



The City Government of Naga

Naga City Disaster Risk Reduction and Management Office



CONTINGENCY PLAN

2023-2028

THE NAGA CITY CONTINGENCY PLAN

Making Naga City Safer Before Disasters Strikes by developing resilient communities and strengthening institutional, organizational capacities , legal and policy framework through community based disaster risk reduction activities involving private - public partnerships.

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City Mayor and Chairman LDRRMC

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Chapter I. Background

A contingency plan is a course of action designed to help an organization respond effectively to a significant future incident, event or situation that may or may not happen.

A contingency plan is sometimes referred to as "Plan B" or a backup plan because it can also be used as an alternative action if expected results fail to materialize. Contingency planning is a component of business continuity (BC), disaster recovery (DR) and risk management.

The purpose of this Contingency Plan is to coordinate these actions to reduce risk to life and damage to property by providing the local agencies and the public with information and advice so that they can respond to potential storm, storm surge, coastal flooding and rain-induced landslide emergencies. Further, this Contingency Plan is intended for all public officials and DRRMC members that will play a role in warning, mitigation, preparedness and emergency response when an impending hazard/s threaten the city.

A CP contains an action plan that is time bound. Oftentimes, the plans are set annually and require regular updating. Through this, it will be easier to measure and compare what has been done and what has not been done from the objectives and activities set by the community. In the NDRRMC parlance, the action plan is the sectoral plan. In summary, a CP is put in place to allow a community to undertake a timely, effective and appropriate emergency response.

A community CP has the following characteristics:

- It is hazard-specific
- Produced in advance of an emergency;
- Developed by the BDRRMC, volunteers, and community members including representatives of the most vulnerable households in the community;
- There must be a representative of, or at least coordination with, the CDRRMC in the development of the CP;
- Simple, short and can be easily understood;
- Shared with all members of the community;
- Familiar to community members as a result of public awareness activities through the practice of community drills;
- Should be regularly reviewed and revised;
- Accessible and available to the members of the community;
- Formally integrated in the barangay and municipal development plans for funding allocation and for sustainability

Preparing a contingency plan before disasters is essential to increase the capacity of personnel in charge of disaster response and enhance local resilience to disasters. The Sendai Framework for Disaster Risk Reduction 2015–2030, adopted at the Third United Nations World Conference on Disaster Risk Reduction in 2015, addresses the importance of “Enhancing disaster preparedness for effective response and to ‘Build Back Better’ in recovery, rehabilitation and reconstruction” as the fourth priority

action. More specifically, its paragraph 33 states that national and local governments shall prepare or review and periodically update disaster preparedness and contingency policies, plans and programs with the involvement of the relevant institutions, considering climate change scenarios and their impact on disaster risk and facilitating, as appropriate, the participation of all sectors and relevant stakeholders

A. Introduction

The Philippines, being in the so-called Circum Pacific belt of fire and typhoon, has always been subjected to constant disasters and calamities. The Great Ocean and seas around the country, while providing wide avenues for international trade and commerce, and a source of tremendous marine resources also serve as the spawning areas of destructive typhoons and monsoons, as well as geologic hazards. In whatever part of the country we are located, the possibility of our experiencing the gloom and the stark reality of disasters such as typhoons, floods, flash floods, earthquakes and man-made disasters such as fire and conflagration, etc, their resultant toll in lives and properties, is always present. Everyone, even in the safety of his home, has not been spared the sight, now the feeling of loss by the terrific disasters and calamities, not as an abstract tragedy, but in the pictures of stunned faces of the survivors.

Disasters are a main source of risk for the poor, and present a serious obstacle to achieving sustainable social and economic development. Disasters affect the poor most severely; measures taken to manage hazards and reduce their impact provide an effective vehicle to make sustainable advances in the fight against poverty.

The year 2011-2012 was the costliest year on the record for natural disasters in the East Asia and the Pacific (EAP) region – trans boundary consequences of flooding in Thailand, the earthquake and tsunami (and cascading effects) in Japan, floods, typhoon and earthquake in Australia and the Philippines, -- which recorded billions in economic losses. (CRED-EMDAT). Because natural disasters have a disproportionate impact on the poor, disaster mitigation and management programs are becoming integral part of poverty alleviation strategies.

Brief History

Pre-colonial era. Bicol region is closely allied with the confederation called the Kedatuan of Madja-as (Itself formed by Austronesian rebels against Rajah Makatunao in a civil war in Brunei), which is located in Panay island. According to the Maragtas, two Datus who followed Datu Puti eventually arrived at Taal Lake and then split up, one group settling later around Laguna de Bay, and another group pushing southward into the Bicol Peninsula, making Bicolanos an intermediate group between people from Luzon and people from the Visayas. The discovery of an ancient tomb preserved among the Bicolanos refers to some of the same deities and personages mentioned in the Maragtas examined by anthropologists during the 1920s.

Spanish colonial period. In 1573, on his second expedition to this region, the conquistador Juan de Salcedo landed in a village and named it "Naga" because of the abundance of Narra trees ("Naga" in Bikol).²

In 1575, Captain Pedro de Chávez, commander of the garrison left behind by Salcedo, founded on the site of the present central business district (across the river from the original Naga) a Spanish city which he named La Ciudad de Cáceres, in honor of Francisco de Sande, the governor-general and a native of the city of Cáceres in Extremadura, Spain. It was still by this name that it was identified in the papal bull of August 14, 1595 that erected the See of Cáceres, together with those of Cebú and Nueva Segovia, and made it the seat of the new bishopric under the Archdiocese of Manila.

In time, the Spanish city and the native village merged into one community and became popularly known as Nueva Cáceres, to distinguish it from its namesake in Spain. It had a city government as prescribed by Spanish law, with an ayuntamiento and cabildo of its own. At the beginning of the 17th century, there were only five other ciudades in the Philippines. Nueva Cáceres remained the capital of the Ambos Camarines provinces and later of the Camarines Sur province until the formal creation of the independent chartered city of Naga under the Philippine Republic.

The bishops of Cáceres occupied a unique place in the Philippine Catholic hierarchy during most of the Spanish regime. By virtue of the papal bull of Gregory XIII, ecclesiastical cases originating in the Spanish East Indies, which ordinarily were appealable to the Pope, were ordered to be terminated there and no longer elevated to Rome. Decisions of bishops were made appealable to the archbishop and those of the latter to the bishop of the nearest see. Thus, in the Philippines, the decisions of the Archbishop of Manila were subject to review by the Bishop of Cáceres whose jurisdiction then extended from the whole Bicol region, the island- province of Marinduque and the present-day Aurora, which was once part of the former Tayabas Province, which is now the province of Quezon. In this sense, bishops of Bikol were delegates of the Pope and could be considered primates of the Church of the Philippines.

This was the reason why bishops of Cáceres and archbishops of Manila were sometimes engaged

in interesting controversies in the sensational Naga case and in such issues as canonical visitation and the secularization of the parishes. As papal delegate, Bishop Francisco Gaínza, then concurrent bishop of Cáceres, sat in the special ecclesiastical tribunal which passed upon the civil authorities' petition to divest Fathers Burgos, Gómez, and Zamora of their priestly dignity. Gaínza did not only refuse the petition but also urged their pardon.

American colonial period. With the advent of the American rule, the city was reduced to a municipality. In 1919, it lost its Spanish name and became officially known as Naga. It acquired its present city charter in 1948, and its city government was inaugurated on December 15 of the same year by virtue of Republic Act No. 305. Rep. Juan Q. Miranda sponsored this legislative act which put flesh into the city's bid to become among the only few independent component cities in the country.

World War II and Japanese occupation. Naga came under Japanese occupation on December 18, 1941 following the Japanese invasion of Legazpi a few days earlier. More than three years later, on April 9, 1945, combined U.S. and Philippine Commonwealth troops under the United States Army, Philippine Commonwealth Army and the Philippine Constabulary, aided by Bicolano guerrilla resistance groups, finally liberated Naga and defeated the Imperial Japanese invaders, thus ending the war.

Independent Philippines. After Naga was liberated from the Japanese, the task of rebuilding the town began in earnest. With only a few casualties, Naga was able to rebuild quickly after the war. After many petitions, Naga became a city on June 18, 1948.

Religious center. Naga City goes by many names: "Queen City of Bicol" and Heart of Bicol due to its central location in the Bicol peninsula, and the Pilgrim City because it is also home to the largest Marian pilgrimage in Asia, the Lady of Peñafrancia, the region's patroness. The 315-year old devotion makes Peñafrancia, together with the Divino Rostro, one of the most popular objects of devotion in the country.

Consequently, Naga is also Bicol's religious center. It is the seat of the metropolitan Roman Catholic Archdiocese of Caceres, whose jurisdiction includes all the suffragan sees of Bicol, the Dioceses of Daet, Legazpi, Libmanan, Masbate, Sorsogon, and Virac.

Ecological Profile

Geophysical Characteristics

Geographic location. Naga City is centrally located in the province of Camarines Sur, about 377 kms south of Manila and 100 kms north of Legazpi City, Albay. Nestled at the foot of Mt. Isarog, the city has a total land area of 8,448 hectares or 84.46 sq kms.

On the Philippine Map, it is placed between 13 to 14° North Latitude and between 123 to 124° East Longitude. It is bounded on the North by the towns of Canaman, Magarao and Calabanga; on the East by Mt. Isarog; on the South, by Milaor and the capital town of Pili; and on the West by the town of Camaligan.

Topography. The city's terrain generally slopes upward from west to east. Its city center, trisected by the Bicol and Naga rivers which are fed by creeks and riverines that crisscross the city, is located near its lowest point, making it susceptible to flooding when unusually heavy rainfall causes these waterways to overflow.

Slope. The low flatlands from the city center up to the upper barangays of Pacol and San Isidro at foot of Mt. Isarog have slopes of 0-3% (almost level) to 3-8% (nearly level to slightly sloping). Collectively, they account for 58% of the total land area.

On the other hand, the eastern part covering barangay Carolina has slopes of 8-18% while Panicuason, which includes the Forest and Parks Reserve of Mt. Isarog that forms part of the National Integrated Protected Areas System (NIPAS), has the steepest from 18-30% and above.

Climate change and hazards

Naga's geographic location, as well as the impact of climate change to the Philippines which is one of the world's most disaster-prone countries, further elevates risks arising from natural hazards that affect the city. These hazards include the following:

Typhoons. Climate change will bring about more intense typhoons. Three of the 16 strongest typhoons over the last 70 years devastated Naga in a span of roughly a decade (2006-16), packing maximum winds of at least 215 kph. One of them ("Glenda" or Rammasun in July 2014) hit the city outside the usual typhoon season, an event that happened only seven times during the period.

Flooding. The major hydro-meteorological hazard facing the city is rain-induced flooding events that put the city's main urban areas at risk, owing to its location at the outlet of the Naga River watershed.

The flood susceptibility map prepared by the Mines and Geosciences Bureau puts 97 hectares (at the junction of the Naga and Bicol rivers) as highly susceptible to flooding, representing 7% of the 1,492-hectare urban district. In all, more than half (55%) of the urban district is susceptible to flooding. The Naga City Local Climate Change Action Plan (LCCAP) places this at an even higher 61%. 2

Over the next 15 years, flooding events are expected to worsen due to climate change. Using climate modeling tools, a precipitation anomaly map prepared by the Manila Observatory shows that by 2025, even with modest efforts at climate change adaptation, rainfall is expected to increase by an average of 5-6% within the urban district, by 4-5% in the peri-urban areas, and 3-4% in uplands. During rainy season, it is projected to increase by as much as 10-11% in the urban district. The LCCAP agrees,

projecting the highest rainfall increase at 9.5% during the rainy months of June, July and August by 2020 and by 16.5% by 2050.

Other climate and geophysical hazards. Lastly, the city also needs to consider three other geophysical hazards that can impact development.

One is rising temperature and drought, especially in the peri-urban and upland agricultural areas. From a baseline historical mean temperature of 26.7 °C for the period 1971-2000, a temperature anomaly map prepared by the Manila Observatory shows that by 2025, under the same climate change adaptation scenario, temperature in Naga will increase by 0.6 °C, raising average temperature to 27.3 °C. During the dry season, the increase can reach as much as 1.2 °C, raising average temperature to 27.9 °C. More worrisome is the LCCAP projection, which sees a 2.2 °C increase by 2050.

Another is **landslides**, which are confined to the Mt. Isarog protected area in Barangay Panicuason and its environs. The MGB landslide susceptibility map identified around 481 hectares (68%) as moderately susceptible and another 226 hectares (32%), located at the peak and two radiating gullies of Mt. Isarog, as highly susceptible to landslides. Fortunately, they do not affect existing built-up areas and developments in said barangay.

The other would include **seismic hazards** that can bring about ground shaking, rupture and/or liquefaction. While the nearest active fault, located across Ragay Gulf, is around 70 kms away from Naga, it triggered a magnitude 7.0 earthquake on March 17, 1973 that wrought the most damage to Calauag, Quezon. Said earthquake caused intensity 4 ground shaking in Naga and as far as Legazpi City. A similar disaster will put at risk around 14% of the city's old housing stock that were built before 1980, when there was weak enforcement of building standards. Also at risk would be old buildings, especially at the urban district, that might be damaged in such an event.

Climate and rainfall. Naga's climatic type falls under Type II under the modified Coronas classification. This condition I characterized by a definite absence of dry season and very pronounced maximum rain period from November to January. Under the Koppen climate classification system, this is equivalent to a tropical savanna climate. It is characterized by monthly mean temperatures above 18 degrees Celsius in every month of the year and typically a pronounced dry season, with the driest month having precipitation less than 60 mm.

Between 2005 and 2014, the city had an average annual rainfall of 2,450 mm, ranging between a low of 2,083 mm (2007) and a high of 3,393 mm (2011). The 10-year average represents a 19% increase over the 2,104 mm recording during the previous planning period. September to December are usually the wettest, while February to April are the driest. During the same period, mean temperature ranged between a low of 23.4 to a high of 31.3 degrees Celsius, or an annual average of 26.8 degrees Celsius.

Demography

Population count and trends. The 2020 Census by the Philippine Statistics Authority (PSA) puts Naga's population at 209,170. This is an increase of 34,239 inhabitants over the 2010 total of 174,931, making Naga the fastest growing city in Bicol. This translates to a 1.8% annual growth rate, lower than the 2.91% registered between 2007 and 2010. Of the total, 49% are male while 51% are female. The latter's share has been steadily growing: in 1995, there were only 95 females for every 100 males; in 2010, there were already 104 for every 100.

In 2015, the city's household population reached 42,152, higher by 6,223 compared to the 35,929 recorded in 2010, yielding an average household size of 4.61, lower than the 4.84 five years back. By comparison, there were 5.20 persons per household in 2000.

By 2030, the city's population is projected to hover between a low of 256,028 to a high of 301,300. If the current 2.3% growth rate is maintained, Naga's population will reach 273,715 by 2030.

Age-sex structure. Naga is a city of young people. Children and the youth (those aged 24 and below) comprise more than half (54%) of the total. More than a quarter (29%) is of school age, with preschoolers accounting for 4%, elementary 12% and secondary 13% of the total. While males make up 52% of the total school-age population in the lower years, the situation is equalized at the secondary level with males and females each getting 50%.

Population density. Based on PSA standards, Naga is 100% urban. At 2,320 residents per sq km as of 2015, up from 1,631 per sq km 15 years ago, it remains the most densely populated city in Bicol using a land area of 84.48 sq kms as base.

Migration. In 1990, 39% of the city's population was considered migrants. In the 2007 Ateneo SSRC survey, 43% of city residents are born in Naga, 38% are from Camarines Sur, 9% are from other Bicol provinces, and 11% from outside Bicol. Their average length of stay in Naga is 28 years.

Results of the 2014 ASSRC survey say that 16.3% of the city's household population have a family member abroad. The same survey said that 61.8% of these international migrants are female while 38.2% are male. Moreover, two of every three (67.6%) are Overseas Filipino Workers (OFWs) working abroad, while 32.3% have permanently migrated or Overseas Filipinos (OFs).

Poverty incidence. According to NSCB estimates, the official figures used by government, poverty incidence in Naga reached 15.7% in 2012, an improvement over the 16.6% registered in 2006 and the 24.4% in 2009.

To more fully capture the extent of poverty, two other data sets are used. One is the self rated poverty data generated through the annual Poverty and Governance Public Opinion Poll conducted by the Ateneo de Naga Social Science Research Center. Over the last few years, there has been a significant downtrend in the number of people saying they are poor: from a high of 62% in 2007, it went down to 48% in 2013, 42% in 2014 and 43.5% in 2015. The other sources are official data generated through the

Community Based Monitoring System (CBMS), a survey conducted by the city government every three years. In 2015, the CBMS identified a total of 10,872 households (33.4%) as income poor.

B. HAZARD IDENTIFICATION

Overview of Hazards

To develop a comprehensive hazard identification, various vulnerability and hazard assessment integrated resiliency of the city, several frameworks where used (*CDRA, Watershed, Ridge-to-Reef/Ecosystem, GHG Assessment*) was conducted where technical support by provided by DILG, ICLEI, ADB and GTZ. Illustrated in Table 1 Below is the summarized stable on the probability and impact of each hazard. This is a one-glance summary based from the Summary of Hazards, Vulnerabilities and Exposure. Indicated below is the overview of hazards of the city:

- ☐ *Vulnerability to flooding.* All the 27 barangays of the city are exposed to flooding in different degrees or proportions with 28% of the total area of the city is exposed to flooding. Fifteen of the 27 barangays or 56% of the total number of barangays have 100% of their area exposed to flooding Likewise, two barangays, namely Tabuco and Triangulo have more that 90% of the total area exposed to flooding. Approximately 9% of the total population is exposed to deep flooding of more than 1.5m; 13% to moderate flooding of 0.5 to 1.5m; and 32% to low flooding of 0.5m and less.
- ☐ *Landslide.* Of the total population of the city, less than one percent is exposed to landslides. Six barangays which were found to be exposed to landslides are: Cararayan; Carolina; Del Rosario; Pacol; Panicuason; and San Isidro. All these barangays have less than 1% of their total population exposed to landslides except Panicuason, which has 27% of its population exposed to landslides.
- ☐ *Liquefaction.* Forty-one percent (41%) of the total population of the city is exposed to liquefaction. The 13 barangays in the lowland area with 90 - 100% of their total area prone to liquefaction. Barangay San Isidro is not affected (green)

by liquefaction

- ☐ *Erodability*. Five barangays are exposed to slight and moderate erosion classes in Naga city: Panicuason (100% of the barangay's total area); Carolina (98%); San Isidro (24%); Cararayan (3%); and Pacol (1%) Barangay San Isidro has No apparent or slight erosion covering about 59.58 hectares or 24.25% (source CCVA). About 32% of the city's total land area is exposed to slight erosion and 7% to moderate erosion. Areas prone to moderate level of erosion are located in the eastern portion of the city

- ☐ Other issues related to hazards are critical health issues which are indicated in the table below. It also integrates the *public safety, civil security and civil disturbance management* which directly acerbate the period of disaster recovery. These are critical issues correlated with the displacement and seasonal shocks experience on the on-set of disaster. As such the city has adopted it and mainstreamed in its contingency planning.

