open spaces totaling approximately 2000 sq. m as indicated in the Garden of Life Park Master Plan 2017-2026 shall be used as temporary mass burial sites for the dead. City Ordinance No. 634, s-2016 on final disposal shall apply when feasible.

For secondary hazards such as overhang utility cables, a system of color coding shall be designed to facilitate visual identification and determination of appropriate action in emergency cases e.g. earthquake, fire, unstable post or tree leaning against cables.

F. IMPLEMENTATION STRATEGIES

1. Creation of Superblocks and new CBD

Consistent with this Land Use Plan, the Zoning Ordinance, which serves as the legal implementation mechanism of this Plan, shall be revised taking into consideration rezoning of certain areas to generate more space either through vertical densification or horizontal intensification:

a. Mixed Development in Certain Areas

Whereas certain zones allow mixed use buildings, mixed development shall allow in certain areas combination of mixed use buildings, residential and commercial buildings categorized as follows:

- 1) Mixed Development I : for areas originally zoned as R3-A along Blumentritt St., Private Road, Pantaleon St., New Road, Pasig River Linear Park
- 2) Mixed Development II: for areas originally zoned as C-1 along North of Coronado St. and both sides of J. Rizal St. and Martinez St. from Coronado St. to Mabini St.
- 3) Mixed Development III: for areas originally R3-B along Blumentritt St., Private Road, Pantaleon St., New Road, Pasig River Linear Park

b. Two-lot deep higher intensity uses

The plan shall devise a methodology for identifying areas to be rezoned similar to abutting properties e.g. commercial to encourage land pooling among property owners. This concept of two-lot deep zoning recognizes that a large land area provides flexibility in designing land development and locating structure to enable developers to comply with the requirements for open spaces and easements.

This is also being conceptualized in support of the concept of swapping air space with open space.

c. Urban Renewal of Eastern Part of Welfareville Compound as New CBD

The area popularly known as Welfareville Compound is in a prime location and has very high potential for economic development. In anticipation of the relocation of its present occupants i.e. the National Center for Mental Health and the Correctional Institute for Women, the plan proposes that this part of Welfareville Compound located in Barangay Mauway be declared as the Urban Renewal Area for a New Central Business

District. Being centrally located in the city, this New CBD will provide a new option to Mandaleños in the western and southern part of the city.

The implementation of the Skyway-C3 missing link project in the vicinity of Gen. Kalentong St. and the DPWH proposed bridge connecting Sheridan St. in Mandaluyong to J. P. Rizal St. in Makati City are expected to divert vehicular traffic to ease congestion from EDSA, Barangka Drive, Boni Avenue and Shaw Blvd.

2. Water Front Development

The plan shall endeavour to reclaim the lost easement along Pasig River and developing the area to be generated to fill the gaps in the linear parks along the river. This is in line with the concept of making Mandaluyong a Walkable City where pedestrians and tourist can enjoy the exercise as part of a healthy lifestyle and stress management.

Where river easements are within the legal boundaries of private properties and acquisition is not feasible, the Plan shall develop a mechanism for coordinating landscaped developments within the required easements to conform to the aesthetic design of the Walkable City Concept.

3. Expansion of Road Networks to foster development of southern part of the City

Recognizing that the threat of traffic congestion posed by new development is a considerable factor that determines social acceptability and economic feasibility of such development, it is only fitting to provide sufficient road network to overcome such threat. In the southern part of the city, the main route is limited to Coronado St. connecting to J. P. Rizal towards New Panaderos St. on the western direction, and connecting to Pantaleon St. leading to Barangka Drive for those heading north to Shaw Blvd. and east to EDSA.

Intensifying developments in this southern part without the necessary road complement will only burden the existing community instead of providing opportunities for economic development and better standard of living.

