



CITY GOVERNMENT OF DAVAO

COMPREHENSIVE LAND USE PLAN

2019-2028

VOLUME 1

The Planning Process

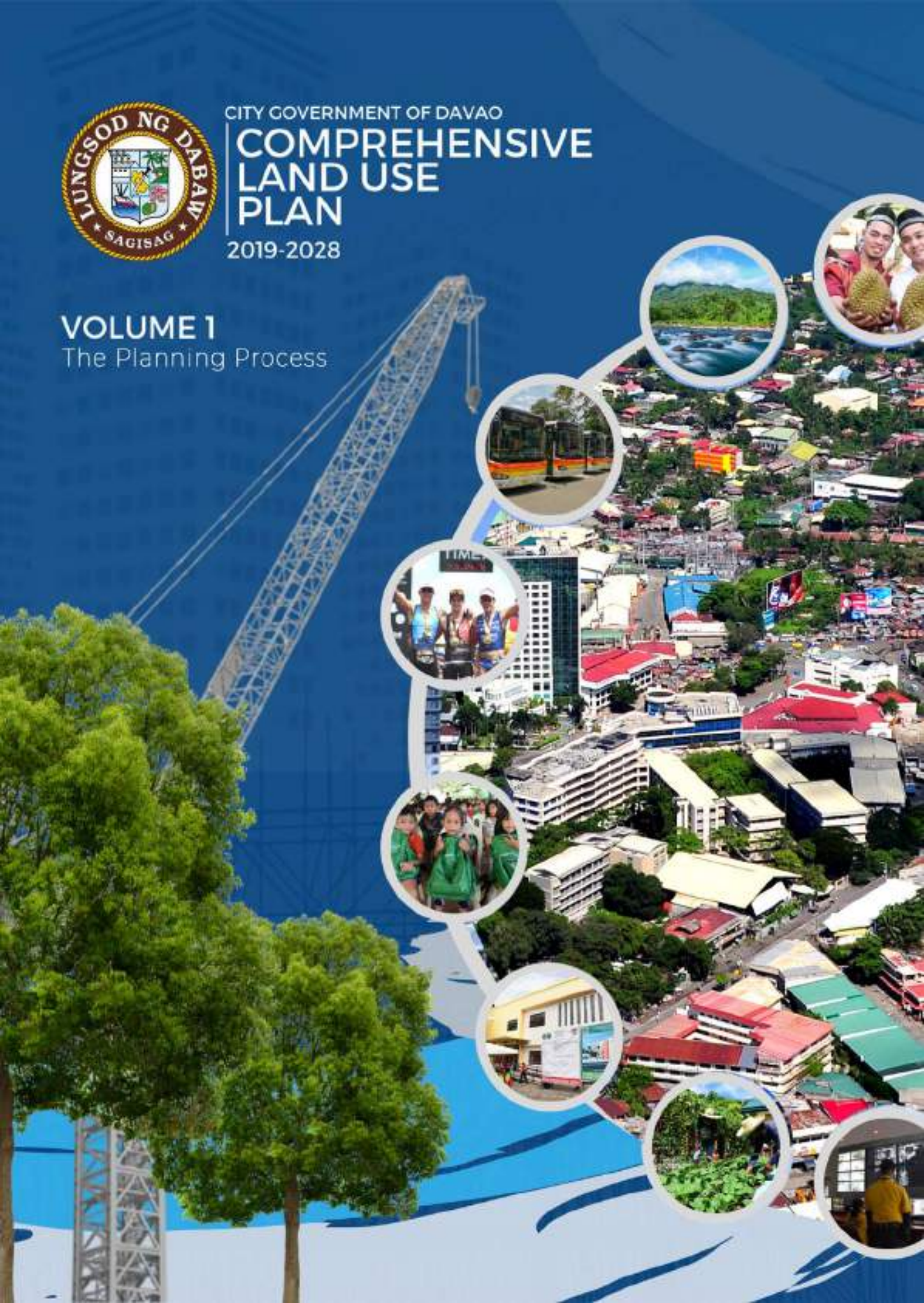


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ACKNOWLEDGMENT

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The 19th City Council
City Council Committee on Housing, Rural and Urban Development
Civil Aviation and Aeronautics Administration XI
Davao City Police Office
Davao City Water District
Department of Agrarian Reform XI
Department of Agriculture XI
Department of Education XI
Department of Energy XI
Department of Environment and Natural Resources XI
Department of Health XI
Department of Human Settlements and Urban Development XI
Department of Information and Communication Technology XI
Department of the Interior and Local Government XI
Department of Public Works and Highways XI
Department of Science and Technology XI
Department of Social Welfare and Development XI
Department of Tourism XI
Department of Transportation XI
Mines and GeoSciences Bureau XI
National Commission on Indigenous Peoples XI
National Economic Development Authority XI
National Housing Authority XI
National Irrigation Administration XI
Philippine Atmospheric, Geophysical and Astronomical Services Administration XI
Philippine Institute of Volcanology and Seismology XI
Philippine Statistics Authority XI
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The City Government of Davao likewise extends its heartfelt gratitude to the community of civil society organizations and nongovernment organizations for their invaluable inputs and contribution during the consultation period and prior to the crafting of the CLUP document.

The same gratitude is extended to the other divisions and offices of the city government for extending their precious time to share valuable data and information.

Message

From the City Mayor

Madayaw!

On behalf of the City Government of Davao, it is my great honor to introduce the Comprehensive Land Use Plan (CLUP) for the year 2019 to 2028, our city's future strategic thrust in further realizing our vision for Davao City to be the center of excellence, in governance, investment, tourism, climate change adaptation, disaster resiliency, and sustainable growth driven by empowered Dabawenyos.

As public servants, it is our duty to uphold the values of excellence, integrity, and humanity in delivering the services expected of us especially in improving the lives of our citizenry, through comprehensive and sustainable action plans. The Comprehensive Land Use Plan embodies the city's strategic thrust and direction on how best to utilize its land and water resources mindful of and attuned to the changing times especially with the onset of climate change, while also ensuring ecological integrity and clean and healthy environment, as well as sustaining our land's biodiversity.

Furthermore, by accelerating infrastructure development through the implementation of strategic programs, projects, and activities, Davao City will have the potential to help drive the Brunei, Indonesia, Malaysia, Philippine-East Asean Growth Area's (BIMP-EAGA) Vision 2025 to be Resilient, Inclusive, Sustainable and Economically competitive (RISE), to go hand in hand with our renewed commitment to strengthening and promoting economic trade, to urism, and cultural initiatives in the region.

As such, I present to you this plan that will not only change the lives of many people and communities, but also reach for that ever growing potential of attaining our desired quality of life. It is my hope that Davao City will remain stronger, more steadfast, and more resolute as we fulfill our sustainable development goals in generations to come.

Daghang salamat.



Foreword

From the City Planning and Development Coordinator

The Comprehensive Land Use Plan (CLUP) 2019-2028 is essentially the 6th edition and a revision of the Comprehensive Land Use Plan (CLUP) 2013-2022; crafted to provide spatial regulation over the City of Davao.

A ridge-to-reef approach was embraced in the study and crafting of the CLUP 2019-2028, providing an integrated plan and thereby, an all-inclusive Zoning Ordinance. Guided by the Comprehensive Land Use Plan (CLUP) Guidebook 2013-2014, a climate and disaster risk assessment (CDRA) study is incorporated in the plan, accordingly conforming to two (2) of the milestone national laws: the Climate Change Act of 2009 (RA 9729) and the Disaster Risk Reduction and Management Act of 2010 (RA 10121). Extensive discussions and a series of detailed meetings with stakeholders from all five (5) sectors were duly organized; the data gathered painstakingly studied, consolidated and presented for public consultation.

We appreciate the never ceasing support of the Department of Human Settlements and Urban Development (DHSUD), and of the key stakeholders of this Plan. The CLUP 2019-2028 shall lead the sustainability of Davao City's land and water resources whilst endeavor an emerging City for infrastructure and economic development.



ENGR. IVAN C. CORTEZ, EnP
City Planning and Development Coordinator



**COMMITTEE ON HOUSING, RURAL AND URBAN DEVELOPMENT
(LOW-END-PROJECTS)**

COMMITTEE REPORT

Item No. 1106 – Re: Comprehensive Land Use Plan (CLUP) 2019-2028;

- Volume 1: the Planning Process**
- Volume 2: Zoning Ordinance**
- Volume 3: Sectoral Studies**
- Volume 4: Climate Disaster Risk Assessment (CDRA)**

BACKGROUND

The proposed amendment and revision of the Davao City Zoning Ordinance, entitled **Item No. 1106 – Re: Comprehensive Land Use Plan (CLUP) 2019-2028** [divided into four (4) volumes: Volume 1: the Planning Process Volume 2: Zoning Ordinance, Volume 3: Sectoral Studies, Volume 4: Climate Disaster Risk Assessment (CDRA)], was the subject of a series of committee hearings by the **Committee on Housing, Rural and Urban Development (Low-end-Projects)**, on the following dates: November 23, 25 & 27, 2020; December 4 & 9, 2020; January 6, 11, 15, 20, 25, 27 & 29, 2021; February 22, 24 & 26, 2021; and, March 4, 2021.

Zoning Ordinance is a regulatory measure, an important tool required for orderly implementation of a Comprehensive Land Use Plan.

Local Governments are mandated to mainstream disaster risk reduction and climate change in development process such as policy formulation, socio-economic development planning, budgeting and governance, particularly in the areas of environment, agriculture, water, energy, health, education, poverty reduction, land use and urban planning, and public infrastructure and housing;

Section 2 (f) of R. A. 10121 provides that the state shall adopt and implement a coherent, comprehensive, integrated, efficient and responsive disaster risk reduction program incorporated in the development plan at various levels of government adhering to the principles of good governance such as transparency and accountability within the context of poverty alleviation and environmental protection.

DISCUSSION

The City Planning and Development Office (CPDO), through Mr. Roy Ryan Rigor, informed the committee that Sectoral Consultations was conducted, wherein various inputs from every

sector consulted were considered, studied, examined and included in the formulation of the proposed revision of the Zoning Ordinance.

CPDO likewise said that the data and maps gathered were taken from the different concerned departments, agencies and sectors equipped with technical expertise to provide accurate information pertaining to the data supplied.

As validation of data, CPDO compared and cross referenced their studies and findings with the latest data from DOST, Philvocs and all appropriate concerned departments, agencies and bureaus.

One of the steps undertaken to come up with the proposed revision of CLUP 2019-208 was the conduct of series of workshops headed by the HLURB Department of Settlements, which served as guide for CLUP planning and preparation, divided into four books, to wit:

- Volume 1: Land Use Plan preparation
- Volume 2: Sectoral Analysis and Tools for Situational Analysis
- Volume 3: Model Zoning Ordinance
- Supplemental Guideline on Mainstreaming

The passage of a revised Comprehensive Land Use Plan for 2019-2028 is urgent, however, the Committee finds it imperative to take extra caution in carefully evaluating, analysing and formulating solutions for sensitive and important matters, as it will play a big part in shaping the future landscape in the City, not to mention the complexity and voluminous contents thereof. Thus, it took the committee sixteen (16) sessions to hear and deliberate the subject matter. The City Planning and Development Office (CPDO) presented the salient points of each and every item proposed to be revised in our present CLUP, and these are now incorporated in the subject proposed revision of CLUP 2019-2028.

Every attendee/participant were encouraged to raise their comments at any time during the presentation.

Mr. Ivan Cortez and Mr. Roy Rigor, both of the CPDO, discussed the following, to wit:

1. Vision: Davao City is a globally livable City and a Center of excellence in governance, investment, tourism, climate change adaptation, disaster resiliency and sustainable growth driven by an empowered citizenry.

Councilor Braga and Councilor Abella commented that the Vision statement did not include agriculture, health and education which are vital needs of the society. The Committee suggested to CPDO to improve the Vision statement and take into consideration the suggestions, which should then be read as:

2. "Davao City is a globally livable City and a Center of excellence in governance, investment, tourism, agriculture, health, education, climate change adaptation, disaster resiliency and sustainable growth driven by an empowered citizenry."
3. The CLUP for 2019-2028 will be divided into four main volumes provided as follows:
 - Comprehensive Land Use Plan
 - Volume 1: Planning Process
 - Volume 2: Zoning Ordinance;
 - Volume 3: Sectoral Studies
 - Volume 4: Climate Disaster Risk Assessment

Councilor Dayanghirang raised his concern as follows: For the Water source of the City, he emphasized that various barangays and subdivisions source their water from Davao City Water District (DCWD) and other conventional sources, such as deep well. He also inquired as to actual status of the water supply in the city and suggested to CPDO to conduct environmental scanning of each area, such as Cabantian, which has water but is not potable. The Committee requested a full presentation of the goals and possible solution to the hazards and dilemmas regularly encountered by Davaoeños.

112 Barangays are catered by DCWD however 70 barangays relied on organized Barangay Water and Sanitation Association for the provision, management and maintenance of Level I and Level II Water Supply Systems.

CPDO was requested to add more comprehensive and sufficient data, instead of a mere general overview, especially for critical matters such as water. In depth data and information are paramount so that the City Council can properly deliberate on the matter. There is no adequate information provided since the data presented does not contain water sourced from deep wells or other conventional outlets.

Councilor Mahipus also inquired and requested the data regarding water problem with information on how many deep wells we have in the City such as those used for domestic, industrial and agricultural purposes since that will give the Committee a clearer picture on the volume of extraction of water. He also added to include the data on the recharge capacity of Aquifers. Councilor Mahipus further suggested that the City should coordinate with other water suppliers/companies for areas which DCWD refuses to supply water, since jurisprudence also established that DCWD cannot monopolize the water supply of the City.

CPDO said that they will collaborate and coordinate with City Engineer's Office and other appropriate departments.

4. For the Project involving Open and Closed Canopy Forest, CPDO was requested to provide the approximate budget and area allocation to be incurred in this kind of project.
5. National Greening Program is the Program of DENR. CPDO must get the records of NGP for at least 3 years from DENR and introduce it to the City Council for appreciation, so that the City will be aware of what they are approving since it comes from Government Funds.
6. The City Legal Office – Task Force Eden is in the process of filing cases for cancellation of titled properties owned by the City, however it may take a while since it necessitates reversion. Efforts are exerted by the City to protect and prevent illegal and unwanted acquisition of government lands.

Councilor Dayanghirang emphasized that the CLUP should complement or serve as a continuation of the previous CLUP. Councilor Mahipus added that if there are changes in terms of reclassification the reclassification must not only be defined but also properly and sufficiently justified. CPDO should provide a list or inventory of the areas that will be reclassified in the proposed amendment. Each reclassification therefore must be justified.

7. The succeeding discussions are comparative advantages on the sectors: environment, Economy, Agriculture, Tourism, Infrastructure and Social:

8. CPDO discussed the land supply for future development areas where in the next 10 years, an additional 8,000 hectares of land are needed to be utilized for residential, commercial, industrial, parks and recreation, cemetery and urban roads.
9. Mr. Ivan Cortez further noted that they have increased greening area for residential from 10% to 15% in the proposed ordinance.

10. Priority Issues and Concerns

- a. Encroachment of human activities other than IP settlers in protected areas
- b. Rapid conversion of agricultural lands into commercial, residential, industrial and other issues
- c. Deterioration of water quality due to absence of sewerage system
- d. Inadequate landfill for mounting garbage
- e. Inadequate agricultural infrastructure support
- f. Congested sidewalks due to presence of street vendors
- g. Exposure to risk/hazards of institutional, residential, agricultural forest, commercial, industrial and tourism areas in sites with infrastructure projects
- h. Traffic congestion
- i. Depletion of Fishery Recourses
- j. Develop City Tourism's Potential
- k. Need for improvement of Port Facilities
- l. Increasing Housing Backlog

11. The spatial strategy to be adopted in order to address the problems is **Multi-Nodal Concentric Spatial Strategy** since it is advantageous to complete the products and services within the areas so that people will no longer need to travel across and in between districts. The current food terminal is located at Toril in which the purpose is to distribute goods. Thus, it is easier for the farmers of Paquibato to transport their goods through Panabo. CPDO commented that there is no limitation as to the food trucks that can be established and if depending on the demand, may put up a second food terminal in the 2nd district.

Councilor Mahipus inquired about the location of the proposed second airport in Davao Region if it will be included in the CLUP.

12. CPDO recommended that the airport be located at Barangay Callawa but there is no final decision or approval yet from the proper authorities.
13. The status of Baguio District was likewise mentioned, since it is identified as having rich eco system and fruit farms and because of the on-going construction of DCWD and Apo Agua, the inhabitants are expressing their dissent since they are deprived of access to rivers.

Councilor Dayanghirang recommended the following to be included in the proposed ordinance:

- a.) *The water below Apo Agua should be given to the City of Davao*
- b.) *Baguio District should be afforded preferential water connection since it has insufficient water supply*
- c.) *No application of water rights should be approved without the consent of the City of Davao*

Councilor Dayanghirang further suggested that based on the Bayanihan Act Guidelines, the construction of Communication towers no longer need the consent of the Homeowner's Association because of the necessity brought about by the Covid-19. According to the City Legal Office the telecommunication company need not apply for Locational Clearance but instead proceed directly to the Building Official to secure a permit thus effectively bypassing the CPDO.

CPDO further explained that upon receipt of the Bayanihan Act, the City Legal Office issued its Legal Opinion that a Locational Clearance is no longer required.

The Committee agreed that it should come up with a policy that before the issuance of a Building Permit, a certification should be issued by the CPDO that the area is suited for the construction of Communication Tower.

Councilor Mahipus added that even if there is a law, the LGU should still be consulted.

It was suggested that in terms of quarry, the **Industrial Permit** should first be approved by the City Council. There must also be a distinction between regular quarrying and industrial quarrying. Five (5) hectares and above should pass through the City Council but below five (5) no longer requires the approval of the council.

Councilor Ralph O. Abella suggested not to require all quarry operations of less than 5 hectares to secure a City Council's approval to make the process friendly to investors, was duly noted by Mr. Cortez and proposed to the applicants to apply 1 (one) hectare per project to fast-track the application.

14. **"Mixed-Used Ordinance"** was defined under the **Plan Used Development (PUD) 2013** but later amended to **residential, commercial and institutional uses under the proposed Comprehensive Land Use Plan (CLUP) 2019-2028**. However, the City Council will decide whether to adopt the said provision or not.
15. **"Variances and Exceptions"** are options to Additional Allowable Use with almost the same requirements.
16. **Sand and gravel** operations will pass through the City Mining Board as the recommendatory agency. However, the approval of all quarries below 5 hectares must come from the Executive Department.

Councilor Abella requested:

- a. To conduct an inspection of all quarry areas every 3 or 6 months; and
- b. and that the quarry operators will have to pay in advance their volume computation on extracted sand and gravel to the City Mining Board or the City Environment and Natural Resources (CENRO).
- c. Not to require all quarry operations of less than 5 hectares to secure a City Council's approval to make the process friendly to investors and proposed to the applicants to apply 1 (one) hectare per project to fast-track the applications.

The Committee concurred and suggested to set a certain period of extraction and to re-apply if the applicant desires to continue with the activity.

The City Council already commenced to streamline and simplify the requirements as to the construction of Cell Site Towers, including the voting of which now only requires simple majority instead of ¾ votes and need not pass through the LZBAA. However due to the implementation of the Bayanihan Act there are further adjustment which needs to be clarified to the City Legal Office especially the provision that no longer requires the application to be approved by the Zoning Administrator.

However, the position of the City Legal Office (CLO), in its legal opinion, stated that all site tower applications, during the validity of Bayanihan Act (pandemic period), will no longer be obligated to seek for Preliminary Approval and Locational Clearance (PALC) or the approval coming from the Zoning Administrator but only from the Office of the City Building Official.

Councilor Abella requested from Mr. Cortez to first course the applications for "Additional Allowable Use" through the Davao City Investment Promotion Center (DCIPC) for proper guidance on the requirements, and to avoid undue delay on the approval and process. Mr. Cortez notified that DCIPC was already mandated to assess in the permitting and licensing of the applications. Thus, the former suggested changing the word from "assess" to "accept" the application before endorsing it to the City Planning and Development Office (CPDO). This is in line with the law about the "Ease of Doing Business".

17. The "Non-Conforming Use" needs further discussion and deliberation from the members of the City Council to conform to the zoning regulation of the City.
18. The term Forest Conservation 1 is changed to "Protection Forest" while "Forest Conservation Zone 2" is changed to "Production Forest" in the proposed CLUP.
19. While, there are several non-conforming establishments existing in the 2nd and 3rd District, the occupants are encouraged to have a reforestation activity.
20. On the matters relating to the construction along the high risk areas, the **Certificate of Non-Conformance** shall be applied by the concerned construction owner or operator, and that non-compliance of it shall be considered violation of the Zoning Ordinance, that he/she must be subjected to fines and penalties.
21. After the City Council approves the proposed Ordinance, the CPDO will undertake to conduct on a massive inspection to non-conforming uses.
22. **Ancestral Domain Areas** will provide allowable uses and activities for **Indigenous People (IP)**, livelihood, tribal village and museum, school for Indigenous Peoples (IPs), among others, wherein the regulation is in accordance to traditional customary design to conform the National Building Code.
23. Other regulations will be subjected to the provision of the Indigenous or **IPRA Law** whichever is applicable.
24. The enforcement of the Preliminary Approval and Locational Clearance (PALC) is a must for every activity to start, as provided in the proposed Ordinance including the Building Permit as mandated under the Zoning Ordinance.

Councilor Dayanghirang raised his remark with regard to the **Occupancy Permit** that such is redundant because the approval of the documents will still pass through the City Planning and Development Office, even if it has already been scrutinized by the Office of the City Building Official. He suggested checking first the Certificate of Occupancy on the part of signatories to do avoid further delays.

Mr. Cortez noted and said that passing of the Occupancy Permit in the CPDO-Zoning Division is to make sure that the application for construction will match to the approved plan.

The Committee informed the body that the same will be revised under Section 45 of the proposed Comprehensive Land Use Plan (CLUP) 2019-2028.

25. In matters relative to the **Responsibility for Administration Enforcement**, the Ordinance will be enforced and administered by the **Zoning Administrator**.
26. To appoint anybody to that effect, it must be in accordance with the existing rules and regulations with at least five (5) years of experience and that no elective official shall be appointed to such capacity.
27. **Qualifications of the Zoning Administrator** - he/she must comply with the requirement of R. A. No. 10587, also known as the Environmental Planning Act of 1013. The powers and functions are to act on all applications for Locational Clearance consistent with laws, rules and policies under the Ordinance. He/she will recommend to the Local Zoning Board of Adjustment and Appeals (LZBAA) on variances, exceptions and request for Additional Allowable Use, monitor on-going and existing projects, issues notices of violation and show cause order to owners, developers and managers among others. He/she will involve the **Philippine National Police (PNP)** and other government agencies in the filing of cases on violators of the Zoning Ordinance. On the implementation scheme, the act appropriate to organizational structure and promote linkages with non-government agencies to pursue co-management with Memorandum of Understanding or any collaborative effort to implement the plan. Functions of the Planning Coordinator, is to coordinate with the Regional Office Division pertaining to the amendment of the Zoning Ordinance and submit it to the Sangguniang Panlungsod. On complaints/opposition for violation of any provision of the Zoning Ordinance or to any clearance/permit issued, Mr. Cortez stressed, that it shall be filed with the Local Zoning Board of Adjustment and Appeals (LZBAA).
28. **Composition of LZBA** are the following: City Mayor, Chairperson of SP Housing Committee or to elect a representative if it does not exist, City Legal Officer, City Assessor, City Engineer, CPDO, CENRO, two (2) private sectors, two (2) NGO representatives and Civil Society Organization. Nevertheless, the Sangguniang Panlungsod (SP) can add a member coming from the SP Committee on Housing. With that information, the Chair remarked that too much members in the composition of LZBAA will contribute delay in the approval of documents.
29. **Powers and Functions of LZBA** which states "it is hereby created a **Local Zoning Board of Appeals (LZBA)** that shall perform the functions and responsibilities as follows: Act on application of the following nature, variance, exception, non-conforming complaint and/or oppositions; act on appeals on that of denial of the Locational Clearance and act on appeals regarding the non-conformity of existing uses. Decision of

LZBAA shall be carried by absolute majority vote and it is final and executory; and to recommend for additional allowable use."

The Committee observed that the authority delegated to LZBAA is not only recommendatory but it has to do with the finality. Hence, upon the Committee's request to submit references relating to final and executory powers of LZBAA, for the committee's guidance, Mr. Cortez replied that the basis of the above-cited powers and functions of LZBAA was taken from the workshop attended by the participants. But it is the City Council which will decide whether to adopt the measure or not, he added.

- 30. Local Zoning Review Committee (LZRC)** - it is hereby created under the City Development Council to review the Integrated Zoning Ordinance every three (3) years. Composition of LZRC, as recommended: Chairperson - City Planning Officer, Members: SP Committee on Housing; City Zoning Administrator, City Assessor, City Legal Officer, City Engineer, CENRO, City Agriculturist, President of the Association of Barangay Captains, three (3) private sectors from Local Chamber of Commerce, Local Council Industry, Federation of Homeowners Associations, Academe, two (2) NGO and CSO representatives. The Chairperson shall convene the LZRC to deliberate on applications and will recommend the approval or disapproval to the Sangguniang Panlungsod. The City Planning Development Office (CPDO) shall serve as the secretariat to the LZRC, and the LZRC will invite a resource person to support the performance of its functions, among others.

Councilor Dayanghirang remarked that having a lot of members in LZRC might cause difficulty during the call to gather meetings. He suggested only two (2) representatives from SP Committee on Housing, the City Mayor, the City Administrator, the City Zoning Planning Officer, one or two representatives from the Executive Department, one (1) NGO, private sector, and that the other representatives from the Executive Department can be a resource person.

Councilor Abella requested to replace the President of the Association of the Barangay Captains to Barangay Captain of the concerned area, which was duly noted by Mr. Cortez.

*Councilor Abella also suggested that the project plan involving **Solid Waste Management** on big commercial center and subdivisions will pass through the scrutiny of the City Planning Officer or the City Council, and to specify in the proposal that the **Sanitation Plan Certificate** is of utmost importance.*

- 31.** All applications related to solid waste were forwarded to the **City Environment and Natural Resources Office (CENRO)**, for their analysis, while the issue on the Sanitation Plan Certificate will be conferred with the Solid Waste Board. The **Water Resource Management Council (WRMC)** is an **inter-departmental Body** that will implement the provision under the **Water Resource Management Protection Code of Davao City**. The compositions and functions of the **Urban Ecological Enhancement Sub-zone Committee**, was presented together with checklist of requirements, although, the said Committee was already approved by the City Council sometime in 2018.
- 32.** As to the additional requirements in applying for exemption on areas classified under Residential Zones, the applicant must submit proof that the lot was acquired prior to the effectivity of the Zoning Ordinance and has no other property classified as residential

anywhere in Davao City, and to comply all other requirements under the applicable laws and ordinances.

33. Any amendment interrelated to Zoning Ordinance, **require ¾ votes** from the members of the City Council during the approval.
34. Regarding the processing fees, the charge will be in accordance with existing scheduled prescribed amended Tax Code, and that fines and penalties on violations were specifically provided in the proposal.
35. For **Production Forest**, the eco-tourism will be limited, for reason that there are lots of tourist related establishments operating in the 3rd District without a business permit. Hence, the Protection Forest Sub-zone was incorporated in the proposal. Citing Section 12.2 - Critical Watershed Zone, the proposal has specified the forest size based on the observation from the Department of Environment and Natural Resources (DENR), reverting areas classified as agricultural to forest classification, and to devote 70% for agriculture production in order to qualify the agro-tourism activity.
36. On Section 12.3.2 – As defined, Production Agricultural areas declared for agricultural use as delineated for all types of agricultural activities.
37. Home Industry - it shall not occupy more than 30% of the floor area of the dwelling unit.
- No comment/suggestion manifested.
38. General Types of Institutional Establishment:

Upon inquiry if proposed amendment has incorporated the building height ordinance, Mr. Rigor answered in the affirmative and said the phrase states: "whichever is lower".

39. For **Agro-Industrial Zone**, the allowable uses is just the same but the construction of gasoline station on major thoroughfares was disallowed under the Building Density.
40. **Major Urban Subzone: Residential (R-1)**, the allowable use is the same.
41. **Medium Residential Density Zone**, no comments manifested.
42. **Major Density Residential Zone (R-2)** was deleted in the proposed Ordinance, however, to adjust the category for R-1 and R-3 due to illegal extension by the homeowners to add rooms or spaces for their business activity, as well as to cater socialized housing under R-3.
43. **Building Height limit is 12 meters for R-3, or as set by Civil Aviation Authority of the Philippines (CAAP).**
44. On **Socialized Housing Zone**, BP 220 and the City Ordinance should be observed.
45. Other activities under Minor Commercial Zone are also allowed on Major Commercial Zone.
46. **Major Commercial Shopping Center (C-3)** was included in the proposed Ordinance but the so-called "*sari - sari store*" will be categorized under R-1.

47. The Industrial Zone and the Agri-Industrial Zone were separated from each other.

48. No suggestion manifested on Light Industrial Zone and Medium Industrial Subzone.

49. **Heavy Industrial Zone (I-3)** - No comment/suggestion manifested, as well as on the General Institutional Zone, Special Institutional Zone, Park and Recreation Zone, Memorial Park Zone, Buffer and Green Zone.

50. **Urban Ecological Enhancement Sub-zone** - Mr. Rigor averred that the proposal is to expand the areas under the said provision and a Technical Working Group (TWG) will be created to that effect. It is also noted that the **Red Flag Subzone and Overlay Zone** will be incorporated in the proposal.

51. **Building Requirements**

The building height limits will be based on City Ordinance No. 027-19 Series of 2019 or as set by CAAP, whichever is lower.

For Agri-tourism projects, a maximum of 5% concrete construction footprint measured by the cumulative total of the ground floor area

52. **NO R-2 IN THE PROPOSED ZONING ORDINANCE**

The major change here is the deletion of the R2 category, placing the category under only R1 and R3. This is due to the practice among owners of residential houses in the R2 subdivisions and housing areas in adding extensions and adjunct structures to their main house or building to be used as additional rooms or spaces for occupancy or business activity. This consequently results to additional number of residents and place of business activities otherwise found and allowed only in R3.

53. **R-1 Residential Zone**

54. **R-3 High Density Zone** – to cater Socialized Housing since R-2 is limited.

55. **INDUSTRIAL ZONE**

- a. The current industrial zone classifies the various industrial activities into their respective types: wood, leather, food (I-1), agriculture, metallic and non-metallic, chemicals, plastics, rubber (I-2), and combination of highly pollutive and highly hazardous industries.
- b. Industrial activities are classified under pollutive to highly and extremely pollutive, hazardous to highly and extremely hazardous, of whatever type.
- c. Agri-industrial zone has been separated from the industrial zone. This makes industrial activities involving food and food-related production to be relocated in the agri-industrial zone for practical purposes such as making them nearer the food

production area and avoiding contamination of food production with chemically pollutive industries.

56. Open easement and buffer zones are specified as important and significant zones to ensure the protection of adjacent and main zones.

It was suggested to adopt measures which will lessen "red-tagging" by avoiding the imposition of several permits which are no longer considered necessary and that it should be monitored by the proper authorities or department.

57. Location Design Standard will be provided by the CPDO in the Zoning Ordinance.

Engr. Mary Ann Orilla of the CPDO assured to furnish copies of the proposal to the City Council so that they can send their comments/suggestions/recommendations on the matter.

*CPDO acknowledge that there are several letters from different organizations and persons, requesting for reclassification of their respective properties to be included in the **Comprehensive Land Use Plan of 2019-2028**.*

Mr. Ivan Cortez, informed the Committee that the recommendations and/or suggestions are already incorporated in the proposed revision of CLUP 2019-2028.

58. The Request for Additional Allowable Use that has 2 types of applications such as variance and exception will necessitate a thorough discussion from the members of the City Council.

59. On the query regarding the "**Mixed-Used Ordinance**", Mr. Cortez stressed that it was already defined under the **Plan Used Development (PUD) 2013** but it was amended to **residential, commercial and institutional** uses under the proposed **Comprehensive Land Use Plan (CLUP) 2019-2028**. The City Council will decide whether to adopt the said provision or not. He added that "**Variations and Exceptions**" are options available for **Additional Allowable Use** with almost the same requirements, while the sand and gravel operations will pass through the **City Mining Board** as the recommendatory agency. The approval of all quarries below 5 hectares must come from the **Executive Department**.

60. For **Non-Conforming Uses**, Mr. Cortez stressed that the matter needs further discussion from the members of the **City Council** to conform the zoning regulation of the City he added that "**The term Forest Conservation 1 is changed to "Protection Forest" while "Forest Conservation Zone 2" is changed to "Production Forest" in the proposed CLUP**. While, there are several non-conforming establishments existing in the 2nd and 3rd District, the occupants are encouraged to have a reforestation activity.

61. On the constructions along the high risk areas, Mr. Cortez cited that the Certificate of Non-Conformance shall be applied by the concerned construction owner or operator, and that non-compliance shall be considered a violation of the Zoning Ordinance, and must be subjected to proper fines and penalties. He further pointed out that if the City Council will approve the proposed Ordinance, the CPDO will embark on a massive inspection to non-conforming uses.

62. **Ancestral Domain Areas** defined under the proposed zoning ordinance provides the allowable uses and activities for Indigenous People (IP), livelihood, tribal village and museum, school for Indigenous Peoples (IPs), among others, wherein the regulation is in accordance to traditional customary design to conform to the National Building Code. Other regulations will be subjected to the provision of **IPRA Law** or other relevant and applicable laws.
63. The enforcement of the **Preliminary Approval and Locational Clearance (PALC)** is a must for every activity to start, as provided in the proposed Ordinance including the Building Permit as mandated under the Zoning Ordinance.

Councilor Danilo C. Dayanghirang raised his observation as to issuances of Occupancy Permits since the approval thereof passes through the City Planning and Development Office, even if it has already been scrutinized by the Office of the City Building Official. He suggested to first check the Certificate of Occupancy to avoid delays. Mr. Cortez noted and said that passing of the Occupancy Permit in the CPDO-Zoning Division is to make sure that the application for construction will match the approved plan.

This is included in the proposed revision, under Section 45 of the proposed Comprehensive Land Use Plan (CLUP) 2019-2028.

64. Mr. Cortez informed the committee that all applications relative to solid waste were forwarded to the City Environment and Natural Resources Office (CENRO), for their analysis, while the issue on the Sanitation Plan Certificate will be conferred by the Solid Waste Board. The Water Resource Management Council (WRMC) is an inter-departmental Body which will implement the provision under the Water Resource Management Protection Code of Davao City. The applicant outside the water resource area need not secure a clearance from WRMC anymore. The compositions and functions of the Urban Ecological Enhancement Sub-zone Committee, was presented together with checklist of requirements, although, the said Committee was already approved by the City Council sometime in 2018.
65. For areas highly susceptible to flooding, CPDO recommended for open space easement to maximize City Government resources and to convert it into green areas. The City Government shall no longer allow renovation of more than 50% of the area.
66. CPDO recommended for the streets of Uyanguren, Sta. Ana and Magsaysay area, including the area near Ladislawa Village going to Buhangin, to be classified as Commercial Zone since the current uses thereof are commercial activities. Tourism activities within the Commercial Zone are considered as sub-zone.
67. Based on the Zoning Ordinance, if an existing establishment is situated in Light Industrial zone in 2013 as well as Light Industrial zone in 1996 Zoning Ordinance, if the 2020 Zoning Ordinance will be passed, it will become existing but non-conforming.
68. The City has two treatments, if conforming up to the present time, even if it will become existing but non-conforming in the future amendments, the same is not included in the phase-out period. The buffer zone should be complied if it is required and the business will continue as usual. However, those establishments that are not compatible in the zoning classification will be subjected for a phase-out period.

69. CPDO's record only provides for those existing but non-conforming.

70. It was clarified that the new classification of an area will not really affect the existing establishments therein, considering that the treatment is still the same. If the establishment was constructed prior to the 2013 Ordinance, it belongs to the non-conforming establishments, however, it will not be subjected to a phase-out period, unless it will create hazard/danger in the area situated.

71. BUHANGIN AREA:

In compliance to the national directives, memorandums and applicable laws, the enhancement subzone was changed. The floodway zone should not serve merely as a space zone but as an overlay zone, as guide on the limitation of any development plan. Thus, floodway zone is restored in the agricultural zone, since based on the 1996 map of the City, the original zone was classified as agricultural zone.

For areas with high susceptibility to flooding, CPDO recommends to convert it to parks and open space easement, to limit the expenses as well as the resources of the government and the private sector.

The present zoning classification in the area of Jade Valley is a combination of Floodway and Residential zone, it was approved in the year 1990's. The **Disaster Risk Reduction and Management Office (DRRMO)** will notify the public that the said area is a Floodway zone and not safe for residential or any establishment. Further, the residents can still occupy the area, but they can no longer expand or renovate more than 50% of their houses.

72. BUNAWAN DISTRICT:

Bunawan District in Buhangin area belongs to Industrial zone however small villages have emerged and settled therein. Thus, in 2013 Zoning Ordinance, the area was declared as Residential Zone based on its actual use. Further, the course of the City of Davao was supposedly to have an agri-industrial area and not to lean much on heavy industrial activities. However, the existing heavy industrial activities such as production of cement and steel will be retained.

The Residential zone in Ilang and Tibungco, are existing urban poor housing community. All Barangay Captains were invited and informed during the public hearing regarding the changes in the zoning classification.

The zonal valuation of properties in Barangay Mahayag will be changed as the same will be reverted to Agricultural zone. Based on the 2013 Zoning Ordinance, the status of Barangay Gatungan is still Agricultural zone.

73. PAQUIBATO DISTRICT:

Classified as agricultural non-tillage however most of the areas in Paquibato are supposed to be classified under protection forest. Thus, there are areas that need to be classified as part of the protection forest and not as an agricultural area.

It was also stated that even if most of those areas will be classified under production forest, the people residing or conduction business thereat can still continue with the agricultural activity in the area.

Based on the 2013 Zoning Ordinance, the said area was classified as **Rural Settlement Area (RSA)** which is still the same classification in the proposed Zoning Ordinance. As such, RSA classification was amended and it was classified as Commercial and Residential zone in the proposed Zoning Ordinance. The areas re-zoned as commercial and residential are areas which has existing school establishments.

For government facilities, it was not indicated in the new proposal so as not to limit the development in the area. Certain flexibility will be applied if a government institution will be erected, thus, it may be allowed, provided the area is not considered Protected Forest or Hazard area.

In areas classified under production forest, agro-tourism activities are allowed, provided however, that at least 70% of the area is to be utilized for agriculture, such as fruit bearing plants, including coconut plantation. Said Zone is under the supervision of the Department of Environment and Natural Resources (DENR).

For the critical watershed areas located in Inayangan – Megkawayan- Lamanan, identified as forest is already a protected forest. Based on the delineation on protected forest by DENR, the status of the Makaduhong Watershed is partly protected and production forest.

Councilor Mahipus suggested that Councilor Dayanghirang should be consulted as his proposal is to declare the said area as watershed as it was already recognized as the 92-hectare Makaduhong Watershed Area.

- 74.Planters in the protection forest area should get necessary permits prior for any industrial activities.
- 75.In Industrial plantation, harvesting is allowed, provided it is replenished.
- 76.Phase-out period shall also apply to plantation activities.
- 77.Baguio District has a minimal changes.
- 78.For Calinan District, there are areas to be classified as Protection forest which were formerly considered Agri non-tillage zones. Floodway zones were converted to agricultural areas.

Councilor Mahipus inquired as to the difference between the protected and the critical watershed as well to the reasons why Suawan River was declared as a Conservation Area while the quarry operations within Davao River located in the upper upstream was reverted to conservation area. CPDO explained that the critical watershed is under EMB while the protected forest is under the timberland.

Mr. Cortez clarified that if the portion of the river is within the Conservation zone, quarry activities is strictly prohibited since if the same will be allowed, temporary roads will be constructed by the quarry operators and the protected area will be compromised.

Councilor Mahipus suggested that the quarrying activities will be allowed as long as the movement is along the river only and not within the Conservation zone.

79. MARILOG DISTRICT.

The changes made in Marilog District is actually to the National directives and the National Memorandum guidelines that if the characteristic of the land pertains to a forest, it must be classified as part of the **Production Forest**. Hence, some agricultural areas were reverted to Conservation forest. However, those areas previously declared as production forest can still continue its agricultural activity provided that it complies with the mitigating measures and limits provided under the law.

As per Technical Description, the properties within CADT or **Critical Watershed** are automatically classified under Protection Forest. The classification of the said areas will be amended in the CLUP 2019-2028 which will now be referred to as **Conservation Zone 1** and **Conservation Zone 2**. With respect to the Protection Forest, the ecotourism activity can continue provided, that they will comply with the parameters as to how they can operate the same.

Mr. Cortez enumerated some of the guidelines approved by the City Council and reflected in the proposed Zoning Ordinance. If the occupant has introduced any development within the Conservation area, there will be a **3-year probationary status** reflected in their **Mayor's Permit**, indicating that they will have to undergo a reforestation program. On the 3rd year CENRO and DENR will look into the restoration of the area, if the same found non-compliant to the guidelines and parameters set in the reforestation program, their business permit will be revoked. However, if they comply with all the requirements and the guidelines provided, their business permit will be eligible for renewal.

80. TORIL DISTRICT:

Majority of the areas in Barangays Tagurano and Eden, Toril District, are considered as **Tourism Development Zone** and **Urban Ecological Enhancement subzone**.

Banana plantation in the area will be subject to a phase-out period, if the same is not compatible under its area of classification.

81. TUGBOK DISTRICT:

Floodway Mitigation Zone was restored back to **Production Agriculture**.

Councilor Mahipus, suggested that the final version of the Zoning Ordinance, should introduce terms and restrictions involving reclassification of classified under Protection Zones namely Agricultural Lands.

Mr. Cortez said that the option is really for Production Agriculture considering that the Protection Agriculture Zones are areas within the Hazard zone. In Production Agriculture Zones, it is allowed by law to convert the 15%, in which the reckoning period of 15% will still be re-evaluated with the Department of Human Settlement and Urban Development; that under Production Agricultural zones, Socialized Housing project is allowed if the same is undertaken, endorsed and approved by the City Government.

Engr. Mary Ann Orilla, City Planning and Development Office representative, presented several **Position Papers** endorsed to the City Planning and Development Office by the Technical Working Group. The position papers were tackled on such date for comments and appropriate action by the Sangguniang Panlungsod of Davao, to wit:

a. Barangay Captain Rey Bargamento - Barangay Mintal

Request to be reclassified into Industrial Zone – CPDO commented that the application should not be granted since Industries might have negative impact on other land uses within the area. CPDO's recommendation is to be reclassified as Commercial-2.

b. ALSONS - Properties in Lasang

CPDO proposed that the properties situated in Lasang should be re-zoned into light industrial and major commercial from residential zone.

c. ALSONS - Properties in Mandug

Reclassification into Minor Commercial Zone and Medium Density Residential Zone

Councilor Abella requested Engr. Orilla to clearly define what kind of agriculture they want to introduce in the area and suggested to indicate that the area is a protected production agricultural area for proper guidance and avoid confusion to the investors. Mr. Roy Rigor clarified that the Allowable Use Provision enshrined under Article 12 is different from the Allowable Uses in every Zone Classification because in the new CLUP, there are allowed uses in every zone.

ALSON's representative manifested that currently there are existing quarry activities near the boundaries of their properties which may be the cause for landslides and erosions hence they are requesting for reclassification in order to develop the properties to prevent further soil erosion.

Mr. Rodrigo Bustillo from the Disaster Risk Reduction and Mgt. Office suggested that since the subject area is considered under moderate area prone to landslide, there must be proper mitigating measures to be introduced. He further suggested allocating green space and opening space, to which the ALSONS agreed.

d. SAN PEDRO COLLEGE

Applicant is requesting to convert the property situated in Mandug from Agri Non Tillage and Medium Density Residential Zone to Industrial Zone as they plan to construct a school for Basic Education for San Pedro College, Mandug Campus to be completed in five (5) phases.

e. Hon. Ralph Abella – Chairman: Committee on Agriculture and Food.

*Councilor Abella is requesting for the creation of a **Food Corridor** to cover the whole District 3 (Toril, Tugbok, Calinan, Baguio, Marilog) and in Paquibato in District 2, including all the*

agro-industrial zones within the city. Councilor Abella informed the body that he will change the request into "Protected Production of Agricultural Area".

f. DMC URBAN PROPERTY DEVELOPERS, INC.

The proposal of the applicant is to develop its 26-hectare property located at Shrine Hills, Matina, Davao City however the area is restricted for any development since the site is prone to landslide. The Committee suggested to include the City Ordinance in Urban Ecological Enhancement Sub Zone for guidance on the matter.

g. SUBDIVISION AND HOUSING DEVELOPERS ASSOCIATION (SHDA)

The applicant signified its request to modify matters pertaining to the application for reclassification of the same sub-zone to be approved without the need for $\frac{3}{4}$ votes of the SP Members.

h. SUBDIVISION AND HOUSING DEVELOPERS ASSOCIATION (SHDA) AND ORGANIZATION OF SOCIALIZED AND ECONOMIC HOUSING DEVELOPERS OF THE PHILIPPINES, INC. (OSHDP)

Applicant proposes that the following greening spaces be credited as part of compliance, to wit: Planting strips, island on roads/rotunda, open spaces and parks-wide recreational areas planted with trees, vertical gardens on buildings and/or perimeter fence, detention/retarding pond or lagoon, slopes and easements/undevelopable areas (i.e. buffer areas for bodies of water).

Engr. Orilla informed the applicant that the request cannot be considered since there is a specific law stating that the aforementioned spaces are not part of the greening spaces.

Hence, the Committee suggested indicating the particular provision of the law because if it is an ordinance, they are now on the process of reviewing and analysing the amendment of the existing Zoning Ordinance.

i. SOUTH DAVAO DEVELOPMENT CO., INC. - Biao Joaquin, Davao City.

Applicant is Requesting for the Zone Classification of the 50-hectare property located in Biao Joaquin into Minor Commercial Sub-Zone (C-1) as allowable use in the zone is aligned with intended development.

j. CAMELLA

Applicant is requesting for reclassification of their property as mix-use (residential and commercial). However, the portion of the property is under UEEZ and cannot be rezoned by virtue of Resolution No. 02434-18 Series of 2018.

k. Robert Seng (SAFECON)

The existing batching plant started its operation since 1994 or before Zoning Ordinance was implemented. It is considered as existing but non-conforming business operation which can operate their business provided that there will be no expansion to be made in the area.

Portion of the requested area is currently classified as Prime Agricultural and the Commercial area.

l. Filipinas 186 Shopping Mall, Inc. represented by Hairong Xu

The subject property is located along Davao-Bukidnon Road, within Barangay Los Amigos, Tugbok District and classified under Floodway Mitigating Zone. Certain mitigating measures needs to be introduced in the area to prevent flooding.

The following points were suggested for further discussion:

- a. To increase the residential zone of the City;
- b. Clarification as to why only the Government housing projects are allowed in the Production Agriculture Zone.
- c. That roads along Ulas going to Mintal and Calinan (Davao Bukidnon road) and Ulas going to Toril roads Dumoy Highway (Mc. Arthur Highway) be classified as Commercial Zones to invite investors and minimize residents from travelling to downtown areas;
- d. To include in the Zoning Ordinance the batching plants and stone crushing plants in light industrial zone.

CPDO discussed the following **applications for reclassification: (Socialized Housing)**, to wit:

- a) **AMORESCO HOMEOWNER'S ASSOCIATION** – The members occupies resided at the creek of Sasa near the old Airport of Davao City. They intend to be relocated to Campo Sinco of Barangay Talomo River, Calinan District, which has an area of 40,000 square meters, more or less, currently classified as Prime Agricultural Zone. Consequently, the association is applying for reclassification to Socialized Housing Zone. However, in the proposed CLUP revision, it is suggested to be classified as Production Agricultural Zone, although it is approximately 50 meters away from other settlement areas. The subject area has adequate access to water supply under Tamugan River operation, electricity and barangay road access. After due deliberation and evaluation of documents presented, CPDO favourably recommended to grant the request.

Councilor Mahipus inquired if Socialized Housing is allowed in Production Agriculture Zone, if the same be converted to Socialized Housing Zone as what the CLUP proposed. Mr. Rigor explained that the current Zoning Classification is Prime Agriculture Zone and the proposal is Production Agricultural which allows Socialized Housing, provided that the project is under a Government program. Pending reclassification, applications can be accommodated to be included in the final approval of the CLUP. However, the applicant is not automatically allowed without securing or complying all the necessary requirements for reclassification.

- b) **BLESSFUL HOMEOWNERS ASSOCIATION, INC.,** - The members of the association aspires for their since they are residing along the danger zone, a flooded area within Juliville Subdivision adjacent to Jade Valley, Tigatto, Buhangin.

The proposed relocation area is at Barangay Talomo River, Calinan District, with an area of 16,250 square meters, more or less, classified as Prime Agricultural Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone. After due deliberation and evaluation of documents presented, CPDO favourably recommended the request for the City Council's approval.

- c) **BAMBOO HOMEOWNERS ASSOCIATION**, applied for Socialized Housing since the City Government demolished the property where its members resided , which is under Bolton Bridge, along Bangkerohan River, which is not only a Danger Zone but is affected by the implementation of the coastal road development project. The area applied for is at Barangay Tacunan, Tugbok District, this City, assisted by the City Government of Davao and the Social Housing Finance Corporation (SHFC) due to urgency of the matter.
- d) **STO. NIÑO HOMEOWNERS ASSOCIATION** - The members of the association reside along the Danger Zone at Barangay Sto. Niño Creek, Tugbok District, they wish to be relocated at Barangay Talomo Riverside, Calinan District, currently zoned as Prime Agricultural Zone of which they are applying to be reclassified into Socialized Housing Zone, consisting.
- e) **HOMELESS SHELTER MEMBERS COOPERATIVE**. The cooperative is part of Davao Shelter Development Cooperative, with various homeless members who reside from all parts of Davao City, gathered together as a Shelter Cooperative. They intend to relocate at Barangay Guiangga, Tugbok District, with an area of 23,670 meters, currently classified as Prime Agricultural Zone. Mr. Rigor explained that, CPDO proposed that the area is to be classified as partly Residential and partly Agricultural Zone. The subject area has adequate access to water supply, electricity and barangay road access. After due deliberation and evaluation of documents presented, CPDO favourably recommended the request. Furthermore, he assured to validate the qualifications on the prerequisite set forth by the City Housing to any applicant in the Socialized Housing Program.
- f) **CARPENTERS HOMEOWNER ASSOCIATION** - Currently the members reside in Carpenter Agdao, Davao City. The applicant intends to relocate at Subasta, Calinan District, this City. The proposed site has an area of 22,247 square meters, which is currently classified as Prime Agricultural Zone. They further informed the Committee that they are applying to be reclassified under a Socialized Housing Zone. The proposed amendment to the CLUP revision of the said area is under a Residential and Production Agriculture Zones.
- g) **TIERRA NUEVA HOMEOWNERS ASSOCIATION, INC.** The members currently reside in Tacunan, Tugbok District, which has an area of 55,000 square meters, more or less, classified as Prime Agricultural Zone. Mr. Rigor explained that the current Zoning Classification is Prime Agriculture Zone and the proposed classification is Production Agricultural which allows Socialized Housing, provided that the project is under a Government program.
- h) **DURIAN EAGLE HOMEOWNERS ASSOCIATION**, the members are residents of Barangay 21, this City, occupying a danger zone along the coastal area of Barangay Talomo hence they are requesting to be relocated at Subasta, Calinan District, this City, with an area of 50,000 square meters more or less which is currently classified as Prime Agricultural Zone. The application pertains to their request that the subject property be reclassified into a Social Housing Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone.
- i) **CATTLEYA HOMEOWNERS ASSOCIATION**. The members are residents of Barangay Communal and Barangay 21-D, seeks to be relocated at Subasta, Calinan District with an area of 33,000 square meters in Zone 3 currently classified under Prime

Agricultural Zone. They are requesting for the subject property be reclassified into a Social Housing Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone.

It was observed that said area is the same with that of the Carpenters Association and Durian Association. The area is very near to existing poultry farms.

Engr. Sam, CPDO, informed that the nearest distance among the three (3) settlements being applied for Socialized Housing is only 300 meters away with 400 meters being the farthest.

Councilor Abella inquired as to who owns the poultry and noted that the Bounty Fresh Poultry is operating a conventional type of poultry.

Councilor Mahipus manifested that, if the poultry operators will comply with the buffer requirements, maybe the application will be granted. Councilor Dayanghirang also suggested to come up with a win-win solution as the City also needs to generate revenue through taxes and inquired if the association can possibly look for another area.

Ms. Eden Santiago of the Department of Human Settlement and Urban Development informed the Body that it is true that the proposed lot is just near a poultry farm and the distance requirements of a poultry project must be 1,000 meters.

MR. EDISON CERNA SABLAY: *(Representative – Feliciano Agro Farm)*

"Ni opposed mi ana kay ingon nila 504 ilang buhaton nga balay dako ra kayo; dili mana pwede kay agricultural land mana Your Honor ug usa pa duol lang kayo sa amua sa Sirib 104 meters lang ang kalay-on. Mo-oppose mi kay kung naa may possible nga langaw ug bad odor kami mapasanginlan kay kami ang pinakaduol; ug dili malikayan nay langaw kay poultry so mo opposed gyud mi ana nga dili madayon ang subdivision kay ang area napalibutan ug poultry dili lang ang amoa."

MR. SAMSON TAN: *(Representative – Tagakpan Sunshine Farm)*

"Ako sab sir mo opposed pud ani kay klaro man gud ni siya nga Prime Agricultural kay kung masugdan man gud ni ug mga subdivision sir so naa na pud uban mosunod ana sir; ug unfair pud sa among side kay kung daghan na kayo diha tao kung nay mga reklamo kami gyud gihapon madihado ana sir."

MR. KRIS PINON: *(Representative – KMD)*

"Sa part naman naming Your Honor gui acknowledge naman naming ang residential na kailangan ng mga tao ng bahay; ang point lang kasi naming Your Honor, mayron naman tayong mga place na dapat doon natin sila ilagay para in the future wala tayong problema; nakikita natin ngayon Your Honor maraming opposed meaning Your Honor may mga problema. Bago pa ng start diyan may problema na so may malaki pang problema darating diyan in the future; at saka Your Honor ng loan po kami lahat sa amin ng loan sa banko Your Honor at wala pa kaming one (1) year na nag babayad."

It is noted that the poultries in the areas have been in operation for a considerable period of time prior to the request of housing project and the area is currently classified as a Prime Agricultural Zone. Even if the poultry owners are using tunnel ventilated poultry houses, it does not guarantee that there would not be any problems in the future which may affect the health of any person living within the area.

KMD Poultry Farm manifested that they have invested a huge amount of finances and resources from the bank for the construction of their poultry project including the tunnel vent. Before they started their operation they found it difficult to find a suitable location in Davao City for the construction of a poultry farm and there are numerous requirements that to submitted and complied with. Poultry projects can provide jobs to the residents nearby. If the Homeowners Association will be allowed to settle in the area in the future, their poultry farms can really cause health problems to the nearby residents.

- j. THE PUNTA DUMALAG HOMEOWNERS ASSOCIATION**, - the Association currently resides at Barangay 75, Punta Dumalag which is considered a Danger Zone due to monsoon waves. The residents intend to relocate at Barangay Tagakpan, Tugbok District, which consist of an area of 30,000 more or less currently classified as Prime Agricultural Sub Zone. The application pertains to their request that the subject property be reclassified into a Social Housing Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone. Moreover, it was revealed that the area is near the Watershed of Davao.
- k. PAG-ASA HOMEOWNERS ASSOCIATION**, the members are currently residing at Purok 9-B, Barangay Tacunan, Tugbok District. The Association members have been residing in the said area since 2009 with an area of 64,000 square meters, more or less, currently classified as Prime Agricultural. The application pertains to their request that the subject property be reclassified into a Social Housing Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone.
- l. DARUL AMAN HOMEOWNERS VILLAGE ASSOCIATION, INC.** The members of the association occupy Barangay 21-C along the Coastal Road. They intend to be relocated at Barangay Mulig, Toril District, this City, which is currently classified as Prime Agricultural Zone. The application pertains to their request that the subject property be reclassified into a Social Housing Zone. Currently, CPDO in its proposed Zoning Ordinance classified the area as Production Agricultural Zone with the area having existing fruit trees, like coconut and mangos, and at least 668 meters from the nearest settlement.

CPDO said that the applicant was able to provide all the necessary documentations required by the Committee including documents relative to the access road. Hence, the City Planning and Development office manifested that considering the circumstances and the documentations presented, the application can be given a favourable recommendation.

82. The provisions on non-conforming uses for buildings and structures under the existing Ordinance, which was passed on 2013 should be considered as it has been in existence prior to the approval of the 2021 revisions of the Ordinance.
83. There should be issuance of Certificate of Non-conformance for business operations which indicate that the activities conducted may become hazardous, nuisance or causes risk to the safety of the public.
84. Non-conforming structures constructed after the passage of 2013 and 2021 Ordinance; Non-Conforming Buildings and Structures or Business Activities will immediately be

demolished through a Demolition Order if the subject property is within the Protected Zones.

85. The prohibition under the Protection Zone is strictly non-negotiable especially to the Marine Protected areas and other protected Agricultural areas.

86. Structures and activities under the Production Zones must observe the phase out period as well as urban use areas based on the schedule for the phase out period with graduated amount of the project cost: Php50 million capitalization project will have a 3-year phase out period to vacate the area to the right zone; above Php50 Million up to Php100 Million project cost have 5 years to vacate; and, all activities above Php100 million pesos has a 7-year phase out period.

Councilor Dayanghirang suggested to provide exemptions on the rules under the Marine Protected Area (MPA) as several of Foreshore Lease activity operation and development along the MPA area may be considered by adding certain provisions and restrictions in order to also protect the business activities within the MPA. It should be properly defined and identified as to where the provisions would be applied and to come up with a win-win solution in order to give an equal opportunity and consideration between economy and the protection of the environment. Mr. Cortez noted that they will possibly add a provision for consideration of the existing establishments within the MPA.

87. For buildings and structures located in proclamation areas, forest protective areas, among others or the Production Forest areas, the reforestation programs extends in the areas being recommended by the DENR and CENRO to be part of the reforestation program to augment the occupied area above 2% for construction or cultivation of the areas under the tenorial agreement otherwise it will be offered to other areas recommended by the CENRO and DENR. Failure to comply with the limitations and requirements would render the non-renewal of their Mayor's Permit.

88. Structures and establishments existing and non-conforming to the guidelines, allowable uses and restrictions under the Forest Production Zone shall be subjected to the Reforestation Program under the guidance of the WRMC and CENRO as part of the compliance process in securing permission for activities conducted within the Forest Production area.

89. Non-conforming structures identified being constructed in high risk areas, where it is prone to landslide and/or other natural man-made hazards, a Demolition Order should be issued by the City Engineer's Office upon the recommendation of the Disaster Risk Reduction and Management Office.

90. As to Industrial Zones, if the current zone is classified under an Industrial Zone but the activities actually engaged are commercial activities, the CLUP proposal is to reclassify such areas into a Commercial Zone.

91. For those establishments within Industrial Zone conducting Industrial activities, the CLUP retain the current zone classification.

Councilor Abella inquired as to the tax implication of the collections from Industrial Zone I to Commercial Zone and requested to invite the City Treasurer's Office to attend the next hearing to discuss tax collection. Mr. Cortez answered that the taxes may be the same since collection of taxes are based on their actual business activities.

Engr. Rigor informed that, in Agdao there were 115 establishments out of which 96 were allowed to be under Commercial Zone, and the rest will be retained under the current Industrial Zone.

The Committee also inquired if establishments located in Agdao under the Industrial Zone but doing commercial activities, if it is permissible to the owners that they will be downgraded to Commercial Zone and the rest will be retained under Industrial Zone. Further, it requested for a concrete map of the establishments doing commercial activities and those conducting industrial activities.

Mr. Cortez explained that the reason why the same was proposed to be classified as commercial zone is due to the present activities within the area which are mostly commercial and there are opportunities for expansion.

92.CPDO likewise discussed the following other applications for reclassification, to wit:

a. MR. GLENN C. ESCOVILLA - Barangay Megkawayan, Calinan, Davao City

The application of Mr. Glenn C. Escovilla is relative to their proposed Mountain resort, with an area of Fifty Five Thousand Seven Hundred Sixty Two sq. m. (55,762), more or less, located at Barangay Megkawayan, Calinan, Davao City.

The operation of said resort has started in the Year 2000. However, after 5 years of its operation the same was closed. Together with the other applicants in the area, they are looking forward to the development of their property as a tourist location.

The Department of Tourism (DOT) implemented the road infrastructure projects in the area leading to Tourism sites and that the road is concrete consisting of two parts: 1) Lacson, Lamanan, Inayangan, and 2) Megkawayan access roads; and Malabog to Megckawayan Peak Resorts.

Mr. Cortez elaborated that in the Residential and Conservation Zones, the Tourism activity may be allowed.

The Resort representative informed that its office tapped skilled individuals to help construct mitigating measures to prevent possible erosion and that the resort has been operating since 2002. He further affirmed that they already established a buffer zone in the area by planting several trees as in compliance to the request of the Committee and the City Planning.

b. Ms. Lyneth C. Salarda - Camp Corsal Resort Garden, located in Barangay Megkawayan, Calinan, this City.

The existing Zone Classification of the property is under Agricultural Land Tillage and partly Rural Settlement Area and the applicant intends to apply for a Tourism Development Zone. However, the new proposed Zoning Classification of the property is proposed as partly Commercial Zone and partly High Density Residential Zone.

Mr. Roy Rigor informed the body it is better to classify the area as Tourism Development Zone because it will help the area develop.

c. SME Posterity Holding Corporation - Libby Road, Brgy. Bago Gallera, Puan, Talomo District, this City.

The applicant is requesting that the property be converted into a Minor Commercial Area. The representative of SME Posterity Holding Corporation informed that the initial plan of

the said area is for taxi garage with refilling station for their own consumption purposes only. However, the same is not allowed within in the Residential areas, hence they are applying for reconsideration. Mr. Rigor clarified that the concerned area is recommended to be classified under High Density Residential Zone.

d. Aurea Somnia Land and Development Corporation - Barangay Bayabas, Toril, this City.

The said area is currently classified as Prime Agricultural Land Subzone to be converted into Residential Zone. However, the recommendation of the TWG is for Production Agricultural.

e. Goodluck Plastic Global Venture Inc - Purok 8, San Miguel Indangan, Buhangin, Davao City.

The proposed activity in the said property is for manufacturing of plastic products and warehouse. The existing classification of the area is High Density Residential Zone, wherein the applicant intends the property to be reclassified as a Heavy Industrial Zone.

Global Plastic Corporation requested that the concerned area be reclassified from Agricultural Zone to Heavy Industrial Zone.

Mr. Rigor discussed to the Committee that the application pertains to a manufacturing of plastics previously a warehousing business. It is situated in the area of Indangan exactly at Purok San Miguel with approximately 10 thousand more or less square meters. In the existing Zoning Ordinance, it is classified within the High Density Residential Zone and the applicants are applying for reclassification into a Heavy Industrial Zone. However, in the proposed New Comprehensive Land Use Plan the area is proposed to remain as High Density Residential Zone.

Atty. Torreon the Legal Counsel of Goodluck Plastic Global Ventures, Inc. emphasized that there is no problem in so far as pollution and environmental concerns even if the property is classified as a High Density Residential Zone. He explained in detail as to the materials that are used by his client for the products to adhere to the mitigating measures which will eliminate the pollution and environmental conservation is properly observed. He also presented to the Body through share documents via online platform the machines and the technologies being used for the production so that the Committee could have as idea on the matter.

After the presentation of Goodluck Plastic Global Ventures Inc., Engr. Cortez requested Atty. Torreon to present to the Committee the document showing that there is no objection as to the adjacent property for reference on the matter. Ms. Irene of EMB mentioned that they will issue ECC to projects which are under plastic base products if the parameter rate is more than 15 thousand metric tons annual production rate. The Committee responded to EMB's representative that the Committee is aware on the agency's procedures and what it prefers to know is the pollution effect to the vicinity if the proposal will be granted.

Ms. Irene said for the record that she is from the Environmental Impact Assessment the one who issued the ECC and she stressed that as to the possibility of pollution sources, the equipment/machines that being used for the products must be secured through a permit from her office. Ms. Eden Santiago of the Department of Human Settlement & Urban Development (DHSUD) opined that the matter should be studied further by the proper authorities since the area is recently classified as a High Density Residential Zone

and the qualms in her mind is that the proposed plastic products wherein the vicinity is surrounded by residences which may pose serious health problems in the future.

The Committee directed the requesting party to coordinate with the City Planning & Development Office (CPDO) for the listing of the necessary documents that it needs to comply and furnish the Committee all documents for appropriate action of the same.

f. **La Fuerza Inc** - Barangay Dumoy, Talomo District, this City.

Mr. Edwin Jaranilla of La Fuerza Bottling Distillery of Emperador, presented its request for the operation of **Emperador Distillery, Inc.** a bottling plant in the City, located at Barangay Dumoy, Toril, this City. They are planning to develop a total area of **5.6 hectares** out of the **9.8 hectares** in the middle portion of the subject property.

The area is presently classified as Low Density Residential and partly Medium Commercial Zone. Applicant's request is for it to be reclassified into Heavy Industrial Zone. The subject property is just beside Pepsi Cola Bottling Co. Applicant intends to invest in Davao City, particularly at the subject property, similar to Pepsi Cola Bottling Co.

Emperador Distillery will put up two (2) bottling plants, with a proper production house for finished goods and raw materials, a Waste Water Plant Facility or other utility areas. DCWD will provide ample water supply in the operation of the same provided that it complies with all the requirements in the operations. Also, a Pollution Officer will be assigned to monitor the Plant to secure standard parameters required by the DENR and other concerned government agencies.

*Mr. Ivan Cortez emphasized the proper monitoring for the compliance of the project as the same is classified as a Heavy Industrial Plant and within **Heavy Industrial Zone** to protect the environment and ensure the safety of the community residing near it.*

Mr. Rigor affirmed that since the project is a distillery it must be considered as Heavy Industrial. Councilor Zozobrado pointed out that the subject property has existing fish ponds adjacent to the proposed Emperador Distillery Plant. He likewise requested that the owner of fishponds will be invited to attend the next hearing for discussion of the same to avoid future complaints.

*DENR representative manifested that Emperador Distillery, Inc., has not yet applied for Environmental Compliance Certificate (ECC) from their Office. Should the project be implemented, the applicant must secure a **Water Discharge Treatment Facility** with standard parameters as well as be monitored by the DENR-EMB. Furthermore, mitigating measures must be adopted and violations to the standards and requirements imposed by the law would entail corresponding penalties.*

Mr. Ivan Cortez stated that, if other investors will operate within a residential area, they will be required to take mitigating measures like pollution and sound devices as not to cause nuisance to its neighbours thereby avoiding future complaints.

Councilor Dayanghirang suggested that the applicant must adopt pollution control as mitigating measures to avoid future complaints from residents and to consider the equal welfare. The revival of the City's economy should also be taken utmost consideration as well as the protection of the environment. The project will produce employments

opportunities and services to Dabawenyos which in turn would generate income from Real Property and Business Taxes from more than P200 Million capitalization.

The representative of the DPWH suggested that the applicant should put up their own isolated drainage from the natural way of disposal as mitigating measures and be required during the Development Permit application.

Councilor Mahipus clarified that the area being applied for is under overlay Water Zone. He inquired as to what should be done to reconcile with the proposed provision of the CLUP that prohibits industrial activities deals with industrial products.

Mr. Cortez manifested that handling hazardous chemicals is prohibited in the Water Resource Zone. However, the application is distillery and mostly on water utilization does not use hazardous chemicals. They can be allowed as long as they are compliant to the Water Treatment Facility requirements in consonance to standard requisite set forth from the DENR-EMB. Moreover, prior to its approval, the same should be thoroughly scrutinized in accordance with the rules on overlay Water Resource Zone.

Councilor Mahipus suggested to add a collatilla, to allow the City Council leeway to put up the uses as Allowable Use provision to accommodate them without violation of the CLUP provision. The Committee recommended to present the same to the plenary for approval of the City Council.

g. Barangay Talandang represented by the Brgy. Captain Cinderela Hiyas.

Applicant requests for the area along the roads of Barangays Biao Escuela, Tugbok District and Biao Joaquin, Calinan District, be converted into a Minor Commercial Zone. Presently, the area is classified as Prime Agricultural Land. CPDO informed the committee that there are portions of the area which are already considered as Commercial Zone, however, it is not advisable to reclassify the entire stretch, applied for, to be Commercial Zone, since most of these areas are still evidently considered agricultural. Thus, CPDO recommends Production Agricultural Zone and partly Residential Zone.

h. Homeless Indigent Members In Group (HIMIG) - Barangay Dacudao, Calinan District, this City

The subject property is classified as Prime Agricultural Zone. Applicant requests for reclassification to Residential Zone. The current proposal of CPDO is Production Agricultural Zone.

Notably, the distance from the subject property to Santiago poultry farm is just 400 meters. Mr. Rigor recommended that the classification of the area concerned should be retained as Production Agricultural Zone.

Upon the presentation of the map, the Committee noted that the said area is not suitable for a Housing project due to the existence of several poultry farms in the vicinity. Hence, the Committee advised the requesting party to look for other places more suitable for its purpose.

Ms. Elma Sisnorio, President, of HIMIG HOA explained that they are applying for a socialized housing through CMP wherein the property is located at Barangay Dacudao, this City, near the Barangay hall, Barangay Health Center and Dacudao Elementary School.

Mr. Rigor commented that if the project is under CMP or a socialized housing program it will be allowed as an "allowable use" under the **Production Agriculture Zone**.

The problems found are as follows:

- There is poultry above view or close to the area.
- The site proposed at the center of the poultry.
- There are other poultry farms found in the said area.
- Tinculo Farm piggery is located near the subject property.

Ms. Elma Sisnorio opted to negotiate with the poultry owners on the matter and suggested that they use new technology to segregate their waste. She added that they can no longer purchase another lot as they have no money for the down-payment since some of their members have no work due to the pandemic. Hence, she suggested having an ocular inspection in the area in order to see the actual site.

Councilor Pilar C. Braga asked the committee as to number of poultries in the area aside from the piggery to which the Committee answered that there are about three (3) poultries in the areas, one is close to 384 meters and the other one is 600 meters. Moreover, under the housing law, through HLURB, residential sites should be within one (1) kilometer or 1,000 meters minimum distance apart from the poultry areas. It also mentioned that if they will approve the application of HIMIG, there is a huge possibility that in the near future, there would be possible conflicts like complaints due to bad odor or health concerns.

Councilor Braga made a follow-up question as to the recommendation of the City Planning and Development Office. CPDO maintains its stand to retain the property as production agricultural. With respect to their application which is for socialized housing, the same may be allowed in production agricultural provided that all the requirements and conditions will be complied.

Ms. Elma Sisnorio also explained that HIMIG was organized through an association accredited by the City. HIMIG is composed of 197 members, who come from the different areas in Davao City such as Barangays 76-A, Matina Pangi and Riverside Bangkal. Upon hearing her statement, Councilor Mahipus opined that the City Council could not decide if the matter is prohibited by law as he does not want that the City Council to be blamed in the future.

The following suggestions were raised during the discussion, to wit:

- Councilor Braga suggested to look for another area which is not complicated.
- Councilor Mahipus suggested to all applicants to pass through the City Planning and Development Office in order to know if the area is suitable for socialized housing.
- Councilor Mahipus suggested to the applicant not to collect money from the members for possible downpayment especially if the said area is not clear.
- Mr. Rigor suggested to the applicant to identify the area which is residential already so that they can easily process their application.
- It was suggested for the applicant to coordinate with the City Planning and Development Office as to their request.

i. Rookies Fruit Preserves Corporation - Barangay Lacson, Calinan District, Davao City.

Applicant is requesting for reclassification of their property from Prime Agricultural Land to Major Industrial Zone considering that the subject property is within the strategic location for the raw materials used in their production including a bypass road which connects directly to the Panabo Road.

The business was established since 1995 up to present as a Fruit Manufacturer and Processor. The area will be used as production and buying station. It will generate job opportunities in the area for about One Hundred or more employees and possible different livelihoods for the local community.

To preserve the environment and avoid unnecessary hazards, since Food Processing entails the need of proper waste management, the applicant presented MITIGATING MEASURES which it will undertake, to wit:

Mitigating Measures for Solid Waste Management:

- 1) All waste such as fruit peels, product/ingredients, spillages, and other wastes generated in the production area shall be placed in sacks by the utility in-charge
- 2) Sacks will be placed at a designated place. Assigned utility or sanitation personnel will collect all wastes during breaks and after production.
- 3) Wastes are segregated in labelled yellow drums or large sacks. (Bio-recyclable and other residual wastes)
- 4) Waste Management Service Provider picks up waste at Plant.
- 5) Collect the FOGs, Fruit Peelings and assorted production rejects/wastes from designated area by a waste management trained and equipped personnel.
- 6) Haul away the FOGs, peelings and other wastes using a DENR-EMB registered Waste Transporter Truck.
- 7) Treat wastes safely and properly through high temperature composting.
- 8) Issues Certificate of Waste Treatment.

Applicant reiterated the Company's commitment to sustainable manufacturing through the use of processes that minimize negative environmental impacts, conserve energy and natural resources, safe for employees, communities and consumers and are economically sound through:

- Skylights
- LED Lighting
- Water Recycling
- Rainwater Harvesting
- Waste Recycling
- Biomass Fuel
- Bio wastes to Fertilizers
- Waste Water Treatment

Applicant also submitted a copy of Administrative Order No. 30 Series of 2020 issued by the Department of Agriculture on October 7, 2020 stating that: "In the interest of service and pursuant to the provisions of Anti-Red Tape Act of 2007 (R.A. 9485) and Ease of Doing Business Act of 2018 (R.A. 11032), Administrative Order No. 18 providing for guidelines on the issuance of Certificate for Conversion of Agricultural Lands dated May 18, 2020 is hereby revoked". Hence, the Certificate of Eligibility to be issued by DAR shall no longer be required in the land conversion process.

CPDO confirmed that the area applied for by Rookies Fruit Preserves Corporation is proposed to be reclassified into a Production Agriculture Zone considering its current geographic state which is compatible and may serve a similar purpose to an Agro-Industrial Zone. It is included in the pending zoning revision proposal under Comprehensive Land Use Plan (CLUP) for 2019-2028. Thus, the subject property may be allowed to be reconsidered and reclassified as a Major Industrial Zone.

j. Ms. Rosario M. Sakay - Palm Drive, Bajada, this City

The subject property is classified as Residential Zone. Applicant requests to reclassify the area as Major Commercial Zone for its proposed condominium projects. The proposal of TWG in the new Zoning Ordinance is Minor Commercial Zone.