C. HAZARD PLAN

TYPHOON

Extreme winds such as typhoons are often accompanied by heavy rains, floods, lightning, etc. They have multi-hazards aspects including serious injuries and fatalities to humans, as well as damage and collapse of houses and properties.

FLOODING

Floods can occur anywhere after heavy rain after events. All floodplains are vulnerable and heavy rain or thunderstorms can cause flash flooding.

Land borne floods occur when the capacity of stream channels to conduct water is exceeded and water overflows banks. Floods are natural phenomena, and may be expected to occur at irregular intervals on all stream and rivers. Settlement of floodplain areas is a major cause of flood damage.

ANATOMY OF TYPHOON

CP FORM 2: Anatomy of the Typhoon/ Severe Weather Disturbance

Root Causes	Early Warning Signs	Triggering Factors	Existing Mitigating Measures
<ul style="list-style-type: none"> Moisture content of the air Inter-tropical convergence zone Low Pressure Area 	<ul style="list-style-type: none"> PAG-ASA Weather Bulletin/ Advisory Tri-Media (TV, Radio, Internet) Discoloration of the sky during sunrise and sunset 	<ul style="list-style-type: none"> Global Warming resulting to climate change Geographical location of the Philippines 	<ul style="list-style-type: none"> Non Structural measures like declogging, dredging activities, waterways clean up Structural measures such as flood control structures and functional drainage system

Table 1: Summary of Hazards based on probability and Impact (Source: HEA, VEA and GHG assessment)

Hazard	Probability		Impacts		Average (P+1/2)	Rank
	Rate	Remarks	Rate	Remarks		
Typhoon	5	Geographic location and historical account	5	Details seen in HEA and VEA Study	5.00	1st
Flood	4	Geographic location and historical account. Critical measures in place and on-going	5	Details seen in HEA and VEA Study	4.50	2nd
Flash Flood	2	Dependent maintenance of neighboring LGUs by Mt. Isarog and the typhoon signal	2	Upland areas to extend in zones beside Inarihan river	2.00	4th
Liquefaction	2	due to prolonged rainfall and soil type	2	selected barangays near river bank	2.00	4th
Erosion	2	due to prolonged rainfall and soil type	2	selected barangays only	2.00	4th
Landslide	2	due to prolonged rainfall and soil type	1	only 1 barangay	1.50	5th
Drought	2	Due to climate change and expanding demand	3	Upland barangays as most critical and water supply source may be affected in the long run	2.50	3rd
Earthquake	1	Dependent of lake Bato fault and nearby Ragay Gulf is triggered	1	refer to geo-technical study	1.00	6th

CP FORM 1: Hazard Identification and Participation

HAZARD	RATE	PROBABILITY REMARKS	RATE	IMPACT REMARKS	AVERAGE	RANK
Typhoon	5	The event is expected to occur in most or many cases will result to multiple casualty and probably death Geographic Location	5	Damage to properties Damage to lifeline and communication facilities Injuries	5	1
Earthquake	1	The event is expected to occur in most or many cases will result to multiple casualty and probably death Geographic Location	3	Damage to private and government infra	2	4
Fire	3	The event might occur at some time and probably will	2	Minor loss to properties	2.5	3
Landslide	2	Minimal occurrence/ seldom occurrence probably in upper barangay	1	Minor loss to properties	1.5	54
Flooding	4	The event is expected to occur in most or many cases will result to multiple casualty and probably death Low lying barangays	4	Damage to properties and livelihood Submerged residential houses Damaged to agriculture	4	2

As seen in the above probability and impact ratings of the hazards, typhoon ranked as top hazard in the City of Naga. Based on the historical records and data, typhoon left most devastation in the lives and properties of the communities.

And the root cause of the occurrence of typhoon in the area can be attributed to its geographic location and considerably because of climate change. Typhoon most likely to occur anytime since the City of Naga is situated in area which is prone to typhoon.

ROOT CAUSE	EARLY WARNING SIGN	TRIGERRING FACTOR	EXISTING MITIGATING MEASURES
Climate Change Typhoon Heavy Rains Natural Phenomenon Geographic Location	PAG-ASA Weather Bulletin Typhoon 2000 updates Social Media	No proper waste disposal Heavy down pour of rain Tropical Cyclone Low Pressure Area Inter tropical convergence zone Shearline habagat	Declogging of waterways Desiltation Dredging Construction of flood mitigation

D. HAZARD SCENARIO

Overview

This is reflective of the hazards and vulnerability profile already provided in the DRRM Plan. The DRRMOoffice intends to develop the detailed implementation strategy for contingency planning at the barangay level which it will integrate its DRRM Plan. As such the city have developed a basic hazard scenario framework for the Two (2) critical hazards identified where maps and templates were identified due to its ranking. Convergence with the actions plans indicated in the DRRM plan and other plans to ensure coherence of intervention which gauges the adaptive capacity undertaken. To illustrate an example: *In Triangulo, the elementary school ground has been raised to almost 2 meters (to include the presence of SM which offers the parking space during typhoons).* The carrying capacity of the said critical barangays (Triangulo and Mabulo) has been addressed by the refurbishment of JMR coliseum. The said medium term plan is integrated in the LCCAP articulated in the resiliency detailed implementation. As such, as indicated in the Manual of Contingency Planning and Review, each barangay shall develop a Hazard Scenario Matrix.

Scenario planning should try to look at a full range of possible hazard events and then to try to prioritize those most relevant to the risk profile of the area. When developing scenarios it is important to undertake an honest analysis of previous disasters, to assess current levels of risk, and to develop projections of the likely humanitarian implications of a particular hazard/threat within a particular risk context.

There is also a need for a clear understanding and appreciation of who is vulnerable and why, and measures that can be taken to strengthen the resilience of disaster-prone communities including the extent to which indigenous coping mechanisms are sustainable. This, invariably, includes a people-centered approach that is sensitive to gender, culture and other context specific issues that undermine or empower particular groups and individuals. Information must be collected through the undertaking of a detailed

vulnerability mapping exercise to clearly identify areas and communities of high vulnerability.

Although scenarios should be based on the most likely and frequent events, it is important to consider what might happen in an abnormally large event, or how responses would need to be adapted in the case of a possible, but less frequent type of hazard event. It is also useful to discuss what would be the early warning signs and triggers that could be used to monitor the progress of a hazard event and its human impact.

TYPHOON/FLOOD

The city hazard scenario plan matrix provides an overview of critical infrastructures and the population affected in each barangay. *As the city practices community-based disaster risk reduction (CBDRR)*, it aims to bring down the City-level contingency plan down to barangay to enhance and address existing plans. This is also to be able to address to “felt risk” of the communities based on an immediate, medium term and long –term scenario as the city continuously address the priority “gaps” identified in each barangay.

DROUGHT, FLOOD AND EARTHQUAKE BEST, MOST LIKELY AND WORST CASE SCENARIO

SCENARIO	DROUGHT	FLOOD	EARTHQUAKE
Best	No drought	Normal seasonal flooding	Earthquake measuring 4.5 on the Richter Scale causing some minor damage in rural areas
Most Likely	Moderate drought affecting one part of the city	Major flooding affecting 50,000 people	Earthquake measuring 6.5 on the Richter Scale causing some major damage in rural areas including some medium sized barangay
Worst Case Scenario	Severe drought affecting large areas of the city	Extreme flood affecting 100,000 people	Earthquake measuring 8 on the Richter Scale with an epicenter in a large barangay causing catastrophic damage

CP FORM 3A-1: Typhoon Event Scenario

SITUATION/ DESCRIPTION OF EVENTS	BAD	WORSE	WORST/ EXTREME
Typhoons / flood	8% of the flooded areas are exposed to deep floods of more than 1.5m depth. 3 barangays have more than 75% of their total built-up areas susceptible to deep flooding.		
	Before Rainy and windy	Before Very warm, cloudy and windy	Before Fast movement of clouds, windy
	During Long period of rain and wind, fallen and uprooted trees	During Strong and heavy rain; flooding with height of up to 1-2 meters, collapsed houses and buildings, uprooted trees	During Strong and heavy rains, strong winds with thunder like sounds, flood with height of up to 3-5 meters, uprooted trees
	After Trash from debris are scattered, cold weather	After Quiet and calm environment, very hot weather	After Quiet and calm environment, continuous raining, very hot weather
Casualty:			
Death	0	0	0
Injury	0	0	0
Missing	0	0	0
Affected Population :	About 61% of the total population of the city is affected by flooding of different depths		
Local	100% of total population or household displaced	100% of total population or 50% HH displaced	100% of total population or 80-90% of GG displaced
Effects on:			
Housing	Partially damaged houses made of light materials	25% partially damaged houses, 5% totally damaged houses	1000 partially damaged houses, less than 100 totally damaged houses
Tourism		Not affected	Not affected
Roads	none	Impassable roads	27% are exposed to flooding Main road exposed to flooding which is 5% of the

			total length of road exposed to all types of hazards; secondary road – 3%; railroad – 1%; and cart track – 18%. Roads exposed to flooding are located in 22 barangays.
Livelihood/Business		Partially Damaged	80% severely affected
Schools	Partially damaged	60 % are partially damaged and 40% totally damaged	20% partially damaged and 80% totally damaged
Power	partial cut off 1 day	1-3 days cut-off	4 days to 14 days cut off
Bridges	---	----	Four bridges in the city are exposed to flooding.
Water	--	Limited Water Supply	Total damage on water and drainage facilities
Agriculture areas	Little damaged	80% agricultural losses	100% of crops damaged (severely affected)
Ecology	Branches will fall off	Few large trees are uprooted	Several large trees are uprooted
Response Capacity	100 % of personnel on standby and ready for deployment	100% of personnel deployed, BRRDMteam and core volunteer network	To exclude all volunteer network groups and private sector /CSR groups for vehicles and warm food support
Others:			
Air Transport		Suspended flights	Suspended flights
Inter-LGU transport	Not really	Day of typhoon	With roads flooded outside Naga, inter-LGU going southward will be affected from 1 – 4 days.

Inter-Province transport	Not really	Day of typhoon	With roads flooded outside Naga, interLGU going southward will be affected from 1 – 4 days.
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Table 10. Estimated Population at Risk from Regular to Frequent Flooding

NAGA CITY Flood Prone Barangay	BARANGAY	AREA AFFECTED IN (ha).	POPULATION AT RISK
1	Abella	0.135	39
2	Bagumbayan Sur	0.804	163
3	Dinaga	4.922	64
4	Igualdad Interior	8.433	2,062
5	Lerma	15.4	396
6	Mabolo	118.899	6,966
7	Penafrancia	7.572	1,686
8	Sabang	26.447	3,839
9	San Francisco	7.438	211
10	Sta Cruz	1.44	333
11	Tabuco	27.286	3,450
12	Tinago	3.744	129
13	Triangulo	52.612	3,711
	Total	275.127	23,049

Chapter II. Goals and Objectives

A. Goals

The goal of the contingency plan is to provide effective, efficient, timely and well coordinated response mechanisms in the event of the occurrence of typhoon, storm surge, coastal flooding and rain-induced landslide in the city. Such mechanisms shall help to protect lives, properties and the environment, and restore the immediate needs of the affected communities.

B. General Objectives

The objective is expressed in terms of benefits that the community will realize from the successful operationalization or implementation of the contingency plan. The benefits can be in the form of saved lives and livelihoods, reduction of suffering, or arrest of further deterioration of a given emergency situation. These benefits will be realized by means of timely, effective and appropriate emergency response. Timeliness, effectiveness and appropriateness also connote organized and coordinated emergency response. Amongst DRRMCs with contingency plan, zero casualties is often the main objective of the CP, or part of the specific objectives.

The general objectives of the contingency plan are as follows:

1. To determine the immediate tasks required for the response operations during typhoon, storm surge, coastal flooding and rain-induced landslide;
2. To conduct inventory of resources available among the cluster response groups, agencies and departments, including the CSOs and volunteer groups;
3. To establish proper coordination through efficient communication and linkage among LDRRMC member agencies and departments and stakeholders;
4. To provide the immediate and appropriate needs of the affected population of the municipality; and
5. To reinforce the standards of reporting system set by the NDRRMC.

Anchored in other CCA/DRR related plan, the main objective of the contingency plan is to provide a timely, efficient, effective, timely, inclusive (gender & disability) and well-coordinated response mechanism in the event of the occurrence of typhoon and the city government of Naga. The said mechanism is to help protect lives, properties and environment to restore the immediate needs of the affected population. The specific objectives are as follow:

- A. To ensure protection of lives and properties in the event of typhoon;
 - B. To determine the immediate needs and resources that will meet the needs in the event of the typhoon;
-

- C. To establish coordination and linkages between and among private/public sector stakeholders in the city in the event of the typhoon and;
- D. To promote inter-linkage with other LGUs during the on-set of extreme weather condition (signal number 3 and above).

Chapter III. Response Arrangements

1) Response Clusters

CP FORM 5A: Composition of Naga City Cluster Response

NO.	CLUSTER	LEAD OFFICE	OFFICES INVOLVED
1	Food and Non Food Items	CSWDO	CHO, CTO, PNP, GSO, CAGO, CDRRMO, DTI
2	Emergency Communications	CDRRMO, COMCEN	PNP, BFP, VOLUNTEER GROUPS, CEPPIO
3	Search, Rescue and Retrieval	NCERT, BFP SRR	BFP, PNP, LNB, VOLUNTEER, PCGA
4	Logistics	GSD	CEO, DPWH, PNP, BFP
5	Education	DEPED	CDRRMO
6	Camp Coordination and Camp Management	CSWDO	CVO, PNP, DEPED, PSO, CDRRMO
7	Health	CHO, NCH	CVO, PRC, CTO, CBO, CDRRMO, NCH, OLLI
8	Management of the Dead and the Missing	DILG	BFP, CHO, PNP, OLLI, CDRRMO, NCH
9	Law and Order	PNP	FORCE MULTIPLIER, BFP, VOLUNTEERS, LNB
10	Protection	CSWDO	PSO, PNP, LNB
11	International Humanitarian Assistance	CMO	PRC, CDRRMO

CP Form 5B: Summary of Cluster Identification

CLUSTER	AGENCIES/ OFFICES INVOLVED							LEAD AGENCY/ OFFICE
Food and Non Food Items	CHO	CTO	PNP	GSO	CAGO	CDRRMO	DTI	CSWDO
Emergency Communications	PNP	BFP	VOLUNTEER GROUPS	CEPPIO				CDRRMO, COMCEN
Search, Rescue and Retrieval	BFP	PNP	LNB	VOLUNTEER GROUP	PCGA			NCERT, BFP SRR
Logistics/ Transportation	CEO	DPWH	PNP	BFP				GSD
Education		CDRRMO						DEPED
Camp Coordination and Camp Management	CVO	PNP	DEPED	PSO	CDRRMO			CSWDO
Health/ WASH	CVO	PRC	CTO	CBO	CDRRMO	NCH	OLLI	CHO
Management of the Dead and the Missing	CHO	PNP	BFP	OLLI	CDRRMO	NCH		DILG
Law and Order	PSO	FORCE MULTIPLIER	BFP	VOLUNTEERS	LNB			PNP
Protection	PSO	PNP	LNB					CSWDO
International Humanitarian Assistance	PRC	CDRRMO						CMO

A. COORDINATION

1. **Food and Non Food Items**- ensure an effective and timely response to Food and Non Food needs during natural disasters in the city through systematic and coordinated operational planning, response and monitoring.

Purpose:

- a. To ensure availability of stockpiles of food and non food items
- b. To provide augmentation of food and non food items to the LGU in cases where prepositioned resources are used up during the disaster period.

- c. To undertake the coordinated provision of food and non-food assistance to the affected families
- d. To establish and maintain adequate capacity and predictable leadership in the emergency food and NFI cluster for managing a humanitarian response
- e. To meet the gaps and priorities for Food and NFI in the locality
- f. To ensure effective partnerships and coordination between government, private agencies and other agencies.
- g. Promote emergency response actions while at the same time considering the need for early recovery planning as well as prevention and risk reduction concerns

2. **Emergency Telecommunications** -the objective of the cluster is to strengthen Information and Communication Technology (ICT) capacities of the city and rapidly disseminate information concerning imminent disaster threats down to all levels to prepare for, respond to and recover from the impacts of disasters.

Specifically, the cluster will organize to provide timely, resilient and predictable ICT support to improve:

- a. Response and coordination among response organizations;
- b. Coordinate communication resources for disaster response
- c. Help facilitate situational awareness and information sharing
- d. Decision-making through timely access to critical information;
- e. Common operational areas for disaster response;
- f. Common system standards and operating procedures.

Roles and Responsibilities:

The Emergency Telecommunications cluster shall have the following roles and responsibilities:

- Monitor weather conditions and updates using available resources;
 - Report weather updates to the LCE of the impending disaster threat in the municipality;
 - Relay 24-hour weather bulletin and advisory from PAG-ASA;
 - Disseminate accurate early warning information to all concerned committees to allow timely action to respond;
 - Furnish information on updates to responsible persons/agencies;
 - Assist in the activation of warning system devices;
 - Establish linkage with other agencies;
-

- Post and updates information advisory thru available social networks (FB, etc.), website, PAG-ASA, resource agencies;
- Establish linkage and communication lines between responsible agencies for reliable updates;
- Provide access and availability of communication facilities to all concerned.

3. **Search, Rescue and Retrieval**- provides support for an effective, timely, organized and systematic search, rescue, and retrieval operations to affected areas in all emergencies to further minimize loss of lives and casualties, including the hand-over of casualties to the Health Cluster for proper treatment and management.

Specific Objectives of the Cluster:

- a. To ensure the safety and security of the response teams deployed by the SRR cluster;
- b. To ensure timely, effective and efficient conduct of SRR operations;
- c. To facilitate and assist in the retrieval, identification and proper management of human remains; and
- d. To account all the responses made by the SRR cluster.