The proposed new road connecting Pantaleon St. to Lions Road leading to EDSA is expected to facilitate ingress/egress of vehicles to/from EDSA, bypassing the chokepoints in Dansalan St-Boni Avenue and Lions Rd.- Mayon St.-Boni Avenue junctions. Together with another targeted road development that will divert traffic coming from Estrella-Barangka Drive Bridge to Pantaleon St. bypassing Pantaleon - Barangka Drive junction, this will enhance

circulation within the vicinity which will also contribute to the decongestion of the Boni Avenue – Barangka Drive traffic choke point. In addition, widening of Pantaleon St. to accommodate potential increase in vehicular traffic in this direction coupled with surface improvements of Mabini, J. Rizal and Nanirahan St. in Bgy. Mabini-J. Rizal at the southwest part of the city are also targeted to support new developments in the southern part of the city.

4. Imposition of Enhanced Development Charges for added Building Height or Floor Area Ratio

Mandaluyong City is the first local government unit in the country to have successfully introduced and implemented zoning regulations with development charge. The main idea is to encourage highest and best use of the land but at the same time generate more revenue to fund the necessary public infrastructure support to mitigate problems that may arise as a result of allowing higher density developments.

To support the concept of Swapping of Air Space with Open Space, the Plan proposes to modify basis for computing Development Charges in the New Zoning Ordinance as originally provided in Article VIII of Zoning Ordinance 475, s-2011. This is envisioned to be a 'Win-Win' solution where proponents can avail of the provision on Development Charge with additional incentives, and the city government to generate more open space for allocation to other necessary uses e.g. road widening, traffic management, environmental protection, disaster risk reduction, peace and order, among others.

5. Incentives for Green Buildings

Similar to zoning with development charge, Mandaluyong City is the first local government unit in the country to have successfully introduced and implemented Green Building regulations through Ordinance No. 535, s-2014. The main rationale for this Ordinance is that buildings are significant contributors to Greenhouse Gas (GHG) emission in the atmosphere.

However, recognizing that green technology is relatively new to most property owners and developers, and that materials and equipment are not yet fully in the local market, the Code limits its coverage and requirements to gradually introduce the concept of Green Buildings locally. To encourage voluntary compliance, the Ordinance introduces incentives by way of additional building height or FAR, as applicable, on top of the maximum allowable building height or FAR per Zoning Ordinance No. 475, s-2011.

With the introduction of the Smart City concept whereby greenhouse gas trackers are targeted for installation in strategic places, detection of the amount of GHG produced and its source will be facilitated.

Relative to this, the Plan shall adhere to the provisions of Ordinance No. 535, s-2014 popularly known as the Mandaluyong Green Building Regulations of 2014 and endeavour to determine possible expansion of the its coverage and applicability as originally provided in Article IV Section of the Ordinance:

- a. Green Building requirements shall apply entirely to new buildings in the following categories:
 - 1) Residential buildings with total floor area greater than 20,000 sq.m.
 - 2) Office buildings with total floor area greater than 10,000 sq.m.
 - 3) Mixed-use buildings with total floor area greater than 10,000 sq.m.
 - 4) Educational buildings with total floor area greater than 5,000 sq.m.
 - 5) Retail buildings with total floor area greater than 15,000 sq.m.
 - 6) Hotel buildings
 - 7) Hospital buildings
 - 8) Government Buildings

For mixed-use buildings, building requirements for each building type incorporated into the mixed-use building shall apply.

- b. Green Building requirements apply to scope of works covered by modification/renovation of existing buildings in the categories above and covering a floor area of at least 1,000 square meters.