According to Ms. Rosario Sakay, the existing buildings constructed within the vicinity are mostly commercial establishments, such as, warehouses, Land bank, and other corporation etc. The said project is a joint venture of the City Global Developer and that the proposed project will be composed of 12 to 15 storeys.

Mr. Rigor clarified that the condominium project is allowed both in the High Density Residential Zone and in the Major Commercial Zone.

k. Shelter Homeless Association - Manuel Biao Guinga, Tugbok District, this City.

Based on the inspection conducted by the TWG, the area is suitable for a Socialized Housing Project; hence, the same was recommended for its approval.

l. RICARDO MANUEL M. SARMIENTO, President and Chief Executive Officer, Vitarich Corporation

Vitarich informed the Committee of their request for Additional Allowable Use, in order for them to resume their operation as Poultry Dressing Plant. He added that they have already completed all the requirements.

Resolution No. 0371-19 adopted on November 12, 2019 provides that the applicant was granted by the City Council a franchise for the operation of a Poultry Dressing Plant valid for a maximum of five (5) years provided that the conditions set are strictly complied within the period stated.

93. Mr. Roy Ryan Rigor presented additional pending applications from several Homeowner's Associations, Private Persons and Entities, as follow, to wit:

m. PHINMA HOUSING:

The subject property is surrounded by Barangays Los Amigos and Tugbok, Tugbok District and it is 24 kilometers away from the Poblacion. It consists of an area of 7.2 hectares and other 2.4 hectares the adjacent property is already classified as R-2 Zone with other properties existing in the area Zoned R-2.

Mr. Rigor also informed the body that the current proposed CLUP R-2 Zone Classification is no longer applicable. Hence, all applicants for R-2 Classification will directly apply or converted into R-3 Classification.

n. CITY GLOBAL APPLICATION

The City Global represented by Rose Sacay manifested that they are planning to construct a multi-storey building, located at Palm Drive, Barangay Buhangin, this City with access roads located at Palm Drive and Sto. Rosario Streets. The proposed composition of the building comprises of commercial spaces in the second floor, 18 storeys for residence, a roof deck and two (2) basements parking lots.

The City Global Engineer informed the body that they have at least 21 floor levels, including the ground floor, basements and 18 floors residential, and roof deck of at least 63 to 66 meters including the basement. They are requesting for their area to be incorporated in the revised zoning ordinance as a mixed use of Commercial and Residential Zone.

Engr. Rigor informed that their height clearance was required as the place is near the runway of the airport. The existing Zone is Residential Zone and the current CLUP proposal is to classify it as Minor Commercial Zone. While applicant is requesting for Minor Commercial Zone, the activity they will undertake falls under the Major Commercial Zone.

Mr. Cortez pointed out that the CAAP height limit should be strictly complied, as well as the City Building Height Limit Ordinance.

o. MAHARLIKA AGRO-MARINE VENTURES CORPORATION

Mr. Vic Lao, CEO of Maharlika Agro-Marine Ventures Corporation presented his concern about his business property and operation, covered by TCT No. 146-2014005651, located at Barangay Tamugan, Marilog District, Davao City.

The area is being used as a Pecking Duck and Poultry Dressing Plant. In the present Zoning Ordinance, the property is classified under the Critical Watershed Zone. However, he manifested that they were already able to obtain a favourable recommendation granted by the City Council for the reclassification of the same subject property years prior. This is evidenced by the record in the archives for Ordinance Number 799 enacted on October 6, 1978 entitled:

“An Ordinance reclassifying Lot No. 6081-A, covered by TCT No. 47106, containing an area of Ten (10) Hectares, more or less located at Tamugan, Calinan, Davao City, from Agricultural to Light Non-Offensive Industrial Zone”.

Hence the applicant established that the plan was already implemented and reclassified even before the area was declared under a watershed zone.

The controversy pertaining to the subject area arose since it is classified under a Critical Watershed Zone. The 17th City Council on December 16, 2014 approved on second reading its favorable endorsement for the establishment of the first pecking duck dressing plant in the country located Barangay Tamugan Davao City.

This is substantiated by the presentation of Resolution No. 01435-14 Series of 2014 adopted on December 16, 2014 entitled:

“Granting the request of Mr. Vicente Lao for the establishment and operation of the first Pecking Duck Dressing Plant in the Country to be located in Barangay Tamugan, Davao City, with a condition that the company will submit the water discharge permit within one (1) month from the date of approval of the resolution from the City Council of Davao.”

Mr. Vic Lao further stated that the controversy was already resolved on December 2014 after the favorable endorsement of the 17th City Council. They were already issued a Mayor's permit and have been in operation from 2015-2020. However they were surprised that this year, when they were trying to renew their business permits that the controversy was again brought up.

The Committee clarified that the previous ordinance granted by the City Council should be incorporated in the proposed CLUP revision, for reference and corroboration.

p. THE HEIRS OF MAHIPUS

The property is situated at Sitio Pagan Grande, Barangay Tamugan. The existing Zoning Classification is Forest Reserve Conservation Area and the applicant is applying for reclassification into Agricultural Zone or Production Agricultural.

Upon inquiry, Engr. Samuel A. Singco of the CPDO stated that in the proposed revision of CLUP the area will be identified as Critical Watershed Zone because there is a water source located within the area.

Mr. Boboy Mendoza of the DENR said that since the area is a titled property, therefore, it is no longer part of the timberland and/or forest reservation area and should be considered as an alienable and disposable area. Moreover, he said that the proper person to answer the queries of the body is the Forestry Section.

Engr. Cortez emphasized that only DENR is can resolve the issue since it is the proper body which can ascertain and declare the proper classification of the property for its disposal, though, there are memorandum circulars emanating from DENR that is in conflict of the present situation.

Mr. Cortez reiterated that the Heirs of Mahipus property is currently under Conservation Zone but in the proposed 2019-2028 Zoning Ordinance it will be part of the Critical Water Shed Zone since part of the property is now within the river. The allowable activities in the area are mainly for reforestation and human activities are also limited. The Ordinance will allow planting of fruit trees in the area.

Atty. Mahipus Sr. said that he is the representative of the Mahipus Heirs and manifested that they requested to remove their property from the Conservation Area because most of the nearby lands were already titled alienable lands and that it is no longer a timber land; that the subject land would be designated as an Agricultural Production area so that they can use the land for agricultural farming; that with respect to the 2013-2019 CLUP, they were not able to use the area because human activity is not allowed under Forest land/Watershed Area; that there is no more forest in the area and that the same is

now densely populated; that the people there have no means of livelihood except farming, but due to flooding, their farm is no longer productive.

Atty. Mahipus, Sr., explained that when his term as a City Councilor ended, they have Sand and Gravel Quarry concession at the area when quarrying is still allowed. There was no soil erosion that occurred because they regularly remove Sand and Gravel that obstruct the flow of the river. However, since the property was placed under a Watershed Area; river quarry is no longer allowed. When the quarry operation ceased, the sand and gravel gradually deposited in the area and obstructed the water flow of the river causing flood and soil erosion.

Atty. Mahipus, Sr., expressed his dismay because if their property will be under the Critical Watershed Zone in the proposed 2019-2028 CLUP, time will come that their whole property will be covered by the river. He is now seeking for an equal protection as property owners so that they can continue their agricultural activity.

The Committee stated that CPDO classified the Heirs of Mahipus property to remain under Critical Watershed Zone based on the DENR Forest Management Bureau (FMB) map plotting. The FMB representative answered that since the property is private and alienated, there is a possibility that their request will be granted. The City Planning also added that it will remain under Critical Watershed Zone wherein they are allowed to plant fruit-bearing trees. They are also allowed - river de-siltation and quarrying in the area at a certain limit with restrictions hence they are allowed to apply for an Additional Allowable Use provided that they follow certain guidelines to protect the river banks and introduce safety measures for environment conservation.

q. Grandwealth Property Ventures Development Corporation

Applicant is requesting for reclassification of its property currently classified as **Agri-non Tillage Zone** located at Barangay Acacia, Davao City to **High Density Residential Zone**. The proposal of the City Planning in the CLUP 2019-2028 is **High Density Residential Zone** with partly **Urban Ecological Enhancement Sub-zone**.

r. Mr. Dino Suelto represented by Mr. Gene Arcena

The property applied for reclassification is located at Libby Road, Puan, Barangay Talomo, with an area of 41,369 square meters. The existing area is considered as **Low Density Residential Zone (R1)** and applicant is requesting for reclassification into **High Density Residential Zone (R3)**. Fortunately, the requested classification is the same with the proposal of CPDO in the CLUP proposed revision.

Mr. Ivan Cortez, City Planning and Development Officer, CPDO directed Mr. Gene Arcena that if the area will be developed soon, the entrances should not be within the circumference and must allocate adequate green spaces.

Jyreen Joy Penaloga, MGB Region XI inquired as to the elevation profile from the road wherein Councilor Mahipus reminded that before cutting the trees they will replenish/replant trees and have the inventories of those trees that were cut in compliance with the DENR's policies.

94. Engr. Ivan Cortez presented some suggested changes to the Zoning Ordinance, which are as follow, to wit:

- a) Under Page 53 – Other Regulations under Residential Zone, it should read **“on street parking is prohibited”** or **“bawal ang mag parking sa kalsada”**.
- b) Page 70 – Building Density –to rephrase **“that must have on firewall to protect the adjacent structures or must have sufficient firewall to protect adjacent structures or establishments”**
- c) Page 85 – Regulations on open space – **“a 30 meters easement shall be required at both side of Davao River from each mouth on the way to Ma-a Bridge wherein the 10 meters will be developed as Davao River Promenade and the remaining 20 meters for road right-of-way purposes”**
- d) Page 86 –to follow as the stipulated changes on page 85 and to also include 69k meters transmission lines because this is also a matter of concern of NGCP. Moreover, the 15 meters easement shall be observed for 69 k meter transmission line for a 30 meters easement for 138 kb transmission lines in a 40 meters easement for 230 kilovolt transmission lines; and the 20 meters buffer zone shall be observed as stipulated in the proposal with the 20 meters to be taken in the Industrial Zone. It should be emphasized that the buffer zone must be provided by those in the Industrial Zone.
- e) The phrase **“except deed of property was acquired through hereditary succession”** needs to be corrected by changing the word **“except”** to **“or”**. The word **“or”** is more appropriate since there are two (2) qualifications in applying for exemption for residential projects.
- f) Minor correction on the **“Omnibus Affidavit”**.

100 Engr. Cortez mentioned that there will no longer be any underground interment services. The recommendation of the City Planning is that the cemeteries and memorial parks shall not be allowed to have any underground interment services for those new cemetery projects.

101 CPDO discussed about the PROPOSED ALLOWABLE USES AND ACTIVITIES IN PROTECTION FOREST, particularly on the Allowable Uses/Activities and Conservation and Protected areas.

Councilor Mahipus Jr. requested for enlightenment as to matter relative to Sand and Gravel Quarry and Earthfill quarry which is proposed to be not allowed within the Protection Forest Zone since according to him these activities are important to the City Development.

It was suggested to the CPDO to be specific on the proposed CLUP revision since rivers need regular de-siltation to maintain the flow of the river; that Sand and Gravel quarry or de-siltation be allowed at the upper and lower stream of the protected areas, provided there is approval from the City Council through the Committee of Environment and Natural Resources.

102 CPDO further discussed highlights on the proposed CLUP revision, such as:

- CRITICAL WATER ZONE
- PROPOSED REGULATION IN CRITICAL WATERSHED ZONE : Allowable Uses/Activities
- Section 12.5.1.2 Rivers, Creeks and Lakes Sub-zone: Allowable Uses/Activities; Building Regulations
- Section 12.5.1.3 Wetland Sub-zone and its Allowable Uses/Activities; Building Regulations and other Regulations
- Section 15.5.1.4 Marine Protected Area Sub-Zone (MPA-SZ); Allowable Uses/Activities; Restricted Activities
- Section 12.5.1.5 Marine Protected Area Buffer-zone; Allowable Uses/Activities; Restricted Activities
- ALLOWABLE USES IN PROTECTION AGRICULTURE; Allowable Uses/Activities ; Building Regulations

Upon query, Mr. Rigor stated that Production Agriculture Sub-Zone is an area where people are allowed to do certain activities while Protection Agriculture Sub-Zone is an area that is prone to landslides and that human activities are limited.

103 For non-conforming structures activities which started prior to the effectivity of the 2013 and 2020 amendments, there are changes proposed by CPDO, such as in the base zones (sub-zone); additional base zones (overlay zones).

104 Mr. Rigor mentioned the changes and additional Overlay Zones which were identified before under the Base Zone. Separate maps were generated regarding Overlay Zones.

105 Mr. Rigor further discussed on:

- a. POLICIES/REGULATIONS: Variance and Exception
- b. Projects Required to Secure Preliminary Subdivision Development Plan (PSDP) and Development Permits (DP)

Councilor Mahipus Jr. suggested that the Changes in the Base Zone, Sub-Zone Classification and Municipal Water Zone should be specified as Protection Coastal Water Sub-Zone and Protection Municipal Water Sub-Zone, which the Committee agreed.

- c. EXISTING NON-CONFORMING BUILDINGS, STRUCTURES & ACTIVITIES:
- d. For Previously Conforming Structures and Activities prior to the 2013 and 2020 Amendments
- e. For Non-Conforming Structures and Activities which started after the effectivity of the 2013 and 2020 Amendments.
- f. PHASE OUT PLAN: Cost of Structure/Building; No. of Years
- g. FOR NON-CONFORMING STRUCTURES AND ACTIVITIES WHICH WERE STARTED PRIOR TO THE EFFECTIVITY OF THE 2013 AND 2020 AMENDMENTS
- h. ON REQUEST FOR ADDITIONAL ALLOWABLE USES: List of activities taken out ; List of activities retained

Councilor Mahipus Jr. also commented on the activities that were taken out from the list and elucidated that it will cause consequences if they proposed an activity at the other zone classification and then apply for an Exception and Variance. Mr. Cortez informed Councilor Mahipus that Exception and Variance are for those Non-Conforming Structures and that the same still have to pass through the City Council for deliberation.

DENR-EMB representative clarified that the Environment Impact Statement (EIS) report and Environment Impact Assessment (EIA) are required for the application for Environmental Compliance Certificate (ECC).

i. LOCAL COMPOSITION ZONING REVIEW COMMITTEE (LZRC)
COMPOSITION

- OPTION 1 – 9 Permanent Members
- OPTION 2 – 14 Permanent Members
- OPTION 3 – 7 Permanent Members

j. LOCAL ZONING BOARD OF ADJUSTMENT AND APPEALS VS. LOCAL ZONING BOARD OF APPEALS:

2013-2022

Section 9. Functions and Responsibilities of the Local Zoning Board of Adjustment and Appeals (LZBAA)

2019-2028

Section 56. Functions and Responsibilities of Local Zoning Board of Appeals (LZBA)

On Variance and Exemption: Councilor Mahipus Jr. suggested that it must be categorical that LZBA still needs the confirmation from the Legislative Body in regard to Variance and Exception on Allowable Uses. Conforming to the statement of Councilor Mahipus Jr., the Committee stated that on matters pertaining to the request for Additional Allowable Use the LZBA is only recommendatory body and it is the City Council which will ultimately approve the same. Hence, it suggested that it will be added to Section 56, Functions and Responsibilities, LOCAL ZONING BOARD OF APPEALS, 2019-2028 to state as:

There is hereby created a LZBA which shall perform the following functions and responsibilities.

*Act and **Recommend** on the following nature:*

- Variances*
- Exceptions*

Councilor Mahipus further suggested that after Section 56, another provision with regard to applications denied by LZBA will be added stating that the same shall be reviewed by the Sangguniang Panlungsod. He cited the provision that LZBA shall conduct a hearing at least once a month and as often as possible to dispose of the pending applications within 30 days from receipt thereof and a lapse of 30 days shall cause the referral of the application to the Sangguniang Panlungsod. He also sought clarification on the Billboard Overlay Prohibited Act which he then suggested to specify if it is for commercial advertising purposes or others. There is no need to secure a permit for propaganda for purposes of election political

campaign. Mr. Cortez said that there is an existing COMELEC rule on the matter

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To recapitulate some items:

- Item No. 1218 – Request of La Fuerza, Inc., represented by Joseph Patrick O. Escovilla, representative, for inclusion in the amendments of the Comprehensive Land Use Plan of Davao City, the reclassification of parcels of land covered by TCT Nos. T-50633, T-50634, and T-24988 from Medium Density Residential and Major Commercial (C-s) Sub-Zone to Industrial Zone, located in Barangay Dumoy, Talomo District, Davao City

Mr. Rigor manifested that the application can be allowed as long as they are compliant with the Water Treatment Facility requirement in consonance with the standards and parameters set by DENR-EMB.

It was suggested that this matter should be included in the 2019-2028 CLUP revision. Further to add at least 100 meters distance from the highway which shall be considered as a Commercial Zone and at the rear will be a Residential Zone since Pepsi Cola Bottling Company is an industrial establishment within the Water Resource Zone and the La Fuerza, Inc. is beside it. Moreover, the area must be treated as an Industrial Zone within the Water Resource Zone provided that they will install mitigating measures such as water treatment facility.

Councilor Braga pointed that since it is a Water Resource Zone, it should be protected.

- Item No. 1246 – Application of Mr. Ernette Paredes, AVP for Mindanao Business Operations, PHINMA Property Holdings Corporation, for the reclassification of property consisting a total area of 71,758 square meters, covered with TCT No. TCT-14-2019007110, from Prime Agricultural Land to Medium Density Residential Zone (R-2), located in Barangay Riverside, Calinan District, Davao City

Mr. Rigor manifested that the request can be allowed provided PHINMA Property Holdings Corporation complies and submits the requirements to the City Planning and Development Office; their office can recommend the proposal of PHINMA after the 2019-2028 CLUP has been approved.

- ITEM NO. 1247 – Application of Mr. Ricardo Manuel M. Sarmiento, President & Chief Executive Officer, Vitarich Corporation, for the reclassification of property covered with TCT Nos. T-208700 and T-208699, from Agricultural to Agro Industrial, located in Barangay Tugbok, Tugbok District, Davao City

Upon perusal of the records, the applicant submitted all relevant and necessary permits and documents required by the City Planning and Development Office.

Resolution No. 0371-19 adopted on November 12, 2019 provides that the applicant was granted by the City Council a franchise for the operation of a Poultry Dressing Plant valid for a maximum of five (5) years provided that the conditions set are strictly complied within the period stated.

- ITEM NO. 1180 - Letter of Adora B. Saldaña for reclassification of a parcel of land from prime agricultural zone to major industrial zone covered and embraced by tct no. 146-2018018523, consisting of thirty seven thousand eighteen (37,018) square meters, more or less, located in barangay lacson, calinan district, davao city.

The Committee provided a recap as to the application and reiterated that as long as they will comply with the necessary requirements they will be considered.

Ms. Alexi Flores informed the Body that they have already complied with all the necessary requirements and permits. The Committee then recommended to present the same to the plenary prior the approval of the CLUP revision to fast track the application pending submission to the committee of the necessary requirements enumerated by the representative.

- ITEM NO. 1234 - Ms. luzviminda d. deatras, president, purok 3a & malagos mutual association, inc., brgy. malagos, baguio district, davao city, for inclusion in the amendments of the comprehensive land use plan of davao city, the reclassification of properties located in barangay malagos, baguio district, this city, from prime agricultural land use to socialized housing zone

Mrs. Sittie Hanifa A. Baraguio, president chrislam homeowners association, inc. brgy. malagos, baguio district, davao city, is requesting for inclusion in the amendments of the comprehensive land use plan of Davao City, the reclassification of properties located in barangay malagos, baguio district, from prime agricultural land use to socialized housing zone

Mr. Virgilio L. Palar, katuparan homeowners association inc., brgy. malagos, baguio district, davao city, likewise requests for inclusion in the amendments of the comprehensive land use plan of davao city, the reclassification of properties located in barangay malagos, baguio district, from prime agricultural land use to socialized housing zone

Ms. Luzviminda Deatras, President, manifested that the four (4) associations are applying for reclassification of their relocation site as they were affected by the Government Property Development in the Malagos resettlement.

Engr. Samuel Singco from the City Planning Development Office, presented the map and informed the Body that the current zone of the subject property is under Prime Agricultural Land Zone and the proposal of CLUP in the proposed revision of the Zoning Ordinance is **Production Agriculture**. CPDO informed the Committee that the three (3) associations have not yet submitted their respective applications to their office.

The association members were those residing within Malagos Development Resettlement a Government Property, for a long period of time and the proposed relocation site is near the area they are currently occupying.

CPDO stated that the applicants should comply with the necessary requirements for proper processing of their requests and further suggested to wait for the approval of the

CLUP revisions as the area is proposed to be classified as Production Agriculture which allows both Agriculture and Socialized Housing.

CPDO was requested to extend the plotting of Residential Zones in the proposed amendment of the Zoning Ordinance CLUP to accommodate the affected associations.

- Mr. Jeffrey L. Ahon, president, St. Nicole Homeowners Association, Inc., requests for inclusion in the amendments of the comprehensive land use plan of Davao City, the reclassification of properties located in Barangay Malagos, Baguio District, from prime agricultural land use to socialized housing zone
- Mr. Jeffrey Ahon, President, St. Nicole Homeowners Association, Inc. whose members were affected by the Coastal Development Project located at Matina Applaya, applied for resettlement at Mulig, Toril. They have been processing their requirements for almost two years and have complied the necessary requirements.

The subject property is within a **Prime Agricultural Zone**. It is located near an abandoned poultry and in anticipation of the possibility of the poultry re-opening; it will raise several problems in the future. It advised them to coordinate with the Malagos Associations to look for another area. It then recommended to defer the same and to hold it in abeyance for final coordination with the Malagos Associations in finding another area to settle which is suitable for residential purposes.

- ITEM NO. 1235 – Request of Andy Mark Villorente, attorney-in-fact of various landowners, for inclusion in the amendments of the comprehensive land use plan of Davao City, the reclassification of properties located at Purok Sitio Sto. Tomas, Barangay Manambulan, Tugbok District, Davao City, from agricultural land to residential zone

Atty. Villorente stated that they are requesting the City for inclusion in the CLUP revision of the reclassification of their property which consists of at least 30 hectares with proposed 1,500 houses to be constructed.

It was observed that there is a power line inside the subject area and where it is prohibited for anyone to put up any structure under the power lines.

The representative, Mr. Gene Arcena, manifested that the proposed **Socialized Housing Project** is the first project of the company in partnership with various developers aimed to provide affordable houses in Davao City. The proposed area per house consists of at least 60 square meters; 80 square meters lot; with 36 square meters floor area under socialized housing parameters enunciated in BP 220 and P.D. 957 House Development.

- ITEM NO. 1232 – Request of Gene A. Arcena, representative of Dino Mae D. Suelto, for inclusion in the amendments of the comprehensive land use plan (clup), Davao City, the reclassification of property located along Libby Road, Puan, Barangay Talomo, Talomo District, this city, from low density residential zone (r-1) to high density residential zone (r-3)

The discussions during the previous Committee Hearings conducted was reiterated, particularly involving the subject at hand. It posited that there is a favorable recommendation but nonetheless with a condition to adjust the road ingress backwards in order to avoid blocking the road access. Furthermore, it was pointed out that the area was

already classified as Residential which will suit to their proposed project in consonance to the Zoning Classification.

- ITEM NO. 1216 – Request of Ms. Lyneth C. Salarda for inclusion in the amendments of the comprehensive land use plan of davao city, the reclassification of two (2) hectares parcel of land, more or less, covered by tct no. t-p-9620, from agricultural to tourism development zone, located at Barangay Megcawayan, Calinan district, Davao City
- ITEM NO. 1222 – Request of Glenn C. Escovilla for the reclassification of property consisting of an area of 55,762 square meters, more or less, covered by tct no. 315107 located in barangay megcawayan, calinan district, this city, from agricultural to tourism zone.

CPDO agreed to adjust the proposed CLUP revision relative to Item Nos. 1216 & 1222, the respective areas of which re situated at Brgy. Megcawayan by reclassifying the areas requested to be part of Eco Tourism Zone.

Mr. Escovilla and Ms. Salarda assured the committee that they will plant more trees to strengthen the area.

- ITEM NO. 1217 – RESOLUTION NO. 61-2020, series of 2020, of the barangay council of talandang, tugbok district, this city, requesting to reclassify a portion of land in barangay talandang, tugbok district, from agricultural to commercial zone particularly along the highway/main road of talandang boundaries from barangay biao escuela, tugbok district and biao joaquin, calinan district.

It was recommended by the CPDO to deny the application since not all of Brgy. Talandang can be reclassified into Commercial Zone. Moreover, there are some Commercial Zones in the area, Mr. Ivan Cortez expressed that it is impossible for the request to reclassify the entire barangay as Commercial Zone, since only a limited portion may be allowed.

- ITEM NO. 1219 – Request of SME Posterity Holding Corporation, represented by edgar d. laure, sme, operations manager, for inclusion in the amendments of the comprehensive land use plan of davao city, the reclassification of one (1) hectare parcel of land, covered by tct no. 145-2013000781, from residential to light comemrcial (c-1) sub-zone, located in barangay bago gallera, talomo district, davao city

The area is mostly residential. One hectare will be used as parking garage for Taxi operations located at Puan, Bago Gallera, Talomo District. The request for reclassification from Residential Zone into Light Commercial Zone which is feasible since the proposed reclassification in the amendment of CLUP is also Residential Zone.

Mr. Rigor clarified that the adjacent subdivision is Amiya of Kisan Lu Realty, so it is already a Residential Zone. However, their request will also fall under the Commercial Zone as their operations are commercial in nature which is a taxi garage and a refilling station. The proponent was instructed to coordinate with CPDO and the Committee relative to its application and the necessary documents should all be complied.

- ITEM NO. 1220 – Request of Rosario M. Sacay, for the reclassification of property from residential to commercial sub-zone, located at palm drive, bajada, davao city.

The applicant informed the committee that they are cancelling the application due to the required height limit and restrictions of CAAP and CPDO.

Engr. Samuel Singco, affirmed that the said applicant sent a correspondence to the committee staff and its office informing that they cancelled the application due to the CAAP Height Clearance limit and the CPDO Height requirements which fail to reach their proposed building height.

- ITEM NO. 1223 – Request of Atty. Diosdado Angelo Mahipus Sr., heir of spouses Mequias and Maria Mahipus, for inclusion in the amendments of the comprehensive land use plan, the reclassification of property covered by tct no. t-422347 located at sitio pagan grande, barangay tamugan, marilog district, from forest reserve conservation area to agricultural zone

It was established that the area is no longer a **Forest Area** however the area is still classified as a **Conservation or Water Conservation Area** and the request is to reclassify the area to **Agricultural Zone** for them to cultivate agricultural plants. In the proposed revision of CLUP, the area shall be classified as **Critical Watershed Zone**.

Atty. Diosdado Mahipus Sr. manifested that the request is to revert the property into the original Zoning Classification which is under a Prime Agricultural Land Zone, since originally the area is under an Agricultural Zone and the properties were already titled. However, the area can no longer be cultivated due to the declaration of the City converting it into a **Forest Reserve Zone**. Hence, as owner of the property, he prayed to revert the property classification back into **Agriculture Zone** to suit their desire to use the area for farming.

Atty. Mahipus, Sr. further stated that their primary intention as the Title owners is to engage in agricultural livelihood. However, due to the current zone classification they are prohibited from doing so. Furthermore, he stressed that the inland water which transgresses in the midst of their property even destroyed their property and caused erosion to the river bank which eroded the land causing devastation of at least 4 hectares of land.

The MGB terrain analysis in the area as **Critical Watershed Zone** paralyzed the agriculture activities of the area. Hence, they strongly disagree with the analysis, as according to them the area is clearly not to be considered **Critical Watershed** because the area is not sloping and should not be considered as a **Watershed Zone**. It was further requested the committee to evaluate the area as the City has the power to declare the zone classification and not the DENR.

Mr. Captor Tubo, DENR-MGB Geologist, explained that a **Critical Watershed Zone** has several factors to be considered, not only the slope, but including the water resource and other relevant factors. Ms. Eden Santiago, DSUD, added that one the factors why the area is considered as **Critical Watershed Zone** is the low lying area or lowland areas.

Watershed has upper part and low lying areas or defined as land drained by water. Thus, the City Planning is proposing that the area be classified as a **Critical Watershed** because of the adjacent rivers, lakes or other bodies of water along the area. It was also added that the Forest Reserved Area should be preserved and cannot be titled to any person if the same is really a **Forest Area Reserve**.

The Committee responded to the manifestation of Ms. Eden of DSUD that, during the acquisition and when the property was registered it was still classified under **Agricultural Zone**. However, it was later on declared as **Forest Conservation Area** which prohibits the owner to use the property for agricultural activities. Hence, the proponent is requesting to revert the original classification as Agricultural Zone

- **ITEM NO. 1221** – Request of Goodluck Plastic Ventures, Inc., represented by Atty. Israelito P. Torreon, for inclusion in the amendments of the comprehensive land use plan of Davao City, the reclassification of property covered by tct no. 146-2010007487 located at purok 8, san miguel, barangay indangan, buhangin district, this city, from agricultural zone to heavy industrial zone

The proponent informed the body that they were advised to secure the GEO-Hazard document as a necessary requirement. It was also recommended to put up mitigating measures and a Waste Water Facility, as well as to secure the necessary permits to discharge effluents, which are on process.

Atty. Torreon assured to submit the lacking requirements to the Committee as soon the same can be secured, since the project is for Light Industrial use only. Mr. Rigor stated that, since the application is considered as non-manufacturing, the application falls under the **Heavy Industrial Zone** for possible preparation for extension of its zoning classification to **Heavy Industrial Zone** in preparation for their expansion in the future as they are engaged in manufacturing products although the applicant clarified that they are not into heavy manufacturing and is confined within Light Industrial activities only.

- **ITEM NO. 1224** – Request of Mr. Jimmy G. Dureza for the reclassification of property consisting of an area of 35,365 square meters, more or less, covered by tct no. 146-2021000009 located in barangay mudiang bunawan district, this city from urban ecological enhancement zone to residential zone

The subject area is mostly classified as Ecological Enhancement Zone, where construction of any structures is prohibited, hence, to avoid landslide or any other risks, the request may not be given favourable consideration.

Geologist Casper Tubo, MGB representative, commented that the same cannot be allowed as the area is not viable to be a Residential Zone because it is very prone to landslide. The Committee recommended to defer the item due to the absence of the proponent.

- **Other matters:**

- Request to include in the Zoning Ordinance whatever changes regulating the extraction of water. This matter will be referred to the National Water Management Council.
- One of the many concerns raised by the stakeholders is the *National highway from Dumoy Road going to Calinan Road*. It was proposed as a Commercial zone but it can be observed that there are parts which are still classified under **Agricultural Zone** and **Residential Zone**. It was suggested that it would be best if Dumoy road going to Calinan will be identified as Commercial Zone to help boost the economy.
- The City Planning explained that the purpose of identifying the said highway as Residential Zone since Crossing Ulas is within Commercial Zone and the traffic within the area is congested. To diffuse the traffic situation, the road between Ulas and Mintal highway were identified to be a Residential Zone. Mintal Proper was identified as Commercial Zone. It was also clarified that establishments like restaurants, bakeries and the like are allowed in a Residential Zone.
- According to Mr. Roy Rigor, Bago Bypass road is classified as a Residential Zone as indicated in the sketch map, it was identified as a Residential Zone and the entrance of bypass road at Bago is the only portion identified as Commercial Zone. It then suggested that this area should be commercial since the road going to South Pacific; there are a lot of commercial establishments.
- Further verification made about the batching plant along Ula being applied for reclassification. The subject area is under **Light Industrial Zone** and some establishments are fitted at the present zone classification. Rock crushers should be properly specified which zone it should fall under. Batching plant and Rock crusher usually goes hand in hand in construction businesses and it may be better if both falls under the same zone classification.
- Councilor Bonguyan concurred with Mr. Rigor in saying that it will be categorized as Heavy Industrial considering the environmental impact coming from emission and the sound pollution caused during the operation.
- Ms. Eden Santiago, Department of Human Settlement and Urban Development (DSUD) representative, suggested that if the construction will use a Crusher in a Batching Plant within construction site, they can consider it as under exception or variance. Upon applying for exception, the developer will secure an Environmental Compliance Certificate and a Certificate of Non-coverage for the protection of the City.
- The status of batching plants along Ma-a, which is presently under **Floodway Zone**. Notably, Safecon Industries Batching Plant and Filmix Concrete Industry Inc. already established mitigating measures to prevent danger when there is flood. The establishments have been in operation before the enactment of the 2013 Zoning Ordinance.
- Mr. Rigor said that Safecon Industries is under Light Industrial Zone and Floodway Zone as identified in 2013 Zoning Ordinance. On the proposed 2019-2028, it was classified as Light Industrial Zone but there was a buffer adjacent to the Residential Zone. Filmix Concrete Industry Inc. is within the Commercial

Zone. Mr. Ivan Cortez also suggested that since the two batching plant were already in operation before the zone classification, the area be now classified as industrial zone provided that such establishment will continue to provide mitigating measures.

- On matters relative to quarry Mr. Ivan Cortez stated that in River Quarrying, although it is under a Conservation area, it will be allowed provided that the access point is not within the conservation area.
- Mr. Roy Ryan II A. Rigor, Assistant City Planning & Development Coordinator, further presented the other Consolidated Inputs in the proposed Zoning Ordinance for **Comprehensive Land Use Plan (CLUP) 2019-2028:**
 - **PROTECTION FOREST-** the Committee instructed to add from the proposed revision as Allowable Use, the extraction of sand and gravel – provided that the river mitigation be used if there is no road establish in the area, includes river protection measures in the Critical Watershed Zone. There must be a regulated quarry, de-siltation and dredging within the Protection Forest.
 - **PRODUCTION AGRICULTURE- “BUFFERZONE”** – there must be proper definition of buffer zone provided between production agriculture and other zones whether its commercial or industrial.
 - **POULTRY** – must have temperature controlled and enclosed environment – the Committee decided to relax the distance of 1,000 meters from one (1) poultry to another.
 - **SOCIALIZED HOUSING** – CPDO defines Socialized Housing as the one referring to housing projects covering houses and lots or home lots only undertaken by the Government or the private sectors for the under privilege and homeless citizens.
 - It was suggested to the CPDO the need to clarify the definition of *Government Initiated of Socialized Housing* whether to include **Private Association** assisted by the **Social Housing Finance Corporation** since in the Production Agriculture Zone; one of the allowable uses is that CPDO would allow Socialized Housing in the Production Agriculture provided that the one who initiated the project is the government. He added that there are homeowner’s associations’ asking for assistance with the Social Housing Finance Corporation and that they must be also included in the term Socialized Housing although technically when this matter was referred to HLURB, housing associations are treated as a private geographical person. CPDO’s definition is that the project must be initiated by the government or the private sectors qualified as under privilege and homeless citizens.
 - **RIVERS, CREEKS AND LAKES** – Add the provision: *“Allowable Use on the activity of dredging”*
 - **INNOVATIVE ROADS FOR DEVELOPMENT** (*Major and/or Innovative Projects as proposed for the amended Zoning Ordinance*) – CPDO mentioned that the Sanggunian upon application of the project proponent upon favorable

recommendation by the LZBAA may allow other uses enumerated therein (e.g. memorial, parks, funeral parlor & power generation).

- CPDO proposes to retain the phrase *“should be referred to the SP for approval”* for Allowable Use in Major and/or Innovative Projects.

Cockpit – will be removed in the list

Quarrying – to be included under the list

Hotels – procuring PALC and DP in the existing Zoning Ordinance as hotel establishments is one of those commercial establishments that must secure PALC and DP.

CPDO proposes that hotels should not be required Locational Clearance as long as it is within situated in the Commercial Zone including instances in Residential Zone where Locational Clearance is sufficient in a hotel establishment. However, it was suggested by Councilor Mahipus during previous zoom committee hearing that *Hotel* should need SP approval

- **NON- CONFORMING STRUCTURES** –as long as mitigating measures are installed/established it may be allowed to continue operations.
 - **FUNCTIONS OF LOCAL ZONING BOARD OF ADJUSTMENT & APPEAL (LZBAA)**- The LZBAA will now have jurisdiction over applications for variance and exemption which was not found in the existing Zoning Ordinance; the LZBAA shall conduct hearings at least once a month and as often as possible to dispose pending applications within 30 days from receipt of application. Lapse of 30 days shall cause the referral of the application to Sangguniang Panlungsod.
 - **AGRICULTURAL LAND**- for conservation criteria –There must be minimum number of hectares to be re-classified as well as minimum number of applications in the area. It should not exceed the 15% limitation wherein the City can have a reclassify Agricultural Lands.
 - Most, if not all, of the requests for reclassification tackled, discussed and deliberated will be submitted to the Sanggunian Secretariat for proper numbering (docketed item number) since the CLUP revision for approval might take a while. Furthermore, the proposed revision of the Comprehensive Land Use Plan for 2019-2028 shall be adopted with some adjustments/corrections and/or amendments.
- Thereafter, Mr. Rigor informed the Body that the presentation for **ITEM NO. 1106 – COMPREHENSIVE LAND USE PLAN (CLUP) 2019-2028** is already completed
 - *Councilor Mahipus manifested to put on record that this will be a historic and landmark legislation under this committee, as this will serve as a guide and dictate the development of the City up to 2028.*
 - *Councilor Braga was also thankful that she was part of the discussion and that the measure is really a road map and historic development for the beloved City of Davao.*
 - End.

RECOMMENDATION

In view of the foregoing, the Committee **RESOLVES:**

A. Favorably recommending the approval of the proposed revision of the Comprehensive Land Use Plan for CY 2021-2028 as presented by the City Planning Division Office, with the inclusion therein additional amendments or modifications as enumerated herein-below. It is further recommended that appropriate Ordinance be passed and approved, consistent to the proposed CLUP 2021-2028 revision, with the inclusion of additional amendments and/or modifications. The following are the suggested additional amendments or modifications in the proposed CLUP 2021-2028 revision, to wit:

1. VISION: "Davao City is a globally livable City and a center of excellence in governance, investment, tourism, agriculture, health, education, climate change adaptation, disaster resiliency and sustainable growth driven by an empowered citizenry.";
2. Green Space for residential areas remains at 10% to avoid additional burden that might be passed on to the end-user, if the proposed 15% is followed;
3. Green Space should include (provided these are planted with trees): island on roads/rotunda, open spaces and parks-wide recreational areas, slopes and easements/undevelopable areas;
4. Re-classification from one zone to another should still require $\frac{3}{4}$ votes of all the members of the City Council;
5. Batching Plants and Crushers should be categorized under the same zone – Industrial Zone;
6. Increase residential zone in the City;
7. Increase commercial zone in the City, particularly along the roads from Ulas to Toril and Ulas to Mintal and Calinan. The new intersection at Libby road should be classified as commercial zone and/or institutional zone;
8. Brgy Megcawayan should include in its area, an Eco-Tourism Zone, particularly those which have been considered existing Tourism Resorts prior to the passage of City Zoning Ordinance;
9. Pepsi Cola Bottling Co.'s property along Dumoy, together with the property of La Fuerza, Inc, be considered as Heavy Industrial Zone;

10. The properties occupied by Safecon Industries Batching Plant and Filmix Concrete Industry, Inc, located along Ma-a, should be re-zoned as Industrial Zone;
11. Creation of FOOD CORRIDOR at the 2nd Congressional District of Davao City;

B. Denying the requests of the following, to wit:

1. Barangay Mintal's request to be reclassified into Industrial Zone, as it will have negative impact on other land uses within the area. CPDO's suggestion is – Commercial Zone;
2. DMC Urban Property Developers, Inc.'s request to develop 26-hectare property at Shrine Hills, Matina, Davao City, being a restricted area for development as it is considered prone to landslide;
3. Aurea Somnia Land and Development Corporation's request to reclassify its area at Barangay Bayabas into Residential Zone. The area is currently classified as Prime Agricultural Zone which the CPDO proposed as Production Agriculture;
4. Barangay Talandang's request to reclassify the entire stretch of the properties along the road from Brgy. Talandang to Brgys., Biao Escuela, and Biao Joaquin – to Minor Commercial Zone. Only a certain portion thereof has been included in the proposed CLUP 2021-2029 revision as Commercial Zone;
- 5.

C. Directing the City Planning Division Office to properly endorse to the City Council, after all necessary requirements are complied, separately from the CLUP revision approval, the following applications, for proper action, to wit:

1. ALSONS – Properties in Lasang;
2. ALSONS – Properties in Mandug;
3. San Pedro College – Mandug area;
4. South Davao Development Co., Inc.;
5. Camella's request for reclassification to mix use (residential and commercial);
6. Filipinas 186 Shopping Mall, Inc.'s request for reclassification of area at Los Amigos, along Davao-Bukidnon Road, to Industrial Zone;
7. Amoresco Homeowners' Association request for socialized housing zone at Brgy. Talomo River;
8. Blessfull Homeowners' Association request for socialized housing zone at Brgy. Talomo River;
9. Bamboo Homeowners' Association request for socialized housing zone at Brgy. Tacunan;
10. Sto. Nino Homeowners' Association request for socialized housing at Brgy. Talomo River;

11. Homeless Shelter Members Cooperative's request for socialized housing at Brgy. Blao Guianga;
12. Carpenters Homeowners Association request for socialized housing at Brgy. Subasta;
13. Tierra Nueva Homeowners Association, Inc. request for socialized housing at Brgy. Tacunan;
14. Durian Eagle Homeowners Association request for socialized housing at Brgy. Subasta;
15. Cattleya Homeowners Association request for socialized housing at Brgy. Subasta;
16. The Punta Dumalag Homeowners Association request for socialized housing at Brgy. Tagakpan;
17. Pag-Asa Homeowners Association request for socialized housing at Brgy. Tacunan;
18. Darul Aman Homeowners Village Association, Inc. request for socialized housing at Brgy. Mulig;
19. SME Posterity Holding Corporation's request for its property at Libby Road to be reclassified into Minor Commercial Area;
20. Goodluck Plastic Global Venture, Inc.'s request for its property at Purok 8, San Miguel, Indangan, to be reclassified from High Density Residential Zone to Heavy Industrial Zone;
21. Homeless Indigent Members In Group's (HIMIG) request to reclassify property at Brgy. Dacudao to socialize housing;
22. Rookies Fruit Preserves Corporation's request to reclassify its area at Brgy. Lacson into Agro-Industrial Zone;
23. Ms. Rosario M. Sakay's request to reclassify her area at Palm Drive, Bajada, from Residential Zone to Major Commercial Zone;
24. Shelter Homeless Association's request to reclassify its property at Brgy. Manuel Guianga to socialized housing;

23. Barbato's/Vitarich' request for additional allowable use of its property at Tugbok District;
24. Phinma Housing's request to reclassify its property at Brgy. Los Amigos;
25. City Global's Application for reclassification of its property;
26. Maharlika Agro-Marine Ventures Corporation's request;
27. The Heirs of Mahipus' request to reclassify their titled property at Sitio Pagan Grande, Brgy. Tamugan, from Forest Reserve Conservation Area to its original zone classification as Agricultural Zone;
28. Grandwealth Property Ventures Development Corporation's request to reclassify its property at Brgy. Acacia from Agri-non Tillage Zone to High Density Residential Zone;
29. Mr. Dino Suelto's request to reclassify his property at Libby Road from Low Density Residential Zone to High Density Residential Zone;
30. Purok 3a & Malagos Mutual Association, Inc.'s request to reclassify as socialized housing zone where they can relocate, situated at Brgy. Malagos, Baguio District, Davao City;
31. Chrislam Homeowners' Association's request to reclassify property as socialized housing at Brgy. Malagos;
32. Katuparan Homeowners Association, Inc.' request to reclassify property as socialized housing at Brgy. Malagos;
33. St. Nicole Homeowners Association, Inc.' request to reclassify property as socialized housing at Brgy. Mulig;
34. Andy Mark Villorente's request to reclassify property as Residential Zone situated at Brgy. Mulig;

RESPECTFULLY SUBMITTED this 28th of April 2021, Davao City, Philippines.

SIGNED BY THE COMMITTEE MEMBERS:

Committee on Housing, Rural and Urban Development
(Low-End-Projects)

Coun. Jesus Joseph P. Zozobrado III
Chairperson

Coun. Louie John J. Bonguyan
Vice Chairperson

Coun. Nilo D. Abellera
Member

Hon. Wilberto E. Al-ag

Coun. Edgar P. Ibuyan, Jr.

23. Barbato's/Vitarich' request for additional allowable use of its property at Tugbok District;
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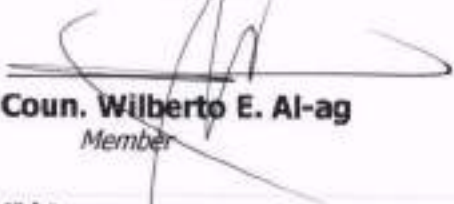
Chairperson


Coun. Louie John J. Bonguyan


Vice Chairperson


Coun. Nilo D. Abellera

Member


Coun. Wilberto E. Al-ag

Member


Coun. Edgar P. Ibuyan, Jr.

Member

Committee on Housing and Subdivision Development
Under P.D. 957 (High-End-Projects)


Coun. Bonifacio E. Militar
Chairperson


Coun. Danilo C. Dayanghirang
Vice Chairperson



Coun. Alberto T. Ungab
Member

Coun. Jonard C. Dayap
Member

Coun. Antoinette G. Principe-Castrodes
Member

Committee on Housing and Subdivision Development
Under B.P. 220 (Medium-End-Projects)


Coun. Bai Hundra Cassandra Dominique N. Advincula
Chairperson


Coun. Myrna G. L'Dalado-Ortiz
Vice Chairperson

Coun. Jessica M. Bonguyan
Member


Coun. Diosdado Angelo Junior R. Mahipus
Member

Coun. Dante L. Apostol Sr.
Member

Committee on Rules, Privileges, Laws and Ordinances


Coun. J. Melchor B. Quitain Jr.
Chairperson

Coun. Louie John J. Bonguyan
Vice Chairperson

Coun. Augusto Javier G. Campos III
Member


Coun. Diosdado Angelo Junior R. Mahipus
Member


Coun. Bai Hundra Cassandra Dominique N. Advincula
Member

Republika ng Pilipinas
LUNGSOD NG DABAW
Sangguniang Panlungsod

RESOLUTION NO. _____
Series of 2021

A RESOLUTION TO PASS AN ORDINANCE ENACTING THE INTEGRATED ZONING ORDINANCE THROUGH THE COMPREHENSIVE LAND USE PLAN (CLUP) OF 2019-2028, AMENDING CITY ORDINANCE NO. 0546-13, SERIES OF 2013.

WHEREAS, The proposed amendment and revision of the Davao City Zoning Ordinance, entitled **Item No. 1106 – Re: Comprehensive Land Use Plan (CLUP) 2019-2028** [divided into four (4) volumes: Volume 1: the Planning Process Volume 2: Zoning Ordinance, Volume 3: Sectoral Studies, Volume 4: Climate Disaster Risk Assessment (CDRA)], was the subject of a series of committee hearings by the **Committee on Housing, Rural and Urban Development (Low-end-Projects)**, on the following dates: November 23, 25 & 27, 2020; December 4 & 9, 2020; January 6, 11, 15, 20, 25, 27 & 29, 2021; February 22, 24 & 26, 2021; and, March 4, 2021.

WHEREAS, Section 20 of RA 7160, Local Government Code of the Philippines provides: That-

“Reclassification of Lands. – (a) A city or municipality may, through an ordinance passed by the Sanggunian after conducting public hearings for the purpose, authorize the reclassification of agricultural lands and provide for the manner of their utilization or disposition in the following cases: (1) when the land ceases to be economically feasible and sound for agricultural purposes as determined by the Department of Agriculture or (2) where the land shall have substantially greater economic value for residential, commercial, or industrial purposes, as determined by the Sanggunian concerned: Provided, That such reclassification shall be limited to the following percentage of the total agricultural land area at the time of the passage of the ordinance:

- 1. For highly urbanized and independent component cities, fifteen percent (15%);*
- 2. For component cities and first to the third-class municipalities, ten percent (10%); and,*
- 3. For fourth to sixth class municipalities, five percent (5%): Provided, further, That agricultural lands distributed to agrarian reform beneficiaries pursuant to Republic Act Numbered Sixty-six hundred fifty-seven (R.A. No. 6657), otherwise known as “The Comprehensive Agrarian Reform Law”,*

shall not be affected by the said reclassification and the conversion of such lands into other purposes shall be governed by Section 65 of said Act.

(b) The President may, when public interest so requires and upon recommendation of the National Economic and Development Authority, authorize a city or municipality to reclassify lands in excess of the limits set in the next preceding paragraph.

(c) The local government units shall, in conformity with existing laws, continue to prepare their respective comprehensive land use plans enacted through zoning ordinances which shall be the primary and dominant bases for the future use of land resources: Provided, That the requirements for food production, human settlements, and industrial expansion shall be taken into consideration in the preparation of such plans.

(d) Where approval by a national agency is required for reclassification, such approval shall not be unreasonably withheld. Failure to act on a proper and complete application for reclassification within three (3) months from receipt of the same shall be deemed as approval thereof.

(e) Nothing in this Section shall be construed as repealing, amending, or modifying in any manner the provisions of R.A. No. 6657."

WHEREAS, Section 447 A.2 (VI, VIII-IX), Section 448 A.2 (VI), and Section 458 A.2 (VII-IX) of RA 7160 provides further: That-

"The Sangguniang Panlungsod (SP), as the legislative body of the City, shall: (a) prescribe reasonable limits and restraints on the use of property within the jurisdiction of the city; (b) adopt a Comprehensive Land Use Plan for the City provided that in the case of Component Cities, the formulation, adoption, or modification of said plan shall be in coordination with the approved Provincial Comprehensive Land Use Plan; (c) reclassify land within the jurisdiction of the City, subject to the pertinent provisions of this Code; (d) enact integrated Zoning Ordinances in consonance with the approved Comprehensive Land Use Plan, subject to existing laws, rules and regulations; establish fire limits or fire zones, particularly in populous centers; and regulate the construction, repair or modification of buildings within said fire limits in accordance with the provisions of the Fire Code."

WHEREAS, Zoning Ordinance is a regulatory measure, an important tool required for orderly implementation of a Comprehensive Land Use Plan.

WHEREAS, Local Governments are mandated to mainstream disaster risk reduction and climate change in development process such as policy formulation, socio-economic development planning, budgeting and governance, particularly in the areas of environment, agriculture, water, energy, health, education, poverty reduction, land use and urban planning, and public infrastructure and housing.

WHEREAS, Section 2 (f) of R. A. 10121 provides that *"the state shall adopt and implement a coherent, comprehensive, integrated, efficient and responsive disaster risk reduction program incorporated in the development plan at various levels of*

government adhering to the principles of good governance such as transparency and accountability within the context of poverty alleviation and environmental protection”.

WHEREAS, the City Planning and Development Office (CPDO) presented the salient points of each and every item proposed to be revised in our present CLUP and these are now incorporated in the proposed revision of CLUP 2019-2028.

WHEREAS, The City Planning and Development Office (CPDO), stated that Sectoral Consultations were conducted, wherein various inputs from every sector consulted were considered, studied, examined and included in the formulation of the proposed revision of the Zoning Ordinance.

WHEREAS, the data and maps gathered were taken from the different concerned departments, agencies and sectors equipped with technical expertise to provide accurate information pertaining to the data supplied and as validation, CPDO compared and cross referenced their studies and findings with the latest data from DOST, Philvocs and all appropriate concerned departments, agencies and bureaus.

WHEREAS, the spatial strategy to be adopted in order to address the problems is **Multi-Nodal Concentric Spatial Strategy** since it is advantageous to complete the products and services within the areas so that the people will no longer need to travel across and in between districts.

WHEREAS, The City Government of Davao recognizes that any land use is a use by right but provides however that the exercise of such right shall be subject to the review standards of the **COMPREHENSIVE LAND USE PLAN (CLUP) OF 2019-2028**.

WHEREAS, The Ordinance:

- a. Gives free market maximum opportunity to spur the city's development within a framework of environmental integrity and social responsibility.
- b. Designed to encourage evolution of high-quality developments.
- c. Formulated to be fully responsive to the constant changing conditions of the City.
- d. Functions as a tool for informed decision-making for land use administrators by providing specific criteria for acceptable developments.
- e. Provides venue for community empowerment, involving stakeholders in critical development decisions.

WHEREAS, the regulations in the Zoning Ordinance are considered as land use management tools that are necessary to provide a clear guidance to land development in order to ensure the community's common good.

WHEREAS, to effectively carry out the provisions of **COMPREHENSIVE LAND USE PLAN (CLUP) OF 2019-2028**, the City is hereby divided into the following zones or districts as shown in the Official Zoning Maps.

WHEREAS, the following shall be designated as Base Zones:

- 1) **Forest and Forestland Zone (F/FLZ)** which shall have two sub-zones, namely: **Protection Forest Sub-Zone (PTFZ)** and **Production Forest Sub-Zone (PDFZ)**;
- 2) **Critical Watershed Zone**;
- 3) **Agricultural Zone (AGZ)** which shall have two sub-zones namely **Protection Agricultural Sub-Zone (PTAZ)** and **Production Agricultural Sub-Zone (PDAZ)**;
- 4) **Urban Use Zones (UUZ)** which shall have the following sub-zones namely:
 - a. **General Residential Zone:**
 1. Residential-1 Sub-Zone (R1-SZ);
 2. Residential-3 Sub-Zone (R3-SZ);
 3. Socialized Housing Zone (SHZ).
 - b. **General Commercial Zone:**
 1. Commercial-1 Sub-Zone (C1-SZ);
 2. Commercial-2 Sub-Zone (C2-SZ);
 3. Commercial-3 Sub-Zone (C3-SZ).
 - c. **General Industrial Zone:**
 1. Industrial-1 Sub-Zone (I1-SZ)
 2. Industrial-2 Sub-Zone (I2-SZ)
 3. Industrial-3 Sub-Zone (I3-SZ)
 4. Agri-Industrial Sub-zone (AgI-SZ)
 - d. **General Institutional Zone:**
 1. Institutional Zone (In-Z)
 2. Special Institutional Sub-Zone (SI-SZ)
 3. Parks and Recreation Zone (PR-SZ)
 4. Cemetery/Memorial Park Zone (C/MP-Z)
 5. Open Space/Easement Zone (OS/EZ)
 6. Buffer/Greenbelt Zone (B/G-Z)
 7. Urban Ecological Enhancement Sub-Zone (UEESZ)
 8. Utilities, Transportation, and Services Zone (UTSZ)
 9. Waste Management, Treatment, Utilization, and Disposal Zone
 10. Tourism Development Zone (TDZ)
 - e. **Municipal Water Zone (MWZ)** which shall have two sub-zones namely
 1. **Protection Water Sub-Zone**
 - a.) Mangrove Sub-Zone (Mn-SZ)

- b.) Rivers, Creeks, and Lakes Sub-Zone (RCL-SZ)
- c.) Wetlands Sub-Zone
- d.) Marine Protected Area Sub-Zone
- e.) Marine Protected Area Buffer Sub-Zone

2. Production Water Sub-Zone

- a.) Aquaculture Sub-Zone (Aq-SZ);
- b.) Municipal Fishing Sub-Zone

WHEREAS, The following shall be designated as **Overlay Zones**:

- a) High Risk to Landslide Overlay Zone;
- b) Moderate Risk to Landslide Overlay Zone;
- c) High Risk to Flood Overlay Zone;
- d) Moderate Risk to Flood Overlay Zone;
- e) Highly Vulnerable to Storm Surge Overlay Zone;
- f) Highly Vulnerable to Liquefaction Overlay Zone;
- g) Active Fault Overlay Zone (FLT-OZ);
- h) Heritage Overlay Zone (HTG-OZ);
- i) Cultural Tourism Development Overlay Zone;
- j) Transit-Oriented Development Overlay Zone (TOD-OZ);
- k) Billboards Overlay Zone (BB-OZ);
- l) Key Biodiversity Overlay Zone;
- m) Ancestral Domain Overlay Zone (AD-OZ); and
- n) Water Resource Overlay Zone (WR-OZ)

WHEREAS, the **COMPREHENSIVE LAND USE PLAN (CLUP) OF 2019-2028** seeks to address the following Priority Issues and Concerns:

1. Encroachment of human activities other than IP settlers in protected areas
2. Rapid conversion of agricultural lands into commercial, residential, industrial and other issues
3. Deterioration of water quality due to absence of sewerage system
4. Inadequate landfill for mounting garbage
5. Inadequate agricultural infrastructure support
6. Congested sidewalks due to presence of street vendors
7. Exposure to risk/hazards of institutional, residential, agricultural forest, commercial, industrial and tourism areas in sites with infrastructure projects
8. Traffic congestion
9. Depletion of Fishery Recourses
10. Develop City Tourism's Potential
11. Need for improvement of Port Facilities
12. Increasing Housing Backlog

WHEREAS, The Zoning Ordinance shall be enacted for the following purposes:

1. Promote and protect the health, safety, peace, comfort, convenience, and general welfare of the inhabitants in the city;

- II. Guide, control, and regulate the growth and development of public and private lands in Davao City in accordance with its Comprehensive Land Use Plan (CLUP);
- III. Provide proper regulatory environment to maximize opportunities for creativity, innovation, and make ample room for development within the framework of good governance and community participation; and
- IV. Enhance character and stability of residential, commercial, industrial, institutional, forestry, agricultural, open space and other functional areas within the city and promote the orderly and beneficial development of the same including areas identified as moderate to high risk to hazards.

WHEREAS, in adopting and enacting the revisions brought about by the **Comprehensive Land Use Plan of 2019-2028**, it is **RESOLVED**:

A. Favorably recommending the approval of the proposed revision of the Comprehensive Land Use Plan for CY 2021-2028 as presented by the City Planning Division Office, with the inclusion therein additional amendments or modifications as enumerated herein-below. It is further recommended that appropriate Ordinance be passed and approved, consistent to the proposed CLUP 2021-2028 revision, with the inclusion of additional amendments and/or modifications. The following are the suggested additional amendments or modifications in the proposed CLUP 2021-2028 revision, to wit:

1. VISION: "Davao City is a globally livable City and a center of excellence in governance, investment, tourism, agriculture, health, education, climate change adaptation, disaster resiliency and sustainable growth driven by an empowered citizenry.";
2. Green Space for residential areas remains at 10% to avoid additional burden that might be passed on to the end-user, if the proposed 15% is followed;
3. Green Space should include (provided these are planted with trees): island on roads/rotunda, open spaces and parks-wide recreational areas, slopes and easements/undevelopable areas;
4. Re-classification from one zone to another should still require $\frac{3}{4}$ votes of all the members of the City Council;
5. Batching Plants and Crushers should be categorized under the same zone – Industrial Zone;
6. Increase residential zone in the City;
7. Increase commercial zone in the City, particularly along the roads from Ulas to Toril and Ulas to Mintal and Calinan. The new

intersection at Libby road should be classified as commercial zone and/or institutional zone;

8. Brgy Megcawayan should include in its area, an Eco-Tourism Zone, particularly those which have been considered existing Tourism Resorts prior to the passage of City Zoning Ordinance;
9. Pepsi Cola Bottling Co.'s property along Dumoy, together with the property of La Fuerza, Inc, be considered as Heavy Industrial Zone;
10. The properties occupied by Safecon Industries Batching Plant and Filmix Concrete Industry, Inc, located along Ma-a, should be re-zoned as Industrial Zone;
11. Creation of FOOD CORRIDOR at the 2nd Congressional District of Davao City;

B. Denying the requests of the following, to wit:

1. Barangay Mintal's request to be reclassified into Industrial Zone, as it will have negative impact on other land uses within the area. CPDO's suggestion is – Commercial Zone;
2. DMC Urban Property Developers, Inc.'s request to develop 26-hectare property at Shrine Hills, Matina, Davao City, being a restricted area for development as it is considered prone to landslide;
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C. Directing the City Planning Division Office to properly endorse to the City Council, after all necessary requirements are complied, separately from the CLUP revision approval, the following applications, for proper action, to wit:

1. ALSONS – Properties in Lasang;
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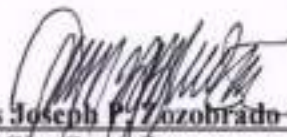
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 34. Andy Mark Villorente's request to reclassify property as Residential Zone situated at Brgy. Mulig;

NOW THEREFORE, BE IT RESOLVED AS IT IS HEREBY RESOLVED, TO ENACT AN ORDINANCE APPROVING THE INTEGRATED ZONING ORDINANCE THROUGH THE COMPREHENSIVE LAND USE PLAN (CLUP) OF 2019-2028, AMENDING THE CITY ORDINANCE NO. 0546-13, SERIES OF 2013.

RESOLVED FINALLY, that copies of this Resolution be furnished to the Office of the City Mayor through the City Administrator's Office, the Vice Mayor's Office, all Davao City Councilors, the City Engineer's Office, the City Planning and Development Office and all other offices/departments concerned, for their information and guidance;

Done this 4th day of May 2021, Davao City, Philippines.


Atty. Jesus Joseph P. Rozobrado-III

City Councilor

Chairperson, Committee on Housing, Rural and Urban Development
(Low-End-Projects-Mother Committee)

Brief Profile of the City

Historical Background/Brief History

Much of the robust development we see in Davao City is attributed to its richness in history, natural resources and its people. Today, the city is in a phase of rapid development projectile compared to three decades earlier when its growth was impeded because of urban insurgency.

In the 1990's, the local government transformed the city into one of the most peaceful cities in the country. The city is known for its ordinances on children and women welfare, firecracker, smoking and liquor ban.

Its geographical location in the marine and mineral-rich southern part of Mindanao provides the city a natural, strategic, and attractive setting for investments, tourism and business.

Prior to the 19th century, the early inhabitants played a vital role in keeping Davao Gulf free from foreign occupation, with the name of Datu Bago emerging as a significant leader during the incursion by Spanish conquistadores, who were already occupying Luzon and the Visayas.

It was only in 1848 when Spanish conquest started to gain ground in Southern Philippines following the arrival of Don Jose Cruz de Oyanguren, a native of Vergara, Guipuzcoa in Spain, along with his 70 comrades. Oyanguren sought the help of one Datu Daupan, chief of Samal Mandayas, who wanted to get even with Datu Bago.

Datu Bago put up a strong resistance but Oyanguren ordered a palisade established in Piapi for his defense and installed a causeway across swamps to bring canons within range of Datu Bago's settlement. Navy Commanding General Don Manuel Quesada also joined in the fight against Datu Bago. By 1849, Oyanguren occupied most of Davao Gulf communities.

Oyanguren established a settlement in the Davao area despite the lack of support from the Spanish government in Manila and his principals. Oyanguren also urged the different tribes, like the Mandayas and Manobos to live in settlements to reach them for trade and commerce. Small progress was made to spur the economy of the gulf region. The Moros, however, threatened those who would collaborate with the Spaniards.

Oyanguren named the Gulf Region "Nueva Vergara" in honor of his hometown in Spain but the place was eventually renamed "Davao" following the strong clamor of the locales. Davao was derived from how three subgroups of the Bagobo tribe named their place: The Tagabawa called the settlement "Dabo,"; the Guiangan dubbed it "Dawaw"; and the Obo tagged it "Davah." The pioneer Christian inhabitants of the area, those who accompanied Oyanguren, were the proponents behind the official adoption of Davao in 1868.

The native inhabitants later converted to Christianity at the instance of Jesuit missionaries in 1868. Some Muslims also became Christians upon the mandate of their leaders, Datu

Timan and Datu Porkan. Father Saturnino Urios, who labored among the Moros of Hijo (in what is now part of Tagum City) in 1892, also further the conversion but turned a religious divide in the area. Those who wanted to live among the Christians left Hijo and resettled in Tigatto and Ma-a, under the supervision of Don Francisco Bangoy and Don Teodoro Palma Gil Sr., respectively. The separatist groups referred themselves later as Kagans.

The Spaniards' reign in Davao lasted only for 50 years with the continuous resistance of the Lumads, or the natives, and Moros, referring to the tribes who embraced Islam. They abandoned Davao in 1899, when the American occupation forces also began to colonize Davao. The American settlers, mostly retired soldiers and investors from Zamboanga, Cebu, Manila and United States, recognized the rich potential of Davao for agricultural venture as there were vast areas of primeval forest lands. Abundant with rich soil, the Americans started to propagate rubber, abaca and coconut in addition to different varieties of tropical plants imported from Ceylon (now Sri Lanka), India, Hawaii, Java and Malaysia. The robust foreign agriculture investments pulled up the local economy with its major export products such as abaca, copra and lumber in the first two decades of the 20th century. Davao also became a regular port of call by inter-island shipping and began direct trade linkages abroad to markets like United States, Japan and Australia.

In 1903, Japanese workers began to arrive in the city to escape the spike in taxes in Japan after the Meiji dynasty regained control of their country. From 30 Japanese workers in 1903, their population in Davao grew to 20,000 in 1941. One Japanese businessman, Ohta Kyozauro, brought 180 Japanese workers from Benguet in 1905 and also invested in abaca plantation and general merchandise store. Another Japanese, Yoshizo Furukawa arrived and invested ₱100,000 in abaca and other business. His total investments grew to ₱10 million in 1941.

On October 16, 1936, President Manuel L. Quezon signed Commonwealth Act No. 51 declaring Davao a chartered city. The Act was sponsored by Assemblyman Romualdo C. Quimpo. The city was inaugurated on March 1, 1937 with Interior Secretary Elpidio Quirino representing President Quezon in the ceremony. The city's territory spanned 244,000 hectares that covered the Municipality of Davao and Municipal District of Guianga.

In 1937, the city's population reached 68,000, which further grew to 98,000 in 1940. Despite the massive death and destruction of the Second World War, the city's population increased to 111,263 in 1946. This doubled to 227,635 in 1960 and tripled to 750,000 in 1970, according to population estimates by officials and the business sector.

After World War II, rehabilitation efforts included rebuilding the status of Davao City as an agricultural and trading hub in Mindanao. Abaca was replaced by other products such as logs, lumber, plywood, copra and banana as the major export commodities. Agricultural products such as mangoes and bananas were produced for country-wide consumption.

In 1955, Davao City was granted authority to conduct elections for local government positions, including mayor, vice mayor and 10 councilors following the enactment of the national law. Mayor Carmelo Porrás emerged as the first chief executive of the city, who was elected in November 1955.

Davao City became the preferred site of commerce, communication and regional offices by private companies which have branches and plantations across Mindanao. Its population continued to grow, helped lately by a spike in migration from Metro Manila and Cebu to escape congestion and stiff competition for work.

By 2016, population was estimated at 1.6 million and the local government's income was pegged at ₱7.3 billion.

Today, Davao City has become a bustling metropolis. The city's economy is spurred by local and foreign investments that continue to register strong profitability. However, climatic changes have also emerged as a major global threat to development, with the city belonging to one of the most vulnerable countries to natural calamities. Thus, Davao city has to step up with measures in countering or mitigating vulnerability to disasters, as well as to increase resiliency and sustainability.

Ethnicity and Language

The city brews with some level of diversity. There is a mixture of Lumads (indigenous people), Moros and ethnic groups from in and out of the country. The migration from Luzon, Visayas and some parts of Mindanao makes this urban center a melting pot.

Amid the diversity of culture, majority of the populace prefer to speak Cebuano, Tagalog and English as ways to understand each other. The dialects of Lumads, Moros and other ethnic groups remain alive especially in their respective communities mostly at the Second and Third Districts.

Among the tribes, Sama, Ata, Kagan, Maguindanao, K'lata, Obu-Manuvu, Iranon, Tausug, Tagabawa, Matigsalog and Maranao have settled in Davao City. Tribal territories or settlements have been observed as prevalent given the social tendency to settle near their next of kin. An example of this are the Bagobos who reside at upper Bangkal to Catalunan, Ula and Biao. Of the indigenous peoples' tribes, the Atas are the earliest natives who inhabited Davao. Most of the Bagobos, on the other hand, intermarried with the Spaniards, Americans and Japanese.

Demography

Human Resource/Demographic Profile

Davao City's household¹ population totaled 1,622,427 in 2015, with an additional 178,537 household members from the previous population count of 1,443,890 in 2010 (Table – 1, see next page). Household population is mostly comprised of working-age population (65.42%) followed by dependent young population (30.54%) and dependent old population (4.04%). Labor force accounts for 69.43%; while school-age population shares 38.81% of the total household populace.

Composition of household population:

School-going population – The elementary pupils make up 31.19% of the school-going population, followed by tertiary students with 27.36%, pre-school pupils with 21.41% and secondary students with 20.03%. School-age population climbs up by 10.47% from 2010.

Working-age population – The number of working-age populace aged 15 to 64 years old increased to 1,061,422 in 2015 from 93,721 in 2010. There are 533,994 males and 527,428 females of working age respectively.

Labor force – Household population aged 15 years old and above reached 1,126,469 as of 2015, climbing up from 990,204 in 2010. There are more females than males in the labor force.

Dependent population – There were 53 dependents for every 100 persons (47 young and six old people) in 2015, higher than the dependency ratio in 2010 when there were 35 dependents (31 young and four old people) for every 100 persons.

Sex distribution² – There is an equitable share between the male and female population under the working age bracket. On the other hand, there is a predominance of male population in school-going population and dependent young population; while females outnumbered males in dependent old population.

¹ Household population is the population enumerated in private households during a census.

² Sex distribution is best expressed as sex ratio, i.e., a ratio higher than 100 indicates that there is a predominance of male population in the area while less than 100 indicates a predominance of female population.

Table – 1. Population Composition by School-Age, Working-Age, Dependent-Age Group and Sex, 2015

Age Group	Both Sexes	%	Male		Female		Sex Ratio
			No.	%	No.	%	
School-going Population							
Pre-school (3-6)	134,824	21.41	70,012	21.89	64,807	20.91	108
Elementary (7-12)	196,430	31.19	101,076	31.60	95,354	30.77	106
Secondary (13-16)	126,156	20.03	63,882	19.97	62,274	20.10	103
Tertiary (17-21)	172,289	27.36	84,879	26.54	87,410	28.21	97
Working Age (15-64)	1,061,422	65.42	533,994	65.26	527,428	65.58	101
Labor Force (15 and over)	1,126,469	69.43	562,867	68.79	564,022	70.13	100
Dependent Population							
Young (0-14)	495,538	30.54	255,350	31.21	240,188	29.87	106
Old (65 and over)	65,467	4.04	28,873	3.53	36,594	4.55	78
Total	1,622,427	100	818,217	100	804,210	100	102

Source: Computed based on the latest PSA data on household population by age-group

Household Population by Age Group and Sex, Year 2010 and 2015

The largest age group in terms of population is the 15-19 age group, which contributes 10% of the total household population (Table – 2). There are 167,020 males and females aged 15 to 19 years old in 2015 from 152,126 in 2010. The least are those aged 80 years old and above with 8,866, although this is a slight increase from 7,946 in 2010. Sex distribution is fairly even with males, slightly outnumbering females by 1.74%.

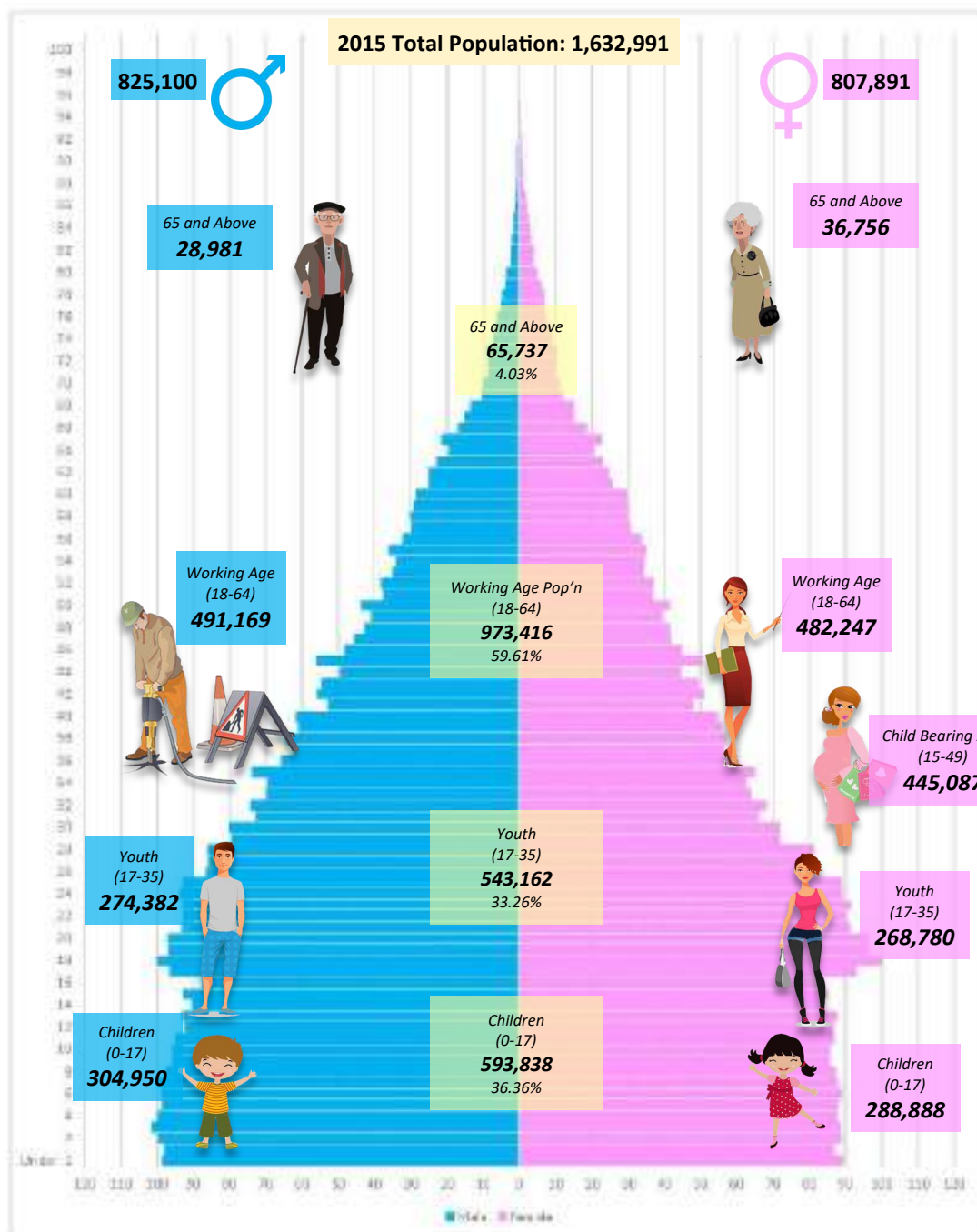
Table – 2. Household Population by Age Group and Sex, Years 2010 and 2015

Age Group	Census Year 2 (2015)			Census Year 1 (2010)		
	Male	Female	Total	Male	Female	Total
Under 1	17,312	16,401	33,713	16,823	15,522	32,345
1-4	70,078	64,533	134,611	66,597	61,870	128,467
5-9	86,044	80,260	166,304	77,182	72,222	149,404
10-14	81,916	78,994	160,910	73,167	70,303	143,470
15-19	83,123	83,897	167,020	72,551	79,575	152,126
20-24	82,497	84,101	166,598	71,610	75,090	146,700
25-29	75,650	73,765	149,415	63,466	63,690	127,156
30-34	64,326	60,908	125,234	58,025	56,069	114,094
35-39	57,444	54,020	111,464	50,173	47,966	98,139
40-44	48,117	45,378	93,495	42,578	42,039	84,617
45-49	40,915	39,923	80,338	35,264	35,787	71,051
50-54	33,091	33,776	66,867	30,189	31,295	61,484
55-59	27,638	29,116	56,754	23,759	24,366	48,125
60-64	21,193	22,544	43,737	16,462	17,258	33,720
65-69	13,562	15,278	28,840	9,979	11,227	21,206
70-74	7,512	9,236	16,748	6,799	8,320	15,119
75-79	4,553	6,460	11,013	3,676	5,045	8,721
80 and over	3,246	5,620	8,866	3,053	4,893	7,946
Total	818,217	804,210	1,622,427	721,353	722,537	1,443,890

Source: Philippine Statistics Authority, Region XI

A broad-based pyramid is observed in ages 19 years old to early 20s, which indicates very high fertility (Graph DE – 1). A narrow-based pyramid is observed in ages 65 years old and above, as the average life expectancy of males and females is 69 years old and 73 years old, respectively. The lack of willingness to give importance to one’s health is among the factors why most males, who aged 65 years old and above, die earlier than females of the same age bracket.

