

# GUIGUINTO

MUNICIPAL DISASTER RISK  
REDUCTION AND MANAGEMENT  
PLAN 2023-2025





*Republic of the Philippines  
Province of Bulacan  
Municipality of Guiguinto*



**OFFICE OF THE SECRETARY TO THE SANGGUNIANG BAYAN**

EXCERPT FROM THE MINUTES OF THE THIRTY NINTH REGULAR SESSION OF THE 11<sup>TH</sup> SANGGUNIANG BAYAN OF GUIGUINTO, BULACAN HELD ON MARCH 27, 2023 AT THE GEN. GREGORIO DEL PILAR HALL.

**PRESENT:**

HON. BANJO S. ESTRELLA	. . . . .	MUNICIPAL VICE MAYOR
Hon. Estrelita P. Aballa	. . . . .	SB Member
Hon. Albert L. Estrella	. . . . .	SB Member
Hon. Ricardo B. Jose	. . . . .	SB Member
Hon. Larra Monica S. Ventura	. . . . .	SB Member
Hon. Julius V. Figueroa	. . . . .	SB Member
Hon. Annabelle A. Garcia	. . . . .	SB Member
Hon. Randall B. Pingol	. . . . .	SB Member
Hon. Cornelio C. Ramos	. . . . .	SB Member
Hon. Landrei Joseph S. Cerdon	. . . . .	SB Member-President SK Federation

**ABSENT:**

Hon. Jose Darsee V. Alvarez	. . . . .	SB Member-President Liga ng mga Barangay
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**RESOLUTION NO. 281**

Series of 2023

Sponsored by: Coun. Albert L. Estrella  
(Committee on Rules)

**RESOLUTION**

**APPROVING AND ADOPTING THE MUNICIPAL DISASTER RISK-REDUCTION MANAGEMENT PLAN FOR THE YEARS 2023-2025 OF THE MUNICIPALITY OF GUIGUINTO**

**WHEREAS**, there has been a request from the Office of the Local Chief Executive for the approval and adoption of Municipal Disaster Risk-Reduction Management Plan of Guiguinto for the years 2023-2025;

**WHEREAS**, the third sentence succinctly written and contained in the municipality's Mission Statement is "To promote a community resilient to disaster and adaptive to climate change".

**WHEREAS**, it is the duty and function of the Sangguniang Bayan to adopt measures to protect the inhabitants of the municipality from harmful effects of man-made or natural disasters and calamities and to provide relief services and assistance for victims during and in the aftermath of said disasters or calamities and their return to productive livelihood following said events, pursuant to Article III, Section 447 of R.A. 7160, otherwise known as the Local Government Code of 1991;

**NOW THEREFORE:**

On motion of Coun. Albert L. Estrella and duly seconded by all members present;

**RESOLVED**, as it is hereby **resolved**, to approve and adopt the Municipal Disaster Risk-Reduction Management Plan for the years 2023-2025 of the Municipality of Guiguinto.

**APPROVED.**

Aye(s)  
Hon. Estrelita P. Aballa  
Hon. Albert L. Estrella  
Hon. Ricardo B. Jose

Nay(s)  
None

BANJO S. ESTRELLA  
Municipal Vice Mayor

SHARON A. EXALTACION  
SECRETARY TO THE SANGGUNIANG BAYAN





*Republic of the Philippines  
Province of Bulacan  
Municipality of Guiguinto*

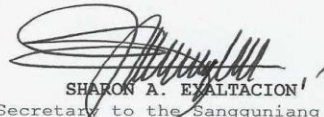


**OFFICE OF THE SECRETARY TO THE SANGGUNIANG BAYAN**

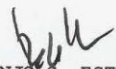
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Hon. Larra Monica S. Ventura  
Hon. Julius V. Figueroa  
Hon. Annabelle A. Garcia  
Hon. Randall B. Pingol  
Hon. Cornelio C. Ramos  
Hon. Landrei Joseph S. Cerdon

I hereby certify the correctness of this excerpt from the minutes of the regular session of the Sangguniang Bayan held on March 27, 2023.

  
SHARON A. EXALTACION  
Secretary to the Sangguniang Bayan

ATTESTED:

  
BANJO S. ESTRELLA  
Presiding Officer



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### ***MISSION***

- Sustain economic growth;
- improve access to quality basic social services;
- Promote a community to disaster and adaptive to climate change;
- Maintain adequate infrastructure, clean and safe environment; and
- Continue the culture of excellence in local governance.

### ***VISION***

The Garden Capital of the Philippines serving as the business gateway to the north and providing its empowered citizenry a diversified economy, responsive



### ***MISSION***

To ensure effective and efficient implementation of civil protection programme that covers all sectors focused on the empowerment of its fourteen (14) barangays for the protection and preservation of life, environment and property.

### ***VISION***

A well versed community resilient to climate change, equipped with all necessary knowledge for the protection of its people and environment leading to a business friendly municipality necessary for sustainable development.



Republic of the Philippines  
Province of Bulacan  
Municipality of Guiguinto

## *Message from the Municipal Mayor*

“To be prepared is half the victory.” – Miguel De Cervantes, Spanish Novelist

Our beloved Guiguinto is a landlocked Municipality in the heart of the Province of Bulacan, which is among the areas traversed by the West Valley Fault. In recent years, we experienced the adverse effect of river flooding, especially when high tide is accompanied by weather disturbances. We are also approximately 38 kilometers away from Manila, which was listed as fourth (4<sup>th</sup>) out of the 100 cities worldwide that are most exposed to natural hazards based on the 5<sup>th</sup> Annual Natural Hazards Risk Atlas (NHRA) of Verisk Maplecroft, a global risk and strategic consulting firm based in Bath, England. Given these hazards, it is imperative for Guiguinto to be disaster resilient.

It is in this light that the Municipal Government has formulated a comprehensive disaster risk reduction and management plan that lays down programs, projects, and activities relative to building a disaster resilient community, institutionalizing measures to reduce disaster risks, and enhancing disaster preparedness and response capabilities at the municipal level.

In our modern day, we already have access to resources that will help us prepare for and mitigate the adverse effects of dreadful and inevitable phenomena that often arise at times when we least expect it. That being said and as part of the *Ligtas na Pamayanan* thrust of *Agaysensong Pamumuhay Campaign*, we commit to protect our fellow Guiguinteros from the harmful effects of man-made or natural disasters and calamities and we shall provide relief services and assistance during and in the aftermath of such events, as well as in their return to their productive livelihood.

With this, it is my honor to present this Municipal Disaster Risk Reduction and Management Plan of Guiguinto for the years 2023 to 2025. We are encouraging each and every Guiguintero to team up with the government as we carry out measures, as may be necessary, to ensure the safety and security of everyone from the risks and dangers of man-made and natural disasters and calamities.

Let us uphold our battle cry.

*Sisiguraduhin natin ang isang pamahalaang nakikinig, tumutugon, ramdam, at abot-kamay ng bawat Guiguintero, lalo na sa panahon ng sakuna at kalamidad sa ating Bayan.*

At your service,

**ATTY. AGATHA PAULA A. CRUZ**  
Municipal Mayor





# CHAPTER I - BACKGROUND



## CHAPTER I BACKGROUND

### 1.1 PHILIPPINES' DRRM FRAMEWORK

The key documents in DRRM in the Philippines are R.A. 10121, the National DRRM Framework and the National DRRM Plan. They outline that DRRM is all-hazards, comprehensive, and risk reduction focused. All Local Government Units must also have a Local DRRM Plan in line with the national Approach to DRRM.

The NDRRMF diagram below shows the four themes of disaster management:

Prevention and mitigation

Preparedness

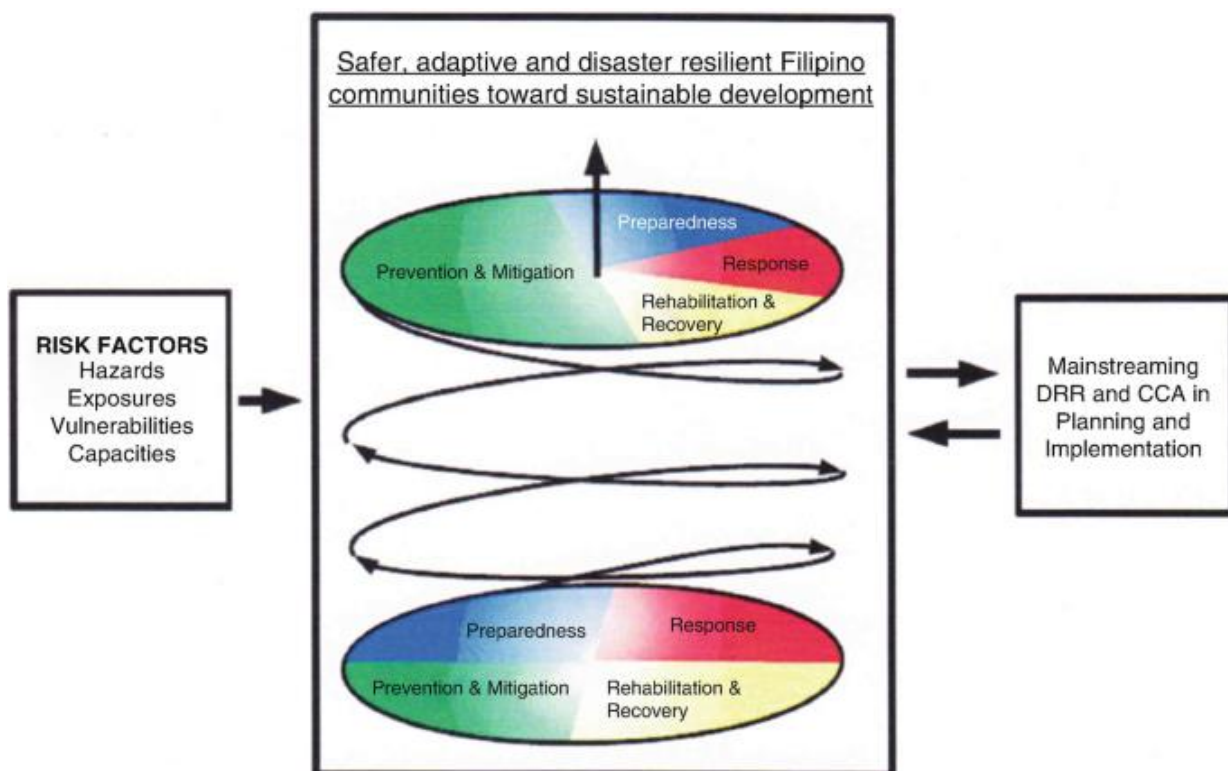
Response

Rehabilitation and recovery

The diagram shows that DRRM in the Philippines is intended to change over time to emphasized prevention and mitigation, and that DRR and CCA will be mainstreamed into development plans.

Figure 1 - NDRRM Plan

#### NDRRM Plan





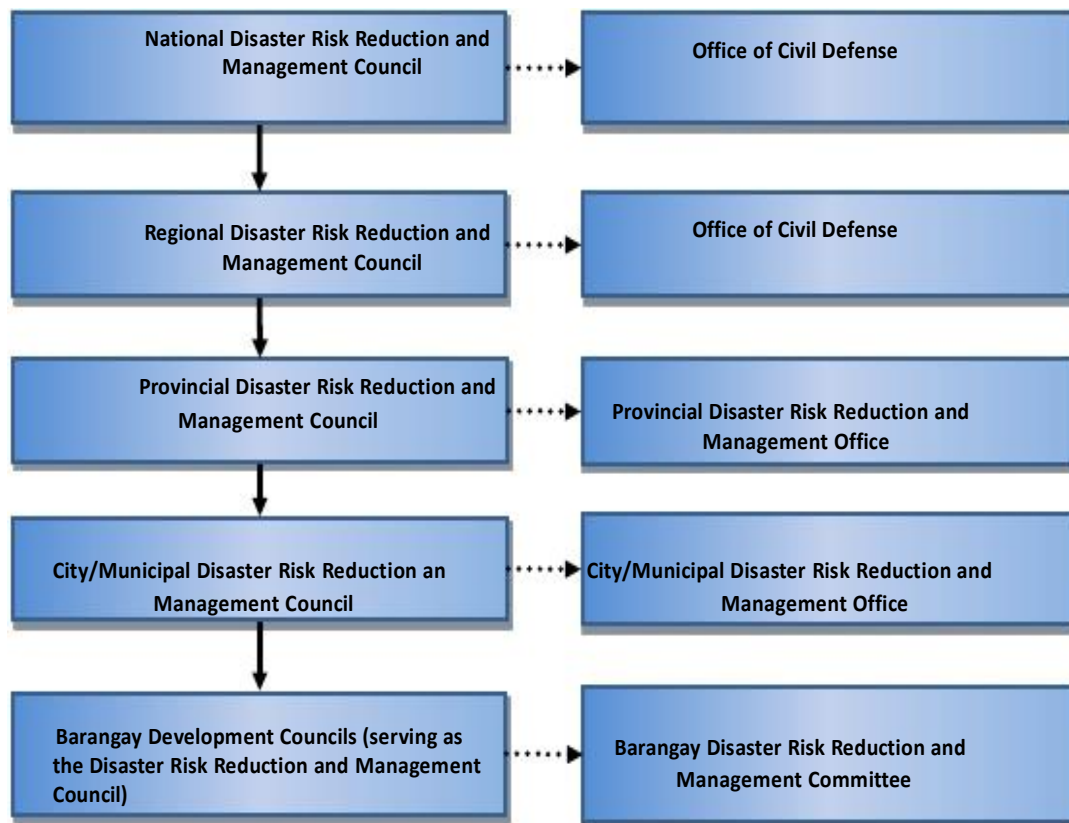
The structure of DRRM in the Philippines as outlined in R.A. 10121 creates DRRM Councils to five levels:

The National DRRM Council  
Regional DRRM Councils  
Provincial DRRM Councils  
Municipal/City DRRM Councils  
Barangay DRRM Committees under the Barangay Development Councils

The Councils at the national and regional levels are supported by the Office of Civil Defense, while the provincial, city and municipal councils are supported by Disaster Risk Reduction and Management Offices based in the Local Government Unit. Barangays are supported by a Barangay DRRM Committee.

The diagram below shows this structure:

Figure 2 - DRRM Councils



### a.) **Role of Municipal DRRM Councils in the Philippines**

As explicitly stated under Republic Act 10121, the Municipal DRRM Council of Guiguinto have four functions:

- Approve, monitor and evaluate the implementation of the Local DRRM Plans and regularly review and test the plan consistent with other national and local planning programs;
- Ensure the integration of disaster risk reduction and climate change adaptation into local development plans, programs and budgets as a strategy in sustainable development and poverty reduction;
- Recommend the implementation of forced or preemptive evacuation of local residents, if necessary; and
- Convene the local council once every three months or as necessary.

### b.) **The Local DRRM Council must also monitor and evaluate the use and disbursement of the LDRRMF.**

Municipal DRRM Offices are responsible for setting the direction, development, implementation and coordination of disaster risk management programs within their territorial jurisdictions. They have a number of functions under RA10121, including formulating and implementing the Local DRRM Plan.

## 1.2 CHILD PROTECTION RELATED LAW

### RA 9262 Anti- Violence Against Women and their Children Act of 2004

- Seeks to address violence committed against women and children in keeping with the fundamental freedoms provided under the constitution. Promotes the protection and safety of victims of violence against women and their children (VAWC) at all times.

### How the Law relates to MDRRMO Plan

- Upholds the rights of women and children before, during and after disaster.

### RA 7160 Special Protection of Children against Child Abuse, Exploitation and Discrimination Act

- Provides special protection to children from all forms of abuse, neglect, cruelty, exploitation and other conditions prejudicial to their development.
- Protects and rehabilitates children gravely threatened or endangered by circumstances which affect or will affect their survival and normal development and over which they have no control such as in armed conflict situations, working under conditions hazardous to their life, safety and morals, during disasters (whether man-made or natural) or being a member of an indigenous cultural community/or living under conditions of extreme poverty
- Contains sections on a) children as zones of peace in situations of armed conflict, b) evacuation of children during armed conflict, c) family and temporary shelter – which specify the measures to ensure protection of children’s rights and welfare.



**RA 9208 Anti-trafficking in Persons Act of 2003**

- Enacts measures and develops programs that will promote human dignity, protect the people from any threat of violence and exploitation, eliminate trafficking in persons, pressures for involuntary migration and servitude of persons, not only to support trafficked persons but more importantly, to ensure their recovery, rehabilitation and reintegration in to the mainstream of society.

**RA 9344 Juvenile Justice and Welfare Act**

- Recognizes the right of every child alleged as, accused of, adjudged, or recognized as having infringed the penal law to be treated in a manner consistent with the promotion of the child's sense of dignity and worth, taking into account the child's age and desirability of promoting his/her reintegration
- Recognizes the right of children to assistance, including proper care and nutrition, and special protection from all forms of neglect, abuse, cruelty and exploitation, and other conditions prejudicial to their development.
- The administration of the juvenile justice and welfare system shall take into consideration the cultural and religious perspectives of the Filipino people, particularly the indigenous peoples and the Muslims, consistent with the protection of the rights of children belonging to these communities

**1.3 PLANNING PROCESS**

- The primary goal of the MDRRM Plan is to improve the existing practices of the LGU on the disaster risk reduction and management through better partnership and working relationships among the departments within the local government unit, civil society organization private sectors and most especially the vulnerable groups including women, persons with disabilities, youth, senior citizen, pregnant and children.
- This DRRM Plan for the Municipal Government of Guiguinto has been prepared following the National DRRM Framework, Provincial DRRM Plan, Regional DRRM Plan and National DRRM Plan along with further planning guidance from the Office of Civil Defense.
- A large number of member agencies from the Municipal Disaster Risk Reduction and Management Council have contributed information and comment in the development of this plan. A draft plan was considered and approved by the MDRRMC, before being approved by the Sangguniang Bayan.

**a) CHILD-CENTERED COMMUNITY BASED DISASTER RISK REDUCTION AND MANGEMENT PROGRAM**

The integration of Child-centered Community based Disaster Risk Reduction and Management, determines how the community, children and other vulnerable groups participate in benefit from and control resources and activities. The combined inclusive and participatory approach in the entire planning and decision-making process from plan formulation/updating, plan

implementation and monitoring and evaluation is a manifestation of good governance that will bring us closer to our goal of having equally contributing to and benefiting from development. The utilization of Child-centered community based DRRM planning approach ensures or provides a mechanism for integrating sustainable indicators in planning.

In the formulation of 6 Year MDRRM plan, there are steps that the Municipal Disaster Risk Reduction and Management Office conducted, the steps are;

1. Training of Child-centered Community Based Disaster Risk Reduction and Management to all 14 barangays.
2. Participatory planning workshop and Community Risk Assessment (CRA) together with children and other vulnerable groups to all the barangays using the tools from the previous training to formulate their Barangay Child-centered Community Based Disaster Risk Reduction and Management Plan.
3. Collection and consolidation of the all the Barangay Child-centered Community Based Disaster Risk Reduction and Management Plan and make sure that there is allocated funds from 5% of their IRA.
4. Formulation of comprehensive and inclusive DRRM Plan of the Municipality

#### **b) MUNICIPAL GOVERNMENT OF GUIGUINTO'S COMMITMENT**

The Municipal Government of Guiguinto's commitment and mandate for DRRM recognizes the increase in the frequency and severity of disaster in the municipality of Guiguinto in recent years, particularly those of hydro-meteorological origin, growing risks from climate change, and national and provincial policies and thrusts for disaster management. The Municipal Government has passed Executive Orders to reflect those policies and demonstrate its commitment to DRRM.

Outlined below are the relevant international, national, provincial and municipal policies for DRRM.

#### **c) NATIONAL AND INTERNATIONAL POLICIES**

##### **Hyogo Framework for Action Priorities**

- Disaster risk reduction is a national and local priority with strong institutional basis for action.
- Identify, assess and monitor disaster risks and enhance early warning
- Knowledge, innovation, education for culture of safety and resilience
- Reduce the underlying risk factors
- Strengthen disaster preparedness for effective response

##### **Philippine Disaster Risk Reduction and Management Act of 2010 (RA 10121)**

- RA 10121, also known as the Philippine Disaster Risk Reduction and Management Act, was made into a law in 2010, repealing Presidential Decree 1566 of 1978. It provided a paradigm shift from a reactive focus on relief and response to a more proactive approach, giving attention to preparedness, prevention, and mitigation.

- The DRRM Act mandates the institutionalization of the DRRM system at the local level through the establishment of a local DRRM Office (DRRMO). It provides for the reorganization of the Disaster Coordinating Councils, now known as the DRRM Council (DRRMC), and further strengthens their functions.

#### **Philippine Climate Change Act of 2009 (RA 9729)**

- The Climate Change Act of 2009 outlines the policy of the Philippine Government to protect climate systems, build national and local resiliency and implement programs to promote climate change adaptation and mitigation in support of sustainable development.
- RA 9729 also mandates local government units to formulate their Climate Change Action Plans and build local awareness, knowledge and build capacity for Climate Change Adaption and mitigation.

#### **Presidential Decree 1566 dated 11 June 1978 “Strengthening the Philippine Disaster Control Capability and Establishing a Community Disaster Preparedness Program Nationwide**

- Sec. 1 (g) - responsibility for leadership rests on the Municipal Mayors
- Sec. 1 (b) - each political and administrative subdivision of the country shall utilize all available resources in the area before asking for assistance from neighboring entities or higher authority;

#### **Local Government Code of 1991**

- Section 444 par. B (vii) and Sec. 324 (d) amended by RA 8185... “Local Government Units shall adopt measures to protect its inhabitants from harmful effects of man-made or natural calamities and to provide relief services and assistance to victims”.

#### **National Disaster Risk Reduction and Management Council, Department of Budget and Management and Department of the Interior and Local Government Joint Memorandum Circular No. 2013-1**

- This Joint Memorandum Circular is issued as a guide to Local Government Units in the allocation and use of the Local DRRM Fund and to enhance transparency and accountability in their use.

#### **International Policy and Framework**

- As stipulated under RA 10121, also known as the Philippine Disaster Risk Reduction and Management Act, was made into a law in 2010, repealing Presidential Decree 1566 of 1978, it provided a paradigm shift from a reactive focus on relief and response to a more proactive approach, giving attention to preparedness, prevention, and mitigation. The DRRM Act mandates the institutionalization of the DRRM system at the local level through the establishment of a local DRRM Office (DRRMO). It provides for the reorganization of the Disaster Coordinating Councils, now known as the DRRM Council (DRRMC), and further strengthens their functions.

### The Sendai Framework

- The Sendai Framework for Disaster Risk Reduction 2015–2030 was adopted at the Third United Nations World Conference on Disaster Risk Reduction, held from 14 to 18 March 2015 in Sendai, Miyagi, Japan, which represented a unique opportunity for countries:
  - a. To adopt a concise, focused, forward-looking and action-oriented post 2015 framework for disaster risk reduction;
  - b. To complete the assessment and review of the implementation of the Hyogo Framework for Action 2005:2015: Building the Resilience of Nations and Communities to Disasters;
  - c. To consider the experience gained through the regional and national strategies/ institutions and plans for disaster risk reduction and their recommendations, as well as relevant regional agreements for the implementation of the Hyogo Framework for Action;
  - d. To identify modalities of cooperation based on commitments to implement a post 2015 framework for disaster risk reduction;
  - e. To determine modalities for the periodic review of the implementation of a post 2015 framework for disaster risk reduction.

During the World Conference, States also reiterated their commitment to address disaster risk reduction and the building of resilience to disasters with a renewed sense of urgency within.

### Priorities for Action

- Taking into account the experience gained through the implementation of the Hyogo Framework for Action, and in pursuance of the expected outcome and goal, there is a need for focused action within and across sectors by States at local, national, regional and global levels in the following four priority areas:

Priority 1: Understanding disaster risk.

Priority 2: Strengthening disaster risk governance to manage disaster risk.

Priority 3: Investing in disaster risk reduction for resilience.

Priority 4: Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction.

- In their approach to disaster risk reduction, States, regional and international organizations and other relevant stakeholders should take into consideration the key activities listed under each of these four priorities and should implement them, as appropriate, taking into consideration respective capacities and capabilities, in line with national laws and regulations. In the context of increasing global interdependence, concerted international cooperation, and enabling international environment and means of implementation are needed to stimulate and contribute to developing the knowledge, capacities and motivation for disaster risk reduction at all levels, in particular for developing countries.



**National Policies / Framework –Local Government Code of 1991**

- Section 444 par. B (vii) and Sec. 324 (d) amended by RA 8185..."Local Government Units shall adopt measures to protect its inhabitants from harmful effects of man-made or natural calamities and to provide relief services and assistance to victims".

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**National Disaster Risk Reduction Management Council, Department of Budget and Management and Department of Interior and Local Governement – Joint Memorandum Circular No. 2013-1**

- This Joint Memorandum Circular is issued as a guide to Local Government Units in the allocation and use of the Local DRRM Fund and to enhance transparency and accountability in their use.

**D.2 Local Policies and Objectives****Executive Order No. 2-S-2013**

- Approval of the creation of the Guiguinto Municipal Disaster Risk Reduction and Mangement Council

**Municipal Ordinance no. 200-S-2014**

- Approval of the creation of the Local Disaster Risk reduction and Management Office with four Plantilla Positions (SG 24, SG 22, SG 18, and SG 15)

**SB Resolution no. 225 Series of 2014**

Approval of the Contingency Plan for Flood for Guiguinto. The first edition of this Contingency Plan was earlier approved by the Local Sangguniang Bayan last June 16, 2014, through the initiative of the Guiguinto MDRRM Council and closely associated its completion to Mr. Aris D.C. Galicio, former MDRRMO-OIC with the close mentoring of Ret. Col. Arturo C. Palileo.

**SB Resolution no. 202 Series of 2015**

An Ordinance for the Creation of the Disaster Risk Reduction Management Office in the Municipality of Guiguinto, Providing funds therefore and for other purposes” it shall be the policy of the Municipal Disaster Risk Reduction Management Council (MDRRMC) to formulate Standard Operating Procedures (SOPs) on a.) Resource allocation and utilization; b.) Coordination between and amongst DRRMC members and other partners; c.) Command and Control on responders during operation to ensure an effective and efficient disaster response system during emergency events, specifically:

1. To lessen the susceptibility of the constituents to flood hazards and risks through the formulation and implementation of a comprehensive contingency plan for worst case flooding;
2. To adapt the incident command system for incident management through engagement of responsive chain of command which shall plan, organize, direct and manage a systematic disaster response using standard operating procedures.
3. To activate a response mechanisms for effective, timely search and rescue operations, in order to save lives and minimize damage to property, in times of worst case flooding;
4. To guarantee that all involved stakeholders shall abide to the basic principles of transparency and accountability in resources and fund utilization during disaster operations; and
5. To ensure smooth and effective coordination and partnership between the Municipality Government and the BDRRM Committees, government agencies, non-government organizations and civil society organizations.

**GENERAL OBJECTIVES**

- To save lives and properties;
- To response immediately and ready at all times by; information, education and communication (IEC);
- To develop a comprehensive contingency plan that would guide the municipality in the implementation and management in the promotion of general welfare of the population;
- To properly coordinate and collective effect among national / local government, and other funding organization;
- To coordinate / networking with NGOs and other sectors;
- To provide continuing relief and medical assistance to disaster victims; and
- To provide restoration and rehabilitation assistance to disaster victims.

To achieve such objectives, the municipality, in the subsequent chapter, defines the overall coordination and command arrangements and sectoral plans during emergency situations.

## SPECIFIC OBJECTIVES

- To reduce the vulnerability of its constituents to risks and hazards by formulating a comprehensive Contingency Plan;
- To create emergency management teams through local ordinance issued by the Barangay Council which shall properly define task and working arrangements, and identify the key players;
- To adopt proper command and control mechanism using standard operating procedures which will ensure that all tasks are accomplished and that targets are achieved;
- To employ a responsive organizational structure and effective chain of command which shall plan, organize, direct and manage assets to provide orderly and systematic disaster response;
- To adapt the incident command system for on-scene incident management.
- To allocate resources such as manpower, equipment and to ensure the proper utilization of fund to manage any critical disaster or incident which may occur;
- To ensure smooth and effective coordination and collaboration between the municipal government and the BDRRM Committee concerned government agencies at the city/municipal level, civil society organization and non-government organization, including volunteers;
- That all stakeholders involved shall abide to the basic principles of accountability and transparency;
- To achieve such objectives, the municipality in the subsequent chapter defines the overall coordination and command arrangements and sectoral plans.;
- As embodied in Sector II of RA 10121, on the organization of LDMRRMC at the local level, Municipal Mayor is the chairman of their respective council, while the Barangay Captain will be the chairman of the barangay DRRMC. The LDRRMC is composed of the following person;
  - Municipal Mayor as Chairman
  - Municipal Administrator as Action Officer
  - as member
  - MSWDO as member
  - MHO as member
  - Municipal Agriculture Officer as member
  - Municipal Engineer as member
  - Municipal Treasurer as member
  - Municipal Budget Officer as member
  - MLGOO as member
  - Dep. Ed District Supervisor as member
  - Chief of Police as member
  - Municipal Fire Marshal as member
  - ABC president as member
  - Philippine National Red Cross as member
  - MDRRMO as Secretariat
  - 8 Accredited Civil Society Organization as member
  - Private Sector Representative as member

- Section 12 of R.A. 10121 mandated that in every municipality, there shall be a LDRRM Office and a Barangay DRRM Office which shall be responsible for setting the direction, development, implementation and coordination of disaster risk management programs within their territorial jurisdiction; and
- Section 21 of R.A. 10121 provides that LDRRM Fund amounting to not less than 5% of the estimated revenue from regular sources, shall be set aside to support disaster risk management activities.



## CHAPTER II – ECOLOGICAL PROFILE OF GUIGUINTO



## CHAPTER II PROFILE OF GUIGUINTO

### 2.0 ECOLOGICAL PROFILE OF GUIGUINTO

Guiguinto began as a barrio of Bulacan town, the former provincial capital of Bulacan. It the place where the Spaniards set up an army post in the barrio to serve as a resting place for forces going to Northern Luzon. In those days, travel throughout Guiguinto was difficult and slow down to single file over a narrow bamboo bridge. Their Filipino guides would cry out, "Hinto"(stop). The Spaniards thought this was the name "Hihinto". The Spaniards substituted "Gui" (with hard "g") for the Tagalog "Hi". The place has since been called Guiguinto.

On the other hand, old timers say that on moonlight nights, a golden bull emerges from the church and goes down to the nearby river to quench his thirst. It then returns to the church, ascends at the altar and disappears. The elders' said that there are buried jars of gold in town, as indicated by the bull, and that is why the town was called Guiguinto.

In 1800, a Spanish priest erected a small chapel in what is now barrio Sta. Rita. In 1873, roads were constructed in barrio Malis. The people in barrios of Pritil, Tabe, and Cutcut even those days were mostly farmers. During Holy Week, villagers of barrio Tuktukan held contest for the hardest egg shells (chicken, duck or goose by knocking eggs together... Tuktukan). The women tried to help each other in singing the "Panica".

Just before the outbreak of the revolution of 1896, the town people of Guiguinto were ordered to sleep in the town at night and to work in their fields only in the day. This was said to have been suggested by the town priest to the authorities because of rumors that many of the town people were joining the secret revolutionary society, the Katipunan. Guiguinto eventually contributed many soldiers to the 1890 revolution.

The remnant of the Old Guiguinto Train Station located at C. Mercado Street at Barangay Poblacion was the mute witness of the bloody massacre of the Spanish Priest during the ambush of Spanish train passing in the area of Guiguinto.





The Municipality of Guiguinto is rich in culture and history as it played a significant part in various revolutions towards Philippines independence. Its history is a tapestry of heroic exploits of its people as it led in the various struggle towards independence. Towards the end of the Spanish colonization and the arrival of the Americans, the province of Bulacan was reconstituted into 13 municipalities from the original 25 established by the Spanish government. This consolidation, Guiguinto became part of the Municipality of Bulacan.

On December 24, 1914, upon Executive Order 126 issued by the American Governor General Francis Burton Harrison, Guiguinto was re-established as a municipality separated from the Municipality of Bulacan; The Executive Order 126 gave Guiguinto as officially recognized independent municipality on January 1, 1915, with Antonio Figueroa as its first "municipal president". The town's population was then about 4,000. The 1960 census placed Guiguinto's population at 10,629. The latest census conducted by PSA on 2020, Guiguinto has a total population of 112,889. Through the years, the Municipality of Guiguinto was able to weather the different changes in administrations and governments. In all those times, Guiguinto was able to stand out as independent and distinct municipality with its people having their own aspiration.



Guiguinto is one of fast growing municipalities in the province of Bulacan. From the predominating agricultural economy, it gradually urbanized and developed and since 2005 it became a first class Municipality. It now placed as an important town in the province because of its strategic location; coming from Metropolitan Manila going to the North you have to pass the Municipality.



## 2.0.1 POPULATION

As of the latest Census conducted in 2020, Guiguinto has a total of 112,889 inhabitants with average annual growth rate of 2.7 percent, higher than that of the Province of Bulacan at 2.5 percent. This figure is about 3.06 percent of the total Bulacan population.

**TABLE 1 2020 Age-Sex Structure**

Age Group	Household Population		
	Male	Female	Both Sexes
0 - 4	5,174	4,810	9,984
5 - 9	5,343	4,920	10,263
10 - 14	5,318	4,984	10,302
15 - 19	5,206	4,915	10,121
20 - 24	5,591	5,316	10,907
25 - 29	5,271	4,862	10,133
30 - 34	4,509	4,445	8,954
35 - 39	4,209	4,008	8,217
40 - 44	3,785	3,918	7,703
45 - 49	3,164	3,246	6,410
50 - 54	2,831	2,926	5,757
55 - 59	2,120	2,340	4,460
60 - 64	1,707	1,876	3,583
65 - 69	1,123	1,426	2,549
70 - 74	710	1,030	1,740
75 - 79	365	538	903
80 years and over	309	594	903
<b>Total</b>	<b>56,735</b>	<b>56,154</b>	<b>112,889</b>

Source: 2020 Census of Population



**TABLE 2 SENIOR CITIZENS**

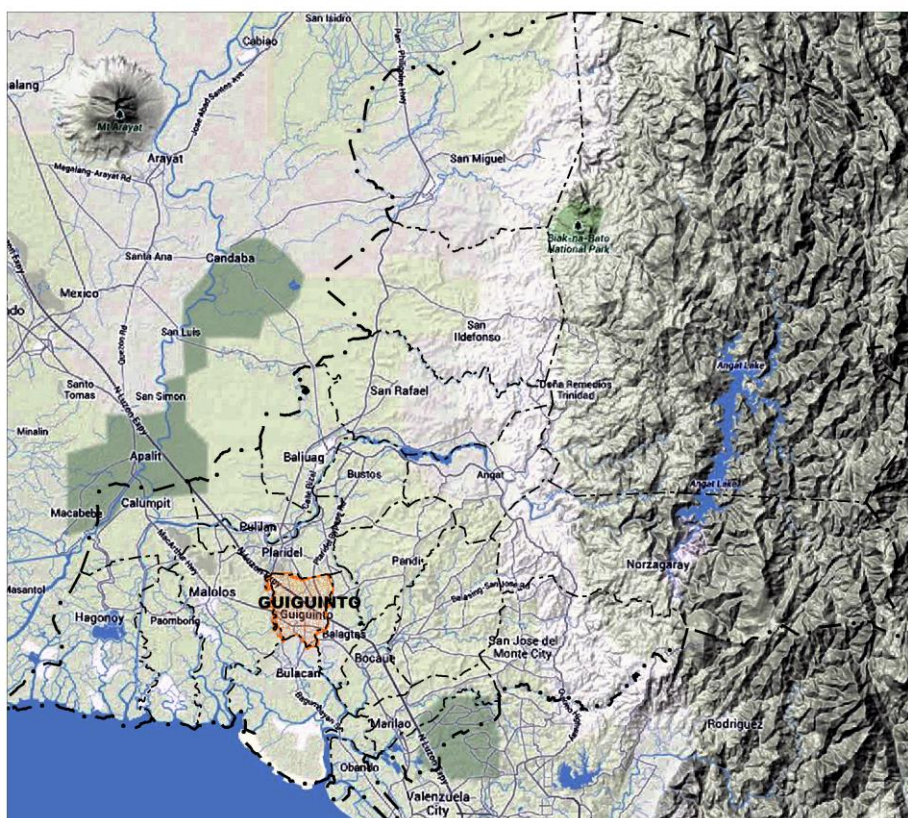
	SENIOR CITIZEN			
	BARANGAY	2020	2021	2022
1	CUTCUT	280	285	332
2	DAUNGAN	177	180	218
3	ILANG-ILANG	1,100	1,120	1,202
4	MALIS	1,202	1,220	1,490
5	PANGINAY	165	170	262
6	POBLACION	405	500	1,190
7	PRITIL	445	450	617
8	PULONGGUBAT	309	320	310
9	STA. CRUZ	1,274	1,300	1,623
10	STA. RITA	1,488	1,500	1,777
11	TABANG	822	850	1,240
12	TABE	513	520	841
13	TIAONG	850	890	1,298
14	TUKTUKAN	1,000	1,100	1,604
	<b>TOTAL</b>	<b>10,030</b>	<b>10,405</b>	<b>14,004</b>

Source: MSWD Guiguinto 2022

## GEOGRAPHY

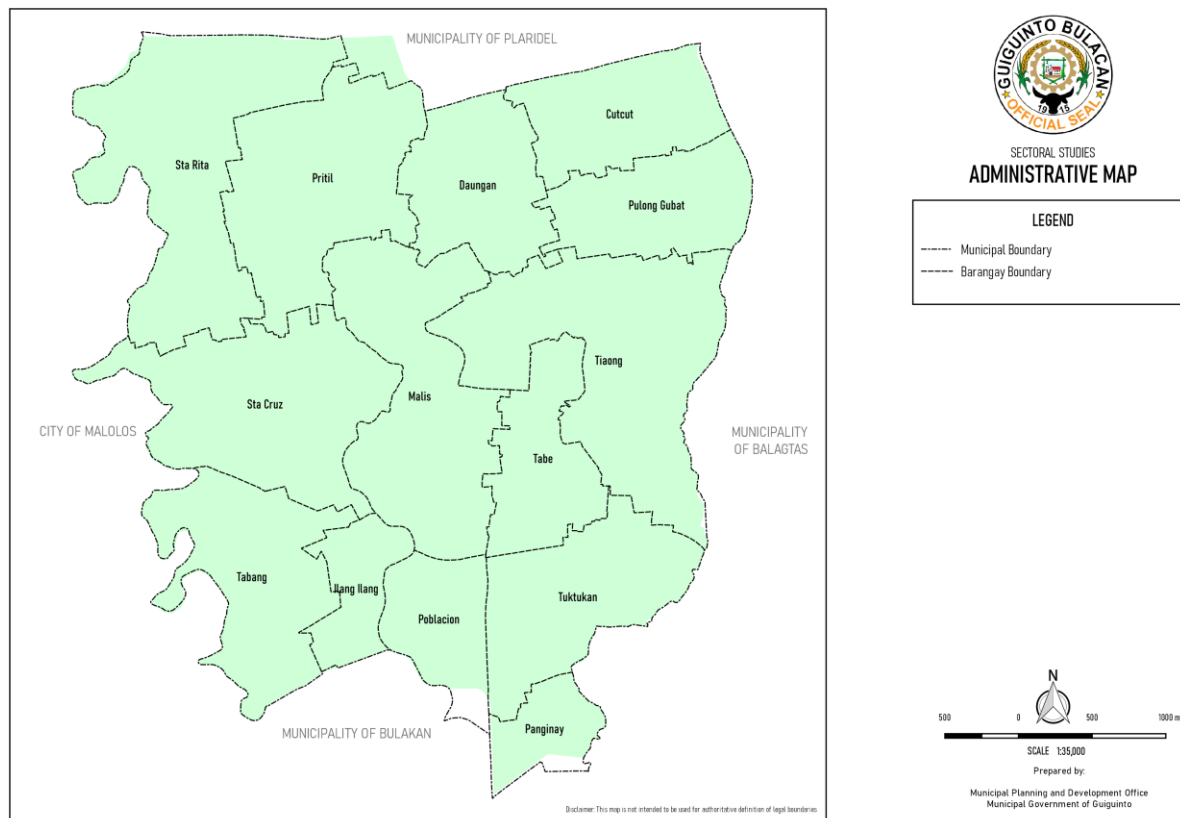
The Municipality of Guiguinto lies near the center of the Province of Bulacan in Central Luzon, approximately within the longitudinal points 14°51'56"N and 14°48'58"N, and within the latitudinal points 120°51'10"E and 120°53'18"E. It is accessible by land through the Manila North Road, about 33 kilometers north of Manila and 8 kilometers south of City of Malolos, the capital of Bulacan. There are four local government units surrounding the Municipality of Guiguinto and all are within the low land portion of the province. At the north of Guiguinto lies the Municipality of Plaridel; on the east, the Municipality of Balagtas; on the south lies the Municipality of Bulacan; and on the west, the City of Malolos. (see map 1-location map and map 2 Administrative Map)

MAP 1 LOCATION MAP OF GUIGUINTO



Source: MPDO 2020

**MAP 2 ADMINISTRATIVE MAP OF GUIGUINTO**



Source: MPDO 2020

## LAND AREA

Guiguinto has a total area of 2,750 hectares based on the records of the Land Management Bureau (LMB) under the umbrella of the Department of Environment and Natural Resources (DENR). However, as per land accounting and estimates using Geographic Information System (GIS), the Municipality of Guiguinto registered a total area of 2,221 hectares following the known limits of its boundaries from the records of the Assessor's Office. Accordingly, since this area was generated using GIS, it shall be used as the primary basis in land use planning to cover the whole territorial jurisdiction of the Municipality of Guiguinto. Shown in Table below is the distribution of land area by barangay using the old records and the area generated using GIS.