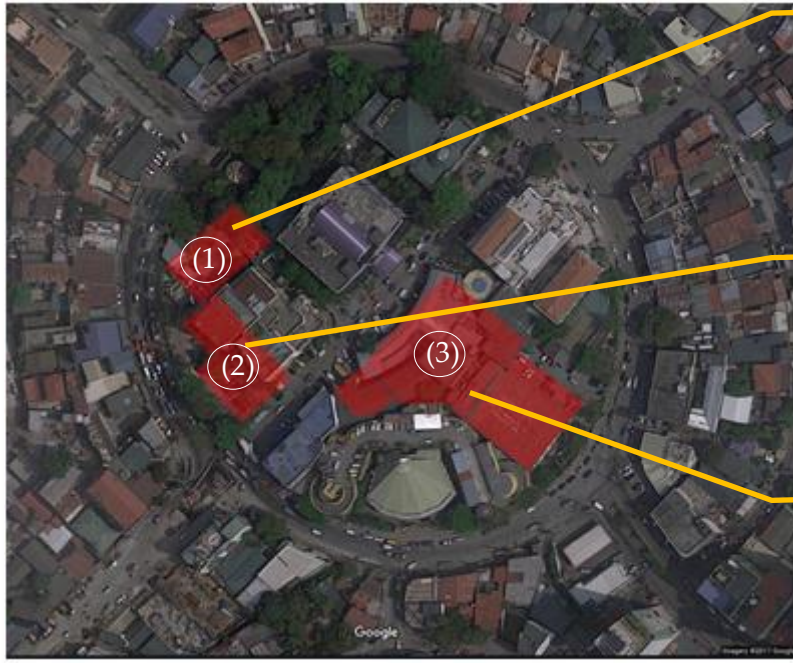
6. Public Private Partnership for Infrastructure Development

The Plan shall take advantage of opportunities for Public Private Partnership for the implementation of support infrastructure projects:

- a. Joint venture for housing development or support programs per RA 10884 Section 18 on Balanced Housing Development
- b. For road development, the Plan shall endeavour to arrange with private owners and developers of superblocks and CBDs the opening of roads to the public.
- c. For the implementation of the Smart City Concept, the Plan shall enjoin support of utility service providers for the development or provision of necessary technology and services.
- d. For emergency and disaster management, the Plan shall endeavour to identify possible areas of cooperation with the private sector and non-government organizations, e.g. through use of facilities and available space within the city.

G. PROPOSED PRIORITY DEVELOPMENT PROJECTS : City Government of Mandaluyong

1. Government Center



a. Redevelopment of City Hall Compound

- 1) Mandaluyong City Jail Building
Amount : ₱ 315 M
Area : 7000 sq.m
- 2) PNP/BFP Building
Amount : ₱ 270 M
Area : 6000 sq.m
- 3) 16-storey Executive Building with Gymnasium
Amount : ₱ 1,065 M
Area : 2,961 sq.m, 832 sq.m, 23,688 sq.m

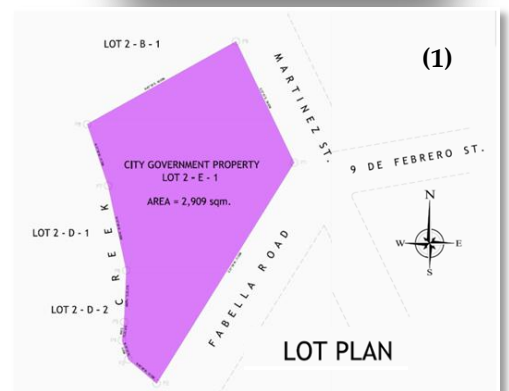
b. Community Center (Barangays)

- 1) Bgy. Poblacion Community Center
P. Burgos St., Bgy. Poblacion
Amount : ₱ 47 M
Area : 1,438 sq.m
- 2) Bgy. Poblacion Community Center (backside)
Amount : ₱ 2.6 M
Area : 105 sq.m
- 3) Bgy. Daang Bakal Community Center
Magalona St., Bgy. Daang Bakal
Amount : ₱ 36 M
Area : 1,200 sq.m
- 4) Bgy. Burol Community Center
Amount : ₱ 47 M
Area : 1,438 sq.m
- 5) Namayan Barangay Hall
Amount : ₱11.945 M
Area : 461 sq.m