Graph DE – 1. Population Distribution by Age Group and Sex, Year 2015



Source: Philippine Statistics Authority, Region XI

Population Distribution

Davao City is composed of three (3) Congressional districts and 11 administrative districts with a total of 182 urban³ and rural⁴ barangays. Of the Congressional districts, the city's First District is largely dominated by urban barangays, registering over 5,000 population each. The Third District, on the other hand, generally comprises of rural barangays or villages and has less than 5,000 populace for each barangay.

Urban and Rural Population

The city's inhabitants mostly live in urban barangays, comprising 76% (1,238,050) of the total population. Only 24% (394,941) of the total population reside in rural barangays (Table DE – 3, see next page). Barangay Bucana maintains its rank as the city's most populous barangay with 83,964 inhabitants, making up 5.1% of the total population. The second most populous barangay is Barangay Buhangin Proper with 4% share of the total population followed by Barangay Ma-a, and Barangay Talomo Proper with 3.7% share respectively.

Barangay Bucana is the most populated owing to its proximity to the town center, the San Pedro Cathedral, malls, schools, terminals and other establishments. It is also close to most of the work places, and it is adjacent to the City Hall with a distance of 2.79 kilometers. Barangay Buhangin Proper is the second most populous, being close to the airport and different industries; while Barangays Ma-a and Talomo Proper are near various establishments and schools like Ateneo de Davao University and University of Mindanao.

The least populated area is Barangay 3-A with 370 persons (0.02%). Although Barangay 3-A is within the Poblacion District, it recorded the least number of residents due to the shift of its land uses to commercial establishments. The next least populated area is Barangay 13-B, also in Poblacion District, with 427 persons. The barangay is the least populated area in 2010 with 0.01% share out of 1,449,296. As with the case of Barangay 3-A, Barangay 13-B is dominated with commercial and institutional establishments.

³ *Urban barangays are those with population size of 5,000 or more. It is also considered an urban barangay if there is an establishment with a minimum of 100 employees, and five (5) or more establishments with a minimum of 10 employees, and five (5) more facilities within the two (2) – kilometer radius from the barangay hall.*

⁴ *Rural barangays have population size less than 5,000.*

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Urban	1,238,050	309,513	4
District I	584,795	147,161	4
Poblacion	174,121	43,530	4
Brgy. 1-A	3,103	776	4
Brgy. 2-A	3,589	897	4
Brgy. 3-A	370	93	4
Brgy. 4-A	1,683	421	4
Brgy. 5-A	11,436	2,859	4
Brgy. 6-A	2,084	521	4
Brgy. 7-A	3,984	996	4
Brgy. 8-A	11,075	2,769	4
Brgy. 9-A	5,698	1,425	4
Brgy. 10-A	6,764	1,691	4
Brgy. 11-B	1,901	475	4
Brgy. 12-B	840	210	4
Brgy. 13-B	427	107	4
Brgy. 14-B	1,175	294	4
Brgy. 15-B	2,891	723	4
Brgy. 16-B	840	210	4
Brgy. 17-B	810	203	4
Brgy. 18-B	1,832	458	4
Brgy. 19-B	31,766	7,942	4
Brgy. 20-B	4,581	1,145	4
Brgy. 21-C	7,478	1,870	4
Brgy. 22-C	6,634	1,659	4
Brgy. 23-C	16,489	4,122	4
Brgy. 24-C	2,602	651	4
Brgy. 25-C	1,967	492	4
Brgy. 26-C	2,510	628	4
Brgy. 27-C	2,152	538	4
Brgy. 28-C	2,270	568	4
Brgy. 29-C	1,557	389	4
Brgy. 30-C	1,608	402	4
Brgy. 31-D	8,321	2,080	4
Brgy. 32-D	1,985	496	4
Brgy. 33-D	2,033	508	4
Brgy. 34-D	1,682	421	4
Brgy. 35-D	578	145	4
Brgy. 36-D	1,581	395	4

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Brgy. 37-D	6,740	1,685	4
Brgy. 38-D	1,505	376	4
Brgy. 39-D	5,143	1,286	4
Brgy. 40-D	2,437	609	4
Talomo	410,674	102,669	4
Bago Aplaya	15,918	3,980	4
Bago Gallera	17,378	4,345	4
Baliok	16,140	4,035	4
Bucana	83,964	20,991	4
Catalunan Grande	32,461	8,115	4
Catalunan Pequeño	22,809	5,702	4
Dumoy	18,622	4,656	4
Ma-a	59,803	14,951	4
Matina Aplaya	33,384	8,346	4
Matina Crossing	32,436	8,109	4
Matina Pangi	18,081	4,520	4
Talomo Proper	59,678	14,920	4
District II	467,705	116,926	4
Agdao	102,267	25,567	4
Agdao Proper	8,897	2,224	4
Centro San Juan	15,586	3,897	4
Gov. Paciano Bangoy	8,816	2,204	4
Gov. Vicente Duterte	8,904	2,226	4
Kapt. Tomas Monteverde	5,716	1,429	4
Lapu-Lapu	11,738	2,935	4
Leon Garcia	13,652	3,413	4
Rafael Castillo	5,783	1,446	4
San Antonio	10,306	2,577	4
Ubalde	2,966	742	4
Wilfredo Aquino	9,903	2,476	4
Buhangin	222,796	55,699	4
Angliongto	13,539	3,385	4
Buhangin Proper	65,461	16,365	4
Cabantian	43,758	10,940	4
Communal	16,740	4,185	4
Hizon	11,265	2,816	4
Pampanganga	14,381	3,595	4
Sasa	52,386	13,097	4
Tigatto	36,387	9,097	4

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Bunawan	142,642	35,661	4
Alejandro Navarro	10,223	2,556	4
Bunawan Pob.	23,495	5,874	4
Ilang	24,947	6,237	4
Mahayag	6,307	1,577	4
Panacan	35,806	8,952	4
Tibungco	41,864	10,466	4
District III	185,550	46,388	4
Baguio	16,260	4,065	4
Baguio Proper	4,655	1,164	4
Gumalang	5,081	1,270	4
Malagos	6,524	1,631	4
Calinan	28,502	7,126	4
Calinan Proper	23,052	5,763	4
Riverside	5,450	1,363	4
Toril	82,621	20,655	4
Crossing Bayabas	11,490	2,873	4
Daliao	21,124	5,281	4
Eden	2,385	596	4
Lizada	20,112	5,028	4
Lubogan	12,156	3,039	4
Toril Proper	12,140	3,035	4
Tugbok	58,167	14,542	4
Los Amigos	9,722	2,431	4
Mintal	13,227	3,307	4
Sto. Niño	20,103	5,026	4
Tugbok Proper	15,115	3,779	4
Rural	394,941	98,735	4
District I	7,941	1,985	4
Talomo	7,941	1,985	4
Langub	2,883	721	4
Magtuod	5,058	1,265	4
Second District	124,545	31,136	4
Buhangin	70,322	17,581	4
Acacia	3,262	816	4
Callawa	3,553	888	4
Indangan	14,867	3,717	4
Mandug	13,594	3,399	4

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Waan	3,925	981	4
Bunawan	9,460	2,365	4
Gatungan	1,190	298	4
Mudiang	2,937	734	4
San Isidro	5,333	1,333	4
Paquibato	44,763	11,191	4
Colosas	4,731	1,183	4
Fatima	3,502	876	4
Lumiad	1,553	388	4
Mabuhay	1,062	266	4
Malabog	10,816	2,704	4
Mapula	2,876	719	4
Pañalum	1,831	458	4
Pandaitan	4,037	1,009	4
Paquibato Proper	2,495	624	4
Paradise Embac	2,654	664	4
Salapawan	2,282	571	4
Sumimao	1,666	417	4
Tapak	5,258	1,315	4
Third District	262,455	65,614	4
Baguio District	17,613	4,403	4
Cadalian	2,446	612	4
Carmen	2,156	539	4
Tambobong	5,993	1,498	4
Tawan-Tawan	3,889	972	4
Wines	3,129	782	4
Calinan	63,573	15,893	4
Biao Joaquin	2,289	572	4
Cawayan	2,295	574	4
Dacudao	4,418	1,105	4
Dalagdag	934	234	4
Dominga	1,607	402	4
Inayangan	4,832	1,208	4
Lacson	5,873	1,468	4
Lamanan	4,538	1,135	4
Lampianao	845	211	4
Megkawayan	3,015	754	4
Pangyan	2,035	509	4
Saloy	2,112	528	4

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Sirib	5,199	1,300	4
Subasta	3,641	910	4
Talomo River	6,846	1,712	4
Tamayong	7,273	1,818	4
Wangan	5,821	1,455	4
Marilog	52,201	13,050	4
Baganihan	1,295	324	4
Bantol	2,324	581	4
Buda	1,885	471	4
Dalaglumot	1,864	466	4
Datu Salumay	2,232	558	4
Gumitan	1,756	439	4
Magsaysay	2,425	606	4
Malamba	4,864	1,216	4
Marilog Proper	16,188	4,047	4
Salaysay	4,431	1,108	4
Suawan	4,586	1,147	4
Tamugan	8,351	2,088	4
Toril	65,901	16,475	4
Alambre	2,010	503	4
Atan-Awe	1,119	280	4
Bangkas Heights	7,671	1,918	4
Baracatan	2,895	724	4
Bato	10,007	2,502	4
Bayabas	2,989	747	4
Binugao	6,934	1,734	4
Camansi	1,189	297	4
Catigan	3,044	761	4
Daliaon Plantation	3,214	804	4
Kilate	1,309	327	4
Marapangi	6,889	1,722	4
Mulig	2,477	619	4
Sibulan	2,479	620	4
Sirawan	7,140	1,785	4
Tagluno	1,391	348	4
Tagurano	1,230	308	4
Tibuloy	2,218	555	4
Tungkalan	2,910	728	4

Table – 3. Population by Urban and Rural Barangay and Average Household Size, 2015

District/Barangay	Population	Estimated Number of Households	Average Household Size
Tugbok	63,167	15,792	4
Angalan	2,475	619	4
Bago Oshiro	11,932	2,983	4
Balengaeng	2,086	522	4
Biao Escuela	3,294	824	4
Biao Guianga	3,664	916	4
Manambulan	2,661	665	4
Manuel Guianga	6,436	1,609	4
Matina Biao	1,811	453	4
New Carmen	2,626	657	4
New Valencia	1,679	420	4
Tacunan	12,773	3,193	4
Tagakpan	4,208	1,052	4
Talandang	3,392	848	4
Ula	4,130	1,033	4

Source: Philippine Statistics Authority, Region XI

The barangays with the highest population are Bucana (Talomo District) with 83,964 people or around 205 people per hectare of its land area, Buhangin Proper (Buhangin District) with 65,461 people or around 97 people per hectare, and Ma-a (Talomo District) with 59,803 people or around 60 people hectare. These three most populated barangays in the city are considered Central Business District (CBD). While the barangays with the lowest population are 35-D with 578 people or about 83 people only per hectare of its land area, 13-B with 427 people or about 38 people per hectare, and 3-A with 370 or about 18 people per hectare – which are all located in the Poblacion District of the city.

Urbanization level

Urbanization levels remain stable at 58.13% in 2000 and 2007. It increased by 79.38% in 2010 as majority of the population prefer to reside near or within growth centers where most of the sources of employment, schools and shopping hubs are situated. Compared to the 2010 figures, it slightly dropped to 75.81% in 2015. The rise of population in urban district prompts subdivision development in suburban areas as most of the lands especially in Poblacion District, where the midpoint of commerce and trade exists, have been saturated with commercial establishments.

Table – 4. Urbanization Levels for the Past 20 Years

Year	City Population			Average Yearly Population Growth Rate (%)		Average 5-Year Tempo of Urbanization (%)	Level of Urbanization (%)
	Urban	Rural	Total	Urban	Rural		City
1995	-	-	1,006,840	-	-	-	-
2000	666,846	480,270	1,147,116	-	-	-	58.13
2007	792,540	570,797	1,363,337	2.4	2.4	0	58.13
2010	1,150,504	298,792	1,449,296	12.4	-21.5	-9.1	79.38
2015	1,238,050	394,941	1,632,991	1.4	5.5	-4.1	75.81

Source: Philippine Statistics Authority, Region XI

Population Density⁵

The city’s population density is seven (7) persons per hectare in 2015, an increase of 18% from 5.94 persons per hectare in 2010 (Table DE – 5). Population density in urban barangays is higher with 46 persons per hectare than in rural barangays with only two (2) persons per hectare. This indicates that there is more population concentration in urban barangays than in rural barangays. The densest is recorded among urban barangays in the First District with 70 persons per hectare. (See Map 1.1)

Table – 5. Population Density by Barangay, 2015

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Urban	1,238,050	26,911.88	46
First District	584,795	8,410.65	69.53
Poblacion	174,121	1,165.61	149.38
Brgy. 1-A	3,103	15.36	202.08
Brgy. 2-A	3,589	16.38	219.11
Brgy. 3-A	370	20.78	17.81
Brgy. 4-A	1,683	23.51	71.59
Brgy. 5-A	11,436	38.10	300.16
Brgy. 6-A	2,084	15.00	138.93
Brgy. 7-A	3,984	22.50	177.07
Brgy. 8-A	11,075	179.80	61.60
Brgy. 9-A	5,698	27.50	207.20
Brgy. 10-A	6,764	28.64	236.21
Brgy. 11-B	1,901	9.57	198.72
Brgy. 12-B	840	17.54	47.90
Brgy. 13-B	427	11.26	37.93
Brgy. 14-B	1,175	18.41	63.82
Brgy. 15-B	2,891	31.54	91.66

⁵ Population density is the ratio of the total population of area to the total land area.

Table – 5. Population Density by Barangay, 2015

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Brgy. 16-B	840	5.53	151.98
Brgy. 17-B	810	5.63	143.95
Brgy. 18-B	1,832	19.80	92.53
Brgy. 19-B	31,766	362.55	87.62
Brgy. 20-B	4,581	56.58	80.97
Brgy. 21-C	7,478	8.56	873.29
Brgy. 22-C	6,634	8.71	761.48
Brgy. 23-C	16,489	21.31	773.66
Brgy. 24-C	2,602	7.72	337.05
Brgy. 25-C	1,967	4.96	396.81
Brgy. 26-C	2,510	8.05	311.76
Brgy. 27-C	2,152	30.99	69.44
Brgy. 28-C	2,270	15.71	144.48
Brgy. 29-C	1,557	10.20	152.65
Brgy. 30-C	1,608	23.50	68.42
Brgy. 31-D	8,321	22.60	368.23
Brgy. 32-D	1,985	17.90	110.89
Brgy. 33-D	2,033	7.74	262.66
Brgy. 34-D	1,682	19.63	85.69
Brgy. 35-D	578	7.00	82.57
Brgy. 36-D	1,581	6.93	228.14
Brgy. 37-D	6,740	7.10	949.30
Brgy. 38-D	1,505	9.00	167.22
Brgy. 39-D	5,143	12.80	401.80
Brgy. 40-D	2,437	10.02	243.29
Talomo	410,674	7,245.04	56.68
Bago Aplaya	15,918	217.35	73.24
Bago Gallera	17,378	717.82	24.21
Baliok	16,140	248.28	65.01
Bucana	83,964	410.51	204.54
Catalunan Grande	32,461	1,495.06	21.71
Catalunan Pequeño	22,809	594.49	38.37
Dumoy	18,622	530.77	35.08
Ma-a	59,803	999.38	59.84
Matina Aplaya	33,384	315.49	105.82
Matina Crossing	32,436	488.82	66.36
Matina Pangi	18,081	584.12	30.95
Talomo Proper	59,678	642.95	92.82

Table – 5. Population Density by Barangay, 2015, Cont.

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Second District	467,705	8,183.61	57.15
Agdao	102,267	530.45	192.79
Agdao Proper	8,897	38.29	232.37
Centro San Juan	15,586	43.48	358.46
Gov. Paciano Bangoy	8,816	81.47	108.21
Gov. Vicente Duterte	8,904	52.02	171.18
Kapt. Tomas Monte- verde	5,716	19.52	292.81
Lapu-Lapu	11,738	59.99	195.67
Leon Garcia	13,652	19.03	717.47
Rafael Castillo	5,783	44.54	129.84
San Antonio	10,306	89.88	114.67
Ubalde	2,966	9.98	297.16
Wilfredo Aquino	9,903	72.26	137.04
Buhangin	222,796	3,465.85	64.28
Angliongto	13,539	288.36	46.95
Buhangin Proper	65,461	672.24	97.38
Cabantian	43,758	757.62	57.76
Communal	16,740	584.65	28.63
Hizon	11,265	218.66	51.52
Pampanganga	14,381	117.51	122.38
Sasa	52,386	767.66	68.24
Tigatto	36,387	761.31	47.80
Bunawan	142,642	4,187.31	34.07
Alejandro Navarro	10,223	626.58	16.32
Bunawan Pob.	23,495	769.18	30.55
Ilang	24,947	570.60	43.72
Mahayag	6,307	803.81	7.85
Panacan	35,806	698.12	51.29
Tibungco	41,864	719.02	58.22

Source: PSA, Region XI and OCPDC, Davao City

Table– 5. Population Density by Barangay, 2015, Cont.

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Third District	185,550	10,317.62	17.98
Baguio	16,260	3,632.11	4.48
Baguio Proper	4,655	848.74	5.48
Gumalang	5,081	1,572.78	3.23
Malagos	6,524	1,210.59	5.39
Calinan	28,502	7,126	21.18
Calinan Proper	23,052	830.55	27.76
Riverside	5,450	514.85	10.59
Toril	82,621	3,005.32	27.49
Crossing Bayabas	11,490	223.35	51.44
Daliao	21,124	194.55	108.58
Eden	2,385	773.77	3.08
Lizada	20,112	436.16	46.11
Lubogan	12,156	208.96	58.17
Toril Proper	12,140	131.60	92.25
Tugbok	58,167	2,334.79	24.91
Los Amigos	9,722	445.49	21.82
Mintal	13,227	752.19	17.58
Sto. Niño	20,103	147.32	136.46
Tugbok Proper	15,115	989.79	15.27
Rural	394,941	191,913.59	2.06
First District	7,941	1,316.09	6.03
Talomo	7,941	1,316.09	6.03
Langub	2,883	853.20	3.38
Magtuod	5,058	462.89	10.93
Second District	124,545	73,400.30	1.70
Buhangin	70,322	5,857.54	12.01
Acacia	3,262	920.34	3.54
Callawa	3,553	1,354.75	2.62
Indangan	14,867	1,474.13	10.09
Mandug	13,594	969.19	14.03
Waan	3,925	436.97	8.98

Source: PSA, Region XI and OCPDC, Davao City

Table – 5. Population Density by Barangay, 2015, Cont.

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Bunawan	9,460	2,203.64	4.29
Gatungan	1,190	887.01	1.34
Mudiang	2,937	686.30	4.28
San Isidro	5,333	630.33	8.46
Paquibato	44,763	65,339.12	0.69
Colosas	4,731	13,201.08	0.36
Fatima	3,502	3,093.73	1.13
Lumiad	1,553	3,206.09	0.48
Mabuhay	1,062	1,421.06	0.75
Malabog	10,816	8,268.79	1.31
Mapula	2,876	8,957.47	0.32
Pañalum	1,831	1,131.41	1.62
Pandaitan	4,037	4,078.59	0.99
Paquibato Proper	2,495	3,511.00	0.71
Paradise Embac	2,654	2,743.47	0.97
Salapawan	2,282	2,779.91	0.82
Sumimao	1,666	2,539.79	0.66
Tapak	5,258	10,406.75	0.51
Third District	262,455	117,197.20	2.24
Baguio District	17,613	4,430.38	3.98
Cadalian	2,446	628.15	3.89
Carmen	2,156	806.01	2.67
Tambobong	5,993	1,230.05	4.87
Tawan-Tawan	3,889	974.39	3.99
Wines	3,129	791.78	3.95
Calinan	63,573	21,220.65	3
Biao Joaquin	2,289	551.62	4.15
Cawayan	2,295	805.45	2.85
Dacudao	4,418	1,247.05	3.54
Dalagdag	934	535.12	1.75
Dominga	1,607	602.11	2.67
Inayangan	4,832	1,420.54	3.40
Lacson	5,873	896.96	6.55
Lamanan	4,538	2,094.88	2.17
Lampianao	845	935.54	0.90

Source: PSA, Region XI and OCPDC, Davao City

Table – 5. Population Density by Barangay, 2015, Cont.

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Megkawayan	3,015	1,844.95	1.63
Pangyan	2,035	708.97	2.87
Saloy	2,112	2,291.36	0.92
Sirib	5,199	2,152.65	2.42
Subasta	3,641	1,215.88	2.99
Talomo River	6,846	810.91	8.44
Tamayong	7,273	1,925.20	3.78
Wangan	5,821	1,181.46	4.93
Marilog	52,201	62,886.05	0.83
Baganihan	1,295	1,062.62	1.22
Bantol	2,324	1,403.54	1.66
Buda	1,885	4,292.76	0.44
Dalaglumot	1,864	3,183.86	0.59
Datu Salumay	2,232	2,107.50	1.06
Gumitan	1,756	5,727.67	0.31
Magsaysay	2,425	5,830.15	0.42
Malamba	4,864	11,074.12	0.44
Marilog Proper	16,188	18,031.84	0.90
Salaysay	4,431	4,467.69	0.99
Suawan	4,586	4,571.98	1.00
Tamugan	8,351	1,132.32	7.38
Toril	65,901	16,036.40	4.11
Alambre	2,010	327.41	6.14
Atan-Awe	1,119	330.88	3.38
Bangkas Heights	7,671	247.27	31.02
Baracatan	2,895	1,131.61	2.56
Bato	10,007	851.61	11.75
Bayabas	2,989	1,201.36	2.49
Binugao	6,934	483.32	14.35
Camansi	1,189	363.18	3.27
Catigan	3,044	2,401.89	1.27
Daliaon Plantation	3,214	1,036.93	3.10
Kilate	1,309	644.90	2.03
Marapangi	6,889	703.76	9.79
Mulig	2,477	998.88	2.48
Sibulan	2,479	1,699.90	1.46
Sirawan	7,140	963.70	7.41
Tagluno	1,391	564.16	2.47

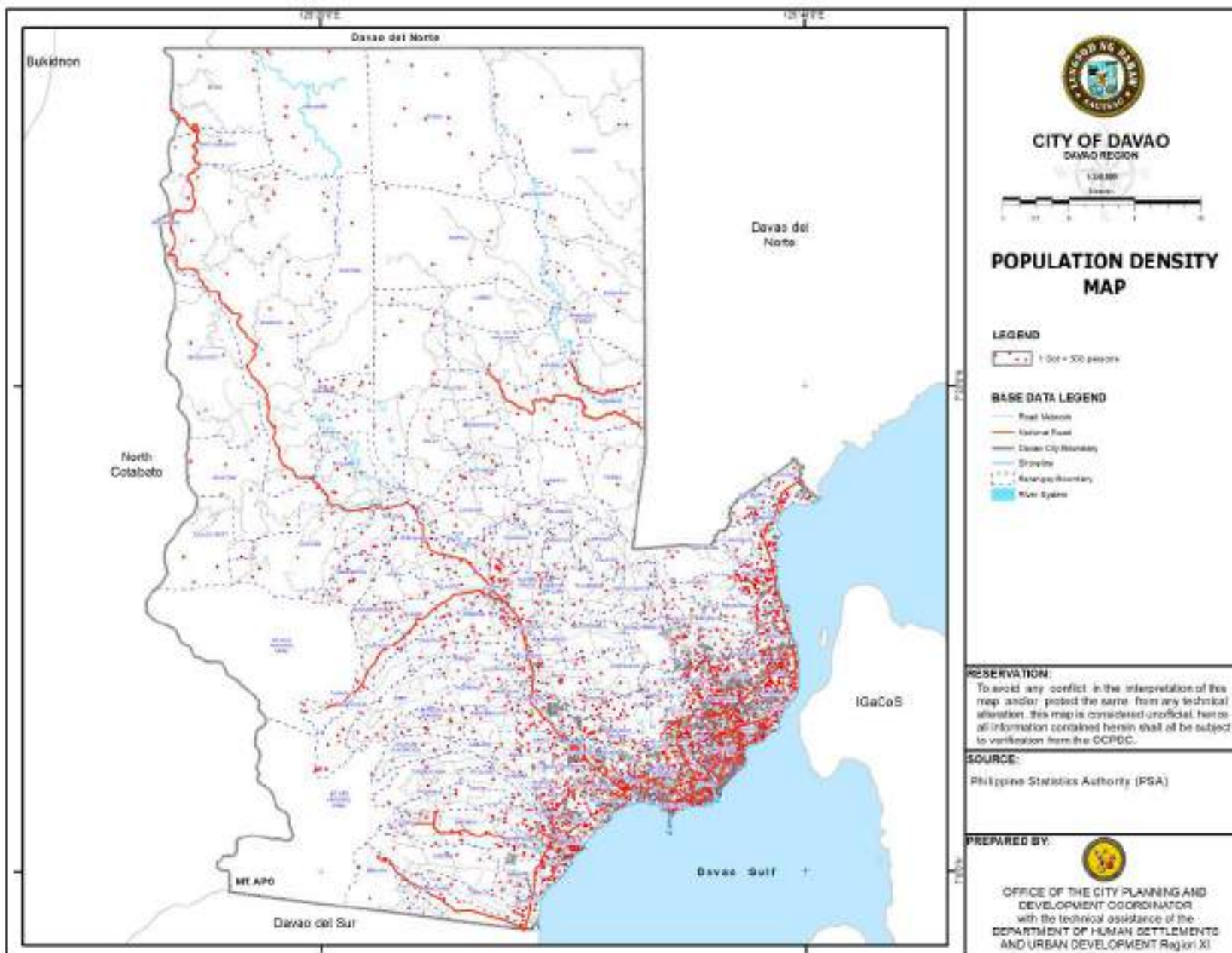
Source: PSA, Region XI and OCPDC, Davao City

Table – 5. Population Density by Barangay, 2015, Cont.

Barangay	Population	Gross Area (ha)	Population Density (Gross Barangay Area)
Tagurano	1,230	505.28	2.43
Tibuloy	2,218	833.64	2.66
Tungkalan	2,910	1,783.65	1.63
Tugbok	63,167	12,623.72	5
Angalan	2,475	481.31	5.14
Bago Oshiro	11,932	637.28	18.72
Balengaeng	2,086	478.85	4.36
Biao Escuela	3,294	1,284.20	2.57
Biao Guianga	3,664	500.91	7.31
Manambulan	2,661	768.50	3.46
Manuel Guianga	6,436	901.32	7.14
Matina Biao	1,811	1,578.20	1.15
New Carmen	2,626	1,107.90	2.37
New Valencia	1,679	954.12	1.76
Tacunan	12,773	906.70	14.09
Tagakpan	4,208	749.73	5.61
Talandang	3,392	1,333.40	2.54
Ula	4,130	941.30	4.39

Source: PSA, Region XI and OCPDC, Davao City

Map 1.1. Population Density Map, Davao City



Historical Growth of Population

The city's population increased to 1,632,991 in 2015 from only 8,560 over a century ago. A huge increase in population is observed especially in 1939 after the inauguration of Davao as a chartered city by virtue of Commonwealth Act No. 51. At the macro level, one (1) in every three (3) persons in Davao Region lives in Davao City. The city contributes 6.67% to the total population in Mindanao. Throughout Philippines, Davao City is the third highly-urbanized city with a population size that surpasses the one million mark next to cities of Manila and Quezon.

Table – 6. Historical Growth of Population, 1975-2015

Year	Davao City		Annual Growth Rate
	Population	Increase/Decrease	
1903	8,560	-	-
1918	21,538	12,978	6
1939	95,546	74,008	7.25
1948	111,263	15,717	1.57
1960	225,712	114,449	6.42
1970	392,473	166,761	5.57
1975	484,678	92,205	4.31
1980	610,375	125,697	4.72
1990	849,947	339,572	3.37
1995	1,006,840	156,893	2.57
2000	1,147,116	140,276	2.83
2007	1,363,337	216,221	2.44
2010	1,449,296	85,959	2.36
2015	1,632,991	183,695	2.30
Davao Region	4,893,318	424,755	1.74
Mindanao	24,135,775	2,167,601	1.9
Philippines	100,981,437	8,643,585	1.72

Source: Census of Population, PSA, Region XI

Fertility and Mortality

Crude Birth Rate (CBR)⁶ –The 2017 CBR demonstrates a sharp decline compared to its four (4) preceding years, which were in the upper 20 levels (Refer to Table – 7). It slightly increased by 8.95% in 2018, but still lower compared to 2016 CBR with 26.30 births per 1,000 population. This attributes to the improvement of contraceptive-use prevalence rate at 61.3% in 2018 from 50.7% in 2016. The number of females who avail of reproductive health services, including contraceptives, in the city government also increased to 226 in 2018 from 15 in 2016.

Crude Death Rate (CDR)⁷

CDR – CDR shows a fluctuating trend, hitting the highest at 6.05 deaths per 1,000 population or an average of 28 deaths a day in 2017 (Refer to Table – 7). Though this slightly increased from 5.64 deaths per 1,000 populations in 2011, it is considered low as it is below 10 per 1,000 populations. The city's CBR is also lower compared to the national average of 6.77 deaths per 1,000 populations. Among the top causes of deaths include pneumonia, cerebrovascular disease, diseases of the heart, diseases of the arteries, arterioles and capillaries and diabetes mellitus.

Table – 7. Crude Birth Rate (CBR) and Crude Death Rate (CDR), 2011-2018

Period	CBR	% Increase/ Decrease from Previous Year	CDR	% Increase/ Decrease from Previous Year
2011	20.98	2.84	5.64	-6.38
2012	21.62	3.05	5.75	1.95
2013	27.97	29.37	5.71	-0.7
2014	27.28	2.47	5.90	3.33
2015	27.91	2.31	5.81	-1.53
2016	26.30	5.77	5.80	-0.17
2017	21.90	-16.73	6.05	4.31
2018	23.86	8.95	7.46	23.31

Source: City Health Office

⁶ CBR refers to the number of live births per 1,000 population.

⁷ CDR refers to the number of deaths per 1,000 population.

Literacy Rate⁸

Davao City's literacy rate improved to 99.09% in 2015 from 98% in 2010 (See Table – 8). This shows that majority of the populace aged 10 years old and over are literate. Only 0.91% are illiterate. Literacy rate among females is slightly higher at 99.14% compared to males at 99.05%. Davao Region has a total of 3,714,650 literate population, both male and female, 33.94% of which are from the City of Davao.

Table – 8. Literacy Rate of Population 10 Years Old and Over, by Sex, 2015

Indicator	Davao City						Davao Region					
	Male		Female		Both Sex		Male		Female		Both Sex	
	No.	Rate %	No.	Rate %	No.	Rate %	No.	Rate %	No.	Rate %	No.	Rate %
Literate	638,657	99.05	637,473	99.14	1,276,130	99.09	1,897,640	97.8	1,817,010	98.03	3,714,650	97.9
Illiterate	6,126	0.95	5,543	0.86	11,669	0.91	42,732	2.2	36,466	1.97	79,198	2.1
(Household Population >10yr)	644,783	100	643,016	100	1,287,799	100	1,940,372	100	1,853,476	100	3,793,848	100

Source: Philippine Statistics Authority, Region XI

Other Population Characteristics

Marital Status⁹

As shown in Table - 9, only 38.5% of the 1,298,209 total population aged 10 years old and above are married as there are largely single males and females (45.1%). Among singles, 53.4% are males and 46.6% are females. The rest of the total population aged 10 years old and above are in common-law/live-in marital arrangement (10.6%), widowed (4.1%), and divorced/separated (1.5%). Of the married populace, there are more married women (250,701) than married men (248,802). The age range for married populace is between 30-49 years old, while the age range for divorced/separated populace is between 35-39 years old.

⁸Literacy rate is the percentage of population who have at least completed a year in elementary education to the population 10 years old and over. He or she is considered literate if he or she is able to read and write.

Table – 9. Marital Status Aged 10 Years Old and Above

Sex and Age Group	Total Population 10 Years old and Over	Marital Status					
		Single	Married	Widowed	Divorced/ Separated	Common-Law/ Live-in	Unknown
Both sexes	1,298,209	585,632	499,503	52,685	19,927	137,011	3,451
Male	651,571	312,804	248,802	12,478	7,735	68,198	1,554
Below 20	166,863	164,043	663	33	54	1,679	391
20-24	83,886	64,890	6,535	90	229	11,900	242
25-29	76,719	38,152	20,379	148	595	17,211	234
30-34	65,191	18,480	32,429	227	868	12,971	216
35-39	58,064	10,289	37,395	385	1,044	8,763	188
40-44	48,452	5,909	35,154	574	1,105	5,634	76
45-49	41,195	4,170	31,199	828	1,122	3,770	106
50-54	33,238	2,796	25,815	1,181	898	2,505	43
55-59	27,744	1,876	21,827	1,558	785	1,659	39
60-64	21,238	1,012	16,689	1,878	532	1,123	4
65-69	13,597	596	10,386	1,776	288	544	7
70-74	7,543	296	5,497	1,387	118	242	3
75-79	4,575	180	3,027	1,176	63	126	3
80-over	3,266	115	1,807	1,237	34	71	2
Female	646,638	272,828	250,701	40,207	12,192	68,813	1,897
Below 20	164,239	155,036	2,186	48	139	6,191	639
20-24	84,792	52,310	13,112	131	682	18,247	310
25-29	74,157	27,925	28,287	272	1,120	16,318	235
30-34	61,187	13,029	35,947	515	1,475	10,015	206
35-39	54,277	7,383	37,722	808	1,642	6,535	187
40-44	45,509	4,774	33,400	1,461	1,649	4,142	83
45-49	40,087	3,609	29,385	2,383	1,538	3,060	112
50-54	33,860	2,810	23,860	3,756	1,413	1,973	48
55-59	29,187	2,179	19,524	5,194	1,070	1,177	43
60-64	22,587	1,419	13,440	6,351	736	631	10
65-69	15,312	970	7,602	6,020	393	312	15
70-74	9,267	565	3,513	4,905	180	100	4
75-79	6,508	407	1,830	4,083	114	70	4
80-over	5,689	412	893	4,280	41	42	1

Source: Philippine Statistics Authority, Region XI

⁹ Marital status refers to the personal status of each individual with reference to the marriage laws or customs of the country. The categories used for marital status include single, married, divorced/separated, common-law/live-in and unknown. Unknown is a category where a person whose marital status is unknown, or whose status is being concealed by the respondent.

Mother Tongue/Ethnicity

Majority, or 36.96%, of the total household population are Bisaya, followed by Cebuano with 21.30% and Boholano with 8.14% as of 2010, which signifies migration coming mostly from the Visayas (Table - 10). Bisaya/Binisaya is a mixture of dialect across Visayan region, while Cebuano is also Bisaya, but with dialect that is distinct and native in Cebu. Davaoeños, Bagobos and Mandayas, who are among the original settlers in Davao City, only account for 7.79%, 1.31%, and 1.26%, respectively, of the dialects spoken.

Table – 10. Population by Mother Tongue, 2010

Mother Tongue	Household No.	% of Total Household Population
Bisaya/Binisaya	533,645	36.96
Cebuano	307,576	21.30
Boholano	117,481	8.14
Davaoeño	112,425	7.79
Hiligaynon, Ilonggo	71,759	4.97
Tagalog	30,409	2.11
Ilocano	29,534	2.05
Waray	22,611	1.57
Bagobo	18,987	1.31
Mandaya	18,163	1.26
Foreign Ethnicity	2,205	0.15
Others	179,091	12.40
Total	1,443,890	100

Source: Philippine Statistics Authority, Region XI

Religious Affiliation/Inventory of Religious Establishments, Year 2015

People in Davao City are largely Roman Catholics, comprising 1,277,210, as of 2015 (See Table – 11). The number of Roman Catholics increased from 1,161,674 in 2010. The next religions with most members include Evangelicals (Philippine Council of Evangelical Churches) and Islam, which comprise 100,768 and 63,127 respectively. The rest of the populace belong to other religious groups (see Annex for full list of details).

Table – 11. Population by Religious Affiliation, Davao City, 2015

Religious Affiliation	No. of People	% of Total Population
Roman Catholics/Christians	1,277,210	78.21
Evangelicals (Philippine Council of Evangelical Churches)	100,768	6.17
Islam	63,127	3.87
Iglesia Ni Cristo	36,204	2.22
Buddhist	989	0.06
Tribal Religions	8,768	0.54
Other religious affiliations	195,925	12
Total	1,632,991	100

Source: Philippine Statistics Authority, Region XI

Labor Force

Table - 12 bares an employment figure in the city of 670,535 or 59.53% of the working age population (15 years old and above). Of the total number of employed persons, majority, or 64%, are males while only 36% of the working age population are females. This shows that for every female employed, there are two (2) males who will also be employed or a ratio of 1:2. On the other hand, the city's total workforce accounts for 34.83% of the number of employed persons in Davao Region. Sex distribution in Davao City is reflective of the entire region, where there are more employed males (63.3%) than employed females (36.7%).

Table – 12. Labor Force Population by Sex and Employment Status, 2015

Sex	Davao City					Davao Region ¹⁰					
	Pop. 15 Yrs. and Over	Em- ployed	%	Unem- ployed	%	Pop. 15 Yrs. and Over	Employed	%	Unem- ployed	%	Not in Labor Force
Male	562,867	429,634	64	23	60	1,622,820	1,222,375	63.5	75	63.3	331,449
Fe- male	564,022	240,901	36	16	40	1,559,180	702,625	36.5	43	36.7	807,551
Both Sexes	1,126,469	670,535	100	39	100	3,182,000	1,925,000	100	118	100	1,139,000

Source: 2015 Census of Population and 2015 Labor Force Survey, PSA, Region XI and OCPDC, Davao City

Overseas Workers from Davao City

In 2012 and 2013, the number of OFWs increased by 8.94% and 70.68% respectively. However, there was a decrease in data records in the years 2014-2017. The downward trend is attributed to the increase of available jobs locally with the spike in local and foreign investments in the city. Of the overseas workers processed from Davao City, majority are balik-manggagawa (returning workers) who are employed in land-based jobs or those who already went and worked abroad. There are a total of 148,201 balik-manggagawa as land-based job workers and 4,649 as sea-based job workers or 96.96% and 3.04%, respectively, out of the total number of balik-manggagawa workers. Females outnumber males in terms on the number of overseas workers, comprising 67.63% out of the total number of OFWs from Davao City. This links as among the reasons why there are few female workers at the local level as a large number of them prefer to work abroad.

¹⁰Data on the employment status of Davao Region was based on the 2015 Annual Labor Force Survey.

Table – 13. Overseas Workers from Davao City, 2011-2017

Year	No. of Overseas Workers			Increase/Decrease in No.			Increase/Decrease in Percent (%)		
	Total	M	F	Total	M	F	Total	M	F
2011	18,921	9,288	9,633	1,010	463	547	5.63	5.24	6.02
2012	20,612	10,158	10,454	1,691	870	1,691	8.94	9.37	8.52
2013	35,181	17,031	18,150	14,569	6,873	7,696	70.68	67.66	73.62
2014	25,127	12,167	12,960	-10,094	-4,884	-5,190	-28.58	-25.56	-28.60
2015	25,294	11,332	13,962	167	-835	1,002	0.66	-6.86	7.73
2016	23,181	9,457	13,724	-2,113	-1,875	-238	-8.35	-16.55	-1.70
2017	16,499	5,365	11,159	-6,682	-4,092	-2,565	-28.83	-43.27	-18.69

Source: Philippine Overseas Employment Administration, Region XI

Persons with Disabilities (PWDs)

The City Social Welfare and Development Office (CSWDO) recorded 2,287 persons with disabilities (PWDs) as of 2016 (Table – 14). The figures increased by 88.63% from 260 in 2012. Majority of the registered PWDs in 2016 have orthopaedic impairment (883) followed by those with development disability (474), mental disability (250), visual impairment (212), speech impairment (164), hearing impairment (178), and motor disability (127).

Table – 14. Persons with Disabilities issued with Identification Cards, By Sex, 2012-2016

Persons with Disabilities	2012	2013	2014	2015	2016	Total
Both Sexes	260	609	986	1044	2287	5189
Female	128	247	454	502	983	2317
Male	132	362	532	542	1304	2872

Source: City Social Services and Development Office, Davao City

Household Population 5 Years Old and Over by Highest Educational Attainment

Almost one-fourth, or 39.22%, of the household population aged five (5) years old and above are in, or have reached, secondary/high school level (Table – 15). Twenty-eight percent (28%) of the populace have reached or are currently enrolled in elementary. The least are those in special education, at 0.045%. On the other hand, region-wide figures show that more than one third, or 38.42%, of the household population in Davao Region have reached or are currently in the elementary level. The household population who are able to reach or are currently in secondary level also share 37.23% out of the total number of household population in Davao Region. Davao City’s percentage figures are slightly higher compared to Davao Region in terms of reaching secondary level as the highest educational attainment among household population. This indicates that there are more individuals who are able to reach or are currently enrolled in secondary in Davao City compared to other areas in Davao Region.

Table – 15. Household Population 5 Years Old and Over by Highest Educational Attainment, 2015

Highest Educational Attainment	Davao City						Davao Region	
	Male		Female		Both Sexes		Both Sexes	
	No.	%	No.	%	No.	%	No.	%
Pre-School	24,290	3.36	21,580	3.03	45,870	3.19	133,978	3.18
Special Education	388	0.054	264	0.037	652	0.045	1,557	0.037
Elementary	218,369	30.22	184,642	25.89	403,011	28.07	1,620,132	38.42
Grade 1-4	115,768	-	94,457	-	210,225	-	836,535	-
Grade 5-6	38,522	-	32,306	-	70,828	-	278,661	-
Graduate	64,079	-	57,879	-	121,958	-	504,936	-
Secondary	284,398	39.36	278,699	39.08	563,097	39.22	1,569,919	37.23
Undergraduate	112,963	-	110,143	-	223,106	-	708,274	-
Graduate	171,435	-	168,556	-	339,991	-	861,645	-
Post-Secondary	6,038	0.84	7,062	0.99	13,100	0.91	60,727	1.44
Undergraduate	961	-	1,024	-	1,985	-	5,613	-
Graduate	5,077	-	6,038	-	11,115	-	55,114	-
College Under-graduate	96,074	13.30	105,216	14.75	201,290	14.02	431,109	10.22
Academic Degree Holder	89,535	12.39	111,810	15.68	201,345	14.02	386,818	9.17
Post Baccalaureate	1,579	0.22	1,752	0.25	3,331	0.23	6,038	0.14
Not Stated	1,956	0.27	2,093	0.29	4,049	0.28	6,777	0.16
Total	722,627	100	713,118	100	1,435,745	100	4,217,055	100

Source: Philippine Statistics Authority, Region XI

Projected Population and Households

Davao City's population is projected to hit the two-million mark by 2024. This is 22.71% higher than the current population of 1,632,991. By 2028, the city's population is projected to further increase to 2,194,659. With the growing populace, the number of households is projected to register a total of 550,954 by 2028 from 409,951 in 2015.

Table - 16. Projected Population and Households

Year	Population	Household
2015 ¹¹	1,632,991	409,951
2016	1,670,550	419,380
2017	1,708,972	429,026
2018	1,748,279	438,893
2019	1,788,489	448,988
2020	1,829,624	459,314
2021	1,871,706	469,879
2022	1,914,755	480,686
2023	1,958,794	491,742
2024	2,003,847	503,052
2025	2,049,935	514,622
2026	2,097,084	526,458
2027	2,145,317	538,567
2028	2,194,659	550,954

Source: Philippine Statistics Authority, Region XI

Population Projection by Barangay

Barangay Bucana is projected to continue having the highest population size with 112,843 by 2028, followed by Barangay Buhangin Poblacion with 87,976 and Barangay Ma-a with 80,372 (Table – 17, see next page). Barangay 3-A's population size is projected to be the lowest with 497 by 2028.

¹¹ Data sourced from Census of Population 2015, Philippine Statistics Authority. The 2016-2030 Population and Household Projection is computed using the Geometric Method based on the 2.30% growth rate of 2010-2015.

Table – 17A. Population Estimation and Projection of Barangays Bago Aplaya-Talomo Proper, Talomo District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
First District	592,736	0.3630	606,369	620,315	634,583	649,178	664,109	679,384	695,010	710,995
Talomo District	418,615	0.2563	428,243	438,093	448,169	458,477	469,022	479,809	490,845	502,134
Bago Aplaya	15,918	0.0097	16,284	16,659	17,042	17,434	17,835	18,245	18,665	19,094
Bago Gallera	17,378	0.0106	17,778	18,187	18,605	19,033	19,471	19,918	20,376	20,845
Baliok	16,140	0.0099	16,511	16,891	17,279	17,677	18,083	18,499	18,925	19,360
Bucana	83,964	0.0514	85,895	87,871	89,892	91,959	94,074	96,238	98,452	100,716
Catalunan Grande	32,461	0.0199	33,208	33,971	34,753	35,552	36,370	37,206	38,062	38,937
Catalunan Pequeño	22,809	0.0140	23,334	23,870	24,419	24,981	25,556	26,143	26,745	27,360
Dumoy	18,622	0.0114	19,050	19,488	19,937	20,395	20,864	21,344	21,835	22,337
Langub	2,883	0.0018	2,949	3,017	3,087	3,158	3,230	3,304	3,380	3,458
Ma-a	59,803	0.0366	61,178	62,586	64,025	65,498	67,004	68,545	70,122	71,734
Magtuod	5,058	0.0031	5,174	5,293	5,415	5,540	5,667	5,797	5,931	6,067
Matina Aplaya	33,384	0.0204	34,152	34,937	35,741	36,563	37,404	38,264	39,144	40,045
Matina Crossing	32,436	0.0199	33,182	33,945	34,726	35,525	36,342	37,178	38,033	38,907
Matina Pangi	18,081	0.0111	18,497	18,922	19,358	19,803	20,258	20,724	21,201	21,688
Talomo	59,678	0.0365	61,051	62,455	63,891	65,361	66,864	68,402	69,975	71,585

Source: PSA, Region XI

Table – 17B. Population Estimation and Projection of Barangays Bago Aplaya-Talomo Proper, Talomo District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
First District	727,348	744,077	761,190	778,698	796,608
Talomo District	513,683	525,498	537,585	549,949	562,598
Bago Aplaya	19,533	19,982	20,442	20,912	21,393
Bago Gallera	21,325	21,815	22,317	22,830	23,355
Baliok	19,805	20,261	20,727	21,204	21,691
Bucana	103,032	105,402	107,826	110,306	112,843
Catalunan Grande	39,833	40,749	41,686	42,645	43,626
Catalunan Pequeño	27,989	28,633	29,291	29,965	30,654
Dumoy	22,851	23,377	23,914	24,464	25,027
Langub	3,538	3,619	3,702	3,787	3,875
Ma-a	73,384	75,072	76,799	78,565	80,372
Magtuod	6,207	6,349	6,495	6,645	6,798
Matina Aplaya	40,966	41,908	42,872	43,858	44,866
Matina Crossing	39,802	40,718	41,654	42,612	43,592
Matina Pangi	22,187	22,698	23,220	23,754	24,300
Talomo	73,231	74,915	76,638	78,401	80,204

Source: PSA, Region XI

Table – 17C. Population Estimation and Projection of Barangays 1-A – 20-B, Poblacion District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Poblacion District	174,121	0.1066	178,126	182,223	186,414	190,701	195,087	199,574	204,165	208,860
Brgy. 1-A	3,103	0.0019	3,174	3,247	3,322	3,398	3,477	3,557	3,638	3,722
Brgy. 2-A	3,589	0.0022	3,672	3,756	3,842	3,931	4,021	4,114	4,208	4,305
Brgy. 3-A	370	0.0002	379	387	396	405	415	424	434	444
Brgy. 4-A	1,683	0.0010	1,722	1,761	1,802	1,843	1,886	1,929	1,973	2,019
Brgy. 5-A	11,436	0.0070	11,699	11,968	12,243	12,525	12,813	13,108	13,409	13,718
Brgy. 6-A	2,084	0.0013	2,132	2,181	2,231	2,282	2,335	2,389	2,444	2,500
Brgy. 7-A	3,984	0.0024	4,076	4,169	4,265	4,363	4,464	4,566	4,671	4,779
Brgy. 8-A	11,075	0.0068	11,330	11,590	11,857	12,130	12,409	12,694	12,986	13,285
Brgy. 9-A	5,698	0.0035	5,829	5,963	6,100	6,241	6,384	6,531	6,681	6,835
Brgy.10-A	6,764	0.0041	6,920	7,079	7,242	7,408	7,578	7,753	7,931	8,114
Brgy.11-B	1,901	0.0012	1,945	1,989	2,035	2,082	2,130	2,179	2,229	2,280
Brgy.12-B	840	0.0005	859	879	899	920	941	963	985	1,008
Brgy.13-B	427	0.0003	437	447	457	468	478	489	501	512
Brgy.14-B	1,175	0.0007	1,202	1,230	1,258	1,287	1,316	1,347	1,378	1,409
Brgy.15-B	2,891	0.0018	2,957	3,026	3,095	3,166	3,239	3,314	3,390	3,468
Brgy.16-B	840	0.0005	859	879	899	920	941	963	985	1,008
Brgy.17-B	810	0.0005	829	848	867	887	908	928	950	972
Brgy.18-B	1,832	0.0011	1,874	1,917	1,961	2,006	2,053	2,100	2,148	2,198
Brgy.19-B	31,766	0.0195	32,497	33,244	34,009	34,791	35,591	36,410	37,247	38,104
Brgy.20-B	4,581	0.0028	4,581	4,581	4,581	4,581	4,581	4,581	4,581	4,581

Source: PSA, Region XI

Table – 17D. Population Estimation and Projection of Barangays 1-A – 20-B, Poblacion District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Poblacion District	213,664	218,579	223,606	228,749	234,010
Brgy. 1-A	3,808	3,895	3,985	4,077	4,170
Brgy. 2-A	4,404	4,505	4,609	4,715	4,823
Brgy. 3-A	454	464	475	486	497
Brgy. 4-A	2,065	2,113	2,161	2,211	2,262
Brgy. 5-A	14,033	14,356	14,686	15,024	15,369
Brgy. 6-A	2,557	2,616	2,676	2,738	2,801
Brgy. 7-A	4,889	5,001	5,116	5,234	5,354
Brgy. 8-A	13,590	13,903	14,222	14,550	14,884
Brgy. 9-A	6,992	7,153	7,317	7,486	7,658
Brgy.10-A	8,300	8,491	8,686	8,886	9,090
Brgy.11-B	2,333	2,386	2,441	2,497	2,555
Brgy.12-B	1,031	1,054	1,079	1,104	1,129
Brgy.13-B	524	536	548	561	574
Brgy.14-B	1,442	1,475	1,509	1,544	1,579
Brgy.15-B	3,548	3,629	3,713	3,798	3,885
Brgy.16-B	1,031	1,054	1,079	1,104	1,129
Brgy.17-B	994	1,017	1,040	1,064	1,089
Brgy.18-B	2,248	2,300	2,353	2,407	2,462
Brgy.19-B	38,980	39,877	40,794	41,732	42,692
Brgy.20-B	1,031	1,054	5,883	6,018	6,157

Source: PSA, Region XI

Table – 17E. Population Estimation and Projection of Barangays 21-C – 40-D, Poblacion District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Brgy.21-C	7,478	0.0046	7,650	7,826	8,006	8,190	8,378	8,571	8,768	8,970
Brgy.22-C	6,634	0.0041	6,787	6,943	7,102	7,266	7,433	7,604	7,779	7,958
Brgy.23-C	16,489	0.0101	16,868	17,256	17,653	18,059	18,474	18,899	19,334	19,779
Brgy.24-C	2,602	0.0016	2,662	2,723	2,786	2,850	2,915	2,982	3,051	3,121
Brgy.25-C	1,967	0.0012	2,012	2,059	2,106	2,154	2,204	2,255	2,306	2,359
Brgy.26-C	2,510	0.0015	2,568	2,627	2,687	2,749	2,812	2,877	2,943	3,011
Brgy.27-C	2,152	0.0013	2,201	2,252	2,304	2,357	2,411	2,467	2,523	2,581
Brgy.28-C	2,270	0.0014	2,322	2,376	2,430	2,486	2,543	2,602	2,662	2,723
Brgy.29-C	1,557	0.0010	1,593	1,629	1,667	1,705	1,744	1,785	1,826	1,868
Brgy.30-D	1,608	0.0010	1,645	1,683	1,722	1,761	1,802	1,843	1,885	1,929
Brgy.31-D	8,321	0.0051	8,512	8,708	8,908	9,113	9,323	9,537	9,757	9,981
Brgy.32-D	1,985	0.0012	2,031	2,077	2,125	2,174	2,224	2,275	2,328	2,381
Brgy.33-D	2,033	0.0012	2,080	2,128	2,177	2,227	2,278	2,330	2,384	2,439
Brgy.34-D	1,682	0.0010	1,721	1,760	1,801	1,842	1,885	1,928	1,972	2,018
Brgy.35-D	578	0.0004	591	605	619	633	648	662	678	693
Brgy.36-D	1,581	0.0010	1,617	1,655	1,693	1,732	1,771	1,812	1,854	1,896
Brgy.37-D	6,740	0.0041	6,895	7,054	7,216	7,382	7,552	7,725	7,903	8,085
Brgy.38-D	1,505	0.0009	1,540	1,575	1,611	1,648	1,686	1,725	1,765	1,805
Brgy.39-D	5,143	0.0031	5,261	5,382	5,506	5,633	5,762	5,895	6,030	6,169
Brgy.40-D	2,437	0.0015	2,493	2,550	2,609	2,669	2,730	2,793	2,857	2,923

Source: PSA, Region XI

Table – 17F. Population Estimation and Projection of Barangays 21-C – 40-D, Poblacion District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Brgy.21-C	9,176	9,387	9,603	9,824	10,050
Brgy.22-C	8,141	8,328	8,519	8,715	8,916
Brgy.23-C	20,234	20,699	21,175	21,662	22,160
Brgy.24-C	3,193	3,266	3,341	3,418	3,497
Brgy.25-C	2,414	2,469	2,526	2,584	2,644
Brgy.26-C	3,080	3,151	3,223	3,297	3,373
Brgy.27-C	2,641	2,701	2,764	2,827	2,892
Brgy.28-C	2,786	2,850	2,915	2,982	3,051
Brgy.29-C	1,911	1,955	1,999	2,045	2,093
Brgy.30-D	1,973	2,019	2,065	2,112	2,161
Brgy.31-D	10,211	10,446	10,686	10,932	11,183
Brgy.32-D	2,436	2,492	2,549	2,608	2,668
Brgy.33-D	2,495	2,552	2,611	2,671	2,732
Brgy.34-D	2,064	2,111	2,160	2,210	2,261
Brgy.35-D	709	726	742	759	777
Brgy.36-D	1,940	1,985	2,030	2,077	2,125
Brgy.37-D	8,271	8,461	8,655	8,855	9,058
Brgy.38-D	1,847	1,889	1,933	1,977	2,023
Brgy.39-D	6,311	6,456	6,605	6,757	6,912
Brgy.40-D	2,990	3,059	3,130	3,202	3,275

Source: PSA, Region XI

Table – 17G. Population Estimation and Projection of Barangays Agdao Proper – Wilfredo Aquino, Agdao District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Second District	592,250	0.3627	605,872	619,807	634,062	648,646	663,565	678,827	694,440	710,412
Agdao District	102,267	0.0626	104,619	107,025	109,487	112,005	114,581	117,217	119,913	122,671
Agdao Proper	8,897	0.0054	9,102	9,311	9,525	9,744	9,968	10,198	10,432	10,672
Centro (San Juan)	15,586	0.0095	15,944	16,311	16,686	17,070	17,463	17,864	18,275	18,696
Gov. P. Bangoy	8,816	0.0054	9,019	9,226	9,438	9,655	9,878	10,105	10,337	10,575
Gov. V. Duterte	8,904	0.0055	9,109	9,318	9,533	9,752	9,976	10,206	10,440	10,680
Kap. T. Monte- verde Sr.	5,716	0.0035	5,847	5,982	6,120	6,260	6,404	6,552	6,702	6,856
Lapu Lapu	11,738	0.0072	12,008	12,284	12,567	12,856	13,151	13,454	13,763	14,080
Leon Garcia Sr.	13,652	0.0084	13,966	14,287	14,616	14,952	15,296	15,648	16,008	16,376
Rafael Castillo	5,783	0.0035	5,916	6,052	6,191	6,334	6,479	6,628	6,781	6,937
San Antonio	10,306	0.0063	10,543	10,786	11,034	11,287	11,547	11,813	12,084	12,362
Ubalde	2,966	0.0018	3,034	3,104	3,175	3,248	3,323	3,400	3,478	3,558
Wilfredo Aquino	9,903	0.0061	10,131	10,364	10,602	10,846	11,095	11,351	11,612	11,879

Source: PSA, Region XI

Table – 17H. Population Estimation and Projection of Barangays Agdao Proper – Wilfredo Aquino, Agdao District, Davao City, 2024 - 2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Second District	726,751	743,467	760,566	778,059	795,955
Agdao District	125,492	128,378	131,331	134,352	137,442
Agdao Proper	10,918	11,169	11,426	11,688	11,957
Centro (San Juan)	19,126	19,566	20,016	20,476	20,947
Gov. P. Bangoy	10,818	11,067	11,321	11,582	11,848
Gov. V. Duterte	10,926	11,177	11,434	11,697	11,967
Kap. T. Monteverde Sr.	7,014	7,175	7,340	7,509	7,682
Lapu Lapu	14,404	14,735	15,074	15,421	15,775
Leon Garcia Sr.	16,752	17,138	17,532	17,935	18,348
Rafael Castillo	7,096	7,260	7,427	7,597	7,772
San Antonio	12,647	12,937	13,235	13,539	13,851
Ubalde	3,640	3,723	3,809	3,897	3,986
Wilfredo Aquino	12,152	12,431	12,717	13,010	13,309

Source: PSA, Region XI

Table – 17I. Population Estimation and Projection of Barangays Acacia – Waan, Buhangin District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Buhangin Dis- trict	293,118	0.1795	299,860	306,756	313,812	321,030	328,413	335,967	343,694	351,599
Acacia	3,262	0.0020	3,337	3,414	3,492	3,573	3,655	3,739	3,825	3,913
Buhangin	65,461	0.0401	66,967	68,507	70,082	71,694	73,343	75,030	76,756	78,521
Cabantian	43,758	0.0268	44,764	45,794	46,847	47,925	49,027	50,155	51,308	52,488
Callawa	3,553	0.0022	3,635	3,718	3,804	3,891	3,981	4,072	4,166	4,262
Communal	16,740	0.0103	17,125	17,519	17,922	18,334	18,756	19,187	19,628	20,080
Indangan	14,867	0.0091	15,209	15,559	15,917	16,283	16,657	17,040	17,432	17,833
Mandug	13,594	0.0083	13,907	14,227	14,554	14,888	15,231	15,581	15,940	16,306
Pampang	14,381	0.0088	14,712	15,050	15,396	15,750	16,113	16,483	16,862	17,250
Angliongto	13,539	0.0083	13,850	14,169	14,495	14,828	15,169	15,518	15,875	16,240
Vicente Hizon, Sr.	11,265	0.0069	11,524	11,789	12,060	12,338	12,621	12,912	13,209	13,513
Sasa	52,386	0.0321	53,591	54,823	56,084	57,374	58,694	60,044	61,425	62,838
Tigatto	36,387	0.0223	37,224	38,080	38,956	39,852	40,768	41,706	42,665	43,647
Waan	3,925	0.0024	4,015	4,108	4,202	4,299	4,398	4,499	4,602	4,708

Source: PSA, Region XI

Table – 17J. Population Estimation and Projection of Barangays Acacia – Waan, Buhangin District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Buhangin District	359,686	367,958	376,422	385,079	393,936
Acacia	4,003	4,095	4,189	4,285	4,384
Buhangin	80,327	82,175	84,065	85,998	87,976
Cabantian	53,696	54,931	56,194	57,486	58,809
Callawa	4,360	4,460	4,563	4,668	4,775
Communal	20,542	21,014	21,497	21,992	22,498
Indangan	18,243	18,663	19,092	19,531	19,981
Mandug	16,681	17,065	17,457	17,859	18,270
Pampanga	17,647	18,053	18,468	18,893	19,327
Angliongto	16,614	16,996	17,387	17,787	18,196
Vicente Hizon, Sr.	13,823	14,141	14,466	14,799	15,140
Sasa	64,283	65,761	67,274	68,821	70,404
Tigatto	44,651	45,678	46,728	47,803	48,902
Waan	4,816	4,927	5,040	5,156	5,275

Source: PSA, Region XI

Table – 17K. Population Estimation and Projection of Barangays Alejandro Navarro – Tibungco, Bunawan District and Barangays Colosas – Mapula, Paquibato District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Bunawan District	152,102	0.0931	155,600	159,179	162,840	166,586	170,417	174,337	178,346	182,448
Alejandro Navarro (Lasang)	10,223	0.0063	10,458	10,699	10,945	11,196	11,454	11,717	11,987	12,263
Bunawan (Pob.)	23,495	0.0144	24,035	24,588	25,154	25,732	26,324	26,930	27,549	28,183
Gatungan	1,190	0.0007	1,217	1,245	1,274	1,303	1,333	1,364	1,395	1,427
Ilang	24,947	0.0153	25,521	26,108	26,708	27,323	27,951	28,594	29,251	29,924
Mahayag	6,307	0.0039	6,452	6,600	6,752	6,908	7,066	7,229	7,395	7,565
Mudiang	2,937	0.0018	3,005	3,074	3,144	3,217	3,291	3,366	3,444	3,523
Panacan	35,806	0.0219	36,630	37,472	38,334	39,216	40,118	41,040	41,984	42,950
San Isidro (Licanan)	5,333	0.0033	5,456	5,581	5,710	5,841	5,975	6,113	6,253	6,397
Tibungco	41,864	0.0256	42,827	43,812	44,820	45,850	46,905	47,984	49,087	50,216
Paquibato District	44,763	0.0274	45,793	46,846	47,923	49,025	50,153	51,307	52,487	53,694
Colosas	4,731	0.0029	4,840	4,951	5,065	5,181	5,301	5,423	5,547	5,675
Fatima (Benawang)	3,502	0.0021	3,583	3,665	3,749	3,835	3,924	4,014	4,106	4,201
Lumiad	1,553	0.0010	1,589	1,625	1,663	1,701	1,740	1,780	1,821	1,863
Mabuhay	1,062	0.0007	1,086	1,111	1,137	1,163	1,190	1,217	1,245	1,274
Malabog	10,816	0.0066	11,065	11,319	11,580	11,846	12,118	12,397	12,682	12,974
Mapula	2,876	0.0018	2,942	3,010	3,079	3,150	3,222	3,296	3,372	3,450

Source: PSA, Region XI

Table – 17L. Population Estimation and Projection of Barangays Alejandro Navarro – Tibungco, Bunawan District and Barangays Colosas – Mapula, Paquibato District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Bunawan District	186,645	190,938	195,329	199,822	204,418
Alejandra Navarro (Lasang)	12,545	12,833	13,128	13,430	13,739
Bunawan (Pob.)	28,831	29,494	30,172	30,866	31,576
Gatungan	1,460	1,494	1,528	1,563	1,599
Ilang	30,613	31,317	32,037	32,774	33,528
Mahayag	7,739	7,917	8,099	8,286	8,476
Mudiang	3,604	3,687	3,772	3,858	3,947
Panacan	43,938	44,948	45,982	47,040	48,121
San Isidro (Licanan)	6,544	6,695	6,849	7,006	7,167
Tibungco	51,371	52,553	53,762	54,998	56,263
Paquibato District	54,929	56,192	195,329	199,822	204,418
Colosas	5,805	5,939	13,128	13,430	13,739
Fatima (Benowang)	4,297	4,396	30,172	30,866	31,576
Lumiad	1,906	1,950	1,528	1,563	1,599
Mabuhay	1,303	1,333	32,037	32,774	33,528
Malabog	13,272	13,578	8,099	8,286	8,476
Mapula	3,529	3,610	3,772	3,858	3,947

Source: PSA, Region XI

Table – 17M. Population Estimation and Projection of Barangays Pañalum – Tapak, Paquibato District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Pañalum	1,831	0.0011	1,873	1,916	1,960	2,005	2,051	2,099	2,147	2,196
Pandaitan	4,037	0.0025	4,130	4,225	4,322	4,421	4,523	4,627	4,734	4,842
Paquibato (Pob.)	2,495	0.0015	2,552	2,611	2,671	2,733	2,795	2,860	2,925	2,993
Paradise Embak	2,654	0.0016	2,715	2,777	2,841	2,907	2,974	3,042	3,112	3,184
Salapawan	2,282	0.0014	2,334	2,388	2,443	2,499	2,557	2,616	2,676	2,737
Sumimao	1,666	0.0010	1,704	1,744	1,784	1,825	1,867	1,910	1,953	1,998
Tapak	5,258	0.0032	5,379	5,503	5,629	5,759	5,891	6,027	6,165	6,307

Source: PSA, Region XI

Table – 17N. Population Estimation and Projection of Barangays Pañalum – Tapak, Paquibato District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Pañalum	2,247	2,299	2,351	2,405	2,461
Pandaitan	4,954	5,068	5,184	5,304	5,426
Paquibato (Pob.)	3,062	3,132	3,204	3,278	3,353
Paradise Embak	3,257	3,332	3,408	3,487	3,567
Salapawan	2,800	2,865	2,931	2,998	3,067
Sumimao	2,044	2,091	2,139	2,189	2,239
Tapak	6,452	6,601	6,752	6,908	7,066

Source: PSA, Region XI

Table – 170. Population Estimation and Projection of Barangays Baguio Proper – Wines, Baguio District and Barangays Biao Joaquin – Inayangan, Calinan District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Third District	448,005	0.2743	458,309	468,850	479,634	490,665	501,951	513,496	525,306	537,388
Baguio District	33,873	0.0207	34,652	35,449	36,264	37,098	37,952	38,825	39,718	40,631
Baguio	4,655	0.0029	4,762	4,872	4,984	5,098	5,216	5,335	5,458	5,584
Cadalian	2,446	0.0015	2,502	2,560	2,619	2,679	2,741	2,804	2,868	2,934
Carmen	2,156	0.0013	2,206	2,256	2,308	2,361	2,416	2,471	2,528	2,586
Gumalang	5,081	0.0031	5,198	5,317	5,440	5,565	5,693	5,824	5,958	6,095
Malagos	6,524	0.0040	6,674	6,828	6,985	7,145	7,310	7,478	7,650	7,826
Tambobong	5,993	0.0037	6,131	6,272	6,416	6,564	6,715	6,869	7,027	7,189
Tawan-Tawan	3,889	0.0024	3,978	4,070	4,164	4,259	4,357	4,458	4,560	4,665
Wines	3,129	0.0019	3,201	3,275	3,350	3,427	3,506	3,586	3,669	3,753
Calinan District	92,075	0.0564	94,193	96,359	98,575	100,843	103,162	105,535	107,962	110,445
Biao Joaquin	2,289	0.0014	2,342	2,396	2,451	2,507	2,565	2,624	2,684	2,746
Calinan	23,052	0.0141	23,582	24,125	24,679	25,247	25,828	26,422	27,030	27,651
Cawayan	2,295	0.0014	2,348	2,402	2,457	2,514	2,571	2,630	2,691	2,753
Dacudao	4,418	0.0027	4,520	4,624	4,730	4,839	4,950	5,064	5,180	5,299
Dalagdag	934	0.0006	955	977	1,000	1,023	1,046	1,071	1,095	1,120
Dominga	1,607	0.0010	1,644	1,682	1,720	1,760	1,801	1,842	1,884	1,928
Inayangan	4,832	0.0030	4,943	5,057	5,173	5,292	5,414	5,538	5,666	5,796

Source: PSA, Region XI

Table – 17P. Population Estimation and Projection of Barangays Baguio Proper – Wines, Baguio District and Barangays Biao Joaquin – Inayangan, Calinan District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Third District	549,748	562,392	575,327	588,560	602,096
Baguio District	41,566	42,522	43,500	44,500	45,524
Baguio	5,712	5,844	5,978	6,115	6,256
Cadalian	3,001	3,071	3,141	3,213	3,287
Carmen	2,646	2,706	2,769	2,832	2,898
Gumalang	6,235	6,378	6,525	6,675	6,829
Malagos	8,006	8,190	8,378	8,571	8,768
Tambobong	7,354	7,523	7,696	7,873	8,054
Tawan-Tawan	4,772	4,882	4,994	5,109	5,227
Wines	3,840	3,928	4,018	4,111	4,205
Calinan District	112,985	115,584	118,243	120,962	123,744
Biao Joaquin	2,809	2,873	2,940	3,007	3,076
Calinan	28,287	28,938	29,603	30,284	30,981
Cawayan	2,816	2,881	2,947	3,015	3,084
Dacudao	5,421	5,546	5,674	5,804	5,938
Dalagdag	1,146	1,172	1,199	1,227	1,255
Dominga	1,972	2,017	2,064	2,111	2,160
Inayangan	5,929	6,066	6,205	6,348	6,494

Source: PSA, Region XI

Table – 17Q. Population Estimation and Projection of Barangays Lacson – Wangan, Calinan District and Barangays Baganihan – Marilog Proper, Marilog District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Lacson	5,873	0.0036	6,008	6,146	6,288	6,432	6,580	6,732	6,886	7,045
Lamanan	4,538	0.0028	4,642	4,749	4,858	4,970	5,084	5,201	5,321	5,443
Lampianao	845	0.0005	864	884	905	925	947	969	991	1,014
Megkawayan	3,015	0.0018	3,084	3,155	3,228	3,302	3,378	3,456	3,535	3,617
Pangyan	2,035	0.0012	2,082	2,130	2,179	2,229	2,280	2,332	2,386	2,441
Riverside	5,450	0.0033	5,575	5,704	5,835	5,969	6,106	6,247	6,390	6,537
Saloy	2,112	0.0013	2,161	2,210	2,261	2,313	2,366	2,421	2,476	2,533
Sirib	5,199	0.0032	5,319	5,441	5,566	5,694	5,825	5,959	6,096	6,236
Subasta	3,641	0.0022	3,725	3,810	3,898	3,988	4,079	4,173	4,269	4,367
Talomo River	6,846	0.0042	7,003	7,165	7,329	7,498	7,670	7,847	8,027	8,212
Tamayong	7,273	0.0045	7,440	7,611	7,786	7,966	8,149	8,336	8,528	8,724
Wangan	5,821	0.0036	5,955	6,092	6,232	6,375	6,522	6,672	6,825	6,982
Marilog District	52,201	0.0320	53,402	54,630	55,886	57,172	58,487	59,832	61,208	62,616
Baganihan	1,295	0.0008	1,325	1,355	1,386	1,418	1,451	1,484	1,518	1,553
Bantol	2,324	0.0014	2,377	2,432	2,488	2,545	2,604	2,664	2,725	2,788
Buda	1,885	0.0012	1,928	1,973	2,018	2,064	2,112	2,161	2,210	2,261
Dalag	1,864	0.0011	1,907	1,951	1,996	2,041	2,088	2,136	2,186	2,236
Datu Salumay	2,232	0.0014	2,283	2,336	2,390	2,445	2,501	2,558	2,617	2,677
Gumitan	1,756	0.0011	1,796	1,838	1,880	1,923	1,967	2,013	2,059	2,106
Magsaysay	2,425	0.0015	2,481	2,538	2,596	2,656	2,717	2,779	2,843	2,909
Malamba	4,864	0.0030	4,976	5,090	5,207	5,327	5,450	5,575	5,703	5,834
Marilog	16,188	0.0099	16,560	16,941	17,331	17,729	18,137	18,554	18,981	19,418

Source: PSA, Region XI

Table – 17R. Population Estimation and Projection of Barangays Lacson – Wangan, Calinan District and Barangays Baganihan – Marilog Proper, Marilog District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Lacson	7,207	7,373	7,542	7,716	7,893
Lamanan	5,569	5,697	5,828	5,962	6,099
Lampianao	1,037	1,061	1,085	1,110	1,136
Megkawayan	3,700	3,785	3,872	3,961	4,052
Pangyan	2,497	2,555	2,613	2,673	2,735
Riverside	6,688	6,842	6,999	7,160	7,325
Saloy	2,592	2,651	2,712	2,775	2,838
Sirib	6,380	6,526	6,677	6,830	6,987
Subasta	4,468	4,571	4,676	4,783	4,893
Talomo River	8,401	8,594	8,792	8,994	9,201
Tamayong	8,925	9,130	9,340	9,555	9,775
Wangan	7,143	7,307	7,475	7,647	7,823
Marilog District	64,056	65,529	67,036	68,578	70,156
Baganihan	1,589	1,626	1,663	1,701	1,740
Bantol	2,852	2,917	2,984	3,053	3,123
Buda	2,313	2,366	2,421	2,476	2,533
Dalag	2,287	2,340	2,394	2,449	2,505
Datu Salumay	2,739	2,802	2,866	2,932	3,000
Gumitan	2,155	2,204	2,255	2,307	2,360
Magsaysay	2,976	3,044	3,114	3,186	3,259
Malamba	5,969	6,106	6,246	6,390	6,537
Marilog	19,864	20,321	20,789	21,267	21,756

Source: PSA, Region XI

Table – 17S. Population Estimation and Projection of Barangays Salaysay – Tamugan, Marilog District and Barangays Daliao – Tagluno, Toril District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participation Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Salaysay	4,431	0.0027	4,533	4,637	4,744	4,853	4,965	5,079	5,196	5,315
Suawan (Tuli)	4,586	0.0028	4,691	4,799	4,910	5,023	5,138	5,256	5,377	5,501
Tamugan	8,351	0.0051	8,543	8,740	8,941	9,146	9,357	9,572	9,792	10,017
Toril District	148,522	0.0910	151,938	155,433	159,008	162,665	166,406	170,233	174,149	178,154
Alambre	2,010	0.0012	2,056	2,104	2,152	2,201	2,252	2,304	2,357	2,411
Atan-Awe	1,119	0.0007	1,145	1,171	1,198	1,226	1,254	1,283	1,312	1,342
Bangkass Heights	7,671	0.0047	7,847	8,028	8,213	8,401	8,595	8,792	8,995	9,201
Baracatan	2,895	0.0018	2,962	3,030	3,099	3,171	3,244	3,318	3,395	3,473
Bato	10,007	0.0061	10,237	10,473	10,713	10,960	11,212	11,470	11,734	12,004
Bayabas	2,989	0.0018	3,058	3,128	3,200	3,274	3,349	3,426	3,505	3,585
Binugao	6,934	0.0042	7,093	7,257	7,424	7,594	7,769	7,948	8,130	8,317
Camansi	1,189	0.0007	1,216	1,244	1,273	1,302	1,332	1,363	1,394	1,426
Catigan	3,044	0.0019	3,114	3,186	3,259	3,334	3,411	3,489	3,569	3,651
Crossing Bayabas	11,490	0.0070	11,754	12,025	12,301	12,584	12,874	13,170	13,473	13,782
Daliao	21,124	0.0129	21,610	22,107	22,615	23,135	23,668	24,212	24,769	25,339
Daliaon Plantation	3,214	0.0020	3,288	3,364	3,441	3,520	3,601	3,684	3,769	3,855
Eden	2,385	0.0015	2,440	2,496	2,553	2,612	2,672	2,734	2,797	2,861
Kilate	1,309	0.0008	1,339	1,370	1,401	1,434	1,467	1,500	1,535	1,570
Lizada	20,112	0.0123	20,575	21,048	21,532	22,027	22,534	23,052	23,582	24,125
Lubogan	12,156	0.0074	12,436	12,722	13,014	13,314	13,620	13,933	14,253	14,581
Marapangi	6,889	0.0042	7,047	7,210	7,375	7,545	7,719	7,896	8,078	8,263
Mulig	2,477	0.0015	2,534	2,592	2,652	2,713	2,775	2,839	2,904	2,971
Sibulan	2,479	0.0015	2,536	2,594	2,654	2,715	2,778	2,841	2,907	2,974
Sirawan	7,140	0.0044	7,304	7,472	7,644	7,820	8,000	8,184	8,372	8,565
Tagluno	1,391	0.0009	1,423	1,456	1,489	1,523	1,558	1,594	1,631	1,669

Source: PSA, Region XI

Table – 17T. Population Estimation and Projection of Barangays Salaysay – Tamugan, Marilog District and Barangays Daliao – Tagluno, Toril District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Salaysay	5,437	5,562	5,690	5,821	5,955
Suawan (Tuli)	5,627	5,757	5,889	6,025	6,163
Tamugan	10,248	10,483	10,724	10,971	11,223
Toril District	182,252	186,443	190,732	195,118	199,606
Alambre	2,466	2,523	2,581	2,641	2,701
Atan-Awe	1,373	1,405	1,437	1,470	1,504
Bangkas Heights	9,413	9,630	9,851	10,078	10,309
Baracatan	3,552	3,634	3,718	3,803	3,891
Bato	12,280	12,562	12,851	13,147	13,449
Bayabas	3,668	3,752	3,838	3,927	4,017
Binugao	8,509	8,704	8,905	9,109	9,319
Camansi	1,459	1,493	1,527	1,562	1,598
Catigan	3,735	3,821	3,909	3,999	4,091
Crossing Bayabas	14,099	14,424	14,755	15,095	15,442
Daliao	25,921	26,517	27,127	27,751	28,390
Daliaon Plantation	3,944	4,035	4,127	4,222	4,319
Eden	2,927	2,994	3,063	3,133	3,205
Kilate	1,606	1,643	1,681	1,720	1,759
Lizada	24,679	25,247	25,828	26,422	27,030
Lubogan	14,917	15,260	15,611	15,970	16,337
Marapangi	8,454	8,648	8,847	9,050	9,258
Mulig	3,181	3,254	3,329	3,406	3,484
Sibulan	3,042	3,112	3,184	3,257	3,332
Sirawan	8,762	8,963	9,169	9,380	9,596
Tagluno	1,707	1,746	1,786	1,827	1,869

Source: PSA, Region XI

Table – 17U. Population Projection of Barangays Tagurano-Tungkalan, Toril District and Barangays Angalan-Ula, Tugbok District, Davao City, 2015-2023

Barangay	2015 (Base Year)	Participa- tion Rate (PR)	Projected Population							
			2016	2017	2018	2019	2020	2021	2022	2023
Tagurano	1,230	0.0008	1,258	1,287	1,317	1,347	1,378	1,410	1,442	1,475
Tibuloy	2,218	0.0014	2,269	2,321	2,375	2,429	2,485	2,542	2,601	2,661
Toril (Pob.)	12,140	0.0074	12,419	12,705	12,997	13,296	13,602	13,915	14,235	14,562
Tungkalan	2,910	0.0018	2,977	3,045	3,115	3,187	3,260	3,335	3,412	3,491
Tugbok Dis- trict	121,334	0.0743	124,125	126,980	129,900	132,888	135,944	139,071	142,270	145,542
Angalan	2,475	0.0015	2,532	2,590	2,650	2,711	2,773	2,837	2,902	2,969
Bago Oshiro	11,932	0.0073	12,206	12,487	12,774	13,068	13,369	13,676	13,991	14,313
Balengaeng	2,086	0.0013	2,134	2,183	2,233	2,285	2,337	2,391	2,446	2,502
Biao Escuela	3,294	0.0020	3,370	3,447	3,527	3,608	3,691	3,776	3,862	3,951
Biao Gui- anga	3,664	0.0022	3,748	3,834	3,923	4,013	4,105	4,200	4,296	4,395
Los Amigos	9,722	0.0060	9,946	10,174	10,408	10,648	10,893	11,143	11,399	11,662
Manambu- lan	2,661	0.0016	2,722	2,785	2,849	2,914	2,981	3,050	3,120	3,192
Manuel Gui- anga	6,436	0.0039	6,584	6,735	6,890	7,049	7,211	7,377	7,546	7,720
Matina Biao	1,811	0.0011	1,853	1,895	1,939	1,983	2,029	2,076	2,123	2,172
Mintal	13,227	0.0081	13,531	13,842	14,161	14,487	14,820	15,161	15,509	15,866
New Carmen	2,626	0.0016	2,686	2,748	2,811	2,876	2,942	3,010	3,079	3,150
New Valen- cia	1,679	0.0010	1,718	1,757	1,798	1,839	1,881	1,924	1,969	2,014
Santo Niño	20,103	0.0123	20,565	21,038	21,522	22,017	22,524	23,042	23,572	24,114
Tacunan	12,773	0.0078	13,067	13,367	13,675	13,989	14,311	14,640	14,977	15,321
Tagakpan	4,208	0.0026	4,305	4,404	4,505	4,609	4,715	4,823	4,934	5,048
Talandang	3,392	0.0021	3,470	3,550	3,631	3,715	3,800	3,888	3,977	4,069
Tugbok	15,115	0.0093	15,463	15,818	16,182	16,554	16,935	17,325	17,723	18,131
Ula	4,130	0.0025	4,225	4,322	4,422	4,523	4,627	4,734	4,843	4,954

Source: PSA, Region XI

Table – 17V. Population Projection of Barangays Tagurano-Tungkalan, Toril District and Barangays Angalan-Ula, Tugbok District, Davao City, 2024-2028

Barangay	Projected Population				
	2024	2025	2026	2027	2028
Tagurano	1,509	1,544	1,580	1,616	1,653
Tibuloy	2,722	2,784	2,848	2,914	2,981
Toril (Pob.)	14,897	15,240	15,590	15,949	16,316
Tungkalan	3,571	3,653	3,737	3,823	3,911
Tugbok District	148,889	152,314	155,817	159,401	163,067
Angalan	3,037	3,107	3,178	3,251	3,326
Bago Oshiro	14,642	14,979	15,323	15,675	16,036
Balengaeng	2,560	2,619	2,679	2,740	2,803
Biao Escuela	4,042	4,135	4,230	4,327	4,427
Biao Guianga	4,496	4,600	4,705	4,814	4,924
Los Amigos	11,930	12,204	12,485	12,772	13,066
Manambulan	3,265	3,340	3,417	3,496	3,576
Manuel Guianga	7,898	8,079	8,265	8,455	8,650
Matina Biao	2,222	2,273	2,326	2,379	2,434
Mintal	16,231	16,604	16,986	17,377	17,776
New Carmen	3,222	3,296	3,372	3,450	3,529
New Valencia	2,060	2,108	2,156	2,206	2,256
Santo Niño	24,668	25,236	25,816	26,410	27,017
Tacunan	15,674	16,034	16,403	16,780	17,166
Tagakpan	5,164	5,282	5,404	5,528	5,655
Talandang	4,162	4,258	4,356	4,456	4,559
Tugbok	18,548	18,974	19,411	19,857	20,314
Ula	5,068	5,184	5,304	5,426	5,551

Source: PSA, Region XI

Projected School-Age Population, Labor Force, and Dependent Population

Household population is projected to reach 2,180,461 by 2028. With the continuous growth, the school-going population, aged three (3) to 21 years old, is expected to increase to 846,284 while labor force, aged 15 years old and above, would spur to 1,513,918. Dependent old and young population would also grow to 753,963 by 2028.