**TABLE 3 DISTRIBUTION OF LAND AREA BY BARANGAY**

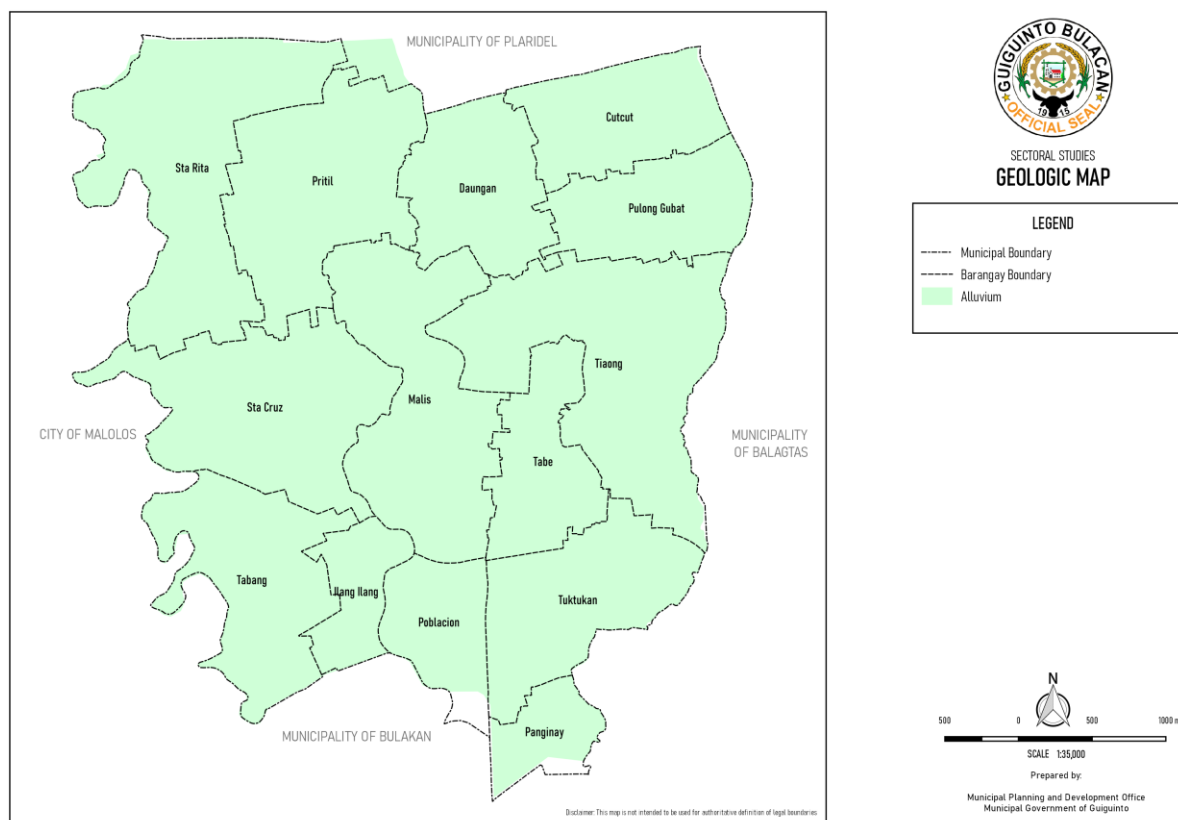
NAME OF BARANGAY	LAND AREA (HAS.)	
	AS PER OLD RECORD	AS PER GIS*
Cut-cut	226	122.750
Daungan	200	130.380
Ilang-ilang	50	60.080
Malis	311	226.480
Panginay	87	52.940
Poblacion	96	84.850
Pritil	323	210.210
Pulong Gubat	151	117.580
Sta. Cruz	248	227.250
Sta. Rita	272	266.840
Tabang	219	174.660
Tabe	114	107.060
Tiaong	258	280.760
Tuktukan	195	159.590
<b>TOTAL</b>	<b>2,750</b>	<b>2,221.43</b>

Note: \*GIS computed area was based on parcel map record of the Assessor's Office

## GEOLOGY

Alluvium is the main underlying geologic structure present in the Municipality of Guiguinto. (See Map 3-GEOLOGIC Map) This geologic makeup is a type of sedimentary rock stems which are commonly found in the western section of Bulacan covering the lowland and coastal areas which is estimated to cover 40-50% of the province's landmass. Alluvial rock formation is the result of the deposition of weathered rock materials by rivers, creeks, and streams of low-level areas. It is a term used when the loose, unconsolidated soils, which are eroded and reshaped by water is deposited or cemented. Further, the alluvial soils are loose at the surface, well-drained, and permeable with good water-holding capacity making it mostly suitable for farming purposes. Although the south western part of Bulacan contains alluvium where deposits of ordinary earth materials such as gravel and crushed stones are found, the Municipality of Guiguinto is not engaged in any form of quarry operation.

**MAP 3 GEOLOGIC MAP**



Source: MPDO Guiguinto as of 2020

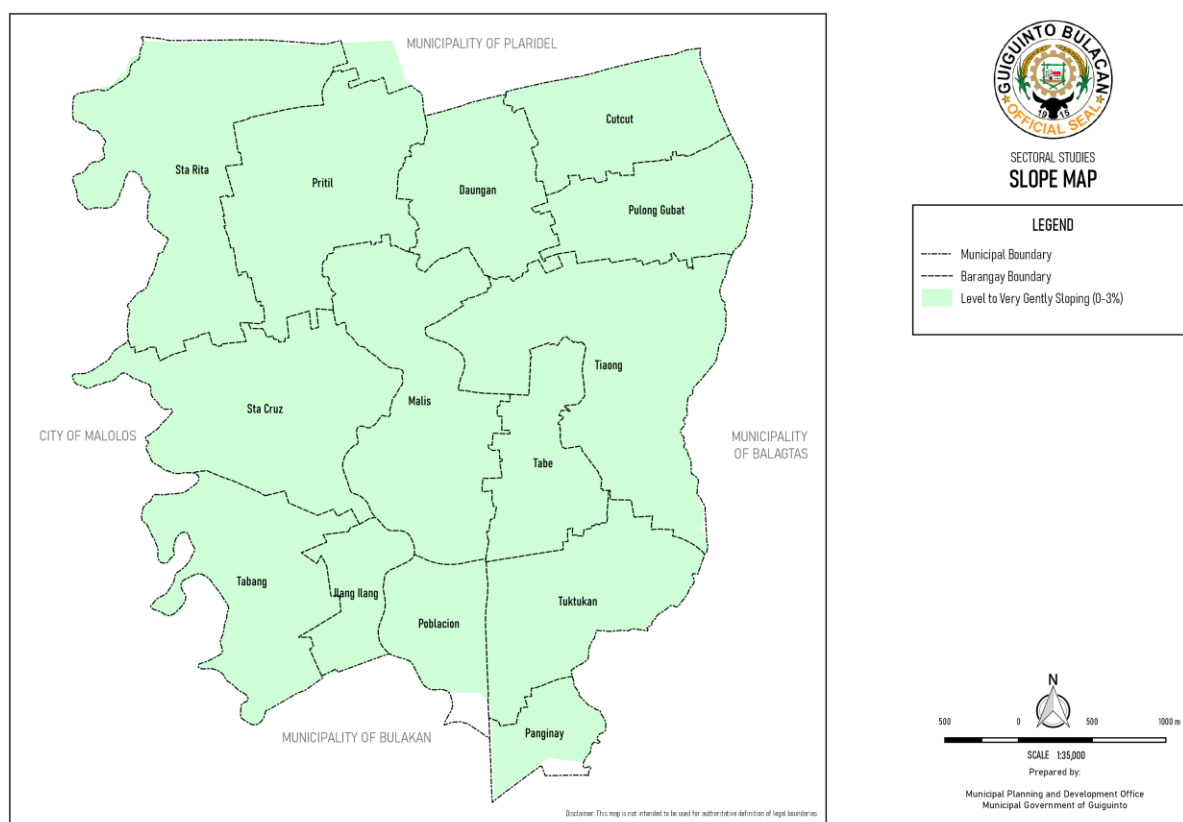


## TOPOGRAPHY AND SLOPE

The overall topographic configuration of Guiguinto belongs to the level ground to very gently sloping terrain or slopes ranging from 0 to 3%. Shown in Map 4-SLOPE MAP, this slope range is normally characterized by a flat landscape wherein about 1-meter elevation difference is observed. Accordingly, the whole territory of Guiguinto is within the ideal developable slope range.

Correspondingly, the general elevation in Guiguinto falls between 5 to 6 meters above sea level (masl). According to the topographic maps generated by the National Mapping and Resource Administration (NAMRIA), 5 masl elevations can be found from central to northern part of the municipality including portions of barangays Pritil, Daungan, Malis, Sta. Rita, Tabe, Sta. Cruz, and Tiaong.

MAP 4 SLOPE MAP



Source: MPDO 2020

## LAND CLASSIFICATION

There are two major classifications of land in the province of Bulacan based on the record of the DENR, the forested area or timberland and the Alienable and Disposable Lands (A&D). The forested areas are found on the eastern side of Bulacan with some protected areas in municipality of Bulacan area. These land areas should not be owned by private individual or entity and should be preserved and protected because of their function for forest purposes. The rest of the province is considered A&D comprising majority of the upland and lowland to coastal areas. These A&D lands refers to those lands of the public domain which have been the subject of the present system of classification and declared as not needed for forest purposes. The entire territory of the Municipality of Guiguinto is covered by the A&D classification of land .This means that the whole land of Guiguinto is not covered by any preservation/protection laws or proclamations that would inhibit possible land developments.

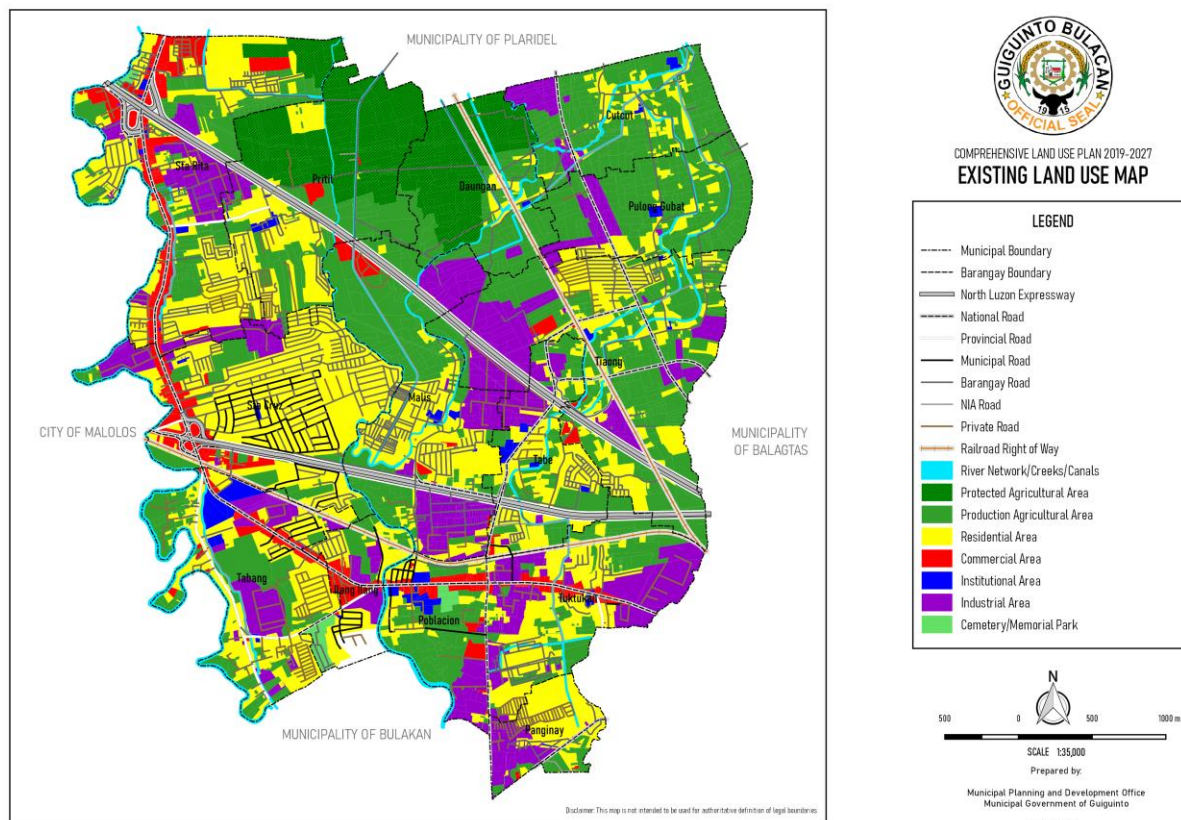
## EXISTING LAND USE AND LAND USE TRENDS

### GENERAL LAND USE

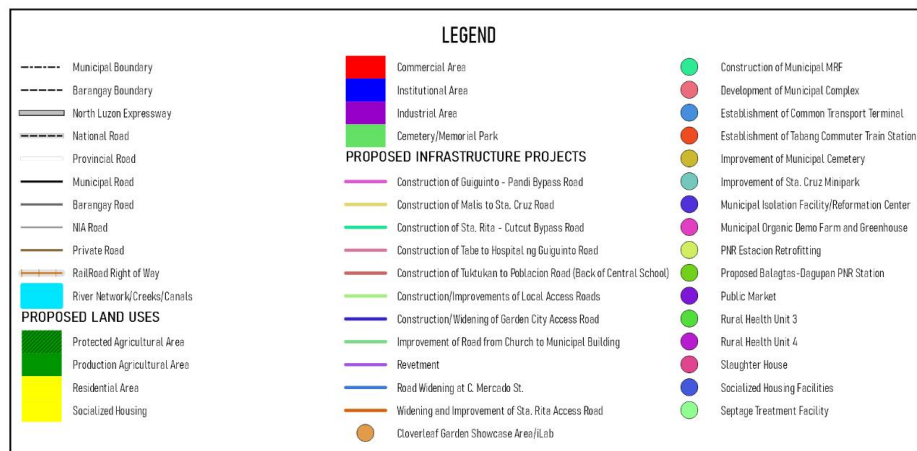
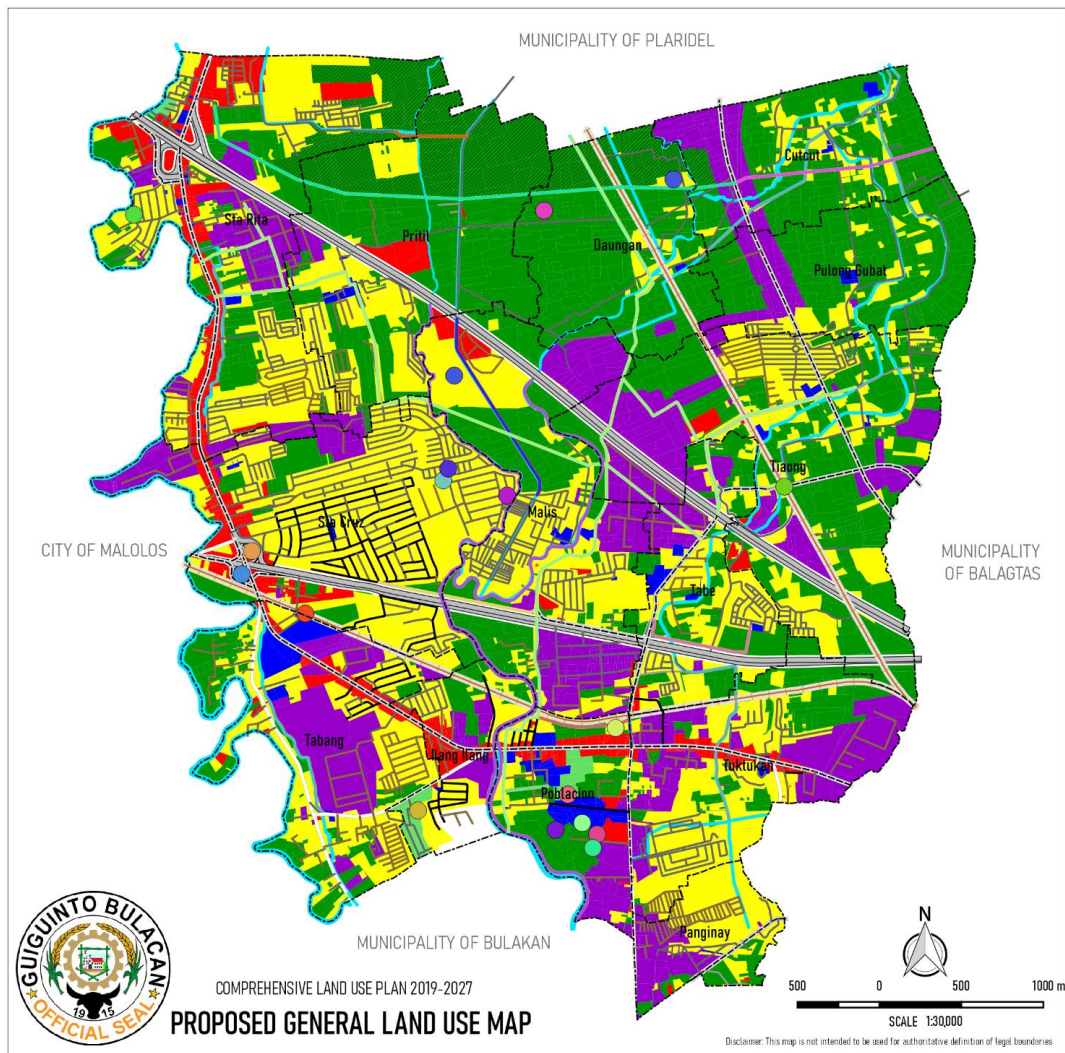
The Municipality of Guiguinto is predominantly agricultural. The biggest part of its lands are still classified as agriculture. Over the years, however, local development has continued to introduce rapid changes in the land use. The introduction of new economic ventures, social and political influences, availability of opportunities and infrastructure developments has triggered the conversion of some of the agriculture lands into residential, business or commercial sites, and most especially industrial sites. Likewise, population growth has its share in the continuous modification of the municipal land use.

Vast agricultural areas of Guiguinto are still found on the northern side of the North Luzon Expressway. However, commercialization and industrialization is beginning to flourish around north eastern part of the municipality due to the recently established Plaridel Bypass Road. On the other hand, the Malolos-Meycauayan Growth Corridor, or the area traversed by the Manila North Road, is where urbanization in Guiguinto is rapidly taking place. This also covers the area on both sides of the Cagayan Valley Road. Commercial and industrial businesses are concentrated on these parts of Guiguinto. Reinforced by several residential subdivisions, the urban core of Guiguinto is represented by barangays Poblacion, Tuktukan, Malis, Ilang-Ilang, Tabang, Sta Cruz, and Sta. Rita. Other barangays outside the urban core occupy the rest of the area, which is mostly agricultural. It must be noted, however, that within these barangays, there are clusters of residential areas; hence, they form part of built-up areas. The Guiguinto River and its tributaries also occupy a considerable area.

**MAP 5 EXISTING LAND USE MAP**



Source: MPDO 2020

**MAP 6 PROPOSED GENERAL LAND USE MAP**

Source: MPDO 2020



## BUILT IN ENVIRONMENT

This consists of approximately 1,455.20 hectares or 65.51% of the municipality's total land area. It includes the densely populated urban barangays and the clusters of residential subdivisions and road networks within the town. The identification of built-up areas is based on the existence of socio-economic activities and presence of infrastructure support facilities in a territory.

Historically, the existing built-up and urban form of the Municipality of Guiguinto can be attributed by the way our Spanish conquistadores plan and constructed the first structures and roads in the town. It is a common practice during the Spanish era to build the government seat near the church. This will serve as the town's center wherein settlements are later developed outward. Such type of urban planning is evident in the Municipality of Guiguinto and many towns in the country.

Along this, residential subdivisions in various categories have found their place in Guiguinto. From socialized housing communities to high-end type of residential subdivisions, Guiguinto continue to attract real estate developments because of the ideal environment the municipality has to offer. Considering the town's small area, there are residential subdivisions with more than 20 hectares of land each and housing developments are continuously occupying the grounds of Guiguinto. These include Sta. Clara Estates in barangay Sta. Rita and Pritil, La Aldea Residences in barangay Ilang-Ilang, and Rockavilla Subdivision.

Commercial and industrial businesses also form a major part of the built-environment of Guiguinto. In fact, this industry is the primary source of income in the municipality. It occupies about 26.89% the built-up area in Guiguinto. For the past decade, Guiguinto continue to experience commercialization and industrialization as a result of the municipality's drive towards economic growth and prosperity. Commercial areas are commonly thriving along the major road networks such as Puregold and Walter Mart. Industrial areas, on the other hand, are dispersed in various barangays. The largest industrial business venture in Guiguinto, the RIS industrial subdivision, is found in barangay Malis with an area covering more than 40 hectares. Also, large industries can be found in barangay Sta. Rita-Pritil and Tiaong, the Bulacan Metro Warehouse and Evergreen with an area of 12 hectares and 10 hectares respectively. These commercial and industrial businesses, which are continuously expanding, are regarded to be included among the major contributors for the continuous expansion of the built-environment in Guiguinto.

For the past 15 years, the Municipality of Guiguinto has markedly experienced urbanization pressure that brought positive and sometimes undesirable changes in its landscape. Figure below shows a view of the satellite image of Guiguinto in year 2002 taken from google earth. It can be observed that the built-area is distributed throughout the municipality, however, concentration of development is evident along the road networks particularly along the Manila North Road or Mac Arthur Highway and the Old Cagayan Valley Road. This particular type of

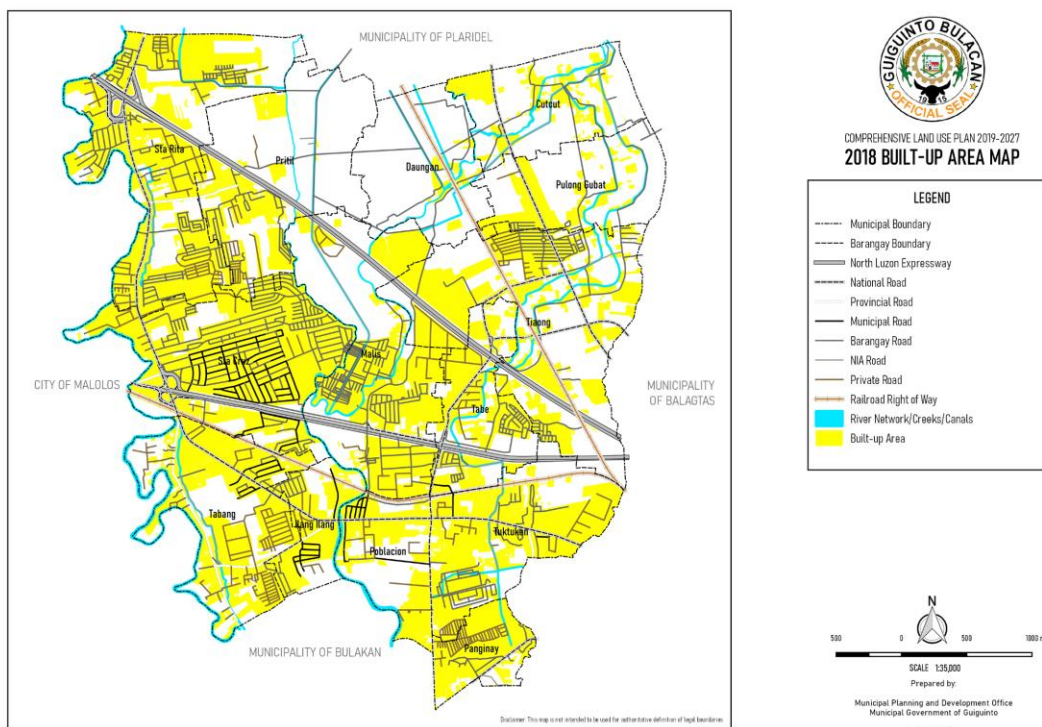


development is not distinct in Guiguinto but can also be observed throughout the stretch of these primary roads in other areas in the province. Being part of the Malolos-Meycauayan urban growth corridor, development flourished along this area brought about by economic forces under the policy advocacy of the Provincial Physical Framework Plan of Bulacan province. Consequently, urbanization in Guiguinto from the last 15 years is concentrated at Poblacion where the seat of the government is located. Built-up in Poblacion area also covers the adjacent barangays along the path of the primary roads. From here, urbanization starts to spread outward slowly occupying the immediate agricultural areas.

Generally, since road infrastructures usually acts as catalyst to urbanization in most of rural communities, the central and northern part of Guiguinto including barangays Malis, Daungan, Cutcut, Pritil, and Pulong Gubat still remains to have agricultural lands. Irrigation system is still present in these areas via the south main canal of NIA. Thus, policies to preserve some areas in these barangays will have to be instituted to protect the interest of many farmers relying heavily in the agricultural sector.

For the past decades, concentration of settlement growth and industries continues to be observed within the Poblacion area and some barangays. With this, communities in other barangays have recorded to increase significantly. The socio-economic activities are observed to grow rapidly. Hence, considering this trend, sub-centers are expected to develop in the future. Following maps show the built-up areas as of 2020 and the projected built-up areas at the end of the planning period.

**MAP 7 BUILT UP AREA**



Source: MPDO Guiguinto as of 2020

## RIVER NETWORK

Guiguinto River is the only major water body that cuts across the town from north to south following the downstream direction. With Guiguinto River as one of its major water resource, flood waters are drain from its north serving the Municipality of Plaridel and Balagtas including runoff from other nearby barangays going to the Municipality of Bulakan. This river covers about 9.6 hectares or 0.36 % of the total land area of the Municipality of Guiguinto and provide substantial role in terms of socio-economic make-up of the town.

Contributing to about 1.4% of the total area of the town with a length of less than 5 kilometers, Guiguinto River divides the municipality vertically from the north where the river passed through barangays Daungan, Malis, Cutcut, and Pritil down to the south traversing barangays Ilang-ilang and Poblacion.

Historically, Guiguinto River was used by the early inhabitants to ferry goods and transport people. It is during those days that this river is very wide and the water is teeming with various species of fishes. Thus, it was a major source of livelihood to some residents through fishing and by growing “kangkong” used as vegetable.

According to the law, rivers are within the jurisdiction of the national government. However, the devolution of power to the local government units gave them the obligation to take care of these precious resources through co-management.

However, the pressure of urbanization in Poblacion and other barangays have resulted to illegal settlements along the river banks. Illegal structures were built and informal family settlers continue to grow over the past decade.

This plan shall ensure the conservation and protection of the Guiguinto River and its tributaries due to its importance not only to the local residents but also in managing the risks inherent to these natural resource.



## CLIMATIC CONDITIONS

The Municipality of Guiguinto basically experiences similar climate that of the other province of Bulacan. It is characterized by two (2) distinct weather conditions namely; the wet and dry season. Others jokingly categorize our weather conditions into Four (4), wet, dry, Very WET and Very Dry. Significantly, especially now that we are affected by the worldwide phenomenon also known as Climate Change, we may attribute the two (2) latter “weather conditions” to the “La Niña” and “El Nino” phenomenon.

Wet Season or Rainy Season more or less, starts from late May and ends around November, the Dry Season on the other hand is from December to April. Again because of the changing times, climate change, the two (2) mentioned phenomenon (La Niña and El Niño), occurrences of the start and end of the two seasons varies from time to time. In addition, the average annual rainfall is 255.3 millimeters (mm) with the month of August having the highest month average rainfall with about to 304 millimeters (mm). The Annual number of rainy days averages to 175 days.

November to April is generally dry while the rest of the year gets wet. The northeast monsoon (AMIHAN) prevails from October to January bringing in moderate and light rainfalls. While on the months of February up to April, the east trade winds predominate but the Sierra Madre Mountain Range to the east disrupts the winds resulting to a dry period. From the month of June to September, southwest monsoon (HABAGAT) threatens to bring Heavy to Torrential Rains. The hottest month usually occurs on the month of May recording an average temperature of 29.7.

## DEMOGRAPHY

Guiguinto is classified as a 1st class municipality effective in 2005. It is composed of fourteen (14) barangays.

As of the latest Census conducted in 2020, Guiguinto has a total of 112,889 inhabitants with average annual growth rate of 2.7 percent, higher than that of the Province of Bulacan at 2.5 percent. This figure is about 3.06 percent of the total Bulacan population.

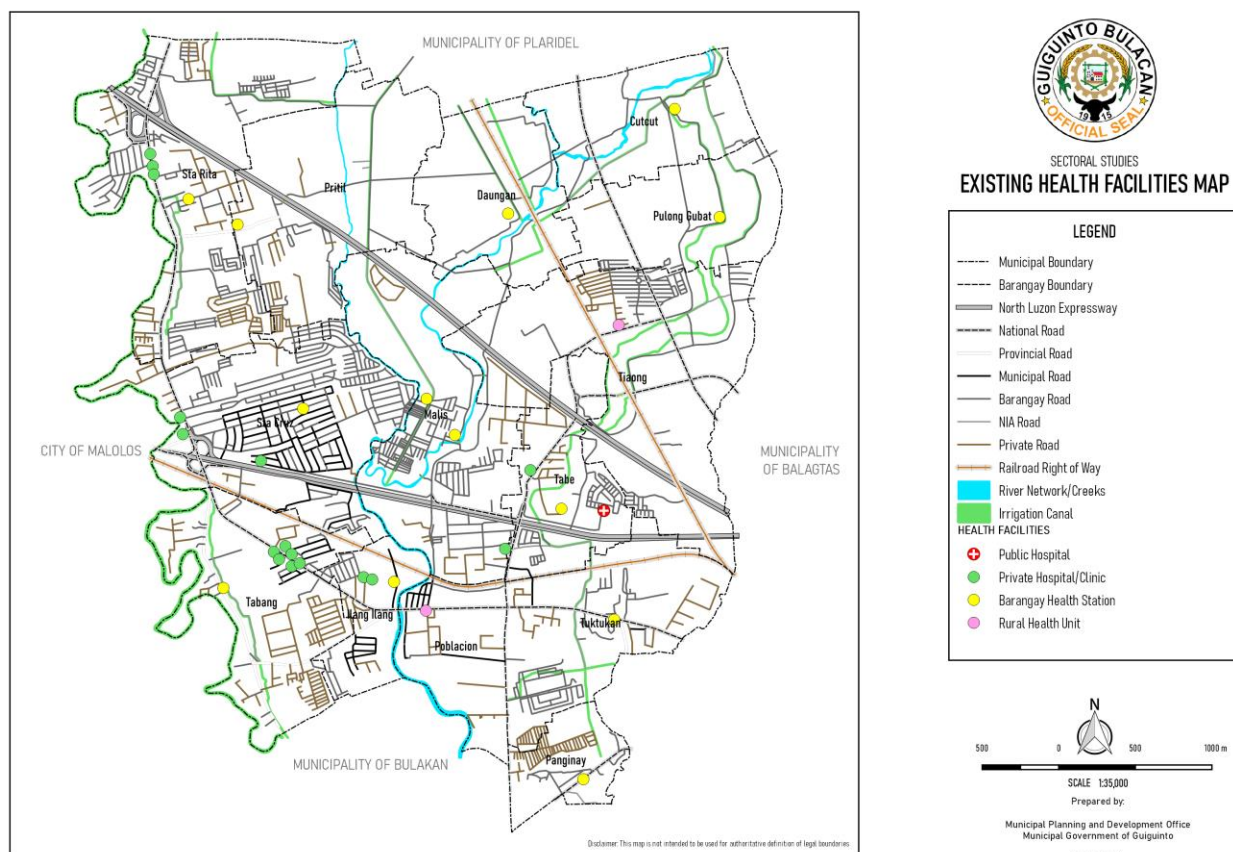
Barangay Malis has the greatest share of the total population at 14.86 percent, followed by Sta. Rita and Tuktukan at 14.45 percent and 10.46 percent respectively. On the other hand, barangays Panginay and Daungan has the least share at less than 4 percent which is equivalent to less than 4,000 inhabitants as of Census 2020. In terms of population growth rate, barangays Pulonggubat and Tiaong are the fastest growing barangays in terms of population at 16.71 percent and 6.17 percent respectively.

## 2.0.2 HEALTH AND NUTRITION

### HEALTH FACILITIES

Health facilities are fundamental in the delivery of health services whether public or privately owned facilities. In the municipality of Guiguinto, 13 Barangay Health Stations are present in different barangay for the delivery of primary health care services such as basic consultation, health education, and referral to Rural Health Units (RHU) and core referral hospital. The RHUs on the other hand, are strategically located one at Barangay Poblacion and the other unit at Barangay Tiaong for the referral facility of the Barangay Health Stations and for other primary health care services such as consultation, basic treatment, dental care, and referral facilities of complicated cases to the next level hospital. It should be noticed that health facilities are strategically located to cater the residents of the respective barangay. The health services in the locality are complemented by private facilities situated in the municipality. There are fourteen (14) diagnostic clinics, two (2) private hospitals, and one (1) public hospital presently operating in the area.

**MAP 8 EXISTING HEALTH FACILITIES**



Source: MPDO 2020



## CHARTS RELEVANT TO HEALTH AND NUTRITION

**TABLE 5 TOP 10 LEADING CAUSES OF MORBIDITY**

CAUSE	NUMBER OF CASES (2020)	CAUSE	NUMBER OF CASES (2021)	CAUSE	NUMBER OF CASES (2022)
ARI for 5 and above	1,035	ARI	7,875	ARI for 5 and above	2,569
ARI fin below 5	993	Hypertension	4,949	ARI fin below 5	2,418
Hypertension	478	Wound	2,268	Disease of the heart	1,546
Skin Disease	324	Anemic	2,105	Hypertension	1,404
Animal Bite	304	UTI	1,776	Anemia	941
Anemia	280	Skin Rashes	1,553	Skin disease	676
Sore Throat/ Tonsilitis	180	Influenza	1,166	wounds	546
UTI	103	Asthma	789	Influenza	279
Influenza	39	Dental Problem	782	Acute Gastro Enteritis	273
Asthma	35	Arthritis	604	Asthma	255

Source: MHO 2022

**TABLE 6 LEADING CAUSES OF MORTALITY**

CAUSE	NUMBER OF CASES (2020)	CAUSE	NUMBER OF CASES (2021)	CAUSE	NUMBER OF CASES (2022)
Disease of the Heart	207	Disease of the Heart	359	Disease of the Heart	155
Disease of the Vascular System	92	Pneumonia	132	Pneumonia	51
Malignant Neoplasm	81	Disease of the Vascular System	89	Disease of the Vascular System	28
Pneumonia	57	Malignant Neoplasm	59	Malignant Neoplasm	26
Diabetic Mellitus/ Ketoacidosis	37	Diabetic Mellitus/ Ketoacidosis	35	Diabetic Mellitus/ Ketoacidosis	21
COPD, Hypoxic Encephalopathy and allied	24	Neoritis, Nephritic Syndrome & Nephrosis	29	Neoritis, Nephritic Syndrome & Nephrosis	20
Traumatic Injury/ Accidents	19	Traumatic Injury/ Accidents	18	Traumatic Injury/ Accidents	19
Tuberculosis (all forms)	13	COPD, Hypoxic Encephalopathy and allied	18	COPD, Hypoxic Encephalopathy and allied	19
Nephritis/ Nephrotic syndrome	11	Certain condition originating in the perinatal period	5	Certain condition originating in the perinatal period	18
Sepsis	10	Tuberculosis (all forms)	5	Tuberculosis (all forms)	16

Source: MHO 2022



## MITIGATION AND PREPAREDNESS

### 1. HAZARD MAPPING

Identification of malnourished children and nutritionally-at-risk pregnant and lactating women exposed to hazard/s in their respective communities. (Reflected in the Municipal Nutrition Spot Map)

### 2. REGULAR MONITORING AND MASTERLISTING

Conduct Operation Timbang regularly (monthly and quarterly for 0-23 months and 24-59 months children and pregnant women respectively) and obtain a master list of NiEM priority or undernourished children and pregnant women. Result are are disseminated to the Municipal Nutrition Committee and Barangay Nutrition Committee so that identified nutritionally-at-risk individuals are given priority attention in nutrition programming planning and intervention.

### 3. Regular updating of Nutrition in Emergencies Logistic Support:

#### a. Equipment and tools for Rapid Nutrition Assessment (RNA):

- Mid Upper Arm Circumference (MUAC Tapes)
- Salter Weighing Scale
- Wooden Height Board

#### b. Micronutrient Supplements

- Vitamin-A Capsules
- Iron with Folic Acid
- Zinc
- Multiple Micronutrient Powder

#### c. Community-Based Management of Acute Malnutrition (**CMAM**) Commodities

- Ready-to-use supplementary foods (RUSF)
- Ready-to-use therapeutic foods (RUTF)

#### d. Infant and Young Child Feeding Support

- Baby Food Blend (locally made in Gintong Kusina of the Municipality of Guiguinto)
- 2- in-1Breastfeeding and Hygiene Kit:

Contents:

Breast pump	Toothpaste
Nursing Apron	Toothbrush
Milk Bag/plastic	Face Towel
Bath Soap	Tissue
Shampoo	Alcohol 70%
Toothpaste	Face Mask
Toothbrush	Face Shield

e. Provision of portable / improvise lactation room for nursing women

## RESPONSE

1. Mobilization of community health and nutrition volunteers (Barangay Health Workers, Lingkod Linga sa Nayon, and Mother Leaders) and Nutrition Cluster (Municipal Nutrition Office, Municipal Health Office, Municipal Social Welfare and Development Office, Municipal Disaster and Risk Reduction Management Office) within 24 hours.
2. Conduct of Infant and Young Child Feeding such as breast feeding and complementary feeding assessment and counselling within 24 hours.
3. Conduct of Rapid Nutrition Assessment (RNA) after 72 hours.  
May use:
  - a. Mid Upper Arm Circumference (MUAC) if weight and height measurement is not possible
  - b. Weight and Height measurement of possible
4. Immediate provision of high dose of vitamin-A supplements to target groups unless a similar dose was given in the past four weeks and Iron-Folate within 24 hours as defined in the current guidelines for micronutrient supplementation. Likewise the provision of Micronutrient Supplement Powder to children 6-23 mos. Within 72 hours.
5. Provision of Ready-to-Use Supplementary Food (RUSF) and Ready-to-Use Therapeutic Food (RUTF) for children identified with MAM and SAM and undernourished pregnant and lactating women.
6. Immediate provision of Iron with Folic Acid for pregnant and lactating women on iron with Folic acid supplementation.
7. Posting and distribution of nutrition promotion and advocacy materials within 24 hours.
8. Masterlisting of target beneficiaries for feeding program for 6-59 months children and pregnant and lactating women within 72 hours and beyond, when the prevalence of global acute malnutrition (GAM) is 10-14%.
9. Nutritional assessment and appropriate response interventions and management of acutely malnourished children, pregnant and lactating women, children with micronutrient deficiencies and those children who are stunted.
10. Conduct of nutrition counselling and supportive nutrition care services for promotion, protection, support to infant and young child feeding practices, such as exclusive breast feeding, re-lactation, and special dietary restrictions within 72 hours.

11. Monitoring of any act that is against Executive Order no. 51- Milk Code, particularly the prohibited distribution or marketing of infant formula and milk donations as well as promotion materials in any form.

## RECOVERY AND REHABILITATION

1. Conduct Nutrition Initial Needs Assessment (NINA) using the NINA standard form within 24 to 72 hours after the onset of emergency or disaster.
- 2.
3. Continue the Nutrition Services such as Operation Timbang or MUAC and Nutrition Interventions for nutritionally-at-risk pregnant and lactating women, Infants and children below five years of age as well as the school children.
  - a. IYCF
  - b. Nutrition for school age children
  - c. Maternal Nutrition
  - d. Prevention and treatment of acute malnutrition
  - e. Operation Bantay Timbang for regular progress monitoring of malnourished children and pregnant women

**SERVICE PACKAGE ON HEALTH AND NUTRITION DURING DISASTER****PRE-DISASTER  
PHASE**

- Hazard Mapping
- Regular Monitoring and Masterlisting
- Regular Updating of Nutrition in Emergencies Logistic Support

**ALERT PHASE**

- Mobilization of community health and nutrition volunteers (BHW, LLN, and ML) and Nutrition Cluster (MDRRMO, MNO, MHO, MSWDO) within 24 hours

**PRE-EMPTIVE  
EVACUATION**

- Put-up portable/improvise Lactation Room in the Evacuation area
- Provision of blanket feeding

**DAY-1 and 2**

- Conduct IYCF such as breastfeeding, complementary feeding, and nutrition assessment and counselling
- Immediate provision of high dose of vitamin-a and Iron- Folate supplement
- Posting and distribution of nutrition promotion and advocacy materials

**DAY-3**

- Rapid Nutrition Assessment (MUAC or Weight and Height assessment)
- MNP Supplementation
- Masterlisting of target beneficiaries, for feeding program for 6-59 mos. Infants and children and pregnant and lactating women (if prevalence of GAM is 10-14%)

**DAY-3 onwards**

- Continue the conduct of nutrition services such as micronutrient supplementation and feeding programs and nutrition counselling

**R E S P O N S E****E M E R G E N C Y & R E C O V E R Y P H A S E**

## 2.0.3 ENVIRONMENTAL MANAGEMENT AND NATURAL RESOURCES

### WATER ENVIRONMENT

The 2012 Socio-Economic Profile of the Municipality of Guiguinto revealed that there is about 9.80 hectares of water bodies in the municipality. The agriculture sector of the municipality's economy depends heavily to this water coming from the river network and through the irrigation system. On the other hand, the manufacturing and tourism industries sector is dependent on the groundwater. Hotels and resorts as well as the manufacturing establishments involve in food processing, chemicals and pharmaceuticals, iron works and concrete products make use of groundwater primarily in their operations. At the same time, these sectors contribute to water degradation and depletion.

### AIR ENVIRONMENT

With regards to ambient air quality, based on the National Air Quality Status Report (2003-2007), the following data were collected and collated from the air quality monitoring stations located in Bulacan, thus:

**TABLE 8 –AIR QUALITY**

STATIONS	CONCENTRATION (ug/Ncm)				
	2003	2004	2005	2006	2007
Saluysoy	141	190	309	186	116
Bocauae			370	195	
Meycauayan City			309		
Intercity Industrial Subdivision					

*Source: National Air Quality as of 2007*

Disaggregated data as well as the updated information from these monitoring stations are not available.

### LAND ENVIRONMENT

The terrestrial environs of Guiguinto, as described in the earlier chapter, have only one classification and that is as A&D land with level to gently sloping configurations. Likewise, as discussed earlier, population density of the municipality has increased from population base year 2000 to the latest Census year 2010. This increase in the number of residents per square kilometre can be translated into an increase in land requirement for services and facilities, not to mention the corresponding increase in the wastes that is expected to be generated. Further discussion of the land environment of the Municipality of Guiguinto will be done separately and in detail later.



## WATER AND SANITATION

Water supply in Guiguinto is provided by the Guiguinto Water District which is operated by the private company Hiyas Water Resources. The said water service provider is servicing all barangays of Guiguinto using the ground water as its sole source.

The water system types are of Level 3, hence, providing individual household connection. As of June 2014, about 11,861 (or 59%) of the 20,194 households in Guiguinto has level 3 water connections. Other communities in some barangays of Guiguinto rely on public and private deep and shallow wells. *Table 9* shows the significant increase in household connection after *Hiyas Water Resources* assume the operation of providing domestic water to the people of Guiguinto.

**TABLE 9 PERCENTAGE INCREASE IN WATER SUPPLY**

BARANGAY	NUMBER OF HOUSEHOLDS		%
	AS OF 2021	AS OF 2022	
1. Cut- Cut	533	565	106
2. Daungan	490	553	113
3. Ilang- Ilang	1,475	1,599	106
4. Malis	2,793	2,958	106
5. Panginay	333	343	103
6. Poblacion	1,322	1,493	113
7. Pritil	915	958	105
8. Pulong Gubat	471	500	106
9. Sta. Cruz	2,590	2,695	104
10. Sta. Rita	4,337	4,469	103
11. Tabang	2,155	2,197	102
12. Tabe	589	654	111
13. Tiaong	1,796	1,892	105
14. Tuktukan	2,723	2,974	109
TOTAL	22,522	23,810	106

Source: HIYAS as of June 2022

Guiguinto Water District has 23 pumping stations located strategically within the town as shown in Table 10. Majority of these pumping station facilities are found in Barangay Sta. Rita, which is attributed by the generous amount of ground water in the area vis-a-vis the strong demand of its population and the immediate vicinity. Other pumping stations are also located where a strong demand for domestic water is present such as Poblacion, Tuktukan, Tabe, Tiaong, and Malis.