2. Housing

- 1) 9 de Febrero Mixed Use Com'l/ Res'l Housing Project
Fabella Rd. corner Martinez St.
Amount : ₱ 161.33 M
Lot Area : 2,900 sq.m
- 2) 72 Units 5-storey MRH (2 Bldgs) w/ Roof Deck
Bgy. Mabini-J. Rizal near NAMEI
Total Floor Area : 2,012 sq. m
- 3) 40 units 6-storey w/ Roof Deck MJ-Rizal MRH
Total Floor Area: 1,960 sq.m
- 4) 40 units 5-storey Pinatubo MRH, Barangka Ilaya
Total Floor Area: 1,495 sq.m
- 5) 29 units 5-storey San Ignacio MRH, Plainview
Total Floor Area : 1,029 sq.m
- 6) 35 units 5-storey Antipolo MRH, Highway Hills
Total Floor Area : 1,285 sq.m



3. Infrastructure Development

a. Sidewalks

1) Covered Walk

Fronting Jose Fabella Memorial School, Senior Citizens Center, Andres Bonifacion Integrated School

Amount : ₱ 4.8 M



2) Improvement of Sidewalks

a) Barangka Drive & D. Guevara (Pantaleon St. – EDSA)

Amount : ₱ 16 M

Length : 2,142 m

b) Dr. Fernandez St. (9 de Febrero – Mariveles St.)

Amount : ₱ 9 M

Length : 1,170 m

c) Boni Avenue (EDSA – F. Blumentritt St.)

Amount : ₱ 28 M

Length : 3,852 m

d) V. Amarillo St. – Samat St.

Amount : ₱ 5 M

Length : 685 m

e) P. Cruz St. – F. Ortigas St. – F. Blumentritt St.

Amount : ₱ 9 M

Length : 1,110 m



b. Roads

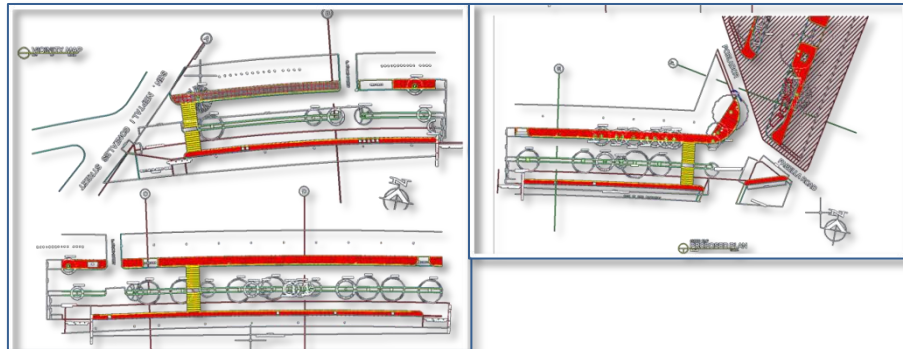
1) Road Widening

a) Wack-wack Road

From Shaw Blvd.
to gated village



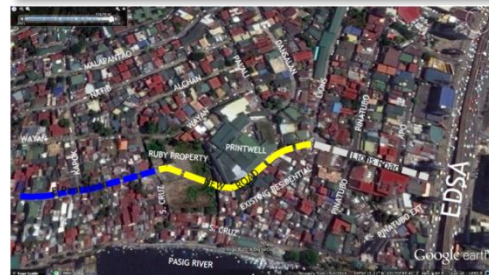
- b) Ortigas Extension
From Sen. Neptali Gonzales St. to Poblador St. and Fabella Road
Amount : ₱ 35 M



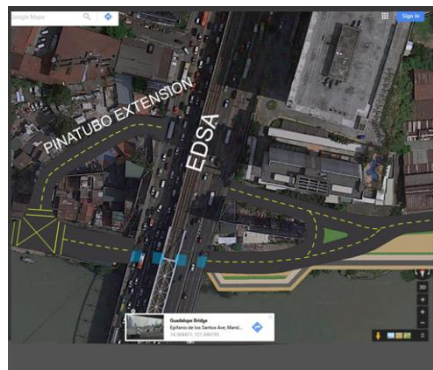
- 2) Road Retrieval and Rehabilitation
Kapalaran St. (from Silangan St. to Hinahon St.)