Table – 18A. Estimated and Projected School-Age Population, Labor Force, and Dependent Population, Davao City, 2015-2022

Grouping	2015 (Base Year)	Participation Rate	Projected Population						
			2016	2017	2018	2019	2020	2021	2022
School-going Population	629,699	0.38	644,182	658,998	674,155	689,661	705,523	721,750	738,350
Pre-School	134,824	0.21	137,925	141,097	144,342	147,662	151,059	154,533	158,087
Elementary	196,430	0.31	200,948	205,570	210,298	215,135	220,083	225,145	230,323
Secondary	126,156	0.20	129,058	132,026	135,063	138,169	141,347	144,598	147,924
Tertiary	172,289	0.27	176,252	180,305	184,452	188,695	193,035	197,475	202,017
Labor Force	1,126,469	0.69	1,152,378	1,178,882	1,205,997	1,233,735	1,262,111	1,291,139	1,320,835
Dependent	561,005	0.35	573,908	587,108	600,611	614,426	628,557	643,014	657,803
Young (0-14)	495,538	0.88	506,935	518,595	530,523	542,725	555,207	567,977	581,040
Old (65 and over)	65,467	0.11	66,973	68,513	70,089	71,701	73,350	75,037	76,763
Household Population	1,622,427	1	1,659,743	1,697,917	1,736,969	1,776,919	1,817,788	1,859,598	1,902,368

Source: PSA, Region XI

Table – 18B. Estimated and Projected School-Age Population, Labor Force, and Dependent Population, Davao City, 2023-2028

Grouping	Projected Population					
	2023	2024	2025	2026	2027	2028
School-going Population	755,332	772,705	790,477	808,658	827,257	846,284
Pre-School	161,723	165,443	169,248	173,141	177,123	181,197
Elementary	235,620	241,040	246,584	252,255	258,057	263,992
Secondary	151,326	154,806	158,367	162,009	165,735	169,547
Tertiary	206,663	211,416	216,279	221,253	226,342	231,548
Labor Force	1,351,215	1,382,292	1,414,085	1,446,609	1,479,881	1,513,918
Dependent	672,933	688,410	704,244	720,441	737,012	753,963
Young (0-14)	594,404	608,076	622,061	636,369	651,005	665,978
Old (65 and over)	78,529	80,335	82,182	84,073	86,006	87,984
Household Population	1,946,123	1,990,884	2,036,673	2,083,517	2,131,438	2,180,461

Source: PSA, Region XI

Population Doubling Time¹²

With the current population growth rate of 2.30%, the city's population is projected to double by 2045 from its actual population of 1,632,991 in 2015. The city will have to consider in its planning process allocation of living and working spaces, improving its services to be able to meet the potential demand.

Life Expectancy

As of 2015, the average life expectancy for males is 68.93 while the average life expectancy for females is 73.03. The lack of willingness to give importance to one's health is among the factors why most males aged 65 years old and above, die younger than females of the same age bracket. This trend is almost similar from two decades ago when the life expectancy of females was higher than their counterparts.

Table – 19. Life Expectancy at Birth

Years	Life Expectancy at Birth		Difference (F-M)
	Male	Female	
2000-2005	65.93	69.53	3.6
2005-2010	67.43	71.53	4.1
2010-2015	68.93	73.03	4.1

Source: PSA, Region XI

¹² Doubling time refers to the length of time a particular population would double its size under a given growth rate.

Physical Features

Geographic Location

Davao City is located in the southeastern part of Mindanao, lying in the grid squares of 6 58' to 7 34' N latitude, and 125 14' to 125 40' E longitude. It is bounded in the north by Davao Province; in the east part by Davao Province and Davao Gulf; in the south by Davao del Sur; and in the west by North Cotabato. Davao City is approximately 946 aerial kilometers or 588 statute miles, southeast of Manila.

Land Area by Barangay

Table 21 shows the land area per barangay distributed in the eleven (11) congressional districts of the City. The largest in terms of land area is the Paquibato District with a size of 65,339.12 hectares followed by Marilog District with an area of 62,886.05 hectares, both located in timberland areas.

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Urban	26,911.88
First District	8,410.65
Poblacion	1,165.61
Brgy. 1-A	15.36
Brgy. 2-A	16.38
Brgy. 3-A	20.78
Brgy. 4-A	23.51
Brgy. 5-A	38.10
Brgy. 6-A	15.00
Brgy. 7-A	22.50
Brgy. 8-A	179.80
Brgy. 9-A	27.50
Brgy. 10-A	28.64
Brgy. 11-B	9.57
Brgy. 12-B	17.54
Brgy. 13-B	11.26
Brgy. 14-B	18.41
Brgy. 15-B	31.54
Brgy. 16-B	5.53
Brgy. 17-B	5.63
Brgy. 18-B	19.80
Brgy. 19-B	362.55
Brgy. 20-B	56.58
Brgy. 21-C	8.56

Source: Geographic Information System, OCPDC, Davao City

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Brgy. 22-C	8.71
Brgy. 23-C	21.31
Brgy. 24-C	7.72
Brgy. 25-C	4.96
Brgy. 26-C	8.05
Brgy. 27-C	30.99
Brgy. 28-C	15.71
Brgy. 29-C	10.20
Brgy. 30-C	23.50
Brgy. 31-D	22.60
Brgy. 32-D	17.90
Brgy. 33-D	7.74
Brgy. 34-D	19.63
Brgy. 35-D	7.00
Brgy. 36-D	6.93
Brgy. 37-D	7.10
Brgy. 38-D	9.00
Brgy. 39-D	12.80
Brgy. 40-D	10.02
Talomo	7,245.04
Bago Aplaya	217.35
Bago Gallera	717.82
Baliok	248.28
Bucana	410.51
Catalunan Grande	1,495.06
Catalunan Pequeño	594.49
Dumoy	530.77
Ma-a	999.38
Matina Aplaya	315.49
Matina Crossing	488.82
Matina Pangi	584.12
Talomo Proper	642.95
Second District	8,183.61
Agdao	530.45
Agdao Proper	38.29
Centro San Juan	43.48
Gov. Paciano Bangoy	81.47
Gov. Vicente Duterte	52.02
Kapt. Tomas Monteverde	19.52
Lapu-Lapu	59.99

Source: Geographic Information System, OCPDC, Davao City

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Leon Garcia	19.03
Rafael Castillo	44.54
San Antonio	89.88
Ubalde	9.98
Wilfredo Aquino	72.26
Buhangin	3,465.85
Angliongto	288.36
Buhangin Proper	672.24
Cabantian	757.62
Hizon	218.66
Sasa	767.66
Tigatto	761.31
Bunawan	4,187.31
Alejandro Navarro	626.58
Bunawan Pob.	769.18
Ilang	570.60
Mahayag	803.81
Panacan	698.12
Tibungco	719.02
Bunawan Pob.	769.18
Ilang	570.60
Mahayag	803.81
Panacan	698.12
Tibungco	719.02
Third District	10,317.62
Baguio	3,632.11
Baguio Proper	848.74
Gumalang	1,572.78
Malagos	1,210.59
Calinan	7,126
Calinan Proper	830.55
Riverside	514.85
Toril	3,005.32
Crossing Bayabas	223.35
Daliao	194.55
Daliaon Plantation	1,036.93
Eden	773.77
Lizada	436.16
Lubogan	208.96

Source: Geographic Information System, OCPDC, Davao City

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Toril Proper	131.60
Tugbok	2,334.79
Los Amigos	445.49
Mintal	752.19
Sto. Niño	147.32
Tugbok Proper	989.79
Rural	191,913.59
First District	1,316.09
Talomo	1,316.09
Langub	853.20
Magtuod	462.89
Second District	73,400.30
Buhangin	5,857.54
Acacia	920.34
Callawa	1,354.75
Communal	584.65
Indangan	1,474.13
Mandug	969.19
Pampanga	117.51
Waan	436.97
Bunawan	2,203.64
Gatungan	887.01
Mudiang	686.30
San Isidro	630.33
Paquibato	65,339.12
Colosas	13,201.08
Fatima	3,093.73
Lumiad	3,206.09
Mabuhay	1,421.06
Malabog	8,268.79
Mapula	8,957.47
Pañalum	1,131.41
Pandaitan	4,078.59
Paquibato Proper	3,511.00
Paradise Embac	2,743.47
Salapawan	2,779.91
Sumimao	2,539.79
Tapak	10,406.75

Source: Geographic Information System, OCPDC, Davao City

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Third District	117,197.20
Baguio District	4,430.38
Cadalian	628.15
Carmen	806.01
Tambobong	1,230.05
Tawan-Tawan	974.39
Wines	791.78
Calinan	21,220.65
Biao Joaquin	551.62
Cawayan	805.45
Dacudao	1,247.05
Dalagdag	535.12
Dominga	602.11
Inayangan	1,420.54
Lacson	896.96
Lamanan	2,094.88
Lampiano	935.54
Megkawayan	1,844.95
Pangyan	708.97
Saloy	2,291.36
Sirib	2,152.65
Subasta	1,215.88
Talomo River	810.91
Tamayong	1,925.20
Wangan	1,181.46
Marilog	62,886.05
Baganihan	1,062.62
Bantol	1,403.54
Buda	4,292.76
Dalaglumot	3,183.86
Datu Salumay	2,107.50
Gumitan	5,727.67
Magsaysay	5,830.15
Malamba	11,074.12
Marilog Proper	18,031.84
Salaysay	4,467.69
Suawan	4,571.98
Tamugan	1,132.32

Source: Geographic Information System, OCPDC, Davao City

Table – 20. Land Area, By Barangay

Barangay	Land Area (Ha)
Toril	16,036.40
Alambre	327.41
Atan-Awe	330.88
Bangkas Heights	247.27
Baracatan	1,131.61
Bato	851.61
Bayabas	1,201.36
Binugao	483.32
Camansi	363.18
Catigan	2,401.89
Kilate	644.90
Marapangi	703.76
Mulig	998.88
Sibulan	1,699.90
Sirawan	963.70
Tagluno	564.16
Tagurano	505.28
Tibuloy	833.64
Tungkalan	1,783.65
Tugbok	12,623.72
Angalan	481.31
Bago Oshiro	637.28
Balengaeng	478.85
Biao Escuela	1,284.20
Biao Guianga	500.91
Manambulan	768.50
Manuel Guianga	901.32
Matina Biao	1,578.20
New Carmen	1,107.90
New Valencia	954.12
Tacunan	906.70
Tagakpan	749.73
Talandang	1,333.40
Ula	941.30

Source: Geographic Information System, OCPDC, Davao City

Topography

A. Elevation

Davao City is rich in resources from ridge to reef. Topographically, a big portion of Davao City is mountainous, characterized by extensive mountain ranges with uneven distribution of plateaus and lowlands.

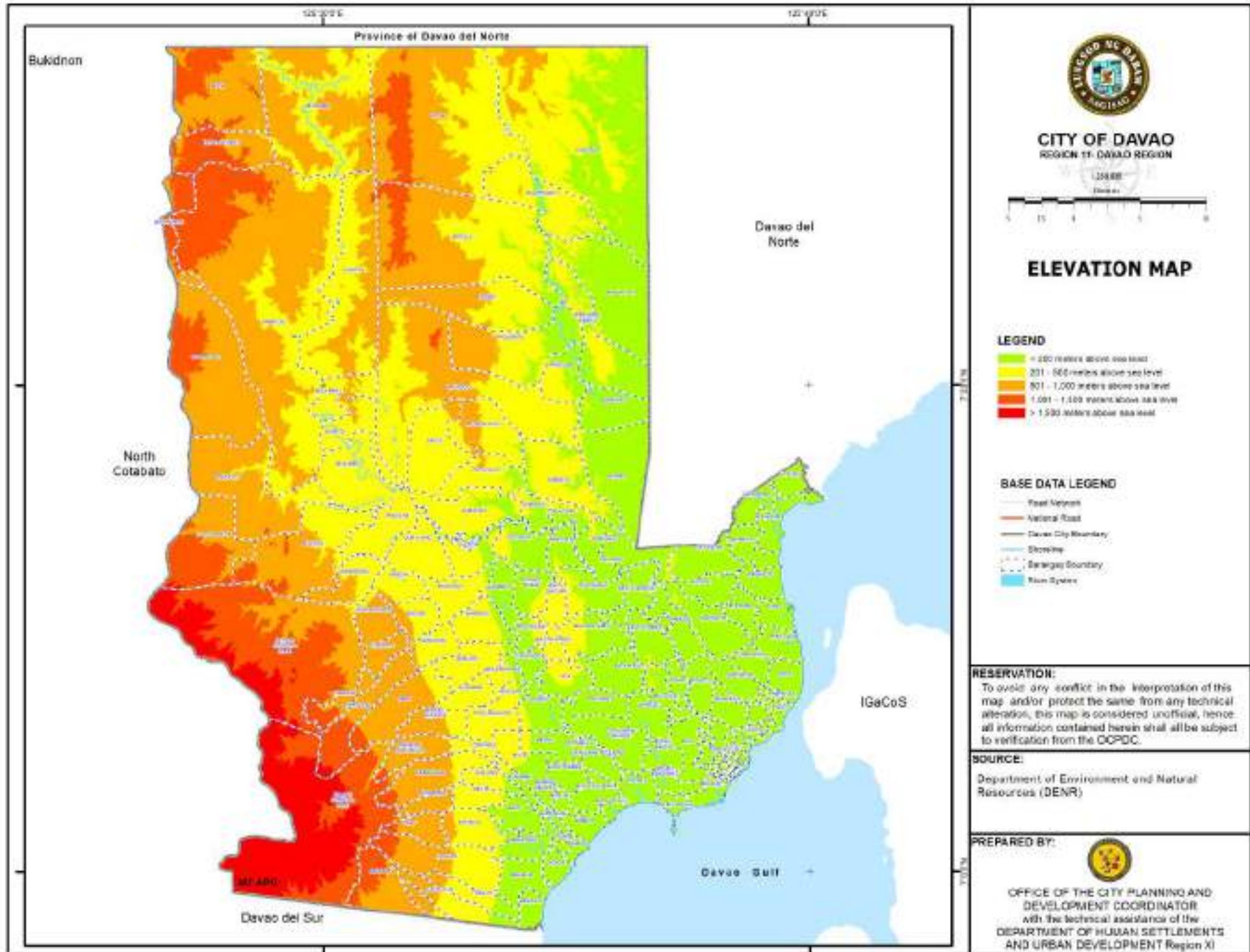
Under Table 21, four percent (4%) of the city's total land area is mountainous, which has an elevation of over 1,500 meters above mean sea level (mamsl). Ten percent (10%) are also steep that are located within the bounds of 1,001 to 1,500 mamsl. The City also has areas with slightly high elevation of 501 to 1,000 mamsl, which span across 66,475.32 hectares or 27% of the City's total land area. A large portion of the City, on the other hand, have lower elevation of below 500 mamsl, which span to a total of 143,060.23 hectares (Map 1.2, see next page).

Table – 21. Elevation, Davao City

Elevation Category (mamsl)	Area (Ha)
<200	67,871.06
201-500	75,189.17
501-1,000	66,475.32
1,001-1,500	24,370.26
>1,500	10,094.59
Total	244,000.39

Source: Department of Environment and Natural Resources, Region XI

Map 1.2. Elevation, Davao City



B. Slope

Table 23 shows that 26% of the city's total land area has a slope range of 50% and above. These slopes are very steep, which are often excessively eroded, shallow, rough, and dry for cultivation. The Bureau of Soils and Water Management (BSWM) cites that slopes with over 50% in range are suitable for forest or pasture, provided that there shall be definite restrictions to protect the forest and wildlife. Twenty three percent (23%) of the city's territory, meanwhile, have a slope range of 30-50%. These are steep slopes that are also suitable for forest and pasture. The BSWM explains that these slopes can be as well developed into plantation crops for exotic fruit trees and other permanent crops.

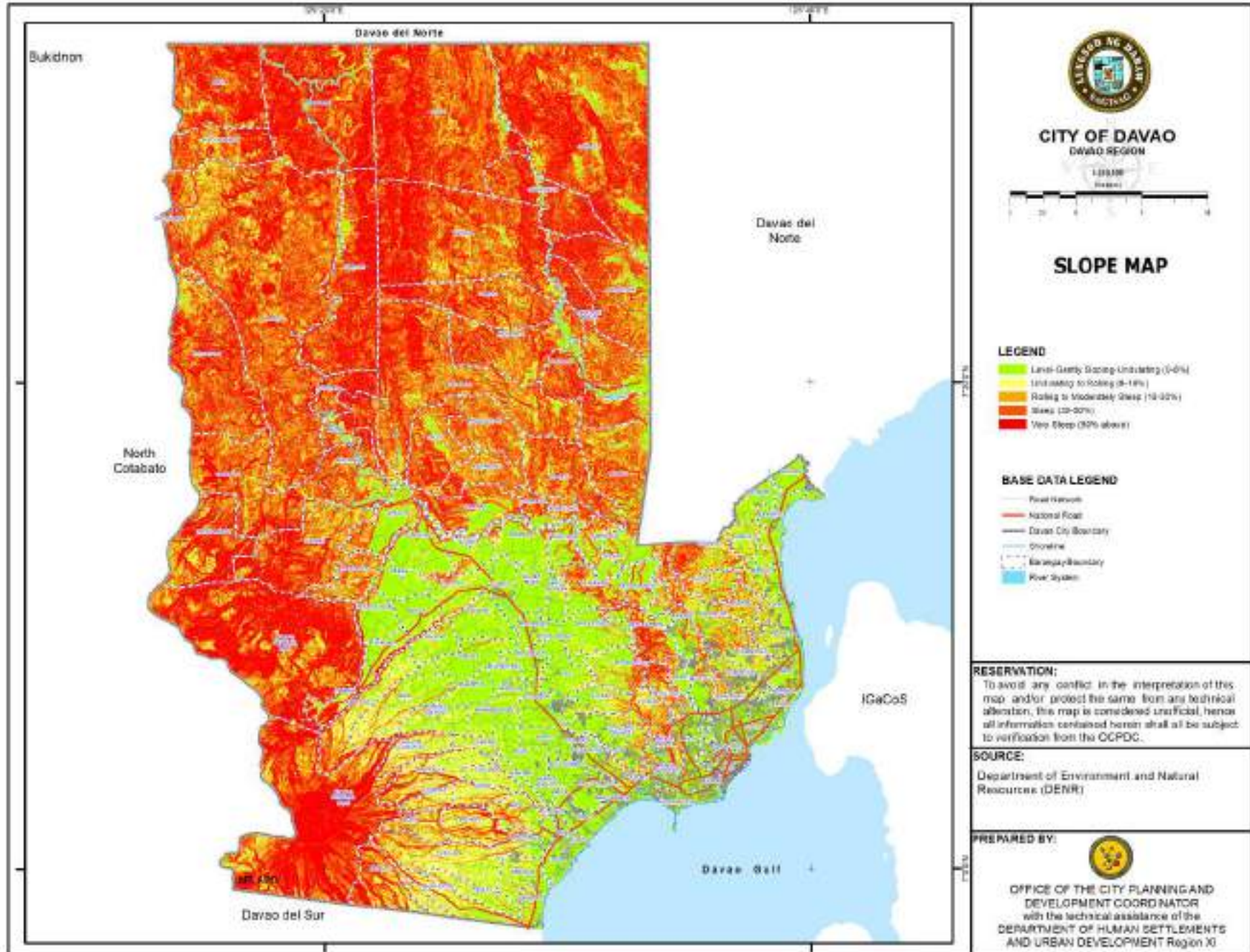
At least 22% of the city's land area has a slope range of zero (0) to eight percent (8%). These are level-gently sloping-undulating slopes. The BSWM cites these as good lands fit for crop cultivation. Upland plains and river terrace cover slopes that range zero (0) to three percent (3%), which are either irrigated or rain-fed and considered as prime agricultural lands. The rest of the city's territory have rolling slopes or rolling to moderately steep slopes. Slopes that range between eight (8) to 18% have to be cultivated with caution as these need carefully planned soil conservation measures to prevent soil erosion. Slopes ranging from 18 to 30% are located in rolling areas, which are best suited for pasture or forest. Cultivation of crops are allowed, provided that proper mitigating measures shall be pursued in rolling areas (Map 1.3, see next page).

Table 22. Slope, Davao City

Slope Category	Area (Ha)
Level-Gently Sloping-Undulating (0-8%)	54,680.14
Rolling to Moderately Steep (18-30%)	37,303.87
Steep (30-50%)	55,861.31
Undulating to Rolling (8-18%)	33,643.64
Very Steep (50% above)	62,511.08
Total	244,000.39

Source: Department of Environment and Natural Resources, Region XI

Map 1.3. Slope, Davao City



Climate/Rainfall

Davao City falls under the Type IV climate of the Coronas Climate Classification System of the Philippine Atmospheric, Geophysical and Astronomical Sciences Administration (PAGASA). This climate type connotes that the rainfall is almost evenly distributed throughout the year.

In this section, the provincial data of Davao del Sur shows climate trends in baseline period, from 1971 to 2000, and projected changes for the years 2036 to 2065 as bared in the Climate Change in the Philippines publication of PAGASA. A Representative Concentration Pathway (RCP) scenario of 8.5 is integrated in the climate trends to easily determine what would be the climate whenever there are high levels of Greenhouse Gas Emissions. The simulation of worst case scenario provides an image of what mitigating measures to pursue and establish to prevent high levels of greenhouse gas emissions.

Table 24 (see next page) shows the projected temperature data of Davao del Sur. By 2036 to 2065, Davao del Sur's temperature is projected to slightly increase to 30°C from 27.8°C particularly in the months of March, April, and May. On the other hand, Table – 23 (see next page) bared the projected rainfall data of Davao del Sur. The amount of rainfall is projected to increase by 584.4 millimeters (mm) by 2036 to 2065 from 494.1 mm in base-line period of 1971 to 2000, specifically during *Habagat* or Southwest Monsoon season from June to August. The Southwest Monsoon is expected to bring heavy rainfall, which usually occurs in the months of June to October.

Table 23a. Seasonal Temperature Increases in 2036-2065 Under High-Range Emission Scenario, Davao del Sur

Province	Observed (in °C) 1971 – 2000				Scenario	Range	Projected (in °C) 2036-2065							
	DJF	MAM	JJA	SON			DJF (Dec-Jan-Feb)		MAM (Mar-Apr-May)		JJA (Jun-Jul-Aug)		SON (Sept-Oct-Nov)	
							% Change	Projected Value	% Change	Projected Value	% Change	Projected Value	% Change	Projected Value
Davao del Sur	26.9	27.8	26.9	27.1	High Emission (RCP 8.5)	Lower Bound	1.3	28.2	1.4	29.2	1.3	28.2	1.3	28.4
						Median	1.6	28.5	1.7	29.5	1.6	28.5	1.6	28.7
						Upper Bound	2.2	29.1	2.3	30.1	2.3	29.2	2.2	29.3

Source: PAGASA Final Observed Climate Trends and Projected Climate Change in the Philippines, 2018

Table – 23b. Seasonal Rainfall Change in 2036-2065 Under High-Range Emission Scenario, Davao del Sur

Province	Observed (in mm) 1971 – 2000				Scenario	Range	Projected (in mm) 2036-2065							
	DJF	MAM	JJA	SON			DJF (Dec-Jan-Feb)		MAM (Mar-Apr-May)		JJA (Jun-Jul-Aug)		SON (Sept-Oct-Nov)	
							% Change	Projected Value	% Change	Projected Value	% Change	Projected Value	% Change	Projected Value
Davao del Sur	288.1	347.1	494.1	442.3	High Emission (RCP 8.5)	Lower Bound	-8.4	263.9	-6.4	325	-7.1	459.2	-14.4	378.5
						Median	-0.9	285.6	2.1	354.2	4.4	515.6	-10.1	397.8
						Upper Bound	16	334.2	15.4	400.4	18.3	584.4	8.2	478.4

Source: PAGASA Final Observed Climate Trends and Projected Climate Change in the Philippines, 2018

Basic Soil Type

The quality of the soil in Davao City differs in terms of color, texture, depth, drainage, relief, permeability, and fertility. Thirty-three percent (33%) of the city’s total land area are mountain soils, which are generally shallow and stony (Table 24). Another soil type, which is dominant in Davao City, is *Tugbok clay*, which comprises 32% of the city’s total land area. These are situated within undulating to gently rising areas that have igneous rock andesite as source of parent material. All these soil types, as shown in the table below, are determined through the Land Resource Information System (LARIS): These are further categorized into three (3) soil groups: 1.) soils in the plains and valleys; 2.) soils in the intermediate uplands; and soils in the hills and mountains.

Table - 24. Basic Soil Type, Davao City

Topographic/Soil Type	Source of Parent Material	Dominant Relief	Area (Has)
A. Plains and Valley			
San Miguel Silty Clay Loam	Alluvium from weathering of igneous	Nearly flat to level	2,882.50
Matina Clay Loam	Alluvium from limestones, shale and sandstones	Flat to gently undulating	6,649.75
B. Intermediate Upland			
Tugbok Clay	Igneous rock andesite	Undulating to gently	78,545.85
Faraon Clay	Soft coralline limestone	Undulating to gently rolling	5,151.17
Cabantian Clay	Soft shale with mixtures of weathered gravels and pebbles	Undulating to hilly	19,072.62
C. Hills and Mountains			
Camansa Sandy Clay Loam	Shale and sandstones with weathered gravel and sand	Hilly, mountains	49,859.43
Mountain soils, undifferentiated	Different kinds of igneous and metamorphic rocks	These soils are generally shallow and stony with excessive drainage; inaccessible and not suited for agriculture	80,316.62
Cabangan Clay Loam	-	-	1,522.06
Total	-	-	244,000

Source: Bureau of Soils and Water Management, Region XI

Geologic Study

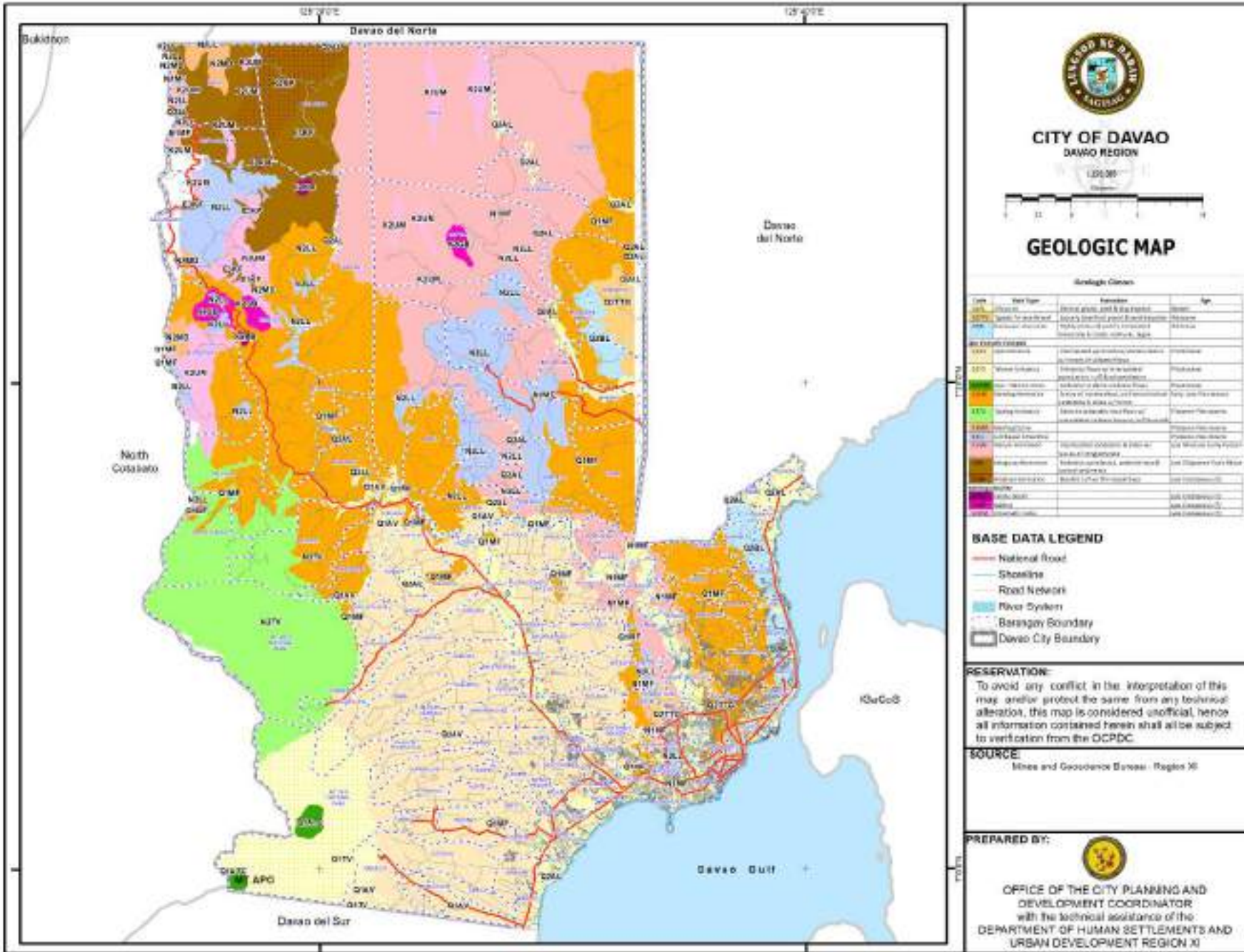
Davao City's geologic strata are largely composed of Apo volcanic complex rocks (Table 25). Of the city's total land area, 23% are layered with Mandog formation rocks, which mostly span in Marilog and Paquibato Districts (Map 1.4, see next page). These rocks are formed through a series of well-consolidated sandstones and shales, which already existed in the early to late Pleistocene period. Another dominant rock type in the city is the Apo volcanic rock, which has lenses of volcanic flows that dates back from the Pleistocene era. Apo volcanic rocks cover 20% of the city's total land area. These rocks are largely situated in Toril District (17,315.41 hectares) and Tugbok District (10,430.24 hectares). Masuhi formation rocks, on the other hand, comprise 19% of the city's total land area. Most of these rocks are located in Paquibato District (36,183.03 hectares). These are interbedded sandstones and shales with lenses of conglomerate, which existed in the late Miocene and early Pliocene years. The rest of the city have alluvium, Tigatto terrace gravel, Bunawan limestone, Talomo volcanics, Apo-Talomo cores, Tipolog volcanics, Marilog dacite, Lumbayao limestone, Kalagutay formation, Nilabsan formation, Kalafu basalt, gabbro, and ultramafic rocks.

Table – 25. Geologic Study, Davao City

Rock Type	Area (Ha)
Alluvium	18,593.70
Tigatto Terrace Gravel	2,846.45
Bunawan Limestone	3,606.02
<i>Apo Volcanic Complex</i>	
Apo Volcanics	47,596.02
Talomo Volcanics	10,122.46
Apo-Talomo Cores	620.56
Mandog Formation	55,896.83
Tipolog Volcanics	18,820.53
Marilog Dacite	1,580.73
Lumbayao Limestone	12,881.87
Masuhi Formation	46,984.37
Kalagutay Formation	9,837.38
Nilabsan Formation	4,128.75
<i>Marilog Opiolite</i>	
Kalafu Basalt	220.82
Gabbro	1,283.28
Ultramafic Rocks	6,453.96
Total	244,000.39

Source: Mines and Geosciences Bureau, Region XI

Map 1.4. Geological, Davao City



Flood Prone Areas

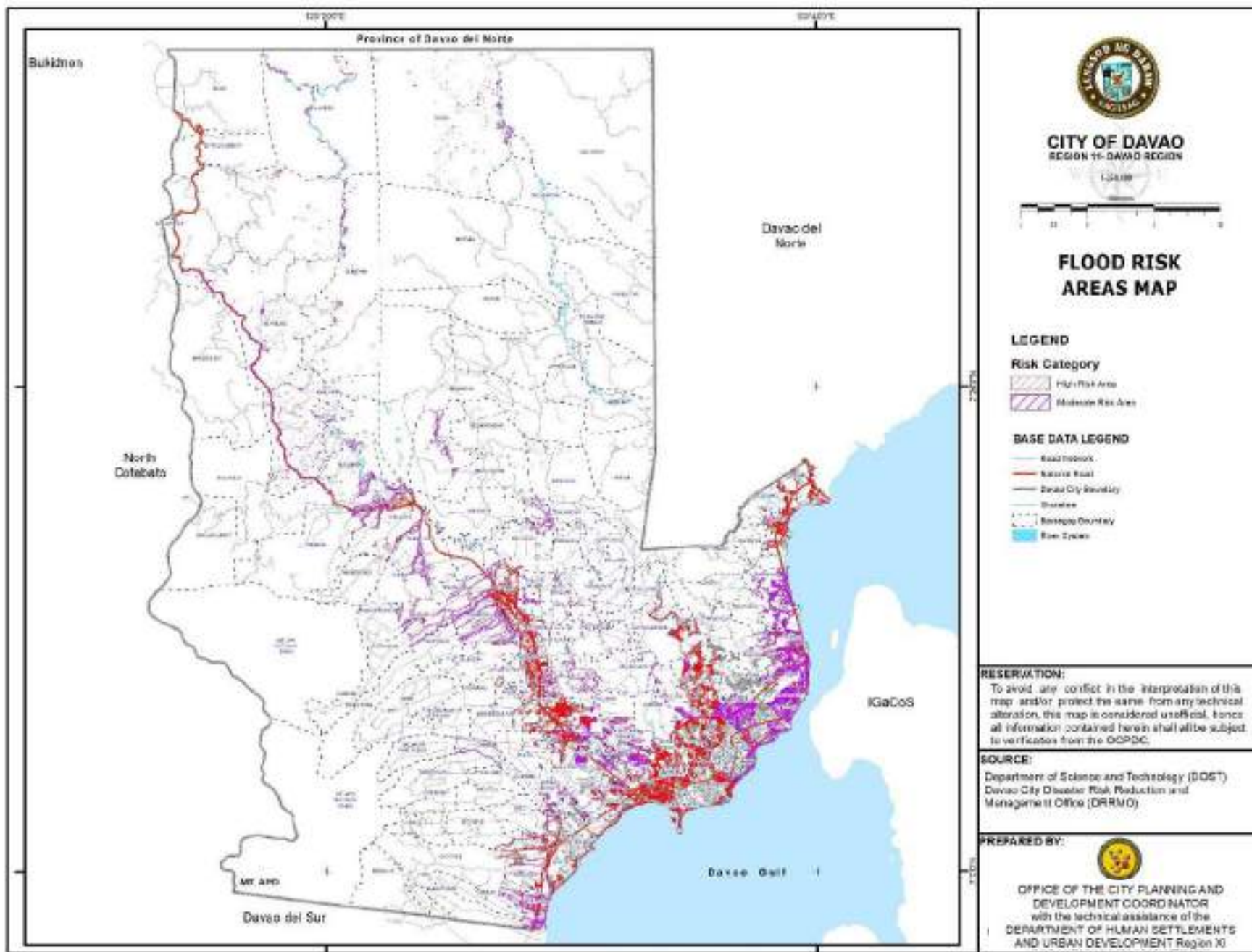
Davao City is situated in the southern part of Davao Region, facing the Davao Gulf. It also has eight (8) major watersheds.

Noting the city's location within this vulnerable topography, almost all of the barangays in Davao City are susceptible to flood except Barangays Baganihan, Buda, Datu Salumay, and Magsaysay in Marilog District.

Seventy-eight percent (78%), or 142 barangays are highly susceptible to flood. These barangays are either located near the watersheds or situated in coastal areas. A total of 124 barangays are also vulnerable to flood, based on the results of the Climate Change Vulnerability Assessment (CCVA).

Flood occurrences have been further observed in 100 barangays, including 21 barangays that are classified as high risk areas (Map 1.5, see next page) where about 20% of the population in a certain village is heavily affected by flood and are in need of immediate assistance. These high risk areas immediately experience flooding during heavy rainfall with a flood depth of more than one (1) meter.

Map 1.5. Flood Risk Areas, Davao City



Landslide Prone Areas

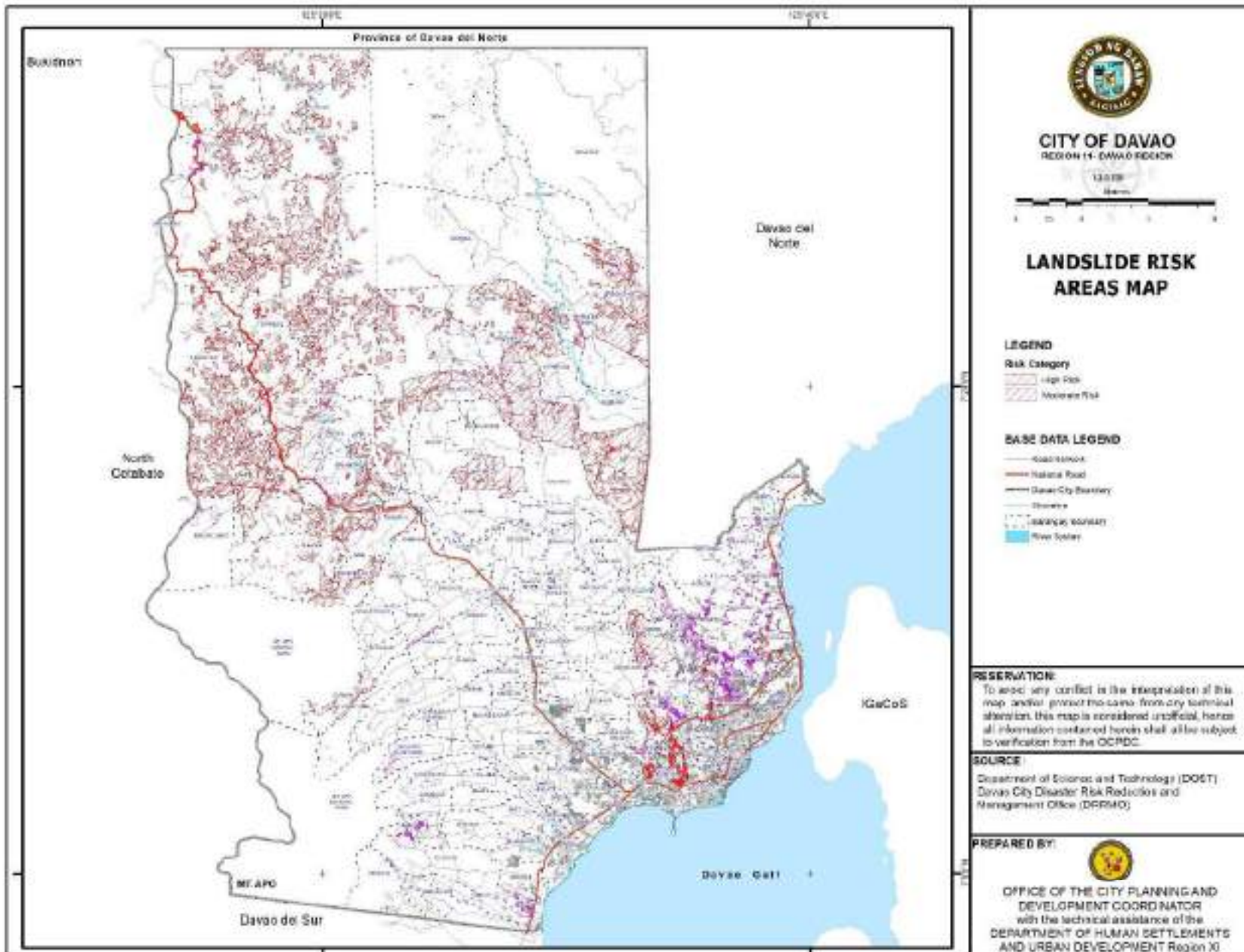
The city is bounded by areas with elevation of less than 200 meters above mean sea level (mamsl) to over 1,500 mamsl. There are also predominance of very steep slopes that cover 26% of the city's total land area.

This location, thus, makes it vulnerable to landslide, which involve the movement of a mass of rock, debris or earth down a slope. Almost all of the areas in Davao City are susceptible to landslide except some portions of Barangays Baganihan, Buda, Datu Salumay, Marilog Proper, and Magsaysay in Marilog District.

Some 50% of the city's barangays are highly susceptible to landslide but notably in the barangays of Gumitan, Malabog, and Eden, which are situated in higher elevation areas. A total of 92 barangays are also classified as both moderately and highly vulnerable to landslide, based on the results of CCVA.

The results of the Disaster Risk Assessment (DRA) have identified 31 barangays with occurrences of landslide, including three (3) barangays that are classified as high risk areas to flood (Map 1.6, see next page).

Map 1.6. Land Slide Risk Areas, Davao City



Hazard Profile

Inventory of Hazards

Davao City is susceptible to flood, landslide, storm surge, and liquefaction. The city has also two (2) active fault systems, namely: Central Davao Fault System and Colosas Fault System. Under Table – 26 (see next page), almost all areas in the city are susceptible to landslide except some portions of Barangays Baganihan, Buda, Datu Salumay, Marilog Proper, and Magsaysay in Marilog District. A total of 178 barangays, 89 barangays, and 99 barangays have low, moderate, and high susceptibility to landslide, respectively. The Mines and Geosciences Bureau (MGB) – XI cites the barangays with low susceptibility to landslide as those located in gently sloping areas. Those with moderate susceptibility to landslide, on the other hand, are situated in areas with moderately steep slopes. The barangays with high susceptibility to landslide are located in areas with very steep slopes.

Another hazard is flood, which affects most of the barangays in the city except Barangays Baganihan, Buda, Datu Salumay, and Magsaysay in Marilog District. Of the city's total number of barangays, 78% are highly susceptible and 123 barangays and 100 barangays have low and moderate susceptibility to flood, respectively. Those with high susceptibility are those areas that experience flood heights of more than one (1) meter, which take place in more than three (3) days of continuous rain. Barangays with moderate susceptibility suffer flood heights of 0.5 to (1) meter in one (1) to three (3) days. Flood is experienced in less than a day of rain with flood depth of less than 0.5 meter in barangays that have low susceptibility to flood.

Noting the presence of rivers, creeks, and other waterways, some parts of the city are susceptible to liquefaction. A total of 45 barangays, 47 barangays, and 77 barangays have low, moderate, and high susceptibility to liquefaction, respectively. Liquefaction occurs in loose to moderately saturated granular soils, where the space between the individual particles is completely filled with water.

The city is also susceptible to storm surge with those barangays facing Davao Gulf. A total of 45 barangays are susceptible to storm surge with a height of four (4) to five (5) meters. These areas have a potential to experience severe damage to coastal communities, which may occur in 24 hours. A storm surge with a height of two (2) to three (3) meters may also happen in 55 barangays. These barangays may experience a very high risk within 36 hours.

The city is also vulnerable to land movements with the presence of active fault systems. The Central Davao Fault System includes Dacudao Fault, Lacson Fault, New Carmen Fault, Pangyan-Biao Escuela Fault and Tamugan Fault, which are situated in 15 barangays, 18 barangays, seven (7) barangays, 15 barangays, and 11 barangays, respectively. Another active fault system is the Colosas Fault System in Colosas, Paquibato District.

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Flood	MGB	1:10,000	Vector File/PRS92-Phil. V	Very high to high	1 meter and above	Areas likely to experience flood heights of greater than 1 meter and/or flood duration of more than 3 days. These areas are immediately flooded during heavy rains; include landforms of topographic lows such as active river channels, abandoned river channels and areas along river banks; and prone to flashfloods.	1-A, 2-A, 5-A, 8-A, 19-B, 21-C, 22-C, 23-C, 27-C, 31-D, 37-D, 39-D, 40-D, Rafael Castillo, Centro, Gov. Vicente Duterte, Leon Garcia Sr., Lapu – Lapu, San Antonio, Ubalde, Baguio, Cadalian, Carmen, Gumalang, Malagos, Tambobong, Tawan-Tawan, Wines, Acacia, Buhangin, Cabantian, Callawa, Communal, Indangan, Mandug, Pampanga, Sasa, Tigatto, Waan, A. Angliongto, V. Hizon, Bunawan, Gatungan, Ilang, Lasang, Mahayag, Mudiang, Panacan, San Isidro, Tibungco, Biao Joaquin, Calinan, Cawayan, Dacudao, Dalagdag, Dominga, Inayangan, Lacson, Lamanan, Lampianao, Megkawayan, Pangyan, Riverside, Saloy, Sirib, Subasta, Talomo River, Tamayong, Wangan, Bantol, Salaysay, Suawan, Tamugan, Colosas, Lumiad, Mabuhay, Malabog, Mapula, Pandaitan, Pañalum, Paquibato, Paradise Embac, Salapawan, Sumimao, Tapak, Bago Aplaya, Bago Gallera, Bucana, Catalunan Grande, Catalunan Pequeño, Dumoy, Langub, Ma-a, Magtuod, Matina Aplaya, Matina Crossing, Matina Pangi, Talomo, Alambre, Atan-Awe, Bankas Heights, Baracatan, Bato, Bayabas, Crossing Bayabas, Binugao, Camansi, Catigan, Daliaon Plantation, Eden, Kilate, Lizada, Lubogan, Marapangi, Mulig, Sibulan, Sirawan, Tagluno, Tagurano, Tibuloy, Tungkalan, Angalan, Bago Oshiro, Balengaeng, Biao Escuela, Biao Guianga, Matina Biao, Los Amigos, Manambulan, Manuel Guianga, Mintal, New Carmen, New Valencia, Sto. Niño, Tacunan, Tagakpan, Tugbok, and Ula

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Flood	MGB	1:10,000	Vector File/PRS92-Phil. V	Moderate	0.5 meter to 1 meter	Areas likely to experience flood heights of 0.5 to 1 meter and/or flood duration of 1 to 3 days. These areas are subject to widespread inundation during prolonged and extensive heavy rainfall or extreme weather condition. Fluvial terraces, alluvial fans, and infilled valleys are areas moderately subjected to flooding.	15-B, 31-D, Agdao Proper, Wilfredo Aquino, Paciano Bangoy, Centro, Gov. Vicente Duterte, Leon Garcia Sr., Lapu – Lapu, Tomas Monteverde, San Antonio, Baguio, Cadalian, Gumalang, Malagos, Tawan-Tawan, Wines, Buhangin, Cabantian, Callawa, Communal, Mandug, Pampanga, Sasa, Tigatto, Waan, A. Angliongto, V. Hizon, Bunawan, Ilang, Lasang, Mahayag, Panacan, San Isidro, Tibungco, Biao Joaquin, Calinan, Cawayan, Dacudao, Dalagdag, Dominga, Lacson, Lamanan, Lampianao, Pangyan, Riverside, Saloy, Sirib, Talomo River, Tamayong, Wangan, Malamba, Suawan, Tamugan, Colosas, Fatima, Pandaitan, Paradise Embac, Sumimao, Tapak, Bago Aplaya, Bago Gallera, Baliok, Bucana, Catalunan Grande, Catalunan Pequeño, Dumoy, Langub, Ma-a, Matina Aplaya, Matina Crossing, Matina Pangí, Talomo, Bankas Heights, Crossing Bayabas, Binugao, Daliao, Liza-da, Marapangi, Mulig, Sirawan, Angalan, Bago Oshiro, Balengaeng, Biao Escuela, Biao Guianga, Matina Biao, Los Amigos, Manambulan, Manuel Guianga, Mintal, New Carmen, New Valencia, Sto. Niño, Tacunan, Tagakpan, Talandang, Tugbok, and Ula
Flood	MGB	1:10,000	Vector File/PRS92-Phil. V	Low	0.5 meter	Areas likely to experience flood heights of less than 0.5 meter and/or flood duration of less than 1 day. These areas include low hills and gentle slopes.	1-A, 2-A, 3-A, 4-A, 5-A, 6-A, 7-A, 8-A, 9-A, 10-A, 11-B, 12-B, 13-B, 14-B, 15-B, 16-B, 17-B, 18-B, 19-B, 20-B, 21-C, 22-C, 23-C, 24-C, 25-C, 26-C, 27-C, 28-C, 29-C, 30-D, 31-D, 32-D, 33-D, 34-D, 35-D, 36-D, 37-D, 38-D, 39-D, Agdao Proper, Wilfredo Aquino, Paciano Bangoy

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Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Flood	MGB	1:10,000	Vector File/PRS92-Phil. V	Low	0.5 meter	Areas likely to experience flood heights of less than 0.5 meter and/or flood duration of less than 1 day. These areas include low hills and gentle slopes.	Rafael Castillo, Centro, Gov. Vicente Duterte, Leon Garcia Sr., Lapu – Lapu, Tomas Monteverde, San Antonio, Ubalde, Baguio, Malagos, Acacia, Buhangin, Cabantian, Callawa, Communal, Indangan, Mandug, Pampanga, Sasa, Tigatto, A. Angliongto, V. Hizon, Bunawan, Gatungan, Ilang, Lasang, Mahayag, Mudiang, Panacan, San Isidro, Tibungco, Biao Joaquin, Calinan, Cawayan, Dacudao, Dominga, Lacson, Lamanan, Lampianao, Pangyan, Riverside, Sirib, Subasta, Talomo River, Wangan, Pandaitan, Bago Aplaya, Bago Gallera, Baliok, Bucana, Catalunan Grande, Catalunan Pequeño, Dumoy, Ma-a, Matina Aplaya, Matina Crossing, Talomo, Bankas Heights, Bato, Crossing Bayabas, Binugao, Catigan, Daliao, Lizada, Lubogan, Marapangi, Sirawan, Toril, Bago Oshiro, Biao Guianga, Matina Biao, Los Amigos, Manambulan, Mintal, New Carmen, New Valencia, Sto. Niño, Tacunan, Talandang, Tugbok, and Ula
Land-slide	MGB	1:10,000	Vector File/ PRS92-Phil. V	Very high to high	-	Areas usually with steep to very steep slopes and underlain by weak materials. Recent landslides, escarpments and tension cracks are present. Human initiated effects could be an aggravating factor.	19-B, Acacia, Alambre, Atan-awe, Baganihan, Baguio, Bantol, Baracata, Bato, Bayabas, Biao Escuela, Biao Joaquin, Binugao, Buda, Buhangin, Cabantian, Cadalian, Calinan, Callawa, Camansi, Carmen, Catalunan Grande, Catigan, Cawayan, Colosas, Communal, Dacudao, Dalag Lumot, Dalagdag, Daliao Plantation, Datu Salumay, Dominga, Eden, Fatima, Gatungan, Gumalang, Gumitan, Ilang, Inayangan, Indangan, Kilate, Lacson, Lamanan, Lampianao, Langub, Lumiad, Ma-a, Mabuhay, Mag-saysay

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Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Land-slide	MGB	1:10,000	Vector File/ PRS92-Phil. V	Very high to high	-	Areas usually with steep to very steep slopes and underlain by weak materials. Recent landslides, escarpments and tension cracks are present. Human initiated effects could be an aggravating factor. Also, areas with numerous old/inactive landslide	Magtuod, Mahayag, Malabog, Malagos, Malamba, Manambulan, Mandug, Manuel Guianga, Mapula, Marapangi, Marilog, Matina Biao, Matina Crossing, Matina Pangi, Megkawayan, Mudiang, Mulig, New Carmen, New Valencia, Pañalum, Panacan, Pandaitan, Pangyan, Paquibato, Paradise Embac, Salapawan, Salaysay, Saloy, San Isidro, Sasa, Sibulan, Sirib, Suawan, Sumimao, Tagluno, Tagurano, Talandang, Talomo, Talomo River, Tamayong, Tambobong, Tamugan, Tapak, Tawan-Tawan, Tibuloy, Tibungco, Tigatto, Tungkalan, Waan and Wines
Land-slide	MGB	1:10,000	Vector File/ PRS92-Phil. V	Moderate	-	Areas with moderately steep slopes. Soil creep and other indications for possible landslide occurrence are present.	A. Angliongto, Acacia, Atan-Awe, Baganihan, Bantol, Baracatan, Bato, Bayabas, Biao Joaquin, Binugao, Buda, Buhangin, Bunawan, Cabantian, Calinan, Callawa, Camansi, Carmen, Catalunan Grande, Catigan, Colosas, Communal, Dacudao Dalag Lumot, Dalagdag, Daliaon Plantation, Datu Salumay, Dominga, Eden, Fatima, Gatungan, Gumalang, Gumitan, Ilang, Inayangan, Indangan, Lacson, Lamanan and Lampianao
Land-slide	MGB	1:10,000	Vector File/ PRS92-Phil. V	Low	-	Gently sloping areas with no identified landslides	10-A, 11-B, 12-B, 13-B, 14-B, 15-B, 16-B, 17-B, 18-B, 19-B, 1-A, 20-B, 21-C, 22-C, 23-C, 24-C, 25-C, 26-C, 27-C, 28-C, 29-C, 2-A, 30-D, 31-D, 32-D, 33-D, 34-D, 35-D, 36-D, 37-D, 38-D, 39-D, 3-A, 40-D, 4-A, 5-A, 6-A, 7-A, 8-A, 9-A, Angliongto, Acacia, Agdao Proper, Alambre, Angalan, Atan-Awe, Bago Aplaya, Bago Gallera, Bago Oshiro, Baguio, Balengaeng, Baliok, Bankas Heights, Bantol, Baracatan, Bato, Bayabas, Biao Escuela, Biao Guianga, Biao Joaquin, Binugao, Bucana, Buda, Buhangin, Bunawan, Cabantian

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Land-slide	MGB	1:10,000	Vector File/ PRS92-Phil. V	Low	-	Gently sloping areas with no identified landslides	Cadalian, Calinan, Callawa, Camansi, Carmen, Catalunan Grande, Catalunan Pequeño, Catigan, Cawayan, Centro, Colosas, Communal, Crossing Bayabas, Dacudao, Dalagdag, Daliao, Daliaon Plantation, Dominga, Dumoy, Eden, Fatima, Gatungan, Gov. Vicente Duterte, Gumalang, Gumitan, Ilang, Inayangan, Indangan, Kilate, Lacson, Lamanan, Lampianao, Langub, Lapu-Lapu, Lasang, Leon Garcia Sr., Lizada, Los Amigos, Lubogan, Lumiad, Ma-a, Mabuhay, Magsaysay, Magtuod, Mahayag, Malabog, Malagos, Malamba, Manambulan, Mandug, Manuel Guianga, Mapula, Marapangi, Marilog, Matina Aplaya, Matina Biao, Matina Crossing, Matina Pangi, Megkawayan, Mintal, Mudiang, Mulig, New Carmen, New Valencia, Pañalum, Paciano Bangoy, Pampanga, Panacan Pandaitan, Pangyan, Paquibato, Paradise Embac Rafael Castillo, Riverside, Salapawan, Salaysay, Saloy, San Antonio, San Isidro, Sasa, Sirawan, Sirib, Sto. Niño, Suawan, Subasta, Sumimao, Tacunan, Tagakpan, Tagluno, Tagurano, Talandang, Talomo, Talomo River, Tamayong, Tambobong, Tamugan, Tapak, Tawan-Tawan, Tibuloy, Tibungco, Tigatto, Tomas Monteverde, Toril, Tugbok, Tungkalan, Ubalde, Ula, V. Hizon, Waan, Wangan, Wilfredo Aquino, and Wines

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Storm Surge	DOST	-	Vector File/ PRS92-Phil. V	4 meters to 5 meters and above	-	Severe damage to coastal communities may occur due to storm surge that is expected within 24 hours or is already happening	10-A, 11-B, 12-B, 13-B, 14-B, 18-B, 19-B, 20-B, 2-A, 30-D, 3-A, 4-A, 5-A, 6-A, 7-A, 8-A, 9-A , A. Angliongto, Bago Aplaya, Bago Gallera, Binugao, Bucana, Bunawan, Daliao, Dumoy, Ilang, Lapu – Lapu, Lasang, Lizada, Ma-a, Mahayag, Matina Aplaya, Matina Crossing Paciano Bangoy, Pampanga, Panacan, Rafael Castillo, San Antonio, Sasa, Sirawan, Talomo, Tibungco, Ubalde, V. Hizon, and Wilfredo Aquino
Storm Surge	DOST	-	Vector File/ PRS92-Phil. V	3 meters to 2 meters	-	High to very high risk storm surge may occur and is expected to impact coastal communities within 36 hours.	10-A, 11-B, 13-B, 14-B, 15-B, 16-B, 17-B, 18-B, 19-B, 1-A, 26-C, 27-C, 28-C, 29-C, 2-A, 30-D, 31-D, 32-D, 33-D, 34-D, 35-D, 36-D, 37-D, 38-D, 39-D, 3-A, 40-D, 4-A, 5-A, A. Angliongto, Agdao Proper, Bago Aplaya, Binugao, Bucana, Bunawan, Daliao, Dumoy, Gov. Vicente Duterte, Ilang, Lapu – Lapu, Lasang, Leon Garcia Sr., Lizada, Ma-a, Mahayag, Matina Aplaya, Matina Crossing, Paciano Bangoy, Pampanga, Panacan, Rafael Castillo, San Antonio, Sasa, Sirawan, Talomo, Tibungco, Tomas Monteverde, Ubalde, V. Hizon, and Wilfredo Aquino
Liquefaction	PHIVOLCS-DOST	-	Vector File/ PRS92-Phil. V	High	-	To occur in loose to moderately saturated granular soils (such as sand), that is, soils in which the space between the individual particles is completely filled with water	10-A, 11-B, 12-B, 13-B, 14-B, 15-B, 16-B, 17-B, 19-B, 1-A, 21-C, 22-C, 23-C, 24-C, 27-C, 28-C, 29-C, 2-A, 30-D, 31-D, 32-D, 33-D, 34-D, 35-D, 36-D, 37-D, 38-D, 39-D, 3-A, 40-D, 4-A, 5-A, 6-A, 7-A, 8-A, 9-A, A. Angliongto, Agdao Proper, Bago Aplaya, Bago Gallera, Binugao, Bucana, Buhangin, Bunawan, Centro, Daliao, Dumoy, Gov. Vicente Duterte, Ilang, Lapu-Lapu, Lasang, Leon Garcia Sr., Lizada, Ma-a, Mahayag

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Liquefaction	PHIVOLC S-DOST	-	Vector File/ PRS92-Phil. V	High	-	To occur in loose to moderately saturated granular soils (such as sand), that is, soils in which the space between the individual particles is completely filled with water	Mandug, Matina Aplaya, Matina Crossing, New Carmen, Paciano Bangoy, Pampanga, Panacan, Rafael Castillo, San Antonio, San Isidro, Sasa, Sirawan, Talomo, Tigatto, Tomas Monteverde, Toril, Ubalde, Vicente Hizon, Waan, and Wilfredo Aquino
Liquefaction	PHIVOLC S-DOST	-	Vector File/ PRS92-Phil. V	Moderate	-	To occur in loose to moderately saturated granular soils (such as sand), that is, soils in which the space between the individual particles is completely filled with water	10-A, 11-B, 12-B, 13-B, 14-B, 16-B, 17-B, 18-B, 19-B, 20-B, 7-A, 8-A, 9-A, A. Angliongto, Bago Aplaya, Bago Gallera, Binugao, Buhangin, Bunawan, Catalunan Grande, Crossing Bayabas, Daliao, Dumoy, Ilang, Lasang, Lizada, Ma-a, Mahayag, Mandug, Marapangi, Matina Aplaya, Matina Crossing, Matina Pangi, New Carmen, Paciano Bangoy, Pampanga, Panacan, San Isidro, Sasa, Sirawan, Talomo, Tibungco, Tigatto, Toril, Vicente Hizon, Waan, and Wilfredo Aquino
Liquefaction	PHIVOLC S-DOST	-	Vector File/ PRS92-Phil. V	Low	-	To occur in loose to moderately saturated granular soils (such as sand), that is, soils in which the space between the individual particles is completely filled with water	Angalan, Bago Aplaya, Bago Gallera, Balengaeng, Baliok, Binugao, Bunawan, Calinan, Callawa, Catalunan Grande, Catalunan Pequeño, Crossing Bayabas, Dacudao, Daliao, Dumoy, Ilang, Lacson, Lasang, Lizada, Los Amigos, Lubogan, Ma-a, Mahayag, Malagos, Mandug, Marapangi, Matina Aplaya, Matina Crossing, New Carmen, New Valencia, Panacan, Riverside, San Isidro, Sasa, Sirawan, Subasta, Talandang, Talomo, Talomo River, Tibungco, Tigatto, Toril, Tugbok, Ula, and Wangan

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	Central Davao Fault System	-	Presence of thrust or reverse fault in which the hanging wall has moved upward relative to the footwall. Reverse faults occur where two blocks of rock are forced together by compression.	Dacudao Fault, Lacson Fault, New Carmen Fault, Pangyan-Biao Escuela Fault
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	<i>Dacudao Fault</i>	-		Biao Joaquin, Calinan, Catalunan Grande, Catalunan Pequeño, Dacudao, Lacson, Lamanan, Los Amigos, Mintal, Riverside, Sto. Niño, Talomo, Talomo River, Tugbok, and Ula
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	<i>Lacson Fault</i>	-		Angalan, Bago Oshiro, Balengaeng, Baliok, Bankas Heights, Binugao, Calinan, Lacson, Lizada, Los Amigos, Lubogan, Malagos, Mintal, Mulig, Sirawan, Subasta, Tugbok and Wangan

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Table – 26. Inventory of Hazards, Davao City

Map Information				Hazard Description			
Hazard	Source	Scale	Format/Date/ Reference System	Susceptibility	Speed of Onset	Likelihood of Occurrence	Areas Covered
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	<i>New Carmen Fault</i>	-	Presence of thrust or reverse fault in which the hanging wall has moved upward relative to the footwall. Reverse faults occur where two blocks of rock are forced together by compression	Biao Escuela, Lampianao, Langub, Matina Biao, New Carmen, New Valencia, and Talandang
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	<i>Pangyan-Biao Escuela Fault</i>	-		Biao Escuela, Biao Guianga, Biao Joaquin, Dacudao, Dominga, Lumiad, Malabog, Mapula, Matina Biao, Pañalum, Pangyan, Paquibato, Sumimao, Tacunan, and Talandang
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	<i>Tamugan Fault</i>	-		Alambre, Baguio, Camansi, Cawayan, Gumalang, Malagos, Manambulan, Subasta, Tagakpan, Tagluno, and Tamugan
Ground or Surface Rupture (Active Fault System)	PHIVOLCS	-	Vector File/ PRS92-Phil. V	Colosas Fault System	-	Presence of strike-slip fault, a fault in which surfaces on opposite side of the fault plane moved horizontally and parallel to the strike of the fault	Colosas

Note: data presented is for reference only. Please refer to the City Planning and Development Office for identification and corresponding hazard status of the areas.

Source: MGB, DOST, and PHIVOLCS, Region XI

Records of Previous Disasters

Flood and landslides are the most common natural disasters in Davao City, which frequently recur in a year. The city's location with a lot of watersheds, gulf, mountains, and hills, makes it vulnerable to these two hazards.

A. Flood Incidents

Disaster records from 2000-2019 show that flooding incidents usually happen during the first quarter of the year, which is considered as the wettest period of the year. In February 2000, a total of 3,938 families in Talomo Proper, Matina Crossing, Matina Pangi, Catalunan Grande and Bago Aplaya were affected, while in January of 2002, at least 17,784 families were affected when the floods occurred in Poblacion, Talomo, Buhangin, Bunawan and Calinan.

In 2006, Talomo Proper was mostly affected, with 1,049 families assisted. Of the four (4) reported incidents, it was the flooding in March 2008 that recorded the highest number of families affected, at 297 families or 1,017 dependents. The flooding occurred in six (6) barangays such as Calinan Proper, Riverside, Wangan, Baguio Proper, Malagos, Los Amigos, all in the Third District.

For 2010, there were 16 reported flooding incidents, one (1) happened during the first month of the year while 15 happened in the second half of the year. Of the 15 incidents, six (6) occurred during the month of September, five (5) happened on September 13 in Suawan, Magsaysay, Marilog Proper, Salaysay and Malamba and one (1) on September 21 in Mandug.

The month of June registered the most number of flooding incidents that year with 18 from a total of 55 in the whole year of 2011. Matina Crossing and Matina Pangi had the most number of affected families with 1,120 and 1,104 respectively from registering a total of 3,591 families in the whole year of 2011.

In August 2014, a total of eight (8) flooding incidents were recorded with 146 affected families in Barangays Matina Pangi, Matina Crossing, and Matina Aplaya and within downtown areas.

Only three (3) flooding incidents were recorded in 2015 and 2016. Barangays Talomo, Sto. Niño and Gumitan experienced flooding in 2015 while Barangays 10-A, Gumitan and Suawan suffered the same fate in 2016. Both years recorded the lowest incidents in the City from 2000-2019.

The first quarter of 2017 was flood-free while the rest of the year recorded 30 flood incidents, affecting 10 barangays with a total number of 38 dependents.