TABLE 10-LIST OF PUMPING STATION OF HIYAS

	NAME OF STATION	LOCATION
<b>1</b>	Agatha	Sta. Rita, Guiguinto
<b>2</b>	Sta. Clara	Sta. Rita, Guiguinto
<b>3</b>	Sta. Rita	Sta. Rita, Guiguinto
<b>4</b>	BMWC	Sta. Rita, Guiguinto
<b>5</b>	Kabilang Bakod	Sta. Rita, Guiguinto
<b>6</b>	Goldridge 2	Sta. Cruz, Guiguinto
<b>7</b>	Masuso	Sta. Cruz, Guiguinto
<b>8</b>	Maunlad	Sta. Rita, Guiguinto
<b>9</b>	Ping Lacson	Poblacion, Guiguinto
<b>10</b>	Real Homes	Tabe, Guiguinto
<b>11</b>	Tabe	Tabe, Guiguinto
<b>12</b>	Mira Verde	Tuktukan, Guiguinto
<b>13</b>	Vice Gov	Tabang, Guiguinto
<b>14</b>	Sanderland	Sta. Cruz, Guiguinto
<b>15</b>	Brooklyn	Tuktukan, Guiguinto
<b>16</b>	Ylang-Ylang	Ilang-Ilang, Guiguinto
<b>17</b>	North Belair	Malis, Guiguinto
<b>18</b>	Tiaong Bacood	Tiaong, Guiguinto
<b>19</b>	Loresco	Pulonggubat, Guiguinto
<b>20</b>	Tuklas	Malis, Guiguinto
<b>21</b>	Sitio Lawa	Tiaong, Guiguinto
<b>22</b>	Daungan	Daungan, Guiguinto
<b>23</b>	Tiaong Bypass	Tiaong, Guiguinto

Source: HIYAS 2022

## HOUSEHOLD WITH SAFE WATER

With regards to the access of the households to safe water, the Table above shows that using the 2021 projected number of households as its base year, the municipality has recorded an increase of 5.7% for 14 barangay.

**TABLE 11- HOUSEHOLDS WITH ACCESS TO CLEAN WATER**

BARANGAY	PROJECTED NUMBER OF HOUSEHOLDS 2021	PROJECTED NUMBER OF HOUSEHOLDS 2022
1. Cut-cut	533	565
2. Daungan	490	553
3. Ilang-Ilang	1,475	1,559
4. Malis	2,793	2,958
5. Panginay	333	343
6. Poblacion	1,322	1,493
7. Pritil	915	958
8. Pulong Gubat	471	500
9. Sta. Cruz	2,590	2,695
10. Sta. Rita	4,337	4,469
11. Tabang	2,155	2,197
12. Tabe	589	654
13. Tiaong	1,796	1,892
14. Tuktukan	2,723	2,974
<b>TOTAL</b>	<b>22,522</b>	<b>23,810</b>

Source: HIYAS as of 2022

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## AGRICULTURAL AREAS AND IRRIGATION SYSTEM

Although the primary source of income of the Municipality of Guiguinto does not rely on its agricultural lands, which is about 879 hectares or 39.5% of the town's total land area, agricultural related activities are still thriving in most part of the town particularly in the northern part. Palay and high-value crops including varieties of vegetable production are still present contributing to 1.46% of Bulacan's agricultural production. This was possible because of the presence of the National Irrigation Administration's (NIA) irrigation laterals traversing various parts of Guiguinto. At present, more than 26% of the agricultural lands belongs to prime lands or key production areas that require protection. As one of the primary thrusts of the local government, this plan shall delineate certain areas in the municipality as protected area for agriculture. This will guarantee the protection and conservation of the remaining strategically located agricultural lands in the town. It will likewise ensure the town's contribution to the national government's aim towards food security. Most of these lands are irrigated and irrigable that can be found at the northern part of the town mainly on the northbound side of the NLEX covering the barangays of Pritil, Daungan and Cutcut.

Over the years, commercialization and industrialization in Guiguinto has rapidly altered its agricultural landscape, making services and trading the primary contributor of the economic growth of the town. The tracts of land classified under non-productive agricultural areas and open spaces within the built-up area of Guiguinto belongs to idle lands, open grasslands, and the like are ideal places for such use and more importantly for urban expansion. Considerable lands are also currently being utilized for the production of ornamental plants in the built-up area. These industries, considered as agricultural-based activities, have been growing significantly over the past years. Also known as horticulture, it is now fast flourishing in Guiguinto and nearby towns in the province. The demand for this industry is not only widely known locally to Guiguinto and nearby provinces but it is now learned its way to international market. Hence, horticulture in Guiguinto has shaped the town's character as Garden Capital in Bulacan. Fostered by the Municipal Government of Guiguinto's support, the town now declares the month of January of every year as Halamanan Festival as a way of promoting and expanding this industry.

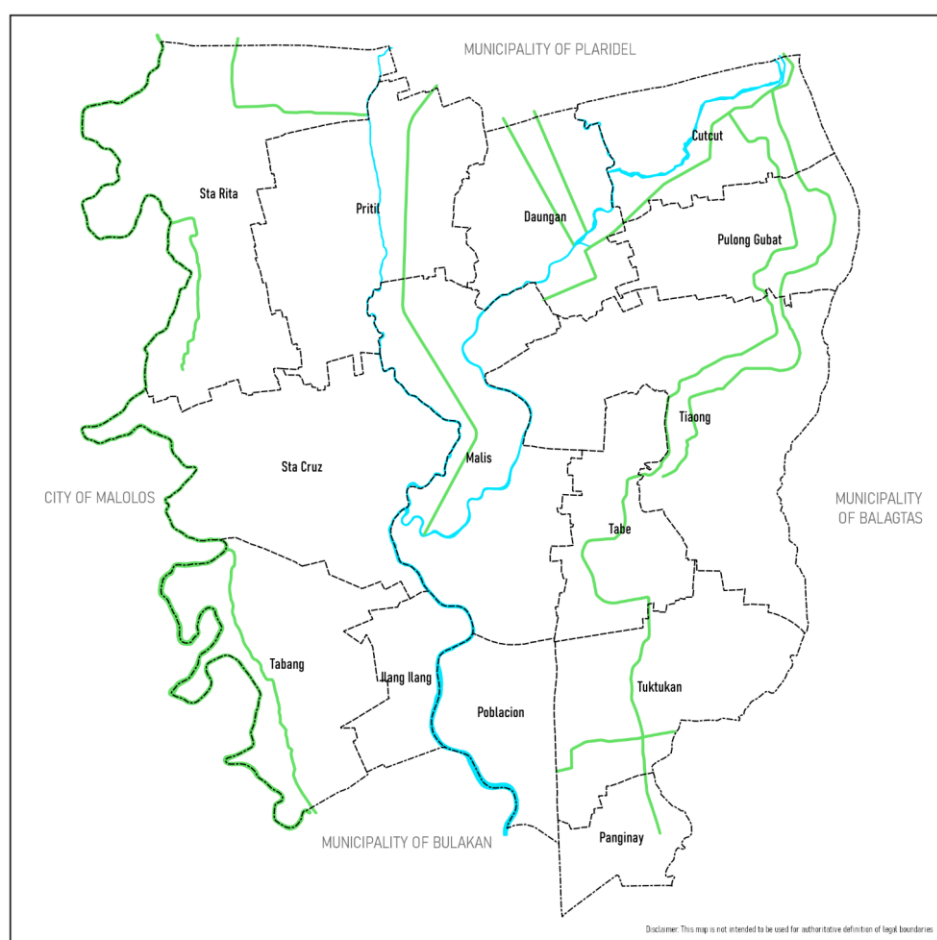
The Municipality of Guiguinto is one of the recipient towns of irrigation water coming from Bustos Dam via the South Main Canal.



**TABLE 12- IRRIGATION SERVICES**

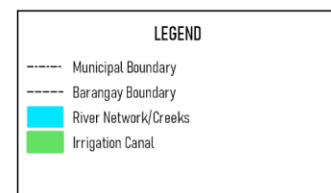
Irrigable Area (Has)	3,036	5.5
Irrigated Area (Has)	2,530	4
NO. OF FARMER BENEFICIARIES	3,042	2,534

**MAP 9 IRRIGATION MAP**



SECTORAL STUDIES

**EXISTING IRRIGATION FACILITIES MAP**



SCALE 1:35,000

Prepared by:

Municipal Planning and Development Office  
Municipal Government of Guiguinto

March 2020

Source: MPDO 2020



## WASTE DISPOSAL SYSTEM

The waste disposal system of the Municipality of Guiguinto is controlled dumping with Material Recovery Facilities (MRF). Four (4) barangays have MRF for waste management. Barangay Ilang-Ilang has the biggest land area of 500 sq. m. for waste management.

**TABLE 13-MRF LOCATIONS**

DISPOSAL SYSTEM	SUPERVISED BY	LOCATION	AREA (SQ.M.)
Residual waste to be transferred to Sanitary Landfill -wacuman	MENRO	Tuktukan (Composting Area)	200
Residual waste to be transferred to Sanitary Landfill -wacuman	MENRO	Tiaong	200
Residual waste to be transferred to Sanitary Landfill -wacuman	MENRO	Ilang-Ilang	500
Residual waste to be transferred to Sanitary Landfill -wacuman	MENRO	Malis	200

*Source: MENRO*

In 2021, a total of 1,354,408 metric tons of waste were collected within the municipality; It includes biodegradable, non – biodegradable and residuals from different residential households, commercial establishments and most especially industrial/manufacturing sites. While in 2022, the collected number of wastes totaled to 1,349,806 metric tons, which were lower than previous year of collections. This shows that the volume of garbage in the municipality has lessen after a year because of different factors. The Municipality of Guiguinto conducts different projects that may help lessen the volume of waste that will be dumped on the sanitary landfill.

The table below shows who among the 14 barangays in town has the highest waste collection and these are barangay Malis, Tuktukan, and Ilang-Ilang. Besides, the three barangays have a bigger land area and population in the municipality.

**TABLE 14- WASTE COLLECTION**

BARANGAY	2021 WASTE COLLECTION IN METRIC TONS					2022 WASTE COLLECTION IN METRIC TONS				
	BIO DEGRADABLE	NON BIO DEGRADABLE	RESIDUALS	TOTAL	%SHARE	BIO DEGRADABLE	NON BIO DEGRADABLE	RESIDUALS	TOTAL	%SHARE
Cutcut	1,426	1,474	14,117	17,017	1.3	23,140	1,524	53,110	77,774	6
Daungan	1,124	1,376	13,158	15,658	1.2	20,415	2,263	29,005	51,683	4
Ilang Ilang	14,162	891	23,091	38,144	2.9	37,442	4,028	88,239	129,709	10
Malis	50,896	6,659	85,745	143,300	10.6	81,487	8,988	82,092	172,567	13
Panginay	5,858	1,481	38,498	45,836	3.4	28,402	1,348	25,406	55,157	4
Poblacion	8,102	2,876	63,408	74,386	5.5	36,344	7,547	31,655	75,547	6
Pritil	8,971	2,012	80,167	91,150	6.7	41,233	6,832	22,213	70,278	5
Pulunggubat	4,107	2,797	11,892	18,795	1.4	25,914	733	28,447	55,094	4
Sta. Cruz	34,611	2,714	35,324	72,649	5.4	36,636	13,467	45,740	95,843	7
Sta. Rita	49,974	2,067	88,850	140,891	10.4	44,322	12,902	67,517	124,741	9
Tabang	12,413	17,088	128,778	158,278	11.7	32,391	3,461	42,430	78,281	6
Tabe	7,891	41,912	45,730	95,533	7.1	35,238	2,844	49,323	87,405	6
Tiaong	24,321	11,967	56,370	92,658	6.8	42,531	26,579	51,536	120,646	9
Tuktukan	15,719	3,719	330,674	350,112	25.9	61,700	2,699	90,682	155,081	11
<b>TOTAL:</b>	<b>239,575</b>	<b>99,031</b>	<b>1,015,802</b>	<b>1,354,408</b>	<b>100%</b>	<b>547,196</b>	<b>95,217</b>	<b>707,394</b>	<b>1,349,806</b>	<b>100</b>

Source: MENRO Guiguinto as of 2022

## 2.0.4 EDUCATION

For elementary education, fourteen (14) public Elementary Schools (ES) are accessible in Guiguinto and situated in the thirteen (13) barangays. Two public ES are situated in barangay Sta. Rita while no public ES in barangay Panginay. The existing public ES are complemented by fourteen (14) private ES located in different barangays.

On the other hand, secondary education is also accessible in the area. At present, there are four (4) public Junior High Schools (HS) and (3) public Senior High Schools strategically located at barangay Sta. Rita, Tiaong, Poblacion, and Malis. These public HS are complemented by seven (7) private HS situated in barangay Sta. Rita, Sta. Cruz, Tuktukan, Tabe, and Poblacion.

For the tertiary education, there are four colleges present in the area namely ATEC Technological Colleges, Global Alliance Technological Institute Corporation, Technical Education and Skills Development Authority (TESDA), and the Immaculate Conception

Major Seminary.

Most of the public school buildings in Municipality of Guiguinto are made of concrete and can be used as an additional Evacuation Center during the unexpected disaster but still some of the classrooms and facilities requiring major repair and rehabilitation.

Regarding the adequacy of school classrooms and teachers based on the standard ratio of the Department of Education (DepEd) of 1:35 student-teacher and student-classroom ratio in elementary, while 1:40 student-teacher and student-classroom ratio for secondary level, Table below show that schools have complied with the standard, On the other hand, both elementary and secondary schools have complied with the standard student-teacher & student-classroom.

**TABLE 15- STUDENT-TEACHER AND CLASSROOM RATIO 2020-2021**

TYPE/ LEVEL	NUMBER OF ENROLEES	STUDENT-TEACHER RATIO	STUDENT-CLASSROOM RATIO
Elementary	12454	1:33	1:34
Secondary	9591	1:27	1:38

Source: DEPED Guiguinto District 2021

Conversely, the historical records on enrolment in public schools by level as shown in Table below that the enrolment in both public elementary & secondary increases for the past three school year.

**TABLE 16- HISTORICAL RECORDS ON ENROLMENT BY LEVEL**

TYPE/ LEVEL	SY 2019-2020	SY 2020-2021	SY 2021-2022
Elementary	11916	12454	12,566
Secondary		9591	10,059

Source: DEPED Guiguinto District 2022



**TABLE 17 SUMMARY OF EXISTING SCHOOLS**

<b>ELEMENTARY</b>		
	<b>NAME OF SCHOOL</b>	<b>TYPE</b>
1	Cut- Cut ES	Public
2	Daungan ES	Public
3	Doña Escolastica Aldaba Punongbayan ES (DEAP ES)	Public
4	Dra. Ruperta G. Caluag ES (ilang-Ilang PS)	Public
5	Guiguinto Central School	Public
6	Malis ES	Public
7	Pritil ES	Public
8	Pulong Gubat ES	Public
9	Sta. Cruz ES	Public
10	Sta. Rita ES	Public
11	Tabang ES	Public
12	Tabe ES	Public
13	Tiaong ES	Public
14	Tuktukan ES	Public
15	Angel of Light Academy	Private
16	Cherubim Montessori School	Private
17	Estrella Learning Academy	Private
18	Getshamane Chrisean School	Private
19	Golden Minds Academy of Guiguinto	Private
20	Hankins Learning School	Private
21	Jusus our Savior Learning Center	Private
22	Liceo De King Solomon	Private
23	Lord's Shepherd Academy	Private
24	North View Montessori	Private
25	Rosaryville Academy of Guiguinto	Private
26	San Ildefonso Learning Center	Private
27	St. Anthony Development and Learning Ceneter of Bulacan	Private
28	St Martin De Porres Catholic School	Private

SECONDARY		
	NAME OF SCHOOL	TYPE
1	Angel of Light Academy	Private
2	Cherubim Montessori School	Private
3	Estrella Learning Center	Private
4	Immaculate Conception Minor Seminary	Private
5	Lord Sheperd's Academy	Private
6	North View Montessori	Private
7	Our Lady of Perpetual Help Institute (OLPHI)	Private
8	Rosaryville Academy of Guiguinto	Private
9	St Martin De Porres Catholic School	Private
10	Felizardo Lipana Memorial H.S.	Public
11	Guiguinto National Vocational H.S.	Public
12	Tiaong H.S.	Public

## 2.0.5 HOUSING

The housing facilities are being provided by a number of subdivisions situated in Guiguinto. There are around thirty subdivisions in the town with more than 2,500 lots or units.

**TABLE 18-LIST OF SUBDIVISIONS**

SUBDIVISION	BARANGAY	AREA (HAS.)	NUMBER OF LOTS
1. Estrella Village	Ilang-Ilang	6.8389	0
2. La Aldea		13.5	237
3. St. Lorraine Subdivision		12.1674	0
4. North Bel Air	Malis	10	389
5. Northville 7 Subdivision		11	0
6. Remarville		0.7449	0
7. Verde Residences	Poblacion	2.8711	129
8. Citta Di Oro	Sta. Cruz	1.68	31
9. Goldridge Subdivision Phase II		18.8	917

SUBDIVISION	BARANGAY	AREA (HAS.)	NUMBER OF LOTS
10. Harcelville Subdivision	Sta. Cruz	1.0965	0
11. Rosaryville Subdivision Phase II		13.1035	0
12. Sanderland		0.9456	52
13. Tierra Dayao Subdivision		1.9882	0
14. Violeta Village I		25.4922	0
15. Violeta Village II		6.8629	0
16. Doña Pilar Homes Phase I & II	Sta. Rita	5.0659	0
17. Maunlad Homes Subdivision		3.921	0
18. Maunlad Homes Subdivision		3.921	0
19. Sta. Clara		11.5081	156
20. Sta. Rita Village I		1.0968	0
21. Sta. Rita Village II		3.3299	0
22. Goldenville Subdivision		2.1265	0
23. Masagana Homes Phase I		1.4799	0
24. Maunlad Homes Subdivision II		5.2861	0
25. Ylang-Ylang Homes Subdivision		0.5364	74
26. Bliss Project I & II	Tabe	2.22	50
27. G.Y. Enriquez Subdivision (Sta. Rita Village)		1.6566	0
28. Cafel’s Park Subdivision	Tiaong	2.9655	0
29. Green Estates Subdivision		22.3	459
30. Mira Verde	Tuktukan	13.0277	24
31. Oro Villas		1.4547	23
TOTAL		205.066	2,541

However, there are informal settlers in the town. As of 2021, there were 14 barangays reported with informal settlers of around 2,011 individuals. Most of the informal settlers were living along the street, riverside, irrigation road of the National Irrigation Authority (NIA), and in some private lands. Barangays Tiaong, Malis, and Ilang-Ilang have the most number of informal settlers recorded at 766, 400, 143, respectively.

**TABLE 19-LIST OF INFORMAL SETTLERS**

Barangay	Along Waterways (Creek & Riverside)	Along PNR Railway	Privately Owned	Government Owned	Renter	No. of ISF 2021	No. of ISF 2020
Cutcut	73		3			76	64
Daungan	20	241	4	2		267	141
Ilang-Ilang	297	12	93	4		406	143
Malis	223		438	62		723	400
Panginay	36		86			122	12
Poblacion	73		97			170	38
Pritil	35		12	5		52	16
Pulonggubat	43			3		46	23
Sta. Cruz	104		27			131	85
Sta. Rita	252		165	16	708	1,141	25
Tabang	39	27	34			100	24
Tabe	164		7		658	829	139
Tiaong	124	457	117	41	76	815	766
Tuktukan	80		110	81		271	135
<b>TOTAL:</b>	<b>1,563</b>	<b>737</b>	<b>1,193</b>	<b>214</b>	<b>1,442</b>	<b>5,149</b>	<b>2,011</b>

Source: HARO 2021

## 2.0.6 SOCIAL WELFARE SERVICES

The level of service in social welfare sector of the municipal government may seem sufficient in the latest inventory of the facilities and services for the delivery social services to its constituents. As of 2022, Day Care Centers are present in every barangay and 11 barangay has a Senior Citizen Centers. The Municipality also built a new Senior Citizen Office to cater all SC from other barangay who still do not have an existing facility. The provision of social services such as Day Care Services, Supplemental Feeding, Medical Services, Burial, Financial Assistance, Counselling, and referrals are made possible in the said facilities. All the facilities are in good physical condition and have necessary staff for the operation and management of services.



**TABLE 20- LIST OF DAYCARE CENTERS**

BARANGAY	FACILITIES	PHYSICAL CONDITION	SERVICES	TYPE OF CLIENTELE	NUMBER OF CLIENTELE	STAFF COMPLIMENT
1. Cut-cut	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	73	2
	Senior Citizen Center		Medical, Burial and Financial	60 years old & above	332	5
4. Daungan	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	63	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	218	5
3. Ilang-Ilang	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	109	2
	Senior Citizen Center		Medical, Burial and Financial	60 years old & above	1,202	5
4. Malis	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	120	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	1,490	5
Northville 7	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	103	2
NCDC	Day Care Center III	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	59	3
5. Panginay	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	69	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	262	5
6. Poblacion	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	103	2
	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	74	2
7. Pritil	Day Care Center	Good	Early Childhood Care and Development Program,	3-4 years old	120	2

BARANGAY	FACILITIES	PHYSICAL CONDITION	SERVICES	TYPE OF CLIENTELE	NUMBER OF CLIENTELE	STAFF COMPLIMENT
			Family Support Program, Supplemental Feeding			
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	617	5
8. Pulong Gubat	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	65	1
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	310	5
9. Sta. Cruz	Day Care Center I	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	93	2
	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	93	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	1,623	5
Maligaya	Day Care Center III	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	90	2
Maunlad	Day Care Center IV	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	105	2
10. Sta. Rita	Day Care Center I	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	114	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	1,777	5
Kabilang Bacood	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	103	2
11. Tabang	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	143	3
12. Tabe	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	93	2
Rocka Village	Day Care Center	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	85	2

BARANGAY	FACILITIES	PHYSICAL CONDITION	SERVICES	TYPE OF CLIENTELE	NUMBER OF CLIENTELE	STAFF COMPLIMENT
13. Tiaong	Day Care Center I	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	123	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	1,298	5
Tiaong Lawa	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	80	1
14. Tuktukan	Day Care Center I	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	90	2
	Day Care Center II	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	93	2
	Senior Citizen Center	Good	Medical, Burial and Financial	60 years old & above	1,604	7
Cruz	Day Care Center III	Good	Early Childhood Care and Development Program, Family Support Program, Supplemental Feeding	3-4 years old	82	2
All Barangays			Counseling, Referrals, Medical, Burial, Financial, Balik Probinsya	PWD, FHONA (Family Heads & Other Needy Adult) Disadvantage, Neglect, Abandon		11 (MSWDO Staff)

Source: MSWD Guiguinto as of 2022

The provision of social welfare and development services is guided with the overall framework of promoting and protecting the social well-being and best interest of the people in the locality. The presence of Day Care Centers and Senior Citizens Centers in the municipality of Guiguinto is compliant with the related laws on social welfare services for the total development and protection of children and senior citizens mandated in the RA 6972, RA 7876, and RA 8980.

## 2.0.7 PEACE AND ORDER

### POLICE PROTECTIVE SERVICES

The Municipal Government has one (1) Main Police Station, one (1) Compact Police Station, one (1) Fire Protection Unit, and Peace Keeping Barangay Patrol/Tanod in every barangay. The minimum standard ratio of police officer to population is 1:1,000 and 1:2,000 for fire officer. As of 2020, the police officer and fire officer to population ratio are 1:2,894 and 1: 8,683, respectively. This shows that more police officer and fire officer are needed to ensure provision of protective services.

**TABLE 21 RATIO OF POLICEMEN/FIREMEN TO POPULATION RATIO**

TYPE OF SERVICES	NUMBER OF PERSONNEL	PERSONNEL TO POPULATION RATIO (2020 POPULATION)	FACILITIES/EQUIPMENT	
			VEHICLE	OTHERS
Guiguinto Municipal Police Station	35 PNP (2 PCO AND 39 PNCO)	1: 2,894	6 (3 Patrol vehicles and 3 motorcycles)	11 Long Firearms, 44 Short Firearms, 1 Telephone, 5 Handled Radio, 2 Base Radio
Fire Protection	13 Firemen	1: 8,683	3 (1 local Big truck & 2 old trucks)	Fire Helmet, Fire Boots, Fire Coat, Fire Trousers, Fire Gloves, Fire Hose (1 and half, 2 and half), and Fire Nozzle
Barangay Peace Keeping Patrol/Tanod	366 Barangay Tanod	1: 308	42 Patrol Vehicles	

## CRIME STATISTICS

Crime statistics on the other hand, shows that there were 28 index crimes and 159 non-index crimes reported in 2022 with an average monthly crime rate of 17.12. Presented also in the following Table is that crime solution efficiency rate in 2022 was 100% which is considered above par.

**TABLE 22-CRIME STATISTICS**

ITEM	DESCRIPTION/VALUE
Number of Index Crimes	<i>Included in this category are the following crimes: crimes such as murder, physical injury, robbery, theft and rape. - 28</i>
Number of Non-Index Crimes	<i>Crimes against persons (parricide/infanticide, maltreatment, kidnapping); crimes against property (estafa and falsification, malicious mischief and damage to property); crimes against morals and order (prostitution, vagrancy, alarm and scandal, assault/resistance to authority, corruption of public official, gambling, slander and libel, threat and coercion and trespassing), crimes against chastity (abduction, seduction, lascivious acts) and other crimes (illegal possession of firearms, explosives and ammunition, concealment of deadly weapons, smuggling, carnapping and prohibited drugs). - 159</i>
Number of Solved Cases	<b>227</b>
Number of Unsolved Cases	<b>0</b>
Crime Solution Efficiency Rate	<b>100%</b>
Average Monthly Crime Rate (per 100,000 Population)	<b>17.12</b>

Source: PNP Guiguinto year 2022

Promoting the peace and order in the area is significant in boosting the socio-economic activities in the locality. The reported low crime solution efficiency may be an indication of low level of protective services of the municipal government.

It should be noted further, that the number of crimes are limited to the incidents reported to the precincts. Thus, another challenge to the municipal government is to increase the level of confidence of the people in authorities to make reporting crimes to the police will be done on reflex.



**TABLE 23 - NUMBER OF REPORTED CASES-CHILDREN IN CONFLICT WITH THE LAW**

Barangay	2019	2020	2021	2022
CUTCUT	0	0	0	0
DAUNGAN	0	0	0	0
ILANGILANG	0	0	0	1
MALIS	0	1	0	0
PANGINAY	0	0	0	0
POBLACION	1	0	0	0
PRITIL	0	0	0	0
PULONG GUBAT	0	0	0	0
SANTA CRUZ	1	0	1	0
SANTA RITA	0	0	0	0
TABANG	0	1	0	0
TABE	0	0	0	0
TIAONG	0	0	0	0
TUKTUKAN	0	1	1	0
TOTAL	2	3	2	1

Source: MSWD Guiguinto 2022

Moreover, the number of children in conflict with law is also a challenge for the municipal government for it is generally known that the youth is the hope of the future. Of the fourteen (14) barangays of the municipality, six (6) barangays have recorded children in conflict with the law for the year 2019 to 2022.

## 2.0.8 SPORTS AND RECREATION

The municipal government's level of service in providing sports and recreational facilities is shown in the below. Based on the 2018 inventory of such facilities, the municipal government operates two sports and recreation facilities located in Sta. Cruz and in Poblacion. The amenities are ecopark, playgrounds, and/or parks.

**TABLE 24-Municipal Sports and Recreation Facilities**

BARANGAY	LOCATION	RECREATIONAL FACILITIES	OWNERSHIP
1. Sta. Cruz	Violeta Village	Municipal Ecopark, Playgrounds, Parks	Municipal Government
2. Poblacion	Municipal Building	Municipal Library, Museums	Municipal Government

On the other hand, sports and recreational facilities are also available in every barangay in the town. As of 2018, there are 73 sports facilities for basketball, badminton, volleyball, tennis games or simply for other outdoor play across barangays **(Table 25)**. The 23 facilities are owned by the barangay government and 50 facilities are owned by private group.

**TABLE 25-BARANGAY-OWNED SPORTS FACILITIES**

BARANGAY	SPORTS FACILITIES	AREA (SQ.M.)	LOCATION	OWNERSHIP
1. Cut-cut	Basketball, Volleyball, etc. (Covered Court/Whole Court)	420	Rizal St.	Government
	Basketball Court (Half Court)	210	Purok I	Private
			Balagtas St.	
			Del Pilar St.	
	Playground	150	Rizal St.	
2. Daungan	Basketball Court (Whole Court)	420	along PNR road	Government
3. Ilang-Ilang	Basketball, Volleyball, etc. (Covered Court/Whole Court)	420	Ilang-Ilang	Government
	Basketball Court (Whole Court)		Pag-Asa Subdivision	Private
	Badminton Court	106		
4. Malis	Basketball Court (Whole Court)	420	Northville	Private
			North Bel Air	
	Basketball Court (Half Court)	210	Trese	
			Tabon	
			Purok II	
5. Panginay	Basketball Court (Whole Court)	420	Cefel St.	Government
	Basketball Court (Half Court)	210	Ibayo	Private
	Playground	150		
6. Poblacion	Basketball Court (Whole Court)	420	Mañalac St.	Government
7. Pritil	Basketball Court (Whole Court)	420	Angeles Village	Private

BARANGAY	SPORTS FACILITIES	AREA (SQ.M.)	LOCATION	OWNERSHIP
8. Pulong Gubat	Basketball Court (Whole Court)	420	Purok I	Government
			Purok II	
	Basketball, Volleyball, etc. (Whole Court)	420	Purok I (Highschool)	Government
			Purok I (Elementary)	
9. Sta. Cruz	Basketball Court (Whole Court/Covered Court)	420	Violeta	Government
	Basketball Court (Whole Court)		Rosaryville	Private
	Basketball Court (Half Court)	210	Maligaya	
			Tierra Dayao	
	Basketball Court (Whole Court)	420	Felville	
			Goldridge	
10. Sta. Rita	Basketball Court (Whole Court)	420	Rocka Ville III	Private
			Masagana	Government
			Sitio Laso	
			Maunlad	Private
	Basketball Court (Half Court)	210	Hangga	
			Sta. Rita Village	
	Volleyball, Badminton Court	106	Rocka Ville III	
11. Tabang	Basketball Court (Half Court)	210	Purok I	Private
			Purok II	
			Purok V	
			Purok VII	
	Basketball Court (Whole Court)	420	Purok VI	
	Basketball, Volleyball, etc. (Whole Court)		Purok IV	
12. Tabe	Basketball Court (Half Court)	210	Sta. Rita Village	Private
			Sitio Bacood	
			Lambac	
			J. Lopez St.	
			Villavicencio St.	
	Basketball, Volleyball, etc. (Whole Court)		Rocka	

BARANGAY	SPORTS FACILITIES	AREA (SQ.M.)	LOCATION	OWNERSHIP
12. Tabe		420	Bliss	Government
	Basketball, Volleyball, etc. (Whole Court)		Bernabe St.	
	Basketball Court (Whole Court/Covered Court) Basketball Court (Whole Court)	420	Taba Rd.	Private
13. Tiaong	Basketball Court (Whole Court)	420	Tiaong Loob	Government
			Ugong	
			Centro	
	Basketball Court (Half Court)	210	Bacood	Private
			Green Estates	
	Tennis Court	551		
14. Tuktukan	Basketball Court (Whole Court)	420	Tiaong Loob	Private
			Tiaong	
			C. Mercado St.	Government
			Cruz	
			Pag-Asa St.	
			San Antonio St.	
	Basketball Court (Half Court)	210	San Lorenzo St.	Private
			Pag-Asa St.	
	Basketball Court (Half Court)	210	C. Mercado St.	Government
	Tennis Court	551	C. Mercado St./ Mira Verde	Private

Source: 2018 Socio Economic Profile

To provide quality sports and engaging recreational facilities in the locality especially for the youth, the monitoring and improvement of existing facilities should always do from time to time. In doing this, the participation of the community in sport and recreation programs will increase.

## 2.0.9 ECONOMY

## PRIMARY SECTOR

### AGRICULTURAL

The following table shows the basic agricultural profile of the Municipality of Guiguinto as of 2018.

Agricultural Demographics

Primary source of Agri-livelihood:	Paddy-agriculture, Agri-livestock
Number of Farmers – Rice and other crops:	413
Number of Livestock & Poultry raisers:	394
Number of Fisher folks:	13
Major Sources of Income:	IRA, Local Taxes and Fees
Annual Income:	PhP470 Million (Source: Municipal Treasury Office)
Poverty Incidence:	5.66% (Source: PSA, 2015 Municipal and City Level Poverty Estimates)
Rice Production (IRRIGATED):	
Total Production:	1,695.01 MT
Area Harvested:	387.87 Has.

Source: Municipal Agriculture Office

### RICE PROGRAM

- Providing Full subsidized of certified seeds.



520 bags this wet planting season (March-September) for 226 Farmers

600 bags this dry planting season (September-March) for 226 Farmers

- Collected 71 soil samples and do the soil analysis at 14 Barangay – Distributed the Result and Recommendation.
- Distributed 65 kilos of zinc phosphate to all farmers with zinc deficient rice fields in all Barangays.
- Insured 296 Rice field area under crop insurance
- Distributed 375 Inorganic Fertilizers to 240 Farmers
- Distributed 200 packs of zinc phosphide for our crop protection program (Rat Infestation).
- Rice Farmers Financial Assistance 420 Farmers, PhP. 5,000.00 per beneficiaries

#### HIGH VALUE CROP DEVELOPMENT PROGRAM

TOTAL VEGETABLES FARMERS	TOTAL AREA (HAS)	COMMODITIES
41	3.15	PECHAY, LETTUCE MUSTASA, KINNA, UPLAND KANGKONG, SPRING ONION, BASIL, KINCHAY

To increase the nos. of families engaged in vegetable farming by 3% for 2022

- 973 Packs assorted vegetable seeds distributed to different organizations (Samahang Magugulay), farmers, and walk in clients.
- Distributed 2 knapsack sprayers, 10 kilos of assorted vegetables seeds to the Guiguinto Vegetable Growers Federation.
- Distributed 50 fruit bearing trees vegetable seeds to all elementary schools under Duterte Legacy Program
- 14 Organic Garden Established

#### HORTICULTURE PROGRAM

TOTAL GARDENERS	TOTAL AREA (HAS)
249	3.00

### LIVESTOCK PROGRAM

In livestock program the municipality makes sure that all livestock animals as well as the companion animals are free from any infectious diseases that will affect the production of the livestock animals and ensure that every people are safe and free from rabies.

- Anti-Rabies Mass Vaccination, Vaccinated 4,915 dogs and 1,195 cats total of 6,110
- Total of impounded animals 120 dogs and cats (Catch, Surrendered)
- Total of released animals 20 dogs (Adopted, Claimed)
- Attending of veterinary treatment and needs of walk-in clients.
- Dispersal of 3 Piglets & 9 Bags of Feeds, 37 Hog Raisers Beneficiaries
- Dispersal of Free-Range Chicken for 117 Hog Raisers & Rabbits for 110 Livestock Raisers

### VEGETABLE PROGRAM

- Vegetable seeds distribution to different organizations (*Samahang Maggugulay*), elementary schools, farmers, and walk-in clients.
- Distributed 4 knapsack sprayer, 5 drums and vegetable seeds to the Guiguinto Vegetable Growers Federation.
- Distribution of assorted vegetable seeds to farmers, vegetable growers, LLN, housewives and public elementary schools.
- Established greenhouse and community garden at Malis Satellite Office.

### ORGANIC AGRICULTURE PROGRAM

- Organization of Municipal Technical Committee on Organic Agriculture RA10068

- Distribution on organic fertilizer to vegetable growers and elementary schools
- Production of vermicast and vermie tea at the organic learning site in barangay Daungan
- Established new cooperator of organic agriculture and established new learning site in barangay Pulong-Gubat.

### COOPERATIVES

Table below shows the registered cooperatives in the Municipality based on the R.A. 9520 or the Data Coordinator Development Authorities (DCDA) for the year 2022.

Table 29 – Enabling Mechanisms – Registered Cooperatives, 2022

NO.	NAME OF COOPERATIVE	LOCATION
1	STRONGLINKS SERVICE COOPERATIVE	Sta. Rita
2	I KABUHAYAN SA GANAP NA KASARINLAN CREDIT AND SAVINGS COOPERATIVE	Poblacion
3	I ST. MARTIN OF TOURS CREDIT & DEVT COOPERATIVE	Sta. Rita
4	CANIOGAN CREDIT & DEVELOPMENT COOPERATIVE-TUKTUKAN	Tuktukan
5	CCT MULTIPURPOSE COOPERATIVE	Tuktukan
6	LIGAS KOOPERATIBA NG BAYAN SA PAGPAPAUNLAD - STA.RITA	Sta. Rita
7	MALOLOS CREDIT AND DEVELOPMENT COOPERATIVE	Tuktukan
8	SOLID BULACAN TOURIST TRANSPORT SERVICE COOPERATIVE	Tiaong
9	TURNPIKE GEN. SERVICES (MULTI-PURPOSE) COOPERATIVE	Sta. Rita
10	GINTONG KUSINA PRODUCERS COOPERATIVE	Poblacion
11	NORTH LUZON TOLLWAY EMPLOYEE MULTI-PURPOSE COOP.	Sta. Rita
12	GARDEN CITY MULTI PURPOSE COOPERATIVE TOLLWAYS MULTI-PURPOSE COOPERATIVE AMARPRO PRODUCERS COOPERATIVE	Sta. Cruz
13	TOLLWAYS MULTI-PURPOSE COOPERATIVE	Sta. Rita
14	AMARPRO PRODUCERS COOPERATIVE	Tuktukan

NO.	NAME OF COOPERATIVE	LOCATION
15	ANG BAGONG CLOVERLEAF (ABC) MULTIPURPOSE COOPERATIVE	Sta. Cruz
16	BULACAN NEW GENERATION TRANSPORT SERVICE COOPERATIVE	Tabang
17	GUIGUINTO FARMERS MULTIPURPOSE COOPERATIVE	Tiaong
18	IMMACULATE HEART OF MARY MULTI-PURPOSE COOPERATIVES.	Taba
19	TRAVEL EXPERT CREDIT COOPERATIVE	Sta. Rita
20	869 MULTI-PURPOSE COOPERATIVE	Sta. Rita
21	GUIGUINTO EMPLOYEES MULTIPURPOSE COOPERATIVE	Poblacion
22	GUIGUINTO WATER STATION OWNERS CONSUMERS COOPERATIVE	Malis

Source: BPLO 2022

## FISHERIES

Being a landlocked municipality, fisheries in Guiguinto are not widespread and do not merit as much importance as agriculture and livestock farming among farmers, compared to other towns like Hagonoy and Bulacan - where two of their major produce include tilapia and milkfish. In fact, there are no sufficient data available on aquaculture in the municipality, albeit the presence of a few small fish ponds and fishing waters in barangays Pritil and Daungan is noted. Backyard fishponds are also known to exist although productions from these are considered minimal and are not considered for commercial consumption.

## HORTICULTURE

For more than twenty years, Guiguinto (especially Tabang and Sta. Cruz) have been a popular destination for garden enthusiasts, landscapers, and horticulturists for their ornamental plants market.



## TERTIARY SECTOR

The impetus for economic activities in Guiguinto mainly involves wholesale & retail trade and personal & community services with the financial help of existing banks and non-bank institutions in the locality. This is where Small and Medium-sized Enterprises (SMEs) come in of which is recognized as the key sector for generating employment opportunities and growth in any local economy. Presence of adequate modes of transportation, telecommunication connections will likewise boost the tourism of the area.

## PUBLIC EMPLOYMENT SERVICES OFFICE

The Public Employment and Service Office facilitated the employment of Guiguinto's constituents. They registered the number of job vacancies for local employment with a total of three thousand one hundred (3,100). And the total job applicants placed for local employment is two thousand nine hundred two (2,902) wherein most applicants were hired to private companies such as Waltermart, Puregold, Flavor Foods, and others.

## BUSINESS ESTABLISHMENTS

For the year 2022, the Business Permit and Licensing Office (BPLO) are able to register a total of 3,120 of businesses, 567 of which are new businesses and 2,553 are renewal businesses. This resulted to generation of additional 3,413 job opportunities. Table below shows the number of business according to its type.

**TABLE 30 - NUMBER OF ESTABLISHMENTS PER OWNER TYPE**

TYPE	NEW	RENEWAL	TOTAL
Single	424	1,766	2,190
Partnership	4	26	30
Corporation	137	721	858
Cooperative	2	22	24
Foundation	0	18	18
<b>TOTAL</b>	<b>567</b>	<b>2,553</b>	<b>3,120</b>

Source: BPLO as of year 2022



Table below shows the total amount collected based from business permit fees and tax from different business establishments.

**TABLE 31 - AMOUNT OF COLLECTION FOR THE YEAR 2022**

<b>FEES</b>	<b>AMOUNT</b>
Business Tax	PhP 237,195,435.33
Business Tax Interest	PhP 323,213.38
Mayor's Permit	PhP 5,022,650.00
Regulatory Fees	PhP 17,734,204.79
BENRO	PhP 385,875.00
<b>TOTAL</b>	<b>PhP 260,661,378.50</b>

*Source: BPLO as of year 2022*

## TOURISM

Every 23rd day of January, Guiguinto foundation is celebrated through Halamanan Festival which became the brand of the Municipality of Guiguinto. It was established in the year 1999 by Mayor Ambrosio C. Cruz, Jr. It demonstrates talents and potentials that promote the realization of the vision of the Municipality of Guiguinto which is to be the Garden Capital of the Philippines.

Grand Street dancing participated by various dancers from barangays of Guiguinto wearing festival costume that represents the flourishing horticulture industry in Guiguinto. The festival also signifies the capabilities and "Galing ng Guiguinteño" in various fields of horticulture such as landscaping, plant propagation, plant seedling and nursery, flower cutting, arranging, interior decorating, dish gardening and bonsai artistry.

Table 32 – Tourist Arrival

	Individuals
Resort & Hotel/ Apartelle (2022)	23,071
Halaman Festival (2020)	10,000

Source: SIKKAT 2022

## 2.0.10 INFRASTRUCTURE

In 2019, Guiguinto has a total road length of 205.9 kilometers. About 13.9 kilometers are toll roads of the North Luzon Expressway, 13.96 km. are national roads, 9.93 kilometers are provincial roads, 46.77 kilometers are municipal roads, 53.46 kilometers are barangay roads and about 48.19 kilometers are private and unspecified classification of roads as indicated in the next Table. The toll road facility is being maintained by Metro Pacific Tollways Corporation (MPTC) and has a road right-of-way of 60 meters on the average. The Municipality of Guiguinto also hosts three (3) toll plazas that link the town from the northern and southern part of Luzon these are Tabang Toll Plaza, Sta. Rita Toll Plaza, and Balagtas Toll Plaza. The national roads on the other hand include two major highways, namely: Manila North Road or the Mac Arthur Highway and the Old Cagayan Valley Road. Most of the roads are concrete and are in fair condition.