Priority shall be given to the very young (0-7 y/o), old (60 y/o above), pregnant, elderly and PWDs. The severely injured with life threatening condition but with a high chance of survival are to be responded first, followed by the less severely injured. Next will be the walking wounded and the last will be those with remote survival.

4. **Logistics**- provide an efficient and effective logistics coordinating structure that will harmonize the activities of all clusters and encourage regular info-sharing among all stakeholders and other partners.

- Formulates, updates, implements and monitors logistical policies, plans, programs and procedures that will harmonize the activities of each cluster
- In charge of inventories of all available resources and manpower

Roles and Responsibilities

- Deployment of personnel and equipment that will conduct debris-clearing operations on major roads, avenues, pathways and waterways to facilitate immediate and smooth flow and transport of emergency relief goods and assistance;
 - Install warning signs on hazardous areas and places damaged by calamities and disasters;
-

- Conduct immediate repairs of critical government facilities

5. **Education**- ensures the safety of learners and DepEd personnel. It also aims to provide continued access to quality of education to all affected learners.

Specific Objectives of the Cluster:

- e. Conduct impact and needs assessment on affected teaching and non-teaching personnel, learners and educational properties;
- f. Provide the required temporary learning spaces, teaching-learning materials to allow for resumption of classes and education service delivery;
- g. Coordinate the provision of Psycho-social support and Services to both learners and DepEd personnel;
- h. Promote and activate the use of alternative delivery modes of learning in affected areas; and
- i. Mobilize resources to facilitate delivery of other relevant assistance to the affected teaching and non-teaching personnel.

6. **Camp Coordination and Management**- provides assistance and augment all requirements for the management and evacuation of individual's families affected by disasters.

Specific objectives of the cluster are:

- j. To ensure the availability of identified safe, secure and accessible evacuation centers for emergencies and disasters;
 - k. To ensure that temporary refuge to individual and families potentially at risk or in actual danger are immediately provided;
 - l. To ensure establishment of sex and age disaggregated data accurate data e.g. listing and profiling of affected families and internally displaced persons (IDPs) in evacuation centers or temporary displacement sites.
 - m. To ensure that all IDPs in evacuation centers are provided with basic humanitarian needs compliant with SPHERE standards such as, but not limited to food with enough nutritional values), potable water, clothing, family items, hygiene kits and other essential non-food items;
 - n. To ensure that energy source and communication facilities are in place.
 - o. Ensure that ECs are off limits and have designated areas for pet animals and livestock.
 - p. Shall continue to seek opportunities for recovery, rehabilitation and developmental tasks as post response activities are undertaken, in case of prolonged stay.
-

7. **Health/ WASH**- provide support of a timely and appropriate public health services to the affected population.

Specific Objectives of the Cluster:

- a. Provide guidance and tools and standards and policies;
 - b. Conduct trainings and other various capacity building activities;
 - c. Develop guidelines and infrastructure on surveillance of communicable, non- communicable and emerging diseases;
 - d. Conduct rapid and comprehensive needs assessments in the affected areas;
 - e. Establish effective coordination mechanisms specifically on health response activities based on reliable morbidity and mortality information;
 - f. Advocate the provision of technical assistance, medicines and supplies, and essential equipment in order to support basic health services for the affected population;
 - g. Build partnerships to promote the integration of cross-cutting issues and implement culture and gender sensitive health services; and
 - h. Develop systems for planning, social mobilization, advocacy, surveillance, monitoring, evaluation and good reporting mechanisms within the health cluster.
8. **Protection**- brings together protection partners who have the necessary expertise, resources, access and capacity. Prevents and responds to human rights violations and meet the protection needs of affected populations in a coordinated and predictable manner.

Specific objectives of the cluster are:

- a. To ensure timely, appropriate and quality provision of multi-sectoral and survivor-centered child protection and gender-based violence services in accordance with local, national and international guidelines/standard on child protection and gender-based violence;
 - b. Establish and maintain appropriate coordination mechanism among all humanitarian actors, including coordination of protection inputs, reports, and humanitarian plan and generation of resources;
 - c. Ensure that the protection response adequately takes into account the primary responsibility of the government to ensure protection of affected persons, by among others establishing adequate response mechanism and coordination with the national and local authorities;
 - d. To advocate to all humanitarian clusters, protection, child protection, gender-based violence duty bearers , government, private sectors and Civil Society Organizations to mainstream child protection and gender-based violence in programs, policies and plans;
 - e. To strengthen partnerships for complementation and coordinated child protection and gender-based violence response through the Regional and Local Inter-Agency Committees on Anti-Trafficking and Violence Against Women and their Children
-

- (ICAT-VAWC) and the Local Council for the Protection of Children (LCPC); and
- f. To establish common information, monitoring and reporting systems on child protection and gender-based violence, linked to the IDP Protection Cluster (IDPPC).

9. **Management of the Dead and Missing**- aims to provide assistance in the proper identification and disposition of the remains in a sanitary manner with cautions to prevent negative psychological and social impact on the bereaved and the community.

Specific Objectives of the Cluster:

- a. Provide assistance in the proper identification and disposition of the remains in a sanitary manner with cautions to prevent negative psychological and social impact on the bereaved and the community;
- b. Strengthen coordination, collaboration and partnerships among agencies and stakeholders (NGOs, POs) of MDM at all levels; and
- c. Establish resource sharing mechanisms among key layers in MDM.

MDM Cluster will focus on four major activities:

- i. Identification of the dead
- ii. Final Arrangement for the dead
- iii. Management of the missing persons
- iv. Management of the bereaved families

10. **Law and Order**- aims to maintain Peace Order and Security during disaster and post-disaster phases in order to execute smooth response activities and protect human lives and properties in and around disaster affected sites.

Specific Objectives of the Cluster:

- a. Provide security to the Response Clusters operating in the affected area;
- b. Provide traffic management that will facilitate the speedy movement of people, goods and equipment to the affected population and responding agencies; and
- c. Enforce law and order in the communities through the provision of information on the disaster response operations and the maintenance of community policing to reduce or arrest criminality in the area.

11. Humanitarian assistance

CP FORM 6: Food and Non-Food Items

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Manpower	Organization/ Initial Meeting	CSWDO	D1
	Equipage	GSO	
	Mobilization and deployment	CRRMO, CSWDO	
Food Items	Request for procurement of food packs	CSWDO	D0
Relief Packs (Food and NFI) Family Of 5 good for 3-4 days Rice Canned Goods Instant Noodles	-Inventory of stockpile/ prepositioned goods -Purchase of goods -Repacking -Secure copy of masterlist of families -Production of forms needed		D1
Non Food Items Beddings Linens Pillows			
Family Kits/ First Aid Kits			
Hygiene Kits Toothbrush Toothpaste Bath Soap Shampoo Detergent Soap Pail & dipper Towels Underwear Sanitary Napkins Disposable Diapers			
Campolas Kits (medicine for emergency purposes)			
Kitchen utensils Stove Plates Glass Spoon and Forks			
DAFAc and other disaster forms			
Master List of Families			

each barangay			
Needs (other needs)			

CP FORM 6: EMERGENCY TELECOMMUNICATION

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
D-1 BEFORE DISASTER			
	Organization/ Initial Meeting	CDRRMO	
	Equipage	CDRRMO	
	Mobilization and deployment	CDRRMO	
Communications Equipment	Purchase of additional handheld radio and base radio	LGU, CDRRMO	
	Distribution of radio equipment to response team members	CDRRMO	
Early Warning System	Distribution of early warning system to every barangay	CDRRMO	
Trainings of personnel	Draft training activity proposal	CDRRMO	

CP FORM 6: SEARCH, RESCUE & RETRIEVAL

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Manpower	Creation of NCERT	LGU, CDRRMO	
	Recruitment of new members	CDRRMO	
	Conduct of competency trainings	CDRRMO, BFP	
	Organization of NCERT	LDRRMC	
Equipment	Maintenance of equipment	CDRRMO	
	Distribution of supplies to personnel	CDRRMO	
Meals	Allocation of funds for meals during standby and response activities	CDRRMO	
Transportation Vehicle	Procurement of rescue vehicle	GSO, CEO, SWMO	
Water Safety Equipment	Rubber Boat	CDRRMO	
	Life Vest	CDRRMO	
Inventory of rescue equipment		CDRRMO	
Inventory of medicines such as first aid kits, CAMPOLAS, etc	Purchase of emergency medicine	CDRRMO	

CP FORM 6: LOGISTICS

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Transportation vehicles for pre emptive and forced evacuation	MOA, Standby vehicles from other offices and agencies	LGU, GSO	
Boats for flooded areas	Standby boats from partner agencies	DRRMO	
Security Personnel	Memorandum/ Office Order for standby of personnel	PNP, PSO, LNB	
SRR Equipment and Supplies	Inventory of available resources	DRRMO	
ERT Personnel and Supplies	Memorandum/ Office Order	DRRMO, NCERT	

CP FORM 6: EDUCATION

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
First Aid Kit	Inventory of medical supplies	DSWD, CHO, DRRMO	
School Supply	Purchase of supplies for affected students	DEPED	
Food Packs	Prepare list of beneficiary	DSWD	
Psychosocial activities and projects	Conduct psychosocial first aid	DSWD	
Temporary shelters	Preparation of materials needed for reconstruction of temporary shelters, learning centers	LGU	
Family kits/ hygiene kits	Purchase of hygiene kits	CHO, DSWD	
Potable water supply	Monitoring of water lines	DSWD, MNWD	
Portable comfort rooms	Maintain proper waste disposal	GSO, LGU	
Hygiene Promotion	Share basic knowledge on proper hygiene	CHO	

CP FORM 6: CAMP COORDINATION AND MANAGEMENT

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Updated list of evacuation center with maximum number of	Updating of master list of evacuation centers	LNB, DRRM, DSWD	

families per EC and contact numbers of camp managers			
CCCM Training	Capacity building of personnel	DSWD, DRRM	
CCCM Composition		DSWD	
Prepositioning of food packs	Purchase of food packs for 1500 families	DSWD	
Prepositioning of non food items and medicine	Procurement of non food items and medicines	DSWD	
CCCM Kits and Forms	Printing of forms	DSWD	
Camp management Info Desk Set Up	Set up CCCM Info desk	DSWD	
Availability of info board	Set up info boards in every evacuation center	DSWD, LNB	

CP FORM 6: HEALTH (WASH, HEALTH, NUTRITION)

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Updated list of vulnerable sectors/ disaggregated listing of vulnerable sector	Regular updating of master list of vulnerable population	LNB, DSWD	Every 6 moths
Master listing of available evacuation centers	Training on Camp Management and Camp Coordination	LNB, DRRMO, DSWD	1 st Quarter of every year
Inventory of health facilities	Crafting of Manual of Operations of health facilities during disasters	MDRRMO, CHO	1 st Quarter of every year
Inventory of logistics intended for WASH	Regular inventory of supplies	DRRMO	Every 6 months
Inventory of manpower	Database of trained health responders	CHO	Once a year
DURING DISASTER			
Deployment of trained personnel	Conduct of competency training and refresher course	DRRMO, CHO	2 nd Quarter
Prepositioning of WASH logistics in highly vulnerable areas	Training on logistics management MOA with suppliers	CHO	2 nd quarter
AFTER DISASTER			
Management of the Dead and the Missing	Training on MDM	DILG, CHO, DRRMO	1 st Quarter

Rehabilitation of damaged lifeline facilities	Standby funds for rehab of lifeline facilities and infra	DRRM	
Waste Management	Training on health & hygiene	CHO	3 rd Quarter

CP FORM 6: PROTECTION

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Masterlist of updated evacuation centers/ temporary shelters	Updated masterlist of evacuation centers and temporary shelters for IDPs	LNB, DSWD, DRRMO	
Capacity building to designate CCCM staff and personnel	Training to augment personnel to camp management	DSWD	
CCCM composition	Composition of Camp management committee	DSWD	
Food Packs	Stockpiling of family food packs for atleast 1000 families	DSWD, DRRMO	
Stockpiling of supplies	Purchase of supplies for IDPs	DRRMO, DSWD	
Evacuation center supplies and kits	Procurement of evacuation center needs	DSWD	

CP FORM 6: MANAGEMENT OF THE DEAD AND MISSING

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Directory of concerned/ partner agencies	Provide directory to concerned agencies	DILG	
Cadaver bags	Procurement of cadaver bags	GSO/ CHO	
Identification of temporary burial sites	Identified temporary burial sites	LGU	
Psycho Social Support	Provide psycho social support to the bereaved families	DSWD	
Personal Protective Equipment for responders	Provide PPE for responders	GSO	
MDM Personnel trained on proper handling of the dead & missing	Designate Team Leader	DILG	

CP FORM 6: LAW AND ORDER

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Personnel	Mustering of troops, augmentation of personnel	LGU, PNP, IMT	
Vehicles	Inventory and maintenance of vehicles	PNP, LGU	
Trainings	Capacity building of personnel	LGU	
Supplies	Procurement of supplies needed	PNP	
Food packs	Purchase of food packs	LGU	
Fuel	Purchase of standby fuel	LGU	

CP FORM 6: HUMANITARIAN ASSISTANCE

Needs	Activities/ Arrangements to Meet the Needs	Responsible Offices	Timeframe
Fuel/ Transportation	Request	LGU	
Foods	Request	DSWD	
Data Gathering/ Reports	Coordination	DSWD, DRRMO	
Manpower	Gather/ Request	DRRMO, GSO, CEO	
Communication equipment	Coordination	LGU, DRRMO	

B. COMMAND AND CONTROL

1.) Emergency Operations Center (EOC)

The Disaster Emergency Operation Center is the center of the operation during disasters or even during normal times. The structure of the DEOC can expand or contract depending on the disaster situation. This is located at the Naga city Public Safety Office where the Central Communications Center is located, that also serves as the Command Center.

The primary function of DEOC is to implement the NDRRM Plan, which includes coordination, operations management, data collection, record keeping, public information, resource management and proposed project to the chairman of the Public Safety Committee for policy development.

The DEOC, its systems and procedures are designed in such a way that information can be promptly assessed and relayed to concerned parties. Rapid dissemination contributes to a faster response and effective decision-making during an emergency. As the master coordination and control point for all

counter-disaster efforts, the DEOC is the center for decision making under a unified command. In a disaster situation, the DEOC will come under the direct control of the chief executive. Or any person designated by him as the chief of operations.

The usual activities of the DEOC will be to:

- ☞ Ensure that all barangays continue to regularly update the BDRRM Plan and encourage them to prepare specific plans for areas prone to specific disasters;
- ☞ Continue identify and interact with the Government departments/agencies, laboratories, research institutions and NGO's to evolve mitigation strategies and set-up study groups and task forces for specific vulnerability studies.
- ☞ Serve as the data bank and ensure that mitigation strategies are planned and implemented;
- ☞ Upgrade and update the city DRRM Plan according to the changing situation of the city, and its development trend ;
- ☞ Disseminate the information about the city DRRM Plan to other departments of the city government and barangay level.
- ☞ Organize damage assessment and needs assessment and update the city DRRM Plan accordingly;
- ☞ Ensure that the warning and communication systems and instruments in the DEOC are in working conditions.
- ☞ Ensure that all emergency rescue equipment and personnel are all ready for deployment at any given time and situation.

On the receipt of the warning or alert from any agency which is competent to issue such warning, all community preparedness measures including counter-disaster measures will be put into operation. The chief executive will assume the role of the chief of operations for disaster management with the aid of the DRRM Officer.

The occurrence of disaster would essentially bring into force the following:

1. The DEOC will be on full alert.
 2. The DEOC can expand to include agencies/offices with responsibilities for specific tasks.
-

3. An on-going UHF RADIO 406.3000 Mhz. will be used for radio communication, wireless communication and hotline contact with the PNP 166, BFP 160, and Ambulance, BMC OPCEN, will be the contact numbers of the DEOC for the dispatch of their personnel, fire trucks and ambulances and other emergency equipment.
4. The DEOC will implement THE HELP LINE 3000 (472-3000, 811-3000, 478- 3000) for the use of the key agencies involved in disaster management to be backed up with a mobile cellular number and a VHF communications facility.
5. The DEOC will implement and use an Incident Command System for its operation.

Agencies/Office Primarily Responsible in Addressing the Threat

- ☞ City Mayors Office
 - ☞ Naga City Disaster Risk Reduction and Management Office
 - ☞ The Naga City Public Safety Office
 - ☞ Bureau of Fire Protection / Naga City Central Fire Station/BFP SRU/EMS
 - ☞ Bicol Medical Center –Health and Emergency Management Staff
 - ☞ Department of Education/ Pre Determined Evacuation Centers
 - ☞ Naga City Hospital/Emergency Rescue Naga
 - ☞ Philippine National Police / Naga City Police Office
 - ☞ Philippine National Police/ MARITIME Group
 - ☞ City Health Office/ Center for Disease Prevention and Surveillance
 - ☞ City Social Welfare and Development Office- Relief Operations
 - ☞ City Agriculturist Office
 - ☞ City Engineers Office
 - ☞ Philippine National Red Cross
 - ☞ Naga City Peoples Council
 - ☞ KABALIKAT NAGA CENTRAL/Emergency Communications System
-

2.) Incident Command System

The City of Naga implement the Incident Command System (ICS) , a planning and management tool to address and coordinate resources during emergencies and disasters with its developed and trained incident management team composed of the members of the Inter Agency Joint Operations Center (IA-JOC) from the members of the LDRRMC. So far, all planned events and major emergencies ICS is used applied.