The six (6) incidents in 2018 happened in barangays Riverside, Sto. Nino, Catalunan Pequeno, Tugbok Proper, Talomo Proper and Catalunan Grande and for January of 2019, only two (2) were reported involving Barangays Bato and Daliao in Toril District.

B. Landslide Incidents

The year 2002 recorded the most number of families affected by landslide with 2,697 or 10,481 dependents in Barangays Marilog, Paquibato, Baguio and Calinan. There were zero reported landslide incidents in 2003, 2004 and 2005.

Only three (3) incidents were reported in 2006, which occurred in Carmen, San Isidro and Marilog Proper that affected 114 families, while 2007 recorded the lowest with only one (1) incident.

No incidents were recorded in 2009 and 2010, while 2011 recorded five (5) landslide incidents, which affected 1,331 families. In 2012, there were reported cases from Barangays Magsaysay, Marilog and Fatima; while the year 2013 recorded two (2) cases in Buhangin Hills and Sto Niño. In 2014, incidents were reported in Guadalupe Village, Pansoy Compound, Matina Crossing, Baganihan, Suawan, Salaysay, and Lumiad. In Tambobong, there were three (3) reported landslides, which happened in February, May and November 2014.

Landslide incidents occurred in June, September, and October 2015 and in April, June, and October 2016. In 2017, a total of 16 landslide incidents happened in April to July and August to December that affected 83 families.

Only two (2) landslides happened in 2018 particularly in Barangays Langub and Cabantian.

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, February 16, 2000	Talomo Proper, Matina Crossing, Matina Pangj, Catalunan Garande, Bago Aplaya	3,938	14511	25	2	-	-	155	155
Flood, April 20, 2000	Sto. Niño	215	651	-	-	-	-	1	
Flood, April 20, 2000	Crossing Bayabas	8		-	-	-	-	1	1
Flood, June 4, 2000	Maa, Bago Aplaya	30	119	10	-	-	-	-	-
Flood, June 7, 2000	Marapangi, Sirawan, Cyphone, Lizada, Bago Galleria, Sto.Niño	91	383	2	2	-	-	3	5
Flood, July 6, 2000	La Verna, San Isidro, San Vicente, Hillside Subd.	87	77	-	-	-	-	-	-
Flood, October 5, 2000	Matina Pangj	95	347	-	-	-	-	10	6
Flood, October 5, 2000	Matina Crossing			-	-	-	-		
Flood, November 18, 2001	Dumoy	15	69	-	-	-	-	4	11
Flood, November 21, 2001	Crossing Bayabas	123	459	-	-	-	-	7	8
Flood, November 21, 2001	Marapangi	28	36	-	-	-	-	2	16
Flood, November 21, 2001	Daliao	28	122	-	-	-	-	-	3
Flood, November 21, 2001	Sirawan	9	25	-	-	-	-	2	-
Flood, November 21, 2001	Bayabas	1	5	-	1	-	-	-	-
Flood, November 21, 2001	Tagluno	-	-	-	-	-	-	-	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, January 4, 2002	Poblacion - A	3,548	16,430	-	7	18	1	55	106
Flood, January 4, 2002	Poblacion - B	78	468	-	-	-	-	3	3
Flood, January 4, 2002	Talomo	10,264	37,732	-	-	-	-	20	35
Flood, January 4, 2002	Buhangin	2,118	8,087	-	-	-	-	59	320
Flood, January 4, 2002	Bunawan	1,854	11,236	-	-	-	-	9	11
Flood, January 4, 2002	Tugbok	51	306	-	-	-	-	2	-
Flood, January 4, 2002	Marilog	197	748	-	-	-	-	1	5
Landslide, January 4, 2002	Marilog	393	1,293	-	-	-	-	-	-
Landslide, January 4, 2002	Baguio	306	-	-	-	-	-	1	-
Landslide, January 4, 2002	Paquibato	757	2,912	-	-	-	-	1	-
Landslide, January 4, 2002	Calinan	1,241	6,276	-	-	-	-	6	2
Flood, May 7, 2003	Tugbok Proper	4	15	-	-	-	-	1	-
Flood, May 7, 2003	Mintal	12	30	-	-	-	-	-	2
Flood, May 7, 2004	Talomo Proper	445	-	-	-	-	-	-	-
Flood, June 1, 2003	Mintal	4	13	-	-	-	-	-	-
Flood, August 20, 2003	Maa	6	16	-	-	-	-	2	3
Flood, April 16, 2004	Matina Pangi	12	47	-	-	-	-	5	6

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, April 16, 2004	Brgy. 74-A	2	9	-	-	-	-	1	1
Flood, January 26, 2006	Bunawan Proper	2	10	-	-	-	-	2	-
Flood, March 2, 2006	Crossing Bayabas	2	7	-	-	-	-	2	-
Landslide, March 2, 2006	Carmen	101	-	-	-	-	-	-	-
Flood, March 5, 2006	Talomo Proper	1,047	-	-	-	-	-	-	-
Landslide, October 30, 2006	San Isidro	2	6	-	1	-	-	-	2
Landslide, November 21, 2006	Marilog Proper	11	-	-	-	-	-	5	-
Flood, June 18, 2007	Saloy	1	-	-	1	6	-	1	-
Landslide, July 4, 2007	Maa	10	46	-	1	2	-	-	-
Flood, August 29, 2007	Catalunan Pequeño	9	38	-	-	-	-	-	-
Landslide, January 7, 2008	Tamugan	-	-	-	-	-	-	-	-
Landslide, January 14, 2008	Matina Pangi	6	19	-	-	-	-	2	2
Flood, March 17, 2008	Calinan Proper, Riverside, Wangan, Baguio Proper, Baguio Proper, Malagos, Los Amigos	297	1,017	-	-	2	-	19	25
Flood, June 7, 2008	San Antonio	23	129	-	-	-	-	2	9
Flood, June 7, 2008	Cabantian	2	11	-	-	-	-	2	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, June 18, 2008	Maa	140	-	-	-	-	-	-	-
Flood, June 29, 2009	Talomo Proper	143	-	-	-	-	-	-	-
Flood, June 29, 2009	Marapangi	7	-	-	-	-	-	1	6
Flood, June 29, 2009	Crossing Bayabas	10	-	-	-	-	-	4	6
Flood, June 29, 2010	Lizada	2	-	-	-	-	-	-	2
Flood, June 29, 2010	Los Amigos	381	-	-	-	-	-	-	-
Flood, June 29, 2010	Mintal	36	-	-	-	-	-	1	1
Flood, June 29, 2010	Ula	6	-	-	-	-	-	-	-
Flood, June 29, 2010	Tugbok Proper	95	-	-	-	-	-	1	5
Flood, June 29, 2010	Manmbulan	2	-	-	-	-	-	-	1
Flood, January 17, 2010	Calinan Proper & Riverside	83	-	-	-	-	-	2	1
Flood, September 13, 2010	Suawan	67	134	-	-	-	-	10	9
Flood, September 13, 2010	Magsaysay	1	7	-	-	-	-	1	-
Flood, September 13, 2010	Marilog Proper	7	37	-	-	-	-	5	2
Flood, September 13, 2010	Salaysay	2	6	-	-	-	-	1	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, September 21, 2010	Mandug	19	57	-	-	-	-	19	-
Flood, September 13, 2010	Malamba	4	9	-	-	-	-	1	-
Flood, October 26, 2010	Tigatto	2	-	-	-	-	-	1	-
Flood, November 29, 2010	Camansi	22	66	-	1	-	-	7	5
Flood, December 06, 2010	Calinan Poblacion	192	960	-	-	-	-	2	6
Flood, January 16, 2011	Km. 10 P16, Tigatto	1	2	-	-	-	-	-	1
Flood, January 16, 2011	Prk. 13,3A,1	3	10	-	1	-	-	1	1
Flood, January 17, 2011	Prk. 2A,4,5B,7,4	80	249	329	-	-	-	5	8
Flood, January 17, 2011	Mandug/Tigatto	140	495	-	-	-	-	-	-
Flood, January 17, 2011	Marapangi,Bayabas,Lizada	1,096	3,288	-	-	-	-	11	20
Flood, January 17, 2011	Inayangan	1	4	-	-	-	-	1	-
Landslide, January 17, 2011	Prk 13, Inayangan	1	4	-	-	-	-	1	-
Landslide, January 23, 2011	Km., 9 Matina Pangi	1	2	-	-	-	-	1	-
Flood, March 30, 2011	Poblacion/Tamayong	-	-	-	-	-	-	-	-
Flood, April 5, 2011	Communal	6	21	-	-	-	-	3	2

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, April 5, 2011	Tigatto	427	-	-	-	-	-	4	210
Flood, April 5, 2011	P-26,Riverside, Maa	1	1	-	-	-	-	-	1
Flood, April 5, 2011	Bunawan	455	-	-	-	-	-	6	45
Flood, April 10, 2011	Gumalang	2	7	-	-	-	-	-	2
Flood, April 19, 2011	Pañalum	-	-	-	-	-	-	-	-
Flood, April 21, 2011	Talandang	22 farmers	-	-	-	-	-	-	-
Flood, April 21, 2011	Tigatto	-	-	-	-	-	-	4	11
Flood, April 21, 2011	Gumalang	3	9	-	-	-	-	2	1
Flood, April 21, 2011	Pangyan	3	-	-	-	-	-	-	-
Flood, April 21, 2011	Tambobong	1	5	-	-	-	-	-	1
Flood, April 22, 2011	Malamba	1	4	-	-	-	-	1	-
Flood, April 25, 2011	Sitio Quimosol	3	7	-	-	-	-	2	-
Flood, May 04, 2011	Panacan	597	3768	-	-	-	-	-	-
Flood, May 04, 2011	Mahayag	20	-	-	-	-	-	-	-
Flood, May 04, 2011	Panpanga	3	9	-	1	-	-	-	2
Flood, May 05, 2011	P-2, Malagos	2	4	-	-	-	-	-	2
Flood, June 2, 2011	P-3 San Vicente Ferrer	4	-	-	-	-	-	2	2
Landslide, June 2, 2011	San Vicente, Tigatto	4	11	-	-	-	-	2	2

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, June 3, 2011	Barangay Dominga	1	-	-	-	-	-	1	-
Flood, June 8, 2011	Narra	7	-	-	-	-	-	4	3
Flood, June 8, 2011	Brgy. Tapak	3	-	-	-	-	-	3	-
Flood, June 8, 2011	P-Capricorn, Lasang	11	-	-	-	-	-	-	-
Flood, June 9, 2011	Brgy. Gumitan Proper	1	-	-	-	-	-	1	-
Flood, June 9, 2011	Sitio Davao Gulf, Brgy., Tamugan	4	-	-	-	-	-	1	3
Flood, June 9, 2011	P-Scorpio, Lasang	250	-	-	-	-	-	-	-
Flood, June 9, 2011	Sto Niño Bucana, lasang	50	-	-	-	-	-	-	1
Landslide, June 9, 2011	Davao Gulf, Tamugan	1,080	-	-	-	-	-	-	-
Flood, June 9, 2011	Paquibato Proper, P-Narra	31	102	-	-	-	-	4	-
Landslide, June 10, 2011	Campo Santos, Marilog	1	-	-	-	-	-	-	-
Flood, June 12, 2011	Brgy. Buda	6	-	-	-	-	-	1	5
Flood, June 13, 2011	Brgy. Tamugan	1	-	-	-	-	-	1	-
Flood, June 14, 2011	Brgy Mandug	14	-	-	-	-	-	14	-
Landslide, June 16, 2011	Gumitan	224	-	-	-	-	-	1	3
Landslide, June 16, 2011	Buda	23	-	-	-	-	-	1	5
Flood, June 29, 2011	NHA Bangkal	403	-	-	1	-	-	44	-
Flood, June 29, 2011	Matina Aplaya	83	-	-	1	-	-	50	33

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, June 29, 2011	Matina Crossing	1,120	-	-	26	-	1	380	159
Flood, June 29, 2011	Matina Pangi	1104	-	-	2	-	-	97	1
Flood, June 29, 2011	Ma-a	497	-	-	-	-	-	1	-
Flood, July 3, 2011	Brgy. Bunawan	1	-	-	-	-	-	1	-
Flood, July 10, 2011	Brgy. Magsaysay	1	-	-	-	-	-	1	-
Flood, July 19, 2011	Brgy Bantol	5	-	-	-	-	-	4	1
Flood, October 7, 2011	Ma-a	3	-	-	-	-	-	2	1
Flood, November 6, 2011	Brgy. Binugao	1	-	-	-	-	-	1	-
Flood, November 6, 2011	Brgy. Sirawan	2	-	-	-	-	-	2	-
Flood, February 25 & 28, 2012	Calinan, Wangan Centro Purok 1	52 farmers	-	-	-	-	-	-	-
Flood, February 27, 2012	Tawan-Tawan	32 farmers	-	-	-	-	-	-	-
Flood, February 28, 2012	Saloy	135 farmers	-	-	-	-	-	-	-
Flood, March 23, 2012	Brgy. Tugbok		29	-	-	-	-	-	-
Flood, April 8, 2012	Brgy. Marapangi	3	8	-	-	-	-	2	-
Landslide, May 21, 2012	Brgy. Fatima	2	4	-	-	-	-	2	-
Landslide, June 11, 2012	Brgy. Marilog	9	32	-	1	-	-		-
Flood, July 04, 2012	North San Juan	1	3	-	-	-	-	1	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, July 23, 2012	Brgy. Magsaysay	1	5	-	-	-	-	1	-
Flood, July 23, 2012	Datu Salumay	16	65	-	-	-	-	16	-
Flood, July 24, 2012	Gumitan, Sitio Dumalogdog	-	-	-	-	-	-	-	-
Flood, July 26, 2012	Sitio Kulafo, Magsaysay	17	69	-	-	-	-	7	10
Flood, December 4, 2012	Agdao, Tibungco, Bunawan, lasang	214	57	-	-	-	-	5	5
Flood, December 4, 2012	Toril, Marilog, Marahan, Baganihan	235	4,368	-	-	-	-	1	13
Flood, December 4, 2012	Talomo, Ma-a, Matina Aplaya, Matina Crossing	349	-	-	-	-	-	1	7
Flood, December 7, 2012	Paquibato Proper	3	-	-	-	-	-	-	-
Flood, December 7, 2012	Tigatto	1	2	-	-	-	-	-	-
Flood, December 8, 2012	Brgy. Malamba	1	4	-	-	-	-	-	1
Landslide, December 15, 2012	Brgy. Magsaysay	1	1	-	-	-	-	-	-
Flood, January 19, 2013	Brgy. Malungon	5	21	-	-	-	-	5	-
Flood, January 19, 2013	Brgy. Tamugan	6	15	-	-	-	-	6	-
Flood, January 20, 2013	Calinan Pob.	2	-	-	-	-	-	2	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, January 20, 2013	Brgy.Waan	1	2	-	-	-	-	-	1
Flood, January 20, 2013	Brgy.Lasang, Paquibato	4	-	-	-	-	-	-	4
Flood, January 20, 2013	Talomo B (3 Brgys.)	-	3,709	-	-	-	-	-	
Flood, January 20, 2013	City Poblacion (7 Brgys.)	-	3,642	-	-	-	-	107	116, A = 2, 404
Flood, January 20, 2013	Buhangin Dist (3 Brgys.)	-	2, 411	-	-	-	-	-	-
Landslide, January 20, 2013	KM.7, P- Buhangin Hills	1	-	-	-	-	-	-	1
Flood, January 24, 2013	Brgy.Tamugan	2	-	-	-	-	-	2	-
Flood, January 24, 2013	Brgy. Calinan Pob.	62	161	-	-	-	-	62	-
Flood, February 09, 2013	Brgy.Calinan Pob.27	27	1,130	-	-	-	-	-	-
Flood, February 09, 2013	Brgy.Riverside	172	-	-	-	-	-	172	-
Flood, February 19, 2013	Brgy. Maa	2	8	-	-	-	-	-	2
Flood, March 07, 2013	Brgy. Calinan	2	3	-	-	-	-	-	2
Landslide, March 25, 2013	Sto.Niño	1	2	-	-	-	-	1	-
Landslide, February 1, 2014	Guadalupe Village,Pansoy Comp.,Matina Crossing	1	7	-	-	2	-	1	-
Landslide, February 2, 2014	Brgy Baganihan	1	1	-	-	-	-	-	1
Landslide, February 19, 2014	Brgy. Tambobong	1	2	-	-	-	-	1	

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Landslide, May 29 ,2014	Brgy Suawan	1	2	-	-	-	-	1	-
Landslide, May 25 ,2014	Brgy Tambobong	3	18	-	-	-	-	1	-
Landslide, May 31 ,2014	Brgy Salaysay	1	5	-	-	-	-	-	1
Flood, June 16, 2014	Maa	3	11	-	-	-	-	3	-
Landslide, June 16, 2014	Purok 1	1	2	-	-	-	-	-	1
Flood, August 21,2014	Brgy Lasang	50	-	-	-	-	-	-	-
Flood, August 25,2014	Brgy Matina Pangi,Brgy Matina Crossing, Matina Aplaya, Downtown Areas	96	-	-	-	-	-	-	-
Flood, September 6, 2014	Brgy Tamugan	47	-	-	-	-	-	-	-
Landslide, September 07,2014	Brgy. Lumiad	47	-	-	-	-	-	-	-
Flood, September 11, 2014	Brgy Tugbok Proper	1	2	-	-	-	-	1	-
Flood, September 11, 2014	Bago-Oshiro	1	4	-	-	-	-	-	1
Flood, October 28, 2014	Brgy. Bunawan	2	12	-	-	-	-	1	1
Landslide, November 17,2014	Tambobong	1	5	-	-	-	-	-	1
Flood, November 22, 2014	Marapangi Toril	1	5	-	-	-	-	-	1

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, January 9, 2015	Talomo	1	7	-	-	-	-	-	1
Landslide, January 9, 2015	Talomo	1	7	-	-	-	-	-	1
Landslide, January 23, 2015	Prk 40 Upper Ulas Davao City	1	3	-	-	-	-	1	-
Flood, June 9, 2015	Brgy Sto. Niño	2	12	-	-	-	-	2	-
Landslide, June 14, 2015	Brgy. Inayangan Calinan Davao City	1	-	-	-	-	-	-	1
Flood, July 6, 2015	Brgy. Gumitan	-	-	-	-	-	-	-	-
Landslide, September 18, 2015	Brgy Buda	1	2	-	-	-	-	1	-
Landslide, October 11, 2015	Brgy. Buda	-	-	-	-	-	-	1	-
Landslide, October 23, 2015	Purok 12, Brgy. Buda	2	13	-	-	-	-	2	-
Landslide, April 9, 2016	Brgy. Matina Pangli	1	4	-	-	-	-	1	-
Landslide, June 26, 2016	June 26, 2016/3:45 AM	1	1	-	-	-	-	1	-
Flood, June 26, 2016	Brgy. 10-A	1	2	-	-	-	-	1	-
Flood, June 21, 2016	Brgy. Gumitan	20	170	-	-	-	-	-	20
Landslide, October 9, 2016	Sitio Panipasan Marilog Proper	1	1	-	-	-	-	1	-
Landslide, October 10, 2016	Brgy. Buda	2	12	-	-	-	-	2	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Landslide, October 23, 2016	Brgy. Suawan	1	1	-	-	-	-	-	1
Flood, October 23, 2016	Brgy. Suawan	1	1	-	-	-	-	1	-
Landslide, April 21, 2017	Brgy. Paquibato Prop.	-	5	-	-	-	-	-	1
Landslide, April 29, 2017	Brgy. Pandaitan	1	5	-	-	-	-	-	1
Landslide, May 3, 2017	Brgy. Mandug	1	1	-	-	-	-	1	-
Flood, May 11, 2017	Brgy. Matina Pangi	2	9	-	-	-	-	1	1
Flood, May 11, 2017	Matina Aplaya 75-A	1	2	-	-	-	-	-	1
Flood, May 11, 2017	Brgy. 74-A Matina Crossing	1	5	-	-	-	-	1	-
Flood, May 11, 2017	Brgy. Langub	1	3	-	-	-	-	1	-
Flood, June 7, 2017	Barangay 5-A	4	11	-	-	-	-	4	-
Flood, May 11, 2017	Brgy. 74-A Matina Crossing	1	5	-	-	-	-	1	-
Flood, May 11, 2017	Brgy. Langub	1	3	-	-	-	-	1	-
Flood, June 7, 2017	Barangay 5-A	4	11	-	-	-	-	4	-
Landslide, June 7, 2017	Brgy. Malamba	1	6	-	-	-	-	1	-
Landslide, June 30, 2017	Brgy. Catalunan Pequeño	1	-	-	-	-	-	-	1
Flood, June 30, 2017	Brgy. Mintal	1	7	-	-	-	-	1	-
Flood, June 30, 2017	Brgy. Baliok	1	3	-	-	-	-	-	1

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, July 1, 2017	Bago Aplaya	1	1	-	-	-	-	1	-
Flood, July 6, 2017	Brgy. Matina Crossing	1	5	-	-	-	-	-	1
Flood, July 6, 2017	Matina Aplaya 75-A	3	10	-	-	-	-	2	1
Landslide, July 12, 2017	Brgy. Matina Pangí	-	-	-	-	-	-	-	-
Landslide, September 3, 2017	Brgy. 10-A	10	32	-	-	-	-	2	1
Landslide, September 11, 2017	Brgy. New Carmen	3	8	-	-	-	-	2	-
Landslide, September 11, 2017	Brgy. Catalunan Grande	2	11	-	-	-	-	1	1
Flood, September 11, 2017	Brgy. Talomo Proper	2	1	-	-	-	-	1	1
Flood, September 11, 2017	Matina Aplaya 75-A	1	2	-	-	-	-	1	-
Flood, September 11, 2017	Brgy. Matina Pangí	1	1	-	-	-	-	-	1
Flood, September 11, 2017	Brgy. Matina Pangí	1	2	-	-	-	-	-	1
Flood, September 12, 2017	Brgy. Panacan	7	17	-	-	-	-	-	7
Flood, September 12, 2017	Brgy. Bunawan	1	2	-	-	-	-	-	1
Flood, September 12, 2017	Brgy. Ilang	3	8	-	-	-	-	1	2
Landslide, September 30, 2017	Brgy. Langub	2	-	8	-	-	-	-	-
Flood, October 1, 2017	Brgy. Baliok	1	4	-	-	-	-	-	1
Landslide, October 5, 2017	Brgy. Langub	2	-	-	-	-	-	-	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Landslide, October 9, 2017	Brgy. Langub and Brgy. Matina Pangli	53	-	-	-	-	-	-	-
Landslide, November 3, 2017	Brgy. Langub	-	-	-	-	-	-	-	-
Landslide, December 5, 2017	Brgy. Tigatto	4	8	-	-	-	-	-	2
Landslide, December 9, 2017	Brgy. Tamugan	1	2	-	-	-	-	1	-
Landslide, December 19, 2017	Brgy. Pandaitan	1	1	-	-	-	-	1	-
Landslide, December 19, 2017	Brgy. Pandaitan	1	1	-	-	-	-	1	-
Flood, December 22, 2017	Brgy 2-A	1	7	-	-	-	-	-	-
Flood, December 23, 2017	Brgy. Buhangin	-	-	-	-	-	-	-	-
Flood, December 23, 2017	Brgy. Bucana	67	-	122	-	-	-	-	-
Flood, December 23, 2017	Brgy. 5-A	-	-	1,500	-	-	-	-	-
Flood, December 23, 2017	Brgy. Bantol	-	-	-	-	-	-	23	-
Flood, December 23, 2017	Brgy. 8-A	-	-	1,500	-	-	-	-	-
Flood, December 31, 2017	Bago Aplaya	1	1	-	-	-	-	1	-
Flood, February 25, 2018	Brgy. Riverside	1	2	-	-	-	-	-	1
Landslide, April 4, 2018	Brgy. Langub	-	-	-	-	-	-	-	-

Source: City Social Services and Development Office, Davao City

Table – 27. Records of Previous Disasters, Davao City (2000-2019)

Hazard Events and Description	Affected Barangays	No. of Affected			No. of Casualties			No. of Casualties	
		Families	Dependents	Individuals	Dead	Injured	Missing	Partially Damaged	Totally Damaged
Flood, May 7, 2018	Brgy. Sto.Niño	1	6	-	-	-	-	1	-
Flood, May 7, 2018	Catalunan Pequeño	1	4	-	-	-	-	1	-
Flood, May 7, 2018	Brgy. Tugbok Proper	3	6	-	-	-	-	-	3
Flood, May 8, 2018	Brgy. Talomo Proper	3	10	-	-	-	-	-	3
Landslide, May 10, 2018	Brgy. Cabantian	3	5	-	-	-	-	1	-
Flood, August 23,2018	Brgy. Catalunan Grande	1	1	-	-	-	-	-	-
Flood, January 01,2019	Brgy. Bato	1	4	-	-	-	-	-	1
Flood, January 23,2019	Brgy. Daliao	9	21	-	-	-	-	5	1
Landslide, January 23, 2019	Brgy. Malabog	1	1	-	-	-	-	-	1

Source: City Social Services and Development Office, Davao City

Likelihood of Occurrence

Likelihood of hazard is an estimate of the period of time a hazard is likely to repeat itself in years. By determining the time interval for a hazard to occur again, it gives an idea of how often a threat of a hazard is expected.

In Davao City, flood and landslides are observed to occur almost annually. The return period of flood, for instance, is every one (year) to three (3) years in 12 barangays such as Tugbok Proper, Marapangi, Talomo Proper, Matina Pangi, Matina Crossing, Matina Aplaya, Ma-a, Tamugan, Gumitan, 19-B, Mandug, and Lasang (Table – 28, see full list of barangays in Volume IV).

A total of 11 barangays experience flood in four (4) to 10 years, particularly in Barangays 10-A, Buhangin Proper, Panacan, Calinan Proper, Malamba, Marilog Proper, Bago Aplaya, Crossing Bayabas, Lizada, Los Amigos and Mintal. Other flood-risk areas experience occasional and improbable occurrences of floods. Only Barangay 28-C experiences rare flooding incident, when the return period of a hazard would occur in 101 to 200 years.

On the other hand, landslide incidents are frequent in Barangays Marilog Proper, Tamugan, Tapak, Matina Pangi, and Matina Aplaya. Twelve (12) barangays also experience moderate occurrences of landslides, which happen every over three (3) to 10 years. These are Barangays Carmen, Tambobong, Buhangin Proper, Tigatto, Inayangan, Megkawayan, Baganihan, Buda, Gumitan, Salaysay, Suawan, and Lumiad. A total of 14 barangays experience occasional occurrences of landslides including Barangays 10-A, 19-B, Callawa, Bunawan, Panacan, San Isidro, Magsaysay, Fatima, Sumimao, Catalunan Grande, Catalunan Pequeño, Langub, Maa, and Daliao.

Table – 28. Likelihood of Occurrence, Davao City

Hazard	No. of Barangays	Likelihood of Occurrence
Flood	12	Frequent (1-3 yrs.)
	11	Moderate (4-10 yrs.)
	24	Occasional (11-30 yrs.)
	52	Improbable (31-100 yrs.)
	1	Rare (101-200 yrs.)
	-	Very Rare (>200 yrs.)
Landslide	5	Frequent (1-3 yrs.)
	12	Moderate (4-10 yrs.)
	14	Occasional (11-30 yrs.)
	-	Improbable (31-100 yrs.)
	-	Rare (101-200 yrs.)
	-	Very Rare (>200 yrs.)

Source: City Disaster Risk Reduction and Management Office, Davao City

Physical/Infrastructure Resources

Road Network (Internal and External Linkages)

The road network of Davao City has a total length of 3,614.48 kilometers, of which 54% are classified as barangay roads, 34% as city roads, and the remaining 12 percent as national roads or highways.

Ninety-nine percent (99%) of the national highway is finished with concrete or asphalt. City roads on the other hand, have about 32% that need upgrading; 99% of barangay roads only have gravel surface.

National roads have a total length of 277.79 kms., made up of 46% concrete and 54% asphalt. City roads have a total length of 1294.78 kms., 55% of which are concrete, 12% asphalt and the remaining 33% is still unpaved. Barangay roads have the longest road length at 2,041.91 kilometers, but mainly unpaved at 91%.

Table – 29. Inventory of Roads by System Classification and Type of Pavement, 2018, Davao City

Classification	Road Surface Type						
	Total Length (km)	Concrete		Asphalt		Gravel	
		L (km)	%	L (km)	%	L (km)	%
National	277.79	129.075	46%	148.714	54%		
City	1294.78	718.54	55%	155.30	12%	420.95	33%
Barangay	2,041.01	132.17	6%	57.18	3%	1,852.56	91%
Total	3,614.48	979.77		361.20		2,273.508	

Source: City Engineer’s Office and Department of Works and Highways XI, Davao City

Hazard Susceptibility

The hazard susceptibility map indicates that a total of 405.18 kms. of roads are susceptible to flooding across all districts. A total of 4.84 kms. of roads in Talomo District, Paquibato District, Baguio District, Calinan District, Toril District, and Tugbok District are also found to be susceptible to earthquake. Moreover, a total of 535.71 kms. of road in C.P Garcia Highway is also identified to be highly susceptible to landslide. The major areas highly susceptible to landslide are Paquibato District with 192.05 kms. and Marilog District with 140.44 kms..

For storm surge, the hazard susceptibility, classification are: 2-meter wave, 3-meter wave, 4-meter wave, and 5-meter wave. A total of 59.50 kms. of roads are found to be susceptible to 2-meter wave, 93.19 kms. are susceptible to 3-meter wave, 118.55 kms. are susceptible to 4-meter wave, and 269.13 kms. are susceptible to 5-meter wave. For liquefaction, a total of 562 kms. of roads are highly susceptible to liquefaction. Talomo District has the highest road length highly susceptible to liquefaction with 276.64 kms.

Table – 30. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

District	Flood			Fault	LANDSLIDE			Storm Surge				LIQUEFACTION		
	HIGH	MODERATE	LOW		HIGH	MODERATE	LOW	2m	3m	4m	5m	High	Mod- erate	Low
District I														
Poblacion	40.43	0.41	143.32	-	0.52	-	179.31	7.81	13.73	20.05	58.48	96.60	23.01	
Talomo	120.06	145.66	383.46	0.59	58.97	25.57	738.23	30.34	50.00	51.65	98.26	276.64	101.01	67.83
Sub-Total	160.48	146.07	526.78	0.59	59.49	25.57	917.54	38.15	63.73	71.69	156.74	373.24	124.03	67.83
District II														
Agdao	7.39	27.57					76.50	1.55	5.16	7.47	51.91	60.60	9.29	
Buhangin	51.36	21.60	30.68		32.98	83.18	558.03	4.76	5.08	6.21	16.77	41.19	51.14	23.89
Bunawan	14.26	6.77	16.63		13.54	37.85	204.26	7.40	10.02	21.70	25.11	38.36	41.91	21.33
Paquibato	4.12	1.45		0.68	192.05	113.73	25.83							
Sub-Total	77.13	57.39	47.31	0.68	238.57	234.76	864.61	13.70	20.26	35.37	93.79	140.14	102.34	45.22
District III														
Baguio	5.03	6.82	4.12	0.07	11.09	7.96	68.92							0.98
Calinan	47.54	64.71	33.72	1.27	52.41	41.05	190.97							46.37
Marilog	11.62	3.42		0.03	140.44	159.74	30.04							
Toril	22.12	23.89	119.27	0.60	20.81	99.90	290.35	7.64	9.21	11.48	18.61	49.12	26.13	23.27
Tugbok	81.25	112.51	58.09	1.59	12.90	14.99	370.49					0.39	3.85	28.34
Sub-Total	167.56	211.35	215.20	3.57	237.64	323.64	950.79	7.64	9.21	11.48	18.61	49.50	29.97	98.96
Grand Total	405.18	414.81	789.29	4.84	535.71	583.96	2,732.94	59.50	93.19	118.55	269.13	562.88	256.34	212.00

Source: Office of the City Planning and Development Officer, Davao City

Inventory of Bridges

Davao City has 168 bridges, 24 percent of which are classified national bridges, while the remaining, 76 percent are city bridges. The city has 66 Reinforced Concrete Deck Girders or bridges (RCDG), three (3) fully concreted bridges, 39 bailey bridges, 28 box culvert types, three (3) foot-bridges, three (3) hanging bridges, and eight (8) overflow bridges. These bridges provide land connectivity across many rivers that flow and empty into the Davao Gulf.

As to hazard susceptibility, 101 bridges are highly susceptible to high flood, seven (7) bridges are susceptible to earthquake, and 19 bridges are highly susceptible to landslide. Four (4) bridges are susceptible to storm surge with 2-meter wave, a total of five (5) bridges are susceptible to storm surge with 3-meter wave, only one (1) bridge is susceptible to storm surge with 4-meter wave, and a total of three bridges are susceptible to storm surge with 5-meter wave. A total of ten (10) bridges are susceptible to high liquefaction (Table PR – 3).

Table – 31. Inventory of Bridges by Location, Type, Hazard Susceptibility, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						Fl	Eq	Ln	Ts	Su	LQ
DISTRICT I											
Poblacion District											
Generoso Br. 1	5-A	-	RCDG	15	Fair	H	-	L			
Generoso Br. 2	5-A	-	RCDG	15	Fair	H	-	L			
Talomo District											
Bago Br.	BAGO APLAYA	1973	RCDG		Fair	H		L		3m	H
Bago Gallera Bridge	BAGO GALLERA	-	Bailey	5	Fair	M		L			
Baliok Bridge	BALIOK	-	RCDG	15	Fair	L		L			
BC-Santiago Villas	CATALUNAN GRANDE	-	Box Culvert		Fair			L			
Bolton Bridge 1	BUCANA	1976	RCDG	15	Fair	H		L			
Bolton Bridge 2	BUCANA	2000	RCDG	15	Fair	H		L			
Inigo Bridge	MATINA PANGI	-	Bailey		Fair	H		L			M
Libby BC	BAGO GALLERA	-	Box Culvert		Fair	L		L			
Libby Br.	BAGO GALLERA	2006	RCDG	15	Fair	M		L			
Nalum Br.	BAGO GALLERA	2006	RCDG	15	Fair	L		L			

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						FI	Eq	Ln	Ts	Su	LQ
Lopez Bailey Bridge	MATINA CROSSING	-	Bailey	5	Fair	H		L		5m	H
Ma-a Jail Bridge	MA-A	-	Bailey	5	Fair	H		L			L
Davao River Br.	MA-A	1970	RCDG	15	Fair	H		L			
Matina Aplaya Bridge	MATINA APLAYA	-	Bailey	7.8	Fair	H		L			H
Matina Br.	MATINA CROSSING	1978	RCDG	15	Fair						
Matina Bridge	MATINA CROSSING	-	RCDG	15	Fair	H		L			H
Matina Bridge Foot-bridge	MATINA PANGI	-	Hanging Bridge	5	Fair	H		L			M
Pangi Br.	MATINA CROSSING	1978	RCDG	15	Fair						
Matina Pangi Bridge I	MATINA CROSSING	-	Bailey		Fair	H		L			M
Matina Pangi Bridge II	MATINA PANGI	-	Bailey		Fair	H		L			
Matina Pangi Bridge III	MATINA PANGI	-	RCDG	15	Fair	H		L			
Matina Pangi Hanging Bridge	MATINA PANGI	-	Hanging Bridge	5	Fair	H		L			M
Matina Pangi Overflow	MATINA PANGI	-	Overflow		Fair	H		L			M
Matina River Overflow	MATINA PANGI	-	Overflow		Fair	H		H			
Saavedra Bridge	CATALUNAN GRANDE	-	Bailey	5	Fair	H		L			
San Rafael Bridge	MA-A	-	RCDG	15	Fair	H		L			
Talomo BC	BAGO APLAYA	-	Box Culvert		Fair	M		L		4m	H
Talomom Br. 1	TALOMO	1968	RCDG	15	Fair						
Talomom Br. 2	TALOMO	2001	RCDG	15	Fair						

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						FI	Eq	Ln	Ts	Su	LQ
Talomo Br. 1	TALOMO	-	RCDG	15	Fair	H		L		3m	
Talomo Br. 2	TALOMO	-	RCDG	15	Fair	H		L		3m	
Ulas Bridge 3	TALOMO	-	RCDG	15	Fair	H		L		5m	
Talomo District					Fair						
Agdao Flyover	AGDAO PROPER	-	Concrete		Fair	M		L		2m	H
Buhangin Flyover	PACIANO BANGGOY	1996	Concrete		Fair	L		L		1m	
DISTRICT II					Fair						
Buhangin District					Fair						
Buhangin Underpass	BUHANGIN	-	Concrete		Fair			L			
Callawa Bridge	CALLAWA	-	RCDG	15	Fair	H		L			
Communal Bridge	CABANTIAN	-	Bailey	5	Fair			L			
Mamay Box Culvert	A. ANGLIONGTO	-	Box Culvert		Fair	H		L			
Sasa Br.	SASA	1971	RCDG	15	Fair						
Waan Bridge	WAAN	-	RCDG	15	Fair	H		L			
Bunawan District		-			Fair						
Bunawan Br. 1	BUNAWAN	2012	RCDG	15	Fair	H		L		2m	H
Bunawan Br. 2	BUNAWAN	2012	RCDG	15	Fair	H		L		2m	H
Gatungan Bridge	GATUNGAN	-			Fair			M			
Ilang Br.	ILANG	1976	RCDG	15	Fair			L		3m	M
Ilang Bridge	ILANG	-	RCDG	15	Fair			L		3m	M
Katipunan Bridge	SAN ISIDRO	-	Bailey		Fair			L			M

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						Fl	Eq	Ln	Ts	Su	LQ
Lasang Bridge	LASANG	-	RCDG	15	Fair	H		L			
Lasang-San Isidro Bridge	SAN ISIDRO	-			Fair	H		L			H
Licanan Bridge	SAN ISIDRO	-	Bailey	5	Fair	H		L			M
Madua Bridge	LASANG	-	Bailey	5	Fair			L			M
Mudiang Bridge	MUDIANG	-	Bailey	5	Fair			H			
Panacan Br.	PANACAN	1976	RCDG	15	Fair						
Panacan Br.	PANACAN	-	RCDG	15	Fair	H		L		2m	H
Panacan Bridge I	PANACAN	-	Bailey	30	Fair	H		L			
Panacan Bridge II	PANACAN	-	Bailey	30	Fair	H		L			L
Panacan Valley Bridge	PANACAN	-	Bailey	25	Fair			M			
Sta. Cruz Bridge	GATUNGAN	-			Fair	H		M			
Upper Ilang Bridge	ILANG	-	Bailey	5	Fair			L			L
Paquibato District											
Crossing Malabog Br.	MALABOG	-	RCDG	15	Fair			M			
Crossing Malabog Bridge	MALABOG	-	RCDG	15	Fair			M			
Fatima Bridge	FATIMA	-	RCDG	15	Fair			M			
KULBA BRIDGE	FATIMA	-			Fair	H		L			
Lumiad-Pañalum Bridge No.1	PAQUIBATO	-	Bailey		Fair			L			
Lumiad-Pañalum Bridge No.2	PAQUIBATO	-	Bailey		Fair			L			
Malabog-Megkawayan Bridge No.2	MALABOG	-	Bailey	5	Fair			M			
Malabog-Paquibato Bridge No.1	PAQUIBATO	-	Bailey	5	Fair			H			
Malabog-Paquibato Bridge No.2	MALABOG	-	Bailey	5	Fair			M			

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						Fl	Eq	Ln	Ts	Su	LQ
Pañalum Br.	PAÑALUM	2006	Steel		Fair						
Pañalum Bridge	PAÑALUM	-	Bailey		Fair			L			
Paquibato Proper Bridge	PAQUIBATO	-	Bailey		Fair			L			
Tibungol Bridge	PANDAITAN	-	Bailey	5	Fair			H			
DISTRICT III					Fair						
Baguio District					Fair						
BC-Ong Village	GUMALANG	-	Box Culvert		Fair	H		L			
BC-Gumalang	GUMALANG	-	Box Culvert		Fair	H	M	L			
BC-1	MALAGOS	-	Box Culvert		Fair	H		L			
Makatuno Footbridge	GUMALANG	-	Footbridge		Fair	H		L			
Tambobong Overflow Bridge	TAMBOBONG	-	Overflow		Fair	H		H			
Wines Bridge	WINES	-	RCDG	30	Fair	H		L			
Calinan District					Fair						
BC-Cawayan	CAWAYAN	-	Box Culvert		Fair	H		L			
BC-Cogon	SUBASTA	-	Box Culvert		Fair	M		L			
Brgy. Riverside Bridge I	RIVERSIDE	-	Bailey	5	Fair	H		L			L
Calinan-Riverside Bridge II	CALINAN	-	RCDG	5	Fair	H		L			L
Callawa Hanging Bridge	LAMPIANAO	-	Hanging Bridge	5	Fair	H		L			
Dacudao Bridge	DACUDAO	-	RCDG	15	Fair	H		L			
Dalagdag Bridge	DALAGDAG	-	RCDG	15	Fair	H		L			
Dalagdag Footbridge	DALAGDAG	-	Hanging Bridge	5	Fair	H		L			
Dominga Bridge	DOMINGA	-			Fair	H		L			

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						Fl	Eq	Ln	Ts	Su	LQ
Lacson Bridge	LACSON	-	RCDG	15	Fair	H		L			
Lamanan Bridge	LAMANAN	-	Bailey	25	Fair	H		M			
Lampianao Bridge	LAMPIANAO	-	RCDG	15	Fair	H		L			
Riverside Footbridge	RIVERSIDE	-	Footbridge		Fair	H		L			L
Saloy Bridge	SALOY	-	Culvert		Fair	H		L			
Subasta Bridge	SUBASTA	-	Bailey	5	Fair	M		L			
Sumimao Bridge	MEGKAWAYAN	-	Overflow		Fair	H		H			
Tagakpan Bridge	SUBASTA	-	Bailey	5	Fair	H		L			
Tamayong Overflow I	TAMAYONG	-	Overflow		Fair			L			
Tamayong Overflow II	TAMAYONG	-			Fair			L			
Vinzon Bridge	SIRIB	-	Bailey	30	Fair	H		L			
Wangan Bridge	CALINAN	-	RCDG	15	Fair	H		L			L
Wangan-Calinan Bridge	CALINAN	-	RCDG	30	Fair	H		L			L
Marilog District		-			Fair						
Bantol Footbridge	BANTOL	-	Footbridge		Fair			L			
Simod Br. I	BUDA	-	RCDG	15	Fair						
Simod Br. II	BUDA	-	RCDG	15	Fair						
Magsaysay Bridge	MAGSAYSAY	-	Overflow		Fair			H			
Malapangi Bridge	MARILOG	-	RCDG	15	Fair			H			
Malapangi Bridge II	SALAYSAY	-	RCDG	15	Fair	H		H			
Marahan Bridge	MARILOG	-	Bailey		Fair			H			
Masawang Bridge	SALAYSAY	-	Bailey		Fair			M			
New Sabang Foot-bridge	TAMUGAN	-	Hanging Bridge	5	Fair	H		L			
Pagan-Grande	TAMUGAN	-	RCDG	15	Fair	H		L			

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						Fl	Eq	Ln	Ts	Su	LQ
Pagan-Pequeño	SUAWAN	-	RCDG	20	Fair	H		L			
Purok 5 Bridge	BUDA	-	Overflow		Fair						
Suawan Br.	SUAWAN	-	RCDG	15	Fair	H		L			
Suawan Bridge III	SUAWAN	-	RCDG	15	Fair			L			
Tamugan Br.	TAMUGAN	-	RCDG	15	Fair	H		L			
Toril District		-			Fair						
Atan-awe BC	ATAN-AWE	-	Box Culvert		Fair			M			
Baracatan Br.	SIBULAN	-						H			
Baracatan BC I	BARACATAN	-	Box Culvert		Fair			M			
Baracatan BC II	BARACATAN	-	Box Culvert		Fair	H		M			
Baracatan BC III	ATAN-AWE	-	Box Culvert		Fair			M			
Baracatan-Sibulan Bridge	SIBULAN	-	Bailey	5	Fair			M			
Bato-Toril Overflow	BATO	-	Overflow		Fair	H		L			
Binugao BC I	BINUGAO	-	Box Culvert		Fair	H	I	L			M
Binugao BC II	BINUGAO	-	Box Culvert		Fair	H	I	L		5m	M
Binugao BC III	BINUGAO	-	Box Culvert		Fair			L			M
Binugao BC IV	BINUGAO	-	Box Culvert		Fair		I	L			M
Binugao Bridge	BINUGAO	-	RCDG	15	Fair	H		L			L
Eden BC	EDEN	-	Box Culvert		Fair	H		M			
Eden BC II	EDEN	-	Box Culvert		Fair			L			
Tagurano Br.	EDEN	-	RCDG	15	Fair	H		H			
Bato Br.	MARAPANGI	-	RCDG	15	Fair	H		L			
Marapangi Bridge I	MARAPANGI	-	RCDG	30	Fair	L		L			L
Marapangi BC	MARAPANGI	-	Box Culvert		Fair	H		L			

Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						FI	Eq	Ln	Ts	Su	LQ
Piedad Br.	CROSSING BAYABAS	-	RCDG	15	Fair	M		L			L
Lipadas Br. I	SIRAWAN	-	RCDG	15	Fair	M		L			M
Lipadas Br. II	SIRAWAN	-	RCDG	15	Fair	M		L			M
Tagluno Bridge	TAGLUNO	-	Bailey	5	Fair	H		H			
Tagurano BC	TAGURANO	-	Box Culvert		Fair	H		H			
Tagurano BC II	TAGURANO	-	Box Culvert		Fair			H			
Tungkalan Bridge	CAMANSI	-	Bailey	5	Fair			H			
Tugbok District					Fair						
Angalan Br. I	LOS AMIGOS	-	RCDG	15	Fair	H		L			L
Angalan Br. II	TUGBOK	-	RCDG	15	Fair	H		L			L
Angalan Br. III	TUGBOK	-	RCDG	15	Fair	H		L			L
Angalan Br. IV	LOS AMIGOS	-	RCDG	15	Fair	H		L			L
Angalan Br. V	TUGBOK	-	RCDG	15	Fair	H		L			L
Angalan Br. VI	TUGBOK	-	RCDG	15	Fair	H		L			L
Balengaeng Bridge	BALENGAENG	-	RCDG	15	Fair	H		L			
BC-Balengaeng crossing	LOS AMIGOS	-	Box Culvert		Fair	H		L			L
BC-Mintal	MINTAL	-	Box Culvert		Fair	H		L			
BC-Talandang	TALANDANG	-	Box Culvert		Fair			L			
BC-Pangyan	TALANDANG	-	Box Culvert		Fair	H		H			
BC on-going	NEW VALENCIA	-	Box Culvert		Fair	H		H			
Catalunan Grande Bridge	TACUNAN	-	Bailey	5	Fair	H		L			
Los Amigos Bridge	LOS AMIGOS	-	RCDG	30	Fair	H		L			L
Manambulan Bridge	MANAMBULAN	-	Bailey	5	Fair	H		L			
Matina Biao Bridge I	MATINA BIAO	-	RCDG	15	Fair	H		L			

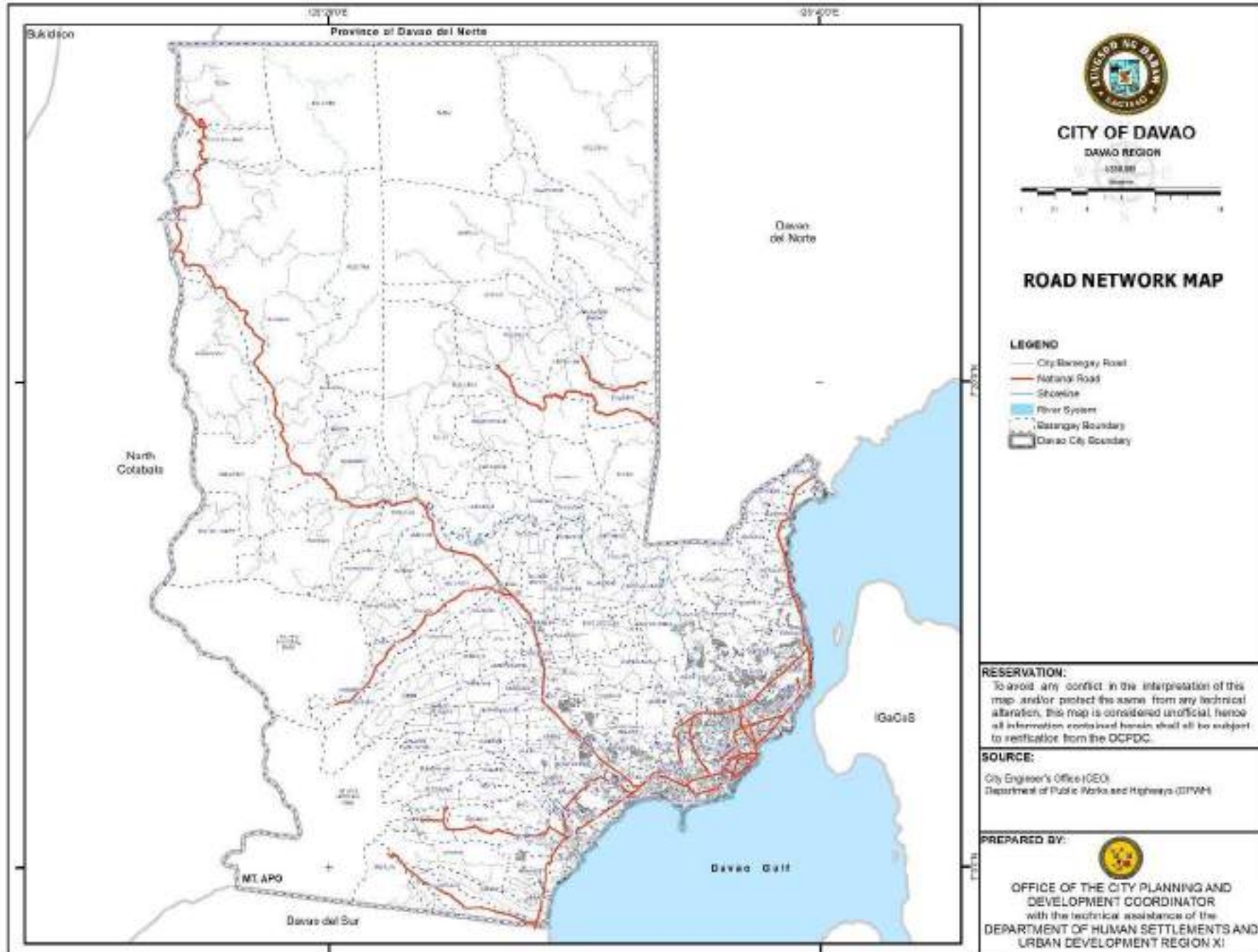
Source: DPWH XI, City Engineer's Office

Table – 31. Inventory of Bridges by Location, Type, Capacity and Condition, 2018

Bridge	Barangay	Year Constructed	Type	Load Capacity (Tons)	Physical Condition	Hazard Susceptibility (H/M/L)					
						FI	Eq	Ln	Ts	Su	LQ
Matina Biao Bridge II	MATINA BIAO	-			Fair	H		L			
Mintal-Tacunan Bridge I	MINTAL	-	RCDG	15	Fair	H	I:	L			
Mintal-Tacunan Bridge II	MINTAL	-	RCDG	15	Fair	H	I:	L			
Pangyan Bridge	TALANDANG	-	Bailey	5	Fair			H			
Small Tacunan Bridge	ULA	-	Culvert		Fair	H	I:	L			
Tacunan Overflow Bridge	TUGBOK	On-going	RCDG	15	Fair	H		L			
Tugbok Quarry Bridge	TUGBOK	2010	RCDG	15	Fair	H		L			
Tugbok-Tacunan Bridge	ULA	-	Hanging Bridge	5	Fair	H		L			L
Twin River Manuel Guinga	MANUEL GUI-ANGA	-	Bailey	5	Fair	H		L			

Source: DPWH XI, City Engineer's Office

Map 2.1. Road Network Map, Davao City



Social Services Facilities/Utilities/Amenities

Education

Public schools in Davao City cover a total land area of 23,815.21 hectares. Public elementary schools occupy a total land area of 23,633.68 hectares, while secondary schools have a total area of 181.53 hectares. Among the congressional districts, District III has the largest area with 23,171.50 hectares.

Elementary education, in terms of the operation of schools, is 58.06% (288) government-owned and 41.94% (208) privately-owned. Majority of the elementary schools are located in District III (40.12%) while the least are in District II (23.79%). This is because District III has a vast land area available for the construction of schools. Most private elementary schools are situated in District I (60.58%) whereas public elementary schools are more concentrated in District III (52.08%).

In terms of hazard susceptibility, 11.46% of these schools or 33 elementary schools, and 14.77 % or 13 junior/senior high schools are highly susceptible to flooding. These schools are mostly located near riverbanks. There are 1.74%, or five (5) elementary schools located along the fault lines of Dacudao, Lacson and Pangyan-Biao Escuela. Only one (1) junior high school is located along the Lacson Fault. About 13.19% or 38 elementary schools and 7.95% or 7 junior/senior high schools are prone to landslide. Majority of these schools are situated in the uplands of Paquibato and Marilog Districts. Moreover, there are 15.63%, or 45 elementary schools and 15.91%, or 14 junior/senior high schools which are highly susceptible to liquefaction. There are also 16.67%, or 48 elementary and 15.91%, or 14 junior/senior high schools which are highly susceptible to storm surge. Water level in these areas rises from 2 to 5 meters during storm surge.

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha)*	Ownership		Facilities*									Hazard Susceptibility (H/M/L)												
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami	Storm Surge	Others (Liquefaction)			
District I	Kindergarten	46.11	53	119	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Good-53	Yes - 53	H-13 M-5 L-24	H-2 L-44				5m-2 4m-3 3m-9 2m-12	H-25 M-6 L-2		
	Elementary			126																						
	Secondary																									
	Junior High School	78.56	15	76	Good	Good	Good-15	Good-15	Good-15	Good-15	Good-15	Good-15	Good-15	Good-15	Good-15	Good-15	Good-477	Good-15	Good-15	H-3 M-3 L-10	L-17				5m-1 3m-2 2m-5	H-8 M-2 L-2
	Senior High School (incorporated in JHS)																									

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha)*	Ownership		Facilities*								Hazard Susceptibility (H/M/L)										
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami	Storm Surge	Others (Liquifaction)
Dis-trict I	Senior High School (stand alone)		1																				
	Sub-Total	124.67	69		<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>	<i>Good - 68</i>

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha)*	Ownership		Facilities*									Hazard Susceptibility (H/M/L)							
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami
District II	Kindergarten	495.43	85	32	Good-85	Good-85	Good-85	Good-85	Good-85	Good -1,533	Good - 30	65	80	Yes - 84	H-6 M-6 L-8			H-13 M-29 L-46		5m-1 4m-1 3m-4 2m-13	H-16 M-3 L-2
	Elementary			33																	
	Secondary																				
	Junior High School	23.62	27	9	Good - 27	Good - 27	Good - 27	Good - 27	Good - 27	Good - 468	Good -16	24	27	Yes-27	H-4 L-3			H-4 M-7 L-19		4m-1 2m-3	H-4 L-2
	Senior High School (incorporated in JHS)			13																	
	Sub-Total	519.05	112	42	Good-112	Good-112	Good-112	Good-112	Good-112	Good-2,001	Good - 46	89	107	Yes - 111	H-10 M-6 L-11			H-17 M-36 L-65		5m-1 4m-2 3m-4 2m-16	H-20 M-3 L-4

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha) *	Ownership		Facilities*										Hazard Susceptibility (H/M/L)						
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami
District III	Kindergarten	306.16	150	47	Good-150	Good-150	Good-150	Good-150	Good-150	Good-150	Good -1,590	Good -24	107	144	Yes-150	H-14 M-18 L-12	Dacudao Fault – 1 Lacson Fault – 2 Pangyan-Biao Escuela Fault - 2	H-23 M-46 L-83	3m-1 2m-2	H-4 M-3 L-7	
	49																				
	Secondary																				

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha)*	Ownership		Facilities*										Hazard Susceptibility (H/M/L)							
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami	Storm Surge
	Junior High School	79.35	46	21	Good - 46	Good – 46	Good – 46	Good – 46	Good – 46	Good – 46	Good - 664	Good - 46	19	20	Yes - 46	H-6 M-6 L-7	Lacson Fault – 1		H-3 M-8 L-35		3m-1 2m-1	H-2 M-2 L-3
	Senior High School (incorporated in JHS)		39	28			Good – 46	Good – 46	Good – 46	Good – 46												
	Sub-Total	385.51	196	145	Good -188	Good -188	Good -188	Good -188	Good -188	Good -188	Good - 1,590	Good- 49	126	164	Yes - 188	H-20 M-24 L-19	Dacudao Fault – 1 Lacson Fault – 3 Pangyan-Biao Escuela Fault - 2		H-26 M-54 L-118		3m-2 2m-3	H-6 M-5 L-10

Table – 32. Schools by Level, Type, Location and Area Occupied SY 2018-2019

Location by Congressional District	Level	Area Occupied (ha)*	Ownership		Facilities*								Hazard Susceptibility (H/M/L)												
			Public	Private	Science Laboratories	HE Rooms	Computer Rooms	Libraries	Clinic	Playground	Comfort Rooms (No. of Toilets)	Schools with internet connection	Schools with electricity	Schools with available water source	Schools with available water source	Flood	Tropical Cyclone	Earthquake/Fault	Volcano	Landslide	Tsunami	Storm Surge	Others (Liquefaction)		
Grand-Total		1,029.23	377	585	Good - 368	Good - 368	Good - 368	Good - 368	Good - 368	Good - 368	Good - 368	Good - 368	Good - 368	Good - 163	283	339	Yes -360	H-46 M-38 L-64		Dacudao Fault – 1 Lacson Fault – 3 Pangyan-Biao Escuela Fault - 2		H-45 M-90 L-244		5m-4 4m-5 3m-17 2m-36	H-59 M-16 L-18

Source: DepEd Basic Education Information System

*Area Occupied and Facilities reflected are only for public schools

*Numbers after the level of susceptibility indicates the number of facilities affected

Tertiary, vocational/technical schools occupy 68.77 hectares in District 1, while 21.44 hectares are occupied in District 2 and 36.08 hectares are currently occupied in District 3. The total combined area is 126.29 hectares.

In terms of hazard susceptibility, two (2) and 19 tertiary schools are highly susceptible to flooding and landslide respectively, while three (3) are moderately susceptible to landslide and one (1) is susceptible to liquefaction. For vocational/technical schools, two (2) and 14 schools are highly susceptible to flooding and landslide while one (1) tertiary level school is susceptible to 5meter water level of storm surge. These are all found in District 1.

Meanwhile in District 2, three (3) tertiary level schools are moderately susceptible to flooding while there are four schools which are highly susceptible to liquefaction. At least two (2) vocational/technical school are moderately susceptible to flooding and four (4) highly susceptible to liquefaction and one tertiary level school is susceptible to a four (4) meter wave level for storm surge.

And for District 3, a tertiary and one (1) vocational technical school are both highly susceptible to flood, while a tertiary and vocation/technical school are moderately and highly susceptible to liquefaction, respectively.

Table – 33. Tertiary and Vocational/Technical Schools by Type, Location, Area and Ownership SY

Location by Congressional District	Level	Area Occupied (ha)	Ownership		Total Enrollment			Hazard Susceptibility (H/M/L)*				
			Public	Private	Male	Female	Total	FL	Fa	LN	SU	L
District I	Tertiary	60.6148	1	31	31,133	34,843	65,976	H-2 M-3 L-24	-	M-1 L-32	5m-1 3m-3 2m-12	H-19 M-1 L-1
	Vocational/ Technical	8.1560	0	29	2,659	4,248	6,907	H-2 M-4 L-18	-	L-29	4m-2 3m-4 2m-5	H-14 M-2 L-3
	Sub-Total	68.7708	1	60	33,792	39,091	72,883	H-4 M-7 L-42	-	M-1 L-61	5m-1 4m-2 3m-7 2m-17	H-33 M-3 L-4

Table – 33. Tertiary and Vocational/Technical Schools by Type, Location, Area and Ownership SY

Location by Congressional District	Level	Area Occupied (ha)	Ownership		Total Enrollment			Hazard Susceptibility (H/M/L)*				
			Public	Private	Male	Female	Total	FL	Fa	LN	SU	L
District II	Tertiary	9.6428	0	9	4,625	3,339	7,964	M-3 L-1	-	L-9	4m-1 3m-2 2m-3	H-4
	Vocational/ Technical	11.7994	1	10	4,247	2,324	6,571	M-2 L-2	-	L-11	2m-4	H-5
	Sub-Total	21.4422	1	19	8,872	5,663	14,535	M-5 L-3	-	L-20	4m-1 3m-2 2m-7	H-9
District III	Tertiary	34.1050	2	5	1,955	565	2,520	H-1 M-1 L-3	-	L-7		M-1 L-2
	Vocational/ Technical	1.9782	2	4	1,049	930	1,979	H-1 L-5	-	L-6	2m-1	H-1 L-1
	Sub-Total	36.0832	4	9	3,004	1,495	4,499	H-2 M-1 L-8	-	L-13	2m-1	H-1 M-1 L-3
Grand Total		126.2962	6	88	45,668	46,249	91,917	H-6 M-13 L-53	-	M-1 L-94	5M-1 4M-3 3M-9 2M-25	H-43 M-4 L-7

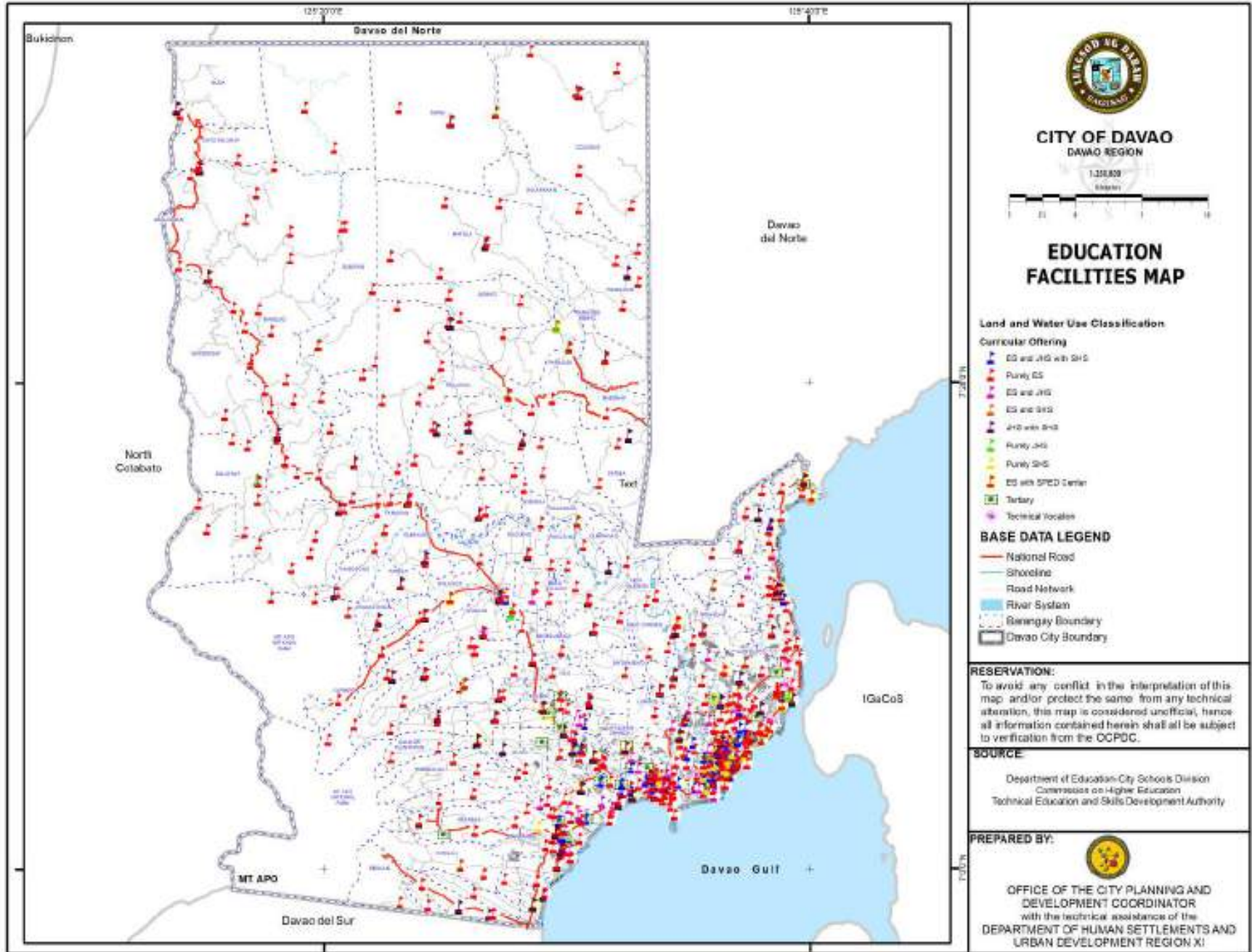
Source: CHED XI & TESDA XI

Notes: *Hazard Susceptibility - Flood (Fl), Fault (Fa) Landslide (Ln), Storm Surge (Su), Liquefaction (L)

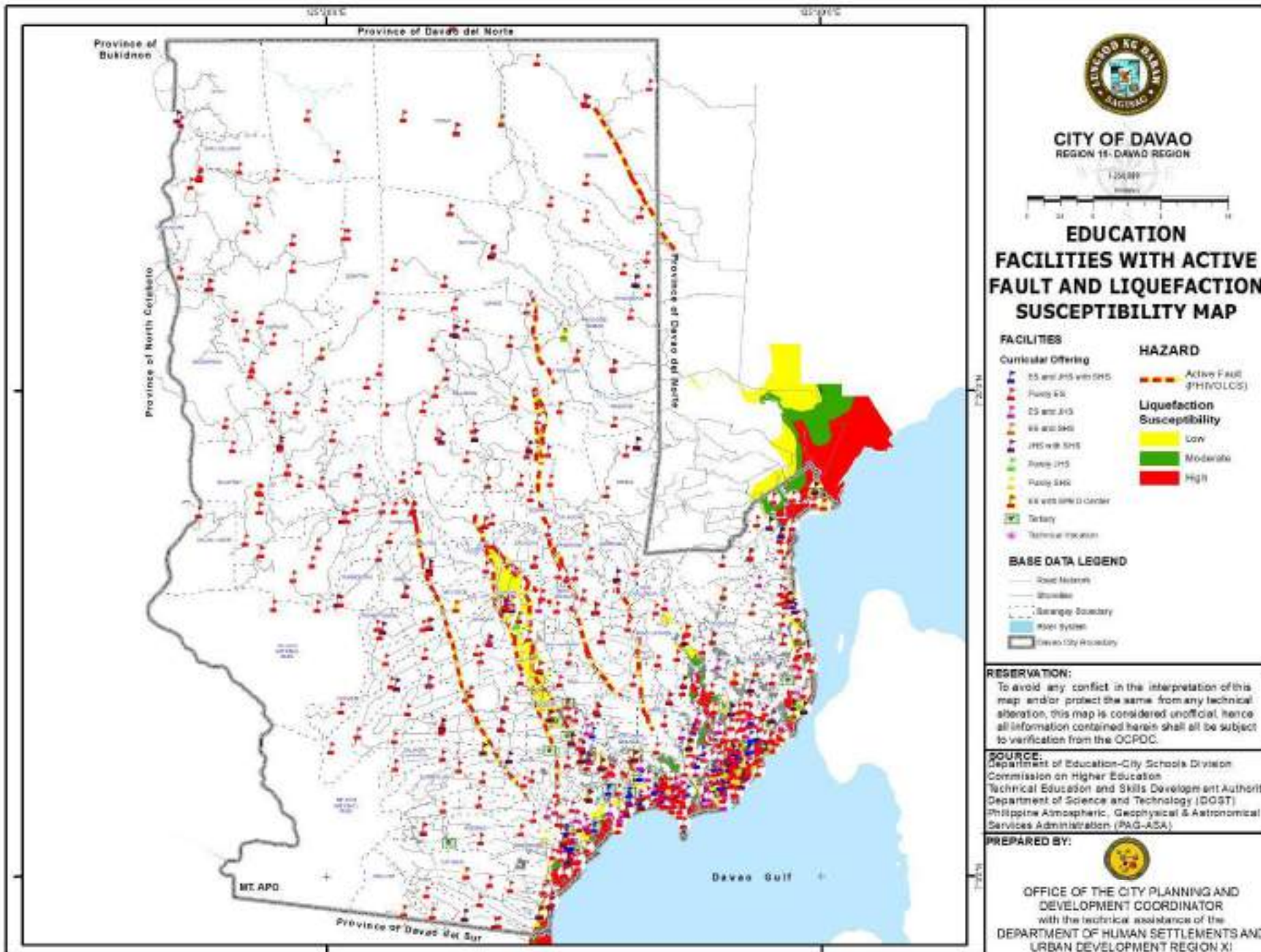
**Indicators for the level of susceptibility –Low (L), Moderate (M), High (H), Very High (VH)

*Numbers after the level of susceptibility indicates the number of facilities affected

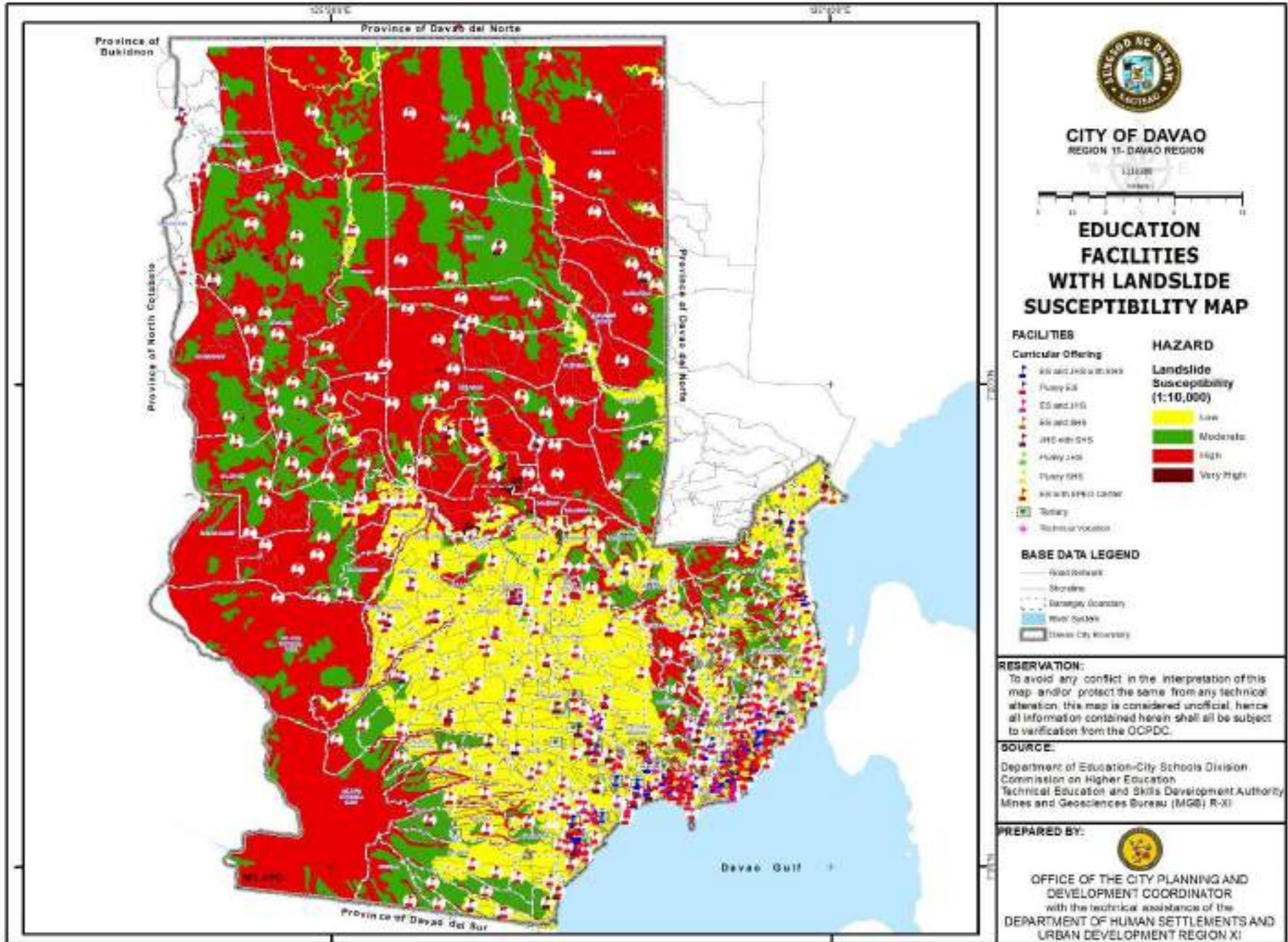
Map 2.2. Education Facilities Map, Davao City



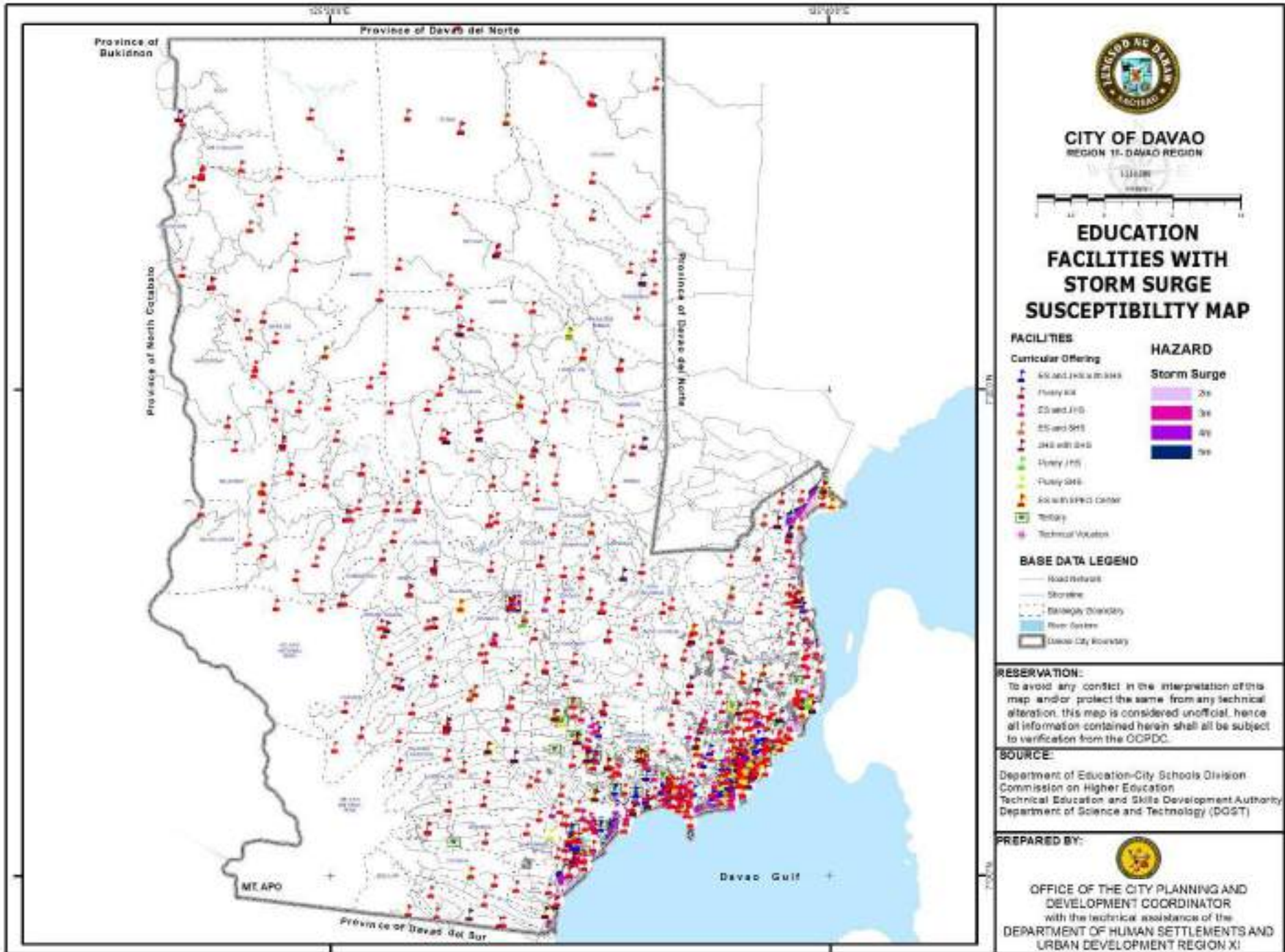
Map 2.3. Education Facilities with Active Fault and Liquefaction Susceptibility Map, Davao City



Map 2.4. Education Facilities with Landslide Susceptibility Map, Davao City



Map 2.5. Education Facilities with Storm Surge Susceptibility Map, Davao City



Health and Sanitation

There are 189 medical personnel (19 doctors, 28 nurses, 19 dentists, 69 midwives, 30 sanitary inspectors and 24 medical technologists) deployed in the rural and barangay health units (RHUs/BHS), Paquibato District Hospital and birthing facilities in the city. The First District, which includes Talomo and Poblacion areas, has the most number of medical personnel at 38.7%, followed by the Third District (31.2%) and Second District (30.1), respectively.