3) New Road

- a) Road Network at Blk. 35, Welfareville Compound (fire affected area)
Amount : ₱ 35 M
- b) Road connecting to EDSA
From Pantaleon St. to Lions Road
Amount : ₱ 75 M
Length : 230 m



- c) Clover leaf at the east and west side
of Guadalupe Bridge with access to proposed
Sheridan Bridge



4. Open Space

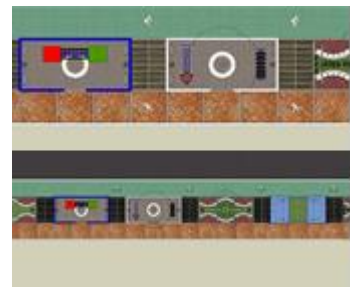
a. Pasig River Linear Parks (filling the gaps)

Total Length : 4,968 m

Existing : 2,987 m

Proposed : 1,981 m

Bgys. Mabini – J. Rizal, Namayan, Vergara, Barangka Ibaba, Barangka Ilaya



b. Garden of Life Park

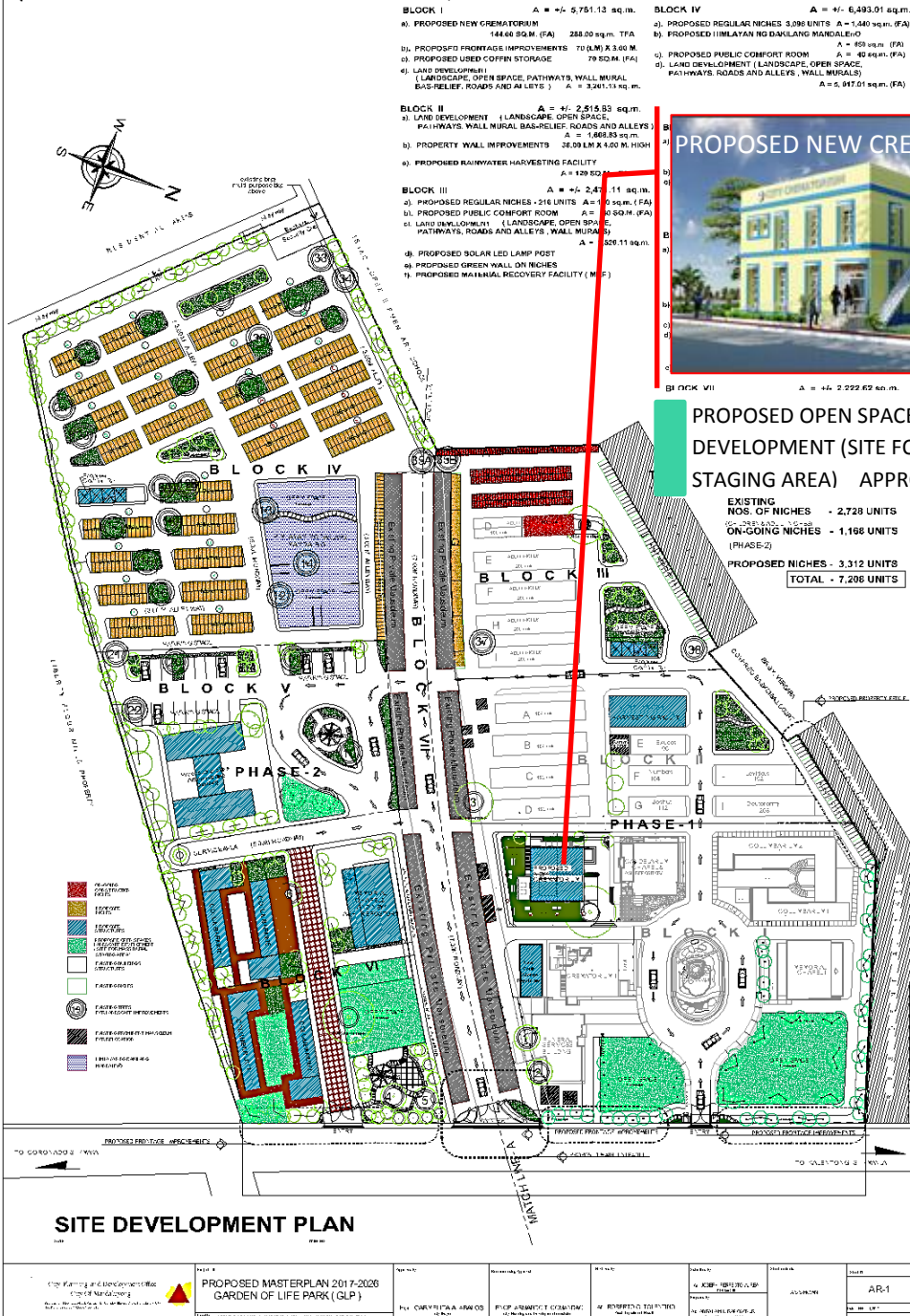
The Garden of Life Park, formerly known as the Mandaluyong City Cemetery, is a 2012 Galing Pook Awardee. Its initial development was guided by a 14-year Master Plan adopted and funded by virtue of City Ordinance No. 391, s-2008. From a mere public cemetery operating mostly under subsidy from the city government, the cemetery has transformed into an economic enterprise that caters even to clients from outside the city.