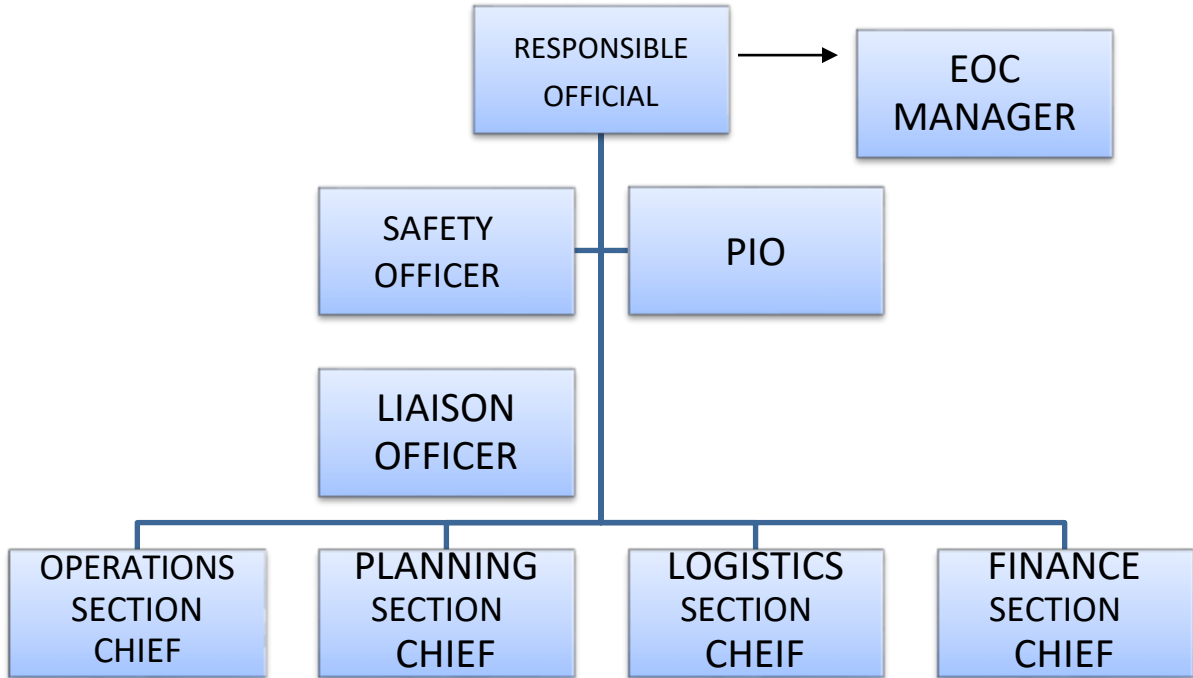
ACTIVATION OF INCIDENT COMMAND SYSTEM

Depending on the types of hazards and upon the recommendation of the City Disaster Risk Reduction and Management Office and approved by the Local Chief Executive or the Responsible Official, the appropriate ICS Sections and Teams shall be activated for the on-scene timely, coordinated and effective response and management to avoid the loss of lives and minimize damage to properties.

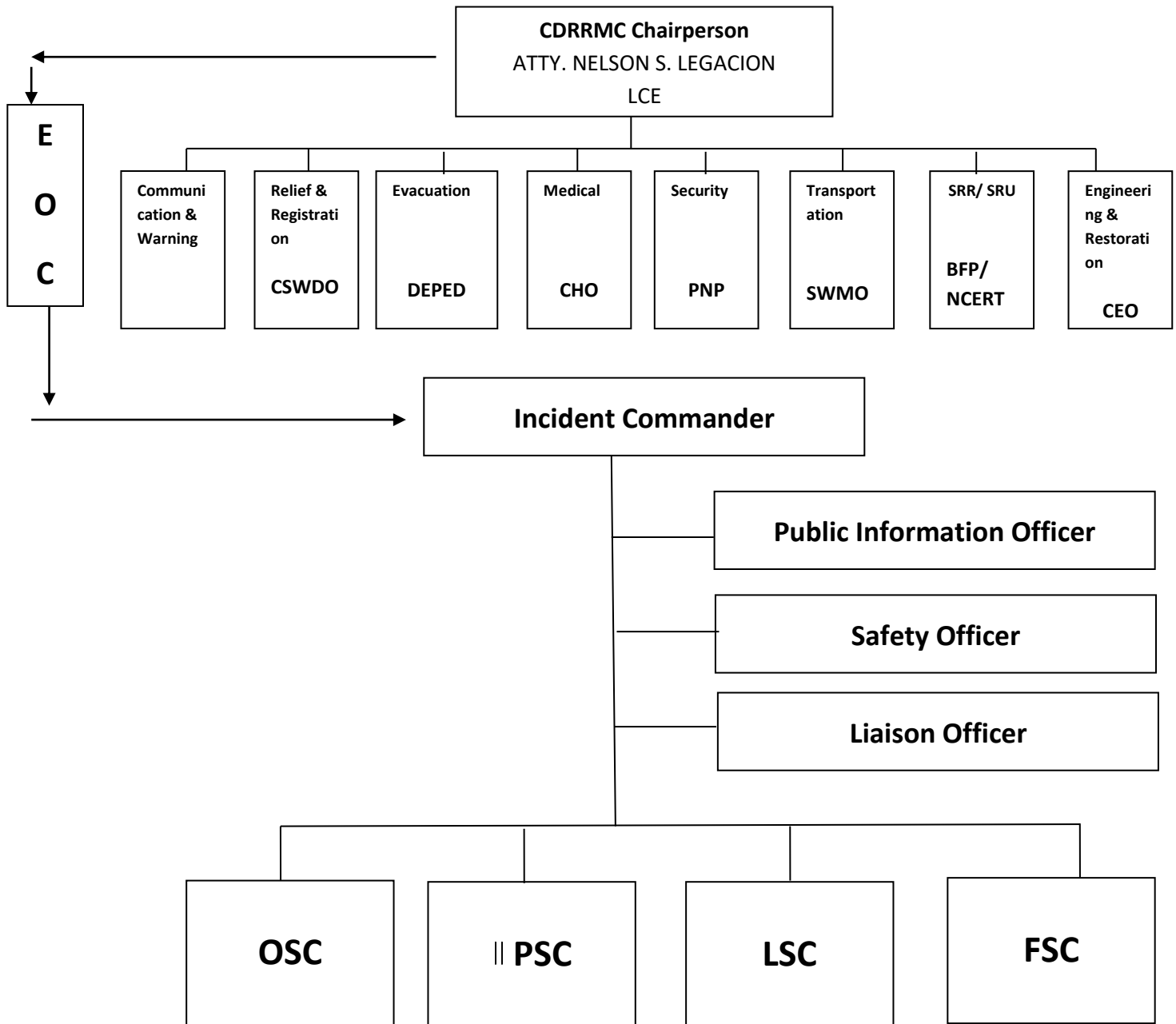
Incident Management Team Duties and Responsibilities:

- 1) Act as the over-all in-charge of on-scene response decision
 - 2) Manage all checked in resources
 - 3) Receive and implement all the directives of the Responsible Official
 - 4) Ensure the safety all personnel and other resources deployed during the operations
 - 5) Responsible for the over-all management of the incident and all activities and functions
 - 6) Provide support to the incident field operations through communication, coordination and resource management functions
-

NAGA CITY INCIDENT COMMAND SYSTEM



3.) Interoperability

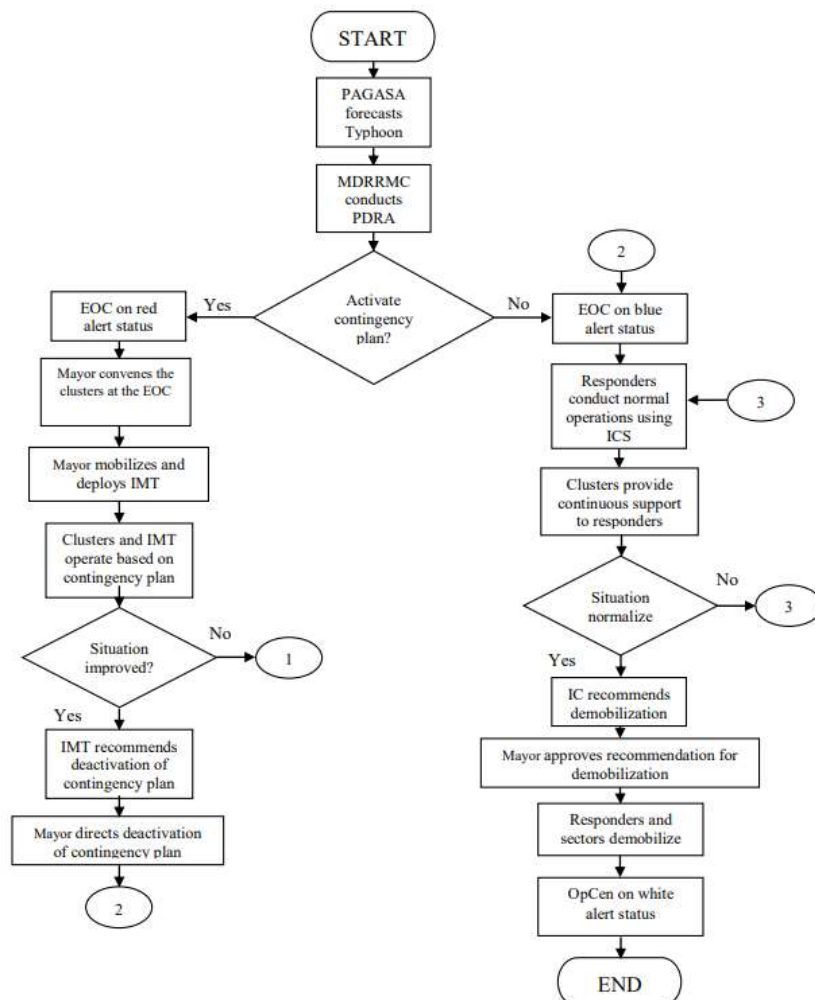


The Chairperson of the LDRRM Council shall supervise the coordination activities and strategic decisions of the cluster. This decision shall then be communicated to the Incident Commander through the Emergency Operation Center. The Incident Commander, on the other hand, shall report the tactical activities to the EOC going to the different clusters.

Chapter IV. ACTIVATION, DE-ACTIVATION AND NON ACIVATION

The contingency plan shall be activated based on the findings of Pre Disaster Risk Assessment (PDRA) by the CDRRMO and the CDRRMC, leading to the activation of the Disaster Emergency Operations Center. The CDRRMC Chairperson shall then convene all the clusters to assess the situation. Afterwards, the CDRRMC Chairperson shall officially activate the Incident Command System (ICS) and delegate authority to the Incident Commander coming from the CDRRMO. The Incident Commander (IC) shall then proceed to organize the Incident Management Team (IMT) and implement tactical activities based on the strategic decisions of the clusters.

The Contingency Plan shall be deactivated once the situation has improved and the when heightened alert is no longer required. The recommendation for deactivation shall emanate from the IC going to the Chairperson of the CDRRMC being the Responsible Officer (RO) via the DEOC. Once deactivated. Operation will still remain until such time that the DEOC will be back to “White Alert” status. At this point the, the operation is already terminated.



STANDARD OPERATING PROCEDURES ON DIFFERENT HAZARDS

I. TROPICAL CYCLONES

1. Preparedness Phase

- Risk Assessment
 - Identify potential hazards, vulnerabilities and risks associated with Tropical Cyclones
 - Conduct regular assessments to update risk profiles
- Emergency Response Plan (in accordance with NDRRMC and OCD IEC)
 - Develop an Emergency Response Plan (ERP) specific to tropical cyclones, detailing roles, responsibilities and communication protocols
 - Establish an emergency management team and assign specific tasks to each member.
 - Designate assembly points, evacuation routes and safe locations for tropical cyclones.

Before

- Monitor the news for weather updates, warnings and advisories.
- Know the early warning and evacuation plan of the community/ barangay.
- Check the integrity of your house and repair weak parts.
- Prepare your family's GO BAG containing items needed for survival.
- When notified, immediately go to the designated evacuation center.

During

- Stay Calm. Stay Indoors and tune in for latest weather updates.
- Turn off main electrical switch and water valve.
- Use flashlight or emergency lamp
- Stay Away from glass windows

After

- Wait for authorities to declare that it is safe to return home.
 - Stay away from fallen trees, damaged structures and power lines.
 - Do not go sightseeing as you may hinder the work of the emergency services
 - Check for wet or submerged electrical outlets and appliances before turning on electricity
 - Throw away rainwater in cans, pots and tires to prevent breeding of mosquitoes.
-

- Early Warning Systems
 - Install and maintain Early warning Systems for Tropical Cyclones
 - Establish communication channels to receive and disseminate warnings effectively
 - Train communities on how to interpret and respond to Tropical Cyclones early Warnings

- Trainings and Drills
 - Conduct regular Information, Education and Communication Campaigns (IEC), training sessions and drills to ensure that all personnel are familiar with their roles and responsibilities during typhoons
 - Train communities on basic first aid, search and rescue techniques and evacuation procedures
 - Review and update training materials and procedures as needed.

II. FLOODS

1. Preparedness Phase

- Risk Assessment
 - Identify potential hazards, vulnerabilities and risks associated with Tropical Cyclones
 - Conduct regular assessments to update risk profiles
- Emergency Response Plan (in accordance with NDRRMC and OCD IEC)
 - Develop an Emergency Response Plan (ERP) specific to floods, detailing roles, responsibilities and communication protocols
 - Establish an emergency management team and assign specific tasks to each member.
 - Designate assembly points, evacuation routes and safe locations for flooding.

Before

- Monitor the news for weather updates, warnings and advisories.
 - Know the early warning and evacuation plan of the community/ barangay.
 - Participate in flood preparedness actions and drills
 - Secure your home. Move essential furniture and items to the upper floor or high areas in your house
 - Before evacuating, turn off all main switches of electricity, water and LPG tanks
 - When notified, immediately go to the designated evacuation center.
-

During

- Stay Calm. Stay Indoors and tune in for latest weather updates.
- Do not touch electrical equipment if you are wet or standing in floodwater
- Do not go swimming in swollen rivers or creeks
- Do not walk or drive through flooded areas

After

- Wait for authorities to declare that it is safe to return home.
- Report fallen trees, damaged structures and power lines.
- Check for wet or submerged electrical outlets and appliances before turning on electricity
- Check your house for possible damages
- Make sure that the food and water for drinking are not contaminated by floodwater
- Early Warning Systems
 - Install and maintain Early warning Systems for Flooding
 - Establish communication channels to receive and disseminate warnings effectively
 - Train communities on how to interpret and respond to Flood Early Warnings
- Trainings and Drills
 - Conduct regular Information, Education and Communication Campaigns (IEC), training sessions and drills to ensure that all personnel are familiar with their roles and responsibilities during typhoons
 - Train communities on basic first aid, search and rescue techniques and evacuation procedures
 - Review and update training materials and procedures as needed.

2. Response Phase for all Hazards

- Activation of Emergency Response Plan
 - Upon receiving an official warning or alert, activate the Contingency Plan/ Response Plan
 - Notify all CDRRMC members, stakeholders and relevant authorities about the current situation and the actions to be taken
 - Communication and Coordination
 - Establish a dedicated communication center (DEOC) to maintain constant communication with all response teams, stakeholders and relevant authorities.
-

- Coordinate with the Disaster Emergency Operations Center (DEOC), local authorities, emergency services and other relevant organizations to exchange information and resources.
- Evacuation and Shelter
 - Enforcement of Pre-emptive or Forced Evacuation
 - Initiate evacuation procedures based on predetermined routes and safe locations
 - Ensure that evacuation routes are clearly marked and accessible
 - Establish temporary shelters equipped with the basic necessities for affected individuals and families
- Search and Rescue
 - Activate search and rescue teams to locate and assist individuals in distress
 - Prioritize rescue operations based on the severity of the situation and the number of people affected
 - Establish triage for medical assessment and treatment of injured individual

3. Recovery Phase

- Damage Assessment
 - Conduct thorough assessment of the affected areas to determine the extent of damage to infrastructure, utilities and facilities
 - Document and prioritize areas requiring immediate attention and action
 - Restoration and Rehabilitation
 - Develop a comprehensive plan for the restoration of essential services, facilities and infrastructure
 - Allocate resources and coordinate efforts to expedite recovery process
 - Psychological Support
 - Provide psychological support and counselling services to affected individuals and response team members
 - Raise awareness about post disaster stress and coping mechanisms
 - Review and Improvement
 - Conduct a post-disaster review to evaluate the effectiveness of the response and recovery efforts
 - Identify areas for improvement and update the SOP and Emergency Response Plan accordingly;
 - Incorporate lessons learned into future IEC, Training Sessions and Drills
 - Community Engagement and Education
 - Engage with the local community to raise awareness about preparedness measures and response procedures
 - Conduct Information Education Communication Campaigns, Workshops, drills to enhance community resilience
-

- Documentation and Reporting
 - Maintain detailed records of all activities, including incident reports, damage assessments, rescue operations and resource utilization
 - Submit timely reports to relevant authorities and stakeholders as required
- SOP Maintenance and Review
 - Regular review and update of Hazard SOP to align with changing circumstances, new technologies and lessons learned from previous incidents
 - Document any change made to the SOP and communicate them to all stakeholders

III. EARTHQUAKE

1. Preparedness Phase

- Risk Assessment
 - Identify the earthquake prone areas in Naga City based on historical data and seismic activity reports
 - Conduct a vulnerability assessment to determine potential impacts and vulnerabilities of critical infrastructure, buildings and facilities
- Emergency Response Plan
 - Develop and regular update on emergency response plan specific to earthquakes, considering local resources and capacities.
 - Clearly define roles, responsibilities and communication channels for all stakeholders involve in the response
- Public Education and Awareness
 - Conduct regular public awareness campaign to educate residents about earthquake risks, preparedness measures and response procedures
 - Promote the importance of creating personal and family emergency plans, including evacuation routes and meeting points
- Emergency Supplies and Equipment
 - Maintain an inventory of emergency supplies and equipment such as first aid kits, flashlights, batteries, food, water and communication devices
 - Regularly inspect and restock supplies ensuring they are readily accessible in key locations throughout Naga City

2. Response Phase

- Early Warning Systems
 - Establish and maintain an effective early warning system to provide advance notice of earthquakes
 - Ensure proper dissemination of warnings through various communication channels, including sirens, text alerts, social media and local media outlets
-

- Evacuation Procedures
 - Identify safe evacuation routes and assembly areas away from potential hazards such as building, slopes and coastal areas
 - Coordinate with local authorities, community leaders, and volunteers to assist in the orderly evacuation of residents, particularly vulnerable groups
- Search and Rescue
 - Activate search and rescue teams trained in earthquake response to conduct swift and efficient search and rescue operations
 - Prioritize the rescue of trapped individuals and provide necessary medical assistance
- Communication and Information Management
 - Establish a centralized communication center to coordinate all response efforts, including incident reporting, resource requests and situational updates
 - Regular update and disseminate accurate information to the public through official channels to prevent misinformation and panic
- Infrastructure Assessment
 - Assess critical infrastructure, including buildings, bridges, roads and utilities to determine structural integrity and safety
 - Develop recovery plan that outlines the necessary steps and resources required for the reconstruction and rehabilitation process

3. Recovery Phase

- Damage Assessment and Recovery Planning
 - Conduct a comprehensive damage assessment to evaluate the impact of the earthquake on infrastructure, buildings and community facilities
 - Develop a recovery plan that outlines the necessary steps and resources required for the reconstruction and rehabilitation process
 - Psychological Support
 - Provide psychological support and counselling services to affected individuals and communities to address trauma, anxiety and grief
 - Collaborate with local health authorities and non-government organizations to ensure the availability of mental health services
 - Restoration of Essential Services
 - Prioritize the restoration of essential services, such as electricity, water, communication, and healthcare facilities to support the recovery process
 - Collaborate with relevant agencies and utility providers to expedite repairs and ensure service continuity
 - Review and Improvement
-

- Conduct a post-disaster review to evaluate the effectiveness of the response and recovery efforts
 - Identify areas for improvement and update the SOP and Emergency Response Plan accordingly;
 - Incorporate lessons learned into future IEC, Training Sessions and Drills
 - Community Engagement and Education
 - Engage with the local community to raise awareness about preparedness measures and response procedures
 - Conduct Information Education Communication Campaigns, Workshops, drills to enhance community resilience
 - Documentation and Reporting
 - Maintain detailed records of all activities, including incident reports, damage assessments, rescue operations and resource utilization
 - Submit timely reports to relevant authorities and stakeholders as required
 - SOP Maintenance and Review
 - Regular review and update of Hazard SOP to align with changing circumstances, new technologies and lessons learned from previous incidents
 - Document any change made to the SOP and communicate them to all stakeholders
-

Non Activation of the CP

In case that there were no disasters or any untoward incident that happened in the months of July to December, the contingency plan will not be activated. In this case, the Plan will be maintained as a perpetual plan for future use in the event of upcoming disasters, emergencies or any event that needs mobilization of resources or IMT based on the plan.