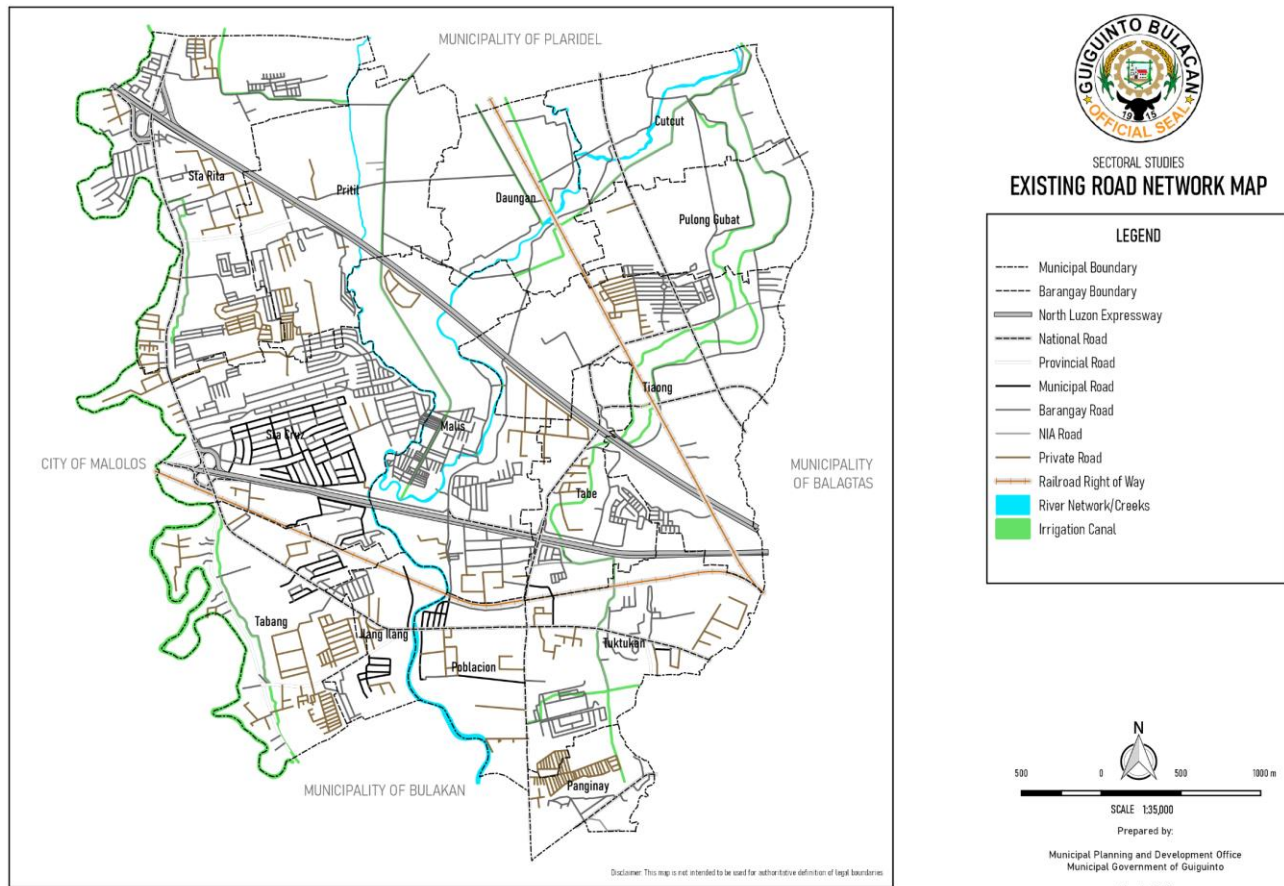
The on-going decongestion of Metro Manila has become one of the contributing factors in road development affecting neighboring provinces and towns. Because of the proposed International Airport located at the Municipality of Bulakan all adjacent barangay and access roads connecting to said airport must be widened. The Municipal Government of Guiguinto has already taken the initiative by constructing additional road connecting Poblacion to Tuktukan with total length of 1.08 kilometer and 10.00 meter wide with drainage line on both sides. The Municipal Government of Guiguinto has also been accessing various national government projects to ensure funding on the development, improvement, and rehabilitation of existing roads.

The Municipality also has (2) two Bypass road Sta. Rita to Daungan (3.52 km.) and Cutcut to boundary of Pandi and Guiguinto (0.63 km.) both roads have a minimum width of 8.00 meters. This will help lessen traffic congestion at Sta. Rita Exit during rush/peak hours. These Bypass roads will also serve as additional access roads for transporting agricultural products.

Table 33 - Inventory of Existing Roads

ROAD TYPE	CONCRETE	ASPHALT	GRAVEL	EARTH	TOTAL LENGTH [(KM)
BARANGAY ROADS	44.6	5.46	2.57	0.83	53.46
EXPRESSWAYS/TOLL ROADS	4.07	9.83	0	0	13.9
MUNICIPAL ROADS	34.54	9.31	0	2.92	46.77
NATIONAL ROADS	10.95	3.01	0	0	13.96
PROVINCIAL ROADS	8.61	1.1	0	0.22	9.93
PRIVATE INDUSTRIAL	12.54	0	0	0.33	12.87
PRIVATE SUBDIVISION	48.14	0	0	0.05	48.19
OTHERS	5.88	0	0	0.94	6.82
				TOTAL	205.9

Source: Municipal Engineering Office 2019

**MAP 10 EXISTING NETWORK MAP**

Source: MPDO 2020

It can also be noted in the inventory of roads of Guiguinto that private subdivision roads, with total length of about 69 km., measures the longest in terms of total road length. This is attributed to the presence of several private subdivisions thriving in Guiguinto that are attracted by its continuing increase in social and economic growth potentials. This is followed by barangay roads at 49.09 km., comprising 90% of the total length that are classified as all-weather road.

The current road requirement of Guiguinto for the projected population of 107,383 per NSO is about 257.72 km. Taking into consideration the standard density of 2.40 km. per 1,000 populations, there is an inadequacy in the total length of in Guiguinto, or about 42.27 km. of road is needed to commensurate its current population.

The proposed additional road with 8.65 km length linking major industrial compound will decrease the current backlog on road minimum requirements

However, the standard road requirements presented are just rough estimates to illustrate and describe the current condition of road density in Guiguinto compared to highly develop urban cities. Road requirements are still dependent foremost on the viability of a specific road project in an area in terms of economy, social, and physical aspects.

The road projected requirements for the succeeding year are as follow, computed by APGR.

Table 35 – Projected Road Length Requirements

YEAR	PROJECTED POPULATION	REQUIRED LENGTH OF ROAD (KM) as per std. density of 2.40 km/1000 population
2020	109,386	262.53
2021	111,427	267.41
2022	113,506	271.2
2023	115,623	277.44
2024	117,780	282.72
2025	119,977	287.76
2026	122,216	293.28
2027	124,496	298.80



## BRIDGES

Guiguinto has a network of fifteen (15) bridges passing various waterways and river tributaries. These bridges are made of reinforced concrete design girders or steel structures and are all in good condition and passable at all weather condition.

**TABLE 36 Bridges within Guiguinto**

NAME OF BRIDGE		LENGTH/ PAVEMENT (IN METERS)	CONDITION	LOCATION
Along Expressway/National Roads/Provincial Roads				
1.	Cagayan Valley Road/Tulayin Tipanan	10	Passable	Sta. Rita
2.	Cagayan Valley Road/Sta. Rita Interchange Bridge	80		
3.	Cagayan Valley Road/Sta. Cruz Interchange Bridge			Tabang
4.	McArthur Highway/Tabang Bridge	30		
5.	Expressway Overpass Bridge 1/ Tabe	80		
6.	Expressway Overpass Bridge 11/Tabe/Tiaong			Tabe
7.	Expressway Overpass Bridge Malis 1/Tabon	60	Passable	Malis
8.	Expressway Overpass Bridge Malis 11			
9.	Malis Bridge	40		
10.	Expressway Overpass Bridge Pritil	60		Pritil
11.	MNR Guiguinto Bridge/ Poblacion to Ilang-Ilang	30		Poblacion
Along Expressway/National Roads/Provincial Roads				
1.	Trece Bridge	10	Passable	Malis
2.	Tuklas Bridge	15		
3.	Pritil Bridge/Ibayo	40		Pritil
4.	Tuktukan-Balagtas Bridge	20		Tuktukan

## ROAD NETWORK SYSTEM

The Municipality of Guiguinto is traversed by four major arterial roads namely, the Manila North Road (MNR) or McArthur Highway, North Luzon Expressway (NLEX), the Cagayan Valley Road or Daang Maharlika Road, and the Plaridel Bypass Road. These roads conveniently link this small town to other parts of Luzon and Metro Manila through various modes of transportation system.

The MNR, maintained by the Department of Public Works and Highways (DPWH), is a 30-meter national highway where built-up is heavily concentrated. It allows access from any point along the highway making it very open to any type of vehicles and commuters.

Considering the NLEX, maintained and operated by the Manila North Tollways, two toll plazas are available at Tabang and Sta. Rita that provides exit and entry from the north and south bound vehicles. However, since NLEX is a toll road facility, it only allows linkage from certain points particularly at the toll plazas. In effect, NLEX divides some areas in Guiguinto creating a level of difficulty in terms of mobility in these places.

Using the Plaridel Bypass Road, the Balagtas Toll Plaza connects the Guiguinto segment of the NLEX to Plaridel going north of Bulacan. However, it only provides exit from the north bound direction of NLEX but not entry and exit to vehicles from the south bound side of NLEX.

The modes of transportation available in Guiguinto are buses, FX/Van/UV Express, jeepneys, tricycles, and pedicabs. Table presents the different bus line that uses the three major arterial roads in Guiguinto. Regular trips are available from these bus companies every day.

## **RAILWAY SYSTEM**

The Municipality of Guiguinto is also traversed by a Rail Road System with a Right-of-Way of 30 meters and the total length of rail road passing the town totals to about 10.5 Km.

The rail road in Guiguinto is divided into 2 alignments. The East Alignment measuring 4.5 Km starts from Barangay Tiaong going to Nueva Ecija and the North-South Commuter Railway Alignment, which measures 6 Km, stretches from Calamba-Tutuban to Malolos-Clark.

The North-South Commuter Railway alignment is envisioned to support Central Luzon to become a global gateway wherein the region will be opened to the world through comprehensive transportation linkages.

The planned commuter station in Guiguinto is proposed at the old Slaughter house in Barangay Tabang.

## **POWER AND UTILITIES**

Electricity in Guiguinto is supplied by the National Power Corporation (NPC) through Manila Electric Company (MERALCO). All 14 barangays of Guiguinto is electrified with 24-hour service

## **INFORMATION AND TECHNOLOGY**

There is one postal service present in Guiguinto located at the Municipal Hall. Guiguinto Post Office is equipped with 6 motorcycles, 1 bicycle, and 1 mail truck used to transport posts throughout the municipality. The main telegraph service of Guiguinto, the Telecom Field Office (TELOF), is located at the Municipal Hall, where telegram-social services are being offered.

## 2.1 RISK PROFILE OF GUGUGUINTO

### HYDROMETEOROLOGICAL HAZARDS

Hydro-meteorological hazards cover those that are related to water and atmosphere caused by climate processes. This process or phenomenon of hydrological, atmospheric, or oceanographic in nature may cause loss of life, injury or other health impacts, property damage, social and economic disruptions or, environmental damages (*United Nations International Strategy for Disaster Reduction 2009*). This includes the discussion flooding, rainfall-induced landslides, storm surges, severe drought, and typhoons with harsh winds.

#### 2.1.1 FLOODING

Flooding is defined as temporary covering of land by water outside its normal confines. There are two types of flooding that can be distinguished, the coastal flooding and river flooding. Coastal flooding or sea-borne flood is caused by storm surges or rising tidal waters. River flooding is usually caused by excessive run-off brought on by heavy rains or storms that lead to overflowing of water systems such as rivers and streams.

This is the most common hazard that is intermittently occurring in the Province of Bulacan as well as in the Municipality of Guiguinto, specifically in the low lying areas. It is usually caused by heavy rains from typhoon or monsoon rains and clogged drainage canals caused by waste materials wherein the areas near the major rivers and other water ways are flooded for extended period of time.

##### a) ELEMENTS AT RISK AND POTENTIAL DAMAGES

- A total population of 56,516 and 11,300 households are affected
- Flood prone areas affecting their personal properties and equipment
- Causing the suspension of classes
- Damages on power transmission lines and communication facilities.
- Silted irrigation canals and drainage systems
- Upgrading of flood gate

##### b) VULNERABILITY (FLOOD)

- The level of awareness and the capacity dealing with disasters in the municipality as a whole is low.
- Poor implementation of anti-littering act, 1 Milyong Kalinisan and other ordinance or program against proper waste disposal and alike, Garbage, being the root cause of this floods.
- High vulnerability road networks with poor or obsolete drainage system.

##### c) CAPACITY (FLOOD)

- Knowledgeable personnel to undergo training on disaster preparedness to be conducted by Red Cross.
- Social acceptability of the community to prepare and respond during disaster.
- Readiness of offices and agencies and extension work on disaster prevention, mitigation, Preparedness, response and recovery.

- Existing maps which serves as a tool/guide like hazard maps.
- Functional cooperatives and financing institutions assisting fisher folks for technical Assistance.
- Strict implementation of Environmental laws and programs (e.g. regular cleaning of river & canals.
- Supportive NGO's, private sector

**TABLE 37 - RECENT TYPHOONS THAT RESULTED TO FLOODING IN GUIGUINTO**

DESCRIPTION	POPULATION/AREAS AFFECTED	IMPACTS
<b>SEVERE TROPICAL STORM PAENG</b>		➤ P 4.17 billion in infrastructural damages.
<i>October 28-30, 2022</i>	The Municipality experienced high rainfall amount leading to the widespread and massive flooding specially in the low lying areas like barangay Panginay, Poblacion, Ilang-Ilang & Malis.	➤ 113.51 million damages on agriculture.  ➤ 160 People reportedly died and 29 remaining missing.
<b>TYPHOON KARDING</b>		➤ P 304 million in infrastructural damages.
<i>September 24-26, 2022</i>	The Municipality experienced high rainfall amount leading to the widespread and massive flooding specially in the low lying areas like barangay Panginay, Poblacion, Ilang-Ilang & Malis.	➤ 3.08 billion damages on agriculture.  ➤ 40 People reportedly died and 5 remaining missing.
<b>TYPHOON ULYSSES</b>		➤ P 12.9 billion in infrastructural damages.
<i>November 11, 2020</i>	The Municipality experienced high rainfall amount leading to the widespread and massive flooding specially in the low lying areas like barangay Panginay, Poblacion, Ilang-Ilang & Malis.	➤ P 7.32 billion damages on agriculture.  ➤ 102 People reportedly died and 10 remaining missing.
<b>TYPHOON TISOY</b>		➤ P 6.65 billion damages across the nation.
<i>December 2-3, 2019</i>	The Municipality experienced high rainfall amount leading to the widespread and massive flooding specially in the low lying areas like barangay Panginay, Poblacion, Ilang-Ilang & Malis.	➤ 2,249 damaged schools and 558,844 damaged houses.  ➤ 17 People reportedly died and 318 were injured.

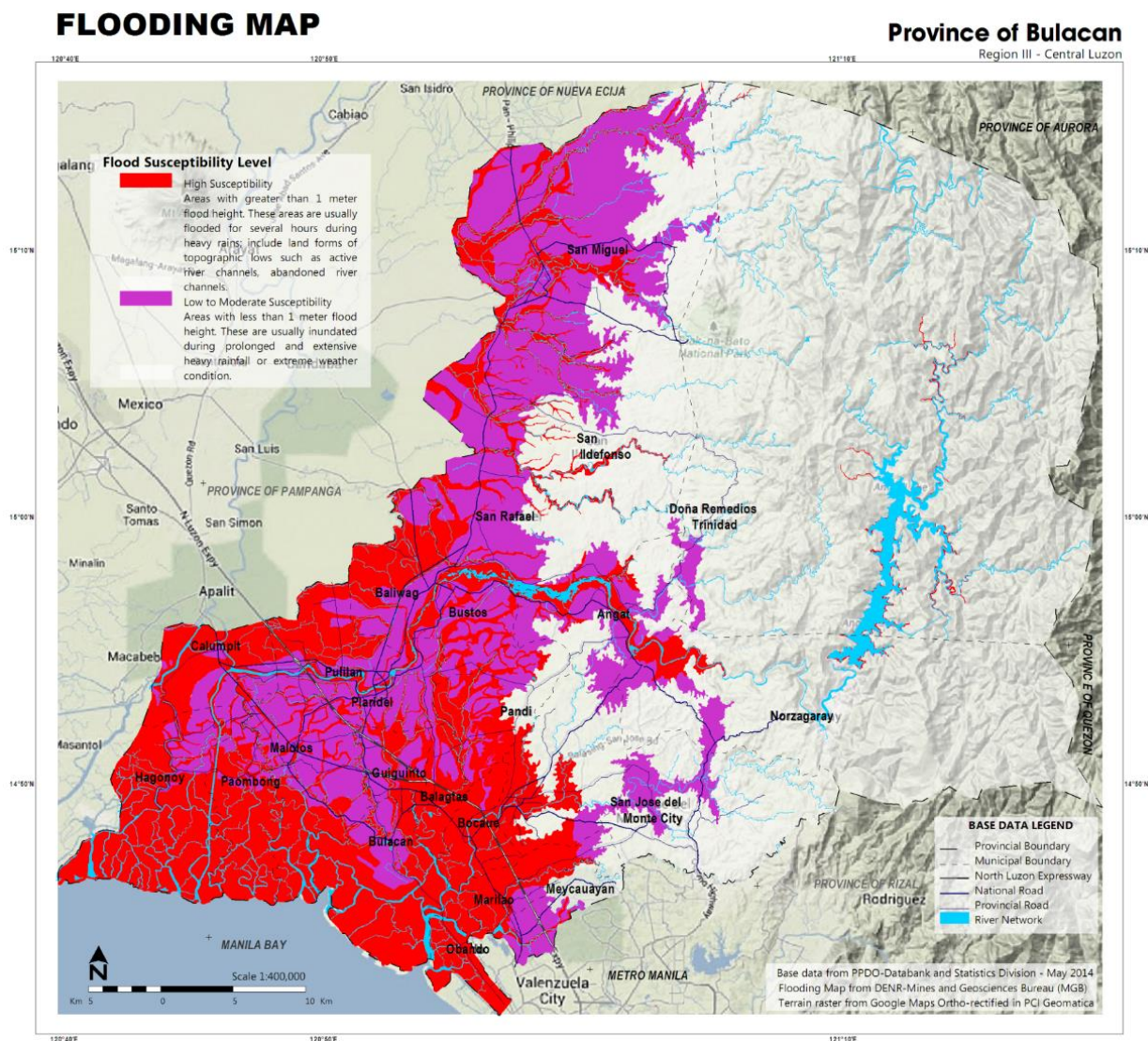
Source: MDRMO Guiguin

Aside from the established principal cause of flooding in the Municipality of Guiguinto,

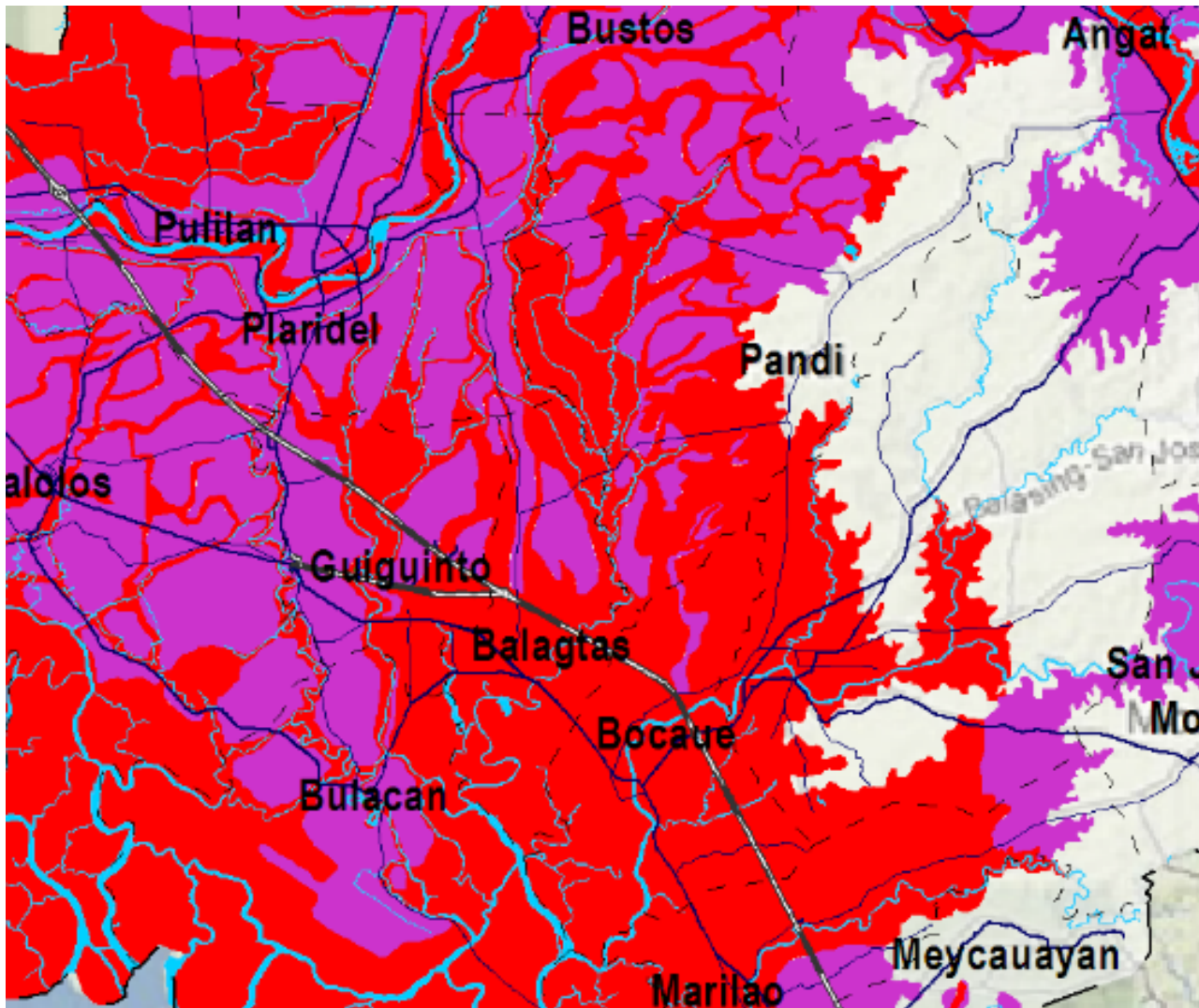
there are other factors that contribute to this hazard that worsens its effect. The general topography of the affected areas can be described as low-lying with a slope of relatively flat that makes the water current flow slowly towards drainage and streams. There are also silted river systems and clogged water ways that contributes to the rapid flood water rise during heavy rains.

With the PAGASA forecast on Climate Change in the Philippines, rains will be more frequent and intensified as the weather condition is aggravated by global warming causing more severe and prolonged flooding. Aside from the considerable damages to properties and disruption of socio-economic activities, human lives are also at risks for those who are living within the highly susceptible flood prone areas. Thus, preparedness and mitigation becomes equally valuable component of disaster risk reduction.

**MAP 11 FLOODING MAP**





**MAP 10 @ ZOOMED**

Based from the flooding map, the following table shows the exposure area of flooding per Barangay at varying susceptibility level. The estimates are GIS-derived and may not conform to the total administrative area.

**TABLE 38- EXPOSED BARANGAYS OF GUIGUINTO**

BARANGAY	LAND AREA (HAS.)	LAND AREA (GIS DERIVED IN KM <sup>2</sup> )	AREA UNDER HIGH SUSCEPTIBILITY TO FLOODING	AREA UNDER LOW TO MODERATE SUSCEPTIBILITY
	LMB-DENR			
Cutcut	226	1.22	0.54	0.59
Daungan	200	1.27	0.94	0.33
Ilang-Ilang	50	0.58	0.33	0.25
Malis	311	2.18	1.39	0.79
Panginay	87	0.52	0.45	0
Poblacion	96	0.79	0.67	0.01
Pritil	323	2.09	1.39	0.7
Pulong Gubat	151	1.17	0.66	0.51
Sta. Cruz	248	2.22	0.48	1.74
Sta. Rita	272	2.6	0.67	1.93
Tabang	219	1.67	0.1	1.56
Tabe	114	1.06	0.91	0.15
Tiaong	258	2.78	1.34	1.44
Tuktukan	195	1.57	1.56	0
<b>TOTAL</b>		<b>21.7</b>	<b>11.43</b>	<b>10.01</b>

Source: GIS Derived Flooding Map

The table resulted from GIS overlay analysis of administrative boundaries and flooding susceptibility shows that the barangay Tuktukan, Tabe, Panginay, Poblacion, and Daungan has the highest percentage of exposure to high susceptibility level of flooding. In recent years, Barangay Malis, Ilang-Ilang, Poblacion and some parts of Sta. Rita which is specifically residents and streets along the riverbanks are mostly affected by flooding.

### 2.1.2 RAINFALL INDUCED LANDSLIDES

This type of landslides refers to the usually sudden downward movement of loosened materials (rocks and earth) due to rain. Based on the DRA/CCVA Report from the PDPFP of the Province of Bulacan, the Municipality of Guiguinto is not prone to this hazard for the topography of the municipality is generally flat.

### **2.1.3 STORM SURGES**

Coastal or storm surges are an abnormal rise in sea water level caused by strong winds and low atmospheric pressure during typhoons. Based on the DRA/CCVA Report from the PDPFP of the Province of Bulacan, the Municipality of Guiguinto is not prone to this hazard as the municipality is not along the coastal area.

## **GEOLOGIC HAZARDS**

Geologic hazards are generally categorized as either earthquake related or volcanic related. The source of data in this section generally comes from Philippine Institute of Volcanology and Seismology (PHIVOLCS) and will usually be presented from regional or provincial perspective due to lack of data at the municipal level.

### **2.1.4 EARTHQUAKE-GROUNDSHAKING**

An earthquake is a weak to violent shaking of the ground produced by sudden movement of rock materials below the earth's surface (L. Bautista, 2008). Earthquakes are caused either by sudden released or slowly accumulated strain energy along faults and trenches (tectonic), or by movement of magma beneath volcanoes (volcanic) most commonly at the collision zone between tectonic plates. The Philippines sit between two tectonic plates, the Philippine Sea Plate to the east and the Eurasian Plate to the west. Between these two plates is found the Philippine Fault Zone where the country's most active faults are located including the West Valley Fault System wherein part of it passes the Province of Bulacan.

#### **Historical Earthquake in the Province of Bulacan**

The Philippines sit between two (2) Tectonic Plates, the Philippine Sea Plate to the east and the Eurasian Plate to the west. Between these two (2) plates is found the Philippine Fault Zone subdivided into two (2), the West Valley Fault System (which by the way includes our province) and the East Valley Fault System.

#### **June 3, 1863**

A destructive earthquake with a magnitude of 6.5 hit the province. The said earthquake consisted of vibrations followed by oscillatory movements. It caused damages to Church Structures, cracked walls and demolished bell towers at Bocaue, Santa Maria, Bulacan, Malolos, San Rafael, Angat, and Guiguinto.

#### **July 16, 1990**

A 7.8 magnitude earthquake hit the northern portion of the Philippines including region 3. In the City of Baguio alone, our country's Summer Capital, there were 1,283 deaths, 3,516 injured and 460 missing reported including severe damaged/collapsed of 19 Buildings. Again the province of Bulacan was lucky enough not sustain major damages although the said earthquake was considerably felt at our province.

According to PHIVOLCS, the following table shows the susceptibility matrix based on ground shaking map.

TABLE 39- SUSCEPTIBILITY TO GROUND SHAKING

Location	SUSCEPTIBILITY TO GROUND SHAKING	TOTAL LAND AREA
Province of Bulacan	<p>The whole province is prone to Intensity VIII Ground shaking level</p> <p><b>VERY DESTRUCTIVE</b></p> <ul style="list-style-type: none"> <li>▪ <i>People find it difficult to stand</i></li> <li>▪ <i>Many well-built buildings are considerably damaged. Concrete dikes and foundations of the bridges are destroyed by ground settling or toppling. Railway tracks are bent or broken.</i></li> <li>▪ <i>Tombstones maybe displaced, twisted or overturned. Utility post, towers and monuments may tilt or topple. Water and sewer pipes may be bent, twisted or broken.</i></li> <li>▪ <i>Liquefaction and lateral spreading cause man-made structures to sink, tilt or topple. Numerous landslides and rock</i></li> </ul>	Whole province.

The map in the next page displays the locations of earthquake generators and active fault lines in the area where Bulacan is located. The historical earthquakes that affected the province were located around these generators such as the Philippine Trench, the Manila Trench and the West Valley Fault System.

Ground Shaking, Ground Rupture, Liquefaction, landslides and rock fall are the key hazards associated with earthquakes. Bulacan as a whole is not vulnerable to earthquakes as other areas in the Philippines, however, some areas within our province incidentally is above the West Valley Fault system which includes San Jose Del Monte, DRT and Norzagaray and portions of Angat which basically exposes the said Municipalities/Cities to Earthquake Related Hazards.

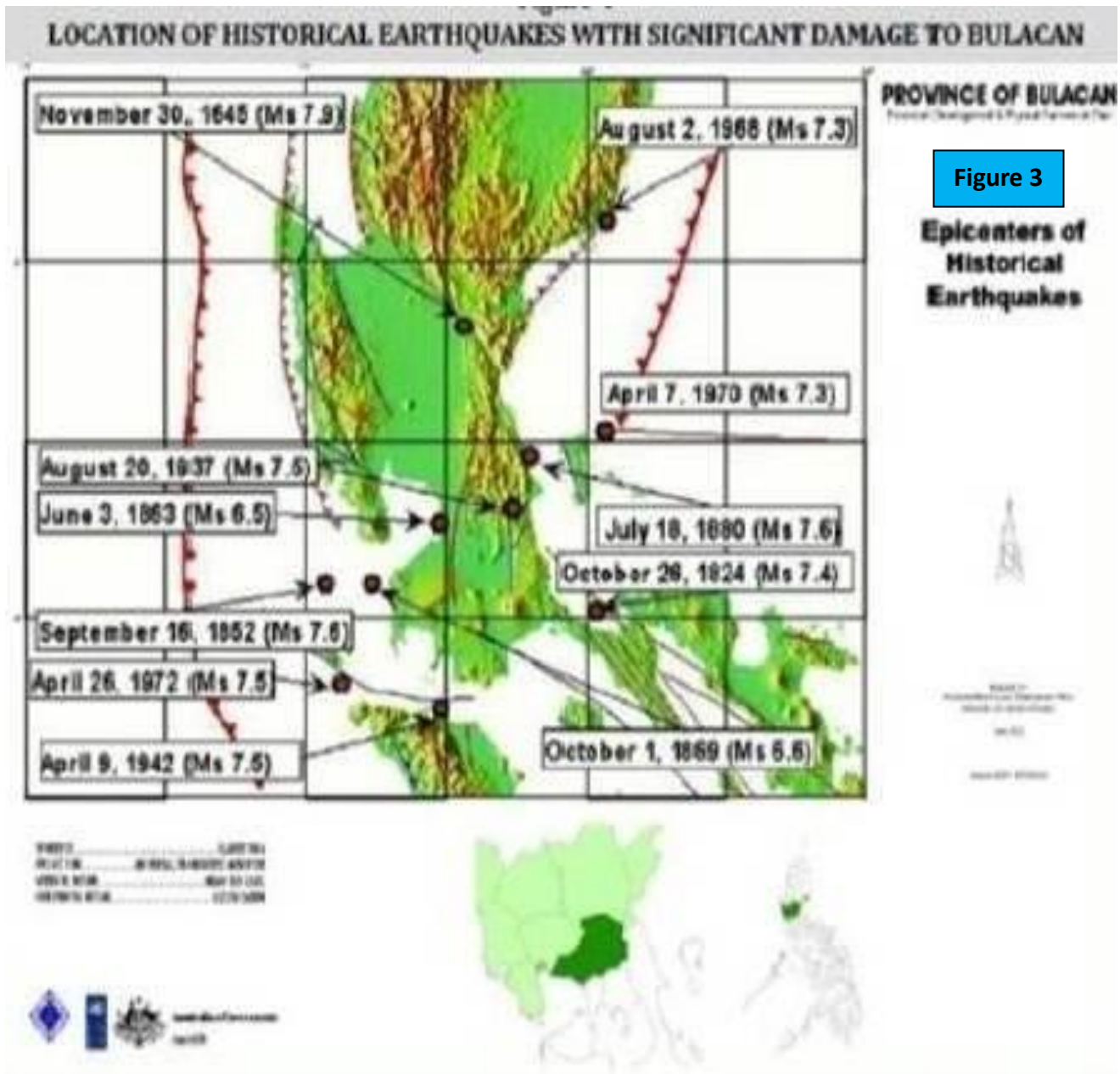
In addition, Ground Shaking is a direct hazard to any structure located around the earthquake's epicenter. Structural failure takes many lives especially on densely populated areas. In the past, we witnessed how prone our country is to this kind of natural disaster which constituted to fatalities and substantial damage.

The municipality of Guiguinto, according to the Philippine Volcanology and Seismology (PHILVOCS) is not prone or will most likely be unaffected DIRECTLY if in case an earthquake strikes the West Valley Fault System. However, a possible breakage of the Angat Dam is another story. Incidentally,

ALL DRRMOs of Bulacan under the supervision of the PDRRMO is in the process of studying and taking all known facts that may constitute to an effective preparation if such occurrence happens.

According to PHILVOLCS, it has been 357 years since the 90-kilometer Fault System shifted, reiterating the agency's warning issued back in 2013. Philvolcs explained that the West Valley Fault moves every 400-600 years, the last movement was on 1658, basic mathematics will tell us that from the data presented, the nearest possible of its re-occurrence will 43 years from now-2058.

Figure 3--EPICENTERS OF HISTORICAL EARTHQUAKE





The map generally presents that most of the area in the municipality is assessed to be at low risk. Though there are areas assessed to be at moderate risk, the positive note is that neither high risk nor very high risk area were identified.

With reference to the results DRA-CCVA report and in the Planning Environment, this risk assessment results are appropriate and parallel, thus it is considered to be accepted. From the risk prioritization results, the Municipality of Guiguinto is not included in the urgent priority when it comes to provincial hazard classification confirming the risk map with no high risk area. Likewise, from the overall climate change vulnerability of the Province of Bulacan, Guiguinto is among the municipalities assessed to be moderately vulnerable to climate change impacts which was also proven by this resultant risk map with some areas identified to moderately at risk.

Based from the result of assessment, the risk is classified with the scale rating of low to moderate level for the Municipality of Guiguinto. Nonetheless, the risks are present and risk reduction measures and strategies should be undertaken by the government. This may include the reduction or management of exposed elements and lessening its vulnerabilities, though implementing each activity poses a varying level of challenges on institutional aspect.

#### **a) EARTHQUAKE RELATED RISK REDUCTION MEASURES**

1. Providing appropriate engineering interventions or structural measures.
2. Proper sitting of human settlements and zoning of disaster prone areas.
3. Establishing safety regulations.
4. Properly enforcing building codes and fire codes.
5. Planning and training for disaster risk management (Contingency Planning and Incident Command System)
6. Conducting hazard assessment and public information drive.
7. Improving socio-economic status of vulnerable communities.
8. Providing access to insurance or various forms of risk transfer mechanism.
9. Procurement of additional rescue tools and equipment.

#### **b) HAZARD VULNERABILITY AND RISK ANALYSIS**

In total, there are 20 cities/towns in Bulacan, 7 cities/towns in Pampanga and 3 cities/towns in Metro Manila likely to be affected in a Dam/Dyke failure scenario due to 7.2 magnitude. Available hazard map on Earthquake Ground Shaking from Province of Bulacan as shown in figure below showed that a worst case Ground Shaking may be experienced by the municipality in the future. The Earthquake hazard map shows that almost all the barangays are vulnerable to Ground Shaking at various degree of magnitude.

The main findings and key conclusions are summarized as follows:

The modeling indicates that the dam break flood wave will not only affect the areas near the Angat River, but spread and occupy vast areas well beyond the Angat River channel, and extend both upstream and downstream into the floodplain of the Pampanga River.

**GROUND SHAKING HAZARD MAP**

**PROVINCE OF BULACAN**  
REPUBLIC OF THE PHILIPPINES

**HAZARD LEVELS**  
 HIGH  
 MODERATE  
 LOW  
 VERY LOW

**LEGEND**  
 MUNICIPALITY  
 RIVER  
 ROAD  
 RAILROAD  
 AIRPORT  
 PORT  
 COASTAL GUARD STATION  
 POLICE STATION  
 FIRE STATION  
 BARANGAY CENTER  
 BARANGAY

**SCALE**  
 0 100 200 300 400 500 600 700 800 900 1000  
 Kilometers  
 0 10 20 30 40 50 60 70 80 90 100  
 Meters

**NOTES**  
 1. This map was prepared by the Department of Science and Technology (DOST) - Philippine Institute of Volcanology and Seismology (PHIVOLCS) in cooperation with the Department of Environment and Natural Resources (DENR) - Office of the Provincial Environment and Natural Resources Officer (OPENRO) - Bulacan.  
 2. The map was prepared using the latest available data and information.  
 3. The map is for general information only and should not be used for legal purposes.  
 4. The map is subject to change without notice.  
 5. The map is the property of the DOST-Philivolcs and should not be reproduced without written permission.

TABLE 40- Projected Property Damages and Fatalities if indeed an earthquake hit the fault line-

LGU	Property Damages (in Php)		Fatalities	
	Ground Shaking	EIL	Ground Shaking	EIL
Angat	514,770,772.99	0.00	172.45	0.00
Balagtas	713,455,364.21	0.00	198.28	0.00
Baliwag	1,283,135,141.91	0.00	442.75	0.00
Bocaue	752,479,800.55	0.00	353.68	0.00
Bulakan	429,995,427.52	0.00	234.16	0.00
Bustos	359,941,520.90	0.00	209.38	0.00
Calumpit	1,496,276,711.80	0.00	326.42	0.00
DRT	110,029,978.37	58,775,768.04	68.92	8.97
<b>Guiguinto</b>	<b>944,287,893.05</b>	<b>0.00</b>	<b>312.04</b>	<b>0.00</b>
Hagonoy	1,183,492,543.62	0.00	398.31	0.00
Malolos City	1,969,903,726.74	0.00	<b>775.99</b>	0.00
Marilao	<b>2,094,848,367.71</b>	0.00	621.35	0.00
Meycauayan	<b>2,192,150,086.71</b>	0.00	653.81	0.00
Norzagaray	801,510,549.85	33,066,041.32	376.44	13.43
Obando	645,401,651.25	0.00	174.59	0.00
Pandi	588,269,226.60	0.00	206.74	0.00
Paombong	266,351,096.80	0.00	171.35	0.00
Plaridel	1,057,307,021.09	0.00	323.73	0.00
Pulilan	910,306,709.53	0.00	288.02	0.00
San Ildefonso	1,057,616,688.04	0.00	305.48	1.98
SJDM City	<b>3,592,091,400.43</b>	9,636,578.89	<b>1,579.96</b>	<b>38.42</b>
San Miguel	1,257,767,855.85	0.00	443.66	0.24
San Rafael	889,192,873.91	0.00	285.82	0.00
Santa Maria	<b>2,199,275,195.80</b>	0.00	<b>747.96</b>	0.00

*The map shows that inundation levels can reach as high as 10-30 meters in some areas of Norzagaray, Bustos and Baliuag, Bulacan due to the initial flood wave resulting from breakage. It may reach as high as 5-10 meters in some areas of Pulilan, Plaridel all the way to Calumpit and Malolos City. It is estimated that 3-5 meter flooding will reach areas of Pampanga (due to the Bustos Dam failure) and the flood plain all the way to Metro Manila. While other areas indicated below shall likely experience between 1-5 meters of flooding.*

## BARANGAYS TO BE AFFECTED

- All 14 Barangays of Guiguinto are exposed to this type of hazards

## VULNERABILITY (EARTHQUAKE):

- Less Participation of the general populace in earthquake drills
- Light materials used in housing construction (Salambao and Binuangan)
- No all barangay has two way radio for communication
- Weak early warning system
- Mega dike is weak in Tawiran and can be destroy if there is earthquake

## c) CAPACITY (EARTHQUAKE)

- Continuous training and information dissemination of volunteers, which are mostly residents of affected barangays and members of the BDRRM

- Earthquake drills in schools and offices are performed regularly
- Supportive private sectors and civic groups
- Willingness of people to learn and further cultivate their knowledge about disaster preparedness, continuous support of barangay officials even after their term in office.
- Existing maps which will serve as planning tool (Geo-hazard, topography and slope map)
- CRA assessment
- Complete CC-CBDRM PLAN

### 2.1.5 GROUND RAPTURE

Ground ruptures occurs when seismic waves radiate causing the ground to vibrate which results to differential movements of two sides of a fracture along the fault system. Based from the DRA/CCVA Report from the PDPFP of the Province of Bulacan, the Municipality of Guiguinto is not prone to this hazard for the West Valley Fault system is not within its area of jurisdiction.

### 2.1.6 SOIL LIQUEFACTION

Based from the DRA/CCVA Report from the PDPFP of the Province of Bulacan, liquefaction can be triggered by strong ground shaking in gently sloping areas with unconsolidated material and water saturated deposits of fine sand. Liquefaction can be found in beach zones, sand pits, sand bars, wide coastal plains, deltaic plains, flood plains, abandoned river meanders, former lake beds or existing marshlands, and swamplands.

MAP 12- LIQUEFACTION MAP

## LIQUEFACTION MAP

## Province of Bulacan



*Source: MGB Region III as of May 2014*

*As per the DRA/CCVA Report and PHIVOLCS hazard map for the province, the Municipality of Guiguinto is generally high susceptible to soil liquefaction due to its geologic properties and topographic characteristics.*

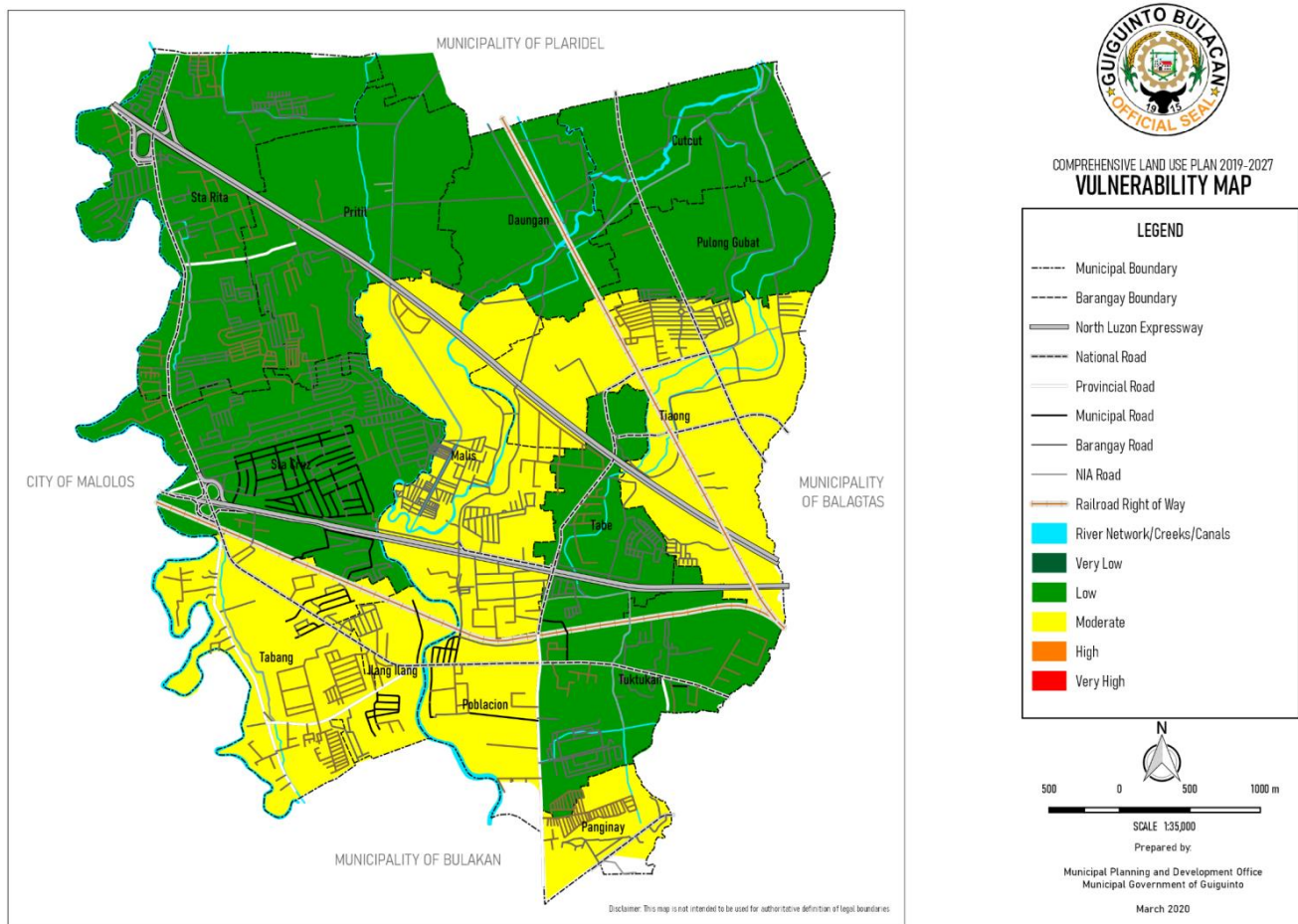
### 2.1.7 EARTHQUAKE –INDUCED LANDSLIDES

Earthquake-induced landslides occur because of ground-shaking in areas having relatively steep topography and poor slope stability. Based from the DRA/CCVA Report from the PDPFP of the Province of Bulacan, the Municipality of Guiguinto is not prone to this hazard.