The GLP has been noted for its “one-stop-shop” service facilities from funeral services, memorial chapel, burial in regular niches, cremation (optional), and rental of columbarium units (optional). It has become a popular Laktbay Aral Destination to

various groups from local government units, academe, private and non-government organizations, and even visitors from governments abroad wanting to learn about best practices in local governance.

GARDEN OF LIFE PARK (GLP) (PROPOSED MASTERPLAN 2017- 2026)

Annex A



Going on its 7th year of operation and continued development, it was deemed appropriate to revise the Master Plan on the basis of increasing demand for services e.g. cremation, columbarium, memorial chapel, funeral services, and new additions like candelarium and introduction of green technology.

Total lot area : 25,404.52 sq m

Services : Funeral Services, Memorial Chapels, Cremation, Columbarium,
Candelarium, Burial Niches (children and adults), Ash Repository

No. of Existing Niches (children and adults) : 2,728 units

Total No. of Planned Niches : 7,208 units

THE PROPOSED MASTER PLAN 2017 – 2026

1) BLOCK I : Area \pm 5,761.13 sq.m

- New Crematorium (TFA 288.00 sq.m)
- Frontage Improvements (70 m x 3 m)
- Land Development (A : 3,201.13 sq.m)
(Landscape, Open Space, Pathways, Wall Mural, Bas-relief, Roads and Alleys)

2) BLOCK II : Area \pm 2,515.83 sq.m

- Land Development (A = 1,608.83 sq. m)
(Landscape, Open Space, Pathways, Wall Mural, Bas-relief, Roads and Alleys)
- Property Wall Improvements 38 LM x 4 m (H)
- Rainwater Harvesting Facility (FA = 120 sq.m)