CP Form 7: Food and Non-Items

Resources	Unit	Quantity	Office/Agency	Resource Location	Remarks
Manpower		14	CDRRMO	Naga City	LGU Employees of CDRRMO
Corned Beef	pcs	500	CDRRMO		On hand
Mineral Water	bottles	250	CDRRMO		On hand
Crackers	packs	200	CDRRMO		On hand
GO BAG (Corned Beef, Crackers, Candies, Mineral Water, Hygiene Kits, Raincoat, flashlight, whistle, first aid kit)	packs	500	CDRRMO		On hand
Foldable Foam	pcs	50	CDRRMO		On hand
Modular Evacuation Tent	pcs	20	CDRRMO		On hand
Pail & Dipper	sets	50	CDRRMO		On hand
Bath Towel	pcs	200	CDRRMO		On hand
Trauma Kit	sets	20	CDRRMO		On hand
Hygiene Kit	sets	200	CDRRMO		On hand
First Aid Kits	sets	200	CDRRMO		On hand
Campolas	sets	50	CDRRMO		On hand
Family Kits	sets	250	CDRRMO		On hand

Stocks: on hand (December 31, 2023)

INVENTORY COUNT FORM
Other Machineries & Equipment

PPE Account Group: _____

Sheet No. _____ of _____

Article/Item	Description	Old Property No. assigned	New Property No. assigned	Unit of Measure	Unit Value	Quantity per Property Card	Quantity per Physical Count	Location/ whereabouts	Condition	Remarks
AED	Training AED	2018-07-05-090-390-05-2A-2B		units	55,000.00	2	2	ADMIN	Good	
High Pressue Lifting Bag	Rescue Equipment for collapse structure High Pre		2019-408	set	785,000.00	1	1	SARU	Good	
High Pressue Lifting Bag	Rescue Equipment for collapse structure High Pre		2019-408	set	785,000.00	1	1	SARU	Good	
Power Rotary hammer	Bosch (SBH 2-10 w/acc.)		2016-2396	set	14,815.50	1	1	Admin	Good	
portable water pump	Honda, gasoline engine, 6HP, 3.1L		2019-502-B & 505	sets	324,900.00	2	0	SARU	Good	DONATED TO BFP
generator set	KVA gasoline open-type GC6200E 220V-60v, 13HP		2017-2	unit	39,000.00	1	0			
chainsaw	engine power:2.2KW (3.0bhp), STIHL		2019-2456-2463	unit	68,500.00	8	2	BFP,PNP,ENRO, SARU, SWMO	Good	2 PNP, 1 BFP, 2 ENRO, SWMO (with PAR)
generator set	5KVA gasoline open-type,GC6200E 220V-60c; Eng		2017-1	unit	39,000.00	1	1	COMCEN	Good	
chainsaw	Fujihama 36", Germany made,SN: 20160509-034		2016-2983	unit	70,882.56	1	0			
grinder	GWS 20-180 7", BOSCH		2016-2397	unit	14,645.40	1	1	Admin	Good	

Prepared by:


CAITLIN B. AMARANTO
LOGISTICS OFFICER-IN-CHARGE

Received by:


ERNESTO T. ELCAMEL
LDRRMO IV

Date:

AS OF DECEMBER 20, 2023

INVENTORY COUNT FORM

Watercraft

PPE Account Group: _____

Sheet No. _____ of _____

Article/Item	Description	Old Property No. assigned	New Property No. assigned	Unit of Measure	Unit Value	Quantity per Property Card	Quantity per Physical Count	Location/ whereabouts	Condition	Remarks
Rescue Boat	Ondoy Fiber Glass Boats	2023-05-090-390-04-4A 4B 4C 4D		unit	172,950.00	4	4	CDRRMO	Excellent	
Rescue Boat	Brand New Rigid Hulled Rescue Boat Capacity: 10		2019-501-B	unit	668,888.00	1	1	SARU	Good	
Rubber Boat			2012-1082	unit	178,888.00	1		Brgy Dinaga		
Rubber Boat	OBM 30HP Yamaha		2012-585	unit	250,000.00	1		PCGA		

Prepared by:


 CAITLIN B. AMARANTO
 LOGISTICS OFFICER-IN-CHARGE

Received by:


 ERNESTO T. ELCAMEL
 LDRRMO IV

Date:

AS OF DECEMBER 20, 2023

INVENTORY COUNT FORM

Motor Vehicles

PPE Account Group: _____

Sheet No. _____ of _____

Article/Item	Description	Old Property No. assigned	New Property No. assigned	Unit of Measure	Unit Value	Quantity per Property Card	Quantity per Physical Count	Location/ whereabouts	Condition	Remarks
Fire Truck	Firefighting Truck ,ISUZU,Engine No.: 4HK10CM6		2020-444	unit	4,690,000.00	1	1	BFP		with ratified Deed of Donation to BFP
Motorcycle	Yamaha Mio Soul125,Engine#43R4E0286713/Fra		2016-2195	unit	79,671.00	1	1	Admin		
Modification of Motorcyd	Motorcycle-ambulance MIO SOUL			unit	24,500.00	1	1	Admin		
Ambulance van	Engine#HFC4DAI2B1C4019421;Chassis#U16AA3C		2014-381	unit	1,499,000.00	1	1			FOR IIRUP
Ambulance	Nissan Urvan N350; Engine Size:2.5LEuso IV diese		2019-237	unit	1,850,000.00	1	1			
Fire Truck	ISUZU NLR85 ;Engine #: 4JJ13U6539/Chassis #: P		2019-369	unit	4,750,000.00	1	1	BFP		with Deed of Donation

Prepared by:


 CAITLIN B. AMARANTO
 LOGISTICS OFFICER-IN-CHARGE

Received by:


 ERNESTO T. ELCAMEL
 LDRRMO IV

Date:

AS OF DECEMBER 20, 2023

CITY
OF
NAGA
REGION V



0 1000 2000 3000 Meters

Scale: 1:95000

ALTITUDINAL MAP

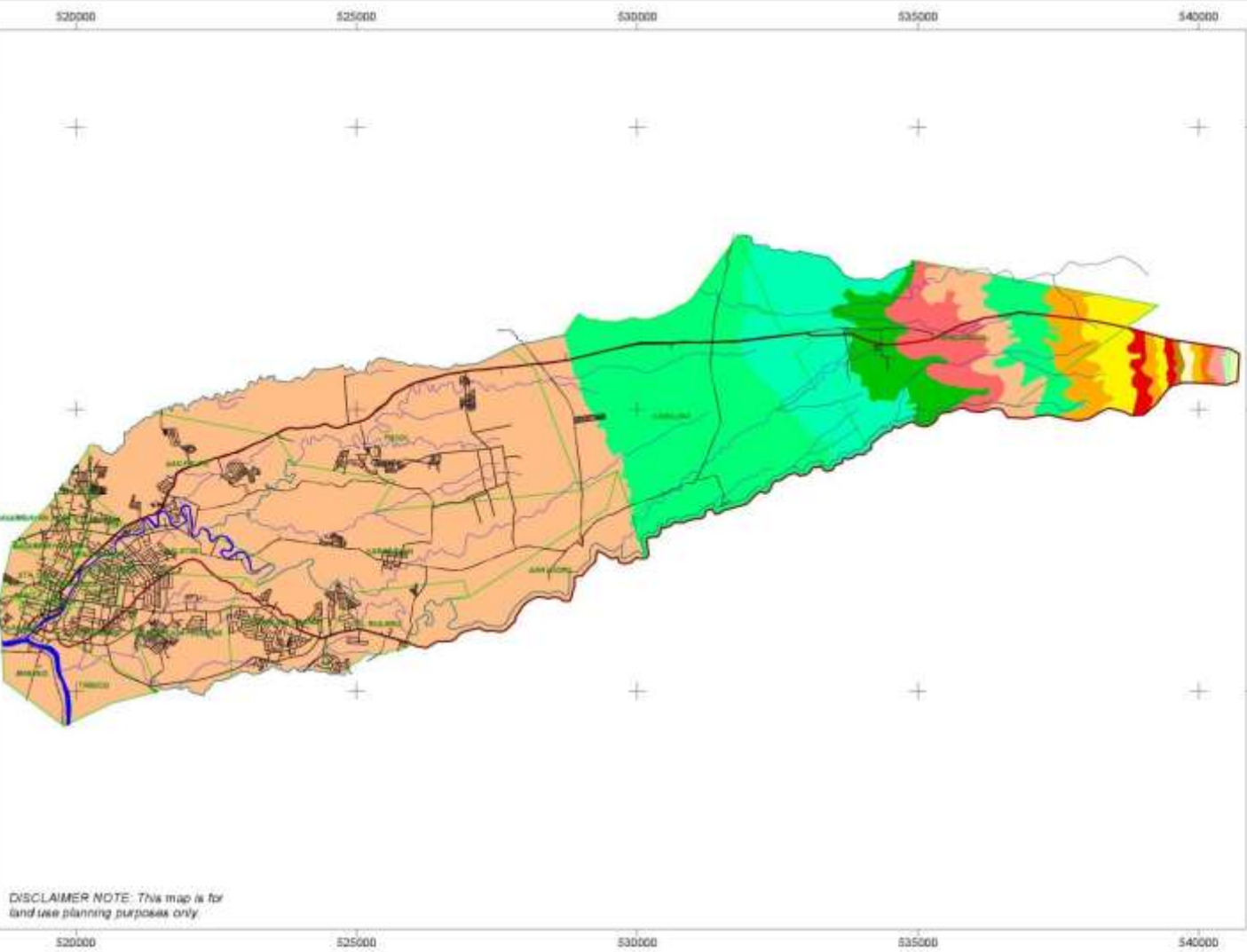
LEGEND:

	Watershed Boundary
Altitude	
	0 - 50
	50 - 100
	100 - 200
	200 - 300
	300 - 400
	400 - 500
	500 - 600
	600 - 700
	700 - 800
	800 - 900
	900 - 1000
	1000 - 1100
	1100 - 1200
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	1400 - 1500
	1500 - 1600
	1600 - 1700
	1700 - 1800
	1800 - 1900
	1900 - 2000

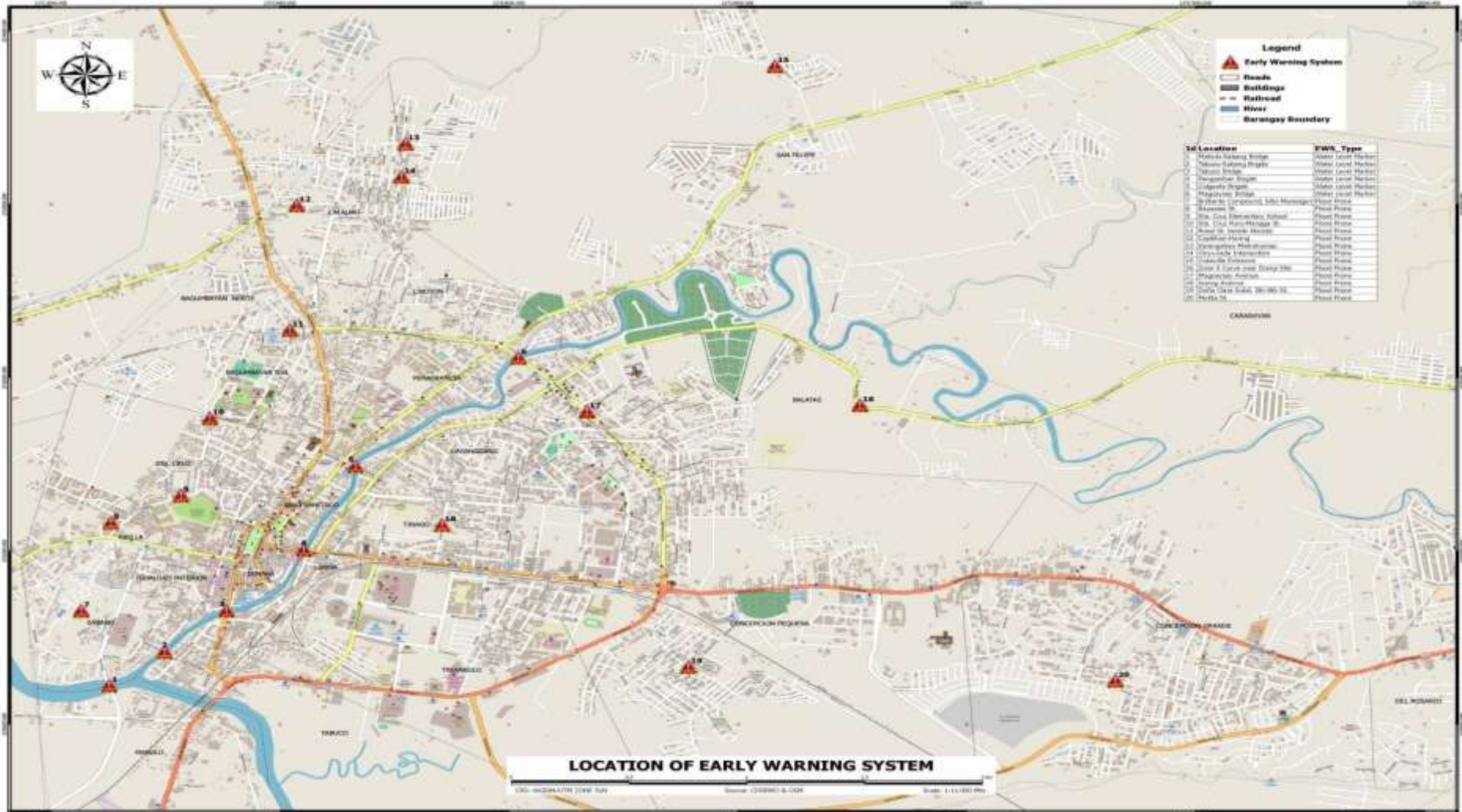
- Creeks
- Rivers
- Roads
- Barangay Boundaries



A PROJECT
OF THE
LOCAL GOVERNMENT OF NAGA
**CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE**
2017



DISCLAIMER NOTE: This map is for
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CITY OF
NAGA
REGION V



Scale: 1:90000

LOCATION OF EVACUATION CENTER MAP

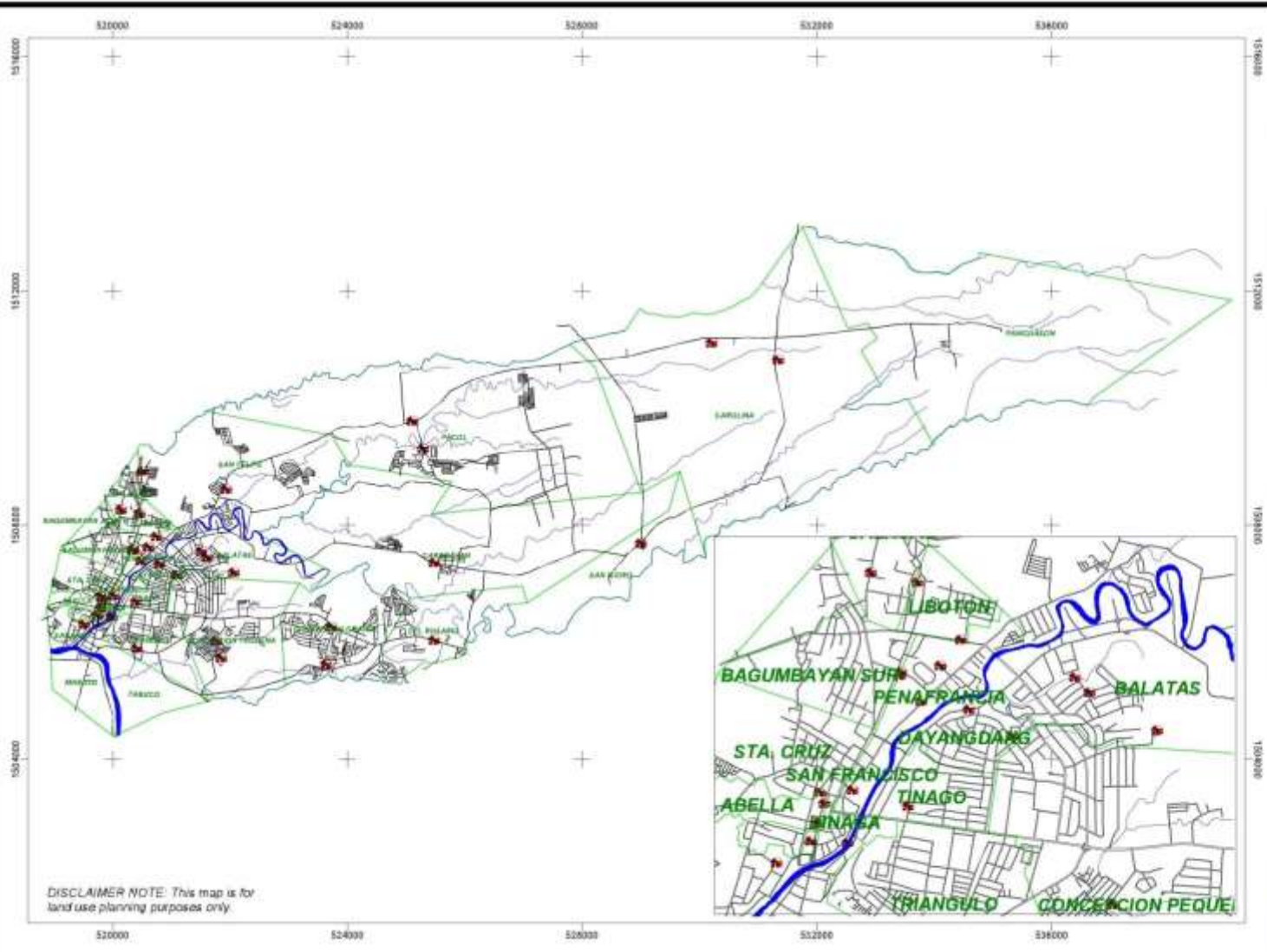
LEGEND:

Evacuation Center

- Creeks
- Rivers
- Roads
- Barangay Boundaries



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**CITY DISASTER RISK REDUCTION AND
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2017**



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CITY OF
NAGA
REGION V



1000 0 1000 2000 3000 Meters

Scale: 1:90000

**FLOOD HAZARD MAP
For 5 Year Return Period**

LEGEND:

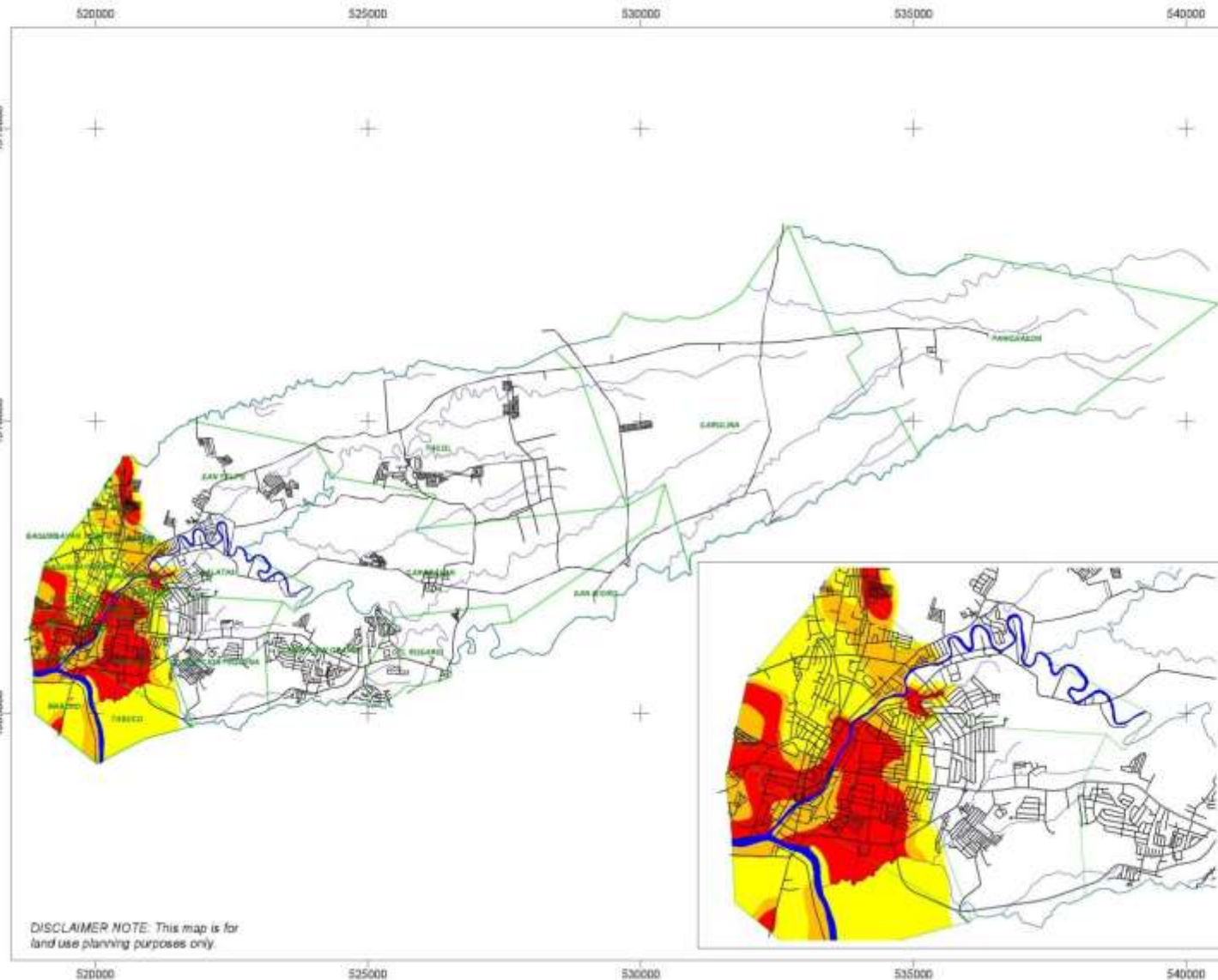
- Low Risk Areas
- Medium Risk Areas
- High Risk Areas

- Creeks
- Rivers
- Roads
- Barangay Boundaries



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CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE
2017



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CITY OF
NAGA
REGION V



Scale: 1:90000

Scale: 1:90000

FLOOD HAZARD MAP
For 10 Year Return Period

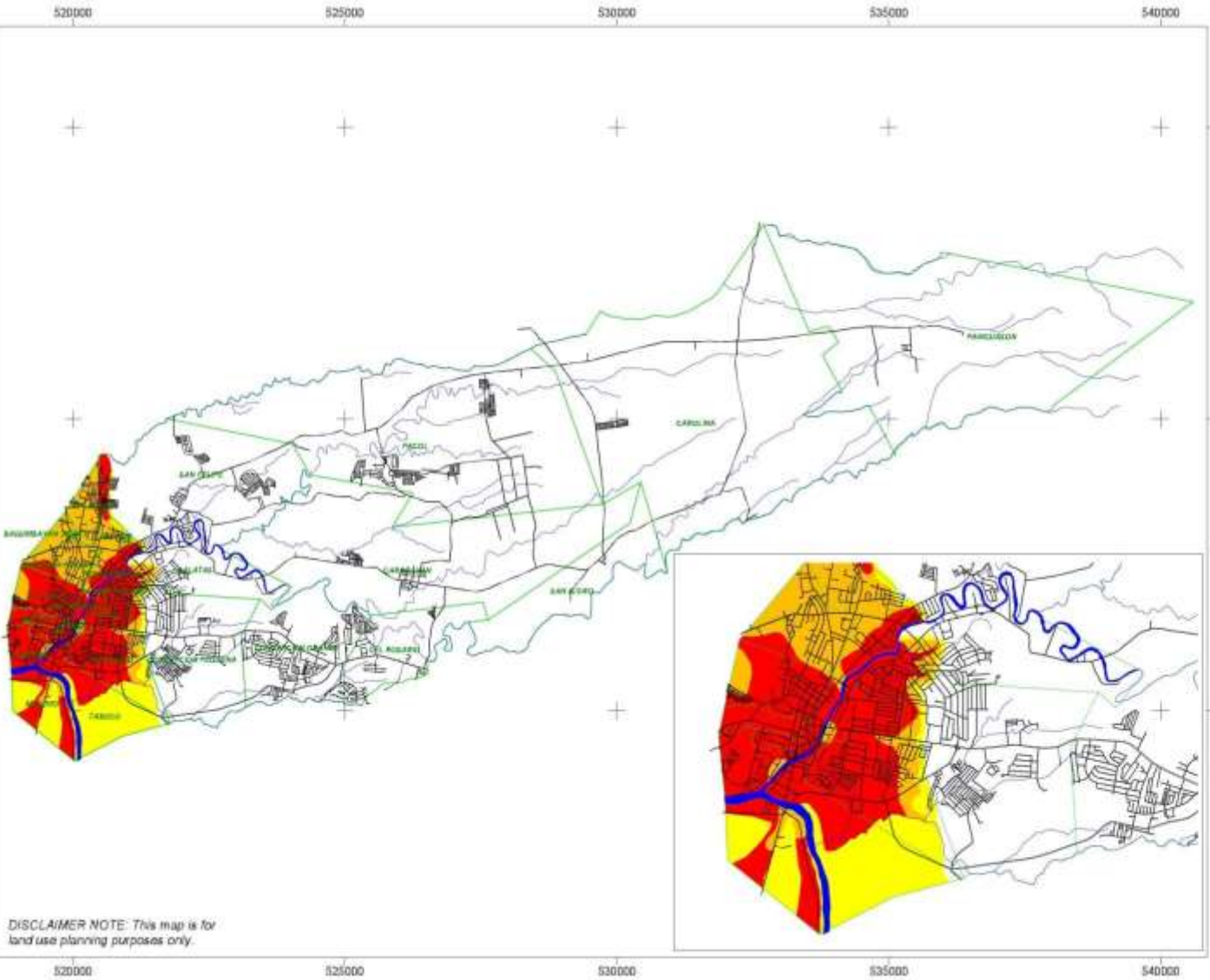
LEGEND:

- Low Risk Areas
- Moderate Risk Areas
- High Risk Areas

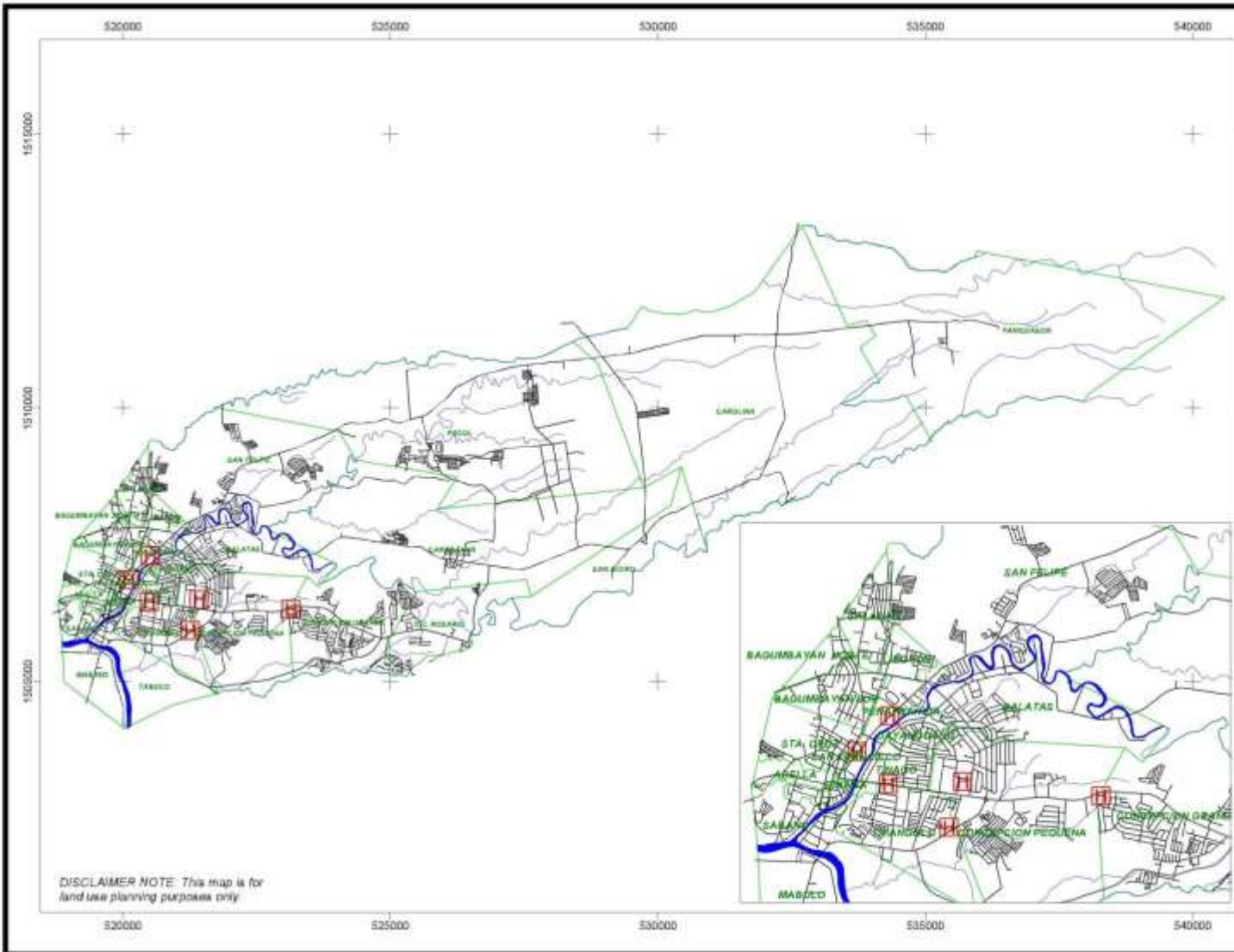
- Creeks
- Rivers
- Roads
- Barangay Boundaries



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CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE
2017



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CITY
OF
NAGA
REGION V



Scale: 1:90000

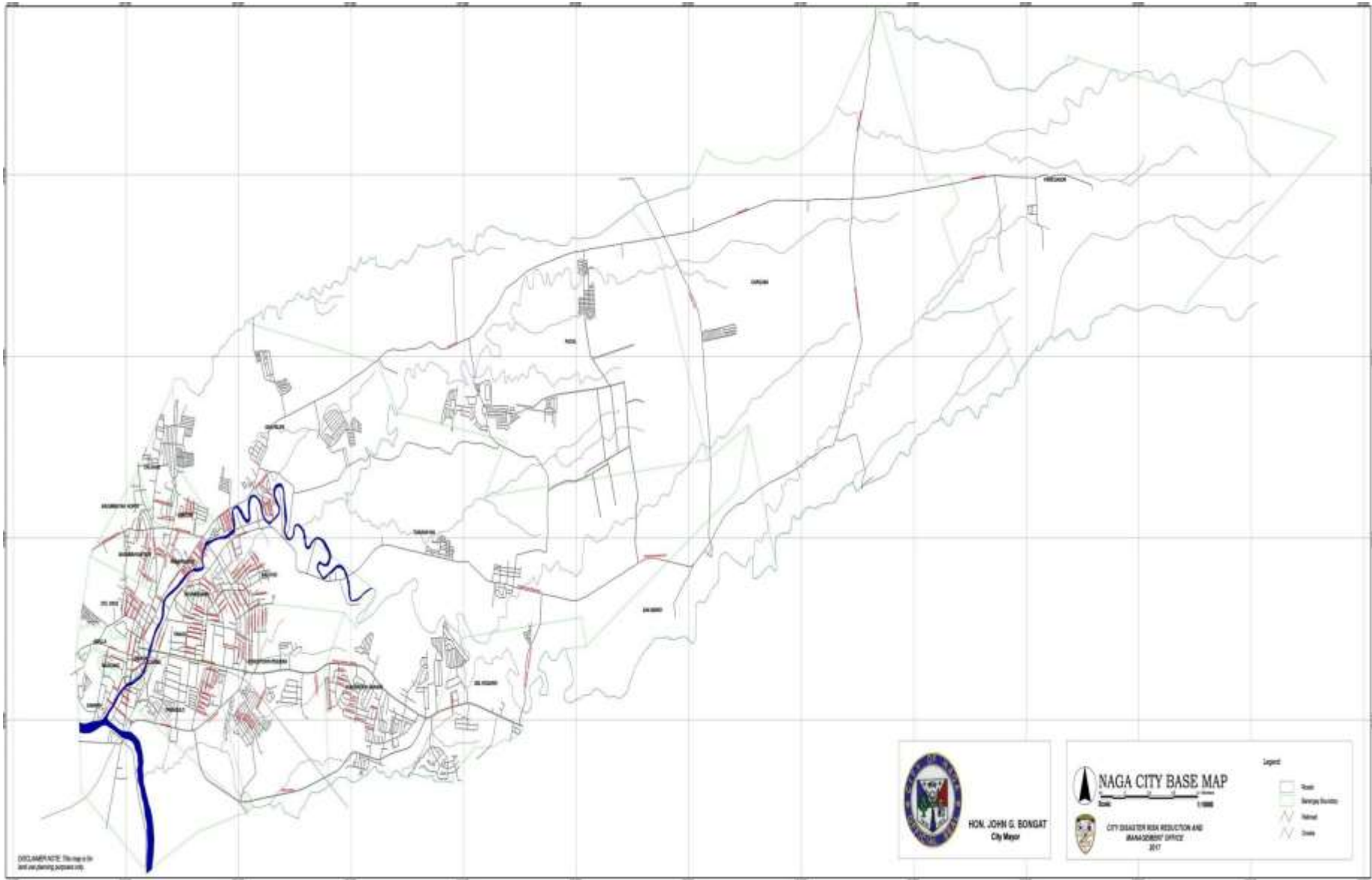
**LOCATION OF HOSPITAL
MAP**

LEGEND:

Hospitals

Creeks
 Rivers
 Roads
 Barangay Boundaries

A PROJECT
OF THE
LOCAL GOVERNMENT OF NAGA
**CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE**
2017



DECLARATION: This map is for
and planning purposes only.