### 2.1.8 CLIMATE CHANGE VULNERABILITY ASSESSMENT

Most part of the province is moderately vulnerable to climate change. There are no municipalities that were ranked at a very high vulnerability though the coastal municipalities of Hagonoy, Paombong, Obando, and Bulacan are highly vulnerable to the impacts of climate change. The following map shows the overall vulnerability assessment of the Province of Bulacan to Climate C

**MAP 13-CLIMATE CHANGE VULNERABILITY MAP-**



Source: MPDO 2020



### 2.1.10 HUMAN HEALTH AND DISEASES

Human health and diseases have the potential to affect the Municipality of Guiguinto, many serious health concerns would not be classified as disasters, but there are some, such as dengue or leptospirosis that may accompany disasters.

Health concerns like sanitation and malnutrition increase following disasters such as floods, along with diseases such as dengue fever and leptospirosis. For example, evacuation centers are a risk for spread of disease due to the close proximity of large numbers of people and the difficulty maintaining normal sanitary conditions. Flood waters can also lead to an increase in the breeding ground for dengue carrying mosquitos, while leptospirosis can be spread through human contact with flood water.

The Municipal Health Office is the key member of the MDRRMC in relation to human health risks. The Human Health Emergency Staff in the Municipal Health Office have protocols for key health risks following disasters.

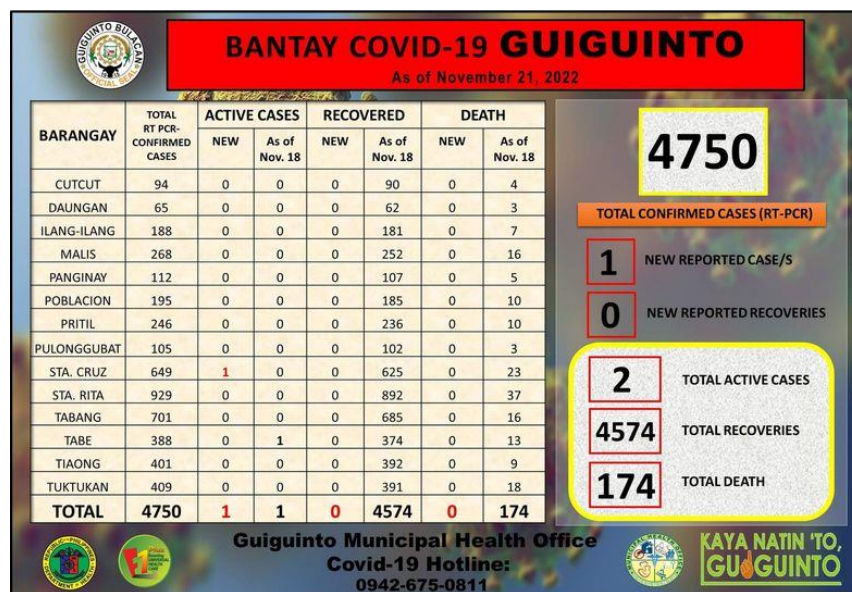
On December 2019, a cluster of pneumonia accessed unknown etiology was reported in Wuhan City, Hubei Province of China. The outbreak was later determined to be caused by a novel coronavirus (2019-NCOV), a new coronavirus strain that has not been previously identified in humans (WHO, 2020).

According to the World Health Organization (WHO), the most common symptoms of COVID-19 are fever, tiredness and dry cough. Few patients experience aches and pains, nasal congestion, runny nose, sore throat or diarrhea. In more severe cases, the situations can progress to pneumonia with acute respiratory syndrome and eventual death. Incubation period of COVID-19 ranges from 1-12.5 days. COVID-19 is transmitted from person to person via droplets, contact, and fomites. It is transmitted when one individual talks, sneezes, or coughs producing 'droplets' of saliva containing the COVID-19 virus. These droplets are then inhaled by another person. COVID-19 transmission usually occurs among close contacts – including family members and healthcare workers. On 12 March 2020 the WHO have characterized COVID-19 a global pandemic.

#### IMPACT OF COVID-19 GLOBAL PANDEMIC

The Municipality of Guiguinto registered its first Covid-19 case in March 2020. During the early stage of the pandemic, the LGU initiated and adopted measures to address the negative impact of the pandemic for the affected population of 112,889 Individuals, including provision of relief goods for the affected families during community quarantine; care bags for the covid-19 positive; establishment of testing laboratory, isolation facilities, and community pantries, and observance of the minimum public health standards such as the wearing of facemask, physical distancing, and frequent hand washing.

As of November 21, 2022, the Municipality of Guiguinto recorded 4,750 confirmed cases of Covid-19 including 174 deaths and 4,574 recoveries. With the widespread transmission, it is critical that the preventive measures during disaster response such as earthquake be incorporated and implemented.



Source: MHO 2022

The Municipality of Guiguinto produced a Procedure that is specifically for prevention and control of emerging infectious diseases that aims to ensure a safe workplace amid a pandemic for the continual effectiveness of the QMS of Municipal Government of Guiguinto, Bulacan. This document aims to define the Offices' processes involved in ensuring safety in the workplace during pandemic.

### 2.1.11 ANIMAL HEALTH AND DISEASES

Animal health risks in Bulacan Province have the potential to be disasters. Agriculture is a significant part of the economy, employing many Guiguiteño's, and some animal diseases such as rabies and avian influenza pose a significant current or potential risk to humans.

The Municipal Agriculture Office undertakes a number of programs to prevent animal diseases, such as vaccinations of pigs and poultry, public education, and monitoring for the possible presence of diseases.

## **DRR-CCA PRIORITY ISSUES AND CONCERNS**

This section discusses the priority issues and concerns from the perspective of DRR-CCA. It focuses on two main segments of concerns such as the risk evaluation and the institutional challenges on DRR-CCA implementation. The risk evaluation will determine if the estimated risks are generally acceptable and will turn as one of the basis of land use and development planning. Then the succeeding segment will enumerate the challenges on governance sector in implementing plans and various programs as a response towards risk reduction.

### **RISK EVALUATION**

The risk assessment methodology and procedures employed in this document were based on the Guidelines on Mainstreaming DRR-CCA into Local Development Planning and Decision Making Processes as well as the Disaster Risk Assessment and Climate Change Vulnerability Assessment Report of the Province of Bulacan. The risk estimates for the Municipality of Guiguinto were done by analyzing the relationships of the factors hazard, exposure, and vulnerability as illustrated in the Risk Triangle. Based on this definition, risk level is contributed by any one of the three factors.

As previously discussed from the Planning Environment Chapter, the Municipality of Guiguinto is exposed to certain types of hydro-meteorological and geologic hazards at various susceptibility levels. This will constitute as composite hazard factor that will determine what are the exposed elements and its existing conditions.

While the hazard and exposure are the most common factors given at every scenario, vulnerability is a concept that links the relationship of the exposed population or properties to the totality of its condition and social situation (Bankoff, et. al. 2004). In other words, it should assess how much harm or damage a hazard could inflict on people considering their overall status. One way of doing this is lessening the vulnerability which can be done through better land use planning.



*Source: Adapted from D. Crichton, 1999; Kron 2002*

## DRRM CHALLENGES

The results of the assessment had identified gaps, weaknesses, and constraints in DRRM and CCA implementation. The method employed the assessment based on the legal mandates under existing DRRM and CCA laws. Based on the institutional assessment of the municipal government on DRRM/CCA implementation, the following challenges have been identified with regards to DRRM.

**TABLE 41-DRRM PHASE AND CHALLENGES**

DRRM PHASE	CHALLENGES
Prevention	Uncontrolled and informal settlements along high danger zones to hazards. Proper implementation of Zoning Ordinances.
	River buffer zones sometimes being neglected.
	Conversion/reclassification of agricultural lands resulting into drainage problems leading to floods.
	Siltation of rivers proves to be a contributing factor to flooding.
Mitigation	De-silting waterways and slope protection activities.
	Extent of enforcements of building codes needs to be assessed.
	All projects should go through Environmental Impact Assessment especially the locally funded projects.
	Resilient architecture designs should become standard and part of provisions on building code.
Preparedness	Formulation of community-based or street level early warning system should be promoted.
	Institutionalization of Municipal DRRM office with full time DRRM officer(s)
Response	DRRM plans though included in the CLUPs and CDP should be properly mainstreamed giving it an emphasis as another development sector.
	Incident Command System in place and implemented.
	Mobilization of organizations and volunteers in relief operation.
	<i>Rapid Damage and Needs Analysis (RDANA)</i> should be carried out immediately after disaster event.
	Relief and rehabilitation plan clearly formulated.

**CCA CHALLENGES**

The following table shows the gaps and challenges of the Local Government Units in the implementation of PPAs with regard to Climate Change Adaptation.

**TABLE 42 -GAPS AND CHALLENGES**

CCA PROGRAMS & PROJECTS	CHALLENGES
<b>MITIGATION</b>	
Energy Efficiency and Conservation	Intensification of campaign on energy conservation
Renewable Energy Adoption	Limited or no existing renewable energy programs.
Environmentally Sustainable Transport	No known environmentally sustainable transport being implemented.
Watershed Management and Reforestation	Implementation of Watershed Management and Reforestation Programs
Mangrove Conservation and Reforestation	Efforts on mangrove reforestation are somewhat minimal or needs to be materialized.
Solid Waste Management	Implementation of sustainable Solid Waste Management program.
<b>ADAPTATION</b>	
Enhanced vulnerability and adaptation assessment	Continuing study for assessment of vulnerability being undertaken.
Integrated Ecosystem Management	No known integrated ecosystem management.
Climate Responsive Agriculture	Resilient crops variety should be considered.
Water Governance and Management	No known Water Governance.
Climate Responsive Health Sector	The Municipal Health Office to continually upgrading its capacity and resource to be responsive to changing needs.
Resilient Cities	Program for promoting of resilient communities should be formalized.
Climate Responsive Industries	No known program for promotion climate responsive industries.
Climate Proofed Buildings and Infrastructure	Building code to be updated to have a provision on climate proofed buildings and infrastructure.
Structural and Non-Structural CCA measures	

CCA PROGRAMS & PROJECTS	CHALLENGES
<b>CROSS CUTTING</b>	
Knowledge Management LGU CCA Capacity Building Gender and Development Technology Transfer Research and Development Information, Education, and Communication	Cross cutting measures should cover wide range of recipients from all possible sectors. There should be focal department of committee in charge of CCA.

Based on the identified challenges from DRRM and CCA implementation, it is better that the LGU should prioritize the institutionalization of Municipal DRRM Office with full time DRRM officers. This would also be the focal department to be in-charge of CCA activities. These people will also spearhead the formulation of the Municipal DRRM Plan and the Local Climate Change Action Plan not just only for compliance to legal mandates but being as responsive as possible to these challenges. These being stated, the Municipality of Guiguinto has indeed satisfied this requirement, aside from having a MUNICIPAL DISASTER RISK REDUCTION AND MANAGEMENT OFFICE, it is also worthy to note that there are four (4) Plantilla Positions in the said Office.

## **RESILIENT COMMUNITIES BY REDUCING VULNERABILITIES**

One of the best ways to respond to the risk reduction is the promotion of resilient communities by lessening their vulnerability and strengthening their adaptive capacity. It would be nearly impossible to reduce the hazard and its arguable questionable to reduce exposure, thus vulnerability is the last factor that the government must be able to reduce. The following table shows the challenges in vulnerability reduction measures.

**TABLE 43- - VULNERABILITY REDUCTION MEASURES**

VULNERABLE SECTORS	CHALLENGES
Population and Settlements	Stable employment and livelihood programs
	Organization and raising of public awareness
	Increase the access to health and educational facilities
	Promotion of resilient settlements areas
	Strengthening of residences to withstand floods and earthquakes.
Production Areas	Stimulating climate responsive agriculture
	Enforcing risk responsive and climate sensitive industries
Hard infrastructures	Climate proofing structures



## FUNCTIONAL ROLE OF THE MUNICIPALITY

The *Local Government Code of 1991 (RA7160, Section440)* states that the municipality, consisting of a group of Barangays, serves primarily as a general purpose government for the coordination and delivery of basic, regular and direct services and, effective governance of the inhabitants within its territorial jurisdiction. The code further states the dual nature of an LGU as political and corporate body in the planning mandates. As a political body, the LGU is a subdivision of the national government endowed with powers to manage its territorial jurisdiction in conformity with the law for and on behalf of the national government. As a corporate body, the LGU is likewise endowed with powers to promote the general welfare of its inhabitants (*Section2a, Section15*).

## 2.2 HAZARD MAPS AND OTHER PERTINENT DATAS

### 2.2.1 HAZARD FACTOR IN GUIGUINTO

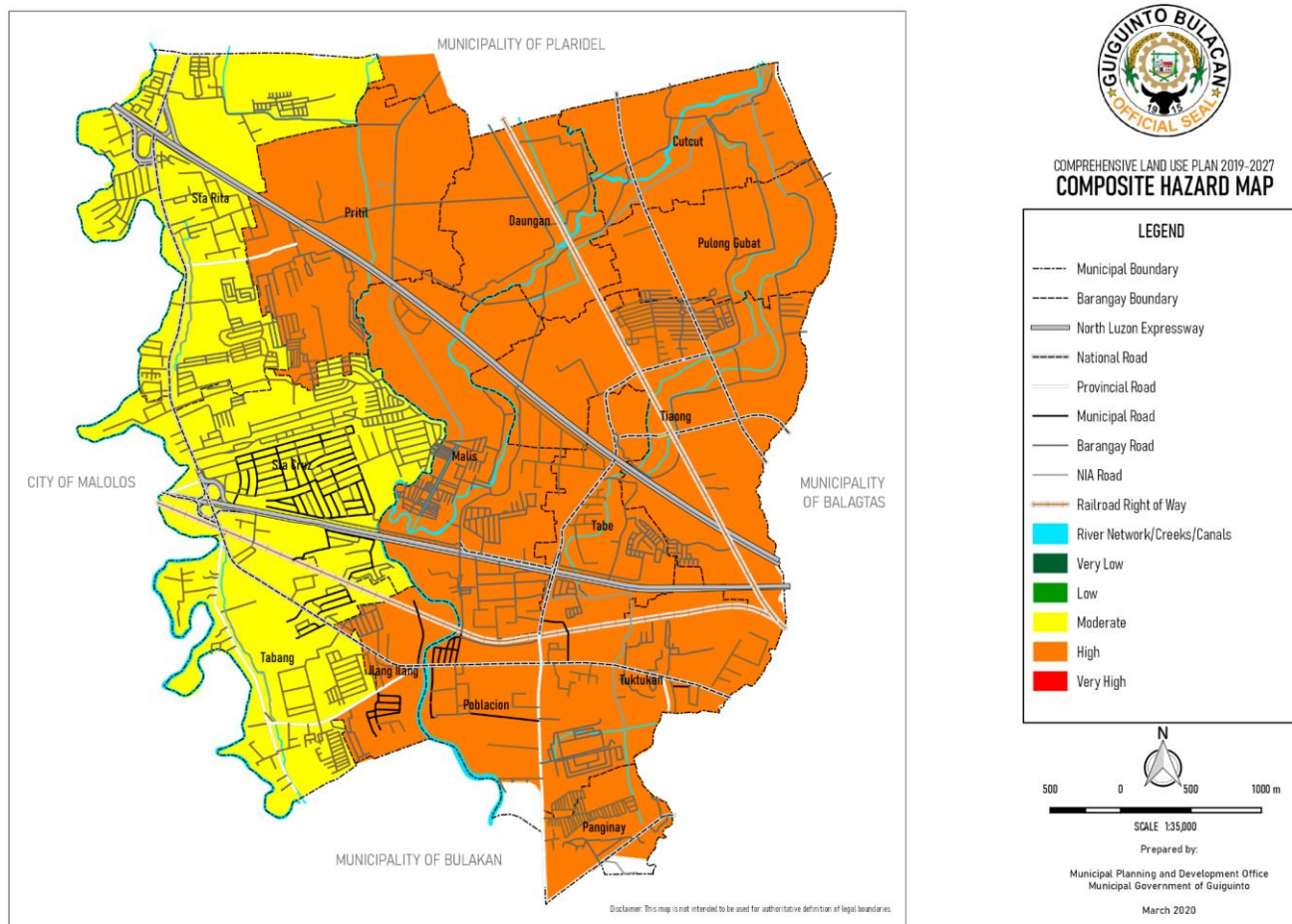
The following table shows the identified hazards in the municipality at the municipality with its corresponding defined weight and ratings as suggested from the DRA-CCVA Report of the province of Bulacan. The composite hazard index carried a weight of 50 percent in assessment of overall risk.

TABLE 44 - HAZARD FACTOR

HAZARD FACTOR (INDEX = 0.5)	SCALE CLASSIFICATION	SCALE RATING	WEIGHT
Flooding Hazard	Extent of flooding at various susceptibility levels		
	High Susceptibility	1	0.2
	Low - Moderate Susceptibility	0.6	
	Not Susceptible	0	
Rain-induced Landslides (RIL)	Extent of RIL hazard - Not Susceptible	0	0.1
Storm/Coastal Surge	Not prone to Storm surge	0	0.1
Ground Shaking (Earthquake)	Prone to strong ground shaking	1	0.2
Ground Rupture	Not Prone	0	0.1
Soil Liquefaction	High susceptibility to soil liquefaction	1	0.1
Earthquake Induced Landslides	Not susceptible to EIL	0	0.1
Tsunami	Prone to Tsunami Inundation	1	0.1
	Not Prone	0	

The flooding hazard was given a weight of 20 percent weight because as per DRA-CCVA report, it is the most common and frequently recurring hazard in the province. While the ground shaking from geologic hazards were given likewise a 20 percent weight because as though it occurred rarely, it carries a larger factor of fatality and property damages. The rest of the percentage weight are evenly distributed to other identified hazards.

The following figure is the composite hazard map based on the scale factors and ratings used for risk estimates. The hazard levels were computed as hazard index from scale rating and corresponding weight and were represented in five categories based on the defined range such as 0.0-0.2 Very Low Hazard Index; 0.2-0.4 – Low; 0.4-0.6 – Moderate; 0.6-0.8 – High; 0.8-1.0 – Very High Hazard Index.

**FIGURE 5- COMPOSITE HAZARD MAP-**

Source: MPDO 2020

Based on the result of overlaying all the hazard maps with its corresponding weight, the composite hazard index for the Municipality of Guiguinto was generated. While most parts of the locality determined to be between high hazard level index, there are portions where the hazard index are moderate. The following table illustrates the generated area of hazard index per barangay.

TABLE 45- - HAZARD LEVEL INDEX

BARANGAY	LAND AREA COVERED (SQ.KM.) PER HAZARD INDEX LEVEL				
	VERY LOW (0.0 - 0.2)	LOW (0.2 - 0.4)	MODERATE (0.4 - 0.6)	HIGH (0.6 - 0.8)	VERY HIGH (0.8 - 1.0)
Cutcut	0.00	0.52	0.71	0.00	0.00
Daungan	0.00	0.21	1.10	0.00	0.00
Ilang-Ilang	0.00	0.00	0.42	0.18	0.00
Malis	0.00	0.19	1.50	0.58	0.00
Panginay	0.00	0.00	0.00	0.53	0.00
Poblacion	0.00	0.00	0.03	0.82	0.00
Pritil	0.00	0.93	0.00	0.00	0.00
Pulong Gubat	0.00	0.65	0.52	0.00	0.00
Sta. Cruz	0.00	0.60	1.30	0.25	0.00
Sta. Rita	0.00	1.90	0.77	0.02	0.00
Tabang	0.00	0.00	1.50	0.25	0.00
Tabe	0.00	0.31	0.26	0.51	0.00
Tiaong	0.00	1.50	1.10	0.20	0.00
Tuktukan	0.00	0.00	0.00	1.60	0.00

The table shows there is a high hazard level index for the most parts of the barangays of Panginay, Tuktukan, Malis, Poblacion, and Tabe while there are no areas determined to be in extremes of very low or very high hazard level index.

### 2.2.2 EXPOSURE LEVEL

The exposure index utilized the three common indicators such as population, land use properties and road network. The population will be presented as density per barangay on built-area with a given weight of 60 percent while the agricultural areas and roads with 20 percent each.

The following table shows the identified indicators for exposure factors with corresponding scale rating and weight. The composite hazard index carried a weight of 25 percent in assessment of overall risk.

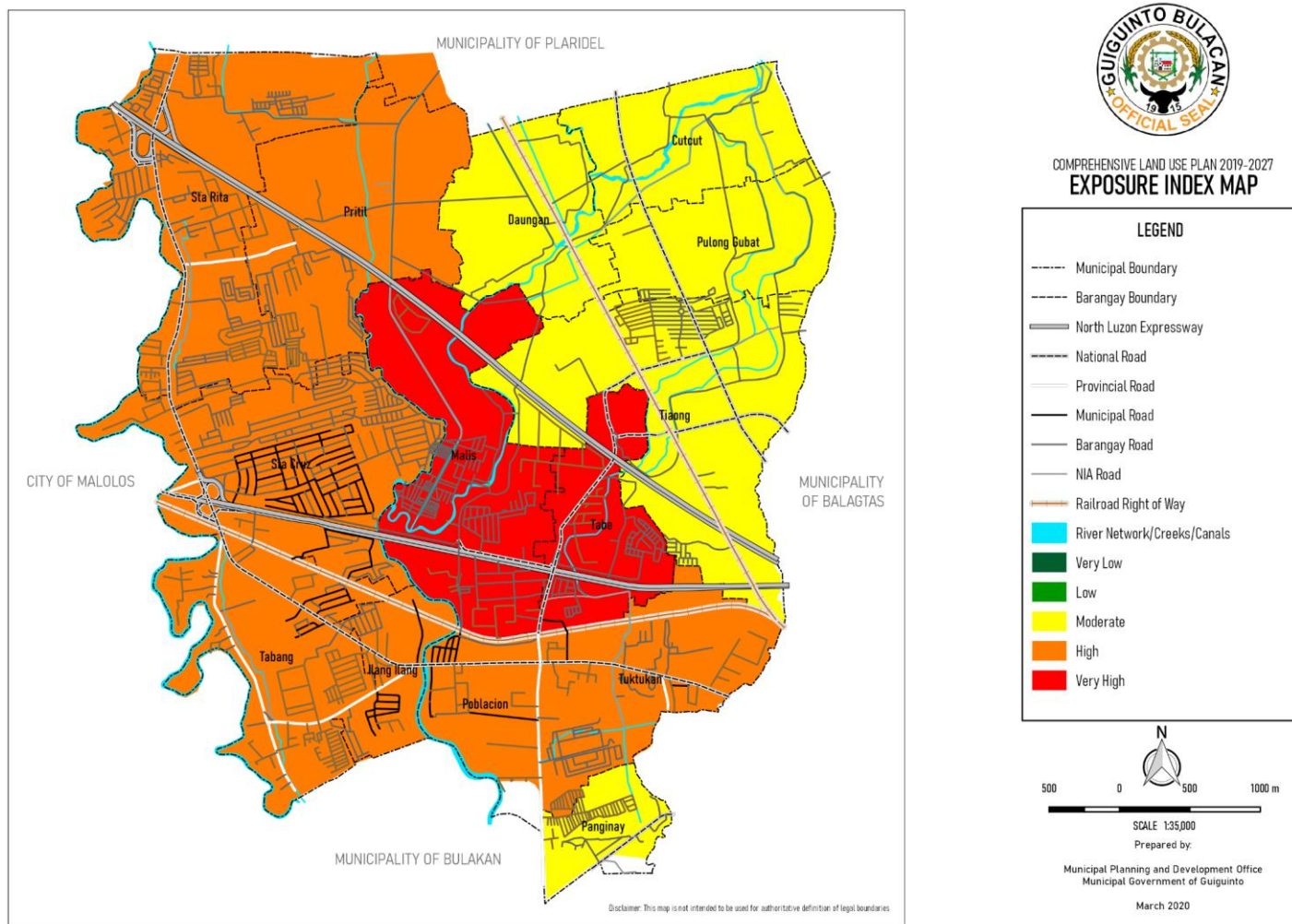
TABLE 46- - EXPOSURE LEVEL INDEX

EXPOSURE INDICATOR (INDEX WEIGHT = 0.25)	SCALE CLASSIFICATION	EXPOSURE RATING	WEIGHT
Population on built-up area based on existing land use	2020 Population density based on 2020 Census and barangay built-up area		
	>6,000 Person/Sq. Km.	1.0 (Very High)	0.6
	4,000-6,000 Person/Sq. Km.	0.8 (High)	
	2,000-4,000 Person/Sq. Km.	0.6 (Moderate)	
	500-2,000 Person/Sq. Km.	0.4 (Low)	
	<500 Person/Sq. Km.	0.2 (Very Low)	
Agricultural Area/Open Spaces based on existing land use	Percentage of agricultural area per alienable and disposable barangay land area		
	>80%	1.0 (Very High)	0.2
	>60%-80%	0.8 (High)	
	>40%-60%	0.6 (Moderate)	
	>20%-40%	0.4 (Low)	
	<20%	0.2 (Very Low)	
Lifelines – Road Network	Percentage of road area per alienable and disposable barangay land area		
	>16%	1.0 (Very High)	0.2
	>12%-16%	0.8 (High)	
	>8%-12%	0.6 (Moderate)	
	>4%-8%	0.4 (Low)	
	<0-4%	0.2 (Very Low)	

Most of the weight percentage was assigned to population because of its significance and priority over other exposed elements. The open areas and roads, though not of equal importance compared to population, likewise influences the risk factor when it is exposed to a certain hazard. There are other elements that can be added here as exposure indicators but these three indicators is sufficient to determine the exposure index

The following figure is the exposure index map based on the scale factors and ratings used for risk estimates.

**MAP 14- EXPOSURE INDEX MAP**



Source: Guiguinto as of 2020

From the overlaying of defined indicators, the exposure index map illustrates the level of exposure for the Municipality of Guiguinto. This map is presented based on the exposure rating and does not factor-in the weight percentage of each expose elements.



### 2.2.3 VULNERABILITY LEVEL

The following table shows the identified indicators for vulnerability factors with corresponding scale rating and weight. The vulnerability index carried a weight of 25 percent in assessment of overall risk. Indicators used in this assessment include the poverty threshold, makeshift housing, unemployment, and barangay urbanity classification.

TABLE 47- VULNERABILITY FACTORS/ INDICATORS

VULNERABILITY INDICATORS (INDEX WEIGHT = 0.25)	SCALE CLASSIFICATION	VULNERABILITY RATING	WEIGHT
Proportion of Population below Poverty Threshold	Population below Poverty Threshold based on CBMS 2009 results		
	>40%	1.0 ( <i>Very High</i> )	0.5
	>30%-40%	0.8 ( <i>High</i> )	
	>20%-30%	0.6 ( <i>Moderate</i> )	
	>10%-20%	0.4 ( <i>Low</i> )	
	<10%	0.2 ( <i>Very Low</i> )	
Proportion of Households Living in makeshift Housing	Based on CBMS 2009 results		
	>10%	1.0 ( <i>Very High</i> )	0.2
	>6%-10%	0.8 ( <i>High</i> )	
	>3%-6%	0.6 ( <i>Moderate</i> )	
	>1%-3%	0.4 ( <i>Low</i> )	
	<1%	0.2 ( <i>Very Low</i> )	
Proportion of Unemployed Member of Labor Force	Based on CBMS 2009 results		
	>10%	1.0 ( <i>Very High</i> )	0.2
	>6%-10%	0.8 ( <i>High</i> )	
	>3%-6%	0.6 ( <i>Moderate</i> )	
	>1%-3%	0.4 ( <i>Low</i> )	
	<1%	0.2 ( <i>Very Low</i> )	
Barangay Urbanity Classification	Urban or Rural Barangay Classification		
	Rural Barangay	0.8 High	0.1
	Urban Barangay	0.4 Low	

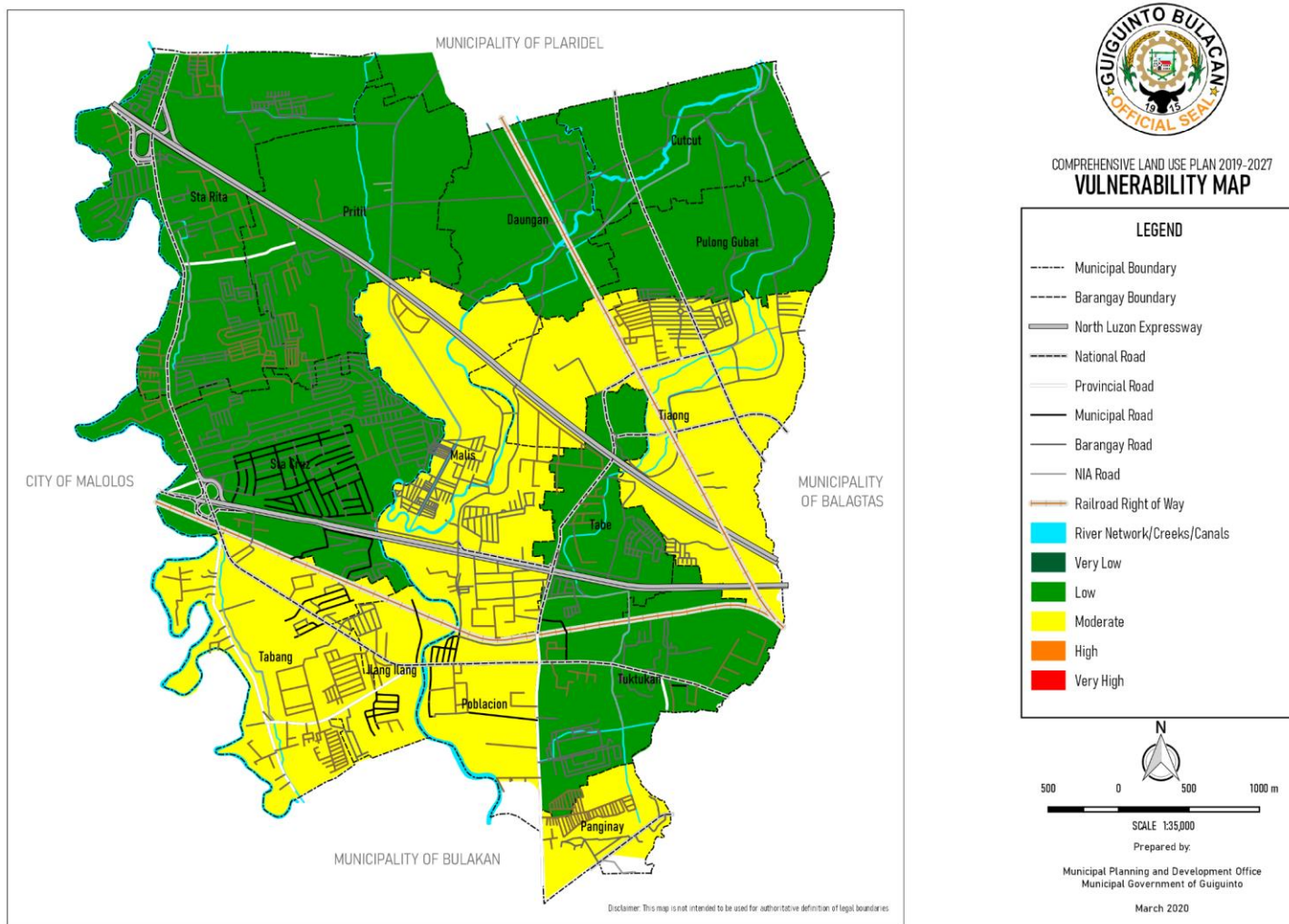
Based on the 2009 NSCB, the municipality of Guiguinto is one of the LGUs in the province with the lowest poverty incidence. This is a good indication of low vulnerability to disasters, thus to give a detailed assessment on barangay level, the poverty threshold result of Community Based Management System (CBMS) were used. Other results from 2009 CBMS such as proportion of household with makeshift housing and unemployed were also used as indicators of vulnerability level.

The Province of Bulacan being among the top 10 provinces with highest Human Development Index is also a good indicator of that Guiguinto is a resilient locality when referring to vulnerability level. The following figure is the vulnerability index map based on the scale factors and ratings used for risk estimates.

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**MAP 15- VULNERABILITY MAP**

The vulnerability indicators processed for this map were represented per barangay level most of which are sourced from 2020 Survey of CBMS. The following table is the summary of computed estimates for vulnerability index



Source: MPDO 2020

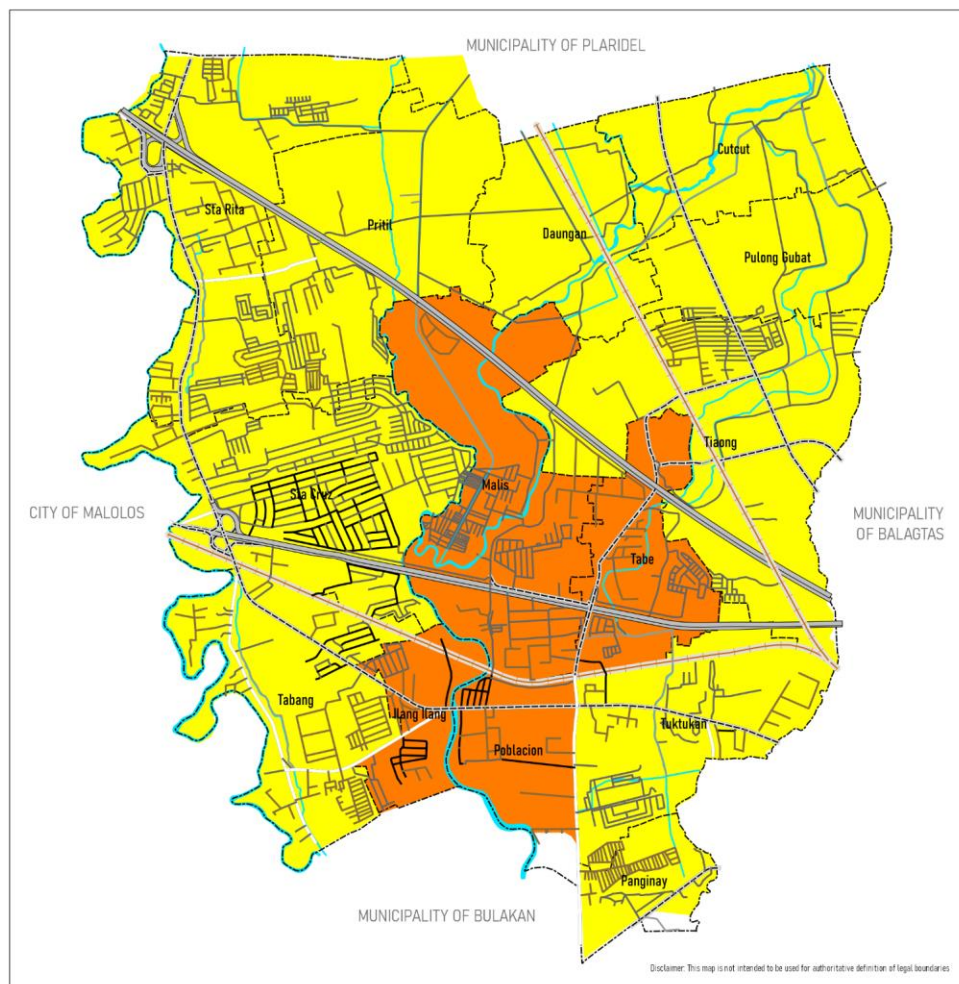
TABLE 48- -VULNERABILITY INDEX

BARANGAY	HOUSEHOLDS 2009 CBMS	POPULATION 2009 CBMS	LABOR FORCE	MAKESHIFT HOUSING	BELOW POVERTY	UNEMPLOYED	POVERTY RATING	MAKESHIFT RATING	UN-EMPLOYMEN T RATING	URBANITY RATING	VULNERABILITY INDEX
Cutcut	583	2,914	816	13	879	0	0.80	0.40	0.20	0.40	0.56
Daungan	331	1,324	400	4	452	2	0.80	0.40	0.20	0.40	0.56
Ilang-Ilang	1,396	5,585	2,028	43	1,185	30	0.60	0.60	0.40	0.40	0.54
Malis	3,354	13,416	4,399	40	823	3	0.20	0.40	0.20	0.40	0.26
Panginay	299	1,196	431	11	308	6	0.60	0.60	0.40	0.40	0.54
Poblacion	960	3,839	1,418	1	736	3	0.40	0.20	0.20	0.40	0.32
Pritil	1,088	4,350	1,441	6	1,292	7	0.60	0.20	0.20	0.40	0.42
Pulong Gubat	499	1,996	696	12	620	0	0.80	0.40	0.20	0.40	0.56
Sta. Cruz	2,841	11,363	3,758	8	149	20	0.20	0.20	0.20	0.40	0.22
Sta. Rita	3,256	13,023	4,275	6	935	11	0.20	0.20	0.20	0.40	0.22
Tabang	2,173	8,693	2,758	73	1,735	5	0.40	0.60	0.20	0.40	0.4
Tabe	1,708	6,831	1,327	12	209	4	0.20	0.20	0.20	0.40	0.22
Tiaong	1,703	6,811	2,404	7	306	22	0.20	0.20	0.20	0.40	0.22
Tuktukan	2,534	10,136	3,579	53	1,946	6	0.40	0.40	0.20	0.40	0.36

The table shows that most of the barangays in the Municipality are categorized at low to moderate vulnerability. Though there were no barangays classified with very high vulnerability index, the barangays of Ilang-ilang, Panginay, Daungan, and Pulong Gubat were categorized as highly vulnerable. This is mainly attributing to vulnerability factors on population living below poverty threshold and proportion of households living in makeshift housing.

#### 2.2.4 RISK ESTIMATES

Based on the overlay analysis of composite hazard map, exposure index map, and vulnerability index maps, the following Map shows the resultant risk map for the municipality of Guiguinto.