3) BLOCK III : Area \pm 2,471.11 sq.m

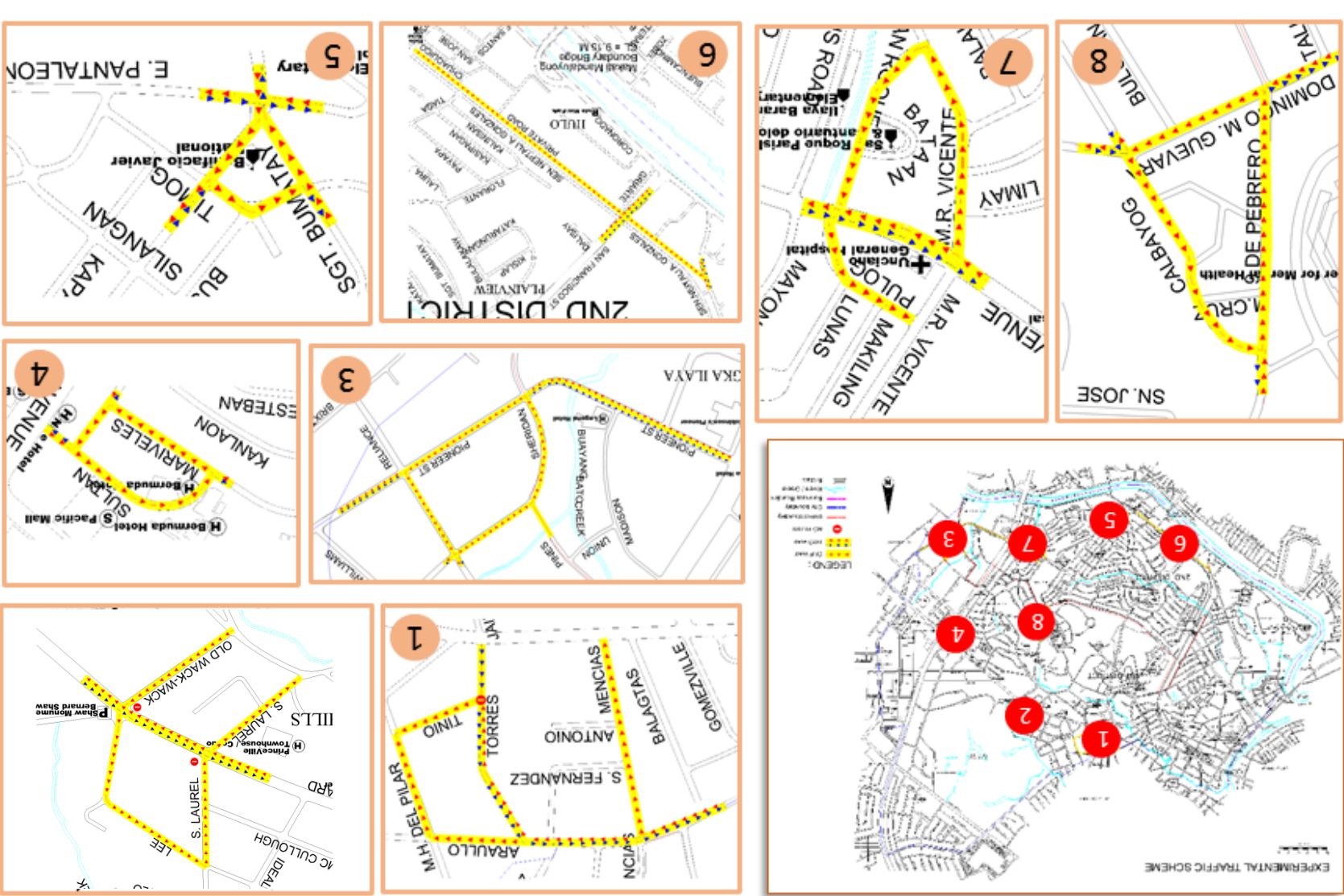
- Regular Niches (216 units , FA = 100 sq. m)
- Public Comfort Room (FA = 40 sq.m)
- Land Development (A = 1,520 sq.m)
(Landscape, Open Space, Pathways, Wall Mural, Roads and Alleys)
- Solar LED Lamp Post
- Green Wall on Niches
- Material Recovery Facility

4) BLOCK IV : Area \pm 6,493.01 sq.m

- Regular Niches (3,096 units, FA = 1,440 sq.m)
- Himlayan ng Dakilang Mandaleño (FA = 650 sq.m)
- Public Comfort Room (FA = 40 sq.m)
- Land Development (FA = 5,017.01 sq.m)
(Landscape, Open Space, Pathways, Wall Mural, Roads and Alleys)