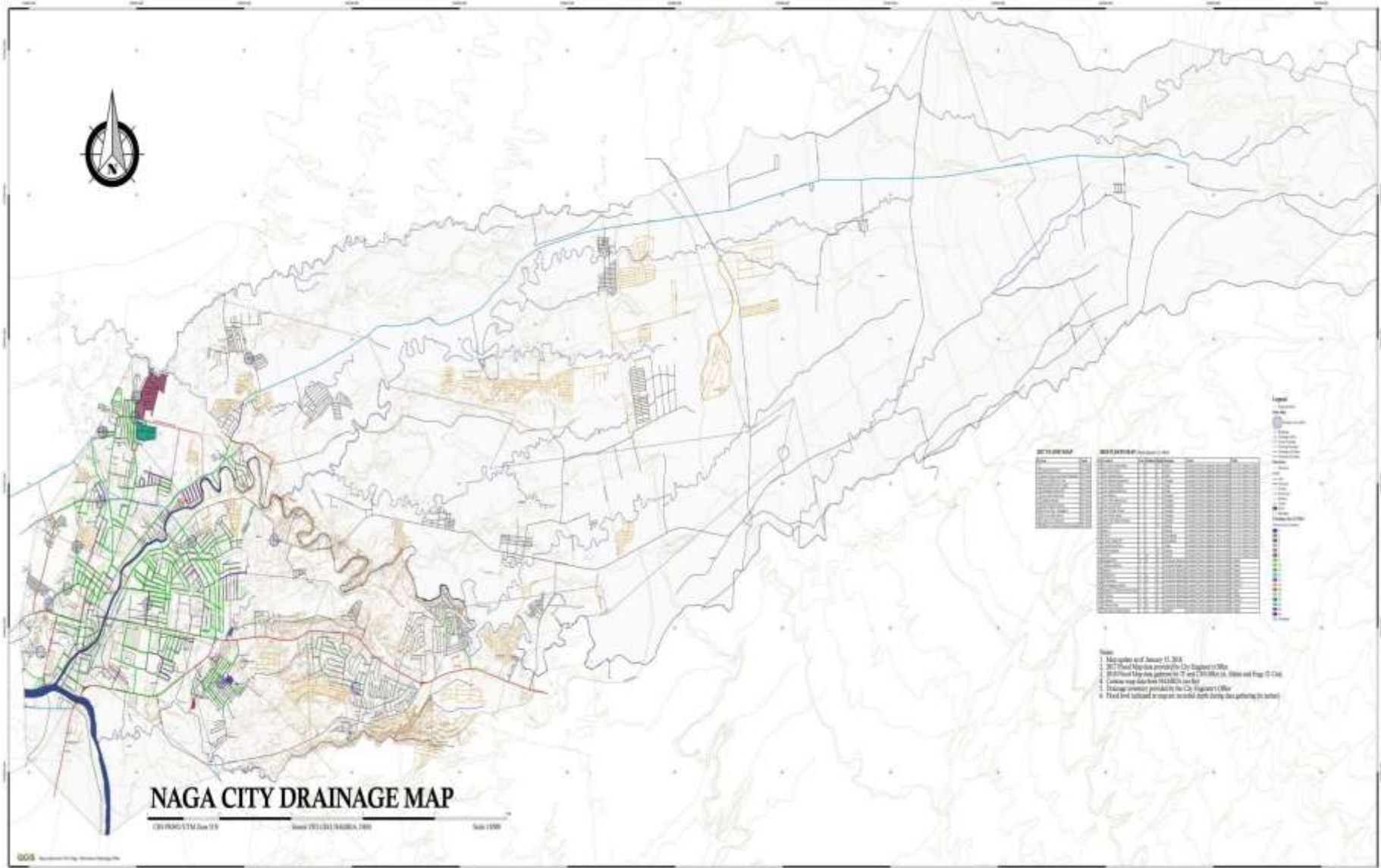


NAGA CITY BASE MAP
Scale: 1:10000

CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE
2017

Legend

- Road
- Barangay Boundary
- Water
- Drain

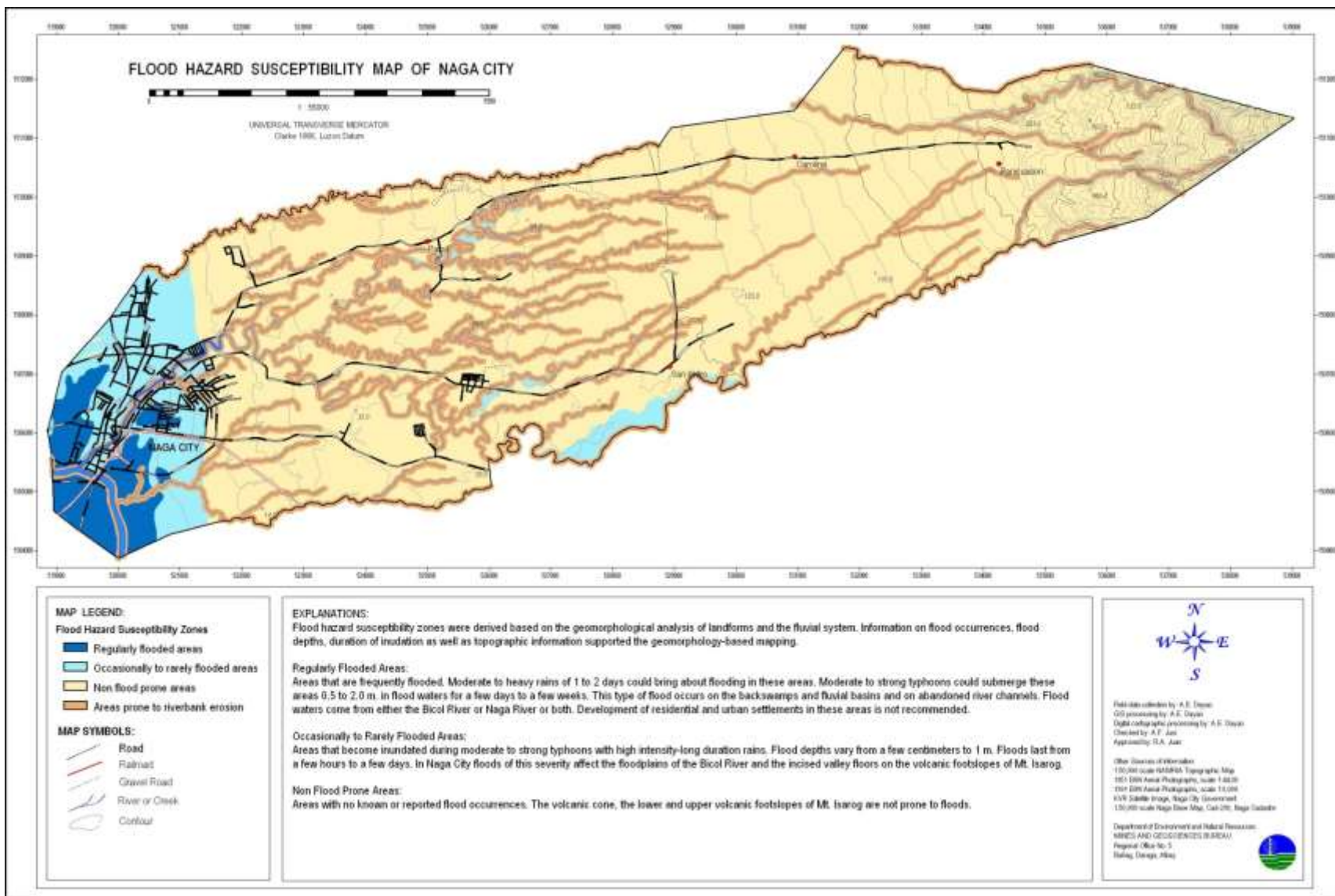


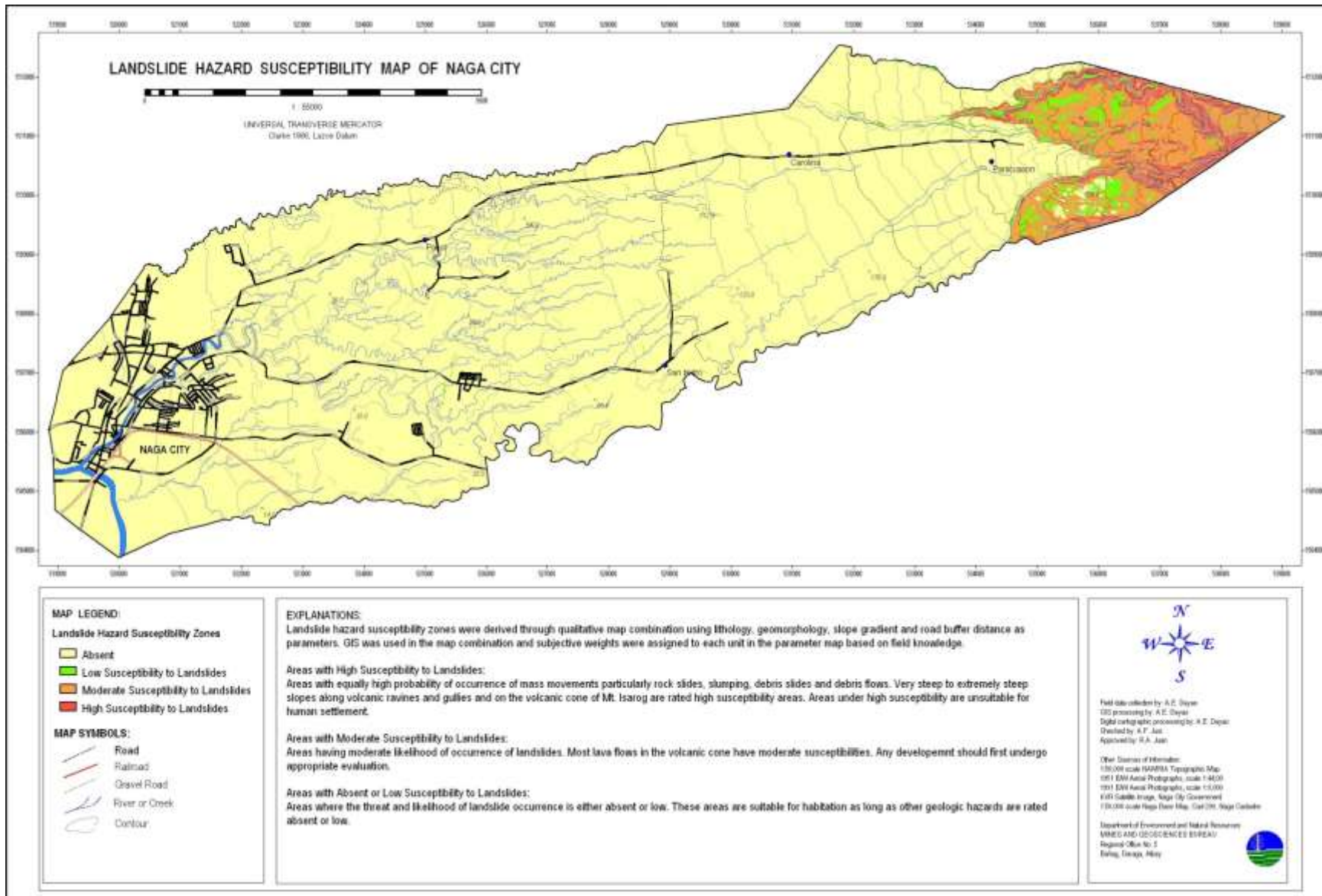
NAGA CITY DRAINAGE MAP

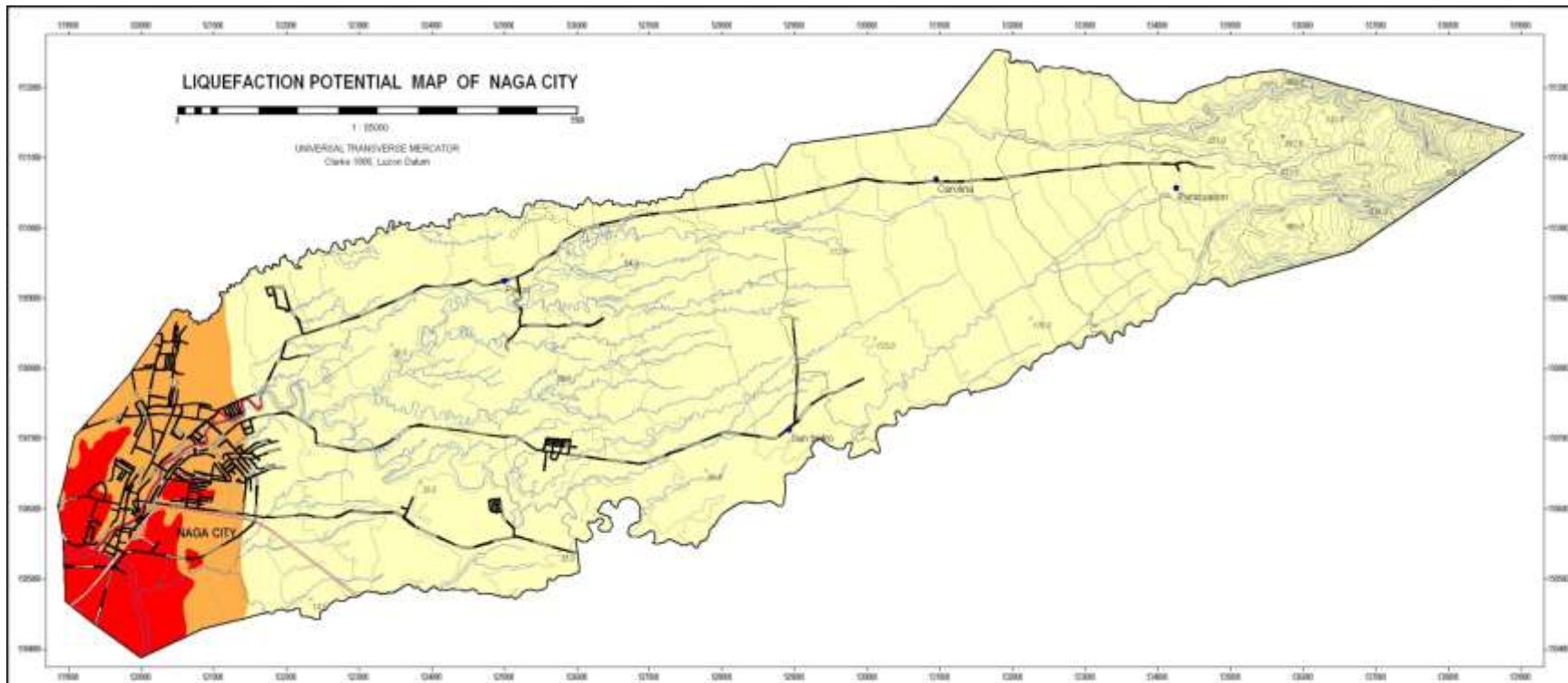
CH 1000 STM Rev 03 Date: FEBRUARY 2003 Scale: 1:500

DRAINAGE MAP	
1	1000
2	2000
3	3000
4	4000
5	5000
6	6000
7	7000
8	8000
9	9000
10	10000
11	11000
12	12000
13	13000
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93	93000
94	94000
95	95000
96	96000
97	97000
98	98000
99	99000
100	100000

- 1. Map updated on January 11, 2003
- 2. 2007 Flood Map data provided by City Engineer's Office
- 3. 2007 Flood Map data prepared by City Engineer's Office
- 4. Contour map data from 10M/20M scale map
- 5. Drainage boundary provided by the City Engineer's Office
- 6. Flood level indicated in map are recorded depth during the gathering of data







MAP LEGEND:

Liquefaction Potential Zones

- Areas where liquefaction is likely
- Areas where liquefaction is possible
- Areas where liquefaction is not likely

MAP SYMBOLS:

- Road
- Railroad
- Gravel Road
- River or Creek
- Contour

EXPLANATIONS:

There are no reported liquefaction occurrences in Naga City based on several interviews. However zones of different liquefaction potential were derived based on the geomorphological analysis of the city following criteria previously made by Masaki and Yasuda.

Areas where Liquefaction is Likely:

Areas where liquefaction is likely include the riverbed of Bicol River, abandoned river beds and meanders, backswamps and alluvial basins. Liquefaction is likely if a big earthquake occurs with epicenter close to Naga City. These areas are unsuitable for urban development without proper earthquake engineering intervention. Multi-storey buildings should be required of geotechnical studies addressing or mitigating effects of liquefaction.

Areas where Liquefaction is Possible:

The floodplain of the Bicol River and the fluvial ridges are areas where liquefaction is possible. Buildings having 4 storeys and more should be required of geotechnical studies.

Areas where Liquefaction is Unlikely:

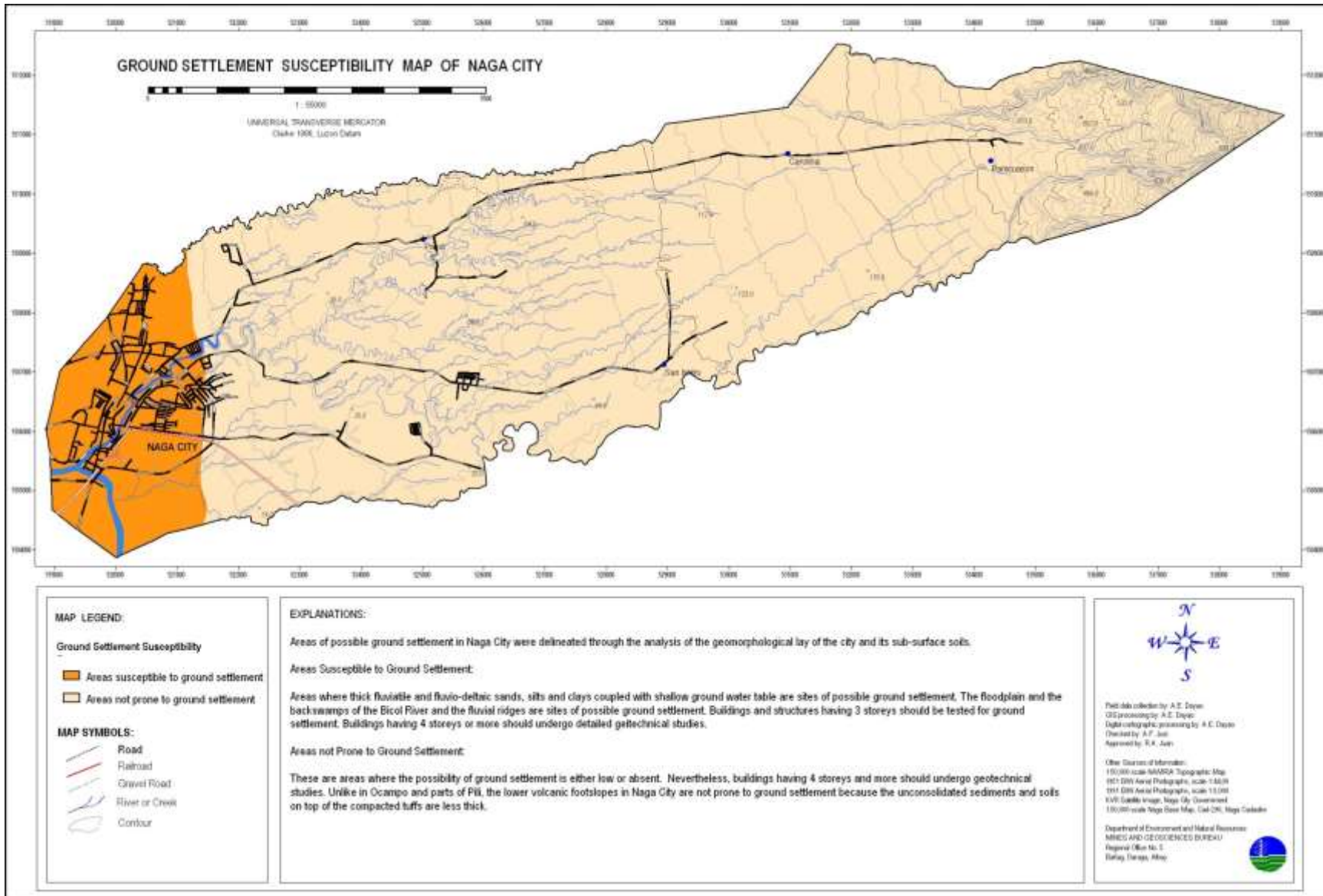
Areas where the likelihood of liquefaction is unlikely. Most parts of Naga City are not prone to liquefaction because of the underlying compacted tuffs and agglomerates of Mt. Isarog.