**MAP 16- RISK MAP**

COMPREHENSIVE LAND USE PLAN 2019-2027

**RISK MAP****LEGEND**

- Municipal Boundary
- Barangay Boundary
- ===== North Luzon Expressway
- National Road
- Provincial Road
- Municipal Road
- Barangay Road
- NIA Road
- Railroad Right of Way
- ===== River Network/Creeks/Canals
- Very Low
- Low
- Moderate
- High
- Very High



SCALE 1:35,000

Prepared by:

Municipal Planning and Development Office  
Municipal Government of Guiguinto

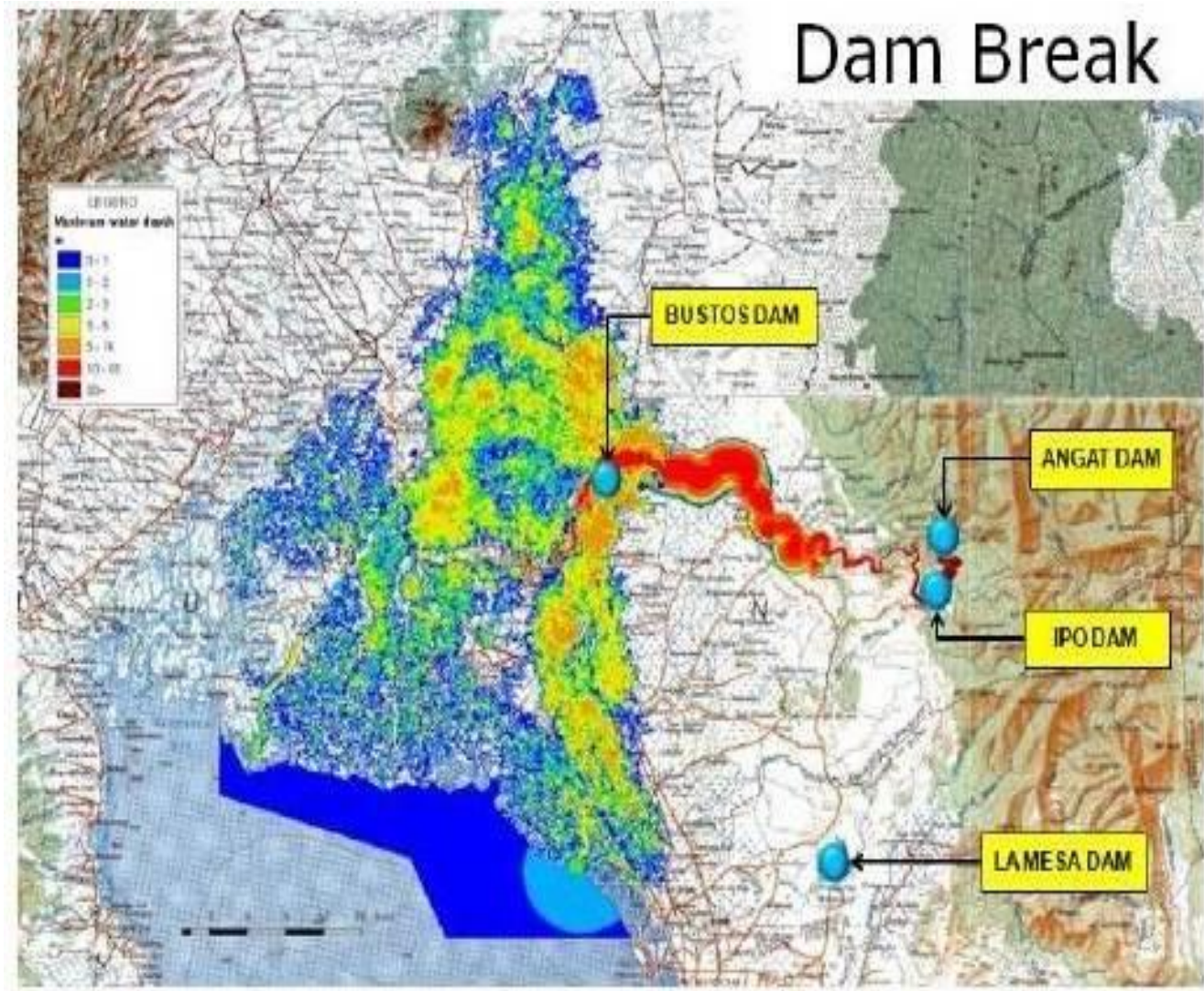
March 2020

Source: Guiguinto 2020





## MAP 17- DAM BREAK INUNDATION MAP



*Dam Break Inundation Map due to 7.2 Magnitude Earthquake*



TABLE 49- SUMMARY OF VULNERABILITIES AND CAPACITIES

Hazard Aspect	Vulnerabilities	Capacities
<b>PHYSICAL</b>		
	<ul style="list-style-type: none"> <li>- Guiguinto's Sewer and Canal System really needs major improvements to say the least</li> <li>- All the 14 Barangays of Guiguinto are still dependent on the Municipality's initiative on Garbage Disposal</li> <li>- Lack of equipment specially on the 14 Barangays</li> <li>- Due to the Geographic location of Guiguinto, one major concern For us are the constant cases of vehicular accidents.</li> </ul>	<ul style="list-style-type: none"> <li>- Generally, Guiguinto is very much accessible to all its neighboring towns, cities</li> <li>- Identified hazard/risk areas</li> <li>- equipage of MDRRM Office is on process, in fact, the said office just recently had its initial purchase of equipment</li> <li>- MOBILE CLINIC-(proposed)</li> <li>- MDRRMO is a Plantilla Position, systems is in place, though it's a work in progress</li> </ul>
<b>SOCIAL ORGANIZATION</b>		
	<ul style="list-style-type: none"> <li>· Low participation of vulnerable groups and children on DRR.</li> <li>· Ordinances on Proper waste segregation/waste disposal and similar issuances are not strictly implemented</li> <li>· 5% appropriation is lacking to address vulnerabilities</li> <li>- Scarcity on Volunteer Groups/ volunteer personnel</li> </ul>	<ul style="list-style-type: none"> <li>· little by little we are able to tap vulnerable groups specifically children, programs for school base activation of Junior BDRRM Volunteers are set to unfold this school year</li> <li>· Coordination between Executive and Legislative Bodies</li> <li>· Strong support to MDRRMO Guiguinto by Atty. Agatha Paula A. Cruz.</li> <li>- MDRRMO Guiguinto is on the verge of organizing BDRRM Volunteers to fill in the gaps to accommodate Other areas of concern.</li> <li>- ENACTMENT OF SEVERAL ORDINANCES               <ul style="list-style-type: none"> <li>a. mandatory installation of Fire Hydrants on all government agencies and institutions</li> <li>b. Schedule of garbage collection, (Monday-Nabubulok, Tuesday-Di Nabubulok)</li> </ul> </li> </ul>
<b>MOTIVATIONAL /ATTITUDE</b>		
	<ul style="list-style-type: none"> <li>- Passivity (in the communities) which we may relate to the fact that Guiguinto is indeed BLESSED of not being a calamity prone area.</li> <li>- Lack of knowledge/awareness (in the communities)</li> <li>- Ningas Cogon is still embedded on most of Guiguitenos,</li> </ul>	<ul style="list-style-type: none"> <li>· LGU and barangay officials are already knowledgeable in</li> <li>· DRRM; Organized MDRRM,</li> <li>· BDRRMC</li> </ul>

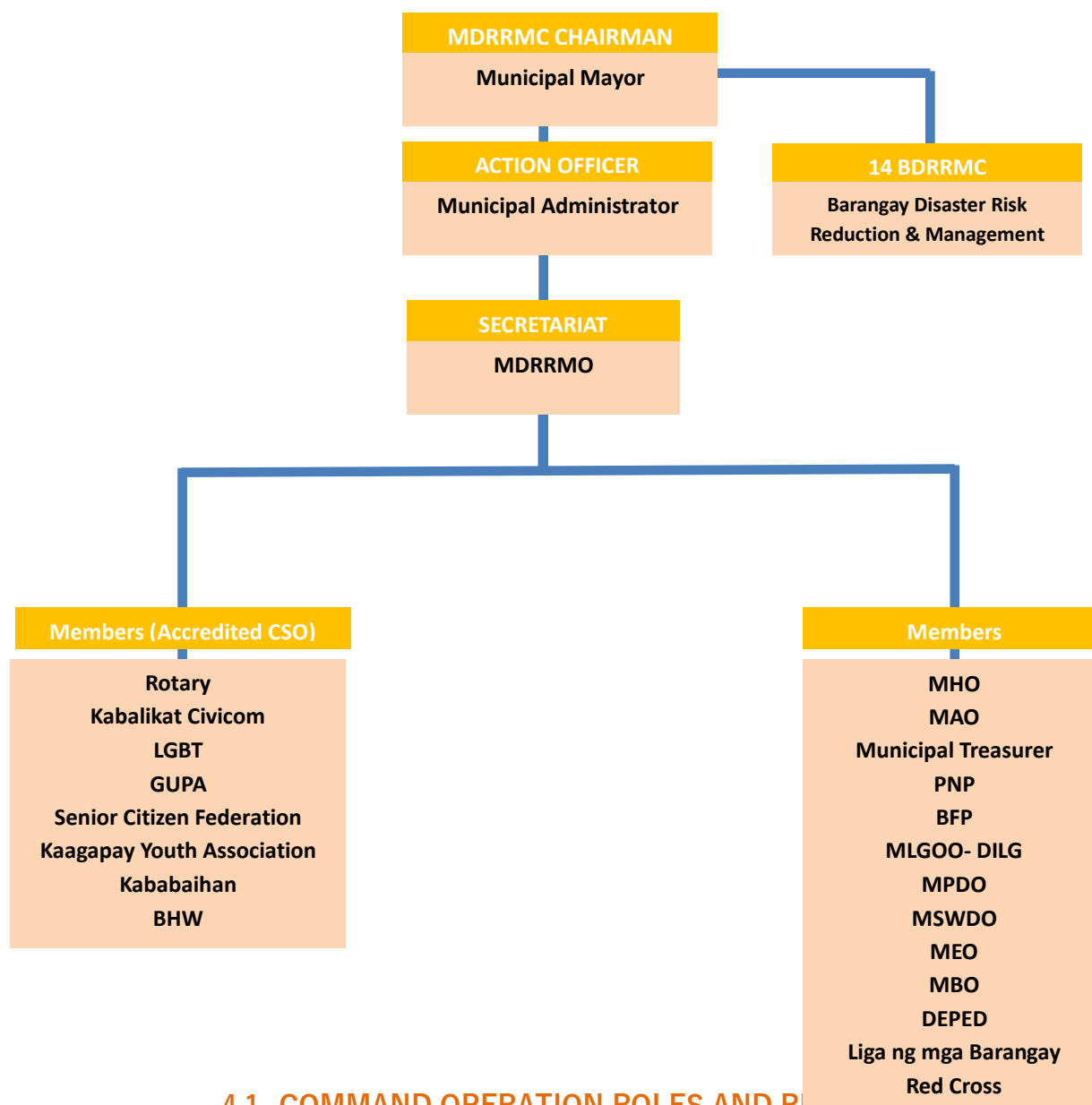
## CHAPTER III GUIGUINTO MDRRM PLAN

### 3.0 ORGANIZATION AND STRUCTURE OF MDRRMO/MDRRMC GUIGUINTO

Our Municipal Mayor heads the MDRRM Council and act as its chairman. Directly under our LCE is our Municipal Administrator as Action Officer. Meanwhile, our MDRRM Office act as secretariat. Please refer to the diagram below to see the offices composition of the council.

### a) GUIGUINTO MDRRM COUNCIL ORGANIZATIONAL STRUCTURE

**FIGURE 6 MDRRM GUIGUINTO Organizational Structure**



### 4.1 COMMAND OPERATION ROLES AND RESPONSIBILITIES

The Incident Command System is a standardized, on-scene, all risk incident management

concept. ICS allows personnel from the Municipality to act as ONE. The users is allowed to adopt an integrated organizational structure to match the needs of a certain event on incidents. Below are the basic position with their respective roles.

**a) GUIGUINTO MDRRMC INCIDENT COMMANDER (Chairman)**

- Provides overall leadership for incident response
- Takes policy direction from Responsible Official and establishes incident objectives
- Delegates authority to others
- Ensures incident safety
- Maintain liaison with agencies participating in the incident
- Has overall responsibility at the incident or event. Sets objectives and priorities;

**b) SAFETY OFFICER (MDRRMC Action Officer)**

- Monitors safety conditions and develops measures for assuring safety of all assigned personnel.

**c) INFORMATION OFFICER**

**(Information /Communication /Secretariat/Reporting/Documentation)**

- Represents and advises the Incident Command.
- Manages on-scene media and public inquiries.
- Public Information includes messages about:
  - Lifesaving measures
  - Evacuation routes
  - Threat and alert system notices
  - Other public safety information

**d) LIAISON OFFICER**

- Point of contact for other agency representative involved in incident of event. Helps in coordinating their involvement

**e) OPERATION SECTION (Plans and Operations)**

- Develop the tactical objectives & organization.
- Conducts the tactical operations to carry out the plans:
- Directs all resources

**f) PLANNING SECTION**

- Develops the action plan to accomplish the objectives;
- Collects and evaluates information ;
- Maintains resource status

**LOGISTIC SECTION (Resources Mgt.)**

- Provides resources & all other services needed by the incident responders

**g) FINANCE/ADMIN SECTION**

- Monitors costs related to incident.
- Provides accounting, procurement, time recording and analysis.

**h) HEALTH**

- Provides direct service and/or technical assistance as maybe necessary.
- Scouts and expands contacts with Hospital, clinic, sanitary and other health institution that will be made available during emergency periods and support in the activities of vulnerable sector.

**i) TRANSPORTATION, EVACUATION AND RELIEF**

- Assists in providing transportation facilities to transport relief, supplies, personnel and disaster victims.
- Coordinates with other agencies for integrated disaster relief operations.
- Accredits stores/suppliers and distributes donated goods.

**3.2 MDRRMO GUIGUINTO PLANNING MATRIX****3.2.1 I'M READY EARLY WARNING SYTEM**

The purpose of early warning systems is to detect, forecast, and when necessary, issue alerts related to impending hazard events. The MDRRMC has installed an early warning monitoring system for the Municipality called the Community-based Flood Mitigation Management Program (CBFMMP), and Guiguinto is significantly given as such.

The purpose of the program is to have a non-structural, community-based holistic approach to flood disaster mitigation aspects. Practically, the program encompasses hydrological monitoring, information exchange and warning to the community of a sub-basin area within the Guiguinto River Basin, particularly the river systems within the Municipality of Guiguinto, the project is composed of a network of rainfall which is located in Barangay Panginay, Malis, Poblacion & Ilang-Ilang and water level monitoring stations and flood markers located strategically within the Guiguinto river basin and a communication system for data and information transfers between the monitoring stations, the municipal /barangay disaster action teams thru its trained volunteers, and the operation center. The CBFMMP, its use and benefits was also communicated to LGUs and vulnerable groups as well as the measures the people can take to prepare for and mitigate the adverse impacts of floods in their locality.

Aside from this, MDRRMO Guiguinto also relies on Social Media and constantly follows FB Pages/ accounts by DOST PAGASA, I'M READY, PDRRMO and other relevant websites. We at MDRRMO Guiguinto monitors, repost and update the people of Guiguinto on the latest and up to date Weather Bulletins.

On the next pages particularly on Table 50, a summary of the early warning system is presented.

The MDRRMC also recognizes the efforts of volunteers, who continuously perform readings of rainfall and water levels, recording and transferring of data and submission of reports.

**TABLE 50- MDRRMO GUIGUINTO EARLY WARNING SYSTEM (FLOOD o BAHÁ)**

MDRRMO GUIGUINTO EARLY WARNING SIGNAL (FLOOD o BAHÁ)					
ALERT LEVEL	SITWASYON	WARNING SIGNAL	MGA AKSYON DAPAT ISAGAWA NG PAMILYA	MGA AKSYON DAPAT ISAGAWA NG MDRRMC GUIGUINTO	PERSON IN CHARGE
			Ihanda ang Go Bag	pag momonitor ng bagyong paparating	MDRRMC Guiguinto at mga Barangay Captain
			Kumpunihin ang mga sira sa bahay	pagpupulong ng mga miyembro ng BDRRMC	BDRRMC



0	Wala pang pag-ulan sa barangay		Magdasal	Paglilinis ng mga kanal, estero atbp daanan ng tubig	MERALCO
			Check ang bawa't isang myembro ng pamilya	pagpuputol sa mga mahahabang sanga ng Puno	LGU GUIGUINTO-GSO, ENGINEERING
1	1 feet na baha sa high risk area	COORDINATE BDRRC paggamit ng mobile radio.	pagtataas ng mga gamit	PDRA paghahanda ng evacuation center	MDRRMC Guiguinto Action Officer at mga Brgy. Captain
	30 min. – 1hr	Paggamit ng social media FB page	pagtataas ng mga kulungan ng hayop o paglipat sa mataas na lugar	pagpupulong ng BDRRC	BDRRC
	Malakas at tuloy-tuloy na pag-ulan		sand bagging	monitoring sa sitwasyon ng bagyo	Health Worker
			Family disasters plan	coordination sa PDRRC/PAG-ASA	Barangay Tanod Mother Leader
2	2 feet sa high risk area	Paga-anunsyo sa lahat ng labing -apat (14) na Barangay gamit ang megaphone, mobile radio, txt brigade.	pagdaragdag ng sand bagging	nagbibigay na ng advisory na lumikas na ang mga pamilya	MDRRMC Guiguinto at mga Brgy. Captain
			naghahanda na rin ang mga nasa medium at low risk area	Evacuation center management	BDRRC
			lumilikas na sa evacuation center ang mga nasa high risk area	rescue sa high risk area, binibigyan ng prioridad ang mga bata, buntis, pWD's at senior citizen.	PNP Guiguinto BFP Guiguinto
			lumilipat na sa kapit-bahay o kamag-anak na nasa mataas na lugar nagpapatay na ng mga switch o linya ng kuryente	Pre-emptive evac.  Activation ng MDRRC /BDRRC	MSWDO
3	3 to 4 feet ang tubig sa high risk area	Pagikot o bra-barangay na babala gamit ang rescue vehicle. paggamit na sirena sa loob ng 3 minuto na tuloy-tuloy	lumilipat na ang mga nasa medium risk	Activation of DOC. Evacuation center management	MDRRMC Guiguinto at mga Brgy. Captain
	-pag-apaw ng lamesa Dam		tumutulong sa pagluluto at pagpapanatili sa evacuation center	pagpapatuloy sa rescue operation	BDRRC
	-pag-apaw ng tulyahan river		force evacuation sa mga nasa high risk	coordination at reporting sa PDRRC	PNP Guiguinto BFP Guiguinto
	-magdamag na pabugso-bugso ang pag-ulan			koordinasyon sa MERALCO para sa pagputol sa linya ng kuryente	MSWDO  private sector MERALCO

Source: MDRMO Guiguinto

TABLE 51- MDRMO GUIGUINTO EARLY WARNING SYSTEM (EARTHQUAKE O LINDOL) – source MDRMO

MDRMO GUIGUINTO EARLY WARNING SIGNAL ( EARTHQUAKE o LINDOL)					
ALERT LEVEL	SITWASYON	WARNING SIGNAL	MGA AKSYON DAPAT ISAGAWA NG PAMILYA	MGA AKSYON DAPAT ISAGAWA NG MDRRC GUIGUINTO	PERSON IN CHARGE

<b>BEFORE</b>			Ihanda ang Go bag lalo na sa mga bata Pagpapatibay ng bahay Family Preparedness Plan	Pagsasagawa ng earth quake drill Pamimigay ng IEC Materials Pagsasagawa ng mga Trainings o Seminar	MDRRMC Guiguinto PDRRMC RED CROSS Mga Barangay Captain BDRRMC
<b>DURING</b>	May pagyanig ng lupa at aftershock KALMADO		DUCK, COVER and HOLD Paghahanap ng OPEN SPACE	Assessment of the Current Situation Coordination with PDRRMC & PhilVocs	MDRRMC Guiguinto
<b>AFTER</b>	<b>KALMADO</b>		Paghahanap sa Pamilya Pagcheck kung safe ang bahay Makipag-ugnyan sa kinauukulang barangay na nakakasakop.	Paglalagay ng command post Pagsasagawa ng Search and Rescue Pagpupulong ng BDRRMC ng apektadong Barangay Koordinasyon sa PDRRMC	MDRRMC Guiguinto BDRRMC Mga Barangay Captain PNP Guiguinto BFP Guiguinto ARMY LGU Guiguinto-GSO Engineering

Source: MDRRMO Guiguinto

TABLE 52- -PLANO SA PAGLIKAS

BARANGAY	Public	Capacity	Day Care	Capacity	Covered	Capacity	GMACC	Kanlungan at	Municipal
----------	--------	----------	----------	----------	---------	----------	-------	--------------	-----------

		Schools	(FAMILY)	Centers	(FAMILY)	Court	(FAMILY)		Kusina ng Bayan	Hall
1	Cut cut	☑	95	☑	5-6	☑	100	500	50	200
2	Daungan	☑	54	☑	5-6	✗				
3	Ilang- Ilang	☑	106	☑	5-6	☑	100			
4	Malis	☑	540	☑	5-6	✗				
5	Panginay	✗		☑	5-6	✗				
6	Poblacion	☑	437	☑	5-6	✗				
7	Pritil	☑	132	☑	5-6	✗				
8	Pulong Gubat	☑	51	☑	5-6	✗				
9	Sta. Cruz	☑	236	☑	5-6	☑	100			
10	Sta. Rita	☑	355	☑	5-6	✗				
11	Tabang	☑	196	☑	5-6	✗ ☑				
12	Tabe	☑	142	☑	5-6		100			
13	Tiaong	☑	210	☑	5-6	✗				
14	Tuktukan	☑	299	☑	5-6	✗				
			2753		84		400	500	50	200
TOTAL										4,087

Source: MDRMO Guiguinto



**IMPORTANT  
NOTES**

If the situation does not permit for Barangay Service Vehicles to accommodate the transfer of evacuees from their respective Barangays going to the secondary or MAIN Evacuation Centers, LGU GUIGUINTO is very much equipped to facilitate such transfers.

All they have to do is to inform our OPCEN and Service Vehicles from the Municipality shall arrive in minutes. PICK UP POINTS will be on their Respective Barangay Halls.

All evacuation centers are accessible to people either by walking or riding small to medium size vehicles, however if the need arises, ALL Barangays are equipped with service vehicles to transfer them to the Secondary Evacuation Centers /Main Evacuation Centers.

### 3.2.2 EVACUATION CAMP STATIONS

TABLE 53- EVACUATION CAMP-STATIONS

ESTASYON/ SERVICE AREA	ANO ANG MATATAGPUAN DITO O ANU ANG GINAGAWA DITO	SINO ANG DAPAT NINYONG LAPITAN
1. Matutuluyan at akomodasyon	Isang lugar kung saan puedeng manirahan ang mga pamilya.	Evacuation camp manager  Tent, Pamahalaang local,

ESTASYON/ SERVICE AREA	ANO ANG MATATAGPUAN DITO O ANU ANG GINAGAWA DITO	SINO ANG DAPAT NINYONG LAPITAN
		Mga pamilyang naapektuhan
2. Opisina o himpilan ng tagapamahala sa kampo	<ul style="list-style-type: none"> <li>Isang opisina o himpilan ang dapat maitaguyod sa bawat evacuation center.</li> <li>Ang opisina o himpilan ay dapat na may sapat na pagkilala at nakikita ng lahat.</li> </ul>	Registration, papel, ballpen , Listsahan ng mga pamilyang nasa evacuation area
3. Palikuran at paliguan	<ul style="list-style-type: none"> <li>Dapat na may ilaw, pwedeng ikandado mula sa loob, at mayroong sapat na daluyan ng hangin.</li> <li>Disensyo: Depende sa liit/lawak ng lugar, uri ng lupa, pinagkukunan ng tubig, kakayanan na panatilihin ang kaayusan, lokal na nakasanayan, at mapagkukunan ng gamit.</li> <li>Dapat na suriin muna ng mga tagapamahala bago gamitin</li> </ul>	Bantay na tanod
4. Child-Friendly Spaces (CFS)	<ul style="list-style-type: none"> <li>Dapat ay may sapat na lugar para sa mga gawain ng mga bata tulad ng paglalaro.</li> <li>CFS ay dapat na malapit sa palikuran na para sa batang babae at lalaki.</li> </ul>	Mga Laruan, bata, day care worker
5. Lugar para imbakan	<ul style="list-style-type: none"> <li>Isang lugar kung saan ang mga relief goods (pagkain at hindi pagkain) ay pwedeng iimbak o ilagay na hindi mapupuntahan ng daga o insekto.</li> </ul>	Relief and Supply committee, volunteers, relief goods,
6. Lugar para sa paglalaba	<ul style="list-style-type: none"> <li>Isang lugar na maaring paglabahan ng mga</li> </ul>	Purok leaders, Gamit

ESTASYON/ SERVICE AREA	ANO ANG MATATAGPUAN DITO O ANU ANG GINAGAWA DITO	SINO ANG DAPAT NINYONG LAPITAN
	kasuotan	panglaba
7. Patubig	<ul style="list-style-type: none"> <li>Lugar kung saan maaring makakuha ng ligtas at malinis na tubig</li> </ul>	Supply and WASH committee
8. Kalusugan	<ul style="list-style-type: none"> <li>klíník at kwarto para sa pagpapasuso</li> <li>mga gamot, at mga kagamitan</li> <li>serbisyo ano mang oras 24/7</li> <li>'medical mission'</li> </ul>	Barangay Health worker, doctor, nurse, midwife, mga nanay at sanggol
9. Kwarto para sa mag-asawa	<ul style="list-style-type: none"> <li>Pribadong kuwarto sa may isang sulok ng evacuation center para sa mga mag-asawa</li> </ul>	Mag-asawa
10. Probisyon para sa pamamahala ng mga alagang hayop na pag-aari ng mga nagsilikas	<ul style="list-style-type: none"> <li>Isang lugar kung saan ligtas at may bantay na maaring panandaliang itago ang mga nailikas na gamit at mga alagang hayop</li> </ul>	D.A., Barangay tanod, Security Committee, mga kagamitan at importanteng dokumento, mga alagang hayop
11. Isolation Area	<ul style="list-style-type: none"> <li>Lugar ng mga may sintomas ng sakit o Virus tulad ng COVID-19</li> </ul>	MHO, MDRMO

Source: MDRMO Guiguinto

## GUIDELINES ON EVACUATION CENTER COORDINATION AND MANAGEMENT FACILITIES

- Shelter and Accommodation
- Isolation Area
- Camp Management Desk Office



- Toilets and Bathing Areas
- Child-friendly Spaces
- Storage Areas
- Laundry Spaces
- Water Spaces
- Health Facilities
- Couples Room
- Provision for Management of livestock and domestic animals owned by evacuees

### **BASIC SERVICES**

- Food
- Nutrition
- Protection
- Water, Sanitation and Hygiene

### **REGISTRATION AND INFORMATION MANAGEMENT**

- Regular consultation and meetings with evacuees
- Maintenance & care of EC facilities
- Mobilization of volunteers
- Sharing of resources among LGUs

### **IMPORTANT ISSUES THAT IS RELEVANT TO ALL SECTORS**

1. Children
2. Older People
3. Persons with Disability
4. Gender
5. Culture
6. Protection
7. HIV/ AIDS
8. Environment

### **EVACUATION COMMITTEE**

1. Cleanliness
2. Health
3. Education
4. Food and Non-food
5. Logistics

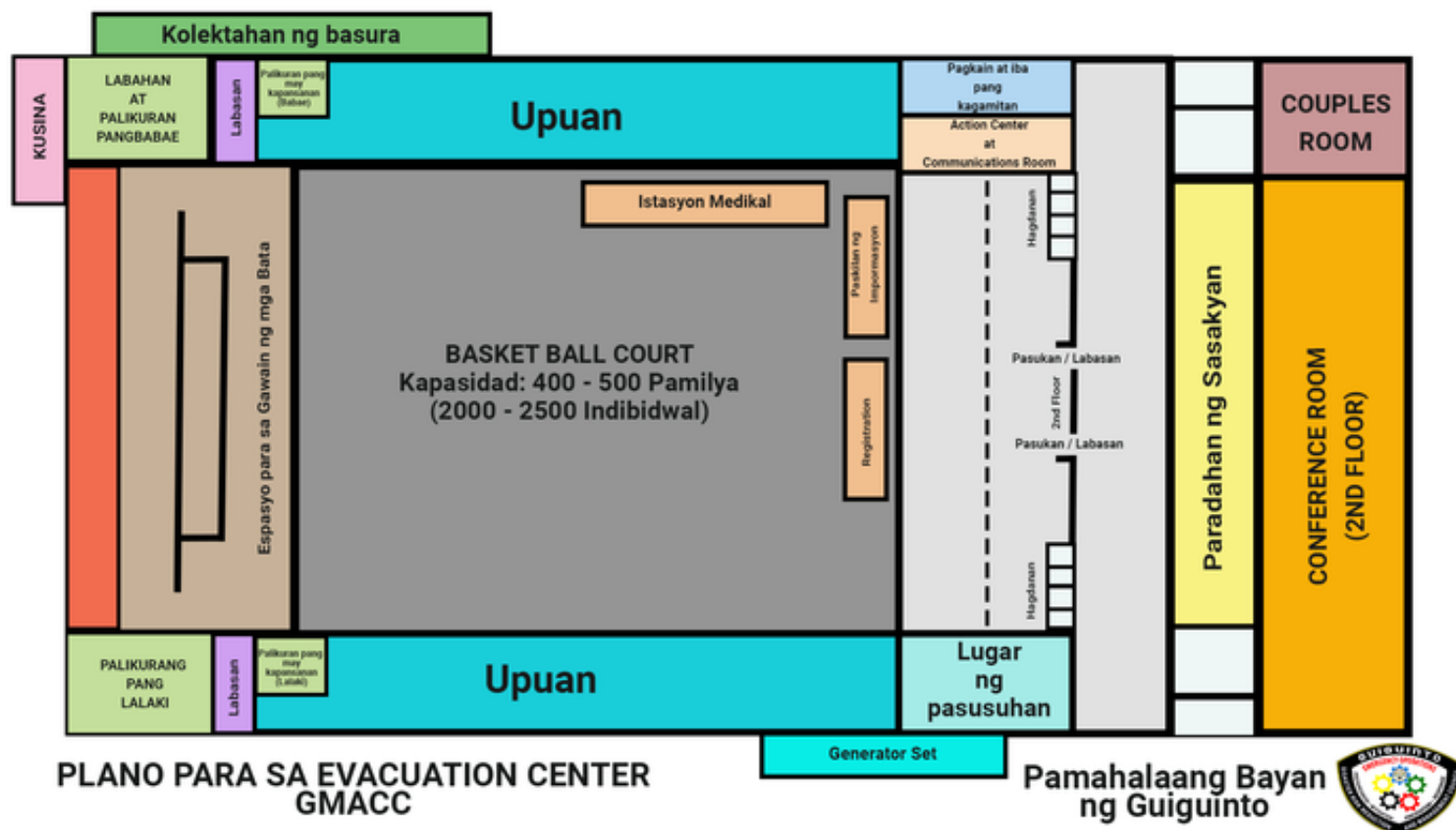
6. Protection, Safety and Security
7. Psychosocial
8. Gender sensitivity

**TABLE 54 EMERGENCY STANDARDS**

INDICATOR	STANDARDS
FOOD	500 g person per/day
WATER	7.6 L per person/day
SITE SPACE	< sq. mtrs. per person
SHELTER	<3.5 mtrs per person
LATRINE	1 Unit/ 20 persons or 1/5 person family
FAMILY KITS	1 unit/ 5 person family
BLANKET	1:1 ratio

**FIGURE 8-EVACUATION PLAN- GMACC**

**Guiguinto Municipal Athletic and Cultural Center**  
**Poblacion, Guiguinto, Bulacan**



### 3.2.3 FAMILY REUNIFICATION PLAN

#### ANO NGA BA ANG ATING DAPAT TANDAAN BILANG ISANG INDIBIDWAL AT MAGING ISANG PAMILYA HABANG MAY PANGANIB?

- Maghanda at huwag kakalimutan dalhin ang “Go Bag” (survival and hygiene kit)
- Tiyaikin na alam ng lahat ng myembro ng pamilya kung saang lugar magkikita-kita o saan ang “pick up point”
- Tukuyin ang inyong mga pangangailan.
- Mahahalagang gamot o gamit, tulad ng “wheelchairs”, “hearing aids”, “crutches” at iba pa.
- Tanungin ang inyong mga sarili kung paano ito matutugunan nang patuluy-tuloy pagkatapos ng kalamidad.
- Ilagay ang mga kagamitan sa bahay sa mataas na lugar.

- Ilagay ang mga hayop sa mataas na lugar.
- Lumipat sa ligtas na lugar bago pa bumaha
- Ang bawat myembro ng pamilya ay dapat na alam ang “DROP, COVER, and HOLD” kapag may malakas na pag-uga.
- Ang lahat ng myembro ng pamilya, bata man o matanda, ay dapat na alam kung saan ang ligtas na lugar na maaari nilang puntahan (malawak na espasyo para sa lindol at mataas na lugar para sa tsunami)
- Dapat may paraan kung paano kukunin o susunduin ang mga batang may kapansanan.
- Alamin kung ano ang maaring mangyari. Maging alerto.
- Magkaroon ng plano sa sambahayan para sa kalamidad at sa oras ng panganib. Isa alang-alang ang lahat na miyembro ng sambahayan.
- Bawasan ang mga maaaring sanhi ng peligro sa loob at labas ng bahay—maging “structural” o “non-structural” man ito.
- Subukang isagawa ang mga hakbang na nakasaad sa plano.
- Maghanda ng mga supplies na magtatagal ng isang linggo. Maghanda ng kagamitan sa paglikas.
- Makipag-ugnayan sa mga kasama sa trabaho, paaralan, at komunidad sa pagtatasa ng mga peligro at pagbuo ng plano para bawasan ang mga ito, at para makapag-handa sa pagtugon.
- Gumawa ng plano para sa pagkikita-kita muli kung magkahiwa-hiwalay man

**ANO NGA BA ANG ATING DAPAT TANDAAN BILANG ISANG INDIBIDWAL AT  
MAGING ISANG PAMILYA PAGKATAPOS NG PANAGNIB?**

- Magmasid at tignan ang mga nasirang kagamitan.

- Magreport sa kinauukulan kung sakaling may mga delikadong kagamitan na maaring pagmulan ulit ng panganib.
- Maglinis ng paligid.
- Magkaroon ng listahan ng mga nasirang kagamitan.
- Kung sakaling may nawalang kapamilya maaring lumapit sa kinauukulan upang makatulong sa paghahanap.
- Makipagugnayan sa barangay sa mga detalye ukol sa paunang tulong.
- Magkaroon ng briefing or psycho-social first aid sa mga na trauma o naapektuhan na mga mamayanan.

**ANO NGA BA ANG ATING DAPAT TANDAAN BILANG ISANG INDIBIDWAL AT MAGING ISANG PAMILYA PAGKATAPOS NG PANAGNIB?**

- Tumulong sa mga aktibidad ng barangay upang maging normal ulit ang pamayanan.
- Ipatupad ang bayanihan system kung saan mapapataas ang moral ng mga ka barangay pagkatapos ng kalamidad.
- Ipagpatuloy pa din ang mga okasyon gaya ng mga fiesta, pasko o iba pang nakagawiaang pagdidiwang upang mas mabilis manumbalik pa din ang dating pamumuhay.
- Iupdate ang mga plano base sa mga natutunan sa naranasan.
- Ipagpatuloy pa din ang mga okasyon gaya ng mga fiesta, pasko o iba pang nakagawiaang pagdidiwang upang mas mabilis manumbalik pa din ang dating pamumuhay.

## INFECTIOUS DISEASE OUTBREAK

### GOALS

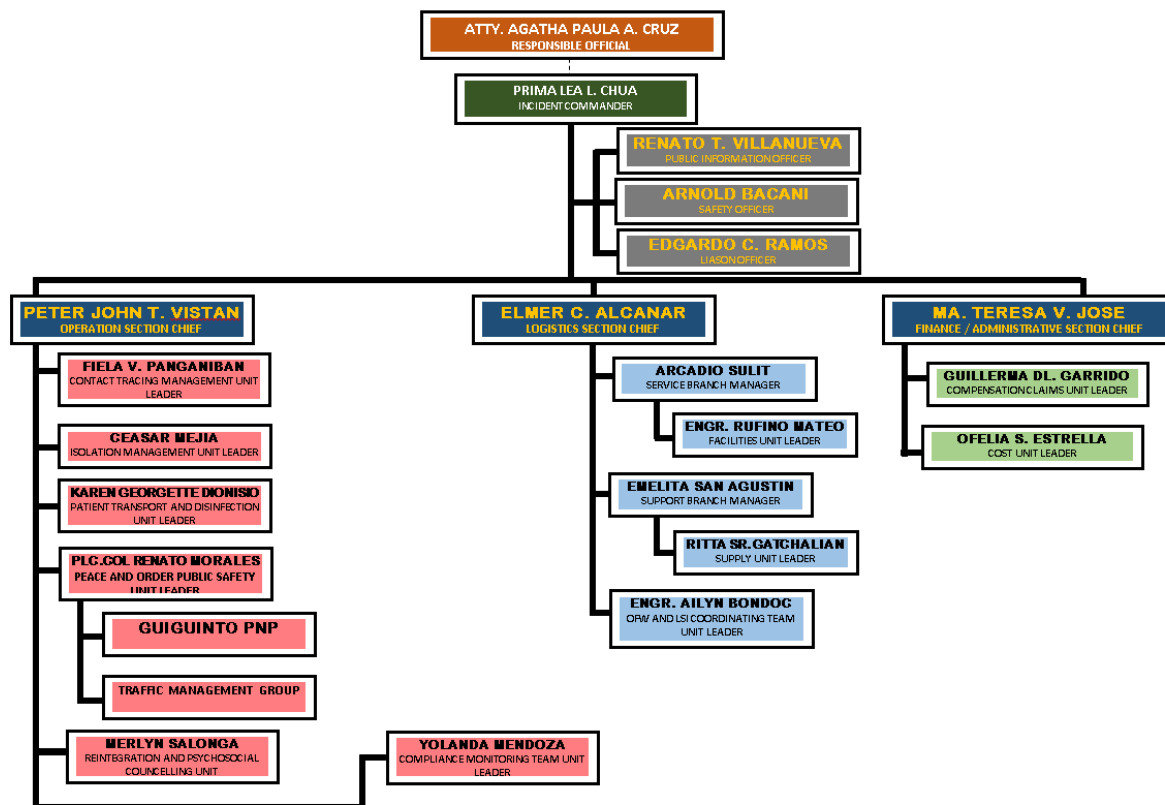
- \* To lessen the susceptibility of the constituents to COVID-19 risks through the formulation and implementation of a comprehensive contingency plan for worst case outbreak of disease;
- \* To provide appropriate response and counter measures to prevent further spread in the community;
- \* To activate a response mechanism for safety transfer and management of patients with suspected/ confirmed cases while preventing further spread;
- \* To guarantee that all involved stakeholders shall abide to the basic principles of transparency and accountability in resources and fund utilization during outbreak operation;
- \* To ensure smooth and effective coordination and partnership between the Municipal Government and the BDRRM Committees, Government Agencies, Non-Government Organizations and Civil Society Organizations.

### OBJECTIVES

- \* Limit human-to-human transmission among close contacts, preventing transmission amplification events, and preventing further community spread;
- \* To mobilize effective actions and resources during a disease outbreak;
- \* Identify, isolate and care for patients early, including the provision of optimized care for infected patients;
- \* To design a feasible plan that is continuously tested and updated;
- \* To lessen morbidity and mortality rate in Guiguinto;
- \* Communicate critical risk and event information to all communities and counter misinformation;
- \* Ensure availability of resources in response to the incident;
- \* To institute implementing guidelines in disease prevention and control mechanism. To achieve such objectives, the municipality in the subsequent chapter defines the overall coordination and command arrangements and sectoral plans



## Organizational Arrangements – Incident Management Team (IMT)



Department of Health as mandated by the 1986 Philippine Constitution is the government agency responsible for the provision of health services to the Filipino people, and leads the health cluster comprised of the different NGAs and NGOs in responding to health threats. Coordination, collaboration and communication is done through the Inter-Agency Task Force on Emerging Infectious Disease (IATF-EID) led by DOH per Executive Order #2014- 168. Down to the local level, the Municipal Health Office shall lead in the promotion, protection and preservation of the health of the community as counterpart of the Department of Health. The Municipal Mayor shall create an Inter-Agency Task Force on COVID-19 wherein the MHO will be the lead agency comprising of the relevant agencies. The MHO shall be closely collaborating with the above identified response sectors in the preparedness and response to a possible COVID-19 outbreak.

## Anatomy of the Hazard for Infectious Disease

<b>ROOT CAUSES</b>	<b>EARLY WARNING SIGNS</b>	<b>TRIGGERING FACTORS</b>	<b>EXISTING MITIGATING MEASURES</b>
<ul style="list-style-type: none"> <li>• Presence of virus and pathogen that can cause diseases to human populations</li> <li>• Presence of novel coronavirus / COVID-19</li> </ul>	<ul style="list-style-type: none"> <li>• Advisory from national (Department of Health) and international (World Health Organization) health monitoring bodies</li> <li>• Presence of common symptoms in communities</li> </ul>	<ul style="list-style-type: none"> <li>• Highly-dense residential settlements</li> <li>• Highly-dense workplace</li> <li>• Poor public health protocols</li> <li>• Poor sanitation practices within communities</li> <li>• High transmission rate within communities</li> </ul>	<ul style="list-style-type: none"> <li>• Strict implementation of minimum public health protocols.</li> <li>• IEC on personal and community sanitation practices.</li> <li>• IEC on preventative measures communities and families can take.</li> <li>• IEC on management of patients affected by the virus and their support system.</li> <li>• Standardized protocols on management of patients and their families.</li> <li>• Stronger public health surveillance measures.</li> <li>• Strengthen community and municipal health systems and resources.</li> <li>• Capacity development for medical and community frontliners.</li> </ul>

The onset of COVID-19 in 2020 introduced health hazards to the public. With the spread of the virus from China to the country, it was inevitable that community transmission would happen in the municipality as well... Primary trigger for COVID-19 transmission and in any public health emergency are the presence of systems where virus transmission can happen easily. Highly dense residential settlements and workplaces are places where community transmission can easily take place. Poor sanitation practices within communal spaces and residences also contribute to low resistance to the virus. Presence of other health concerns, like respiratory ailments and lifestyle diseases also contribute to low immunity to virus. Mitigation measures adapted by the Municipality to address public health emergencies include strengthening community and municipality health systems; strong IEC campaign on preventative measures and adaption of minimum public health standards; standardized protocols on management of patients and other affected individuals, and capacity development for medical and community frontliners, which include doctors, nurses, emergency responders, and barangay health workers.

## SCENARIO GENERATION

With consultation with the MDRRMO Technical Working Groups, different scenarios were drawn to anticipate potential impact and losses when each hazard occurs. Contingency Plans and resource allocation are based on these scenarios.