The city government puts premium to health programs and projects and mobilizes its health workers to ensure better quality health services for Davaoeños. The number of health workers, however, remain below the ideal ratio. Shortages are also observed following the standard ratio set by the DOH. To augment the number of health workers, the city employs additional human resources and volunteer health workers. Currently, there are 370 Barangay Nutrition Scholars (BNS) and 1,125 Barangay Health Workers (BHWs) all deployed to their respective communities.

For hospitals, there are 28 facilities which are considered to have low susceptibility and another two (2) with medium susceptibility, to hazards. For flooding, there are three (3) hospitals that are identified within high to very high flooding hazards. There are 11 hospitals that have high risks for liquefaction and these are located at the Poblacion and Agdao Districts.

For health centers, there are 22 centers that belong to the moderate to high flooding hazards. These health centers are mostly located near a river system. Also, there are nine (9) health centers which are classified as highly susceptible to landslide, five (5) of which are found in Paquibato District. For liquefaction hazards, there are 70 health centers that are listed and most of these are found in the Poblacion and Talomo areas. Out of the total number of health centers, 77 are categorized to be affected by storm surges.

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Level 3 Health Facilities														
Brokenshire Integrated Health Ministries Inc.	Brgy. 8-A	Private	200	44	210	22	0	0	476	Operational	LF	L		
Davao Doctors Hospital	Brgy. 6-A	Private	250	647	332	4	0	0	1233	Operational	LF	L	4m	High
San Pedro Hospital	Brgy. 14-B	Private	295	71	262	1	0	0	629	Operational	LF	L	3m	High
Southern Philippines Medical Center	Buhangin	Public	1,200	696	1,326	95	0	0	3317	Operational		L		
Total				1,458	2,130	122	0	0	5,655					
Level 2 Health Facilities														
Anda Riverview Medical Center, Inc.	Brgy. 2-A	Private	56	27	48	2	0	0	77	Operational	VHF	L	3m	High
Davao Adventist Hospital	Talomo	Private	75	79	67	6	0	0	152	Operational	MF	L		Low
Davao Medical School Foundation Hospital	Brgy. 19-B	Private	154	32	102	2	0	0	136	Operational	LF	L		
Gig Oca Robles Seamen's Hospital- Davao	R. Castillo	Private	50	26	43	4	0	0	73	Operational	HF	L	2m	High
Medical Mission Group Hospital and Health Services Cooperative of Davao City	Leon Garcia	Private	80	24	47	0	0	0	71	Operational	LF	L	2m	High
Metro Davao Medical and Research Center, Inc.	Buhangin	Private	135	103	117	3	0	0	223	Operational	LF	L		
Ricardo Limso Medical Center, Inc.	Brgy. 3-A	Private	85	311	58	2	0	0	371	Operational	LF	L	4m	High
Total				602	482	19	0	0	1103					
Davao Mediquest Hospital	Toril	Private	46	13	35	4	0	5	57	Operational	LF	L		Moderate
Holy Spirit Community Hospital of Davao	Mintal	Private	30	12	20	1	0	0	33	Operational	MF	L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Isaac T. Robillo Memorial Hospital	Calinan	Private	25	37	31	3	0	0	71	Operational	MF	L		Low
Malta Medical Center	Toril	Private	24	106	27	1	0	0	134	Operational		L		
St. John Hospital of the Cross Hospital	Toril	Private	30	36	54	1	0	0	91	Operational	LF	L		Moderate
Tebow Cure Hospital	Wilfredo Aquino	Private	17	3	25	0	0	2	30	Operational		L	5m	Moderate
AP dela Cerna Hospital	Cabantian	Private									HF	L		
Alterado General Hospital	R. Castillo	Private									MF	L	2m	High
Principe Baguio Community Medical Hospital	Baguio	Private									LF	L		
Camp Panacan Station Hospital	Panacan	Public-Armed Forces										L		
Total				207	192	10	0	7	416					
Grand Total				2,267	2,804	151	0	7	7,174					
Talomo Central														
Matina Aplaya Health Center(RHU)	Matina Aplaya	Public	BHS	1	2	3	2	37	45	Operational	L	2m	High	
Matina Crossing Health Center	Matina Crossing	Public	Attached							Operational	L		High	
Talomo Central Health Center	Matina Crossing	Public	RHU							Operational	L		Low	
Catalunan Grande Health Center	Catalunan Grande	Public	BHS							Operational	L			
Gravahan Health Center	Gravahan	Public	BHS							Operational, Needs Repair	L	4m	High	
Pangi Health Center	Matina Pangi	Public	BHS							Operational	L		Moderate	

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Talomo North														
Talomo North Health Center RHU	SIR Phase 1, Brgy 76-A	Public	RHU	1	2	3	2	50	58	Operational	HF	L	2m	High
SIR Phase 2 Health Center	SIR Phase 2, Brgy 76-A	Public	BHS							Operational	LF	L	3m	High
Times Beach Health Center	Times Beach, Brgy. 76-A	Public	BHS							Operational	LF	L	3m	High
Bucana Health Center	Bucana, Brgy.76-A	Public	BHS							Operational, Needs Repair	LF	L	2m	High
St. John Health Center	Casilac, Bucana, Brgy 76-A	Public	BHS							Operational	HF	L	2m	High
Kabacan Health Center I	Yakal St., Brgy. 76-A	Public	BHS							Operational	MF	L	2m	High
Kabacan Health Center II	San Isidro	Public	BHS							Ongoing construction	LF	L	2m	High
Teen Center	Balite Brgy 76 -A	Public								Ongoing construction	MF	L	2m	High
Magtuod Health Center	Brgy. Magtuod	Public	Attached							Operational		M		
Langub Health Center	Brgy. Langub	Public	Attached							Operational		M		
Mojon BHS	Sitio Mojon, Brgy. Langub	Public	BHS							Operational		H		
Ma-a Health Center	Brgy. Ma-a	Public	BHS							Operational	LF	L		
Talomo South														
Puan Health Center	Puan	Public	RHU	1	2	6	2	55	66	Operational	MF	L		Low
Baliok Health Center	Brgy. Baliok Proper	Public	BHS							Operational	LF	L	4m	Moderate
Purok Makar	Purok Makar, Baliok	Public	BHS							Ongoing construction	LF	L		
Purok 6, Ramonena	Purok 6, Baliok	Public	BHS							Ongoing construction	MF	L		
Bago Gallera Health Center	Brgy. Bago Gallera	Public	BHS							Operational, Needs Repair	LF	L		
Bago Gallera Health Center	Rosalina Village 1	Public	BHS							On-going Construction	LF	L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Talomo South														
Bago Aplaya Health Center	Brgy. Bago Aplaya	Public	BHS							Operational	HF	L	2m	High
Gulf View Health Center	Gulf View Subd., Bago Aplaya	Public	BHS							For Turnover	LF	L	3m	High
Dumoy Health Center	Brgy. Dumoy	Public	Attached							Operational	LF	L		Low
Catalunan Pequeño Health Center	Brgy. Catalunan Pequeño	Public	Attached							Operational, Needs Repair	MF	L		
NHA Relocation Health Center	Brgy. Talomo Proper	Public	BHS							on-going construction	HF	L	2m	High
Royal Valley Health Center	Brgy. Talomo Proper	Public	BHS							Operational	MF	L		Moderate
Talomo Cemento Health Center	Brgy. Talomo Proper	Public	BHS							on-going renovation	HF		2m	High
Poblacion District A														
Brgy 1-A Health Center	Brgy. 1-A	Public	Attached							Operational, Needs Repair	HF	L	3m	High
Brgy. 2-A Health Center	Brgy. 2-A	Public	Attached							Operational, Needs Repair	VHF	L	3m	High
Tomas Claudio Health Center	Brgy. 4-A	Public	RHU							Operational	LF	L	3m	High
Teen Center	Brgy. 4-A	Public								On-going Construction	LF	L	3m	High
Bankerohan Health Center	Brgy. 5-A	Public	BHS	1	1	3	2	35	42	Operational	LF	L	4m	High
Brgy.6-A Health Center	Brgy. 6-A	Public	Attached							Operational, Needs Repair	LF	L		
Brgy.8-A Health Center	Brgy. 8-A	Public	Attached							Operational, Needs Repair	LF	L		
Brgy.9-A Health Center	Brgy. 9-A	Public	BHS							On-going Construction	LF	L	4m	High
Brgy.10-A Health Center	Brgy. 10-A	Public	Attached							Operational, Needs Repair	LF	L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Poblacion District B														
Brgy 11-B Health Center	Brgy. 11-B	Public	Attached	1	2	3	2	18	26	Operational, Inside the Brgy. Hall	LF	L	4m	Moderate
Brgy 12-B Health Center	Brgy. 12-B	Public	BHS							Operational	LF	L	5m	Moderate
Brgy. 13-B Health Center	Brgy. 13-B	Public	BHS							Operational	LF	L	4m	Moderate
Brgy.14 Health Center	Brgy.14-B	Public	BHS							Operational	LF	L	2m	High
Brgy.15 Health Center	Brgy. 15-B	Public	BHS							Operational	LF	L	2m	High
Brgy. 18 Health Center	Brgy.18-B	Public	BHS							Operational, Needs Repair	LF	L	3m	Moderate
Brgy. 19 Health Center (RHU)	Brgy.19-B	Public	RHU							Operational, Will transfer to El Rio	LF	L		
EL Rio Vista Health Center (RHU)	Brgy. 19-B	Public								On-going Construction	VHF	L		High
New BHS	Brgy. 19-B	Public	BHS							On-going Construction	LF	L		
Brgy. 20 Health Center	Brgy.20-B	Public	BHS							Operational	LF	L	3m	Moderate
Poblacion District C														
Brgy.21-C Piapi Health Center	Brgy. 21-C	Public	Attached	1	1	4	3	35	44	Operational, Inside the Brgy. Hall	LF	L	2m	High
Brgy 22-C Health Center	Brgy. 22-C	Public	BHS							Operational	HF		2m	High
Brgy 23-C Mini Forest Health Center	Brgy. 23-C	Public	RHU							Operational	LF	L	2m	High
New BHS / Isla Verde Purok 3B	Brgy. 23-C	Public	BHS							Operational, For Construction	HF		2m	High
Brgy 24-C Health Center	Brgy. 24-C	Public	BHS							Operational	LF	L	2m	High
Brgy.25-C Health Center	Brgy. 25-C	Public	BHS							Operational, Needs Repair	LF	L	2m	High
Brgy.26-C Health Center	Brgy. 26-C	Public	BHS							Operational	LF	L	2m	High
Brgy.27-C Health Center	Brgy. 27-C	Public	BHS							Operational	LF	L	2m	High
Sta. Ana Health Center	Brgy. 27-C	Public								On-going Construction	HF	L	2m	High
Brgy.28-C Health Center	Brgy. 28-C	Public	BHS							Operational	LF	L	2m	High
Brgy. 29-C Health Center	Brgy. 29-C	Public	BHS							Operational	LF	L	2m	High
Brgy.30-C Health Center	Brgy. 30-C	Public	BHS							Operational, Needs Repair	LF	L	2m	High

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Poblacion District D														
Brgy. 32-D Jacinto Health Center	Brgy. 32-D	Public	RHU	1	1	3	2	40	47	Operational	LF	L	2m	High
Reproductive Health and Wellness Center		Public								Operational	LF	L	2m	High
Brgy 36-D	Brgy.36-D	Public	BHS							Operational, Needs Repair	LF	L	2m	High
Brgy.37-D	Brgy. 37-D	Public	BHS							Operational	LF	L	2m	High
Brgy.38-D	Brgy.38-D	Public	BHS							Operational, Needs Repair	LF	L	2m	High
Brgy. 39-D	Brgy.39-D	Public	BHS							Operational, Needs Repair	LF	L	2m	High
Agdao District														
Leon Garcia Health Center	Leon Garcia	Public	BHS	2	2	4	2	68	78	Operational	MF	L	2m	High
Vicente Duterte Health Center	Vicente Duterte	Public	BHS							Operational	LF	L	2m	High
Wilfredo Aquino Health Center	Wilfredo Aquino	Public	BHS							Operational	MF	L	2m	High
Paciano Bangoy Health Center	Paciano Bangoy	Public	BHS							Operational	LF	L	4m	Moderate
San Antonio Health Center	San Antonio	Public	BHS							Operational	LF	L	2m	High
Ubalde Health Center	Ubalde	Public	BHS							Operational	LF	L	2m	High
R.Castillo Health Center	R. Castillo	Public	BHS							Operational		L	2m	High
Lapu-Lapu Health Center	Lapu-Lapu	Public	BHS							Operational	LF	L	2m	High
North San Juan Health Center	Centro Agdao	Public	BHS							Operational		L		High
New BHS	Centro Agdao	Public	BHS							Ongoing Construction	LF	L	2m	High
South San Juan Health Center	Centro Agdao	Public	BHS							Operational	MF	L	2m	High
Tomas Monteverde Health Center	Tomas Monteverde	Public	BHS							Operational	MF	L	2m	High
Agdao Health Center	Agdao	Public	RHU							Operational	MF	L	2m	High

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Buhangin District														
Acacia Health Center	Acacia	Public	BHS	1	4	8	2	54	69	Operational		M		
Buhangin Proper Health Center	Buhangin Proper	Public	Attached							Operational		L		
Buhangin Health Center	Buhangin Proper	Public	RHU							Ongoing Renovation		L		
Spring Valley Health Station	Buhangin Proper	Public	BHS							Operational		L		
Old San Isidro Health Station	Buhangin Proper	Public	BHS							Operational		L		
Mahayag Health Station	Buhangin Proper	Public	BHS							Operational		L		
St.Jude Health Station	Buhangin Proper	Public	BHS							Operational		L		
Buhangin Health Center	Buhangin Proper	Public	RHU							Needs Repair, For Renovation		L		
Cabantian Health Center	Cabantian	Public	BHS							Operational		L		
Callawa Health Center	Callawa	Public	BHS							Operational	LF	L		
Communal Health Center	Communal	Public	BHS							Ongoing Renovation		L		
Indangan Health Center	Indangan	Public	Attached							Operational		L		
Mandug Health Center	Mandug	Public	BHS							Ongoing Construction		L		Low
Tigatto Health Center	Tigatto	Public	BHS							Operational		L		
Waan Health Center	Waan	Public	BHS							Operational		L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Bunawan District														
Bunawan Health Center	Bunawan	Public	RHU	1	0	4	1	86	92	Operational		L	3m	Moderate
Panacan Proper Health Center	Panacan	Public	Attached							Operational	LF	L	2m	High
Ilang Health Center	Ilang	Public	Attached							Operational		L		
Mudiang Health Center	Mudiang	Public	Attached							Operational		H		
Tibungco Health Center	Tibungco	Public	BHS							Operational		L		
Panacan 13 Health Center	Panacan	Public	BHS							Operational		L	4m	High
Golden Hills Health Center	Panacan	Public	BHS							Operational		L		
Veterans Hills Health Center	Panacan	Public	BHS							Ongoing Construction		L		Moderate
Lasang Health Center	Lasang	Public	Attached							Operational		L	2m	High
San Isidro Health Center	San Isidro	Public	Attached							Operational		L		Moderate
Mahayag Health Center	Mahayag	Public	BHS							Operational		M		
Gatungan, Health Center	Gatungan	Public	Attached							Operational		H		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Paquibato District														
Malabog Health Center	Malabog	Public	RHU	1	1	4	0	94	100	Operational		M		
Sumimao Health Center	Sumimao	Public	BHS							Operational		H		
Fatima Health Center	Fatima	Public	BHS							Operational		M		
Paradise Embac Health Center		Public	BHS							Operational		H		
Paquibato Proper Health Center	Paquibato	Public	BHS							Operational		L		
Paquibato District Hospital	Paquibato	Public	Hospital							Ongoing Renovation		L		
Pandaitan Health Center	Pandaitan	Public	BHS							Operational, Needs Repair		H		
Lumiad Health Center	Lumiad	Public	BHS							Operational		M		
Mapula Health Center	Mapula	Public	BHS							Operational, Ongoing Completion		M		
Damilag BHS	Damilag	Public	BHS							Operational		M		
Salapawan Health Center	Salapawan	Public	BHS							Ongoing Construction		M		
Kinse-kinse Health Center	Salapawan	Public	BHS							Ongoing Construction		H		
Panaga Health Center w/ birthing	Panaga	Public	BHS							Operational, Ongoing Construction		M		
Pañalum Health Center	Pañalum	Public	RHU							Operational		M		
Mabuhay Health Center	Mabuhay	Public	BHS	Operational		L								

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel					Physical Condition	Hazard Susceptibility				
				Doctor	Nurse	Midwife	Sanitary Inspector	Other		Total	Flood	Land-slide	Storm Surge	Liquefaction
Sasa District														
Anglongto Health Center	Anglongto	Public	BHS	1	0	4	1	34	40	Ongoing Construction		L		
Pampanga Health Center	Pampanga	Public	BHS							Operational	MF	L		
New BHS	Pampanga	Public	BHS							Ongoing Construction		L		
Hizon Health Center	Hizon	Public	BHS							Operational	MF	L	2m	High
Sasa Health Center	Sasa	Public	RHU							Ongoing Construction		L	2m	High
Sasa Health Center	Sasa	Public	Teen Center BHS							Ongoing Renovation		L	2m	High
Doña Salud SubCenter	Sasa	Public	BHS							Operational		L		
Km.11 Sasa Subcenter	Sasa	Public	BHS							Operational		L	2m	High
Landmark Sub Center	Sasa	Public	BHS							Operational		L	2m	High
Beach Club Sub Center	Sasa	Public	BHS							Operational		L	3m	High

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Baguio District														
Baguio Health Center	Baguio	Public	RHU	1	1	3	1	77	83	Operational		L		
Baguio BHS	Baguio	Public	BHS							Operational, Needs Repair		L		
Cadalian Health Center	Cadalian	Public	BHS							Operational, Needs Repair		L		
Carmen Health Center	Carmen	Public	BHS							Operational, Needs Repair		L		
Gumalang Health Center	Gumalang	Public	BHS							Operational	MF	L		
Malagos Health Center	Malagos	Public	BHS							Operational		L		
Baguio Urban Health Center	Baguio	Public	BHS							Operational	LF	L		
Tawan-Tawan Health Center	Tawan-Tawan	Public	BHS							Operational, Needs Repair		L		
Tambobong Health Center	Tambobong	Public	BHS							Operational, Needs Repair		M		
Wines Health Center	Wines	Public	BHS							Operational, Needs Repair		L		
Salapawan Health Center	Salapawan	Public	BHS							Ongoing Construction		M		
Kinse-kinse Health Center	Salapawan	Public	BHS							Ongoing Construction		H		
Panaga Health Center w/ birthing	Panaga	Public	BHS							Operational, Ongoing Construction		M		
Pañalum Health Center	Pañalum	Public	RHU							Operational		M		
Mabuhay Health Center	Mabuhay	Public	BHS	Operational		L								

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Calinan District														
Biao Joaquin Health Center	Biao Joaquin	Public								Ongoing Construction	MF	L		
Calinan Pob. Rurak Health Unit	Calinan	Public	RHU							Operational	HF	L		
Calinan Subcenter	Calinan	Public	BHS							Operational	MF	L		Low
Cawayan Health Center	Cawayan	Public	BHS							Operational		L		Low
Dacudao Health Center	Dacudao	Public	BHS							Operational	MF	L		
Dalagdag Health Center	Dalagdag	Public	BHS							Operational		L		
Inayagan Health Center	Inayagan	Public	BHS							Operational		H		
Lacson Health Center	Lacson	Public	BHS							Operational		L		
Lamanan Health Center	Lamanan	Public	BHS							Operational		L		
Lampiano Health Center	Lampiano	Public	BHS							Operational		L		
Megkawayan Health Center	Megkawayan	Public	BHS	1	3	6	2	139	151	Operational		M		
Pangyan Health Center	Pangyan	Public	BHS							Operational		M		
Riverside Health Center	Riverside	Public	BHS							Operational	VHF	L		Low
Saloy Health Center	Saloy	Public	BHS							Operational	HF	L		
Sirib Health Center	Sirib	Public	BHS							Operational		L		
Subasta Health Center	Subasta	Public	BHS							Operational	MF	L		
Talomo River Health Center	Talomo	Public	BHS							Operational	MF	L		
Talomo Urban Health Center	Talomo	Public	BHS							Operational	MF	L		
Tamayong Health Center	Tamayong	Public	BHS							Operational		L		
Tamayong Subcenter	Tamayong	Public	BHS							Operational		M		
Wangan Health Center	Wangan	Public	BHS							Needs Repair, For Construction	LF	L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel					Physical Condition	Hazard Susceptibility				
				Doctor	Nurse	Midwife	Sanitary Inspector	Other		Total	Flood	Land-slide	Storm Surge	Liquefaction
Marilog District														
Baganihan	Baganihan	Public	Attached	1	1	2	1	85	90	Operational				
Bantol	Bantol	Public	BHS							Operational		M		
Dalag	Dalagdag	Public	BHS							Operational		M		
Datu Salumay	Datu Salumay	Public	BHS							Operational, Needs Repair				
Sitio Tagumpay BHS	Datu Salumay	Public	BHS							Operational		M		
Magsaysay	Magsaysay	Public	Attached							Operational		M		
Malamba	Malamba	Public	BHS							Operational, Needs Repair		M		
Marilog Proper	Marilog	Public	BHS							Operational		M		
Marahan RHU with Birthing	Marahan	Public	RHU							Operational, For Turnover		M		
Marilog Urban Health Center	MArilog	Public	Urban Health Center							Ongoing Construction		M		
Marilog District Infirmary	Marilog	Public								Operational		M		
Salaysay	Salaysay	Public	BHS							Operational		M		
Suawan	Suawan	Public	BHS							Operational		L		
Tamugan	Tamugan	Public	BHS							Operational	MF	L		

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel					Physical Condition	Hazard Susceptibility				
				Doctor	Nurse	Midwife	Sanitary Inspector	Other		Total	Flood	Land-slide	Storm Surge	Liquefaction
Toril District														
Alambre	Alambre	Public	BHS	2	4	5	4	134	149	Operational, Needs Repair		L		
Atan-Awe	Atan-Awe	Public	BHS							Operational		M		
Bangkas Heights	Bangkas Heights	Public	BHS							Operational, Needs Repair		L		
Baracatan	Baracatan	Public	BHS							Operational		L		
Bato	Bato	Public	BHS							Operational, Needs Repair		LL		
Bayabas	Bayabas	Public	BHS							Operational		L		
Binugao	Binugao	Public	BHS							Ongoing Renovation	HF	L		Moderate
Camansi	Camansi	Public	BHS							Operational		L		
Catigan	Catigan	Public	BHS							Operational, Needs Repair		M		
Crossing Bayabas	Crossing Bayabas	Public	BHS							Operational	LF	L		Low
Ambulatory Surgical Clinic	Crossing Bayabas	Public	Medical Clinic							Operational	LF	L		Low
Daliao	Daliao	Public	BHS							Operational	LF	L	3m	High
Daliaon Plantation	Daliaon Plantation	Public	BHS							Operational		M		
Eden	Eden	Public	BHS							Operational, Needs Repair		M		
Kilate	Kilate	Public	BHS							Operational, Needs Repair		L		
Lizada	Lizada	Public	BHS							Operational	LF	L		Moderate
Lubogan	Lubogan	Public	BHS							Operational	HF	L		
Marapangi	Marapangi	Public	BHS							Operational	MF	L		Low
Mulig	Mulig	Public	BHS							Operational		L		
Sibulan	Sibulan	Public	BHS							Ongoing Renovation		H		
Sirawan	Sirawan	Public	BHS							Operational, Needs Repair		L		Low
Tagluno	Tagluno	Public	BHS							Operational		L		
Tagluno	Tagluno	Public	BHS							Operational		L		
Tagurano	Tagurano	Public	BHS	Operational, Needs Repair		L								
Tibuloy	Tibuloy	Public	BHS	Operational		M								

Table – 34. Medical Health Facilities and Personnel

Name of Health Facility	Barangay	Ownership	Capacity (No. of Beds)	Number of Personnel						Physical Condition	Hazard Susceptibility			
				Doctor	Nurse	Midwife	Sanitary Inspector	Other	Total		Flood	Land-slide	Storm Surge	Liquefaction
Toril Poblacion	Toril	Public	RHU							Operational	LF	L		Low
Toril Urban Health Center	Toril	Public	Urban Health Center							Operational	LF	L		Low
Tungkalan	Tungkalan	Public	BHS							Operational		L		
Tugbok District														
Angalan	Angalan	Public	BHS							Operational	MF	L		
Bago Oshiro	Bago Oshiro	Public	BHS							Operational		L		
Balingaeng	Balingaeng	Public	BHS							Operational	MF	L		
Biao Escuela	Biao Escuela	Public	BHS							Operational		L		
Biao Guianga	Biao Guianga	Public	BHS							Operational	MF	L		
Los Amigos	Los Amigos	Public	BHS							Operational	MF	L		Low
Los Amigos New Urban Health Center	Los Amigos	Public	Urban Health Center							Operational	MF	L		Low
Manambulan	Manambulan	Public	BHS							Operational		L		
Manuel Guianga	Manuel Guianga	Public	BHS							Operational		L		
Matina Biao	Matina Biao	Public	BHS							Operational	MF	L		
Mintal	Mintal	Public	BHS	1	1	4	1	127	134	Operational	MF	L		
Tugbok District Health Center	Tugbok	Public	RHU							Operational	MF	L		
New Carmen	New Carmen	Public	BHS							Operational		M		
New Valencia	New Valencia	Public	BHS							Operational		L		
Sto. Niño	Sto. Niño	Public	BHS							Operational		L		
Tacunan	Tacunan	Public	BHS							Operational		L		
Tagakpan	Tagakpan	Public	BHS							Operational	MF	L		
Talandang	Talandang	Public	BHS							Operational, Needs Repair		L		
Tugbok Pob.	Tugbok Pob.	Public	BHS							Operational, Needs Repair		L		
Ula	Ula	Public	BHS							Operational		L		

Source: City Health Office, Department of Health and City Planning and Development Office

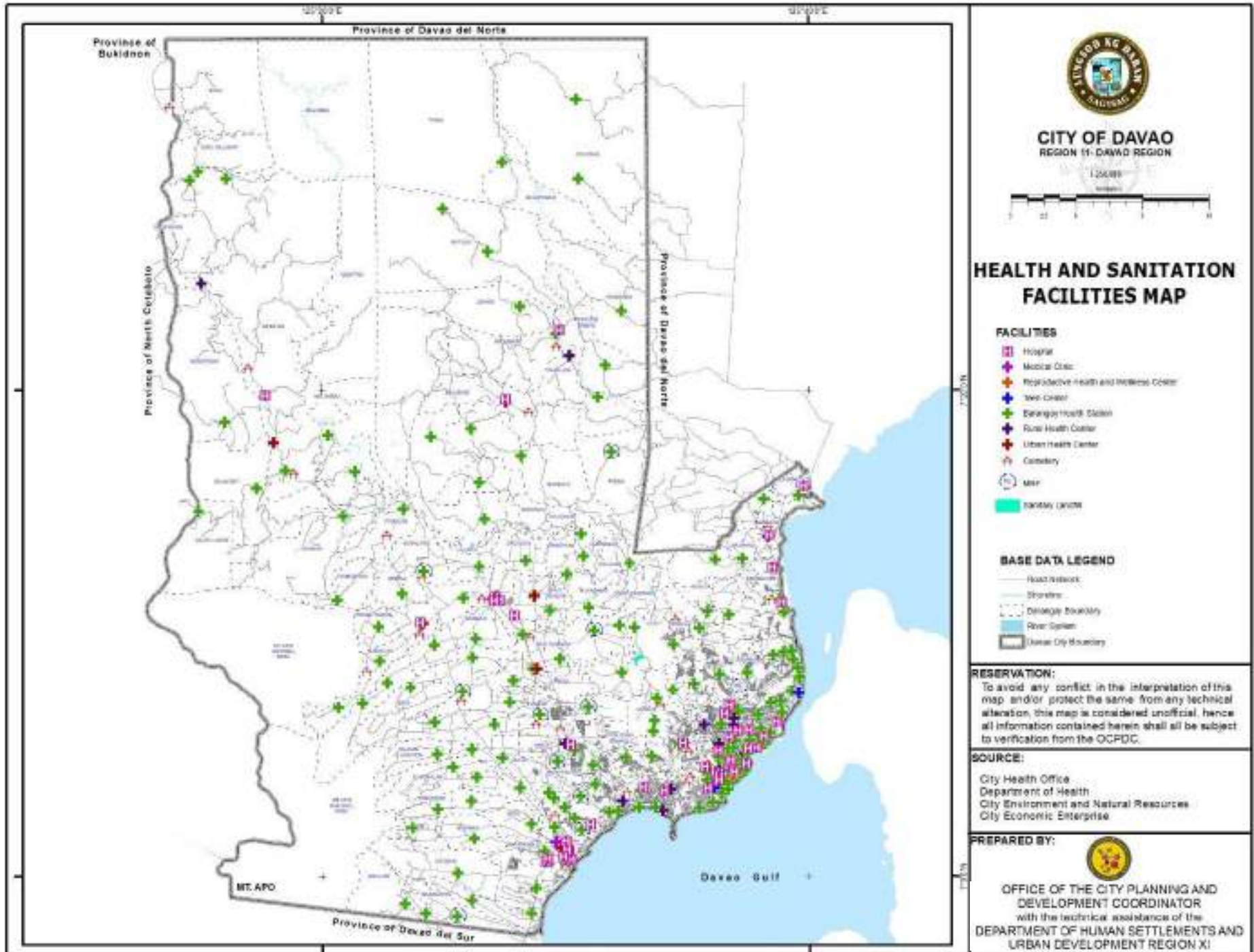
***Figures after level of hazard susceptibility are the number of facilities affected

Table – 35. Number of Healthcare Professionals, 2018

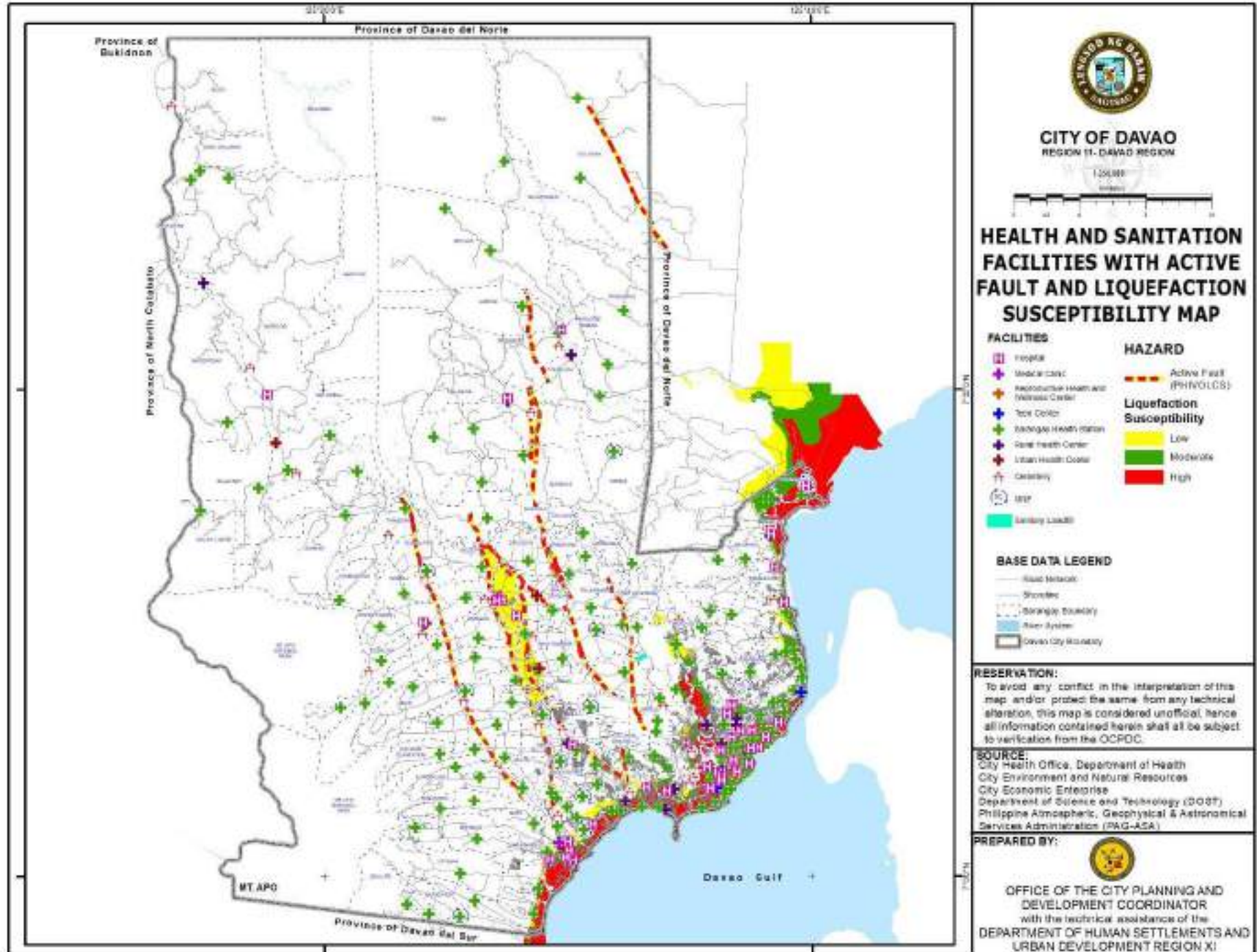
District/ Standards	Type of Healthcare Professional						
	Doctor	Nurse	Midwife	Dentist	Medical Tech- nologist	Sanitary In- spector	Barangay Health Workers
Total First District	7	11	25	7	8	15	255
Total Second District	6	7	24	6	8	6	322
Total Third District	6	10	20	6	8	9	548
Total	19	28	69	19	24	30	1125
Actual Ratio	1:91,486	1:62,080	1:25,192	1:91,486	1:72,427	1:57,942	No specific standards for BHWs
Standard Ratio	1:20,000	1:20,000	1:5,000	1:20,000	1:20,000	1:20,000	
Deficiency on DOH Standards	68	59	279	68	63	57	

Source: City Health Office

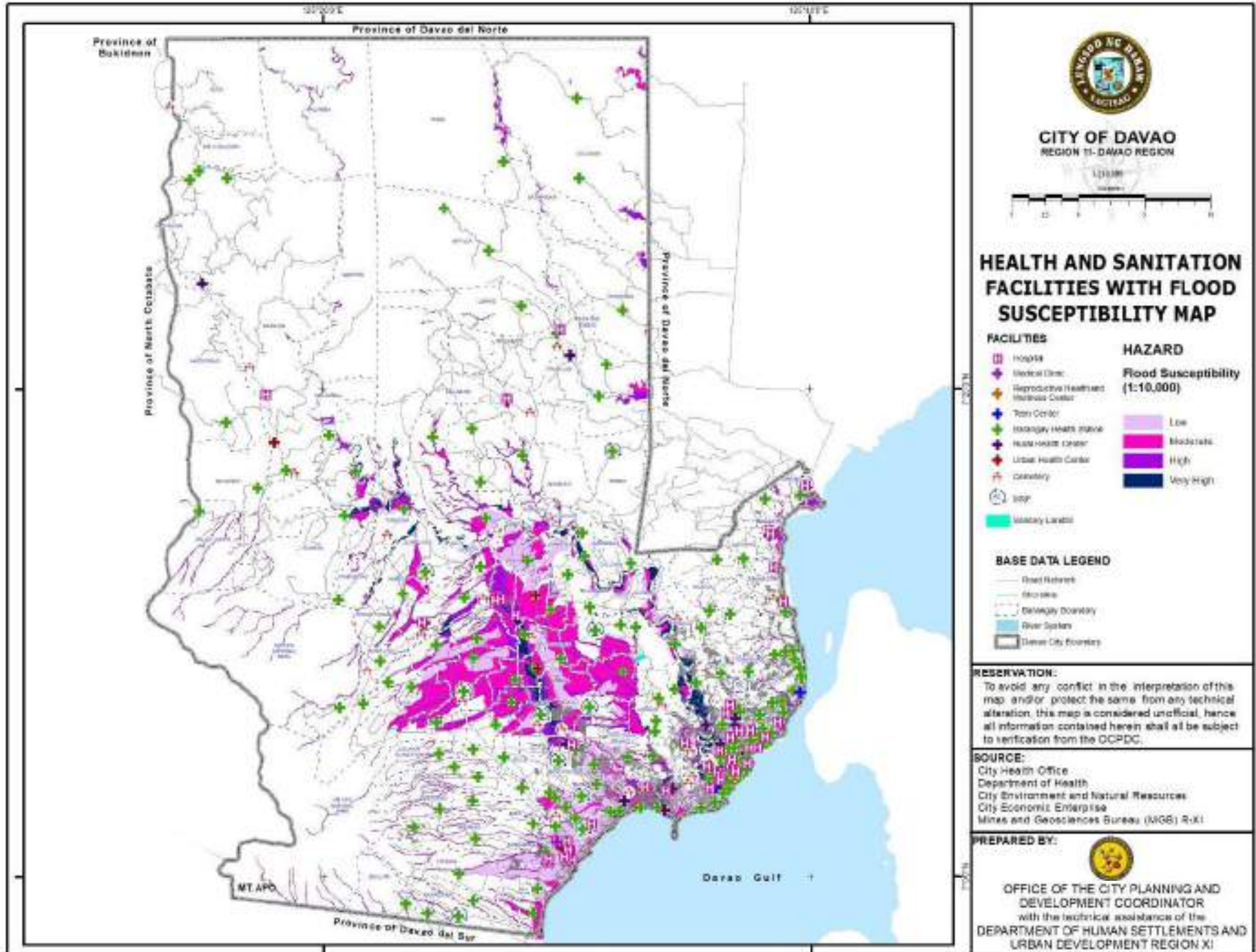
Map 2.6. Health and Sanitation Facilities Map, Davao City



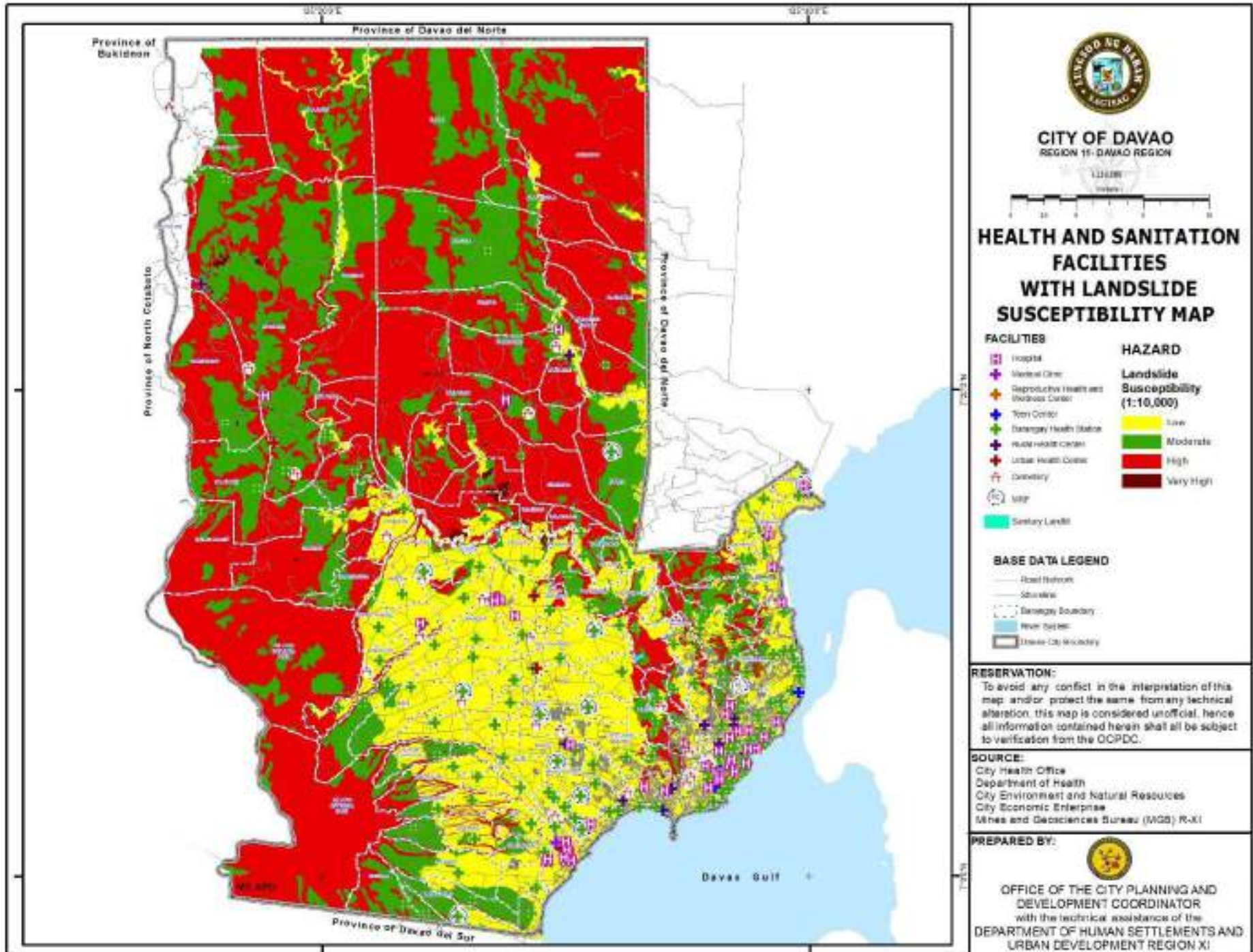
Map 2.7. Health and Sanitation Facilities with Active Fault and Liquefaction Susceptibility Map, Davao City



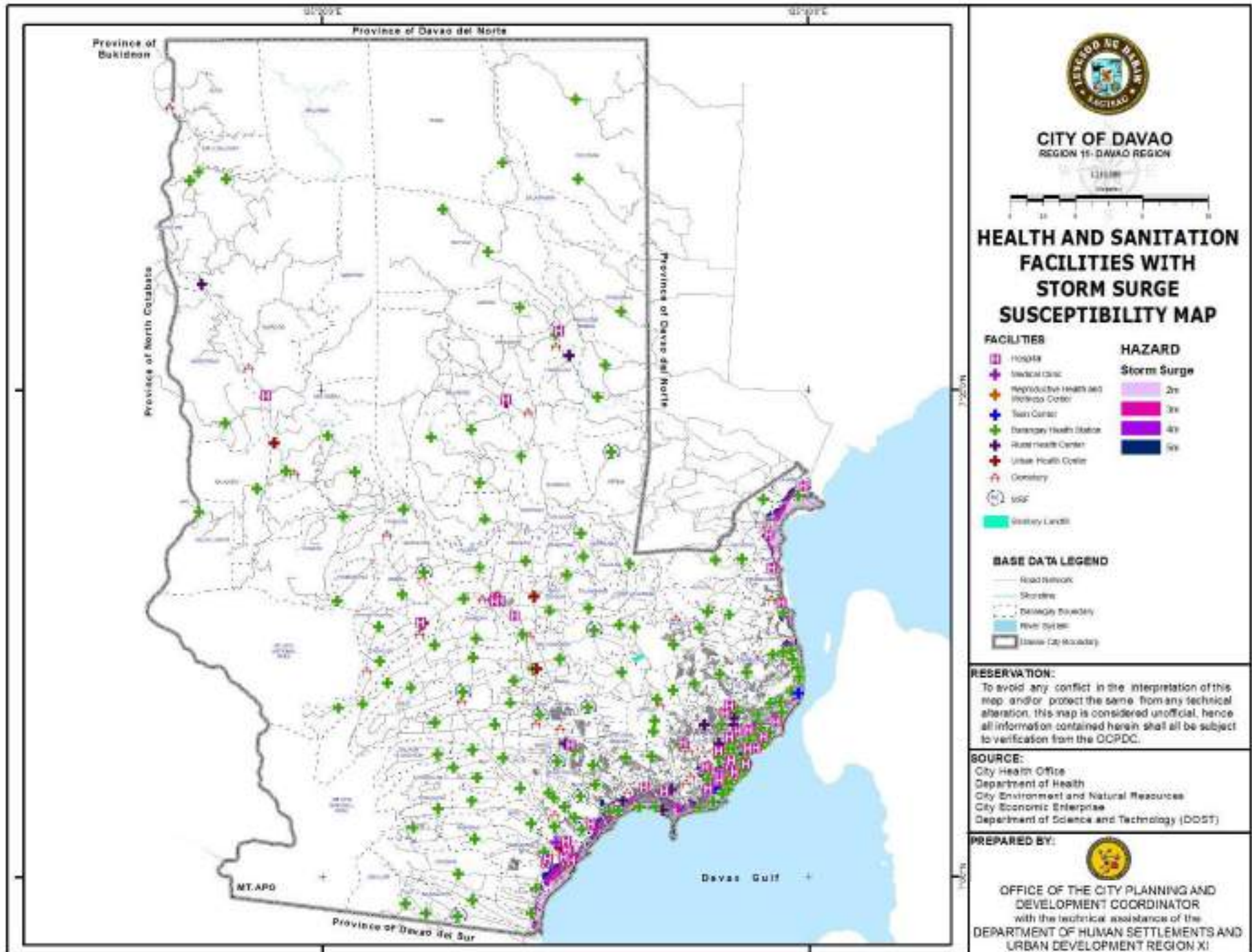
Map 2.8. Health and Sanitation Facilities with Flood Susceptibility Map, Davao City



Map 2.9. Health and Sanitation Facilities with Landslide Susceptibility Map, Davao City



Map 2.10. Health and Sanitation Facilities with Storm Surge Susceptibility Map, Davao City



Protective Services

As shown in Table 37, Davao City has a total of 2,131 police personnel assigned to carry out field and administrative duties. The city's average personnel to population ratio in 2018 is 1:814, which is less than the ideal ratio of 1:500. It is interesting to note that Baguio police station's personnel to population is well within the ideal standard at 1:447 ratio.

Other remaining police stations need personnel augmentation given that one (1) personnel serves over 1,000 residents. This falls below the given national standard except for San Pedro police station with 1:1004 personnel to population ratio. A total of 1,244 police auxiliaries are distributed to each police station (PS) of DCPO, who augment and multiply the current police manpower. They include Special CAFGU Active Auxiliaries (SCAA) personnel of the city's Anti-Crime Unit (ACU), Task Force Davao, barangay tanods, detective services and private security agencies. Talomo Police District (PS3) has the most number of forces with 164 police officers having the largest population served at 440,199. In contrast, both Marilog and Paquibato Police Stations only have 48 police officers.

Furthermore, all buildings and structures of DCPO are in fair condition and equipped with 130 patrol vehicles, 14 utility vehicles, 1 Personnel Troop Carrier and 122 motorcycles in 2018. Of the total number of vehicles, 14 patrol vehicles and 1 unit of Troop Carrier are given by the Davao City LGU, and Japan's Grant Aid donated 26 units of patrol vehicles as part of their "Economic and Social Development Program."

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility				
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq
Headquarters	Brgy. 38-D	59,629	Fair	251		1:6,966	32	Patrol Car	64	3	224-1313	L	L		3m	H
29							Patrol Jeep									
City Mobile Force Company			Fair	220		1:7,947	24	Motorcycle	40	2						
Foot Patrol Section	Fair	286		1:6,113	3	Utility Vehicle	4									
Traffic Group	Brgy. 76-A	5,000	Fair	107		1:16,340	3	Patrol Jeep	26	1	296-0771					
	53	Motorcycle														
Police Station 1	Quezon Blvd., Davao City	500	Fair	142	224	1:1,545	6	Patrol Jeep	22	1	233-4884	L	L		2m	H
							1	Utility Vehicle								
							2	Motorcycle								
							1	Patrol Car								
PS1 Sub-Station (Jacinto)	Brgy 31-D, D.C.	100	Fair									L	L		2m	H
PS1 Sub-Station (23-C)	Brgy 23-C, D.C.	25	Poor									L	L		2m	H

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility				
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq
PS1 Sub-Station (Tomas Monteverde)	Brgy Tomas Monteverde	25	Poor									M	L		2m	H
PS1 Sub-Station (Agdao Proper)	Brgy Agdao Proper	50	Fair									L	L		3m	H
PS1 Sub-Station (Paciano Bangoy)	Paciano Bangoy	25	Poor									M	L			
PS1 Sub-Station (Leon Garcia)	Brgy. Leon Garcia	25	Poor									H	L		2m	H
PS1 Sub-Station (Jerome)	Brgy Ubalde Agdao	25	Poor									H	L		2m	H
Police Station 2 (San Pedro)	San Pedro St., Davao City	250	Fair	100	172	1:1,004	7	Patrol Jeep	10	1	226-4835	L	L		3m	H
						1	Utility Vehicle									
						7	Motorcycle									

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility						
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq		
Police Station 3 (Talomo)	Matina Crossing., Davao City	1,000	Fair	169	246	1:2,604	8	Patrol Jeep	20	1	297-1598	VH	L					H
							1	Utility Vehicle										
							4	Motorcycle										
							2	Patrol Car										
PS3 Sub-Station (Sandawa)	Brgy. 76-A	15	Fair									L	L			2m	H	
PS3 Sub-Station	Brgy. 76-A	8	Fair									M	L			3m	H	
PS3 Sub-Station (UM Matina)	Brgy. 74-A	6	Fair									M	L			4m	H	
PS3 Sub-Station (Matina Aplaya)	Brgy. 75-A	8	Fair									VH	L			2m	H	
PS3 Sub-Station (Maa)	Brgy. Maa	20	Fair									M	L				L	

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility					
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq	
PS3 Sub-Station	Brgy. Catalunan	8	Fair									L	L				
PS3 Sub-Station (Baliok)	Brgy. Baliok	20	Fair									L	L				
PS3 Sub-Station (Ulas)	Brgy. Talomo	12	Fair									M	L		4m	M	
PS3 Sub-Station (Bogsers)	Brgy. Matina Aplaya	16	Fair										L		4m	H	
PS3 Sub-Station (Dumoy)	Brgy. Dumoy	8	Fair									L	L			L	
PS3 Sub-Station	Brgy. Talomo	12	Fair									M	L		2m	H	
Police Station 4 (Sasa)	KM. 9, Sasa, Davao City	250	Fair	105	89	1:1,427	4	Patrol Jeep	18	1	233-0441	M	L				M
							1	Utility Vehicle									
							2	Motorcycle									
							1	Patrol Car									

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility				
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq
PS4 Sub-Station	Brgy. Angliongto	5	Fair									L	L		3m	M
PS4 Sub-Station (Panacan Relocation)	Brgy, Panacan	40	Fair									L	L			
Police Station 5 (Buhangin)	Buhangin, Davao City	200	Fair	108	118	1:1,947	4	Patrol Jeep	21	1	241-1411		L			
							1	Utility Vehicle								
							7	Motorcycle								
							1	Patrol Car								
PS5 Sub-Station (Milan)	Brgy. Buhangin	30	Fair										L			
PS5 Sub-Station (Hilside)	Brgy. Buhangin	40	Fair										L			
PS5 Sub-Station (La Verna)	Brgy. Cabantian	40	Fair										L			
PS5 Sub-Station (Cabantian)	Brgy. Cabantian	80	Fair										L			

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility						
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq		
PS5 Sub-Station (Tigatto)	Brgy. Tigatto	80	Fair										L				M	
PS5 Sub-Station (North Town)	Brgy. Cabantian	120	Fair										M					
Police Station 6 (Bunawan)	KM. 23, Bunawan, Davao City	200	Fair	75	66	1:1,550	4	Patrol Jeep	1	1	236-0685							
							1	Utility Vehicle										
							3	Motorcycle										
							1	Patrol Car										
PS6 Sub-Station (Ilang)	Brgy. Ilang	80	Fair										L			3m	M	
PS6 Sub-Station (Lasang)	Brgy. Lasang	100	Fair										L			5m	L	
Police Station 7 (Paquibato)	Malabog, Paquibato, Davao City	4,711	Fair	48	22	1:1,479	3	Patrol Jeep	4	1	RADIO							
							4	Motorcycle										

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility					
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq	
Police Station 8 (Toril)	Lao St., Toril, Davao City	500	Fair	99	121	1:1,544	4	Patrol Jeep	10	1	291-1633	L	L			L	
							1	Utility Vehicle									
							3	Motorcycle									
							1	Patrol Car									
PS8 Sub-Station (Shell Toril)	Brgy. Toril	5	Fair									L	L				M
PS8 Sub-Station	Brgy. Crossing	5	Fair									L	L				
PS8 Sub-Station (Lubogan)	Brgy. Lubogan	5	Fair									H	L				
Police Station 9 (Tugbok)	Mintal, Davao City	200	Fair	83	78	1:1,126	3	Patrol Jeep	5	1	293-1977	H	L	Dacudao Fault			
							1	Utility Vehicle									
							5	Motorcycle									
							1	Patrol Car									
PS9 Sub-Station (Bago Oshiro)	Brgy. Mintal	30	Fair										L				
PS9 Sub-Station (Tacunan)	Brgy. Tacunan	30	Fair									H	L				

Table – 36. Davao City Police Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Police Personnel	No. of Police Auxiliaries	Personnel to Population Ratio	Vehicles		Equipment		Contact no.	Hazard Susceptibility						
							NO.	Types	Handheld Radio	Base Radio		Fl	Ln	Ft	Su	Lq		
PS9 Sub-Station (Los Amigos)	Brgy. Los Amigos	30	Fair									M	L				L	
Police Station 10 (Calinan)	Calinan, Davao City	300	Fair	81	51	1:1,140	5	Patrol Jeep	10	1	295-0119	H	L				L	
							1	Utility Vehicle										
							3	Motorcycle										
							1	Patrol Car										
PS10 Sub-Station (Poblacion Calinan)	Brgy. Calinan	30	Fair									M	L				L	
Police Station 11 (Baguio)	Baguio, Davao City	200	Fair	64	28	0.352083	3	Patrol Jeep	6	1	RADIO		L					
							1	Utility Vehicle										
							3	Motorcycle										
							1	Patrol Car										
Police Station 12 (Marilog)	Marahan, Davao City	10,000	Fair	48	29	1:1,173	3	Patrol Jeep	4	1	RADIO		M					
							1	Utility Vehicle										
							2	Motorcycle										
							1	Patrol Car										
Total		84,098		2,131	1,244	1:814	267		39	18								

Source: Davao City Police Office

*Physical condition of facility – fair, poor, critical

*Vehicle Type – Patrol car, prisoner van, motorcycle, bicycle, patrol boats

*Indicate level of susceptibility for all hazards: very high (VH), high (H), moderate (M), Low (L)

*Types of hazards- Flood (Fl), landslide (Ln), Fault (Ft), Storm Surge (Su), Liquefaction (Lq)

The number of Jail Officers in 2018 is 159, and is distributed as follows: 82 jail officers in Davao City main jail, 31 jail officers in the female jail and 46 jail officers in the City Jail Annex. The personnel to inmate ratio of all the jail facilities in Davao City is below the given national standard of 1:7. Female and Annex facility of the jail have the nearest personnel to inmate ratio at 1:15 and 1:13, respectively. However, the main jail facility is way below the national standard ratio at 1:40.

Table – 37. Davao City Jail Protective Services by Facilities and Equipment, 2018

Types of Services	Brgy.	Area (sq. m)	Physical Condition of Facility	No. of Personnel	Personnel to Inmate Ratio	Vehicles		Contact no.	Hazard Susceptibility				
						No.	Types		F	L	F	S	L
Davao City Jail (Main)	Brgy Ma-a, City Jail Compound, Davao City	750	Fair	82	1:40	4	3 Van	284-0033	M	L			
1 Bus													
Davao City Jail (Female)		400	Fair	31	1:15	2	1 Car	284-0644					
Davao City Jail (Annex)	198	Fair	46	1:13	4	1 Ambulance	237-8003						
						3 Van							
Total		1,348		159	1:23	10							

Source: Bureau of Jail Management and Penology

**Physical condition of facility – fair, poor, critical

*Vehicle Type – Patrol car, prisoner van, motorcycle, bicycle, patrol boats

*Indicate level of susceptibility for all hazards: very high (VH), high (H), moderate (M), Low (L)

The Davao City Fire Headquarters, a major component of the Bureau of Fire, has a total of 11 fire sub-stations, strategically distributed in the populated barangays of the city. As shown in the table below, there are 247 firefighters operating throughout the city together with 23 fire trucks and three (3) rescue/transport vehicles. On the other hand, the city's overall firefighter to population ratio in 2018 is computed at 1:7,079 and is way below the ideal number of firemen. The firefighter to population ratio of each station varies: Central Fire Station has 1:5,705 becoming the closest ratio to the given ideal national standard. Other remaining fire stations are way below the national standards. Davao City Fire Protection's Fire truck to fireman ratio has 1:11 ratio while the prescribed regulations is 1:14. The fire truck to population ratio of 1:76,013 in the city is a far cry from the national standard of 1:28,000.

Table – 38. Davao City Fire Safety Protective Services by Facilities and Equipment, 2018

Types of Services	Barangay	Area (sq. m)	Physical Condition of Facility	No. of Personnel	Personnel to Population Ratio	Vehicles		No.	Types	Fire Hydrants	Contact no.	Hazard Susceptibility				
						Fireman to Firetruck Ratio	Firetruck to Population Ratio					Fl	Ln	Ft	Su	Lq
District Office	Monteverde Cor. Alvarez Sts, Davao City	1587	fair	57	1:5,705			6	Firetruck and BER		285-8820	L	L		2m	H
EMS				9				1	Service Vehicle		224-0524					
SRU				9				3	Firetruck and Rescue Transport Vehicle							
Central				20		1:12	1:14,262	2	Rescue Transport Vehicle	99						
S.I.R. Bucana	Pag-asa St., Phase 1, New	417	poor	12	1:14,537			1	Firetruck	82	298-3566	M	L		2m	H
Buhangin	San Francisco	200	poor	11	1:11,964	1:12	1:162,419	1	Firetruck	13	9822360414		L			
Bunawan	Km. 23, Bunawan,	300	poor	14	1:6,983	1:11	1:131,598	1	Firetruck	1	9968931379		L		3m	M
						1:14	1:97,758									

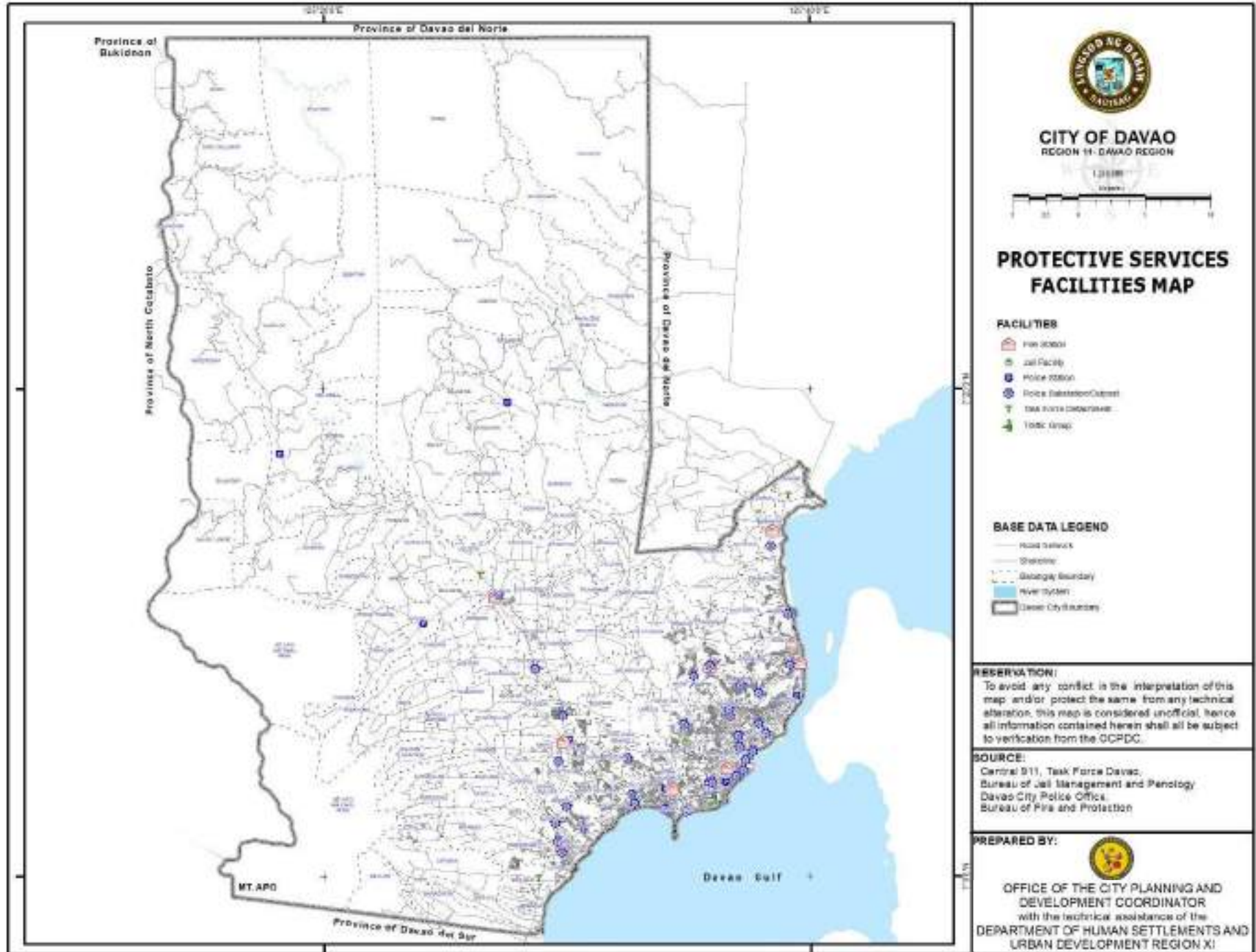
Source: BFP

Table – 39. Barangay Security Force and Volunteers by Types of Services, 2018

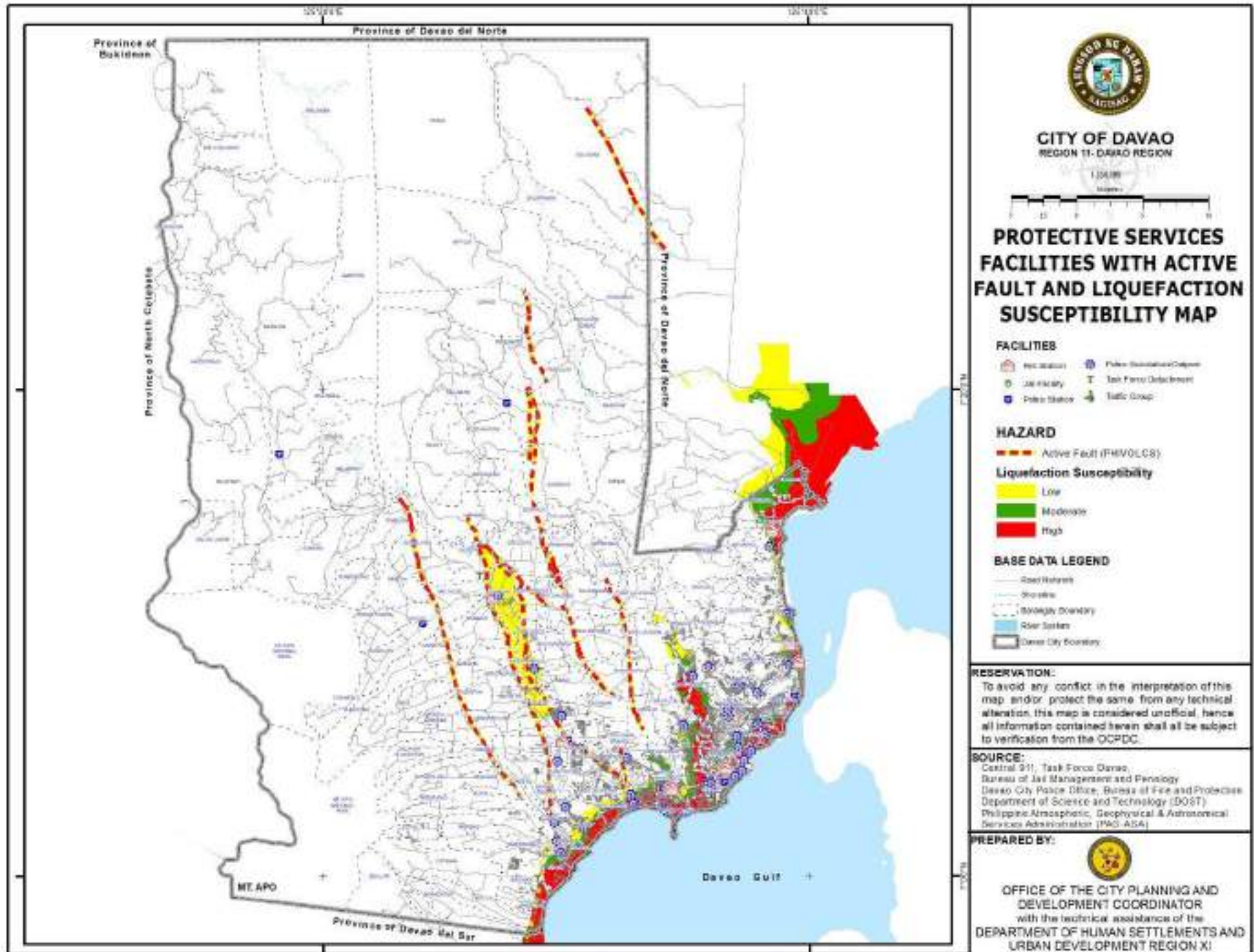
Types of Services	Number of Security Force/ Volunteer	Facilities/ Equipment	Condition of Facilities/ Equipment
Barangay Tanod (Traffic, Peace and Order, Disaster, Auxiliary Services)	3,640	Full Gear/ Tala Mobile	Fair
		Motorcycle/ Mobile Car	Fair
		Rain Coat/ Flashlight/ Backboard	Fair
		Batota/ Pito/ Posas	Fair

Source: Barangay and Cultural Communities Affairs Division

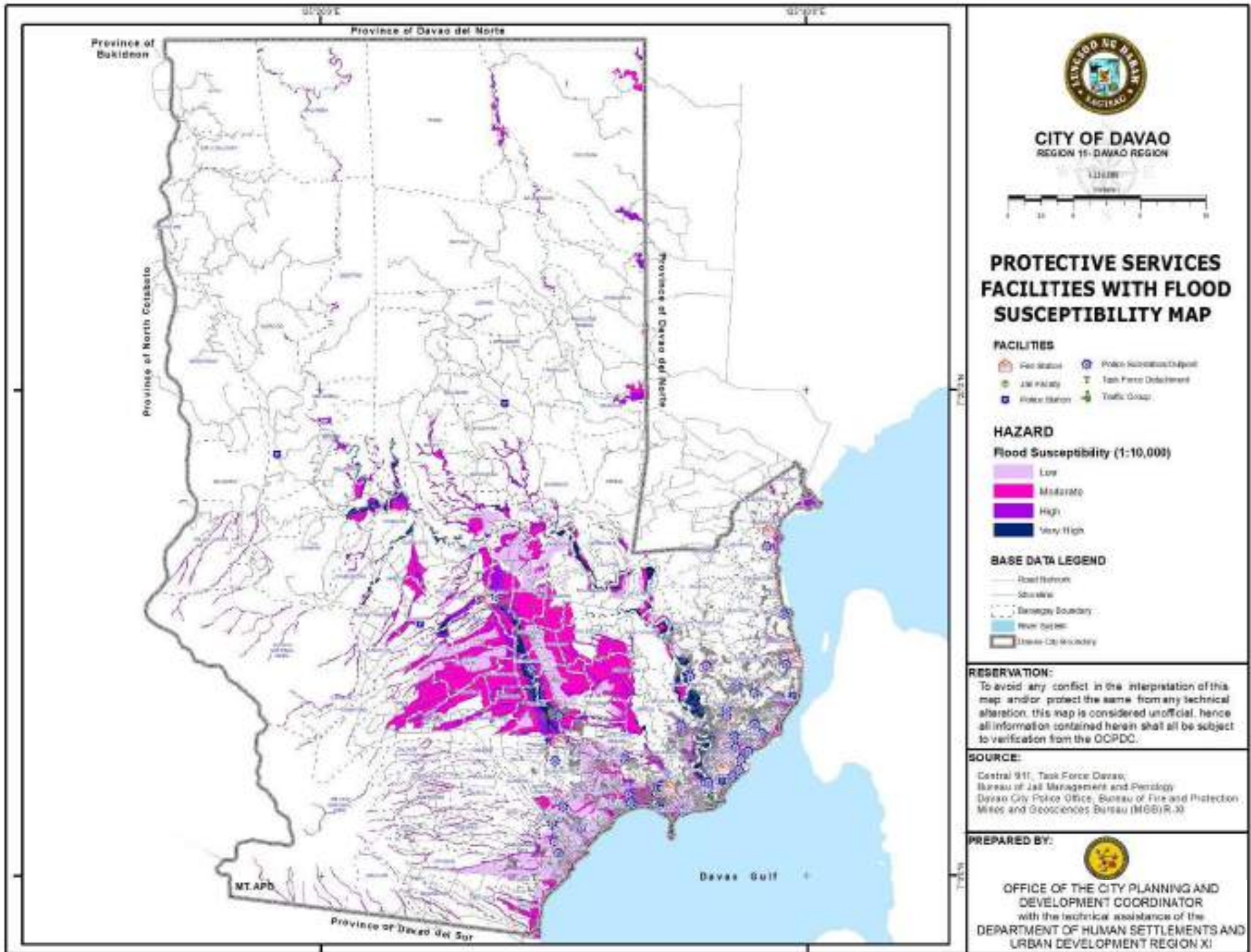
Map 2.11. Protective Services Facilities Map, Davao City



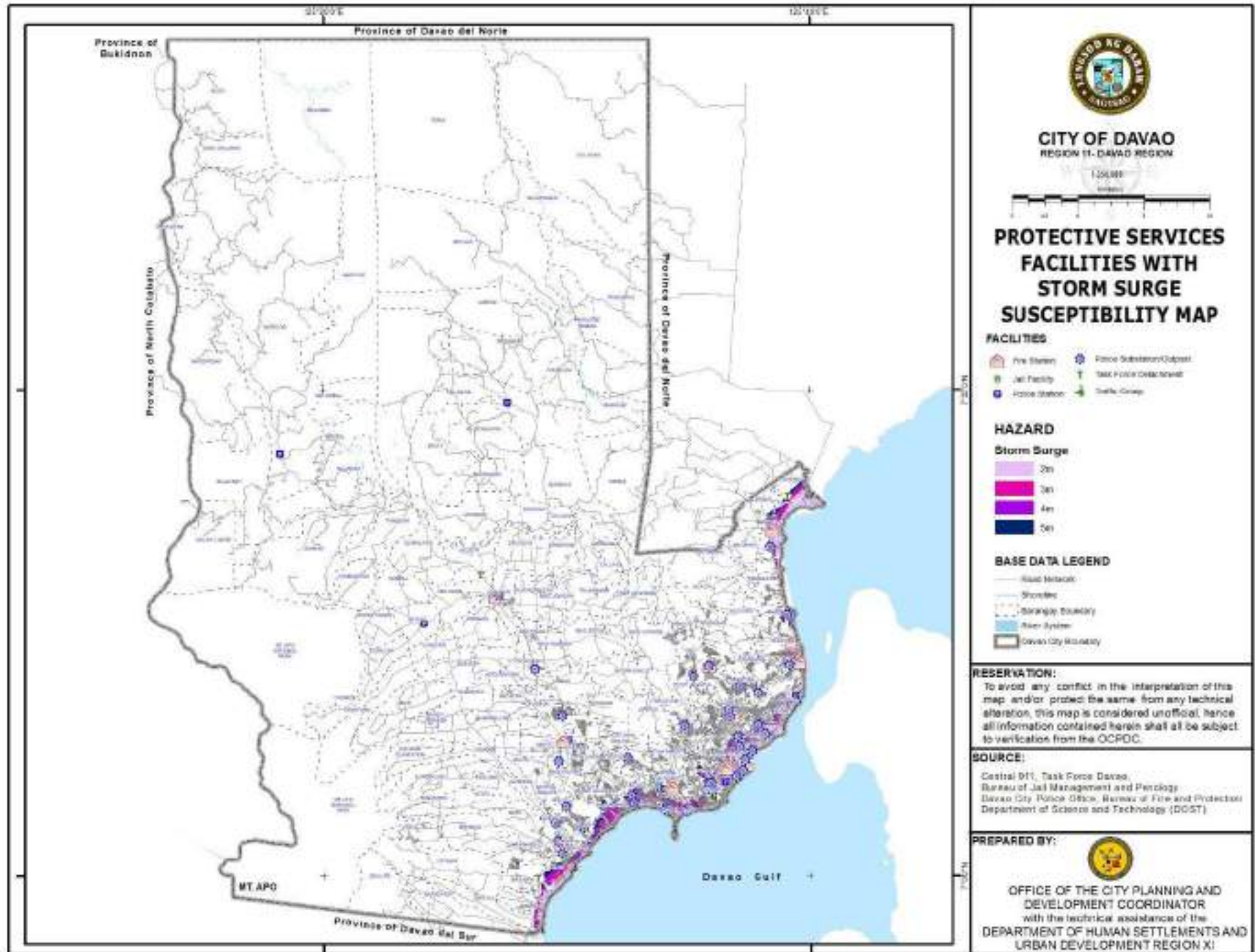
Map 2.12. Protective Services Facilities with Active Fault and Liquefaction Susceptibility Map, Davao City



Map 2.13. Protective Services Facilities with Active Fault and Liquefaction Susceptibility Map, Davao City



Map 2.14. Protective Services Facilities with Storm Surge Susceptibility Map, Davao City



Social Welfare

Early Childhood Care and Development (ECCD) services are provided in all barangays of the city. In 2018, a total of 60,750 children aged 3-4 years old were served; 49% of whom were males and 51% females. These children were served in 686 ECCD service centers - 563 center-based, four (4) child-minding centers, and 119 home-based centers/supervised neighborhood play in 175 barangays. These barangays have an average of four (4) day-care facilities.