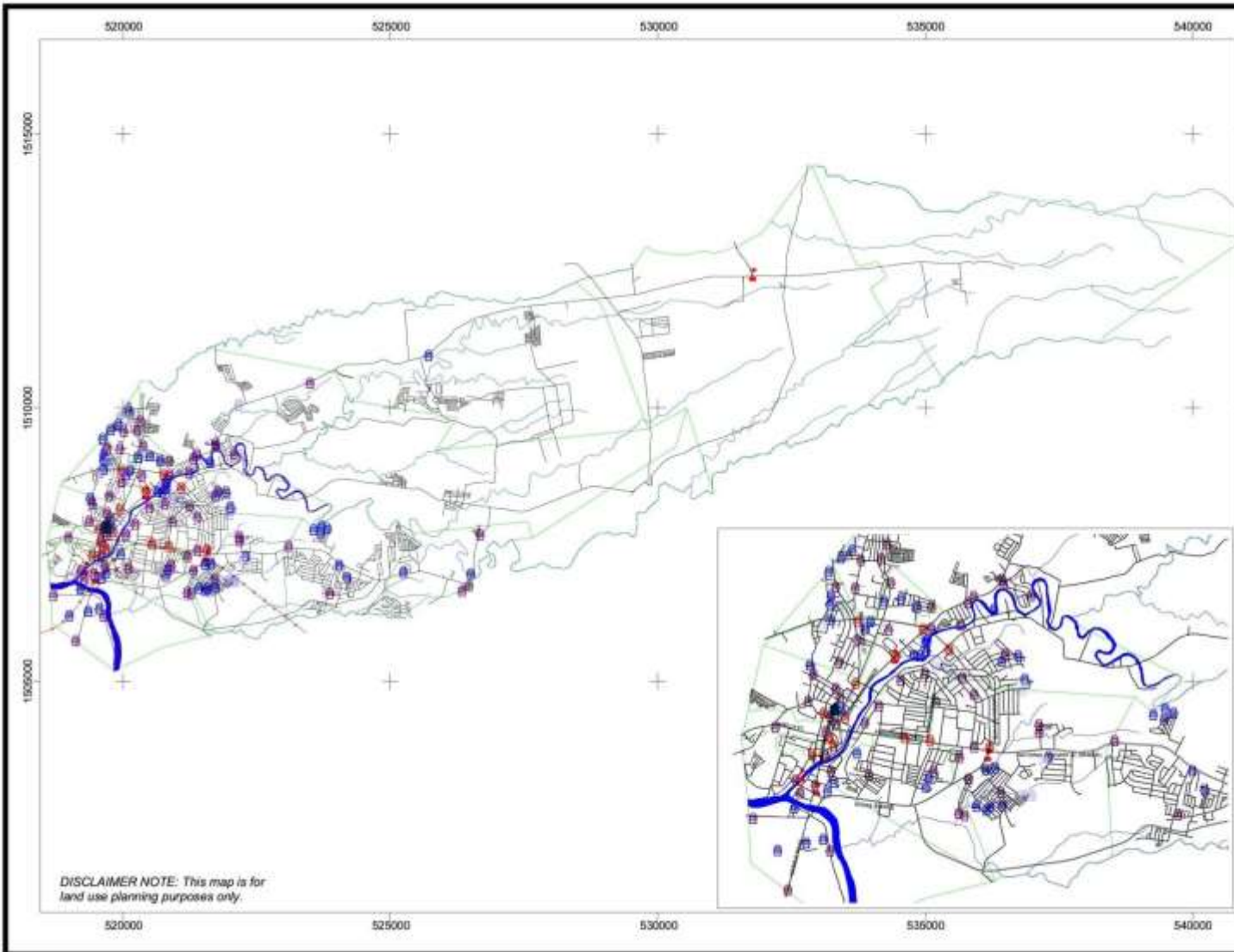


Field data collected by: A.E. Sayon
 GIS processing by: A.E. Sayon
 Digital cartographic processing by: A.E. Sayon
 Checked by: R.F. Jua
 Approved by: R.A. Juan

Other Sources of Information:
 1:50,000 scale NAD83/A Topographic Map
 1:50,000 Aerial Photographs, scale 1:42,000
 1:50,000 Aerial Photographs, scale 1:5,000
 1:50,000 Satellite Image, Naga City Government
 1:50,000 scale Naga River Map, GAD-200, Naga-City.gov.ph

Department of Environment and Natural Resources
 MIMEL AND GEOSCIENCES BUREAU
 Regional Office No. 7,
 Dolog, Davao, Mindanao





CITY
OF
NAGA
REGION V







Scale: 1:90000

**PROTECTIVE SERVICES
FACILITIES MAP**

LEGEND:

-  Police Headquarters
-  Police Sub-Stations

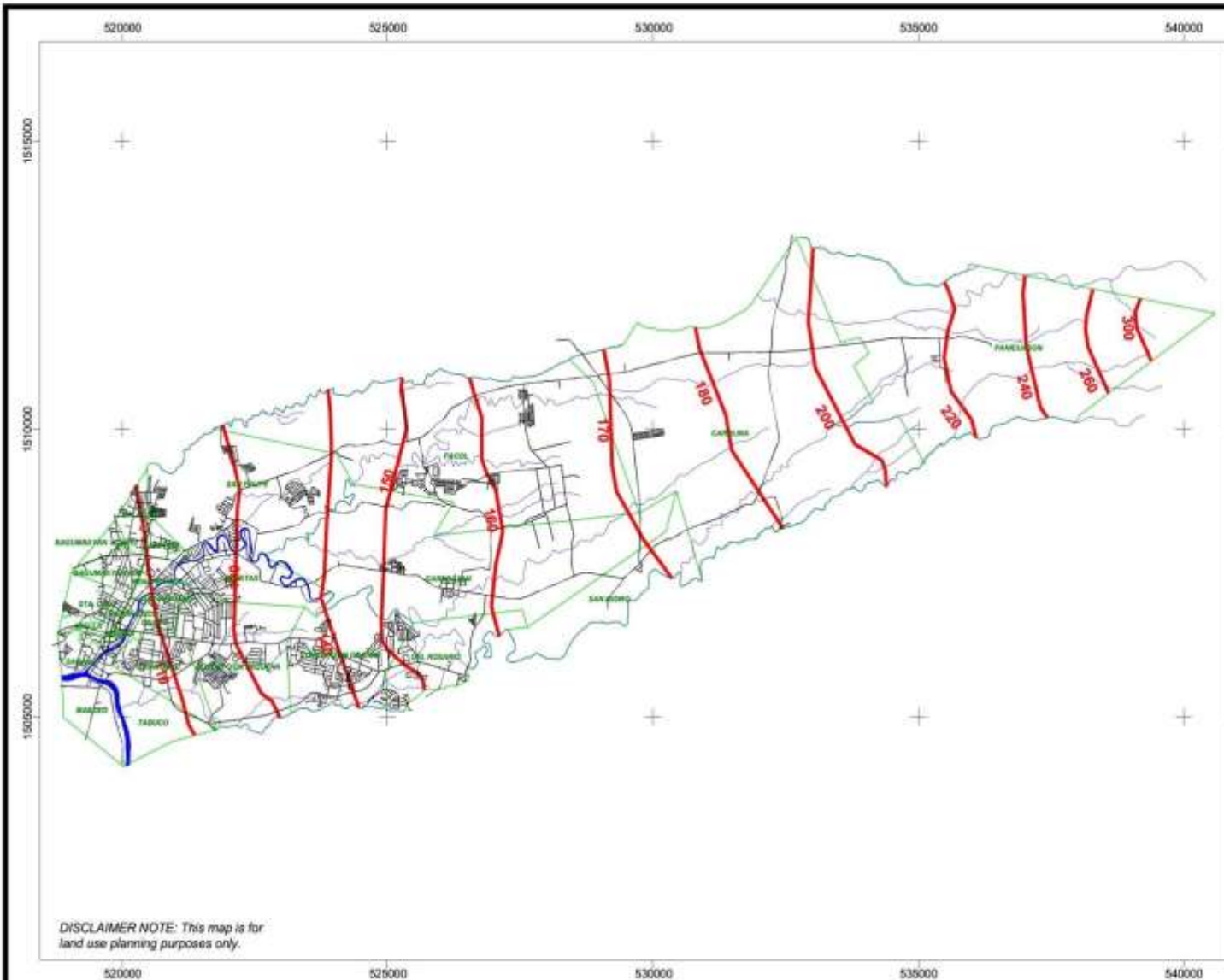
Fire Hydrants

-  Blow-Off Type
-  Commercial Type
-  Residential Type
-  Stand Pipe

-  Creeks
-  Rivers
-  Roads
-  Barangay Boundaries



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**CITY DISASTER RISK REDUCTION AND
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2017



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CITY OF NAGA REGION V



Scale: 1:90000

WIND HAZARD MAP
For 5 Year Return Period

LEGEND:

Max Wind Gust Isolines in KPH

- Creeks
- Rivers
- Roads
- Barangay Boundaries

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CITY DISASTER RISK REDUCTION AND MANAGEMENT OFFICE
2017

CITY OF
NAGA
REGION V



1000 0 1000 2000 3000 Meters

Scale: 1:90000

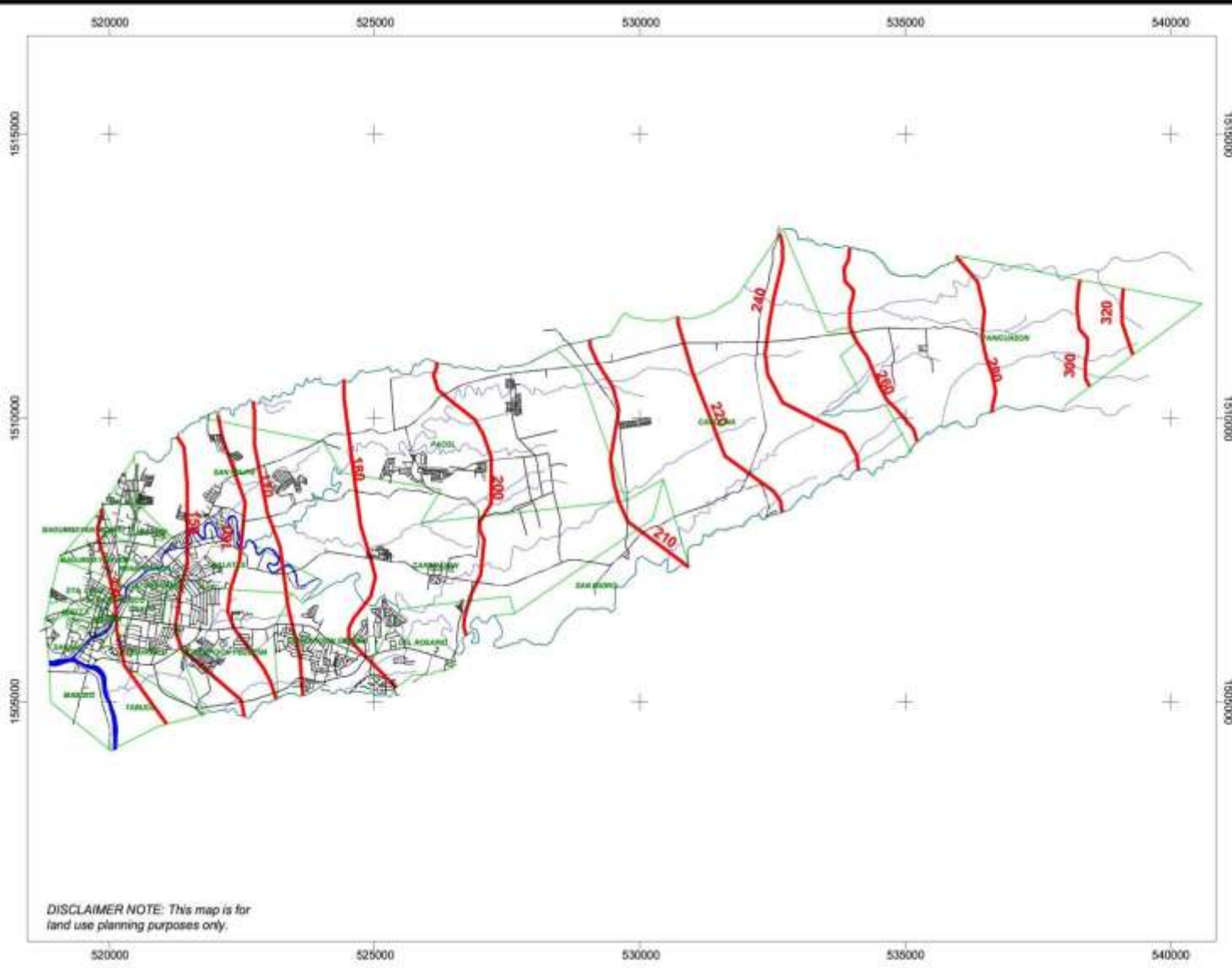
WIND HAZARD MAP For 10 Year Return Period

LEGEND:

 Max Wind Gust Isolines in KPH

-  Creeks
-  Rivers
-  Roads
-  Barangay Boundaries

A PROJECT
OF THE
LOCAL GOVERNMENT OF NAGA
 CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE
2017



CITY
OF
NAGA
REGION V



1000 0 1000 2000 3000 Meters

Scale: 1:90000

WIND HAZARD MAP
For 20 Year Return Period

LEGEND:

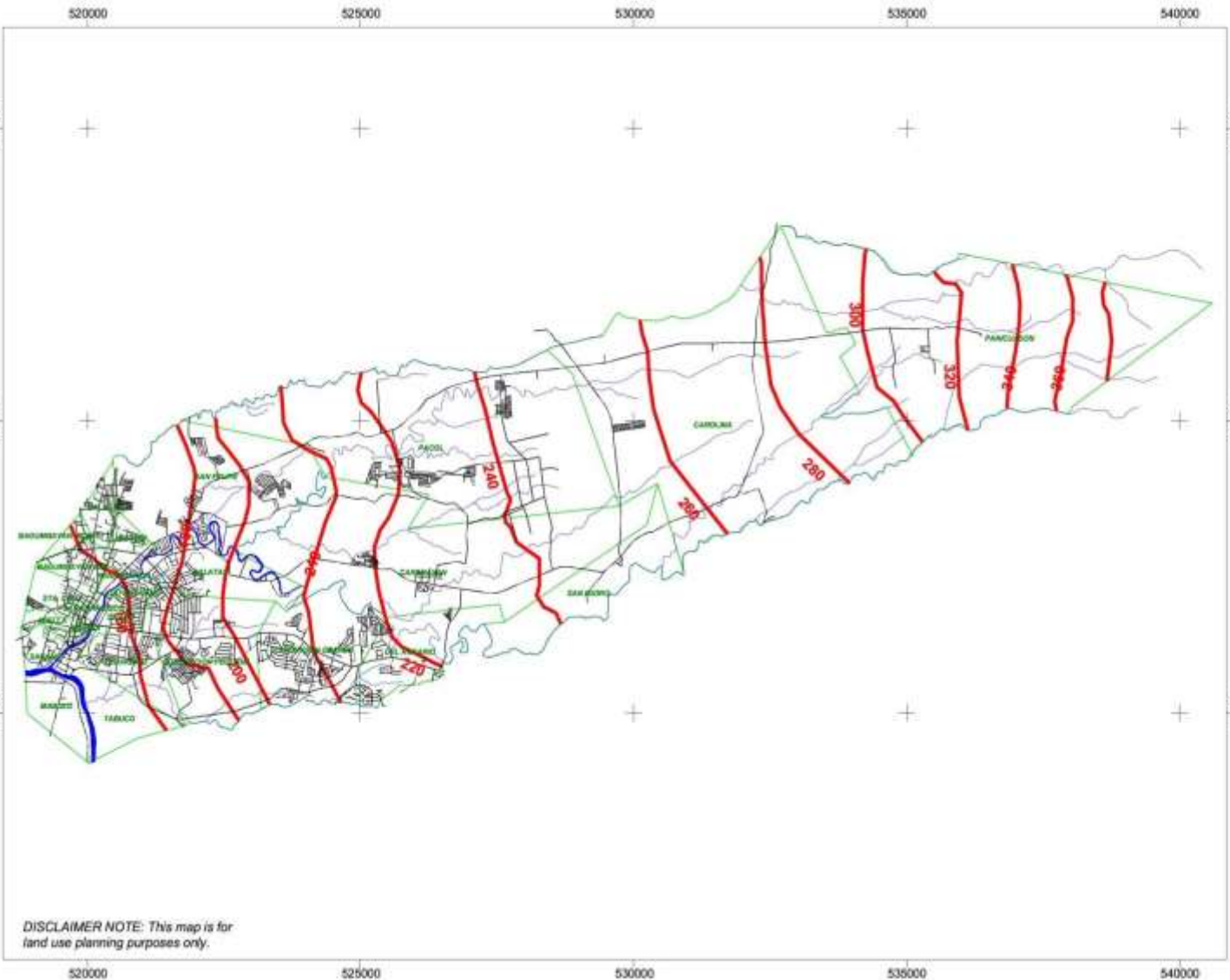
Max Wind Gust Isolines in KPH

- Creeks
- Rivers
- Roads
- Barangay Boundaries

A PROJECT
OF THE
LOCAL GOVERNMENT OF NAGA



**CITY DISASTER RISK REDUCTION AND
MANAGEMENT OFFICE**
2017



*DISCLAIMER NOTE: This map is for
land use planning purposes only.*