<b>PARTICULARS</b>	<b>BAD</b>	<b>WORSE</b>	<b>WORST</b>
<i>General Description of Event</i>	<i>Isolated positive cases; whole province is under MGCQ</i>	<i>Positive cases leading to community transmission; whole province is under MECQ/GCQ</i>	<i>Increasing positive cases sustained by community transmission; whole province is under ECQ (most severe restrictions)</i>
<i>No. of Affected Individuals</i>	<i>112,889 based on census</i>	<i>112,889 based on census</i>	<i>112,889 based on census</i>
<i>No. of Dead</i>			
<i>No. of Injured</i>			
<i>No. of Missing</i>	<i>NA</i>		
<b>EFFECTS</b>			
<i>Transportation</i>	<i>NA</i>		<i>Public transportation are suspended</i>
<i>Livelihood/ Business</i>	<i>Loss of jobs for some workers; limited working hours;</i>	<i>Loss of jobs for some workers; limited working hours;</i>	<i>Loss of jobs for most workers are not considered as front liners or APOR; limited working hours; closure of some local businesses</i>
<i>Environment /Ecology</i>			<i>Increase in solid waste present in the community; increase in toxic and medical wastes that needs specific handling and disposal protocols present in the community</i>
<i>Agriculture</i>	<i>Limited hours for agricultural activities</i>	<i>Limited hours for agricultural activities; agricultural loss due to restrictions on transportation on goods, mobility of farm workers</i>	<i>Limited hours for agricultural activities; agricultural loss due to restrictions on transportation on goods, mobility of farm workers</i>
<i>Response Capacities</i>	<i>Additional workforce needed to provide response services</i>	<i>Additional workforce needed to provide response services; Food and cash assistance for families and individuals who lost jobs, cannot go to work</i>	<i>Additional workforce needed to provide response services; Food and cash assistance for families and individuals who lost jobs, cannot go to work</i>

**SECTORS RESPONSIBLE IN HANDLING INFECTIOUS DISEASE OUTBREAK**

Below is the proposed Command, Control, and Coordination arrangement:

<i>SECTOR</i>	<i>FOCAL</i>	<i>RESPONSIBILITY</i>
<i>Governance</i>	<i>Mayor's Office</i>	<ul style="list-style-type: none"> <li>* Establish a system of command and control for Guiguinto in case of outbreak</li> <li>* Serves as the Responsible Official (RO) when there is an infectious disease outbreak</li> </ul>
<i>Incident Management</i>	<i>MDRRMO</i>	<ul style="list-style-type: none"> <li>* Receives authority from the RO</li> <li>* Establishes the appropriate Incident Command System (ICS)</li> <li>* Approves and authorizes the implementation of the Incident Action Plan or Response Plan</li> <li>* Coordinates with key people and officials</li> </ul> <p>Reports process and updates on the operations to the RO</p>
<i>Health</i>	<i>MHO</i>	<ul style="list-style-type: none"> <li>* Ensure protection of lives and health properties.</li> <li>* To reduce the preventable mortalities and further morbidities resulting from COVID-19</li> </ul> <p>To maintain a heightened alert to suspicious COVID-19 cases to suspected/ confirmed case. Conduct contact tracing to the close contacts and ensure communication to the suspected/ confirmed cases. Monitor the health status of PUI/PUM</p> <ul style="list-style-type: none"> <li>* Ensure COVID-19 free community</li> </ul>
<i>Law and Order</i>	<i>GUIGUINTO MPS</i>	<ul style="list-style-type: none"> <li>* Ensure safety and security of lives and properties of affected population; and resource mobilization</li> <li>* Shall ensure to maintain peace and order</li> </ul>

3.2.4 MDRRMO GUIGUINTO ACTION PLAN

Proposed/Programs/ Projects/Activities	TIMEFRAME		Brief Description/Objective	Project Cost		
				2023	2024	2025
PREPAREDNESS						
Basic/ Standard First Aid and BLS-CPR	March	August	Explain the importance of Basic Life Support (BLS) & Perform first aid more effectively in an emergency situation Reissuance of ID from Red Cross	300,000.00	330,000.00	350,000.00
Emergency Medical Technician Course	January	July		150,000.00		150,000.00
Barangay & School Rescuelympics	March	July	Enhance skills and capacity of the Students/ Community	150,000.00	150,000.00	150,000.00
Fire and Earthquake Drill	January	December	Enhance skills and capacity of the Students/ Community	150,000.00	150,000.00	150,000.00
Water Search & Rescue (W.A.S.A.R.)	January	July	Increased level of skills in conducting operations in an aquatic disasters such as flood , drowning, etc.	150,000.00	150,000.00	150,000.00
Fire Olympics	March	March	Enhance skills and capacity of the 14 Barangays	250,000.00	250,000.00	250,000.00
Evacuation Management	January	December	Enhanced the capabilities of the MDRRM Personnel	200,000.00		200,000.00
Basic Collapsed Structure Search & Rescue (C.S.S.R.)/ High Angle Search & Rescue	July	December	Enhanced the capabilities of the MDRRM Personnel	150,000.00		150,000.00
Pre-Disaster Risk Assessment	January	December	Enhanced the capabilities of the MDRRM Personnel	150,000.00	150,000.00	150,000.00
Annual DRRMOs Target Setting & Year End Assessment	November	December	Enhanced the capabilities of the MDRRM Personnel	200,000.00	200,000.00	200,000.00
Rescuelympics	July	December	Enhanced the capabilities of the MDRRM Personnel	600,000.00	600,000.00	600,000.00
Fire Suppression with Hazardous Materials (HazMat) Management Seminar	January	May	Enhanced the capabilities of the MDRRM Personnel	150,000.00		150,000.00



Proposed/Programs/ Projects/Activities	TIMEFRAME		Brief Description/Objective	Project Cost		
				2023	2024	2025
Purchase/Printing of DRRM information materials, ads & signs, safety signage (DRRM fliers, books, booklet, poster manual, etc.) Installation/ Improvement of Early Warning Device and Public Address	January	December	Increased level of awareness and enhance skills and capacity of the community	1,000,000.00	1,000,000.00	1,000,000.00
MDRRM Office Building	January	March	Improve Accessibility and Response	3,000,000		
Purchase of medical supplies	January	December	Provided of appropriate supplies for immediate needs of the victims of disasters	500,000.00	500,000.00	500,000.00
Purchase of different equipment/tools for emergency operations	January	December	Provided of appropriate supplies for immediate needs of the victims of disasters	1,000,000	1,000,000	2,000,000
Procurement of Fire Truck	November	November			15,000,000	
Repair & Maintenance of Evacuation Center	January	December		400,000.00	400,000.00	400,000.00
Procurement of Rescue Truck	January	December			1,600,000.00	1,600,000.00
Procurement of Rescue Boat	January	December	Improvement of Response Capabilities and Disaster Mitigation	600,000.00		1,000,000.00
Procurement of Drone	July	July	High-end technology/ equipment and tools for immediate response and services		500,000.00	
Urban search and rescue (U.S.A.R.)	January	December			500,000.00	
First Aid Kit	January	December			500,000.00	500,000.00
Procurement of Uniforms for MDRRM Personnel (Safety Shoes, Tac Pants, overall suit, rash guard, jacket, Rain boots, Rain coat)	March	March			250,000.00	
Collapsible Tent	January	December			300,000.00	300,000.00
Procurement of Ambulance Vehicle	January	December			4,000,000.00	4,000,000.00
Enhancement Seminar/ Training for the Barangay DRRM Plans	January	December		50,000.00	50,000.00	50,000.00
Prevention & Mitigation						
School Hydrological Information Network (SHINE)	January	December	Enhance skills and capacity of the Students	200,000.00	200,000.00	200,000.00



Proposed/Programs/ Projects/Activities	TIMEFRAME		Brief Description/Objective	Project Cost		
				2023	2024	2025
Physical Infrastructure and Engineering Supports Construction Flood Control/Covered Canals	January	December	Lessen the adverse impacts of hazards through structural measures	2,000,000	3,000,000	3,000,000
Improvement of Central MRF for Climate Change Adaptation and Disaster Mitigation	January	December	To mitigate disaster by providing the municipality on effective garbage processing	3,000,000	3,000,000	3,000,000
Maintenance of Command Center	January	December	Improvement of Response Capabilities and Disaster Mitigation	1,350,000	1,350,000	1,350,000
Drainage Canal/ Flood Mitigation/ Dredging and Declogging of Rivers, Canals, Waterways	January	December		5,500,000.00	5,000,000.00	4,000,000.00
Sugod Guiguinto Command Center	January	December		4,000,000.00		4,000,000.00
Prevention & Mitigation						
Payment of Premiums on Calamity Insurance	January	December		600,000	1,000,000	1,000,000
Response						
Procurement of Fire Extinguisher	January	December	Provided of appropriate supplies for immediate needs of the victims of disasters	200,000.00		200,000.00
Expenses on different communications/equipment/devices	January	December	monitored weather updates/forecast and communication/	200,000	200,000	200,000
ONE Guiguinto Emergency Hotline Number	April	April	Establish Special Emergency Hotline Number	400,000	400,000	400,000
Stock-pile of NON-Consumable & Non-Perishable Goods/ Relief Goods	January	December	Provision of goods and medicines to the victims of disasters/calamities	1,000,000	1,000,000	1,000,000
Modification/ Repair of Rescue Vehicles				400,000.00	400,000.00	400,000.00
Establishment of Incident Command Post for motorists/tourists				300,000.00	300,000.00	300,000.00



# CHAPTER IV - SITUATIONAL ANALYSIS: SWOC



## CHAPTER IV Situational Analysis: SWOC

### 4.1 STRENGTHS, WEAKNESSES, OPPORTUNITIES, AND CHALLENGES

#### 4.1.1 PREVENTION AND MITIGATION

MITIGATION	STRENGTHS	WEAKNESSES	OPPORTUNITIES	CHALLENGES	FUTURE ACTIONS
<b>Early Warning</b>	<ul style="list-style-type: none"> <li>Early Warning System (Rain Gauges &amp; Sirens installed throughout the Municipality)</li> <li>CBFMP (Community Based Flood Mitigation Program)</li> </ul>	<ul style="list-style-type: none"> <li>Internal funding</li> <li>Only 4 Sirens installed</li> <li>Support/ participation of sufficient numbers of skilled observers</li> </ul>	<ul style="list-style-type: none"> <li>External funding for new equipment</li> </ul>	<ul style="list-style-type: none"> <li>Guidelines for providing benefits to community observers for CBFMP</li> </ul>	<ul style="list-style-type: none"> <li>Providing Automated Rain Gauges to all Barangays</li> </ul>
<b>Structural Measures</b>	<ul style="list-style-type: none"> <li>Upgrading of roads and retrofiting of bridges with provision of drainage</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient funds</li> </ul>	<ul style="list-style-type: none"> <li>Funding assistance from National Government for infrastructure project</li> </ul>	<ul style="list-style-type: none"> <li>Increasing risks due to climate change-existing structures pressured/ inadequate</li> </ul>	<ul style="list-style-type: none"> <li>Widening of roads and bridges</li> <li>Improvement of drainage system</li> </ul>
	<ul style="list-style-type: none"> <li>Dredging operation and construction of slope protections</li> </ul>	<ul style="list-style-type: none"> <li>Lack of equipment</li> </ul>	<ul style="list-style-type: none"> <li>Involvement of NGOs, NGAs, and other private institutions</li> </ul>	<ul style="list-style-type: none"> <li>River buffer zones sometimes being neglected</li> <li>Uncontrolled and informal settlements along high danger zones to hazards. Proper implementation of Zoning Ordinances.</li> </ul>	<ul style="list-style-type: none"> <li>Acquisition of modern dredging equipment</li> <li>Continuous dredging operation</li> <li>Maintenance of slope protection and provision of river dikes with check gates</li> </ul>
	<ul style="list-style-type: none"> <li>Infrastructures/buildings assessment and resiliency</li> </ul>	<ul style="list-style-type: none"> <li>Lack of manpower</li> </ul>	<ul style="list-style-type: none"> <li>Partnership with other government agencies and private sectors</li> </ul>	<ul style="list-style-type: none"> <li>Enactment of stricter local policy on the issuance of building permit</li> <li>Conversion/reclassification of agricultural lands resulting into drainage problems leading to floods.</li> </ul>	<ul style="list-style-type: none"> <li>Mandatory assessment of infrastructure to be enacted into law</li> </ul>
<b>Property Insurance Coverage</b>	<ul style="list-style-type: none"> <li>All MGG equipment buildings/ vehicles are properly insured</li> </ul>	<ul style="list-style-type: none"> <li>No upgraded insurance coverage</li> </ul>	<ul style="list-style-type: none"> <li>Upgrading of insurance coverage</li> </ul>	<ul style="list-style-type: none"> <li>Cost efficient insurance</li> </ul>	<ul style="list-style-type: none"> <li>Regular upgrading of insurance coverage</li> </ul>
<b>Safety Regulations</b>	<ul style="list-style-type: none"> <li>No Helmet, No Ride Policy</li> <li>No Plastic</li> <li>4 O'clock Habit</li> <li>Environmental Code of Bulacan</li> <li>Waste Segregation</li> </ul>	<ul style="list-style-type: none"> <li>Weak implementation &amp; improper practice of the Community</li> </ul>	<ul style="list-style-type: none"> <li>Orientation to community about the updates on public safety regulations</li> </ul>	<ul style="list-style-type: none"> <li>Long term and stricter implementation</li> </ul>	<ul style="list-style-type: none"> <li>Long term and stricter implementation</li> <li>Adopt and implement new regulations</li> </ul>



MITIGATION	STRENGTHS	WEAKNESSES	OPPORTUNITIES	CHALLENGES	FUTURE ACTIONS
<b>River System Improvement</b>	<ul style="list-style-type: none"> <li>Source of irrigation water</li> <li>Mapped out river systems</li> </ul>	<ul style="list-style-type: none"> <li>Silted rivers</li> <li>Improper waste disposal of factories and others</li> <li>Informal Settlers along river system</li> </ul>	<ul style="list-style-type: none"> <li>Supreme court en Banc on rehabilitation of Manila Bay</li> <li>Presence of relocation project for informal settler families</li> <li>Partnership with National Housing Authority thru the HARO</li> </ul>	<ul style="list-style-type: none"> <li>Political will of concerned officials in the implementation of Urban Development Housing Act of 1995 (RA 7279) and anti-squatting law and other related laws</li> <li>Relocation of informal settlers</li> </ul>	<ul style="list-style-type: none"> <li>Dredging, Clearing, Slope protection</li> <li>housing projects for informal settler families living in multi-hazard areas</li> </ul>
<b>DRRM and CCA Plans</b>	<ul style="list-style-type: none"> <li>DRRM/CCA recognized in MGG development policies/plan</li> <li>Updated information on risks and hazards</li> </ul>	<ul style="list-style-type: none"> <li>Support/ participation of Barangays in DRRM locally and municipal level</li> <li>Limited active programs to address increased risks from climate change</li> </ul>	<ul style="list-style-type: none"> <li>External funding and program support</li> <li>Participation of the barangays to the DRRM and CCA programs of the Municipality</li> <li>regular meetings, updates, and participation and provision of technical assistance</li> <li>Presence of Contingency Plan, LCCAP and DRRM Plan</li> <li>Participation in national climate change initiatives</li> </ul>	<ul style="list-style-type: none"> <li>Increasing risk from hazards and extreme events makes mitigation harder</li> </ul>	<ul style="list-style-type: none"> <li>Hiring of additional personnel</li> <li>Additional Training for staffs development</li> <li>Regular Information Education Campaign to Increase awareness among barangays to climate change impacts to help improve their mitigation activities.</li> <li>Update Contingency Plan, LCCAP and DRRM Plan</li> </ul>

## 4.1.2 PREPAREDNESS

PREPAREDNESS	STRENGTHS	WEAKNESSES	OPPORTUNITIES	CHALLENGES	FUTURE ACTIONS
<b>MDRRMC Secretariat</b>	<ul style="list-style-type: none"> <li>Training and capability building</li> <li>SHINe Program for Schools</li> <li>Experienced in previous disasters</li> <li>Support from PDRRMC, PGB Offices</li> <li>Well prepared disaster program</li> <li>MDRRMO capabilities (manpower) and equipment</li> <li>24/7 Operation Center</li> </ul>	<ul style="list-style-type: none"> <li>Only 2 permanent DRRM Officer</li> <li>Not all barangays are active in DRRM</li> <li>Community preparedness</li> <li>Limited manpower</li> </ul>	<ul style="list-style-type: none"> <li>Partnership with other National Agencies, NGOs, and private sector</li> <li>Donations from other agencies and private companies</li> <li>IEC activities and media promotion</li> <li>Family Preparedness Plan</li> </ul>	<ul style="list-style-type: none"> <li>Long term infrastructure projects</li> <li>Continuous implementation of DRRM programs</li> <li>Institutionalization of Municipal DRRM office with full time DRRM officer(s)</li> <li>intensification of information and education campaign</li> <li>DRRM plans though included in the CLUPs and CDP should be properly mainstreamed giving it an emphasis as another development sector.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of related DRRM infrastructure projects</li> <li>Hiring of additional manpower</li> <li>Construction of additional permanent evacuation centers</li> <li>Tree planting program</li> </ul>

### 4.1.3 RESPONSE

RESPONSE	STRENGTHS	WEAKNESSES	OPPORTUNITIES	CHALLENGES	FUTURE ACTIONS
	<ul style="list-style-type: none"> <li>functional evacuation center</li> <li>Active participation of the PNP, AFP, BFP to any disaster response</li> <li>Dedicated SUGOD Rescue Team</li> <li>Experienced in flood, Vehicular Accident rescue and relief good distribution</li> <li>MGG Department Heads trained in Rapid Damage Assessment Needs Analysis and ICS</li> <li>Relationship with Puregold for relief food supplies</li> </ul>	<ul style="list-style-type: none"> <li>Limited equipment/ logistics for towing, lifting, and transporting</li> <li>Insufficient trained Personnel for WASAR, rescue, and relief operations</li> <li>Communities refuse to evacuate when warned</li> <li>Additional vehicles for rescue and response</li> </ul>	<ul style="list-style-type: none"> <li>Support from business community for the procurement of equipment and logistics for WASAR, rescue, and relief operations</li> <li>Planned improvement of MDRRMO building (the Municipal EOC)</li> </ul>	<ul style="list-style-type: none"> <li>Enhance knowledge of disaster risks and vulnerabilities, coordination, supervision, and monitoring of disaster response</li> <li>Community empowerment and willingness to evacuate</li> <li>Mobilization of organizations and volunteers in relief operation</li> <li>Rapid Damage and Needs Analysis (RDANA) should be carried out immediately after disaster event</li> </ul>	<ul style="list-style-type: none"> <li>Conduct training, seminars, and drills for untrained Personnel on WASAR, rescue, CSSAR and relief operations</li> <li>Procure equipment for towing, lifting, and transporting</li> <li>Conduct ongoing public awareness and education through multi-media</li> </ul>

### 4.1.4 RECOVERY AND REHABILITATION

RESPONSE	STRENGTHS	WEAKNESSES	OPPORTUNITIES	CHALLENGES	FUTURE ACTIONS
	<ul style="list-style-type: none"> <li>Capable manpower</li> <li>Close coordination with barangays</li> <li>Existence of different agencies and organizations</li> <li>Community is supportive towards those affected</li> </ul>	<ul style="list-style-type: none"> <li>Funding</li> <li>Political intervention</li> <li>Lack of insurance for many individuals</li> </ul>	<ul style="list-style-type: none"> <li>Support agencies, foundations, partners</li> <li>Building back better can reduce risks</li> </ul>	<ul style="list-style-type: none"> <li>ensuring accurate damage reports</li> <li>Proper utilization of DRRM fund of barangay levels</li> <li>Political interventions</li> </ul>	<ul style="list-style-type: none"> <li>Training of barangay counterparts on damage/needs assessment</li> <li>Establish strong coordination with other funding agencies both private and government financial assistance</li> <li>Formulate guidelines/ criteria in the prioritization of rehabilitation programs</li> <li>Promote hazard information and climate change to ensure better recovery and rehabilitation decisions</li> </ul>

# CHAPTER V – THEMATIC AREA PLAN

## CHAPTER V THEMATIC AREA PLAN



## PREVENTION AND MITIGATION

LONG TERM GOAL	OBJECTIVES
<b>Avoid hazards and mitigate their potential impacts by reducing vulnerabilities and exposure and enhancing capacities of communities</b>	Reduce vulnerability and exposure of communities to all hazards
	Enhance capacities of communities to reduce their own risks and cope with the impacts of all hazards

Disaster Prevention and Mitigation provides key actions and activities around identifying and analyzing hazards, risk analyses, mainstreaming DRRM into development plans, and minimizing the impact of disasters in terms of casualties and damages. It underscores the need for sound scientific information and analysis of risks and hazards.

Many of the member agencies under the MDRRMO are responsible for aspects of prevention and mitigation, and it is the role of the MDRRMO to coordinate the activities of its members, the community and others to achieve long-term risk reduction.

### PREVENTION AND MITIGATION ACTIVITIES

#### Local Flood Forecasting and Early Warning Systems

The of early warning systems is to detect, forecast, and when necessary, issue alerts related to impending hazard events. In Guiguinto, the MDRRMO has installed an early warning monitoring system for the province called the DRRM Awareness & Early Warning Program.

The purpose of the program is to have a non-structural, community-based holistic approach to flood disaster mitigation aspects. Practically, the program encompasses hydrological monitoring, information exchange and warning to the community of a sub-basin area within the Guiguinto River, particularly the river systems within the Municipality of Guiguinto.

The MDRRMO also recognizes the efforts of volunteers at the Barangay level, who continuously perform readings of rainfall and water levels, recording and transferring of data and submission of reports.

#### Modernization of Community-Based Flood Mitigation Management Program

Through the tremendous efforts of MDRRMO headed by Atty. Agatha Paula A. Cruz, the Modernization of the DRRM Awareness & Early Warning Program was realized. At the Operation Center is the Sugod Guiguinto Command Center (SGCC) complete with a variety of state-of-the-art equipment and systems which will aid in monitoring a massive geography. It is known that closed-circuited televisions or CCTVs are enormously popular around the globe. This will provide real-time updates from a different place without undergoing a painstakingly long ride in order to check a certain location. The MDRRMO, for the past 3 years, has strategically put thirty (5) CCTVs in place across the Municipality along the Guiguinto River.

#### 1. Property Insurance Coverage

As part of mitigating measures, the Municipality of Guiguinto pays for property insurance of its buildings, vehicles and other properties, a practical way to mitigate the disastrous effects of calamities and avoid unexpected pressure against its local funds. This is also in adherence to a call for property insurance coverage against the perils of natural and man-made disasters and calamities as per NDCC Memorandum Circular 2003-21.

## 2. Safety Regulations

In adherence to the Building Code and Fire Code (PD 1185), the Municipality of Guiguinto supports and assists the BFP in the conduct of Fire Safety Inspection at the buildings of the Local Government of Guiguinto. Results and recommendations are discussed and acted upon.

## 3. Municipal Legislation

The Mayor issued Executive Orders to effectively carry out measures and P/P/As on disaster management. The MDRRMO also has its existing protocols - sets of guidelines in performing its duties. These protocols are updated regularly to meet the needs of victims of calamities.

## 4. Structural Measures

MDRRMO structural measures against flood in the Province include construction/repair and maintenance of dikes, levees, and other waterways.

## 5. DRRM Fund Investment Plan

The MDRRM Council has approved the DRRM Fund Investment Plan, which provides for many of the mitigation programs.

## 2. NDRRMP OUTCOMES FOR PREVENTION AND MITIGATION

The NDRRMP includes a range of outcomes, outputs and activities for each thematic area. These are included in this MDRRMP as guidance for future activities for the Guiguinto MDRRMC. Not all the NDRRMP activities are relevant at the local government level, and where inappropriate they have been omitted or modified.

### Outcome 1: Disaster Risk Reduction and Management and Climate Change and Adaptation mainstreamed and integrated in local development policies, plans and budget

Outputs	Activities
1. Impacts of risks on development programs and projects are well recognized in government plans and budgets	<ol style="list-style-type: none"> <li>1. Comply with the guidelines on the utilization of the 5% budget dedicated for DRRM and CCA Activities</li> <li>2. Mainstream DRR in development programs and plans</li> </ol>

Outputs	Activities
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2. Decisions supported by tools and technologies that facilitate the financial and economically sound mainstreaming of DRRM and CCA	<ol style="list-style-type: none"> <li>1. Apply science and evidence-based scenarios in mainstreaming DRRM and CCA into plans, policies, programs</li> <li>2. Build capacities to effectively mainstream DRRM and CCA in development planning, investment programming, project development and evaluation.</li> </ol>
3. Enhanced CSO participation in local DRRMC	<ol style="list-style-type: none"> <li>1. Include CSO representation in the local DRRMC</li> <li>2. Shortlist and select appropriate CSO/s to be represented in the local DRRMC using the selection criteria and accreditation by the National DRRMC</li> </ol>
4. Measures to reduce vulnerability and to increase capacity to cope with disaster are integrated in plans, programs and projects	Integrate hazard, vulnerability and capacity assessment in relevant plans, programs and projects
5. Measure identified to ensure that programs and projects do not contribute to further risks	Enhance CLUP, CDP and Zoning Ordinance to include risk parameters
6. Local DRRM Councils established	Convene Local DRRM Councils per RA 10121
7. Local DRRM Offices established (facility, manpower and budget)	Institutionalize DRRM offices with permanent plantilla position for the DRRM officers, personnel and budget

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Monthly monitoring on the utilization of MDRRM Fund.	12 monthly reports x 5 years	80% of DRRM Fund is utilized and managed according to guidelines.	Municipal Accounting Office, MDRRMO	2023-2025	General Fund and MDRRMF
2	<p>Implementation of the Sugod Guiguinto Command Center (SGCC).</p> <p>Promotion on the use of commodity maps in PPA Planning of cropping calendar.</p> <p>Updating of Disaster Risk and Vulnerability</p>	<p>14 Barangays</p> <p>14 Barangays</p> <p>1 report</p> <p>MDRRMC</p>	<p>100% of Barangays monitored and informed</p> <p>50% adaption</p> <p>Updated DRVA report</p>	<p>MDRRMO</p> <p>MAO</p>	2023-2025	General Fund and MDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
	Assessment report.  Capability Building Activities on DRR/CCA	members/ TWG	MDRRM Personnel engaged in training and workshops on DRR/CCA.	HRMO/ MDRRMO		
3	Disaster Risk and Vulnerability Assessment report is being included in MGG P/P/As.  Inclusion of DRR/CCA P/P/As in AIP.  Business continuity plan to guide the business sector to cope up with disaster and climate change.	Refer to Output No.2			2023-2025	General Fund and MDRRMF
4	Monitoring and Evaluation plan preparation of all MDRRMC member agencies	All MDRRMC Member agencies	Monitoring and Evaluation plan prepared	All MDRRMO Member agencies	2023-2025	General Fund and MDRRMF
5	Regular Quarterly Meeting of MDRRMO	4 meetings x 5 years	All agenda discussed and all issues resolved	MDRRMO	2023-2025	MDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
6	Operation and Maintenance of MDRRMO	DRRMO	Permanent Plantilla Position for DRRM Officer and personnel  With approved budget	DRRMO, Ingguniang Bayan	2023-2025	General Fund and MDRRMF

**Outcome 2: DRRM and CCA Sensitive Environmental Management**

Outputs	Activities
1. Environmental policies with DRRM and CCA lens and component	1.1. Review and Integrate DRRM and CCA into various environmental policies, plans, programs and projects.
2. Joint work-plan for DRRM Plan and Local Climate Change action plan	2.1. Review DRRM and CCA laws and implement rules and regulations to develop a joint work-plan.

Output No	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
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1	Environmental Code		DRRM Fund is managed and utilized according to guidelines.	All concerned MGG Offices	2023-2025	General Fund
	Updating of LCCAP	1 Plan				
	Implementation of Municipal Children's Code	1 Code	Updated LCCAP	MSWDO and all partner offices/agencies		
			All provisions implemented			

**Outcome 3: Increased Disaster Resilience of Infrastructure Systems**

Outputs	Activities
1. Enhanced disaster mitigation and preparedness strategies for infrastructure systems	<ol style="list-style-type: none"> <li>1. Enforce the building code and apply green technology</li> <li>2. Conduct inventory, vulnerability and risk assessments for critical facilities and infrastructure</li> <li>3. Implement guidelines on the redesign, retro-fitting or operational modification of infrastructure as relevant</li> <li>4. Integrate DRRM and CCA in the local ordinances</li> </ol>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	National Building Code being implemented.  Inventory of Critical Infrastructures by DILG		- DRRM Fund is managed and utilized according to guidelines.	c/o MEO and GSO		

**Outcome 4: Community Based and Scientific DRRM and CCA Assessment, Mapping, Analysis and Monitoring are Conducted and/or Improved**

Outputs	Activities
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1. DRRM and CCA assessment and mapping conducted	<ol style="list-style-type: none"> <li>1. Conduct vulnerability assessment on a regular basis (every 1st quarter on election year-per existing DILG policy) and as the need arises</li> <li>2. Conduct hazards mapping and assessment</li> </ol>
2. Knowledge products for DRRM and CCA planning tools are made available and accessible	<ol style="list-style-type: none"> <li>1. Collect various DRRM and CCA products for sharing</li> <li>2. Establish a knowledge management center</li> <li>3. Disseminate information through partnership with various stakeholders</li> </ol>

Outputs	Activities
3. Studies using the research methods and tools for multi-hazard and risk assessments are conducted.	<ol style="list-style-type: none"> <li>1. Conduct of studies on disaster prevention intervention and climate change effects</li> <li>2. Conduct of capacity building research activities for both the city and community levels</li> </ol>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	<p>Sectoral vulnerability assessment (Health, Agriculture, and Water Supply)</p> <p>Infrastructure Audit Periodic updating of Hazard Maps</p>	<p>5 Assessment Reports</p> <p>1 Audit All hazard maps</p>	<p>Assessment Reports prepared</p> <p>Infrastructure Audit Report Updated hazard maps</p>	<p>All concerned offices</p> <p>MEO MPDO</p>	2023-2025	General Fund and LDRRMF
2	<p>Distribution of Disaster Handbook "Paghahanda sa Sakuna" ES and HS Students</p> <p>Establishment of Knowledge Center.</p> <p>Trainings and capability building activities for stakeholders</p>	<p>Grades 4-5 and 11-12</p> <p>1 Center</p> <p>All stakeholders</p>	<p>-Increased student awareness on DRR/CCA</p> <p>Functional Knowledge Center</p> <p>Increase knowledge and capability of stakeholders</p>	DRRMO	2023-2025	LDRRMF

3	Community participatory action research on crops production	10 sites per year	Adopted all climate-resilient technologies on rice	PAO	2023-2025	LDRRMF
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Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
4	Application of “How Safe is My Home” Tool in MGG Facilities  Administer pre-test and post- test for evaluation for all capacity building activities	All MGG facilities  All capacity building activities	All MGG facilities assessed  Effectiveness of training gauged	EO, MDRRMO  DRRMO	2023-2025	LDRRMF

#### Outcome 5: Communities have Access to Effective and Applicable Disaster Risk Financing and Insurance

Outputs	Activities
1. Various disaster risk financing and insurance schemes for vulnerable groups and/or communities are made available and accessible	1. Produce or promote IECs encouraging hazard insurance coverage for government, private infrastructures, and other business establishments 2. Use and promote the directory of available financing window for LGUs 3. Promote insurance schemes among production sector, supply sector, local communities and responders
2. Mechanisms developed for increased risk financing modalities	1. Support and promote new modalities for risk financing schemes 2. Develop an advocacy and risk communication plan to encourage communities to avail of risk financing options

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Development of IEC materials on hazard insurance coverage for government and business establishments	IEC materials developed / prepared for 14 barangays and business establishments	Development and distribution of IEC materials on hazard insurance coverage of	MDRRMO	2023-2025	LDRRM Fund General Fund

			public facilities and business establishments			
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**Outcome 6: End to End Monitoring and Response System, Forecasting and Early Warning are Established and/or Improved**

Outputs	Activities
1. Enhanced monitoring, forecasting and hazard warning	<p>Develop and institutionalize EWS information sharing and communication systems between the Municipality and the stakeholders, e.g. communities and private establishments</p> <p>Apply the criteria and/or accreditation standard for community-based early warning system (CBEWS) by the National DRRMC</p> <p>Procure equipment and establish facilities for EWS</p> <p>Develop localized disaster EWS</p> <p>Establish CBEWS for various hazards</p> <p>Train and tap communities for hazard monitoring</p>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/ Office	Timeframe	Source of Funds
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1	Sugod Guiguinto Command Center (SGCC)	Refer to Outcome 1	Monitored situations and disseminated information on hazards for sound decision-making	MDRRMO	2023-2025	General Fund and LDRRMF
	Adoption of Operation	MDRRMC				
	LISTO by DILG BDRRM	Quarterly EQ drill	MDRRMC on standby/ready			
	Drills and SimEx	Refer to Outcome 1	Conducted EQ drills and SimEx			
	Implementation of SHINE Program					

### PREPAREDNESS

Disaster preparedness provides for key strategic actions that give priority to community awareness and understanding, contingency planning, capacity building and skills development, conduct of local drills, and development of local disaster plans and protocols. In preparing communities and governments for possible disasters, it is vital to understand needs based on hazard and risk analysis in order for preparedness activities to be appropriate, realistic and effective.

Preparedness activities are not linear, but are instead cyclical and ongoing with improvements over time. Behavioral change created by the preparedness aspect is eventually measured by how well people respond to and recover from disasters. The role of the MDRRMC in preparedness is to coordinate the activities of its members, the community, and others to ensure that Guiguinteños are as prepared as possible for future emergencies.

LONG TERM GOAL	OBJECTIVES
<b>Establish and strengthen capacities of communities to anticipate, cope and recover from the negative impacts of emergency occurrences and disasters</b>	Increase the level of awareness of the community to the threats and impacts of all hazards, risks and vulnerabilities
	Equip the community with the necessary skills to cope with the negative impacts of a disaster
	Increase the capacity of institutions
	Develop and implement comprehensive national and local disaster preparedness
	Strengthen partnership among all key players and stakeholders

### 3. CURRENT PREPAREDNESS ACTIVITIES

## 1. Training and Capability Building Programs

Year-round training and capability building programs of MDRRMC target the Response Teams of Sugod Rescue Teams, Barangay Disaster Risk Reduction and Management Councils (BDRRMCs), other government agencies and offices, NGOs, schools, private institutions, business establishments, resorts and hotels, Persons with special needs, various sectors and other civil groups. Training and capability building programs include the following:

- DRR and CCA Trainings
- Emergency Responders Training (ex. Standard First Aid, Basic Aquatic Safety and Rescue, etc.)

## 2. Networking and Linkages

Networking and benchmarking is also done by the MDRRMC through many regional and national to aid in its disaster risk reduction and management P/P/As. It learns from other LGU and agencies' experiences and helps build synergies between the Bulacan PDRRMC and other Disaster Risk Reduction Management Councils. Networking provides a platform to share information on best practices and on the other hand, helps build and strengthen a community with common interest, which can play an advocacy role in mainstreaming disaster management issues for more effective influence on national policy.

## 4. Information and Education Campaigns

For public information and education, the MDRRMC continuously disseminates Handbooks, flyers, leaflets, posters, streamers, tarpaulins. Also, as part of its disaster awareness campaign, the MDRRMC participates in the national Fire Prevention Month campaign in March as stated in Presidential Proclamation 115-A dated November 17, 1966 and Disaster Consciousness Month in July as per Executive Order No. 137, s. 1999.

Aside from dissemination of information and education materials (hanging of posters, tarpaulins and streamers in conspicuous places and dissemination of flyers and leaflets on Fire Prevention), in coordination with concerned agencies, the MDRRMC activities for Fire Prevention Month includes:

- Motorcade;
- Conduct of training on First Aid /Orientation on Fire Safety/Fire Drill;
- Conduct of Fire Safety Inspection to Municipal government offices and other national and local government offices; and
- Other related P/P/As.

For Disaster Resilience Month in July, the MDRRMC continuously educate and increase people's awareness on the different hazards affecting their community and how to build up their disaster management capabilities. It also joins the Regional First Aid Competition not only to improve First Aid capabilities but to enhance coordination, assistance and camaraderie between and among provinces, cities and municipalities and other NGO Response Teams in Region 3. Activities for the Disaster Resilience Month include:

- Training on Water Search and Rescue/First Aid;
- Fire/Earthquake Drill;
- Dissemination of leaflets, flyers; posting/hanging of streamers, tarpaulins and posters;

- Participant or host to Regional First Aid and Basic Life Support Olympics; and Other related P/P/As.

Operation Iwas Paputok is a campaign for firecracker safety that runs each year from the last week in December to the first week in January. The MDRRMC and Bureau of Fire Protection work closely to run an information and education campaign to encourage the safe sale and use of fireworks within the community.

## **5. Contingency Planning**

Contingency Planning is a process that analyses specific disaster scenarios that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

The purpose of Contingency Planning is to be able to rapidly respond and cope with the effect of a specific emergency and achieve people's readiness to react appropriately. It assists in mobilizing effective actions and resources for emergency response; generating commitment among parties involved to act in a coordinated manner before the emergency occurs; and designing a concrete and continuous plan until the emergency occurs.

## **6. Information Exchange/Information Management**

The information exchange by the Guiguinto MDRRMC, PAGASA-DOST and other government and private institutions has provided technical capacity for increased transfer of ideas, lessons learned and general knowledge about disaster reduction.

## **4. NDRRMP OUTCOMES FOR PREPAREDNESS**

The NDRRMP includes a range of outcomes, outputs and activities for preparedness.

### **Outcome 7: Increased Level of Awareness and Understanding of the Community to the Threats and Impacts of All Hazards**



Outputs	Activities
1. A comprehensive local DRRM IEC program developed and implemented.	1.1. Develop DRRM and CCA IEC and advocacy plan and programs.

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	<p>Distribution of Leaflets, flyers and posters.</p> <p>Disaster Handbook “Paghahanda sa Sakuna” Distributed to ES and HS Students</p> <p>Implementation of SHINE</p> <p>Conduct trainings and capability building activities for stakeholders</p>	<p>Refer to Outcome No. 4</p> <p>Output No. 2</p>				

#### Outcome 8: Communities are Equipped with Necessary Skills and Capability to Cope with the Impacts of Disasters

Outputs	Activities
1. Increased understanding and application of risk reduction measures and better prepared communities	<p>1. Formulation of standard programs of instructions (POIs), training modules.</p> <p>2. Conduct of trainings and simulation exercises on disaster preparedness and response</p>
2. DRRM is mainstreamed and taken into consideration in decision making	2.1. Customized capacity building activities for disaster risk managers, key decision makers and staff
3. Sustained DRRM education and research through permanent training institutions	3.1. Establishment of DRRM Training Institute to conduct education, training, research and publication programs
4. Increased awareness of students through the integration of DRRM and climate change into the curriculum and education materials.	<p>1. Integrate DRRM and CCA in school, textbooks and teachers’ guides and manual.</p> <p>2. Conduct of DRRM and CCA education and training for the private and public sectors</p>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
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1	<p>Modules for Standard First Aid, Basic Aquatic Safety and Rescue and Training for Instructors.</p> <p>Conduct of Various trainings to: BDRRM Response Teams, NGOs and Volunteer groups, Schools, Agencies, Youth, Children and person with special needs organizations and others.</p> <p>Participation in various activities:  NSED  WASAR simex  EQ /Fire Drills</p>	<p>Cascade to 14 Barangays</p> <p>Train all participants</p> <p>Participate in all activities</p>	<p>3 Modules prepared</p> <p>Increased in KSA</p> <p>Increased awareness in disaster preparedness &amp; response</p>	<p>DRRMO</p> <p>DRRMO</p>	2023-2025	General Fund and LDRRMF/
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Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/ Office	Timeframe	Source of Funds
	Training on Disaster Risk Reduction	<p>Targeted Members of Cooperatives in the Municipality</p>	<p>Consciousness about the importance of Disaster Risk Reduction developed;</p> <p>Increased awareness on the strategies and specific measures to avoid and mitigate the identified risks.</p>			
2	Advanced training for PDRRMC Members and Bulacan Rescue staff - ICS, RDANA, PDANA,	<p>Provide advance training</p>	Increased in KSA	MDRRMO	2023-2025	General Fund and LDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
	CSSR, PDRA, REDAS  Business Continuity Seminar	Targeted Members of Cooperatives in the Municipality	Basic business continuity planning, management, business impact analysis, strategy formulation, response and operations promoted			
3	Training for instructors and provision of venue	Pool of instructors	Availability of Instructors	MDRRMO	2023-2025	General Fund and LDRRMF
4	Distribution of disaster preparedness handbook "Paghahanda sa Sakuna" Implementation of SHINE program DRRM Orientation, EQ/Fire Orientation/Drill	Refer to Outcome No. 4 Output No.				

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
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5	Conduct of :  Brigada Eskwela Plus.  Oryentasyon sa Paghahanda ng Barangay sa kalamidad at pamamahagi ng CSSR Hand Tools.	10 BEP  All barangays	Increased KSA	MDRRMO	2023-2025	General Fund and LDRRMF
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**Outcome 9: Increased DRRM and CCA Organizational Capacity of Municipal DRRM Office, DRRM Council and Local DRRMCs in the Province**

Outputs	Activities
1. Self-reliant and operational local DRRM council and committees	<ol style="list-style-type: none"> <li>1. Conduct of regular and special meetings and focus group discussions.</li> <li>2. Conduct of seminars, workshop and table-top exercises for DRRM council/committee members</li> <li>3. Accreditation of NGOs</li> </ol>
2. Fully-functioning, adequately staffed and financially capable local DRRM Offices	<ol style="list-style-type: none"> <li>1. Develop the Municipal DRRM Plan</li> <li>2. Conduct risk assessments, contingency planning, knowledge management and training activities</li> <li>3. Inventory of resources</li> <li>4. Stockpiling and prepositioning of resources</li> </ol>
3. Fully-functioning and adequately staffed local DRRM Operations Center	3.1. Establish the DRRM Operations Center

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/ Agency/Office	Timeframe	Source of Funds
1	Quarterly meeting of MDRRMC	20 meetings	Agenda discussed and Issues resolved	MDRRMO	2023-2025	General Fund and

	Workshop and write shop on plan updating DRRM Plan Contingency Plan LCCAP  Recommend to Sanggunian for NGO accreditation	Enhance/update plans  Accredit NGOs	Reference in times of disaster  NGOs accredited			LDRRMF
2	MDRRM Plan, and Contingency Plan completed, regular training.  Database of manpower, equipment and other resources  Prepositioning of rescue teams  Provision relief goods on standby.	Develop 3 plans  Update record  All rescue teams  500 pax (initial)	Reference in times of disaster  Availability of references and basis  Stand by rescue teams in affected Barangays  Provision of food packs for evacuees		2023-2025	General Fund and LDRRMF
3	Executive Order No. 17, Series of 2010.	1 OpCen	Provision of DRR / CCA related services and rescue operations			

**Outcome 10: Developed and implemented comprehensive provincial and city/municipal preparedness and response policies, plans and systems**

Outputs	Activities
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1. Enhanced preparedness and response strategies, including coordination mechanisms and infrastructure	1.1. Develop and/or enhance and simulate scenario-based preparedness and response plans
2. Increased coordination through the incident command systems	Develop and/or enhance ICS coordination and communication systems Develop and/or enhance a standard manual of operations for Operations Centers
3. Better prepared citizenry	3.1. Develop and/or implement guidelines for emergency response teams
4. Increased coordination, complementation and interoperability of work in DRRM	Develop and/or enhance agreed protocols for gathering, reporting and distributing information 2. Develop and/or enhance common and integrated response assessment tools and mechanisms (i.e., SOPs for deployment for and coordination with rapid assessment teams, SSR and evacuation)
5. Integrated operations and essential services rendered	5.1. Conduct an inventory of existing resources and services

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Contingency Plan for Hydromet, Earthquake and Infectious Diseases	2 plans	Reference in times of disaster	MDRRMC TWG	2023-2025	General Fund and LDRRMF
2	Implementation/execution of ICS  Protocol for OpCen	All disaster events and festivities  Implementation of protocol	Well managed incidents or activities  Efficient and effective DRRM services	MDRRMC  MDRRMO	2023-2025	General Fund and LDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
3	Protocol for EMS	Implementation of protocol	Efficient and effective rescue operations	MDRRMO	2023-2025	General Fund and LDRRMF



4	Communication linkage to 24 C/MDRRMOs	24 radios	Efficient flow of communication	MDRRMO	2023-2025	General Fund and LDRRMF
	Adoption of response mechanisms	Conduct of PDANA & RDANA	Identified immediate resources needed	RDANA/PDANA Team		
5	Database of Manpower, equipment and other resources	Refer to Outcome No. 9 Output No. 2				

**RESPONSE**

LONG TERM GOAL	OBJECTIVES
<b>Provide life preservation and meet the basic subsistence needs of affected population based on acceptable standards during or immediately after a disaster</b>	To decrease the number of preventable deaths and injuries
	To provide basic subsistence needs of affected population
	To immediately restore basic social services

Disaster Response is the provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce negative health impacts, ensure public safety and meet the basic subsistence needs of the people affected. It is predominantly focused on immediate and short-term needs and is sometimes called “disaster relief”.

Disaster Response includes key activities during the actual emergency operations such as needs assessment, search and rescue, relief operations, and early recovery activities. Generally, the success and realization of this theme relies heavily on timely, proper coordination and adequate resources.

**5. CURRENT RESPONSE ARRANGEMENTS****1. Activation of the MDRRMC and its Members**

Response activities in the Municipal require mobilization of the MDRRMC and other partner-agencies' services for warning, rescue, evacuation, disaster relief, medical, fire brigade and damage control.

In the event of a typhoon, all member agencies are informed thru text, call or radio message to standby, monitor their own areas of responsibility and report any typhoon related incidents. If Public Storm Warning Signal No.

2 raised, Before the Typhoon landfalls on the Area of Responsibility, all the MDRRMC members are mandated to report to the Emergency Operation Center which is open 24/7 for an emergency meeting and planning for the response that the Council should provide if needed. Rescue teams, fire trucks, ambulance and other rescue equipment will be on standby at the center to respond immediately to emergency calls. Coordination with local DRRMC's is regularly done. MGG hospitals are ready to provide medical assistance to victims. The MDRRMC is also the one responsible for reporting and releasing typhoon and flood-related data and reports.

The MDRRMC also coordinates with LGUs, or if necessary, provides augmentation in the evacuation of disaster victims. Relief goods, medicines, potable water and medical services and stress debriefing if needed are also provided to victims.

## 2. Regular Operations

The MDRRMC helps coordinate a number of response operations that its member agencies participate in. Sugod Rescue Team also acts as First Aider to the following activities:

- Rescue Operations
- Typhoon
- Flood
- Fire
- Collapsed Structure
- In Oplan such as
- Iwas Paputok every last week of December to 1st week of January of the coming year
- Oplan Lakbay Alalay during Holy Week Season
- Oplan Kaluluwa on All Souls and Saints' day
- Search and Retrieval of victims
- Lakbay Aral ( visit of historical and other tourist spots) of foreign and local visitors
- Stand by Medic in Events and other Festivities

## 3. Warnings

Guiguinto MDRRMC will receive warnings from surveillance agencies and may provide advisories on to other agencies, local governments, and to the public.