- 5) BLOCK V : Area \pm 2,489.22 sq.m
- Two (2) Storey Administrative Building with Storage Facility and Basement Ash Repository (TFA = 540 sq.m)
 - Rotunda with Pergola (FA = 120 sq.m)
(Land Development (A = 2,099.22 sq.m)
 - Landscape, Open Space, Pathways, Wall Mural, Roads and Alleys)
- 6) BLOCK VI : Area \pm 3,451.60 sq.m
- Columbarium Buildings 3, 4, 5 & 6 with Basement Ash Repository Storage Facility (12,672 units, TFA 1,616.00 sq.m)
 - Two (2) Storey Memorial Chapel Building (TFA = 400 sq.m)
 - Rotunda with Pergola (FA = 120 sq.m)
 - Land Development (A = 2,731.60 sq.m)
(Landscape, Open Space, Pathways, Wall Mural, Roads and Alleys)
 - Frontage Improvements (80 LM x 3m)
- 7) BLOCK VII : Area \pm 2,222.62 sq.m
- Main Entry Improvements
 - Existing Structures and Mausoleum (A = 1,110 sq.m)
 - Land Development (A = 1,112.62 sq.m)
(Landscape, Open Space, Wall Mural, Roads and Alleys)

H. ON-GOING EXPERIMENTAL TRAFFIC SCHEME



FRAMEWORK/TIMELINE OF PLANNING ACTIVITIES

| OUTPUT/ ACTIVITY | AGENCY RESPONSIBLE | TARGET PERIOD OF IMPLEMENTATION/ COMPLETION | | | | | | |
|-------------------------------------------------------------------|------------------------------|---------------------------------------------|-------|------|-------|------|------|-----|
| | | 2014 | 2015 | | 2016 | | 2017 | |
| | | | Sem1 | Sem2 | Sem1 | Sem2 | Q1 | Q2 |
| I. PRE-PLANNING STAGE | | | | | | | | |
| Organizing Project Team | CPDO | | | | | | | |
| Project Launch | CPDO-SELUP | | | | | | | |
| Updated MCEP 2015 | CPDO-SELUP | | | | April | | | |
| Updated Land Use Map | CPDO –SELUP & ZONING | | | | June | | | |
| II. PLANNING STAGE | | | | | | | | |
| Identification of Urban Dev't. Issues/Concerns | CPDO-SELUP & PME | | April | Oct | | | | |
| Consultation-Workshop on Formulation of Dev't. Framework (SA/VMG) | LDC/CPDO/ CITY | | | | | July | | |
| Formulation of New CLUP 2016-2030 | LDC/CPDO/ CITY | | | | | | | Apr |
| Adoption of CLUP and Endorsement to MMDA | City Council/ Mayor's Office | | | | | | | Apr |
| Revised Zoning Ordinance | LZRC/LDC/ City Council | | | | | | | Apr |
| Done | | | | | | | | |
| Proposed | | | | | | | | |

DOCUMENTATION

1. Orientation-Workshop on the Formulation of Comprehensive Land Use Plan for the City of Mandaluyong
DepEd Division Office Conference Hall
July 13-15, 2016
2. Focused Group Discussion on the Final Vision Statement/
Orientation on the Sustainable Development Goals
Office of the Mayor – Conference Room
August 5, 2016
3. Plenary Workshop for the Presentation of Sectoral Outputs on
Goals and Objectives Setting
Kaban ng Hiyas Auditorium
August 26, 2016
4. Stakeholders' Consultation on the Proposed
Mandaluyong Comprehensive Land Use Plan (CLUP)
and Zoning Ordinance 2017-2032
March 15, 16, 17 & 20, 2017



MANDALEÑO DISIPLINADO

GAWA HINDI SALITA