However, ten (10) barangays in the Poblacion District, particularly 3-A, 11-B, 13-B, 14-B, 16-B, 17-B, 24-C, 25-C, 29-C and 34-D, have not established such facilities as these areas are located in commercial zones. Children aged 3-4 years old in the said barangays are served by the Mobile ECCD.

Balay Dangupan Crisis Intervention Center caters to abused girls where forty-nine (49) are temporarily sheltered. Balay Dangupan is built within the compound of Co Su Gian Home for the Elderly in Lower Cabantian, Buhangin District. The area is susceptible to low-level of landslide hazard.

Bahay Pag-asa provides homelife and reformative services to male children in conflict with the law (CICL) with 100 CICL currently being housed. The center is located in Barangay Oshiro, Tugbok District with a high level of susceptibility to flood but low susceptibility to landslide.

Paginhawaan Drop-In Center and the Quick Response Team for Children Concerns provide services to 123 boys, and 1,294 boys and girls, respectively. Both centers are within a compound located at Barangay 38-D where there is low level susceptibility to flood and landslide, high susceptibility to soil liquefaction, and vulnerable to 2-meter storm surge.

Mentally-challenged children are provided residential care in Lingap Center with 22 children being assisted. Lingap Center for Mentally-Challenged Children is located at Barangay Tugbok, Tugbok District where there is high susceptibility to flooding, and low susceptibility to landslide and soil liquefaction.

Victims of violence against women and their children (VAWC) who need temporary shelter are housed in the Sidlakan Women Crisis Center where 16 VAWC victims are temporarily housed as of 2018. The center is located at SIR Phase 1, Barangay 76, Poblacion District which is moderately susceptible to flood, with low susceptibility to landslide, and high level of susceptibility to liquefaction and 2-meter storm surge.

Provision of educational assistance, conduct of case management, family life, education and counseling are common services to each facility.

As of 2018, there are 160 ECCD service centers considered to be in poor physical condition; 31 are home-based. Moreover, 43 centers are in critical status with seven (7) home-based service centers.

Residential care facilities are also established to guarantee the social protection of the children needing special protection.

For abandoned male and female elderly, Co Su Gian Center for the Elderly provides residential care, case management, and self and social enhancement services. As of 2018, the facility catered to 57 abandoned elderly. The center is located in Lower Cabantian, Buhangin District where Balay Dangupan Crisis Intervention Center is also situated.

Another social welfare facility of the city is the Davao City Treatment and Rehabilitation Center for Drug Dependents (DCTRCDD). As of 2018, it houses 135 male and 31 female adults and 18 male and five (5) female children drug dependents. The facility provides treatment and rehabilitation, family life education and counseling, educational assistance, and self and social enhancement. DCTRCDD is situated in Bago Oshiro, Tugbok District an area with a low susceptibility to landslide.

Shelter care facilities of the national social welfare arm are also well established. The Reception and Study Center for Children (RSCC) of the Department of Social Welfare and Development provides services for the abandoned, foundling, neglected or involuntary committed, surrendered or voluntary committed children 0-6 years old. RSCC is located within the compound of the Southern Philippines Medical Center, Dumanlas Road, Barangay Buhangin which has a low susceptibility to landslide.

The Group Home for Girls provides temporary substitute home care to girls and women in extremely difficult circumstances. It is located in Barangay Maa, Talomo District which has a low level susceptibility to flood and landslide, and moderate level of susceptibility to liquefaction.

The Regional Rehabilitation Center for the Youth (RRCY) provides home life and judicial liaison services to 16-17 years old children in conflict with the law committed by the courts of justice. RRCY is located in Bago Oshiro, Tugbok District where there is a low susceptibility to landslide.

Table – 40. Presence of Social Welfare Facilities and Services Offered, Ownership and Physical Condition, 2018

District	Facility	Services Offered	Type of Clientele	No. of Clientele	Staff	Ownership	Physical Condition	Hazard Susceptibility				
								Flood	Earth-quake (Lacson Fault)	Land-slide	Storm Surge	Liquefaction
Poblacion	ECCD centers	ECCD Services	Children 3-4 years old	2,926	57	LGU	32 – good	11 – L	24 - L		10 -2m	6 – M
							21 - fair	1 – M			2 – 3m	46 – H
							1 – poor	2 – H			5 – 4m	
							1 - critical	11 – VH			2 – 5m	
Residential Care Facilities	Temporary shelter, home life / surveillance & rescue	Children-at-risk	110	45		2 – good	2 – L	2 – L	2 – 2m	2 - H		
Talomo	ECCD centers	ECCD services	Children 3-4 years old	5,131	92	-do-	41 – good	17 – L	36 - L		15 – 2m	9 – L
							49 – fair	8 – M			3 – 3m	7 – M
							2 - critical	6 – H			1 – 4m	52 – H
								1 – VH			2 – 5m	
Residential care facility	Temporary shelter, family life	Victims of violence against women & their children	20	8		Good	M	L	2m	H		

Table – 40. Presence of Social Welfare Facilities and Services Offered, Ownership and Physical Condition, 2018

District	Facility	Services Offered	Type of Clientele	No. of Clientele	Staff	Ownership	Physical Condition	Hazard Susceptibility					
								Flood	Earthquake (Lacson Fault)	Land-slide	Storm Surge	Liquefaction	
Agdao	ECCD centers	ECCD services	Children 3-4 years old	1,607	30	LGU	13 – good	5 – L	12 – L	14 – 2m	25 – H		
							6 – fair	9 – M					
							6 – poor						
							5 – critical						
Buhangin	ECCD centers			4,191	91	-do-	59 – good	12 – L	56 – L	27 – 2m	8 – L		
							5 – fair	3 – M			7 – L		
							13 – poor	36 – H			43 – H		
							14 – critical	2 – VH					
	Residential care facility / alternative home for children	Temporary shelter, case management, home life	Abandoned / foundling, neglected or involuntary committed, surrendered or voluntary committed children 0-6 years old;	100	60	LGU				3 – L	1 – M		
												Abused girl-children;	DSWD
												Abandoned older persons	

Table – 40. Presence of Social Welfare Facilities and Services Offered, Ownership and Physical Condition, 2018

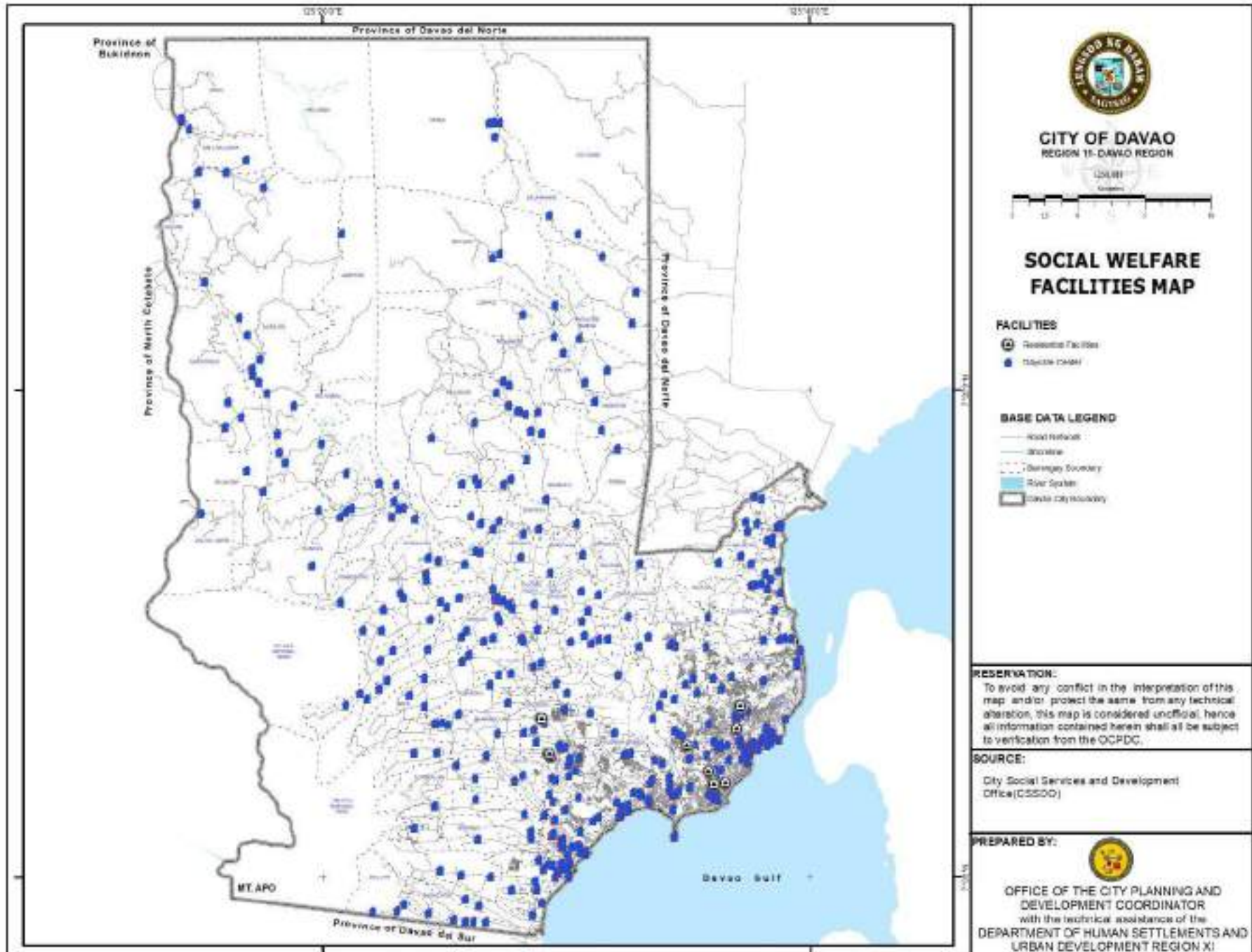
District	Facility	Services Offered	Type of Clientele	No. of Clientele	Staff	Ownership	Physical Condition	Hazard Susceptibility				
								Flood	Earthquake (Lacson Fault)	Land-slide	Storm Surge	Liquefaction
Paquibato	ECCD centers			3,150	82		30 – good	8 – M		2 – L		
							1 – fair	42 – H		21 – M		
							48 – poor	12 – VH		59 – H		
							3 – critical					
Baguio	ECCD centers			1,071	27		6 – good	2 – L		23 – L		
							6 – fair	2 – M		1 – M		
							10 – poor	9 – H		3 – H		
							5 – critical					
Calinan	ECCD centers			2,856	67		13 – good	10 – L	1	43 – L		22 - Low
							2 – fair	15 – M		5 – M		
							46 – poor	24 – H		13 – H		
							6 – critical	1 – VH		1 - VH		
Marilog	ECCD centers			2,711	79		4 – good	42 – H		16 – L		
							17 – fair			33 – M		
							51 – poor			30 – H		
							7 – critical					

Table – 40. Presence of Social Welfare Facilities and Services Offered, Ownership and Physical Condition, 2018

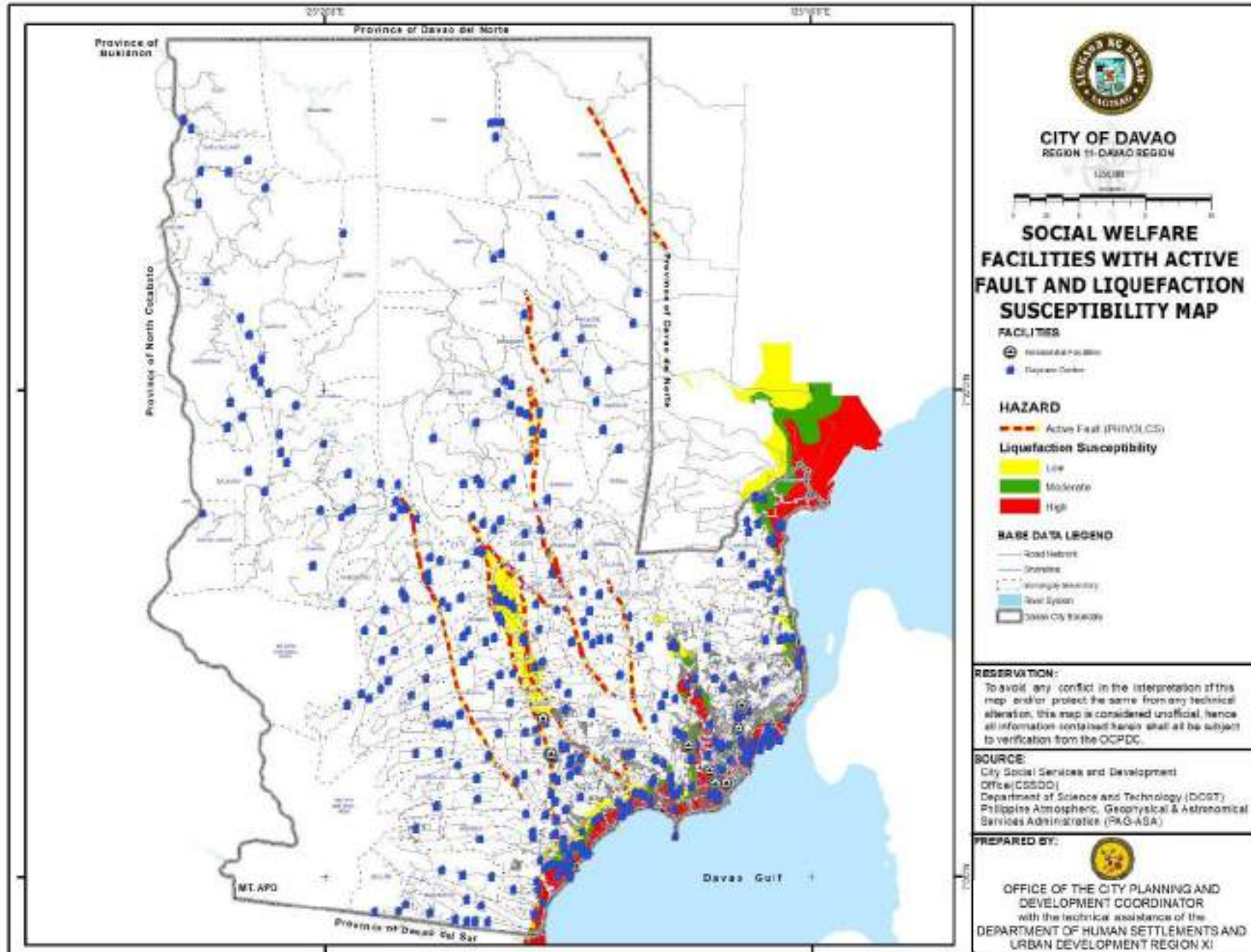
District	Facility	Services Offered	Type of Clientele	No. of Clientele	Staff	Ownership	Physical Condition	Hazard Susceptibility				
								Flood	Earthquake (Lacson Fault)	Land-slide	Storm Surge	Liquefaction
Toril	ECCD centers			3,850	76		15 – good	33 – L	2	65 – L	5 – 2m	10 – L
							13 – fair	4 – M		7 – M	4 – 3m	19 M
							45 – poor	16 – H		1 – H	2 – 4m	4 - H
							3 - critical					
Tugbok	ECCD centers			3,081	60		13 – good	8 – L		56 – L		17 - L
							47 – fair	23 – M		4 – M		
								10 – H				
	Residential care facilities	Temporary shelter, home life, case management;	Children in conflict with the law committed by the courts of justice;	400	200		4 – good	1 – H		4 – L		1 - L
		Treatment and rehabilitation;	Mentally-challenged children;									
		Judicial liaison services	Drug dependent									

Legend: VH – Very High; H – High; M – Moderate; L - Low

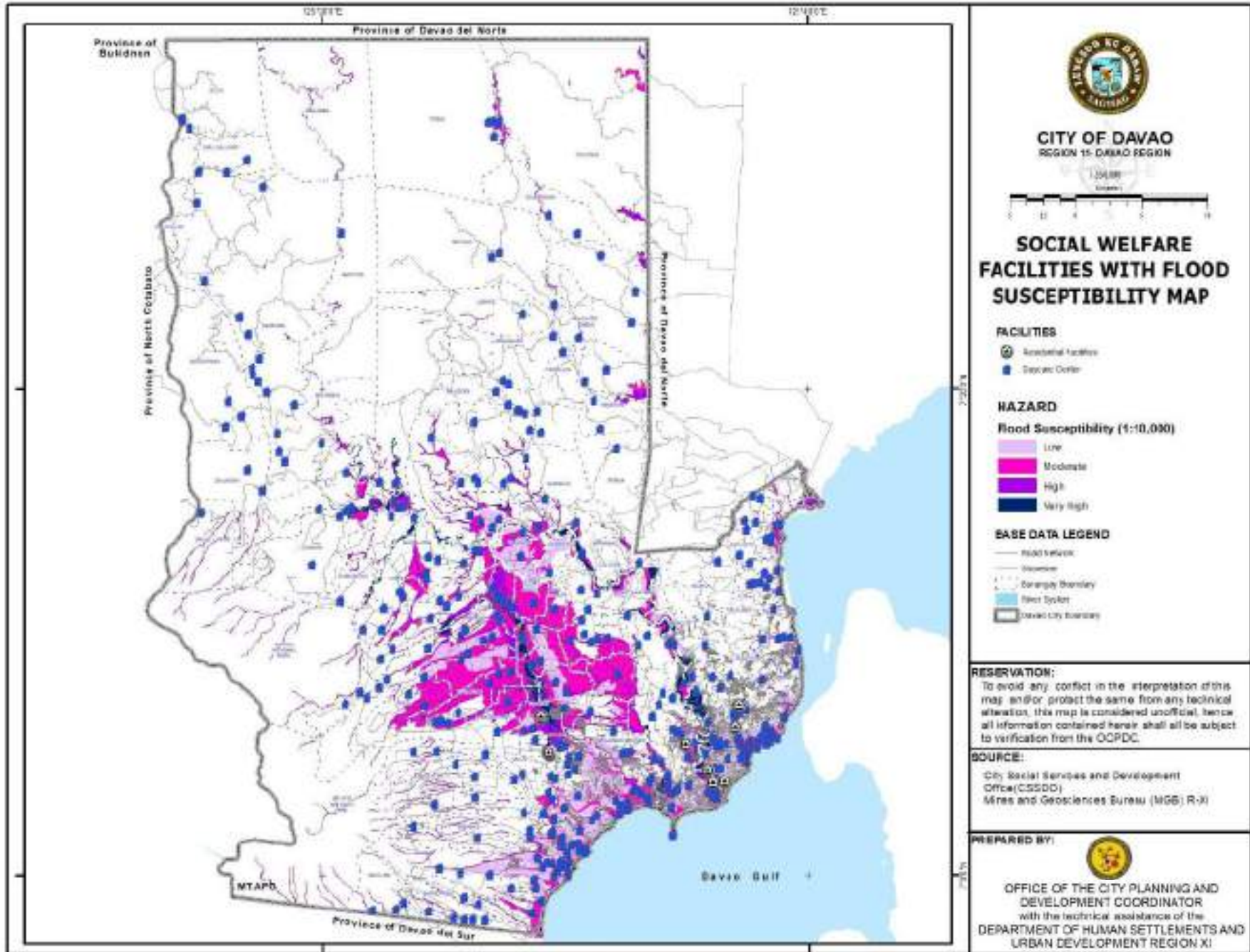
Map 2.15. Social Welfare Facilities Map



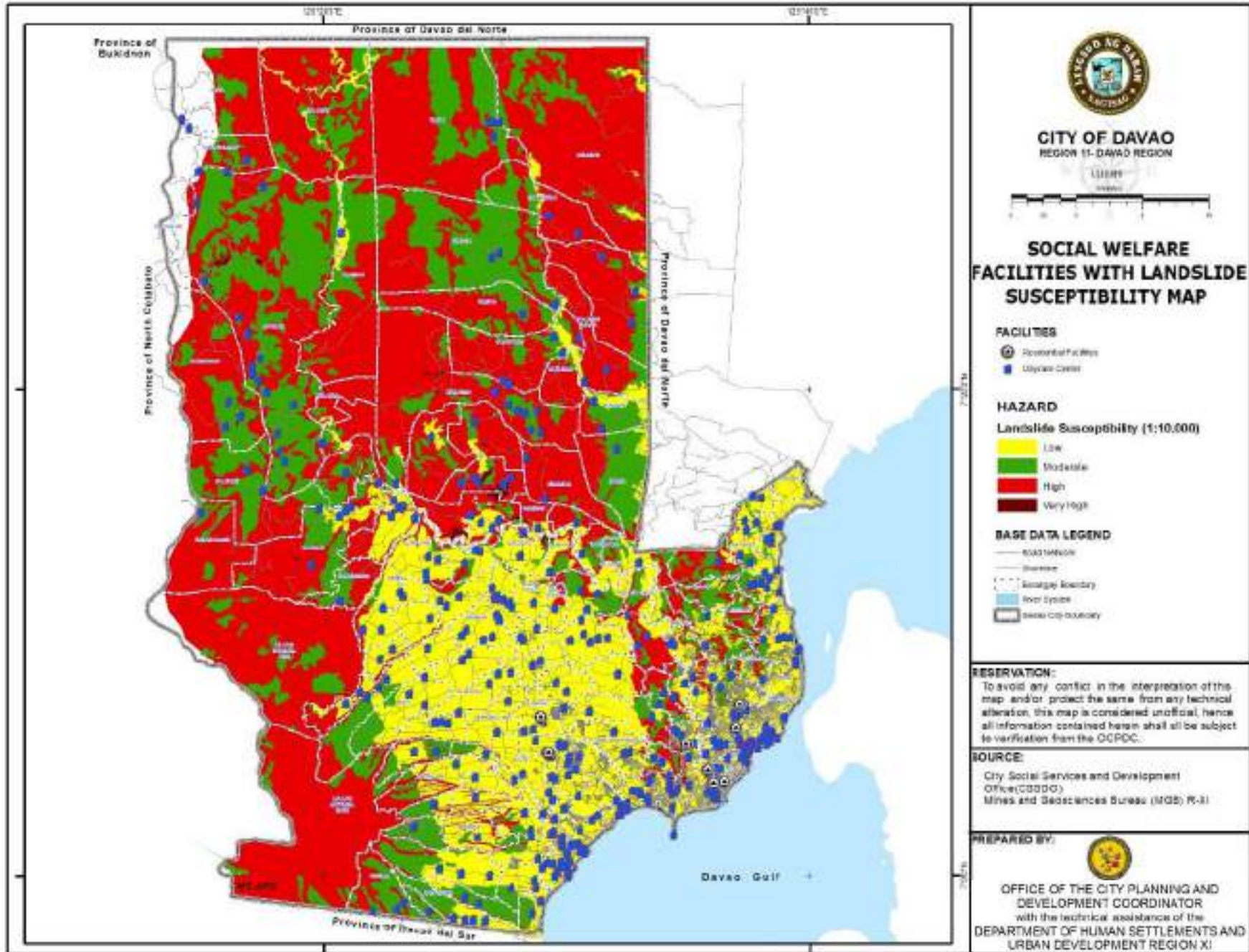
Map 2.16. Social Welfare Facilities with Active Fault and Liquefaction Susceptibility Map



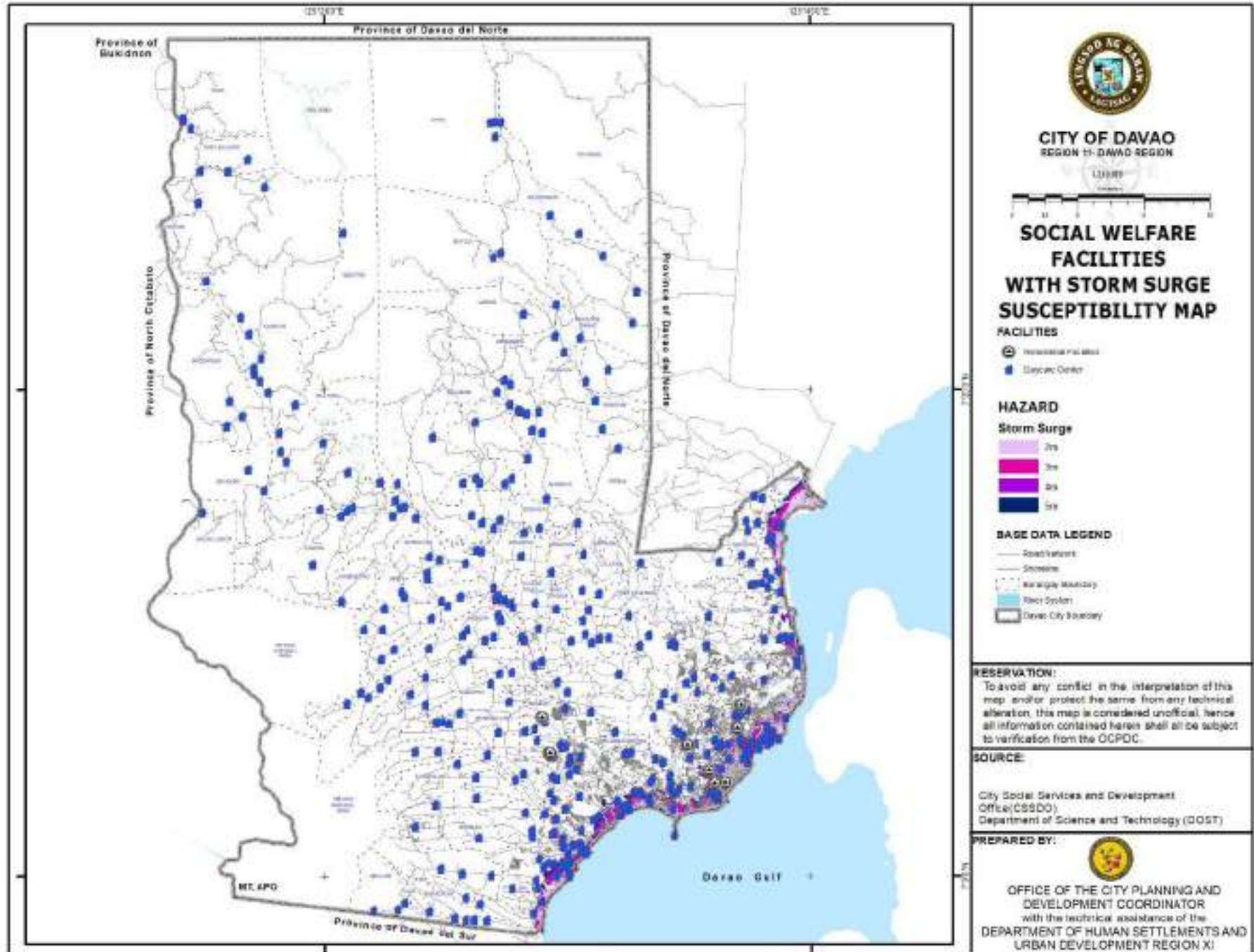
Map 2.17. Social Welfare Facilities with Flood Susceptibility Map



Map 2.18. Social Welfare Facilities with Landslide Susceptibility Map



Map 2.19. Social Welfare Facilities with Storm Surge Susceptibility Map



Sports and Recreation

Most of the sports and recreation facilities are located in the Poblacion District and Talomo District where population are dense. In 2018, the city has 336 government-owned sports and recreational facilities with an estimated total land area of 49.433 hectares. The largest sports complex is inside the University of the Philippines Mindanao covering 20 hectares of land. This facility aims to achieve the city's goal of becoming the premier destination for sports events/activities. There are still on-going construction for more facilities in the UP Mindanao sports complex.

Davao City has two (2) major public parks, namely People's Park and Magsaysay Park. These parks are established for people to unwind, for children to play, and for the public to gather in their period of leisure or physical fitness activities. The city lacks indoor sports facilities to accommodate the sports enthusiasts who play volleyball, badminton, table tennis, and similar indoor activities.

Park facilities however, lack locker/storage area to cater to park-goers who intend to leave their things or valuables while jogging or doing other activities in the park. There is also a need to rehabilitate uneven pavements, pathways and jogging lanes.

Out of the 326 facilities, 12 need renovation while the rest are still well-maintained and in good condition. There are covered courts in barangays that have been used as evacuation centers over the years for lack of structures assigned as such to house families affected by the occurrence of natural or manmade calamities. It is also a noteworthy information that only two of the 95 facilities are used as evacuation areas, in Barangay 21-C and Barangay Gumalang, wherein the areas are identified as park or open space. These number to 166 facilities used as evacuation centers based on their physical and geographical locations.

The hazard susceptibility to flood, landslide, storm surge, and liquefaction are identified based on the location of both the sports and recreational facilities. There are 84 facilities found to be highly susceptible to flooding, while six (6) facilities are highly susceptible to landslide. Fifty-one facilities are expected to be affected in a storm surge of a height of four (4) meters, and two (2) more facilities are expected to be affected by a storm surge of 5-meter water level. Some 143 facilities are highly susceptible to liquefaction. Mintal Park, for example, is located near the Central Davao fault system.

Table – 41. Sports and Recreation Facilities Number, Location, Area, Ownership and Physical Condition

District	Type of Facility		Number of Facilities	Total Lot Area (ha)	Ownership	Physical Condition of Facility	Used as Evacuation Center (Y/N)	Hazard Susceptibility (H/M/L)			
								FI	Ln	Su	Liquefaction
Poblacion	Sports	Basketball Court	42	1.686	Public- 42	Fair-41 Poor-1	Yes-19 No-24	L- 36 H-2 VH-3	L-41	2M-17 3M-4 4M-8	M-13 H-24
	Recreational	Parks	19	8.250	Public-19	Fair-19	Yes-2 No-17	L-15 H-3 VH-1	L-19	2M-11 3M- 5	M-2 H-17
Talomo	Sports	Basketball Court	83	4.314	Public-83	Fair-81 Poor-2	Yes-43 No-20	L-28 M-12 H-25 VH-9	L-80 M-2 H-1	2M-28 3M- 8 4M-11	L-5 M-9 H-37
	Recreational	Parks	2	0.080	Public-2	Fair Poor	No-2	L-2	L-2	2M-2	H-2
Buhangin	Sports	Basketball Court	42	1.813	Public-42	Fair-41 Critical-1	Yes-20 No-22	L-14 H-7 VH-1	L-41 M-1	4M-8	L-6 M-4 H-10
	Sports	Tennis Court	7	0.565	Public-7	Fair-7	No	L-5 H-2	L-7	4M-7	M-5 H-7
	Sports	Gymnasiums	6	0.273	Public-6	Fair-6	No	L-6	L-6	4M-6	H-6
	Recreational	Parks	2	0.220	Public-2	Fair-2	No-2	L-2	L-2	4M-1	L H
Agdao	Sports	Basketball Court	23	0.901	Public-23	Fair-21 Critical-2	Yes-11 No-12	L-9 M-9 H-5	L-19	2M-9	L-1 M-4 H-18
	Recreational	Parks	1	0.370	Public	Fair	No	M			M

Table – 41. Sports and Recreation Facilities Number, Location, Area, Ownership and Physical Condition

District	Type of Facility		Number of Facilities	Total Lot Area (ha)	Ownership	Physical Condition of Facility	Used as Evacuation Center (Y/N)	Hazard Susceptibility (H/M/L)			
								Fl	Ln	Su	Liquefaction
Tugbok	Sports	Basketball Court	36	21.781	Public-36	Fair-34 Poor-2	Yes-31 No-5	L-7 M-10 H-6	L-34 M-2		L-1
	Sports	Gymnasium	1	0.144	public	fair	yes	L	L		
	Recreational	Mintal Park	1	0.11	public	Fair	no	H	L		
Baguio	Sports	Basketball Court	9	0.480	Public-9	Fair-8 Poor-1	Yes-5 No-4	L-1 M-1 H-2	L-7 H-2		
	Sports	Gymnasium	2	0.085	Public-2	Fair-2	Yes-2	H-2	L-1		
Toril	Sports	Basketball Court	26	1.422	Public-26	Fair-24 Poor-1 Critical-1	Yes-22 No-4	L-18 M-5 H-1	L-26	2M-12	L-2 M-3 H-15
	Recreational	Parks	2	4.237	Public-2	Fair-2	No-2	L-2	L-2		L-2
Bunawan	Sports	Basketball Court	14	1.177	Public-14	Fair-14	Yes-10 No-4	L-2 M-6 H-1	L-12 M-1	2M-6 3M-1 5M-2	L-4 M-4 H-3
	Recreational	Parks	1	0.248	DOTC	fair	No		L		

Table – 41. Sports and Recreation Facilities Number, Location, Area, Ownership and Physical Condition

District	Type of Facility		Number of Facilities	Total Lot Area (ha)	Ownership	Physical Condition of Facility	Used as Evacuation Center (Y/N)	Hazard Susceptibility (H/M/L)			
								Fl	Ln	Su	Liquefaction
Calinan	Sports	Basketball Court	5	0.290	Public-5	Fair-5	Yes-5	L-2 M-1 H-1 VH-1	L-5		L-2
	Recreational	Parks	1	0.548	Public	Fair	No	H	L		
Paquibato	Sports	Basketball Court	9	0.317	Public-9	Fair-9	Yes-7 No-2	H-8	L-6 H-3		H-2
	Recreational	Parks	1	0.083	Public	fair	No	H	L		
Marilog	Sports	Basketball court	1	0.040	Public	Fair	Yes	H	M		
Total			336	49.433							

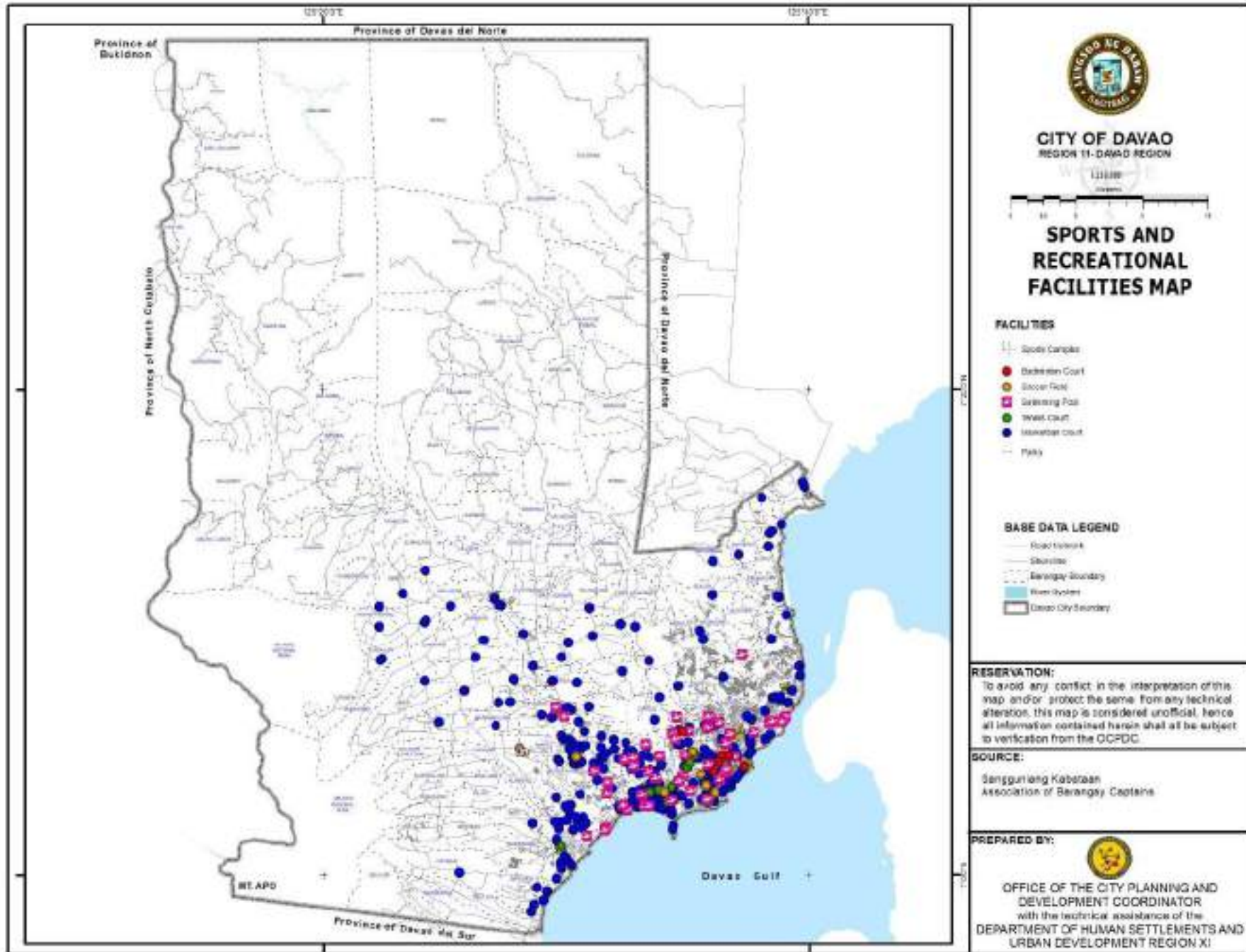
Source: City Environment and Natural Resources Office, Sangguniang Kabataan, Association of Barangay Captains

Notes: *Hazard Susceptibility - Flood (Fl), Landslide (Ln), Storm Surge (Su), Liquefaction

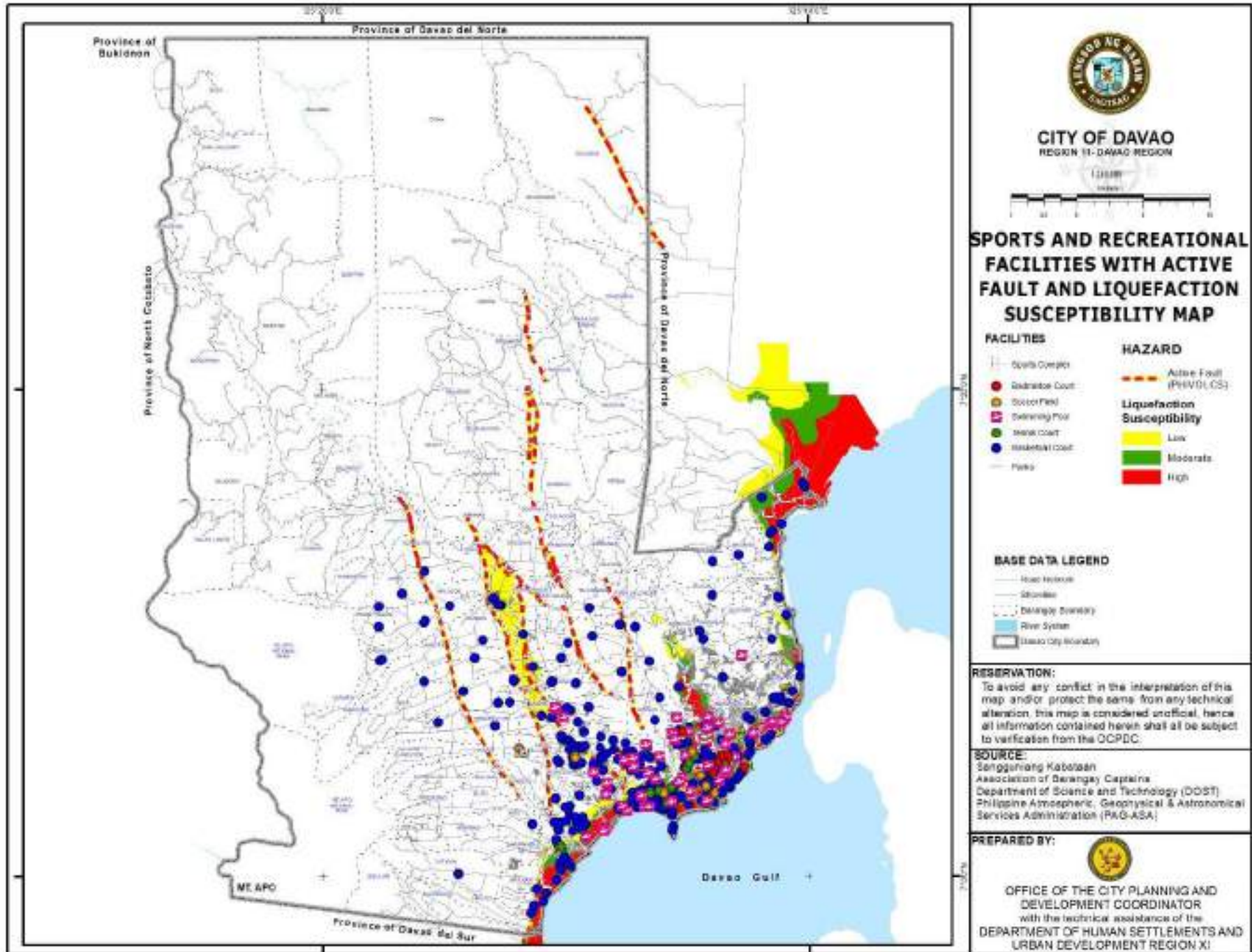
**Indicators for the level of susceptibility –Low (L), Moderate (M), High (H), Very High (VH)

***Figures after level of hazard susceptibility are the number of facilities affected

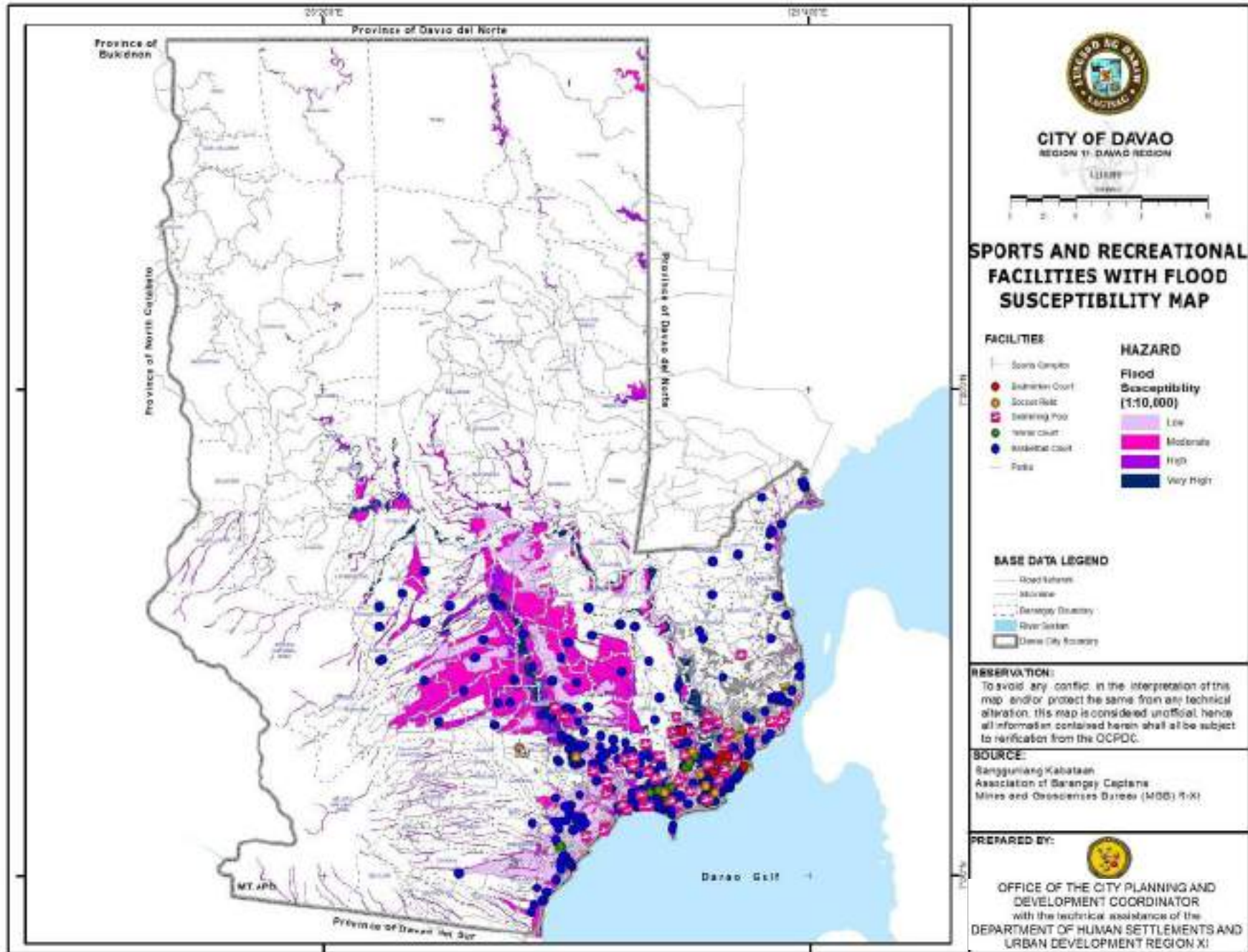
Map 2.20. Sports and Recreational Facilities Map



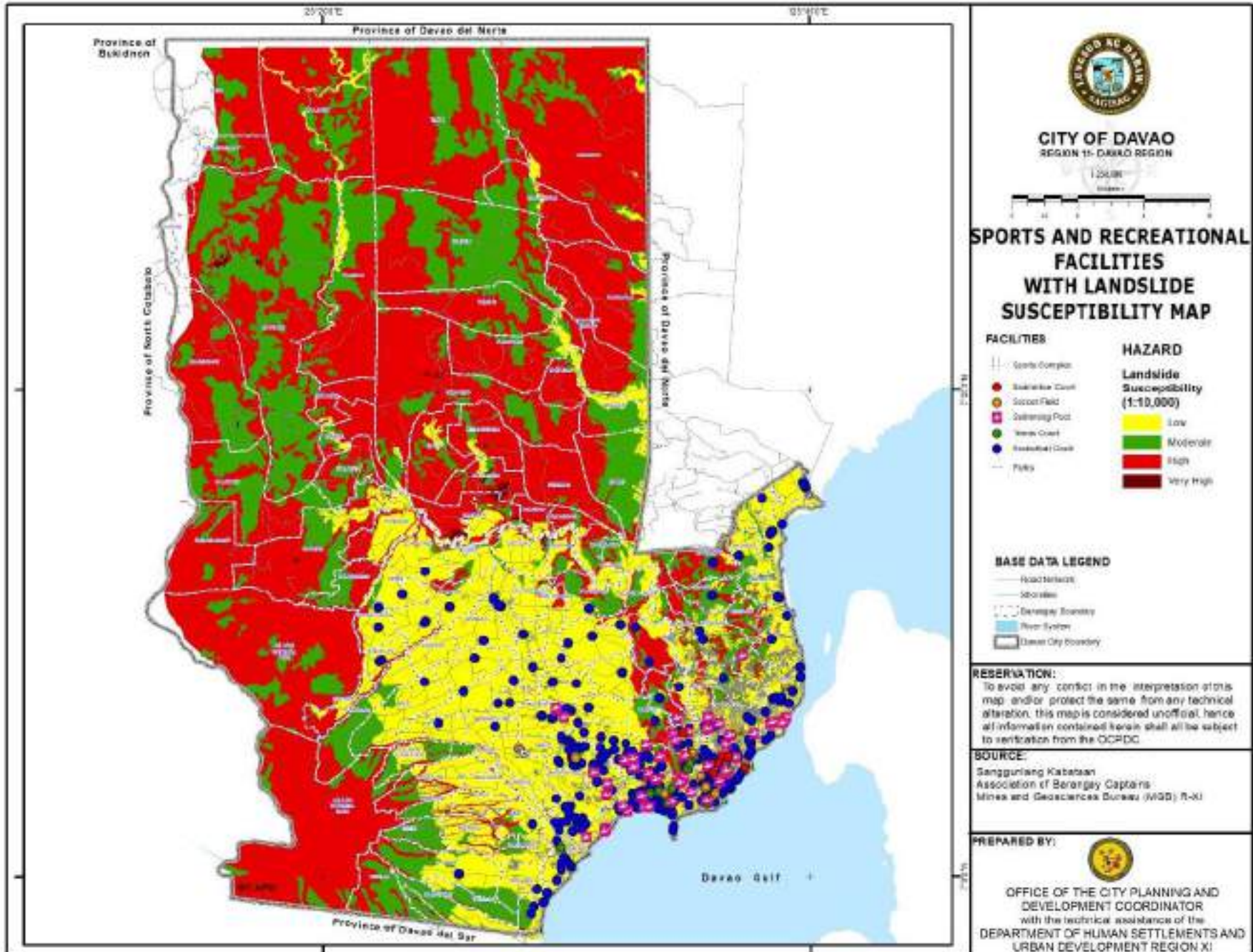
Map 2.21. Sports and Recreational Facilities with Active Fault and Liquefaction susceptibility Map



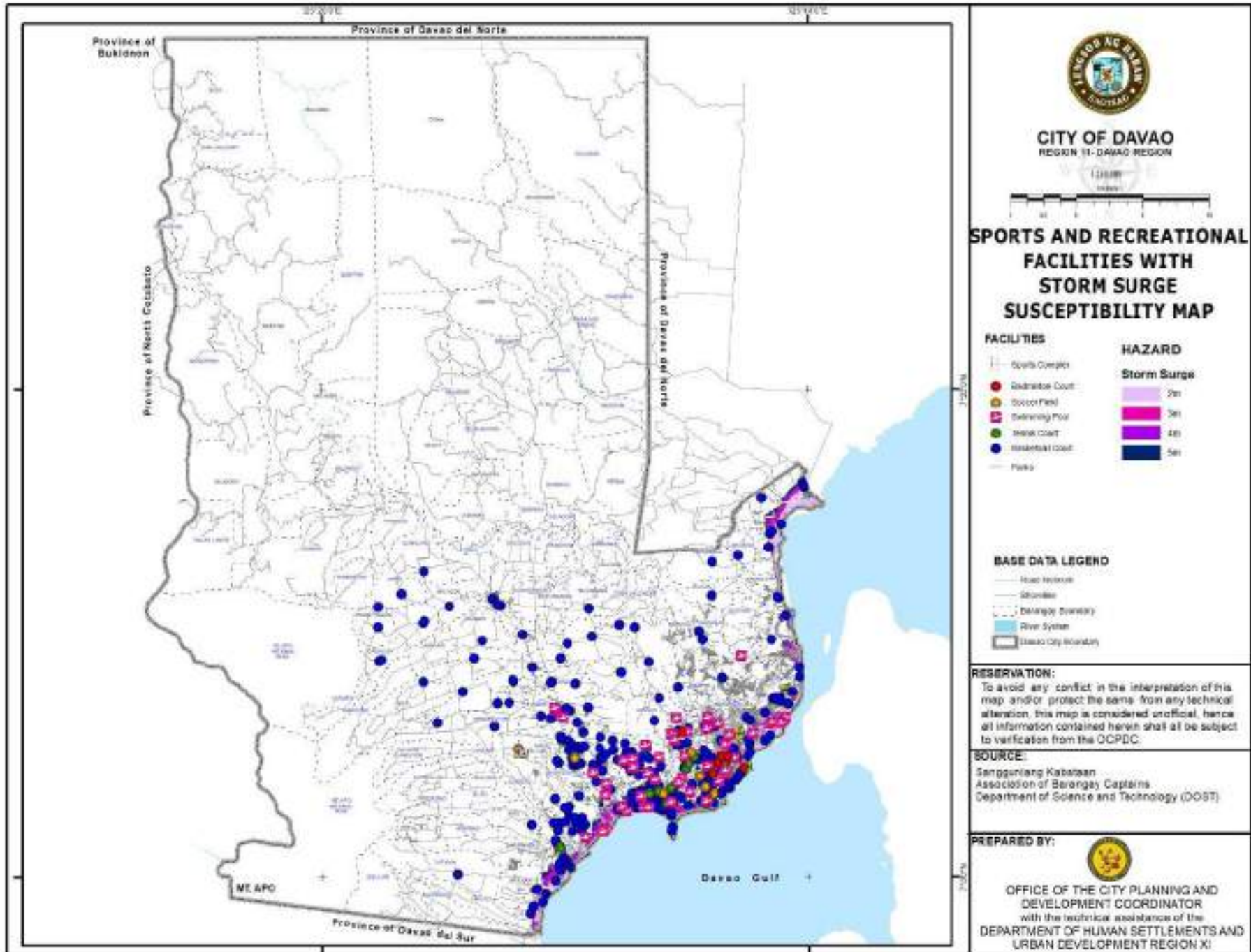
Map 2.22. Sports and Recreational Facilities with Flood Susceptibility Map



Map 2.23. Sports and Recreational Facilities with Landslide Susceptibility Map



Map 2.24. Sports and Recreational Facilities with Storm Surge Susceptibility Map



HOUSING

There are 16 settlement areas in the city with a total of 8,405 housing units built in government-owned lands and administered by the City Housing division.

Moderately prone to flooding are settlement areas in Sto Nino 1,2,3, and DMCI Aglipayan, both in Mintal as well as East Marahan in Marilog and Los Amigos 1, 2 in Tugbok.

Tigatto Homes in Buhangin and East Marahan are moderately and highly susceptible to landslide, respectively.

Table – 42. Resettlement Areas, Davao City

Name of Resettlement Area	Barangay	Land Ownership	No. of Households	No. of Housing Units	Utilities/Facilities/Amenities	Administration	Hazard Susceptibility (H/M/L)				
							Fl	Ln	Fa	Su	Lq
Catalunan Grande	Catalunan Grande, Talomo	City Government	466	233	Day Care Center, Basketball Court, Water, Power	City Housing	L	L	-	-	-
Tibungco Phase 1	Tibungco, Bunawan	City Government	3,295	1,369	Day Care Center, Basketball Court, Water, Power	City Housing	L	-	-	-	-
Tibungco Phase 2	Tibungco, Bunawan	City Government	272	249	Day Care Center, Basketball Court, Water, Power	City Housing	L	-	-	-	-

Table – 42. Resettlement Areas, Davao City

Name of Resettlement Area	Barangay	Land Ownership	No. of Households	No. of Housing Units	Utilities/Facilities/Amenities	Administration	Hazard Susceptibility (H/M/L)				
							Fl	Ln	Fa	Su	Lq
Sto. Niño Mintal Phase 1	Sto. Niño, Tugbok	City Government	1,200	683	Day Care Center, Basketball Court, Barangay Health Center, Water, Power	City Housing	M	-	-	-	-
Sto. Niño Mintal Phase 2	Sto. Niño, Tugbok	City Government	615	823		City Housing	M	-	-	-	-
Sto. Niño Mintal Phase 3	Sto. Niño, Tugbok	City Government	1,174	646		City Housing	M	-	-	-	-
Mahayag Homes	Mahayag, Bunawan	City Government	500	250		City Housing	L	-	-	-	-
Marapangi Homes	Marapangi, Toril	City Government	278	15	Day Care Center	City Housing	H	-	-	-	-
Tigatto Homes	Tigatto, Buhangin	City Government	394	197		City Housing	L	M	-	-	-
Malagamot Homes	Malagamot, Bunawan	City Government	432	216	Day Care Center, Basketball Court	City Housing	H	-	-	-	-
Panacan Homes	Panacan, Bunawan	City Government	1853	666	Day Care Center, Basketball Court	City Housing	L	-	-	-	-

Table – 42. Resettlement Areas, Davao City

Name of Resettlement Area	Barangay	Land Ownership	No. of Households	No. of Housing Units	Utilities/Facilities/Amenities	Administration	Hazard Susceptibility (H/M/L)				
							Fl	Ln	Fa	Su	Lq
Los Amigos Phase 1	Los Amigos, Tugbok	City Government	1,646	823	Day Care Center, Basketball Court & 2 evacuation centers	City Housing	M	-	-	-	-
Los Amigos Phase 2	Los Amigos, Tugbok	City Government		346		City Housing	M	-	-	-	-
DMCI/Aglipayan	Mintal, Tugbok	City Government	118	150	None	City Housing	M	-	-	-	-
East Marahan	Marilog	City Government	150	100	None	City Housing	M	H	-	-	-
Kalayaan Homes	Lasang	City Government		1,469	-	City Housing	L	-	-	-	-
TOTAL				8,405							

Source: NHA, Civic Organization, Cooperative, OCPDC, Urban Poor

Urban Land Reform Projects

A total of 62 community organizations are beneficiaries of the city's urban land reform projects, with a total of 6,656 housing units, benefitting 6,957 families. Power is mainly supplied by the DLPC, while water is supplied by DCWD, deep well, flowing water and from the barangay water source.

Basketball courts and chapels are alternatively used as community centers. Garbage collection and disposal are managed by CENRO.

Table – 43. Urban Land Reform Projects, Davao City

NAME of COMMUNITY ASSOCIATION	Land Ownership	NO. of Families	No. Of Housing Units	Water	Power	Garbage Disposal System	Community Center	Others
Airview Heights Settlers Ass'n., Inc,	CA	180	128	DCWD	DLPC	CENRO	Basketball Court Meeting Hall Day Care	
Bago Galleria Homeowners Ass'n	LO	125	125	DCWD	DLPC	CENRO	Basketball Court Day Care	
Bato Urban Homeowners Ass'n.	CA	205	196	Barangay	DLPC	CENRO	Meeting Hall	
Bayanihan Homeowners Ass'n.	LO	84	84	Barangay	DLPC	CENRO	Basketball Court Chapel	
Belisario Homesite HOA	CA	50	34	DCWD	DLPC	CENRO	Basketball Court	
Blue Diamond Village HOA, Inc.	LO	80	76	DCWD	DLPC	CENRO	Meeting Hall	
Bolton Bridge Homeowners Ass'n.	CA			--				case on going
Buhangin Diversion Road HOA, Invc.	LO	170	151	Barangay	DLPC	CENRO	Basketball Court Chapel	
Buhangin United Neighborhood & SOA	LO	30	30	DCWD	DLPC	CENRO	None	

Table – 43. Urban Land Reform Projects, Davao City

NAME of COMMUNITY ASSOCIATION	Land Ownership	NO. of Families	No. Of Housing Units	Water	Power	Garbage Disposal System	Community Center	Others
Bunawan Divine Mercy HOA, Inc.	LO	155	147	Barangay	DLPC	CENRO	Basketball Court DayCare Chapel	
Bunawan Hilltop Homeowners Ass'n, Inc.	LO	149	149	Barangay	DLPC	CENRO	Basketball court Chapel	
Bunawan Homeowners Ass'n	LO	30	30	Barangay	DLPC	CENRO	None	
Bunawan Promise Land Settlers Ass'n	CA	95	85	DCWD	DLPC	CENRO	Basketball Court Day Care Chapel	
Bunawan Riverside Homeowners Ass'n.	LO	125	118	Barangay	DLPC	Compost Burn	None	
Bunawan Village Ass'n., Inc.	CA	180	170	Barangay	DLPC	CENRO	Basketball Court Chapel	
Calinan Bayanihan HOA, Inc.	LO	35	27	DCWD	DLPC	CENRO	None	
Christian Homeowners Ass'n.	CA	73	73	Flowing	DLPC	CENRO	None	
D' Garden Landless Ass'n	CA	90	82	DCWD	DLPC	CENRO	Basketball Court Meeting Hall Chapel	
Dabawnon Kita HOA	LO	34	34	DCWD	DLPC	CENRO	None	
D'Achievers HOA, Inc.	CA	192	172	DCWD	DLPC	CENRO	Chapel	
Daliao Sweet Tamarind HOA, Inc.	CA	130	125	Flowing	DLPC	CENRO	None	
Davao City Peoples Coalition for HR	CA	137	137	DCWD	DLPC	CENRO	Chapel	

Table – 43. Urban Land Reform Projects, Davao City

NAME of COMMUNITY ASSOCIATION	Land Ownership	NO. of Families	No. Of Housing Units	Water	Power	Garbage Disposal System	Community Center	Others
Denia Settlers Ass'n., Inc.	CA	91	80	DCWD	DLPC	CENRO	Basketball Court Chapel	
Desabilla Village Settlers Ass'n	LO	135	126	Flowing	DLPC	CENRO	Chapel	
Freedom Homeseekers Ass'n	LO	64	64	DCWD	DLPC	CENRO	Chapel	
Green Pastures Ass'n. of Buhangin, Inc.	LO	238	238	Barangay	DLPC	Compost Burn	Meeting Hall	
Guara Talisay HOA, Inc.	LO	20	12	DCWD	DLPC	CENRO	None	
Integrated Settlers Ass'n of Toril, Inc.	CA	152	140	DCWD	DLPC	CENRO	Basketball Court Chapel Day Care	
Jirah Settlers Ass'n of Bunawan	LO	92	82	DCWD	DLPC	CENRO	Chapel	
Kahayag Homeowners Ass.	LO	94	94	DCWD	DLPC	CENRO	None	
Landless Association of Bunawan	CA	92	92	DCWD	DLPC	CENRO	None	
Leonora Village HOA, Inc.	LO	45	41	DCWD	DLPC	CENRO	None	
Lizada Integrated Homeowners Ass'n.	LO	77	77	Flowing	DLPC	CENRO	None	
Lubogan Homeowners Ass'n	LO	59	59	DCWD	DLPC	CENRO	None	
Mahayaha Settlers Ass'n	CA	75	75	DCWD	DLPC	Compost Burn	None	
Marapang i Urban Homeowners Ass'n	LO	71	65	Deep Well	DLPC	CENRO	Meeting Hall	

Table – 43. Urban Land Reform Projects, Davao City

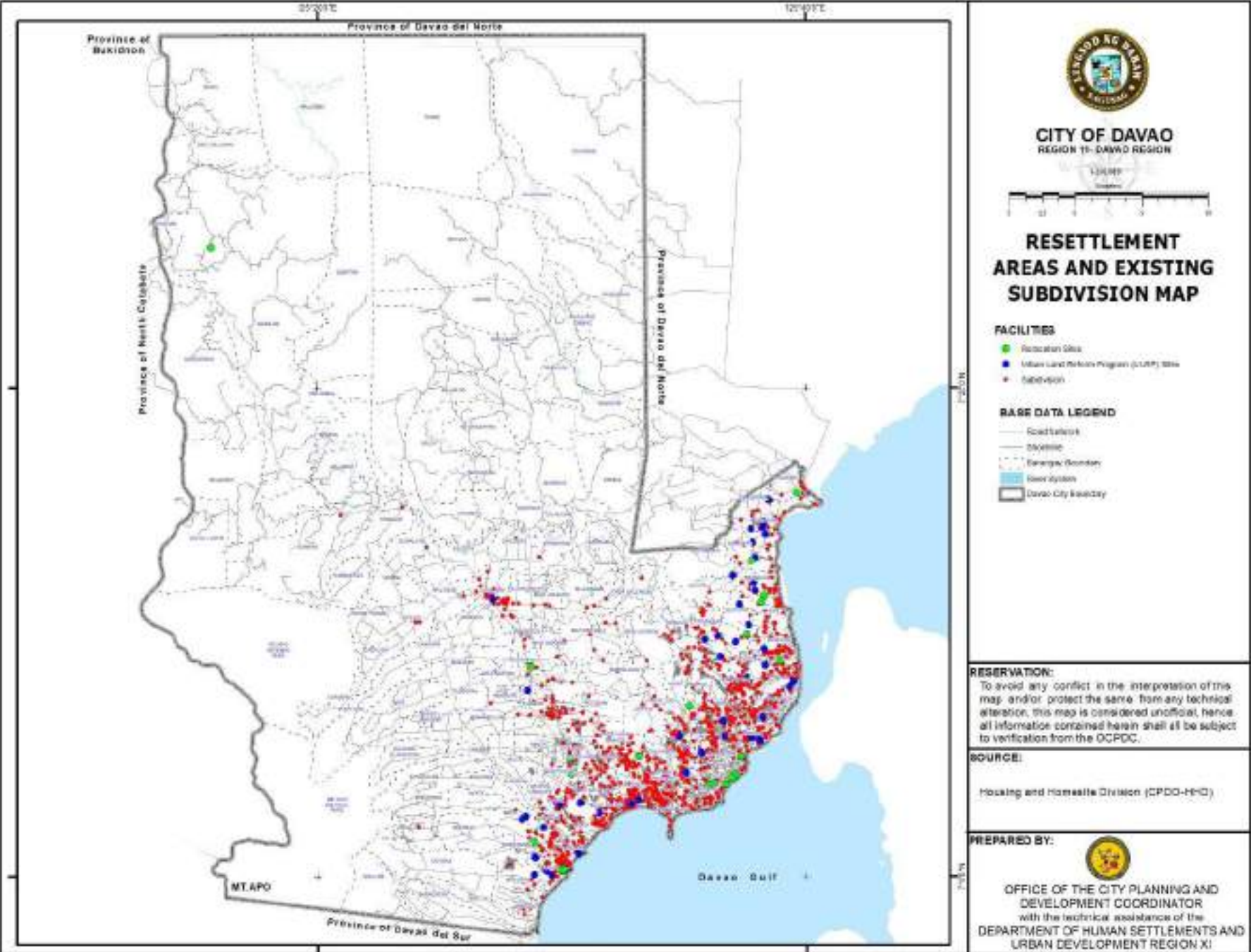
NAME of COMMUNITY ASSOCIATION	Land Ownership	NO. of Families	No. Of Housing Units	Water	Power	Garbage Disposal System	Community Center	Others
Nagkahiusa Settlers Ass'n. Inc.	LO	275	250	DCWD	DLPC	CENRO	Basketball Court Chapel Day Care	
New Fatima Village HOA, Inc.	CA	110	110	DCWD	DLPC	CENRO	Chapel	
New Kasilak Homeowners Ass'n.	LO	135	128	Barangay	DLPC	CENRO	Meeting Hall Chapel	
New Mahayag Homeowners Ass'n.	CA	95	88	Barangay	DLPC	Compost Burn	Day Care Chapel	
Palanca Village HOA	CA	210	195	DCWD	DLPC	CENRO	Basketball Court Chapel	
Panacan Looban Community HOA	LO	190	172	Barangay	DLPC	Compost Burn	Basketball Court Chapel	
Panacan Roadside Homeseekers Ass'n.	LO	230	202	Barangay	DLPC	Compost Burn	Basketball Court Meeting Hall	
Plain View San Isidro Bunawan Ass'n,	LO	115	104	DCWD	DLPC	CENRO	Basketball Court Day Care Chapel	
Purok Lourdes Blk 4 Carmelite Highland	LO	122	122	Barangay	DLPC	CENRO	None	
R. Gonzales Homeowners Ass'n.	LO	70	70	DCWD	DLPC	CENRO	None	
San Lorenzo Ruiz Settlers Ass'n	CA	85	79	DCWD	DLPC	CENRO	Basketball Court Chapel	
San Marcos - Jerome Homeseekers Ass'n.	LO	32	16	DCWD	DLPC	CENRO	None	

Table – 43. Urban Land Reform Projects, Davao City

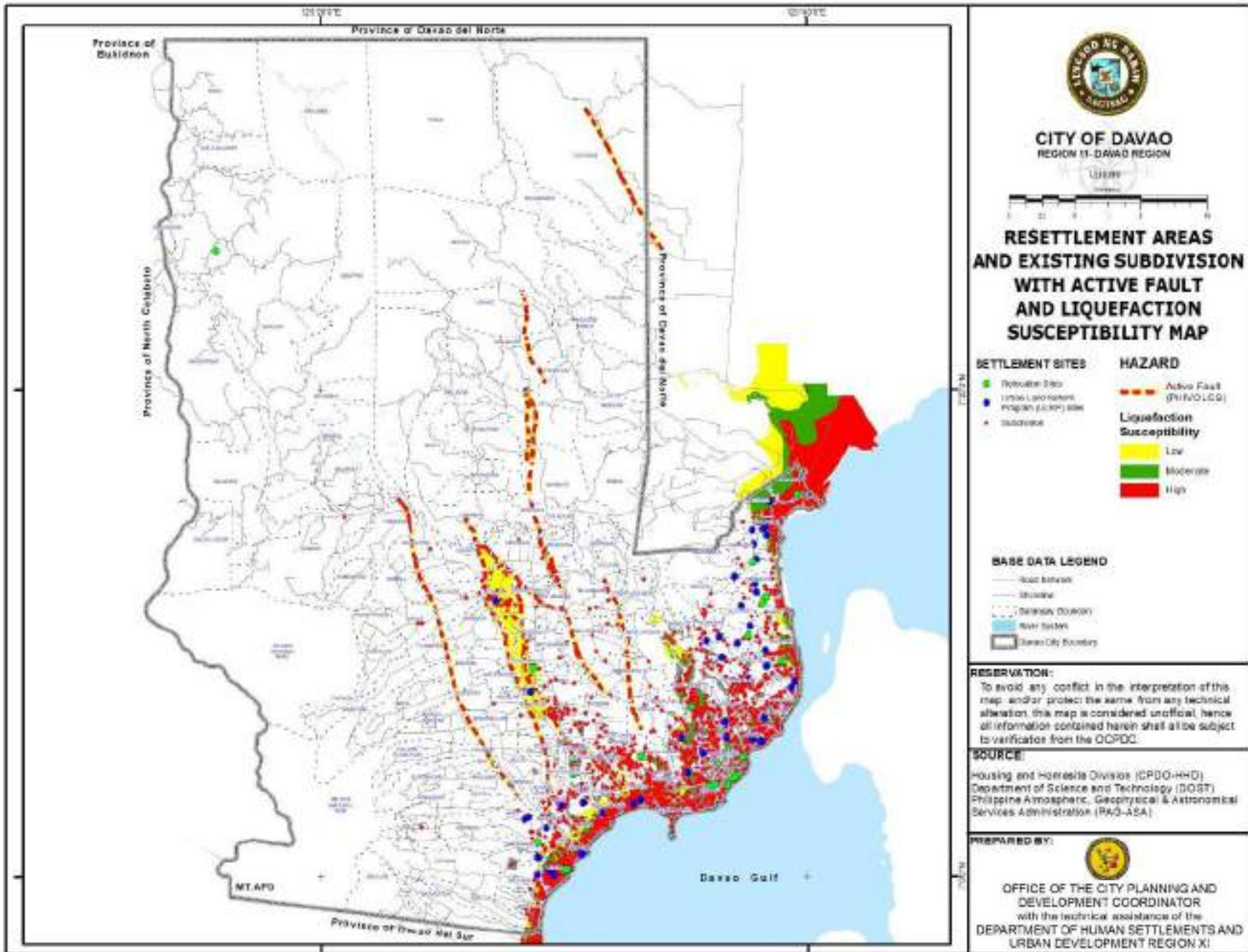
Sandawa Village HOA, Inc.	CA	75	69	DCWD	DLPC	CENRO	Basketball Court Day Care Chapel	
Sandawa Village HOA, Inc. Phase II	CA	80	65	DCWD	DLPC	CENRO	Day Care	
Small Communal HOA, Inc.	LO	192	192	DCWD	DLPC	Compost Burn	Meeting Hall	
Sto. Niño Bulusan HOA, Inc.	CA	70	65	DCWD	DLPC	CENRO	Chapel	
Talomo Urban Settlers Ass'n	LO	225	210	DCWD	DLPC	CENRO	Basketball Court Day Care Chapel	
Tibungco Community HOA, Inc.	LO	323	323	Deep Well	DLPC	Compost Burn	Basketball Court Chapel	
Tibungco Friendly HOA	LO	227	227	Barangay	DLPC	CENRO	Chapel	
Tisa Homeowners Ass'n., Inc.	LO	95	95	DCWD	DLPC	CENRO	Basketball Court Chapel	
Tukbisa, Inc	LO	120	195	Deep Well	DLPC	CENRO	Uncemented Basketball Court Chapel	
United Bucana Lasang HOA, Inc.	LO	80	80	DCWD	DLPC	CENRO	None	
United Settlers of San Rafael HOA, Inc.	LO	32	28	DCWD	DLPC	CENRO	None	
United Toril Homesettlers Ass'n.	LO	110	104	DCWD	DLPC	Compost Burnt	Chapel	
United Settlers of San Rafael HOA, Inc.	LO	32	28	DCWD	DLPC	CENRO	None	
United Toril Homesettlers Ass'n.	LO	110	104	DCWD	DLPC	mpost Bu	Chapel	

Source: OCPDC, Community Associations

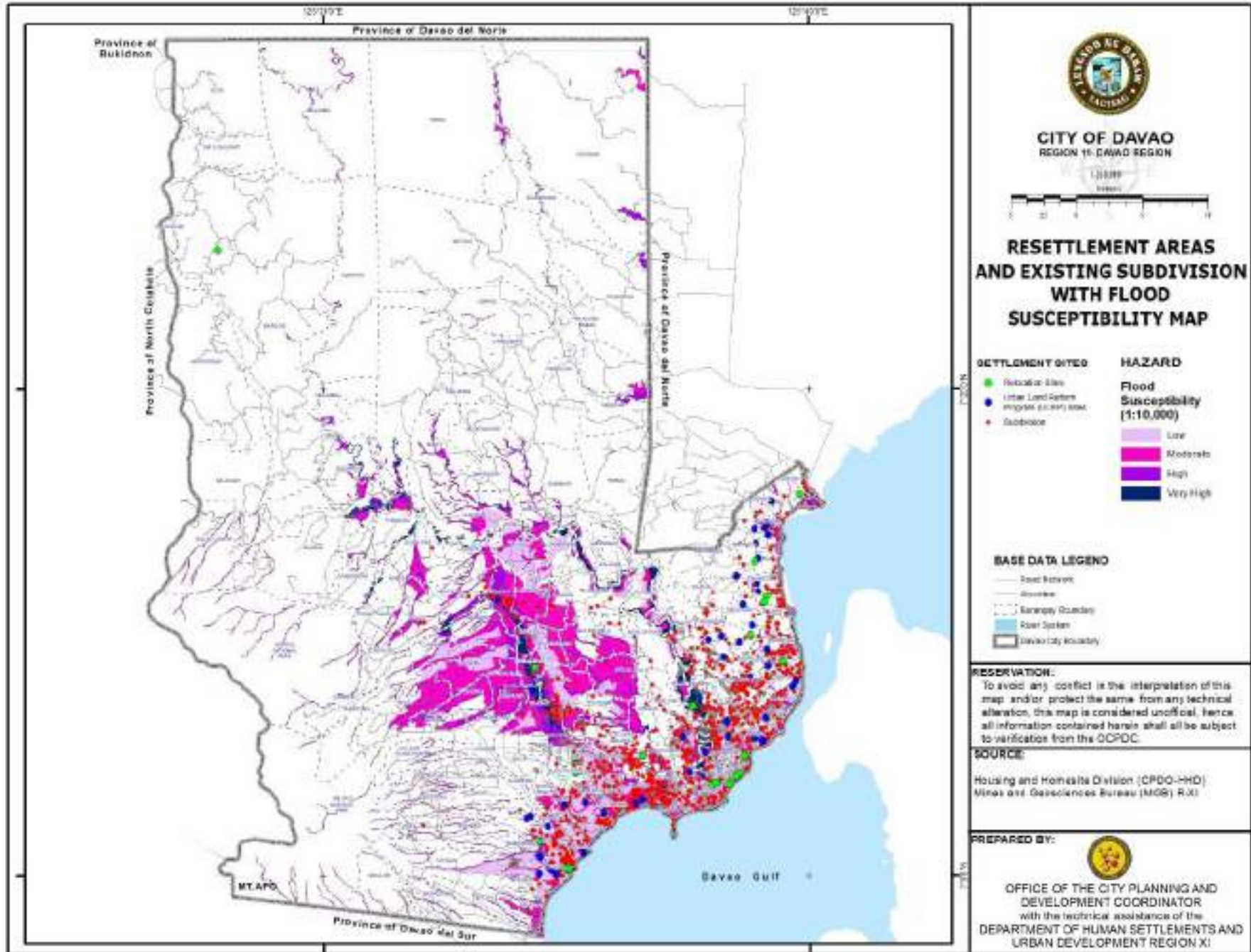
Map 2.25. Resettlement Areas and Existing Subdivision Map



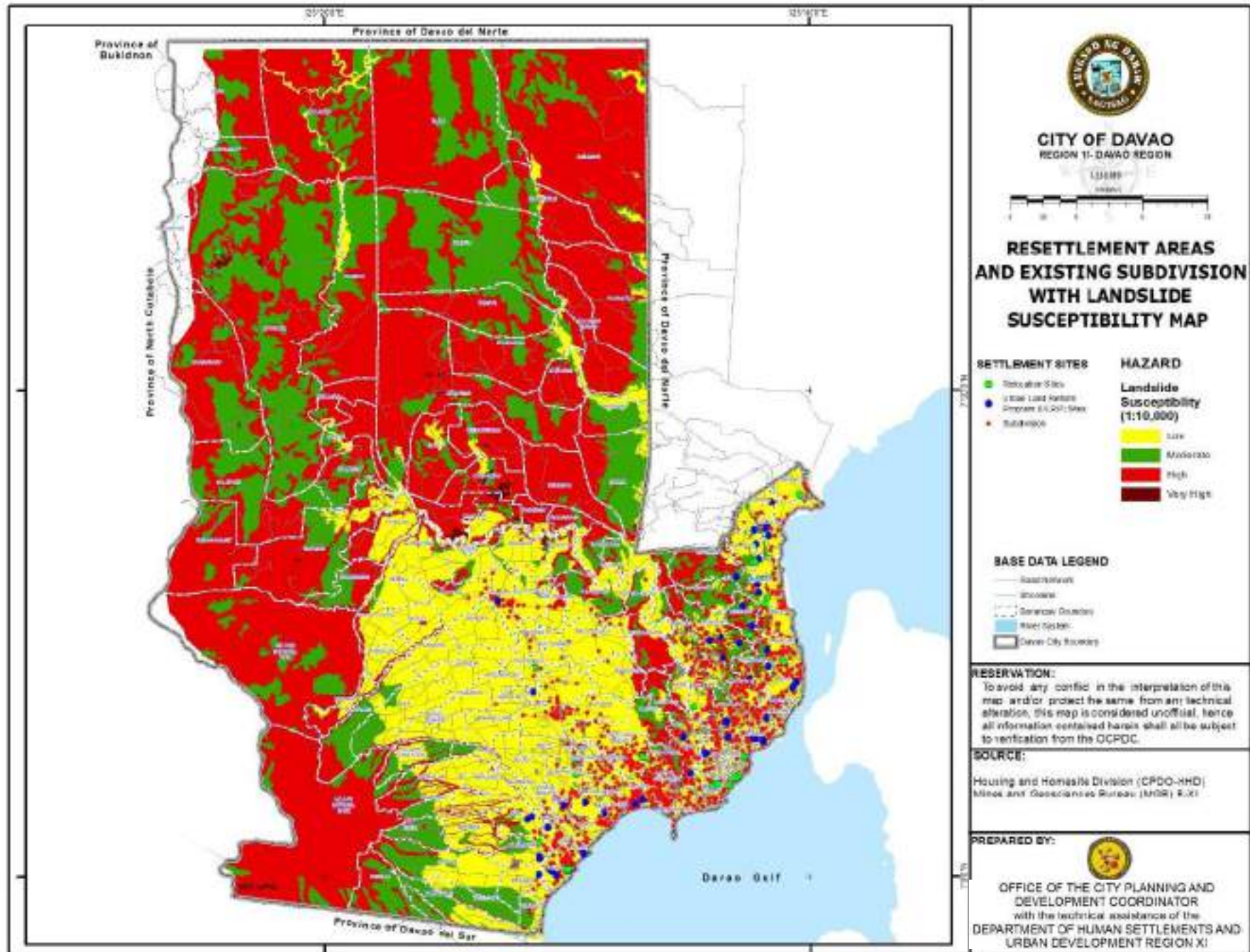
Map 2.26. Resettlement Areas and Existing Subdivision with Active Fault and Liquefaction Susceptibility Map



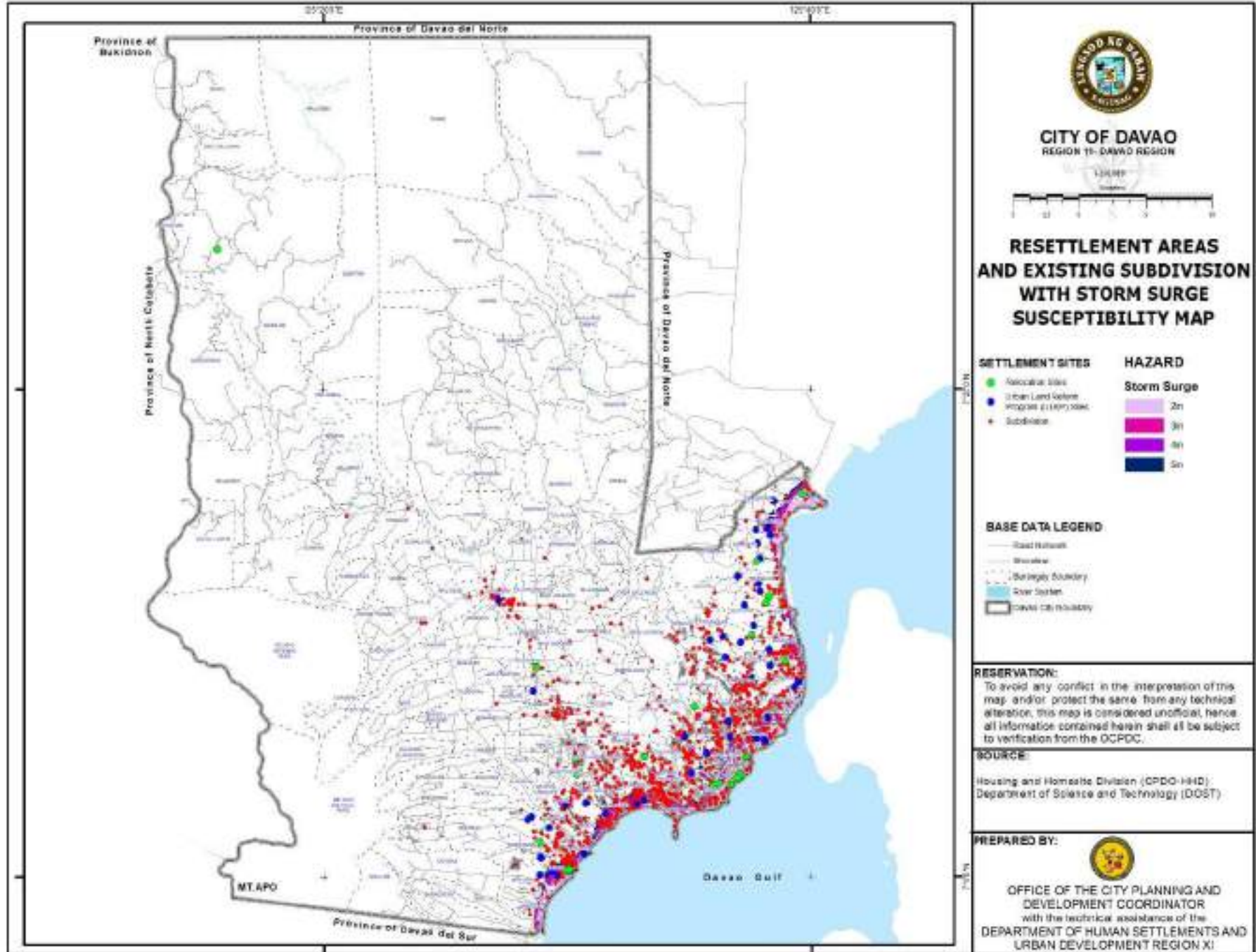
Map 2.27. Resettlement Areas and Existing Subdivision with Flood Susceptibility Map



Map 2.28. Resettlement Areas and Existing Subdivision with Landslide Susceptibility Map



Map 2.29. Resettlement Areas and Existing Subdivision with Storm Surge Susceptibility Map



Utilities: Power, Communication Network and Water

Power

Electricity is delivered from generation plants to consumer households through the grid components of power generation, transmission and distribution. Many of these grid components however, are vulnerable to natural hazards and the adverse effect of climate change. Power plants, transmission lines and power substations in Davao City are mostly affected by flood, earthquake, landslide, storm surge, and liquefaction.