Hazard Alert / Warning	Agency
Typhoon	PAGASA
Flooding	PAGASA and Community Based Flood Warning System
Human Health Diseases	Department of Health, Provincial Health Office
Animal Health Diseases	Provincial Veterinary Office, Provincial Agriculture Office

Hazard Alert / Warning	Agency
Tsunami	PHIVOLCS and OCD
Fire Incidents	BFP
Volcanic Eruption	PHIVOLCS

Within Bulacan, the Bulacan PDRRMC may issue warnings through the MDRRMC, and may use media releases, radio communication, telephone, loudspeakers or other mechanisms as necessary.

#### **4. Incident Command System**

The Incident Command System (ICS) is a system for managing the response to disaster events. The PDRRMO, Municipal / City DRRMOs and other agencies have been trained in using an Incident Command System (ICS) for managing the response to disasters.

The ICS structure consists of an Incident Commander, and key roles of Operations, Planning, Logistics, and Finance and Administration. The ICS is used in the Municipal Emergency Operations Center during disasters, and may also be used for managing incidents on site.

The MDRRMC has pre-identified ICS roles for different hazards, with roles allocated to different people and agencies depending on the needs of the particular hazard. These ICS structures are included in the annexes to this plan.

#### **5. Municipal Emergency Operations Center**

The DRRMO is permanently located in the Municipal compound, Brgy. Poblacion, Guiguinto Bulacan. The premises are used as a permanent 24/7 operations center for Guiguinto Rescue. During emergencies, the MDRRMC Operations Center (MDRRMC OpCen) is activated into a MDRRMC Emergency Operations Center (EOC) and becomes the center for multi-agency operational coordination, response resource mobilization, alerts and monitoring, and information management.

The Emergency Operations Center functions as the Sugod Guiguinto Command Center (SGCC) which include radio and phone communications, computers and internet systems, a weather monitoring display, CCTV, Video Walls.

#### **6. Public Information Management**

During disasters, the Incident Commander under the Incident Command System will generally be responsible for approving and providing timely and accurate information via all available media.

#### **7. Evacuation**

Advice to evacuate will often come from PAGASA in relation to typhoons or storms based on their Public Storm Warning system. The MDRRMC is likely to issue further warnings to areas considered particularly high risk, or issue its own warnings based on information about specific areas. Other hazards such as tsunami, fire or dam failure could also lead to directions to evacuate.

Evacuation centers are generally the responsibility of the LGU – Guiguinto Municipality and Social Welfare and Development Office. The Guiguinto Municipal Athletic Cultural Center (GMACC) is our primary evacuation center here in Guiguinto.

Contingency planning done by the MDRRMC addresses evacuation in response to floods and earthquakes.

### **8. Declaring a State of Calamity**

A state of calamity may be declared by the President of the Philippines for a cluster of barangays, municipalities, cities, provinces, and regions. A local Sanggunian may also declare or lift a state of calamity based on the recommendation of the DRRMC and a damage assessment and needs analysis.

The Sanggunian Panlalawigan has declared states of calamity in the past during disasters. The MDRRMO supports the MDRRMC and the Sanggunian Bayan in determining whether to declare a state of calamity.

### **9. Requesting and Receiving Support from Outside Guiguinto**

A response to an emergency in Guiguinto may involve support provided from agencies outside the Municipality, such as neighboring municipalities and even our PDRRMO and the Office of Civil Defense. Guiguinto MDRRMC maintains links with these agencies to ensure the ability to work with them in the event of a disaster.

### **10. Debrief and Reporting**

Learning from events and exercises is essential for improving disaster management in Bulacan. The MDRRMO will coordinate a debrief after the response to significant disasters for agencies involved, and submit Situational Reports to PDRRMC and DILG and provide any subsequent reports to those agencies.

## **6. NDRRMP OUTCOMES FOR RESPONSE**

The NDRRMP includes a range of outcomes, outputs and activities for response.

### **Outcome 11: Well-established Disaster Response Operations**

Outputs	Activities
1. Activated functional ICS on site	1.1. Activation of the ICS at the municipal and barangay levels as appropriate
2. Well-established system of information gathering, reporting and dissemination	2.1. Issuance of public advisories in accordance with the established/developed protocols
3. Established and functioning system for coordinated and efficient relief operations	Establishment of coordination systems for effective and efficient relief and response operations Activation of relief distribution points/centers

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Ladderized training on ICS	C/M/B/DRRMOs	Well managed incidents, events and festivities	MDRRMO	2023-2025	General Fund and LDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
2	Information dissemination	All affected Barangays	Awareness of communities	MDRRMO	2023-2025	General Fund and LDRRMF
3	Coordination mechanism to affected areas  Activation of relief distribution points in disasters	All affected Barangays  RDP in affected areas	Efficient work flow  Identified relief distribution points or centers	MSWDO	2023-2025	General Fund and LDRRMF

**Outcome 12: Adequate and Prompt Assessment of Needs and Damage at All Levels**

Outputs	Activities
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1. Timely, appropriate and consolidated needs assessment reports	1. Activation of assessment teams at all levels, as needed 2. Consolidation, analysis and dissemination of data by the DRRM Council using the appropriate DANA assessment tool
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Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Activation of RDANA and PDANA Teams	All disasters	Availability of trained RDANA Teams PDRRMC deals with DANA information during disasters	RDANA / PDANA Team	2023-2025	General Fund and LDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
	Consolidation of data and information gathered	Consolidation report	Recommendation for rehab and recovery assistance / support			

**Outcome 13: Integrated and Coordinated Search, Rescue and Retrieval (SRR) Capacity**

Outputs	Activities
Victims found, retrieved & reconnected with their families	Development and implementation of a system for SRR and management of the dead and missing with concerned agencies

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Capability building activities for rescue teams	Refer to Outcome No. 7 Output No. 1				

**Outcome 14: Affected Communities Evacuated Safely and on Time**



Outputs	Activities
1. Safe and timely evacuation of affected communities	1. Coordination with appropriate agencies 2. Activation of evacuation system and/or set of procedures

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Coordination Mechanism Evacuation Camp Management	Refer to Augmentation to affected LGUs	Provision of efficient and effective services to evacuees	MDRRMO/ MSWDO	2023-2025	General Fund and LDRRMF

**Outcome 15: Temporary Shelter Needs are Adequately Addressed**

Outputs	Activities
1. All evacuees are sheltered in facilities adequately equipped for all needs (including areas for lactating mothers and persons with special needs)	1. Identification of standard-based relief shelters and sites 2. Provision of Modular tents and other temporary shelter facilities 3. Implement a set of minimum standard for temporary shelters
2. Child-friendly spaces or temporary learning areas in the evacuation center for continuity of education	2.1. Establishment of women child-friendly spaces/temporary learning area in the evacuation center for continuity of education
3. Safety for the sources of people's livelihood	3.1. Provision of spaces for people's pets and agricultural animals in the ECs or elsewhere
4. Increased and diversified people's livelihood skills	4.1. Conduct of livelihood-oriented activities for internally displaced persons

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency /Office	Timeframe	Source of Funds
1	Identification of relocation sites  Makeshift evacuation centers  Minimize the use of schools as evacuation centers (CEPC or Children's Code)	Establish relocation sites in safe areas  Covered courts/Multi-purpose halls in affected areas  Availability of multi-purpose halls	Saved lives and properties  Saved lives and properties  Uninterrupted classes of students	MSWDO, MDRRMC	2023-2025	General Fund and LDRRMF
2	Child friendly spaces in Evacuation Centers	1 CFS in every EC	Continues learning activities for children	MSWDO, MDRRMC	2023-2025	General Fund and LDRRMF
3	Identified animal evacuation centers	Space for animals in every evacuation center	Maintain source of livelihood	MSWDO, MDRRMC	2023-2025	General Fund and LDRRMF
4	Cash for work	Qualified Internally displaced persons	Source of livelihood	MSWDO, MDRRMC	2023-2025	General Fund and LDRRMF

**Outcome 16: Basic Health Services Provided to Affected Population Whether Inside or Outside Evacuation Centers**

Outputs	Activities
1. All patients seen/treated and epidemics prevented	1.1. Conduct of medical consultation & nutritional assessment
2. Water-borne diseases prevented	2.1. Assessment of water quality and conduct of quick damage repairs and road clearing operations
3. Database of hospitals and other health care providers	3.1. Determination of existing and available hospitals to address the casualties (if there is enough hospital services)
4. Lifelines restored (Utilities)	4.1. Immediate restoration of lifelines

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Monitor RHU activities on medical consultations and nutritional assessment	All Barangays affected	Improved service delivery	MHO, MSWDO	2023-2025	General Fund
2	Distribution of chemicals for indoor and outdoor vector spraying at schools and communities  Distribution of chorine granules and jerry cans Monitoring of WASH and SPEED and evacuation centers	All affected Barangays	Disease outbreak prevented	MHO	2023-2025	LDRRMF

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
3	Maintenance and regular updating of HEMS directory. Updated Health Emergency Preparedness and Response Plan (HEPRP)	1 Directory	Directory updated annually	MHO	2023-2025	General Fund
4	Immediate restoration of lifelines	All affected Barangays	Service delivery	GSO and MEO	2023-2025	LDRRMF

**Outcome 17: Psychosocial Well-being Promoted and Mental Health Problems and Risks Reduced**

Outputs	Activities
1. Disaster-affected population are in good mental and psychological state	<ol style="list-style-type: none"> <li>1. Ensure coordination among heads of MHPSS;</li> <li>2. Develop and conduct/support psychosocial programs and referral systems; and</li> <li>3. Conduct traumatic and/or psychological stress debriefings</li> </ol>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Regular Meeting of MSWDO and other stakeholders  Partnership with key stakeholders Psychosocial First Aid and Stress Debriefing Exercises	14 barangays  MOA All affected individuals	Improved coordination and collaboration  Signed agreement MHPSS Activities undertaken	MSWDO  MSWDO MSWDO	2023-2025	General Fund  LDRRMF

**Outcome 18: Coordinated, Integrated System for Early Recovery Implemented at the Municipal and Local Levels**

Outputs	Activities
1. Mechanisms for coordinated and integrated early recovery established and essential services restored	<ol style="list-style-type: none"> <li>1. Conduct of Post DANA ;</li> <li>2. Development and implementation of a system for early recovery, to include specific activities addressing the needs identified;</li> <li>3. Development of partnership mechanisms with utility providers and key stakeholders; and</li> <li>4. Design and implementation of temporary livelihood and/or income generating activities (i.e., cash for food or work; micro and small enterprise recovery)</li> </ol>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Conduct of PDANA and preparation of action plan  Partnership with utility providers and key stakeholders  Seminar on Spotting Opportunities During Crisis	All affected areas  All utility providers  Cooperatives and MSEs in the Province	PDANA report generated  Signed agreements  Increased awareness on how to enable business to continue operations, recover quickly and effectively from any time of disruptions like calamities	MDRRMC  MDRRMO	2023-2025	General Fund

**REHABILITATION AND RECOVERY**

LONG TERM GOAL	OBJECTIVES
<b>Restore and improve facilities, livelihood and living conditions and organizational capacities of affected communities, and reduce disaster risks in accordance with the “building back better” principle</b>	To restore people’s means of livelihood and continuity of economic activities and business
	To restore shelter and other buildings/installations
	To reconstruct infrastructure and other public utilities
	To assist in the physical and psychological rehabilitation of persons who suffered from the effects of disaster

The Disaster Rehabilitation and Recovery aspect covers concerns related to employment and livelihoods, infrastructure and lifeline facilities, and housing & resettlement. The principle of “building back better” requires improvement and increased disaster resilience during restoration and rehabilitation after disasters.

## 7. REHABILITATION AND RECOVERY PROGRAMS

Rehabilitation and recovery programs will be suited to the impacts of the particular disaster. Rehabilitation programs of the MDRRMC and its member agencies include:

- Providing emergency or financial assistance;
- Housing materials for victims whose houses were severely damaged or destroyed by typhoons or fires;
- Loans and Grants provided by the Municipal Government;
- Cash or food for work programs;
- Programs such as Self Employment Assistance (SEA) may also be available; and
- Agricultural assistance, including re-stocking fish farms.

Rehabilitation and recovery assistance may also be provided by national agencies, other countries, and international bodies such as the World Food Program. The MDRRMC may request this assistance depending on the nature of the disaster and the recovery needs.

## 8. NDRRMP OUTCOMES FOR REHABILITATION AND RECOVERY Outcome 19: Damages, Losses and Needs Assessed

Outputs	Activities
1. Post Disaster Needs Assessment	1.1. Conduct Post Disaster Needs Assessment (PDANA)
2. Strategic Action Plan	2.1. Formulation of Strategic Action Plan based on the PDANA and coordinate the Strategic Action Plan for implementation for disaster-affected areas



Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Availability of trained PDANA Team	Refer to Outcome No. 18 Output No. 2				
2	Preparation of rehabilitation and recovery plan	Refer to Outcome No. 18 Output No. 2				

**Outcome 20: Economic activities restored and, if possible, strengthened or expanded**

Outputs	Activities
1. Sustainable livelihood programs and projects	1.1. Database of existing livelihood programs/activities
2. Credit facilities for affected sectors	2.1. Identify the needed assistance and formulate/implement appropriate program
3. New business introduced	3.1. Identify/mobilize funding source

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Database of existing livelihood programs/activities			Guiguinto Cooperatives		

2	<p>Provision of rehabilitation funds or financial assistance (micro-financing) for Coops or MSEs affected by calamities who have no access to banking or financing institutions to rebuild their livelihood project that will enable the business to continue operations and recover quickly – Maximum of P50,000.00</p> <p>Loan Structuring for MSEs of Coops with existing loan who are affected by calamities; Proponent will be given a grace period of one (1) year to pay the outstanding balance to ease financial difficulty, avoid default and further interest.</p>	Coops and MSEs affected by calamities	Financial Assistance granted/ provided	Guiguinto Cooperatives	2023-2025	LDRRMF
3	Identify/mobilize funding source			Guiguinto Cooperatives		

**Outcome 21: Provision of human settlements incorporating DRRM and CCA**

Outputs	Activities
1. Safe Relocation sites	1.1. Identify and provide suitable relocation sites for affected population
2. Disaster-resilient housing designed and constructed / reconstructed	2.1. Design/construction/reconstruction of disaster resilient housing units
3. Self-sufficient communities with access to basic social services	3.1. Conduct trainings for social preparation of host communities and those that will be relocated to reduce conflict

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Identification of in town relocation sites	24 LGUs		NHA and LGUs		
2	Strict implementation of building code	All housing units	Disaster resilient housing units designed and constructed	NHA and LGUs		
3	Social Preparation orientation for relocatees	All affected families	Social preparation conducted	MPDO, MDRRMO, MSWDO		

**Outcome 22: Disaster and Climate Change-Resilient Infrastructure Reconstructed**

Outputs	Activities
1. Infrastructural facilities reconstructed/repared/renovated according to the standard codes(building code and other referral codes such as structural, architectural, electrical and others including fire code, zoning and other ordinances)	1.1. Undertake the necessary rehabilitation/reconstruction/renovation of damage infrastructure based on the latest code and guidelines introducing and promoting green technology
2. Development / building permit / ancillary permits approved within the prescribed time	2.1. Close monitoring of approved building and other permits and inspection of on- going projects whether government or private buildings/structure to ensure compliance and enforcement of the above code

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	Rehabilitation and reconstruction of damaged infrastructure	All damaged infrastructure	Reconstructed and rehabilitated infrastructure compliant to latest building code and green technology guidelines	MEO, GSO	2023-2025	General Fund

2	Infrastructure Audit	All on-going projects	Compliance to latest building code and green technology guidelines	MEO and GSO	2023-2025	General Fund
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**Outcome 23: Disaster and Climate Change-Resilient Infrastructure Reconstructed**

Outputs	Activities
1. Vulnerable population provided with adequate and appropriate risk protection measures	<ol style="list-style-type: none"> <li>1. Develop systems for appropriate risk protection measures</li> <li>2. Conduct post disaster/conflict needs analysis with the affected communities</li> <li>3. Develop systems of support and communication among key stakeholders</li> <li>4. Build capacities of psychosocial care providers</li> </ol>

Output No.	Programs, Projects and Activities	Target including Gender Concern	Key Output	Responsible Person/Agency/Office	Timeframe	Source of Funds
1	<p>Develop systems for appropriate risk protection measures</p> <p>Conduct post disaster/conflict needs analysis with the affected communities</p> <p>Develop systems of support and communication among key stakeholders</p> <p>Build capacities of psychosocial care providers</p>	<p>Refer to Outcome No. 7</p> <p>Output No. 1</p> <p>Outcome No. 18</p> <p>Output No. 2</p> <p>Outcome No. 17</p> <p>Output No. 1</p> <p>Outcome No. 2</p>				

## MONITORING AND EVALUATION

Monitoring and evaluation is a key element in any effective policy or risk management process. The said process of gathering, filing, accessing and analyzing information will enable the Municipal Mayor/Municipal Disaster Risk Reduction and Management Council Head, to determine the progress of the implementation of the MDRRM Plan, and make timely decisions to ensure that progress is maintained according to schedules and targets. To have an effective and enhance transparency, the Municipal Mayor addresses its constituents through public dissemination of the outputs of monitoring and evaluation activities. In addition, such activity provides assurance that MDRRMC GUIGUINTO and its members are complying with their obligations, achieving objectives and making progress towards the goals in this plan.

Monitoring and evaluation are different processes:

- Monitoring is establishing, checking, controlling, and keeping record of what has happened;
- Evaluation is measuring effectiveness and establishing and assessing why outcomes have or have not occurred. It is not expected that the 'Vision' will have been fully realized or all the objectives met by the end of this DRRM Plan's life. They will remain as aspirational statements that will require continuous work to maintain the progress that has been made. Progress will be regularly evaluated as follows:
  - The MDRRM Office Guiguinto will be the key agency responsible for monitoring and evaluation of DRRM activities.
  - The MDRRM Office Guiguinto and other MDRRMC members will report regularly to the MDRRMC at its meetings, and provide an end of year achievement report.
  - The MDRRM Office Guiguinto also coordinates end of year achievement reporting from other Local Government Units in the province.
  - Members of the MDRRMC GUIGUINTO will also report through their own systems on their DRRM related projects and achievements. They will remain as aspirational statements that will require continuous work to maintain the progress that has been made.

The MDRRM Office shall be primarily responsible in carrying out monitoring and evaluation activities but whose work shall be reviewed by the Municipal Disaster Risk Reduction and Management Council as the overseeing body of the municipality for disaster risk reduction and management. be adopted:

**PREVENTION AND MITIGATION**

Expected Results	PPAs	Baseline Data	Assumptions/ Risks	Objectives/ Indicators	Target	Data Sources	Data Gathering Methods	Frequency and Recipient of Reports	OPR	Resources Needed
Formulation of Comprehensive Contingency, DRRM, & LCCA Plan	Plan Preparation	5 Plans	All plans prepared and approved Non-preparation/approval of plans	Number of plans prepared	5 plans	Sanggunian Bayan resolution E.O.	Submission	LCE As the need arises Varying (3-6 yrs or more than 10 years)	MDRRM O TWG Sanggunian Bayan	
Creation and Adoption of Command and Control Mechanism	Command Center for Disaster Mitigation and Quick Response	72 CCTVs 2 EWS in the municipality installed 6 SGCC Operators	Computer / CCTVs malfunction Loss of CCTVs in designated areas around the municipality Trained and Capacitated Personnel might resign or be assigned in other department	Number of CCTVs Number of EWS in the municipality installed Number of SGCC Operators Provision of CCTV Footage	To ensure that the CCTVs are operational and protected. Maintained and secured EWS Personnel granted security of tenure Provide CCTV Footage to all requests		Submission of Reports either Hard Copy and Soft Copy or through email or social media	LCE / Local DRRM Officer	MDRRM O, LGUs and Barangay	Funds Manpower Capabilities
End to End monitoring system (monitoring and response), forecasting, early warning are established and/or improved and provision of CCTV Footage Playback	Operation and Maintenance of Sugod Guiguinto Command Center -S.H.I.N.E. -Painting/ repainting of staff gauges, installation of rain gauges, automatic weather station	72 CCTVs 2 EWS in the municipality installed 6 SGCC Operators	Computer / CCTVs malfunction Loss of CCTVs in designated areas around the municipality Trained and Capacitated Personnel might resign or be assigned in other department	Number of CCTVs Number of EWS in the municipality installed Number of SGCC Operators Provision of CCTV Footage	To ensure that the CCTVs are operational and protected. Maintained and secured EWS Personnel granted security of tenure Provide CCTV Footage to all requests		Submission of Reports either Hard Copy and Soft Copy or through email or social media	LCE / Local DRRM Officer	MDRRM O, LGUs and Barangay	Funds Manpower Capabilities
DRRM and CCA sensitive environmental management	Master Drainage Plan - River Dredging	Operation and Maintenance of Sugod Guiguinto Command Center -Painting/ repainting of staff gauges, installation of rain gauges, automatic weather station	Non-implementation Sink of Backhoe	No. of seedlings No of Sites cleaned	PPAs		Submit Report	Every bayanihan activity		Funds Supplies Manpower



**PREPAREDNESS**

Expected Results	PPAs	Baseline Data	Assumptions/ Risks	Objectives/ Indicators	Target	Data Sources	Data Gathering Methods	Frequency and Recipient of Reports	OPR	Resources Needed
Creation of Emergency Management Teams	Seguridad sa Umaasensong Guiguinto sa Oras ng Disaster - Alertong Barangay Carry Na! (SUGOD ABC na!) / Basic/ Standard First Aid and BLS-CPR	14 barangays	Few participants from barangay	Enhance skills and capacity of the Community	14 barangays	Post Activity Report	Submission	After the Activity	MDRRMO	Funds, Manpower
Establishment of Coordination and Collaboration Among Barangay, CSOs, and Volunteers in all activities required by this Plan.	Evacuation Management	14 Barangays	Participation of the Community	Post Activity Report Number of Participants	14 barangays	Post Activity Report	Submission	After the Program	MDRRMO, Barangay	Funds, Manpower
Communities are equipped with necessary skills and capabilities disasters	Conduct of Capability Building Activities (Drills, SimEx)	Capacitate 25 employees of MDRRMO Number of Drills/SimEx Conducted in the province	Participation of the community during Drills/SimEx Commitment of the LCEs and Barangay officials in DRR/CCA	Post Activity Report Number of Participants	4 Drills	Post Activity Report	Submission	Before, During and After the Drill	MDRRMO	Funds, Manpower
Affected Communities Evacuated Safely and on Time	Provision of Evacuation Management Support to Barangays	All affected communities			All affected communities				Barangays, MDRRMO, MSWDO	

**RESPONSE**

Expected Results	PPAs	Baseline Data	Assumptions/ Risks	Objectives/ Indicators	Target	Data Sources	Data Gathering Methods	Frequency and Recipient of Reports	OPR	Resources Needed
Damages, Losses and Needs Assessed	Strategic Action Planning for PDANA	14 days post disaster Damages, Losses and Needs Assessment Report Prepared	The Damages, Losses and Needs are not properly addressed.	Assessment Report submitted by Barangays affected	Conduct of Damages, Losses and Needs Assessment after 10 days of disaster	Damages, Losses and Needs Assessment of the affected Barangays	Submission	ANA	MDRRMC TWG	Funds/ Manpower

**RECOVERY AND REHABILITATION**

Expected Results	PPAs	Baseline Data	Assumptions/ Risks	Objectives/ Indicators	Target	Data Sources	Data Gathering Methods	Frequency and Recipient of Reports	OPR	Resources Needed
Establishment of Organizational Structure with Efficient Chain of Command	Incident Command System Training Course	24 Municipal Department Heads Trained	Incomplete participants	Number of participants	Learning the importance and awareness of the Government Official & MDRRMO Personnel to an effective and efficient incident management/emergency response plan for managing critical incidents.	Post Activity Report	Submission		MDRRMO	Funds, Manpower



ABBREVIATIONS AND ACRONYMS

<b>AFP</b>	<b>Armed Forces of the Philippines</b>
<b>ASAP</b>	<b>As Soon As Possible</b>
<b>BDC</b>	<b>Barangay Development Council</b>
<b>BDRRMC</b>	<b>Barangay Disaster Risk Reduction and Management Council</b>
<b>BERT</b>	<b>Barangay Emergency Response Team</b>
<b>BFAR</b>	<b>Bureau of Fisheries and Aquatic Resources</b>
<b>BFP</b>	<b>Bureau of Fire Protection</b>
<b>CBEWS</b>	<b>Community Base Early Warning System</b>
<b>CISD</b>	<b>Critical Incident Stress Debriefing</b>
<b>Com Grp</b>	<b>Communication Group</b>
<b>CP</b>	<b>Contingency Plan</b>
<b>CSOs</b>	<b>Civil Society Organizations</b>
<b>DA</b>	<b>Department of Agriculture</b>
<b>DANA</b>	<b>Damage Assessment and Needs Analysis</b>
<b>DBM</b>	<b>Department of Budget and Management</b>
<b>DepEd</b>	<b>Department of Education</b>
<b>DOH</b>	<b>Department of Health</b>
<b>DSWD</b>	<b>Department of Social Welfare and Development</b>
<b>ECs</b>	<b>Evacuation Centers</b>
<b>EOC</b>	<b>Emergency Operation Center</b>
<b>ERAT</b>	<b>Emergency Rapid Assessment Team</b>
<b>GMACC</b>	<b>Guiguinto Municipal Athletic and Cultural Center</b>
<b>GSO</b>	<b>General Services Office</b>
<b>IC</b>	<b>Incident Commander</b>
<b>ICP</b>	<b>Incident Command Post</b>
<b>ICS</b>	<b>Incident Command System</b>
<b>IEC</b>	<b>Information Education Campaign</b>
<b>INGOs</b>	<b>International Non-Government Organizations</b>
<b>LCE</b>	<b>Local Chief Executive</b>
<b>LDRRMC</b>	<b>Local Disaster Risk Reduction &amp; Management Council</b>
<b>LDRRMF</b>	<b>Local Disaster Risk Reduction and Management Fund</b>
<b>LDRRMO</b>	<b>Local Disaster Risk Reduction &amp; Management Office</b>
<b>LGU</b>	<b>Local Government Unit</b>
<b>MAO</b>	<b>Municipal Agriculture Office</b>
<b>MDRRMC</b>	<b>Municipal Disaster Risk Reduction &amp; Management Council</b>
<b>MDRRMF</b>	<b>Municipal Disaster Risk Reduction &amp; Management Fund</b>
<b>MDRRMO</b>	<b>Municipal Disaster Risk Reduction &amp; Management Office</b>
<b>MEO</b>	<b>Municipal Engineering Office</b>

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<b>MHO</b>	<b>Municipal Health Office</b>
<b>NDRRMC</b>	<b>National Disaster Risk Reduction &amp; Management Council</b>
<b>NDRRMF</b>	<b>National Disaster Risk Reduction and Management Fund</b>
<b>NFIs</b>	<b>Non Food Items</b>
<b>NGOs</b>	<b>Non-Government Organizations</b>
<b>OMA</b>	<b>Office of the Municipal Administrator</b>
<b>OPR</b>	<b>Office/Person Responsible</b>
<b>OEC</b>	<b>Outside Evacuation Center</b>
<b>PWDs</b>	<b>Persons With Disability</b>
<b>PCG</b>	<b>Philippine Coast Guard</b>
<b>PNP</b>	<b>Philippine National Police</b>
<b>PN</b>	<b>Philippine Navy</b>
<b>PRC</b>	<b>Philippine Red Cross</b>
<b>PDNA</b>	<b>Post Disaster Needs Assessment</b>
<b>POSD-TMO</b>	<b>Public Order and Safety Division-Traffic Management Office</b>
<b>PDRRMC</b>	<b>Provincial Disaster Risk Reduction &amp; Management Council</b>
<b>PDRRMO</b>	<b>Provincial Disaster Risk Reduction &amp; Management Office</b>
<b>RHMs</b>	<b>Rural Health Midwives</b>
<b>RHNs</b>	<b>Rural Health Nurses</b>
<b>RHPs</b>	<b>Rural Health Physicians</b>
<b>SAR Grp</b>	<b>Search and Rescue Group</b>
<b>SOPs</b>	<b>Standard Operating Procedures</b>
<b>SPEED</b>	<b>Surveillance in Post Extreme Emergencies and Disasters</b>
<b>TMG</b>	<b>Technical Management Group</b>
<b>VOs</b>	<b>Volunteer Organizations</b>
<b>VRGs</b>	<b>Volunteer Rescue Groups</b>
<b>WHF</b>	<b>World Health Foundation</b>
<b>WHO</b>	<b>World Health Organization</b>

**DEFINITION OF TERMS**

<b>Adaptation</b>	The adjustment in natural or human systems in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.
<b>Capacity</b>	A combination of all strengths and resources available within a community, society or organization that can reduce the level of risk, or effects of a disaster. Capacity may include infrastructure and physical means, institutions, societal coping abilities, as well as human knowledge, skills and collective attributes such as social relationships, leadership and management. Capacity may also be described as capability.
<b>Civil Society Organizations</b>	Non-state actors whose aims are neither to generate profits nor to seek governing power. CSOs unite people to advance shared goals and interests. They have a presence in public life, expressing the interests and values of their members or others, and are based on ethical, cultural, scientific, religious or philanthropic considerations. CSOs include non-government organizations (NGOs), professional associations, foundations, independent research institutes, community-based organizations (CBOs), faith-based organizations, people's organization, social movements, and labor unions.
<b>Climate Change</b>	A change in climate that can't be identified by changes in the mean and/or variability of its properties and that persists for an extended period typically decades or longer, whether due to natural variability or as a result of human activity.
<b>Community-Based Disaster Risk Reduction and Management</b>	A process of disaster risk reduction and management in which at risk communities are actively engaged in the identification, analysis, treatment, monitoring and evaluation of disaster risks in order to reduce their vulnerabilities and enhance their capacities, and where the people are at the heart of decision-making and implementation of disaster risk reduction and management activities.
<b>Complex Emergency</b>	A form of human-induced emergency in which the cause of the emergency as well as the assistance to the afflicted is complicated by intense level of political considerations.
<b>Contingency Planning</b>	A management process that analyzes specific potential events or emerging situations that might threaten society or the environment and establishes arrangements in advance to enable timely, effective and appropriate responses to such events and situations.

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<b>Disaster</b>	A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources. Disasters are often described as a result of the combination of: the exposure to a hazard; the conditions of vulnerability that are present; and insufficient capacity or measures to reduce or cope with the potential negative consequences. Disaster impacts may include loss of life, injury, disease and other negative effects on human, physical, mental and social well-being, together with damage to property, destruction of assets, loss of services, social and economic disruption and environmental degradation.
<b>Disaster Mitigation</b>	The lessening or limitation of the adverse impacts of hazards and related disasters. Mitigation measures encompass engineering techniques and hazard-resistant construction as well as improved environmental policies and public awareness.
<b>Disaster Preparedness</b>	The knowledge and capacities developed by governments, professional response and recovery organizations, communities and individuals to effectively anticipate, respond to, and recover from, the Impacts of likely, imminent or current hazard events or conditions. Preparedness action is carried out within the context of disaster risk reduction and management and aims to build the capacities needed to efficiently manage all types of emergencies and achieve orderly transitions from response to sustained recovery. Preparedness is based on a sound analysis of disaster risk and good linkages with early warning systems, and includes such activities as contingency planning, stockpiling of equipment and supplies, the development of arrangements for coordination, evacuation and public information, and associated training and field exercises. These must be supported by formal institutional, legal and budgetary capacities.
<b>Disaster Prevention</b>	The outright avoidance of adverse impacts of hazards and related disasters. It expresses the concept and intention to completely avoid potential adverse impacts through action taken in advance such as construction of dams or embankments that eliminate flood risks, land-use regulations that do not permit any settlement in high-risk areas, and seismic engineering designs that ensure the survival and function of a critical building in any likely earthquake.



<b>Disaster Response</b>	The provision of emergency services and public assistance during or immediately after a disaster in order to save lives, reduce health impacts, ensure public safety and meet the basic subsistence needs of the people affected. Disaster response is predominantly focused on immediate and short-term needs and is sometimes called "disaster relief".
<b>Disaster Risk</b>	The potential disaster losses in lives, health status, livelihood, assets and services, which could occur to a particular community or a society over some specified future time period.
<b>Disaster Risk Reduction</b>	The concept and practice of reducing disaster risks through systematic efforts to analyze and manage the causal factors of disasters, including through reduced exposures to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events.
<b>Disaster Risk Reduction and Management</b>	The systematic process of using administrative directives, organizations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. Prospective disaster risk reduction and management refers to risk reduction and management activities that address and seek to avoid the development of new or increased disaster risks, especially if risk reduction policies are not put in place.
<b>Disaster Risk Reduction and Management Information System</b>	A specialized database which contains, among others, information on disasters and their human material, economic and environmental impact, risk assessment and mapping and vulnerable groups.
<b>Early Warning System</b>	The set of capacities needed to generate and disseminate timely and meaningful warning information to enable individuals, communities and organizations threatened by a hazard to prepare and to act appropriately and in sufficient time to reduce the possibility of harm or loss. A people-centered early warning system necessarily comprises four (4) key elements: knowledge of the risks; monitoring, analysis and forecasting of the hazards; communication or dissemination of alerts and warnings; and local capabilities to respond to the warning received. The expression "end-to-end warning system" is also used to emphasize that warning systems need to span all steps from hazard detection to community response.

<b>Emergency</b>	Unforeseen or sudden occurrence, especially danger, demanding immediate action
<b>Emergency Management</b>	The organization and management of resources and responsibilities for addressing all aspects of emergencies, in particular preparedness, response and initial recovery steps.
<b>Exposure</b>	The degree to which the elements at risk are likely to experience hazard events of different magnitudes.
<b>Geographic Information System</b>	A database which contains, among others, geo-hazard assessments, information on climate change, and climate risk reduction and management.
<b>Land-Use Planning</b>	The process undertaken by public authorities to identify, evaluate and decide on different options for the use of land, including consideration of long-term economic, social and environmental objectives and the implications for different communities and interest groups, and the subsequent formulation and promulgation of plans that describe the permitted or acceptable uses.
<b>Mitigation</b>	Structural and non-structural measures undertaken to limit the adverse impact of natural hazards, environmental degradation, and technological hazards and to ensure the ability of at-risk communities to address vulnerabilities aimed at minimizing the impact of disasters. Such measures include, but are not limited to, hazard-resistant construction and engineering works, the formulation and implementation of plans, programs, projects and activities, awareness raising, knowledge management, policies on land-use and resource management, as well as the enforcement of comprehensive land-use planning, building and safety standards, and legislation.
<b>National Disaster Risk Reduction and Management Framework</b>	Provides for comprehensive, all hazards, multi-sectoral, inter-agency and community-based approach to disaster risk reduction and management.

<b>National Disaster Risk Reduction and Management Plan</b>	<p>The document to be formulated and implemented by the Office of Civil Defense (OCD) that sets out goals and specific objectives for reducing disaster risks together with related actions to accomplish these objectives.</p> <p>The NDRRMP shall provide for the identification of hazards, vulnerabilities and risks to be managed at the national level; disaster risk reduction and management approaches and strategies to be applied in managing said hazards and risks; agency roles, responsibilities and lines of authority at all government levels; and vertical and horizontal coordination of disaster risk reduction and management in the pre-disaster and post-disaster phases. It shall be in conformity with the NDRRMF.</p>
<b>Post-Disaster Recovery</b>	The restoration and improvement where appropriate, of facilities, livelihood and living conditions of disaster-affected communities, including efforts to reduce disaster risk factors, in accordance with the principles of "build back better".
<b>Preparedness</b>	Pre-disaster actions and measures being undertaken within the context of disaster risk reduction and management and are based on sound risk analysis as well as pre-disaster activities to avert or minimize loss of life and property such as, but not limited to, community organizing, training, planning, equipping, stockpiling, hazard mapping, insuring of assets, and public information and education initiatives. This also includes the development/enhancement of an overall preparedness strategy, policy, institutional structure, warning and forecasting capabilities, and plans that define measures geared to help at-risk communities safeguard their lives and assets by being alert to hazards and taking appropriate action in the face of an imminent threat or an actual disaster.
<b>Private Sector</b>	The key actor in the realm of the economy where the central social concern and process are the mutually beneficial production and distribution of goods and services to meet the physical needs of human beings. The private sector comprises private corporations, households and nonprofit institutions serving households.
<b>Public Sector Employees</b>	All persons in the civil service.
<b>Rehabilitation</b>	Measures that ensure the ability of affected communities/areas to restore their normal level of functioning by rebuilding livelihood and damaged infrastructures and increasing the communities' organizational capacity.

<b>Resilience</b>	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.
<b>Response</b>	Any concerted effort by two (2) or more agencies, public or private, to provide assistance or intervention during or immediately after a disaster to meet the life preservation and basic subsistence needs of those people affected and in the restoration of essential public activities and facilities.
<b>Risk</b>	The combination of the probability of an event and its negative consequences.
<b>Risk Assessment</b>	A methodology to determine the nature and extent of risk by analyzing potential hazards and evaluating existing conditions of vulnerability that together could potentially harm exposed people, property, services, livelihood and the environment on which they depend. Risk assessments with associated risk mapping which include: a review of the technical characteristics of hazards such as their location, intensity, frequency and probability; the analysis of exposure and vulnerability including the physical, social, health, economic and environmental dimensions; and the evaluation of the effectiveness of prevailing and alternative coping capacities in respect to likely risk scenarios.
<b>Risk Management</b>	The systematic approach and practice of managing uncertainty to minimize potential harm and loss. It comprises risk assessment and analysis, and the implementation of strategies and specific actions to control, reduce and transfer risks. It is widely practiced by organizations to minimize risk in investment decisions and to address operational risks such as those of business disruption, production failure, environmental damage, social impacts and damage from fire and natural hazards.
<b>Risk Transfer</b>	The process of formally or informally shifting the financial consequences of particular risks from one party to another whereby a household, community, enterprise or state authority will obtain resources from the other party after a disaster occurs, in exchange for ongoing or compensatory social or financial benefits provided to that other party.

<b>State of Calamity</b>	A condition involving mass casualty and/or major damages to property, disruption of means of livelihoods, roads and normal way of life of people in the affected areas as a result of the occurrence of natural or human-induced hazard.
<b>Sustainable Development</b>	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs. It contains within it two (2) key concepts: (1) the concept of "needs", in particular, the essential needs of the world's poor, to which overriding priority should be given; and (2) the idea of limitations imposed by the state of technology and social organizations on the environment's ability to meet present and future needs. It is the harmonious integration of a sound and viable economy, responsible governance, social cohesion and harmony, and ecological integrity to ensure that human development now and through future generations is a life-enhancing process.
<b>Vulnerability</b>	The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard. Vulnerability may arise from various physical, social, economic, and environmental factors such as poor design and construction of buildings, inadequate protection of assets, lack of public information and awareness, limited official recognition of risks and preparedness measures, and disregard for wise environmental management.
<b>Vulnerable and Marginalized Groups</b>	Those that face higher exposure to disaster risk and poverty including, but not limited to, women, children, elderly, differently-abled people, and ethnic minorities.

#### ANNEXES

**Annex 1 – R.A. 10121 AN ACT STRENGTHENING THE PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT SYSTEM, PROVIDING FOR THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT FRAMEWORK AND INSTITUTIONALIZING THE NATIONAL DISASTER RISK REDUCTION AND MANAGEMENT PLAN, APPROPRIATING FUNDS THEREFOR AND FOR OTHER PURPOSES.**

**Annex 2 – E.O. No. 02 Series of 2013 - AN ORDER CREATING THE GUIGUINTO MUNICIPAL DISASTER RISK REDUCTION MANAGEMENT COUNCIL PURSUANT TO SECTION 11 OF REPUBLIC ACT NO. 10121, KNOWN AS THE "PHILIPPINES DISASTER RISK REDUCTION AND MANAGEMENT ACT OF 2010"**

**Annex 3 – E.O. No. 12 Series of 2018 - RE-ORGANIZING THE GUIGUINTO MUNICIPAL DISASTER RISK REDUCTION MANAGEMENT COUNCIL PURSUANT TO SECTION 11 OF REPUBLIC ACT NO. 10121, KNOWN AS THE**

**“PHILIPPINE DISASTER RISK REDUCTION AND MANAGEMENT ACT OF 2010”****Annex 4 – Resolution No. 550 Series of 2019 - APPROVING AND ADOPTING THE MUNICIPALITY’S CONTINGENCY PLAN FOR EARTHQUAKE****Annex 5 - Resolution No. 551 Series of 2019 - APPROVING AND ADOPTING THE MUNICIPALITY’S CONTINGENCY PLAN FOR HYDROMET (FLOODING)****Annex 6 – Related Training Conducted**

NAME	STANDARD FIRST AID & CPR/AED	CSSR	CRASH VEHICLE EXTRICATION & RESCUE	HAR	MCI & AMBU OPS	WATER SAFETY	FIRE SUPP.	HAZMAT	ICS (LVL 1)	ICS (LVL 2)	ICS (LVL 3)	PUREFORCE SYSTEM TRAINING
<b>SRT</b>												
PETER JOHN T. VISTAN	/	/	/	/	/	/	/	/	/	/	/	/
KAREN GEORGETTE C. DIONISIO	/	/	/	/	/	/	/	/	/	/	/	/
JAMES CHRISTIAN V. DELA CRUZ	/	/	/	/	/	/	/	/	/	/	/	/
ALJAE A. VALENTIN	/	/	/	/	/	/	/	/	/	/	/	/
APRIL PARREÑO	/	/	/	/	/	/	/	/	/	/	/	/
ANNA MARIE PALILEO	/	/	/	/	/	/	/	/	/	/	/	/
JOSEPH LEXTOR BARREDO	/	/	/	/	/	/	/	/	/	/	/	/
RON DEXTER V. ROBLES	/	/	/	/	/	/	/	/	/	/	/	/
RAFFY MARQUEZ	/	/	/	/	/	/	/	/	/	/	/	/
ERIC JOSE	/	/	/	/	/	/	/	/	/	/	/	/
DANILO SEDANO	/	/	/	/	/	/	/	/	/	/	/	/
CARLOU CUNANAN	/	/	/	/	/	/	/	/	/	/	/	/
RONALD ESTRELLA	/	/	/	/	/	/	/	/	/	/	/	/
CRISTOPHER GUARDIANO	/	/	/	/	/	/	/	/	/	/	/	/
INOCENCIO VENTURA	/	/	/	/	/	/	/	/	/	/	/	/
ALLAN ANDRES	/	/	/	/	/	/	/	/	/	/	/	/
RICARDO CABIGAO	/	/	/	/	/	/	/	/	/	/	/	/
ROLEX GEGABALEN	/	/	/	/	/	/	/	/	/	/	/	/
ROGELIO VENTURA	/	/	/	/	/	/	/	/	/	/	/	/
<b>SGCC OPERATORS</b>												
BENEDICT BALTAZAR	/	/	/	/	/	/	/	/	/	/	/	/
JANSEN PAUL REYES	/	/	/	/	/	/	/	/	/	/	/	/
KIM CLACIO	/	/	/	/	/	/	/	/	/	/	/	/
JOHN VERGEL CANLAS	/	/	/	/	/	/	/	/	/	/	/	/
PAULO BUERGO	/	/	/	/	/	/	/	/	/	/	/	/
THADEUS JOHN MANZANO	/	/	/	/	/	/	/	/	/	/	/	/
<b>Total</b>	<b>21</b>	<b>5</b>	<b>20</b>	<b>5</b>	<b>7</b>	<b>5</b>	<b>5</b>	<b>2</b>	<b>4</b>	<b>4</b>	<b>2</b>	<b>17</b>

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