The city has a total of 497 existing transmission towers, of which 404 are located in rural areas, and 93 are located in urban areas.

Of these towers, 39 are located areas which are highly susceptible to flood . Many are in Tugbok District, with 19 towers, and Marilog District, with ten (10) towers. The towers in Calinan District, Buhangin District, Baguio and Bunawan District are also highly susceptible to flood.

Ten (10) transmission towers are located in high earthquake susceptibility areas. Five (5) of these are in Marilog District and the remaining five (5) towers are in Tugbok and Calinan Districts.

Also, 94 transmission towers are located in high landslide susceptible areas. Fifty-two (52) of them are in Marilog District and the remaining towers are scattered in Baguio, Buhangin, Bunawan, Calinan, Talomo and Tugbok districts.

Five (5) other towers are located in areas deemed highly susceptible to liquefaction. Four (4) towers are in Bunawan District.

For storm surge, only a single transmission tower is highly susceptible to 4-meter wave and it is located in Toril District. (Table 44).

Out of the 22 DLPC substations, a total of eight (8) substations, Dumoy Substation, Puan Substation, P. Reyes Substation, Gaisano Substation, Sta. Ana Substation, R. Castillo Substation, Pampanga Substation, and Panacan Substation are highly susceptible to liquefaction. Four (4) substations: Santa Ana Substation, R.Castillo Substation, Pampanga Substation, and Don Ramon Substation are susceptible to storm surge with 2-meter wave. The P. Reyes Substation, Gaisano Substation, Victoria Substation, Panacan Substation, Don Ramon Substation and Bunawan Substation are susceptible to storm surge with 3-meter wave. In addition, Don Ramon Substation and Bunawan Substation are found to be susceptible to storm surge with 4-meter wave. Also, Dumoy Substation, Bajada Substation, ERA Substation and Don Ramon Substation are susceptible to storm surge with 5-meter wave. Meanwhile, three substations namely, Calinan, Tugbok and Matina Power Substations are located in a high flood susceptibility area.

Three power plants in Malagos, Talomo and Mintal are located in high flood susceptibility area and one power plant, namely Therma South in Binugao, is located in a high liquefaction susceptibility, and storm surge with 3-meter wave susceptible area.

Table – 44. Transmission Towers, 2018, Davao City

Political District	Hazard Susceptibility (H/M/L)							
	Fl	Eq	Ln	Su				Lq
				2m	3m	4m	5m	
Baguio (28)	M-2 H-1	-	L-24 M-3 H-1	-	-	-	-	L-2
Buhangin(22)	H-3	-	L-5 M-12 H-5	-	-	-	-	-
Bunawan (63)	L-1 M-1 H-1	-	L-37 M-13 H-13	-	-	-	-	L-1 M-11 H-4
Calinan (44)	L-10 M-9 H-5	H-2	L-35 M-6 H-3	-	-	-	-	L-6
Marilog (171)	H-5	-	L-17 M-85 H-51	-	-	-	-	-
Paquibato (2)	-	-	L-2	-	-	-	-	-
Talomo (34)	M-2 H-1	-	L-19 M-7 H-8	-	-	-	-	-
Toril (49)	L-5 M-2 H-4	H-5	L-32 M-16 H-1	-	-	√-1	-	L-2 M-5 H-1
Tugbok (84)	L-5 M-25 H-19	H-3	L-64 M-8 H-12	-	-	-	-	-
Total- 497	H-39 M- 41 L-21	H-10	H-94 M-150 L-235			1		H-5 M-16 L-9

Source: City Planning and Development Office

Table - 45. Power Substations, 2018, Davao City

	Barangay	Area Occu- pied (ha)	Year Con- structed	Voltage	Hazard Susceptibility (H/M/L)						
				(kV)	FI	Ln	Su				Lq
							2m	3m	4m	5m	
1	Toril	0.1125	1969	69	L	L	-	-	-	-	L
2	Dumoy	0.1322	2005	69	L	L	-	-	-	√	H
3	Puan	0.0803	1992	69	L	L	-	-	-	√	H
4	Calinan	0.1	1969	69	H	L	-	-	-	-	L
5	Tugbok	0.1809	2015	69	H	L	-	-	-	-	-
6	Talomo Proper	0.1142	1990	69	L	L	-	-	-	-	L
7	Matina Crossing	0.1	1997	69	H	L	-	-	-	-	M
8	Bucana	0.1547	2002	69	L	L	-	-	-	-	M
9	Maa	0.1308	2016	69	L	L	-	-	-	-	L
10	4-A	0.08259	1997	69	L	L	-	√	-	-	H
11	13-B	0.0454	1997	69	L	L	-	√	-	-	H
12	15	0.0607	1986	69	L	L	√	-	-	-	H
13	20-B	0.0595	1992	69	L	L	-	√	-	-	M
14	19-B		1968-76	69	L	L	-	-	-	-	-
15	19-B	2.5926	1996	138	L	L	-	-	-	-	-
16	Cabantian	0.1712	2014	69	-	L	-	-	-	-	-
17	RCastillo	0.0852	1998	69	-	L	√	-	-	-	H
18	Pampang	0.1031	1976	69	M	L	-	√	-	-	H
19	Panacan	0.0858	2003	69	-	L	-	√	-	-	H
20	Tibungco	0.2626	2008	69	-	M	-	-	-	-	-
21	Bunawan	1.554	2007	138	-	L	-	√	-	-	M
22	Bunawan	0.1085	1980	69	-	L	-	√	-	-	M

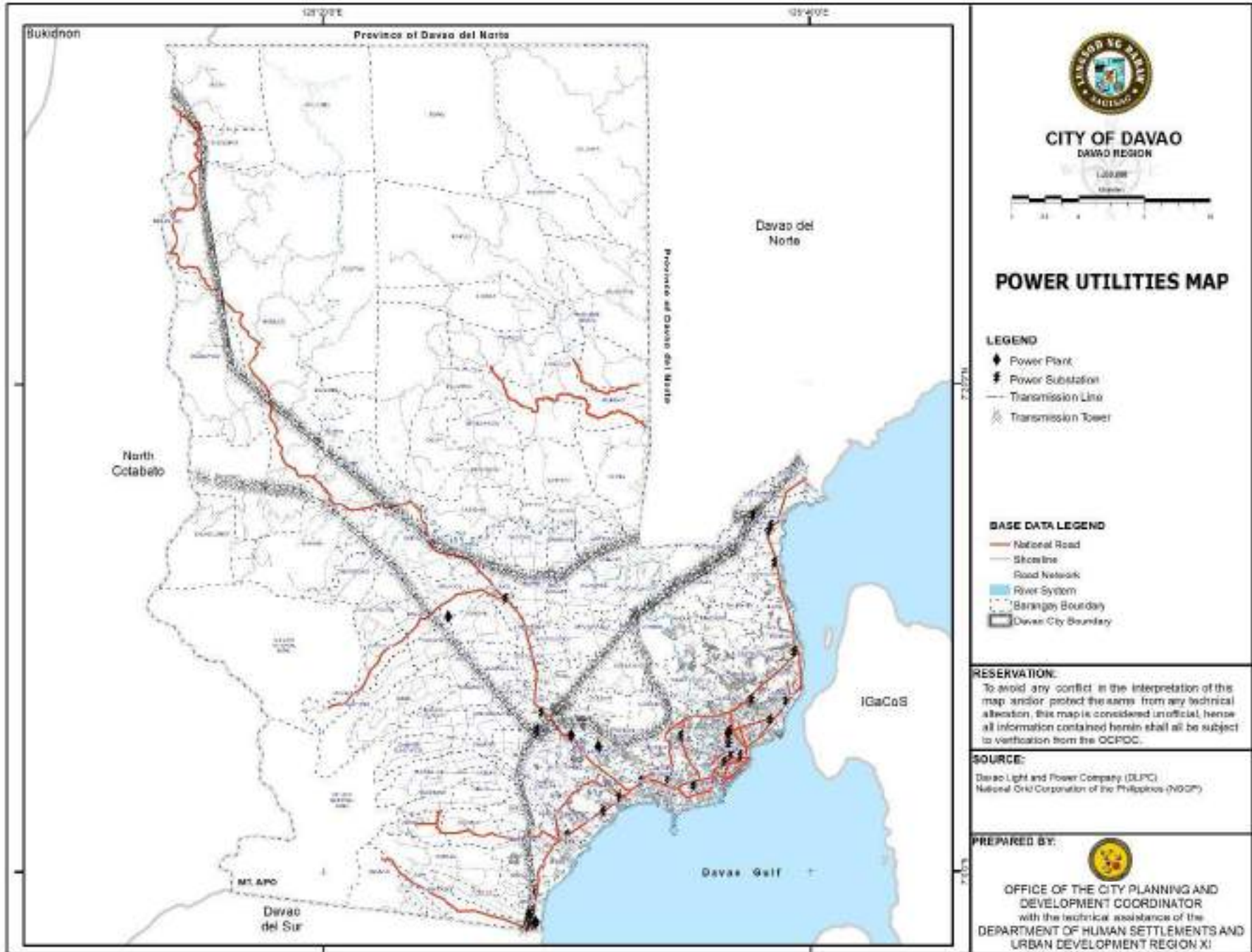
Source: Davao Light and Power Company

Table – 46. Power Plants, Davao City, 2016-2018

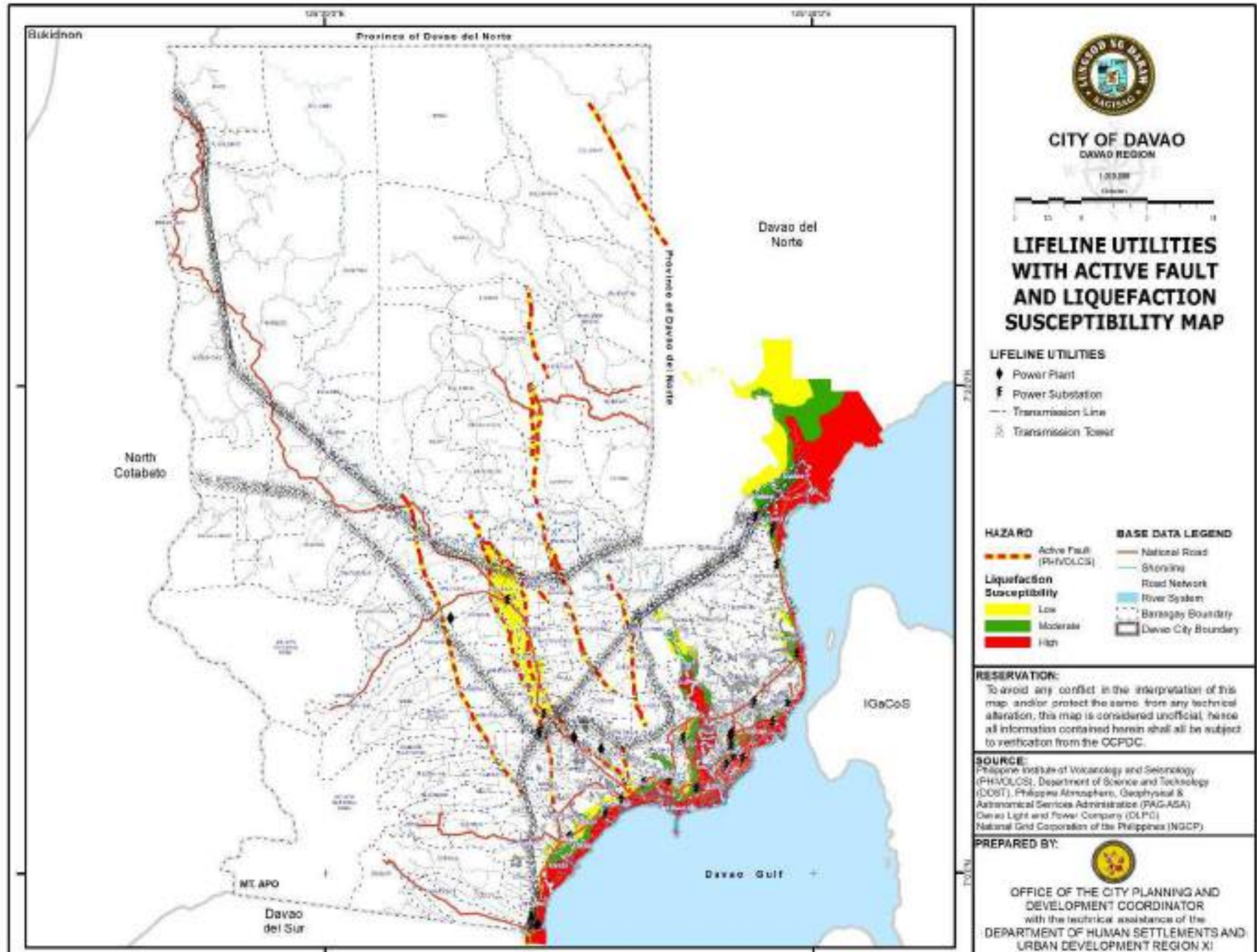
Name of Power Plant	Barangay	Owner/Operator	Capacity (MW)		Type of Plant	Date of Commission/ Operation	Hazard Susceptibility (H/M/L)							
			Installed	Dependable			FI	Ln	Su				Lq	
									2m	3m	4m	5m		
1	Therma South	Binugao	Therma South Inc (TSI)	150	130	Circulating Fluidized Bed (CFB) Coal	Unit 1- Sep 2015 Unit 2- Feb 2016	M	L	-	✓	-	-	H
2	Bajada Diesel Power Plant	19-B	Davao Light and Power Company	58.7	48	Bunker/ Diesel Internal Combustion Engine	Jun 1995	L	L	-	-	-	-	-
3	HEDCOR Talomo 1 HEP	Malagos	HEDCOR Inc.	4.5	4.4	Run-of-River type HEPP	Oct 1995	H	L	-	-	-	-	-
4	HEDCOR Talomo 1 HEP	Mintal						H	L	-	-	-	-	-
5	HEDCOR Talomo 1 HEP	Catalunan Pequeño						H	L	-	-	-	-	-

Source: Department of Energy

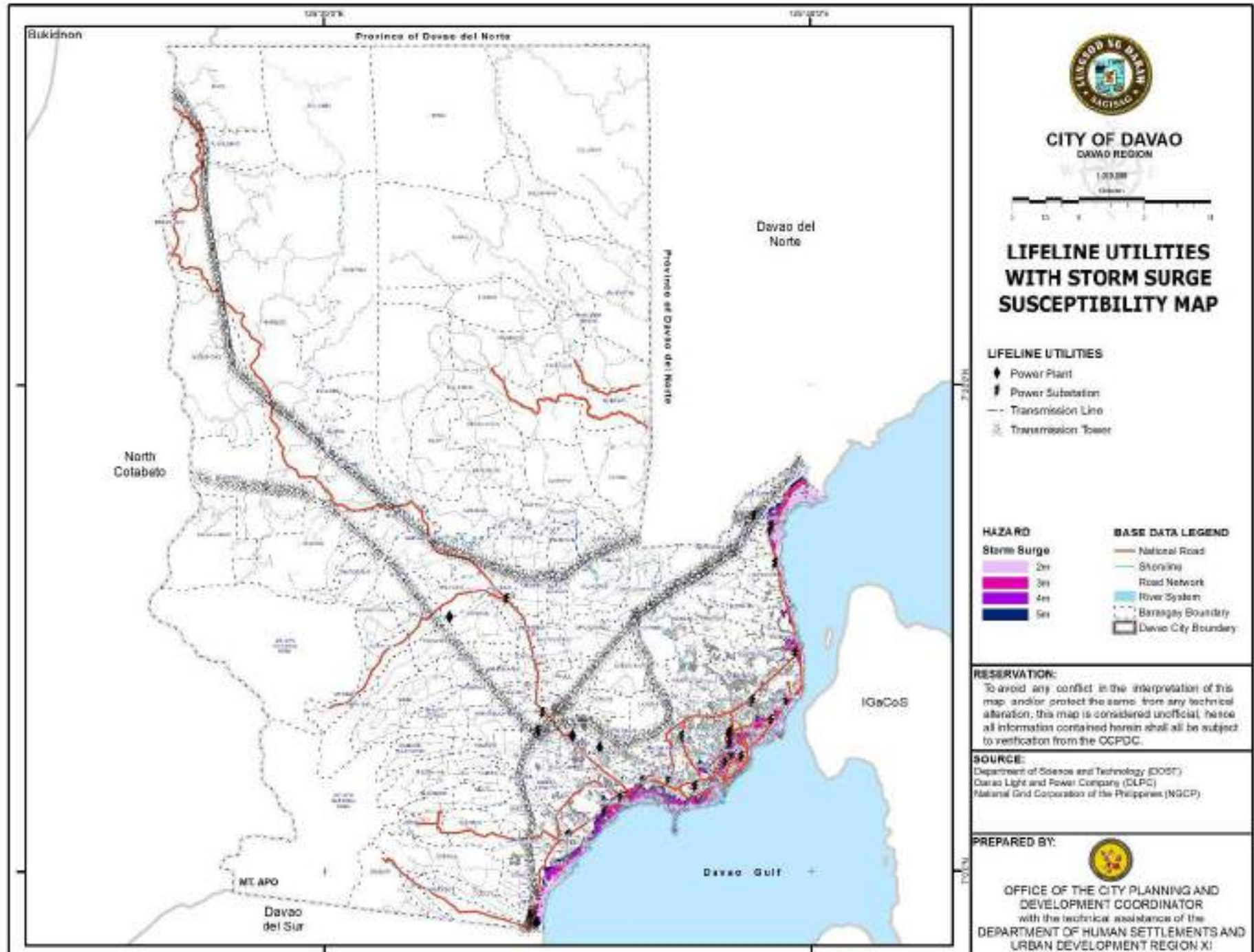
Map 2.30. Power Utilities Map



Map 2.31. Lifeline Utilities with Active Fault and Liquefaction Susceptibility Map



Map 2.32. Lifeline Utilities with Storm Surge Susceptibility Map



Communication Services/Facilities

In Davao City, there are monitoring and tracking devices such as weather tracking stations and radars. The Department of Science and Technology (DOST) has placed Automated Rain Gauges (ARG) in nine (9) different barangays, five (5) of which are located in schools and four (4) are in barangay halls. A single Water Level Monitoring station (WLMS) is located in Mintal Bridge. DOST owns seven (7) ARGs & WLMS (Tandem) which are located in different bridges in Davao city. There is also an Automated Weather Station owned by the Weather Philippines/Davao City located in Central 911 Calinan Station and six (6) Manual Water Level Markers that is located in six (6) different bridges in Davao.

There are 11 postal offices in the city, five (5) of which are privately-owned. The Davao City Central Post Office, which is the main station, supervises one (1) extension counter. The Philippine Postal Corporation (PPC) distributes the mails to its 1,050 mail boxes throughout the city, representing 97.50% of its total postal facilities.

As of 2019, the Davao City Central Post Office has 29 letter carriers, Matina Post Office has 10 letter carriers, Bunawan Post Office has two (2) letter carriers, Calinan Post Office has five (5) letter carriers, Toril Post Office has eight (8) letter carriers, Mintal Post Office has six (6) letter carriers, and University of Mindanao has one (1) letter carrier. All in all, the whole Davao City has a total of 61 letter carriers

Broadcast and Television Networks

Broadcast communication covers the entire Davao City and plays a major role as a source of information for far-flung barangays. As of 2018, there are 14 amplitude modulation (AM) radio stations in Davao City, including the government-owned DXRP-Radyo ng Bayan, now named Radyo Pilipinas. The city has a total of 25 privately-owned frequency modulation (FM) radio stations. There are a total of 15 television stations and two (2) cable stations servicing the requirements of the city residents. These stations are all privately owned. The oldest radio station is the DXUM – 819 KHZ (Radyo Ukay) which was established in 1946.

In terms of hazards, out of all communication facilities such as cell sites, postal services, radio and broadcast services, some are found along fault lines, flood susceptible zone, landslide susceptible zone, liquefaction susceptibility zone and storm surge susceptibility zone.

A total of 14 cell sites are located in a very high flood susceptibility area. Also, 119 cell sites are located in a liquefaction susceptibility area. Moreover, a total of 15 cell sites are susceptible to a 5-meter storm surge.

As for postal facilities, five (5) are located in an area with high liquefaction susceptibility, and two (2) are under moderate and low susceptibility. As for landslide and flood, majority of the postal facilities are in moderate and low susceptibility. Two (2) postal facilities are in an area susceptible to a 4-meter storm surge, three (3) are in an area susceptible to 3-meter storm surge, and two (2) are located in an area susceptible to a 2-meter storm surge.

Out of 38 radio broadcast service facilities, five (5) are in an area with high landslide susceptibility. Six (6) are located in an area susceptible to storm surge with 4-meter wave.

Out of 14 television broadcast service facilities one (1) is located in an area with high liquefaction susceptibility, seven (7) are located in high landslide susceptibility.

There are no facilities located within the active fault line system. Weather tracking stations shall be established 10 meters away from active fault as buffer zone.

As for other communication services facilities, nine (9) automatic rain gauges are located within an area with low and moderate susceptibility for all types for hazards. As for ARG and WLMs tandem and Manual Water Level Marker, all are located in a high flood susceptibility bearing the fact that it is strategically located within rivers for monitoring.

Table – 47. Meteorological Weather Tracking Stations and Radars, Davao City 2018

Type	Year Constructed	Area Occupied (ha)	Brgy.	Ownership		Hazard Susceptibility (H/M/L)								
				Public	Private	FI	Eq	Ln	Su				Lq	
									2 m	3 m	4 m	5 m		
Automated Rain Gauges (ARG)														
DOST	-	-	Baguio District Barangay Hall	√		-	-	L	-	-	-	-	-	-
DOST	-	-	PSHS-SMC	√		L	-	L	-	-	-	-	-	-
DOST	-	-	Damilag Elementary School	√		M	-	L	-	-	-	-	-	L
DOST	-	-	Sitio Butay	√		-	-	-	-	-	-	-	-	-
DOST	-	-	Tamayong Elementary School	√		M	-	L	-	-	-	-	-	L
DOST	-	-	Lipadas Bridge	√		M	H	L	-	-	-	√	M	
DOST	-	-	Baracayo Elementary School	√		M	-	L	√	-	-	-	-	H
DOST	-	-	Eden Elementary School	√		-	-	L	-	-	-	-	-	-

Source: Philippine Postal Corporation

Table – 47. Meteorological Weather Tracking Stations and Radars, Davao City 2018

Type	Year Constructed	Area Occupied (ha)	Brgy.	Ownership		Hazard Susceptibility (H/M/L)							
				Public	Private	FI	Eq	Ln	Su				Lq
									2m	3m	4m	5m	
DOST	-	-	Biao Escuela	√		-	-	-	-	-	-	-	-
Water Level Monitoring Stations (WLMS)													
DOST	-	-	Mintal Bridge	√		H	-	L	-	-	-	-	L
ARG & WLMS (Tandem)													
DOST	-	-	Tamugan Bridge	√		H	-	L	-	-	-	-	-
DOST	-	-	Suawan Bridge	√		H	-	L	-	-	-	-	-
DOST	-	-	Calinan Bridge	√		H	-	L	-	-	-	-	L
DOST	-	-	Lacson-Lamanan Bridge	√		-	-	-	-	-	-	-	-
DOST	-	-	Mintal Bridge	√		H	-	L	-	-	-	-	L
DOST	-	-	Waan Bridge	√		H	-	L	-	-	-	-	-
DOST	-	-	Matina Pangi Bridge	√		H	-	L	-	-	-	-	M
Automated Weather Station													
Weather Phil. / Davao City	-		Central 911 Calinan Station	√		-	-	L	-	-	-	-	-
Manual Water Level Marker													
Brgy. 5-A	-		Bankerohan Bridge	√		H	-	L	-	-	-	-	-
Brgy. 19-B	-		Garcia Bridge	√		H	-	L	-	-	-	-	H
Brgy. 10-A	-		San Rafael Dike	√			-		-	-	-	-	-
Brgy. Matina Crossing	-		Balusong Bridge	√		H	-	L	-	-	-	-	H
Brgy. Talomo	-		Ulas Bridge	√		H	-	L	-	-	-	-	-
Brgy. Calinan	-		Wangan Bridge	√		H	-	L	-	-	-	-	L

Source: Philippine Postal Corporation

Table – 47. Meteorological Weather Tracking Stations and Radars, Davao City 2018

Type	Year Constructed	Area Occupied (ha)	Brgy.	Ownership		Hazard Susceptibility (H/M/L)							
				Public	Private	FI	Eq	Ln	Su				Lq
									2m	3m	4m	5m	
Mail Boxes (P.O. Box)													
Davao City Central P.O.													
(a) Medium Size	-	-	R.O. XI Bldg., Cor. Roxas and Mag-saysay Ave.	√		L	-	L	-	√	-	-	H
(b) Small Size	-	-		√		L	-	L	-	√	-	-	H
Stamping Machine (Meter)													
Metered Machine													
(a) Davao City Central P.O.	-	-	R.O. XI Bldg., Cor. Roxas and Mag-saysay Ave.	√		L	-	L	-	-	-	-	H
(b) Ateneo Post Office	-	-	A.D.D.U. Campus		√	L	-	L	√	-	-	-	H
(c) Gaisano Post Office	-	-	J.P. Laurel Ave.		√	L	-	L	-	√	-	-	H
(d) Victoria Plaza Post Office	-	-	J.P. Laurel Ave.		√	L	-	L	-	-	√		M
(e) U.M. Post Office	-	-	U.M Campus (Bolton)		√	L	-	L	√	-	-	-	M

Source: Philippine Postal Corporation

Table – 48. Communication Services Facilities, Davao City, 2018

Type	Year Constructed	Area Occupied (ha)	Brgy.	Ownership		Hazard Susceptibility (H/M/L)								
				Public	Private	FI	Eq	Ln	Su				Lq	
									2m	3m	4m	5m		
Postal Services														
Post Office														
(a) Davao City Central Post Office	-	-	R.O. XI Bldg., Cor. Roxas and Mag-saysay Ave.	√		L	-	L	-	-	-	-	-	H
Extension Counters														
(a.1) Sangguniang Panlungsod	-	-	SP Building (Pichon)	√		L	-	L	-	√	-	-	-	H
(b) Talomo Post Office	-	-	Crossing Ulas		√	M	-	L	-	-	√	-	-	L
(c) Toril Post Office	-	-	Toril District Hall	√		L	-	L	-	-	-	-	-	L
(d) Mintal Post Office	-	-	Mintal District Hall	√		M	-	L	-	-	-	-	-	
(e) Calinan Post Office	-	-	Calinan District Hall	√		H	-	L	-	-	-	-	-	L
(f) U.M. Post Office	-	-	U.M. Campus (Bolton)		√	L	-	L	√	-	-	-	-	H
(g) Ateneo Post Office	-	-	A.D.D.U. Campus (Jacinto)		√	L	-	L	√	-	-	-	-	H
(h) Gaisano Mall Post Office	-	-	J.P. Laurel Ave.		√	L	-	L	-	√	-	-	-	H
(i) Victoria Plaza Post Office	-	-	J.P. Laurel Ave.		√	L	-	L	-	-	√	-	-	M
(j) Bunawan Post Office	-	-	Bunawan District Hall	√		-	-	L	-	√	-	-	-	M
Mail Distributor Center	-	-	Corner Mag-saysay & Roxas Avenues	√		-	-	-	-	-	-	-	-	-

Source: Philippine Postal Corporation

Table – 49. Broadcast and Television Network

Type	Year Constructed	Area Occupied (sqm)	Barangay	Ownership		Hazard Susceptibility (H/M/L)				
				Public	Private	Fl	Eq	Ln	Su	Lq
DXAB – 1296 KHZ (Radyo Patrol) ABS-CBN Co.	1957	1,168.27	Shrine Hills, Matina, Davao City		√		-	M	-	-
DXDC – 621 KHZ (Radyo Agong) (RMN)	1957	130.29	Bonifacio cor. Anda St., Davao City		√	L	-	L	3m	H
DXFE – 1197 KHZ Far East Broad Casting Co.	1972	734.20	Torres St., (Pob.) Davao City		√	L	-	L	-	-
DXGM – 1125 KHZ (GMA Network, Inc.)	1995	414.08	Shrine Hills, Matina, Davao City		√		-	H	-	-
DXGO – 855 KHZ (AksiyonRadyo)	1998	1,209.38	R. Castillo St., Davao City		√	H	-	L	2m	H
DXKT – 1071 KHZ Radio Phils. Network	1961	189.41	Circumferencial Road, Marfori Heights Davao City		√	L	-	L	-	-
DXMF – 585 KHZ (BomboRadyo)	1975	438.50	San Pedro St., Davao City		√	L	-	L	4m	H
DXRA – 783 KHZ (RMC Bctg. Company)	1975	218.17	Door 1 Delgar Bldg., Km.5 J.P Laurel Avenue, Davao City		√	L	-	L	-	-
DXRD – 711 KHZ (Nation Bctg. Corp.)	1967	354.62	NBC Bldg. Florentino Torres, Davao City		√	L	-	L	-	M
DXRP – 675 KHZ (Philippine Bctg. Service)	1965	373.51	2/F MGB Braveheart Bldg., Matian, Davao City	√		L	-	L	-	L
DXUM – 819 KHZ (Radyo Ukay)	1946	-	Ponciano cor. Palma St, Davao City		√	-	-	-	-	-
DXAM - 1017 KHZ (Kalayaan Bctg. System)	2001	-	Anflocor Corporate Center, Damosa Da-		√	-	-	-	-	-
DXOW - 981 KHZ (Radio Corp.)	-	-	V. Mapa Ext., Davao City		√	-	-	-	-	-
DXIP - 900 KHZ (Southern Bctg. Network)	-	211.62	3/F Lachmi Mall Bldg., Bolton St.,		√	-	-	-	-	-

Source: National Telecommunications Commission (NTC)

Table – 49. Broadcast and Television Network

Type	Year Constructed	Area Occupied (sqm)	Barangay	Ownership		Hazard Susceptibility (H/M/L)				
				Public	Private	FI	Eq	Ln	Su	Lq
Frequency Modulation Radio Stations										
DXDR - 88.3 MHz Ultrasonic Broadcasting System, Inc.	1995	204.79	Shrine Hills, Matina, Davao City		√	L	-	L	3m	H
DXBE - 89.1 MHz SBS Radio Network (Quest Bctg. Net	1991	106.47	Door 21, 2nd Flr., Jocar Complex 2, Guererro St., Davao City		√	L	-	L	4m	M
DXGN - 89.9 MHz Catholic Bishops Conference of the Phils	1988	100.01	San Pablo Parish Compound, Juna Subd. Matina, Davao City		√	-	-	M	-	-
DXBM - 90.7 MHz Manila Broadcasting Company	1986	80.78	R. Castillo St., Agdao, Davao City		√	-	-	M	-	-
DXKX - 91.5 MHz Primaxx Bctg. Network	2015	34.54	Ulas, Davao City		√	L	-	L	2m	H
DXWT - 92.3 MHz University of Mindanao	1988	353.44	Ponciano Reyes St., Davao City		√	L	-	L	3m	H
DXAC - 93.1 MHz Mareco Broadcasting Network	1998	138.36	Claveria St., Davao City		√	-	-	M	-	-
DXXL - 93.9 MHz Radio Mindanao Network	2002	131.03	Anda cor. Bonifacio St., Davao City		√	L	-	L	3m	H
DXLL - 94.7 MHz Informedia Resources Management, Inc.	1995	503.30	3rd Floor Anda Corporate Center, Anda St.		√	L	-	L	3m	-
DXKR - 95.5 MHz UM Broadcasting Network	1993	226.88	Ponciano Reyes St., Davao City		√	L	-	L	3m	H
DXFX - 96.3 Bombo Radyo Phils.	1993	149.42	San Pedro St., Davao City		√	L	-	L	4m	H
DXUR - 97.1 MHz Ultimate Entertainment, Inc.	2015	44.24	4th Floor Unit Lanco Bldg. Bajada, Davao City		√	L	-	L	3m	M
DXSS - 97.9 MHz Southern Bctg. Network	1996	211.62	Shrine hill, Davao City		√	-	-	M	-	-
DXKN - 98.3 MHz Kalayaan Broadcasting System, Inc.	2008	2,515.73	Tagum, Davao del Norte		√	L	-	L	4m	H
DXQM - 98.7 MHz Aliw Broadcasting Corporation	1992	159.99	4D3F Atu Plaza Bldg., Gov. Duterte St., Davao City		√	L	-	L	3m	H

Source: National Telecommunications Commission (NTC)

Table – 49. Broadcast and Television Network

Type	Year Constructed	Area Occupied (sqm)	Barangay	Ownership		Hazard Susceptibility (H/M/L)				
				Public	Private	Fl	Eq	Ln	Su	Lq
DXCT - 99.5 MHz Audiovisual Communicators, Inc.	1995	100.01	5/F Gaisano Mall Of Davao, J.P. Laurel Ave., Davao City		√	-	-	M	-	-
DXDJ - 100.3 MHz Free Air Broadcasting Network, Inc.	1987	99.04	Shrine Hills, Matina, Davao City		√	-	-	H	-	-
DXRR - 101.1 MHz ABS-CBN Corporation	1992	3,637.92	Shrine Hills, Matina, Davao City		√	-	-	L	-	-
DXET - 101.9 MHz Nation Broadcasting Corporation	2009	354.62	Shrine Hills, Matina, Davao City		√	-	-	H	-	-
DXRV - 103.5 MHz GMA Network, Inc.	2002	223.60	Shrine Hills, Matina, Davao City		√	L	-	L	4m	H
DXMA - 104.3 MHz United Christian Bctg. Media	2004	589.57	3rd Floor, NB Mercado Building, McArthur Highway, Talomo, Davao City, Davao del Sur		√	L	-	L	4m	H
DXYS - 105.1 MHz Manila Broadcasting Company	1995	80.78	ATU Plaza, Gov. Duterte St., Davao City		√	-	-	H	-	-
DXMX - 105.9 MHz Oriental Mindoro Management Resources Corporation	2005	698.08	Doors 4 and 5, RJ Homes Bldg., Pelayo St., Davao City		√	-	-	H	-	-
DXET - 106.7 MHz ABC Development Corporation	1993	-	Matina Shrine, Davao City		√	-	-	-	-	-
DXNU - 107.5 MHz Progressive Broadcasting Corporation	1989	-	Shrine Hills, Matina, Davao City		√	-	-	-	-	-
Television										
TV-2 ABC Dev't. Corp.	1993	1,207.24	Shrine Hills, Matina, Davao City		√	-	-	M	-	-
TV-4 ABS-CBN Corp.	1992	3,632.58	Shrine Hills, Matina, Davao City		√	-	-	M	-	-
TV-5 GMA Network, Inc.	1995	-	Shrine Hills, Matina, Davao City		√	-	-	H	-	-

Source: National Telecommunications Commission (NTC)

Table – 49. Broadcast and Television Network

Type	Year Constructed	Area Occupied (sqm)	Barangay	Ownership		Hazard Susceptibility (H/M/L)				
				Public	Private	Fl	Eq	Ln	Su	Lq
TV-7 Southern Broadcasting Network	1992	246.27	Davao City		√	-	-	H	-	-
TV-9 Radio Philippines Network, Inc.	1972	-	Davao City		√	L	-	L	-	-
TV-11 People's Television Network	1974	1,298.78	Davao City		√	-	-	H	-	-
TV-13 Intercontinental Bctg. Corp.	1962	663.29	Matina Hills, Davao City		√	-	-	H	-	-
TV-21 Amcara Bctg. Net. Inc.	1996	3,593.89	Matina Shrine, Davao City		√	-	-	M	-	-
TV-23 Rajah Bctg. Network	1995	3,050.54	Davao City		√	-	-	H	-	-
TV-25 Gateway UHF TV Broadcasting, Inc.	2004	52.03	Davao City		√	-	-	H	-	-
TV-27 GMA Network, Inc.	1995	605.18	Davao City		√	-	-	H	-	-
TV-29 Nation Broadcasting Corporation	1993	102.08	Davao City		√	-	-	M	-	-
TV-31 Broadcast Enterprises & Affiliated Media, Inc.	1995	738.98	Davao City		√	L	-	L	2m	H
TV-43 Swara Sug Media Corporation	2003	315.96	Matina Hills, Davao City		√	-	-	L	-	-
TV-49 Eagle Broadcasting Corporation	-	-	Davao City		√	-	-	-	-	-
Cable Networks										
SkyCable – Cable World Network, Inc.	-	414.442	JP Cabaguio Ave., Davao City		√	M	-	L	3m	M
Panabo CATV	-	-	Cabantian, Davao City		√	-	-	-	-	-

Source: National Telecommunications Commission (NTC)

Cell Site Networks

Based on the data provided by NTC, the antenna height of the cell sites ranges from 15 meters to 60 meters with the catchment radius of 0.5 to 3.0 kilometers. Cell sites with low catchment radius provides internet access in a much higher speed.

Table – 50. Cell Site Network

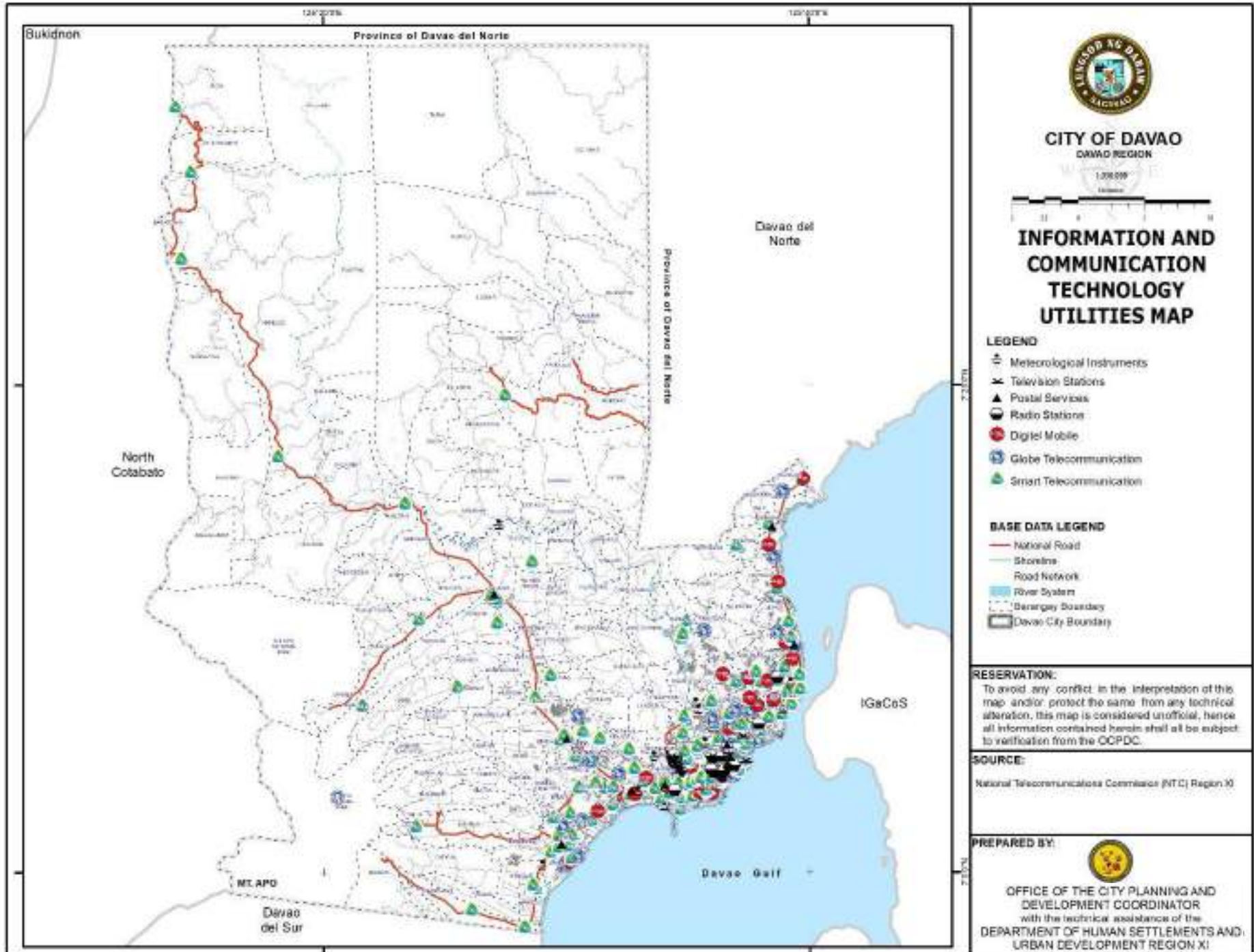
Type	Year Constructed	Area Occupied (sq.m)	Barangay	Ownership		Hazard Susceptibility (H/M/L)							
				Public	Private	Fl	Eq	Ln	Su				Lq
									2 m	3 m	4 m	5 m	
Cell Sites Network													
Smart Communications, Inc.	2010-2016		Agdao District		√	-	-	L-18	3	9	5	-	H-16 L-1
	2010-2016		Baguio District		√	-	-	L-1	-	-	-	-	-
	2010-2016		Buhangin District		√	-	-	H-5 M-1 L-31	4	-	-	-	H-4 M-2
	2010-2016		Bunawan District		√	-	-	L-14	-	-	3	3	H-2 M-7
	2010-2016		Calinan District		√	-	-	M-1 L-6	-	-	-	-	L-3
	2010-2016		Marilog District		√	-	-	M-1 L-1	-	-	-	-	-
	2010-2016		Paquibato District		√	-	-	H-1	-	-	-	-	-
	2010-2016		Poblacion District		√	H-1 L-35	-	L-36	11	8	10	-	H-24 M-6
	2010-2016		Talomo District		√	H-4 M-8 L-26	-	H-2 M-4 L-47	2	3	8	3	H-20 M-9 L-6
2010-2016		Toril District		√	-	-	M-1 L-11	-	1	-	-	H-1 M-3 L-1	
Globe Telecom (GMCR), Inc.	2010-2016		Agdao District		√	-	-	L-8	2	3	2	-	H-7
	2010-2016		Buhangin District		√	-	-	L-12	-	-	-	-	-
	2010-2016		Agdao District		√	-	-	L-8	2	3	2	-	H-7

Table – 50. Cell Site Network

Type	Year Constructed	Area Occupied (sq.m)	Barangay	Ownership		Hazard Susceptibility (H/M/L)							
				Public	Private	FI	Eq	Ln	Su				Lq
									2 m	3 m	4 m	5 m	
Globe Telecom (GMCR), Inc.	2010-2016		Buhangin District		√	-	-	L-12	-	-	-	-	-
	2010-2016		Bunawan District		√	-	-	M-1 L-4	1	-	-	-	H-1 M-1
	2010-2016		Calinan District		√	-	-	L-2	-	-	-	-	L-2
	2010-2016		Poblacion District		√	-	-	H-1 L-15	1	5	-	3	H-5 M-5
	2010-2016		Talomo District		√	-	H-2	H-1 L-9	1	-	-	3	H-4 L-1
	2010-2016		Toril District		√	-	-	H-1 L-3	1	1	-	-	H-2
	2010-2016		Tugbok District		√	-	-	L-1	-	-	-	-	-
	2013-2014		Agdao District		√	-	-	L-2	2	-	-	-	H-2
	2013-2014		Buhangin District		√	-	-	M-1 L-10	1	-	-	-	H-1
	2013-2014		Bunawan District		√	-	-	L-7	-	-	2	1	H-1
Digitel Mobile Philippines, Inc.	2013-2014		Calinan District		√	-	-	L-1	-	-	-	-	L-1
	2013-2014		Marilog District		√	-	-	L-14	-	-	-	-	-
	2013-2014		Poblacion District		√	-	-	-	7	3	1	-	-
	2013-2014		Talomo District		√	-	-	H-2 L-20	-	1	4	2	H-10 M-6 L-2
	2013-2014		Toril District		√	-	-	L-2	-	-	-	-	H-1
	2013-2014		Tugbok District		√	-	-	L-2	-	-	-	-	-

Source: NTC and PIA

Map 2.33. Information and Communication Technology Utilities Map



Water

As of 2018, Davao City has a total of 178 units of Level I water systems. Shallow wells, deep wells, and improved spring water are the three types of Level I water supply system in Davao City. Among the Level I water supply systems in the city, 50% (89) are improved springs, 46% (82) are shallow wells, while deep well is 0.04% percent. District 3 has the highest number of shallow wells, improved spring and deep well with 47, 58 and 4 units, respectively. District 2 has 35 units of shallow well and 31 units of improved spring.

Table – 51. Level I Water Supply System by Type and Number of Population Served 2018

Barangay	No. of Households served	Shallow Well	Deep Well	Improved Spring	Hazard Susceptibility (H/M/L)				
					Fl	Ln	Eq	Lq	Su
District II									
Buhangin District									
Cabantian	10,940	1		1		M			
Mandug	3,399	4		3	L	L		M	
Bunawan District									
Bunawan Proper	5,874	9		7	M	L		H	2m/3m
Ilang	6,237	6		6		L			
Tibungco	10,466	6		6	H	L		L	2m/3m
Panacan	8,952	4		3	H	L		L	
San Isidro, Bunawan	1,333	2		2		L			
Mahayag	1,577	1		4		M			
Gatungan	298	2		2		M			
Mudiang				1		L			
District III									
Calinan District									
Talomo River	1,712		1	1	M	L			
Wangan	1,455		1	1		L			
Riverside	1,363		1	1	M	L			
Toril District									
Daliao	5,281	25		24	L	L		H	2m/3m/4m/5m
Lizada	5,028	7		8	L	L		H	2m/3m
Sirawan	1,785	12		12	M	L		H	2m/5m
Binugao	1,734	2		2	H	L		H	2m
Lubogan	3,039	1		1	L	L			
Tugbok District									
Talandang	848		2	2		M			
Ula	1,033		2	2	M	L			
	72,354	82	7	89					

Source: City Engineer's Office (CEO)

Level II water supply is sourced from either a spring or a deep well with submersible pump, which is directed to a water reservoir before distributing to the community. There are a total of 232 units of Level II water facilities installed in the city. These are subdivided into two types: deep well and spring by gravity. In Davao City, the highest number of units are located in District 2 with a total of 149 units. District 3 has 77 units while District 1 has six (6) units. The number of units located in District 2 are divided into deep well with 78 units and spring source by gravity with 71 units. Bunawan District has recorded the highest number of households dependent on Level II water supply with households reaching up to 22,000.

The Barangay Water and Sanitation Association (BAWASA) is being organized for the provision/management and maintenance of Level II water supply systems to effectively sustain the availability of water.

Table – 52. Level II Water Supply System by Type and Number of Household Served, 2018, Davao City

Political district	Number of units	Type of Water Source	No. Of HH served	Hazard Suscepibility (H/M/L)		
				Fl	Ln	Lq
TALOMO DISTRICT- 2 barangays	6	Deep Well-6	1986		M-2	
DISTRICT II						
BUHANGIN DISTRICT – 5 barangays	15	Deep Well -15	3782	H-3	M-7. H-1, L-7	H-2
BUNAWAN DISTRICT – 5 barangays	23	Deep Well-23	22027		H-2, M-5, L-16	
PAQUIBATO DISTRICT- 12 barangays	32	Spring Source by Gravity- 29, Deep Well -2, Other-1	10318		H-21 M-5, L-2	
BAGUIO DISTRICT- 6 barangays	12	Deep Well-8 Spring Source by Gravity-4	7753	M-19	L-28 H-5	
CALINAN DISTRICT- 10 barangays	34	Deep Well-28 Spring Source-6	6999	M-2		
MARILOG DISTRICT- 12 barangays	33	Spring Source by Gravity- 30 Level II Deep Well-2	13051		M-7 H-16 L-3 Blank-5	
DISTRICT III						
TUGBOK DISTRICT- 10 barangays	47	Deep Well- 43 Spring-4	13712	M-21	H-2 M-1 L-42	L-3
TORIL DISTRICT-17 barangays	30	Deep Well- 10 Spring Source by Gravity-10	13,984	H-8	M-5 H-13 L-12	H-12 M-2 L-1

Source: City Engineer's Office (CEO)

Hazard Susceptibility for Level I and Level II Water Supply

Susceptibility of water systems to natural hazards such as earthquake, flood, landslide, liquefaction and storm surge are generated through the hazard maps. As shown in Table - 53, exposed to high flood susceptibility are Level I water supply units in Tibungco, Panacan, and Binugao. Shallow wells and improved springs in Cabantian, Mahayag, Gatungan, and Talandang are moderately susceptible to earthquake.

Level I Water Supply units found in Bunawan Proper, Daliao, Lizada, Sirawan, and Binugao, are highly susceptible to liquefaction. On the other hand, Bunawan Proper, Tibungco, Daliao, Lizada, Sirawan and Binugao are susceptible to storm surge with 2-meter wave. The water utilities in Bunawan Proper, Tibungco, Daliao and Lizada are susceptible to storm surge with 3-meter wave, and Barangay Daliao is susceptible to storm surge with 5-meter wave.

For Level II water supply, the highest number of facilities susceptible to flood, landslide and liquefaction are found in District 3. Water supply units including its communal faucets are highly susceptible to flood in Tigatto, Waan, Atan-awe, Baracatan, Binugao, Camansi, Tagluno, Tagurano, Tungkalan, Balingaeng, Matina Biao, Baguio Proper and Gumalang. A total of 42 barangays using either deep-well source or spring by gravity source with communal faucets are also found to be highly susceptible to landslide. Moreover, Barangay Waan, with 981 households is the sole barangay with Level II water supply which is identified to be highly susceptible to liquefaction. Not a single barangay with Level II water supply with source and communal faucets is susceptible to storm surge. This is because the Level II water systems are availed of by communities located in hinterland areas, which cannot be served yet by DCWD.

Table – 53. DCWD Production Wells, 2018, Davao City

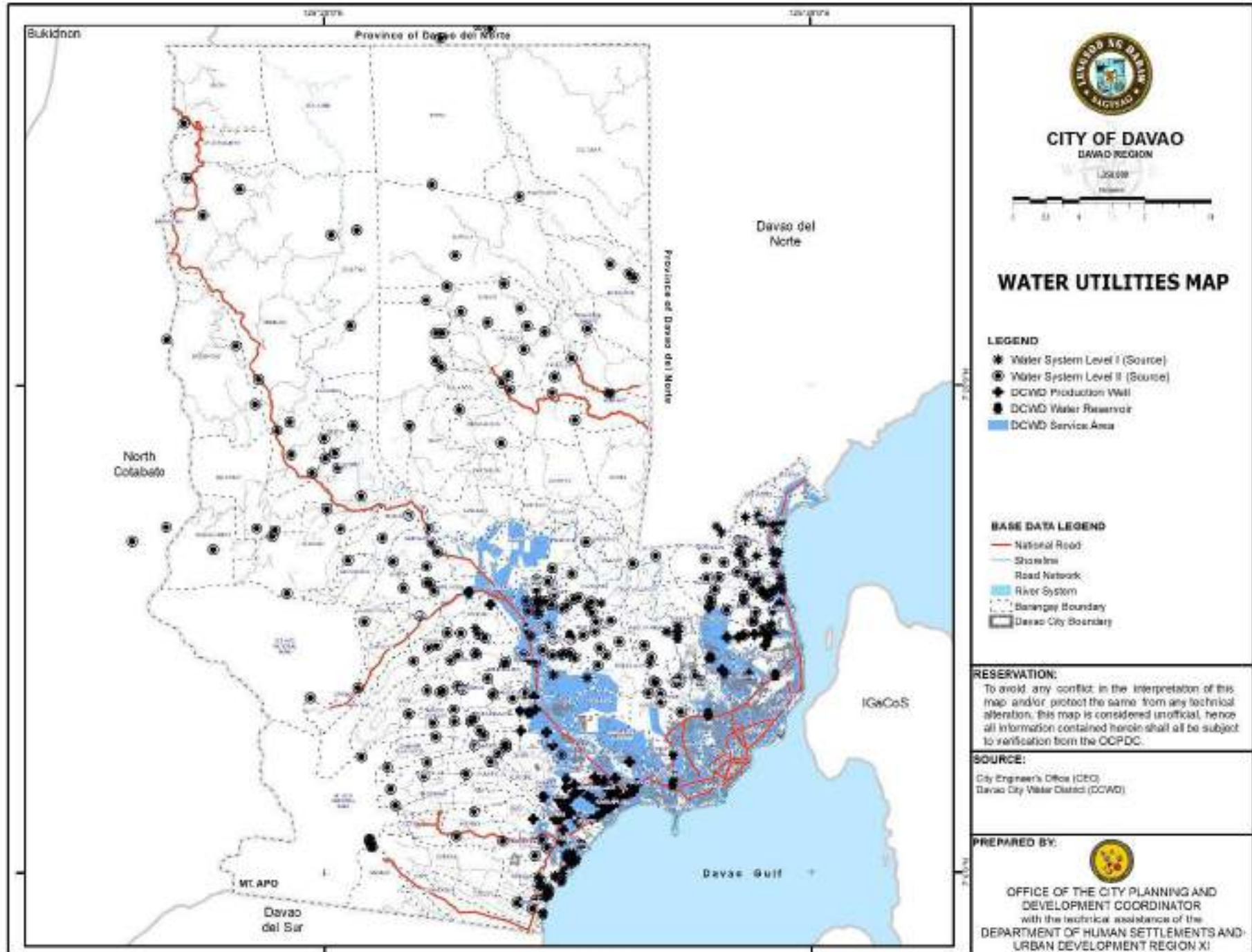
NAME	LOCATION	PUMP TYPE	PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (H/M/L)				
				FL	LN	LQ	EQ	SU/TS
PW 1	KM. 7, TALOMO SUMP BANGKAL, BRGY. TALOMO	VERTICAL TURBINE	GOOD	H	L	L		5m
PW 2	BENEDICTINE SISTERS ROAD, BRGY. TALOMO	SUBMERSIBLE	GOOD	L	L	L		
PW 3	UUHSA, BRGY. TALOMO	VERTICAL TURBINE	GOOD	M	L	M		4m
PW 4	KM. 8 ULAS, BRGY. TALOMO	VERTICAL TURBINE	GOOD	M	L	M		5m
PW 5	PUAN JUNCTION, BRGY. TALOMO	SUBMERSIBLE	GOOD	M	L	M		4m
PW 6	LOWER RAPNAGA, PUAN, BRGY. BAGO APLAYA	SUBMERSIBLE	GOOD	L	L	M		
PW 7	LOWER RAPNAGA, PUAN, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	L	L	H		4m
PW 8	LOWER RAPNAGA, PUAN, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	L	L	H		3m
PW 9	CROSSING BAGO APLAYA, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	L	L	H		4m
PW 10	KM. 10 BAGO APLAYA FRONTING IDEAL SUBDIVISION, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	L	L	H		5m
PW 11	DAVAO-COTABATO ROAD, NEAR BAGO BRIDGE, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	H	L	H		2m
PW 12	KM. 11 DUMOY NEAR THE ENTRANCE TO DUSNAI, BRGY. DUMOY	VERTICAL TURBINE	GOOD	L	L	H		5m
PW 13	BAGO GALLERA ROAD NEAR GALLERA DE ORO SUBD. BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L	M		5m
PW 14	KM. 9, PUAN ALONG DAVAO COTABATO ROAD BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	L	L	M		5m
PW 15	ALONG BAGO GALLERA ROAD INFRONT OF MEGA HOMES, BRGY. BAGO GALLERA	SUBMERSIBLE	GOOD	L	L	L		
PW 16	CATOTAL SUBDIVISION NEAR BLOCK 22, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	H	L	M		4m
PW 17	GALLERA DE ORO SUBDIVISION NEAR BLOCK 8, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	M	L	L		5m
PW 18	PUROK 6, STA CRUZ BAGO GALLERA ROAD FRONTING SPRING VALLEY, BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	M	L			
PW 19	RELDO VILLAGE, ACACIA ST., BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	M	L			
PW 20	ALONG APO GOLF ROAD, BRGY. BAGO APLAYA	VERTICAL TURBINE	GOOD	M	L			
PW 21	ALONG LIBBY ROAD INFRONT OF SAN LORENZO VILLAGE, BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	M	L			
PW 22	ENTRANCE OF TOSCANA SOLARIEGA, BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L			
PW 23	TOSCANA SOLARIEGA NEAR BLOCK 11, BRGY. BAGO GALLERA	SUBMERSIBLE	GOOD	L	L			
PW 24	LIBBY ROAD, NEAR ADCIVILLE SUBDIVISION, BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L			
PW 25	FARLAND EXTENSION NEAR BLOCK 2, BRGY. DUMOY	VERTICAL TURBINE	GOOD	M	L	L		
PW 26	ALONG IWHA ROAD, BRGY. BALIOK	SUBMERSIBLE	GOOD	L	L			

Table – 53. DCWD Production Wells, 2018, Davao City

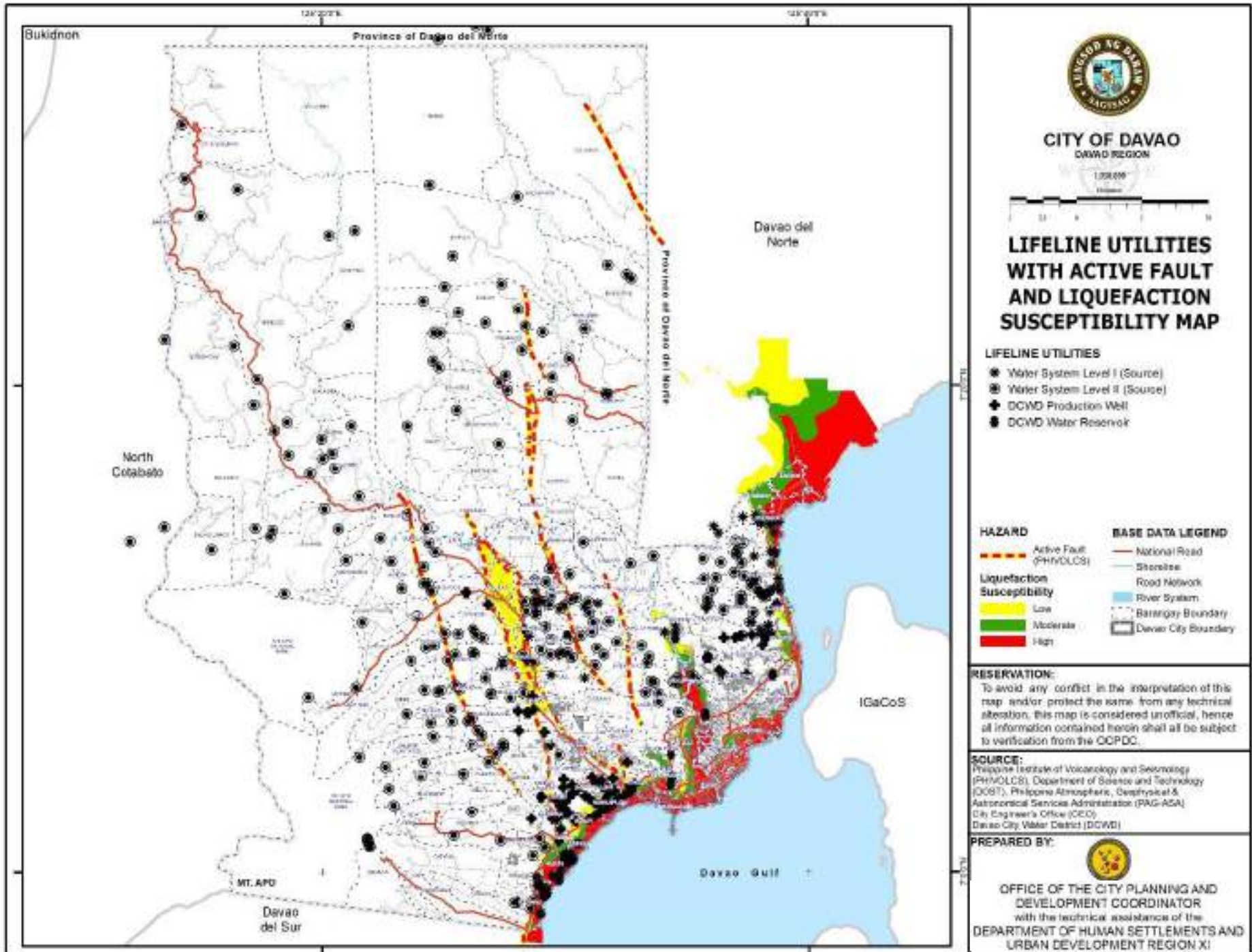
NAME	LOCATION	PUMP TYPE	PHYSICAL CONDITION	HAZARD SUSCEPTIBILITY (H/M/L)				
				FL	LN	LQ	EQ	SU/TS
PW 27	ALONG IWHA ROAD, BRGY. BALIOK	SUBMERSIBLE	GOOD	L	L			
PW 28	ALONG BAGO GALLERA ROAD, PUROK 3 , BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L			
PW 29	BAGASA VILLAGE, LIBBY ROAD, BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L			
PW 30	ENTRANCE TO GREENLAND SUBDIVISION, ALONG DAVAO COTABATO ROAD, BRGY. DUMOY	VERTICAL TURBINE	GOOD	L	L	M		
PW 31	ALONG LIBBY ROAD, PUROK 5, BRGY. BAGO GALLERA	VERTICAL TURBINE	GOOD	L	L			
PW 32	ALONG LIBBY ROAD, PUROK 1, BRGY. BALIOK	SUBMERSIBLE	GOOD	L	L			
PW 33	LIBBY ROAD, NEAR DAVAO NEW TOWN RELOCATION, BRGY. BAGO GALLERA	SUBMERSIBLE	GOOD	L	L			
PW 34	SITIO SAKA, BRGY. BAGO OSHIRO	VERTICAL TURBINE	GOOD	L	L			
PNC 2	PUROK 24, MALAGAMOT, BRGY. PANACAN	SUBMERSIBLE	GOOD		L			
PNC 3	PUROK 24, MALAGAMOT, BRGY. PANACAN	SUBMERSIBLE	GOOD		H			
PW 33	LIBBY ROAD, NEAR DAVAO NEW TOWN RELOCATION, BRGY. BAGO GALLERA	SUBMERSIBLE	GOOD	L	L			
PW 34	SITIO SAKA, BRGY. BAGO OSHIRO	VERTICAL TURBINE	GOOD	L	L			
PW 35	SITIO NALUM, ALONG LIBBY ROAD, BRGY. BAGO OSHIRO	VERTICAL TURBINE	GOOD	L	L			
PW 36	SUSANA HOMES NEAR BLOCK 11, BRGY. BALIOK	VERTICAL TURBINE	GOOD	L	L			
PW 38	BACANAYA COMPOUND, BRGY. CATALUNAN PEQUE?O	SUBMERSIBLE	GOOD	L	L			
PW 39	PUROK 6, BRGY. BALIOK	SUBMERSIBLE	GOOD	M	L			
PW 40	BRGY. BALIOK, DAVAO CITY	SUBMERSIBLE	GOOD		L			
DACOVILLE PW NO. 1	DACOVILLE SUBD., BRGY. DUMOY		GOOD	L	L			
TRL 1	RASAY ST., BRGY. TORIL	VERTICAL TURBINE	GOOD	L	L	L		
TRL 2	PUROK PAGKAKAISA, BRGY. LUBOGAN	SUBMERSIBLE	GOOD	L	L			
LBG 1	MANGAHAN BRIDGE ALAMBRE, TORIL	VERTICAL TURBINE	GOOD	H	L			
LBG 2	BANGCAS HEIGHTS LUBOGAN, TORIL	SUBMERSIBLE	GOOD	M	L			
CAB 1	PUROK 1 COMMUNAL, BRGY. COMMUNAL	SUBMERSIBLE	GOOD		L			
CAB 2	CABANTIAN ROAD, BRGY. CABANTIAN	SUBMERSIBLE	GOOD		L			
INDANGAN PW 1	NAGKAHIUSA VILLAGE, BRGY. INDANGAN	SUBMERSIBLE	GOOD		L			
PNC 6	MALAGAMOT ROAD, BRGY. INDANGAN	SUBMERSIBLE	GOOD		L			
MOLAVE	DAVAO MOLAVE HOMES, BRGY. INDANGAN	SUBMERSIBLE	GOOD		M			
PNC 1	PUROK 27, MALAGAMOT, BRGY. PANACAN	SUBMERSIBLE	GOOD		M			

Source : Davao City Water District and Office of the City Planning and Development Coordinator

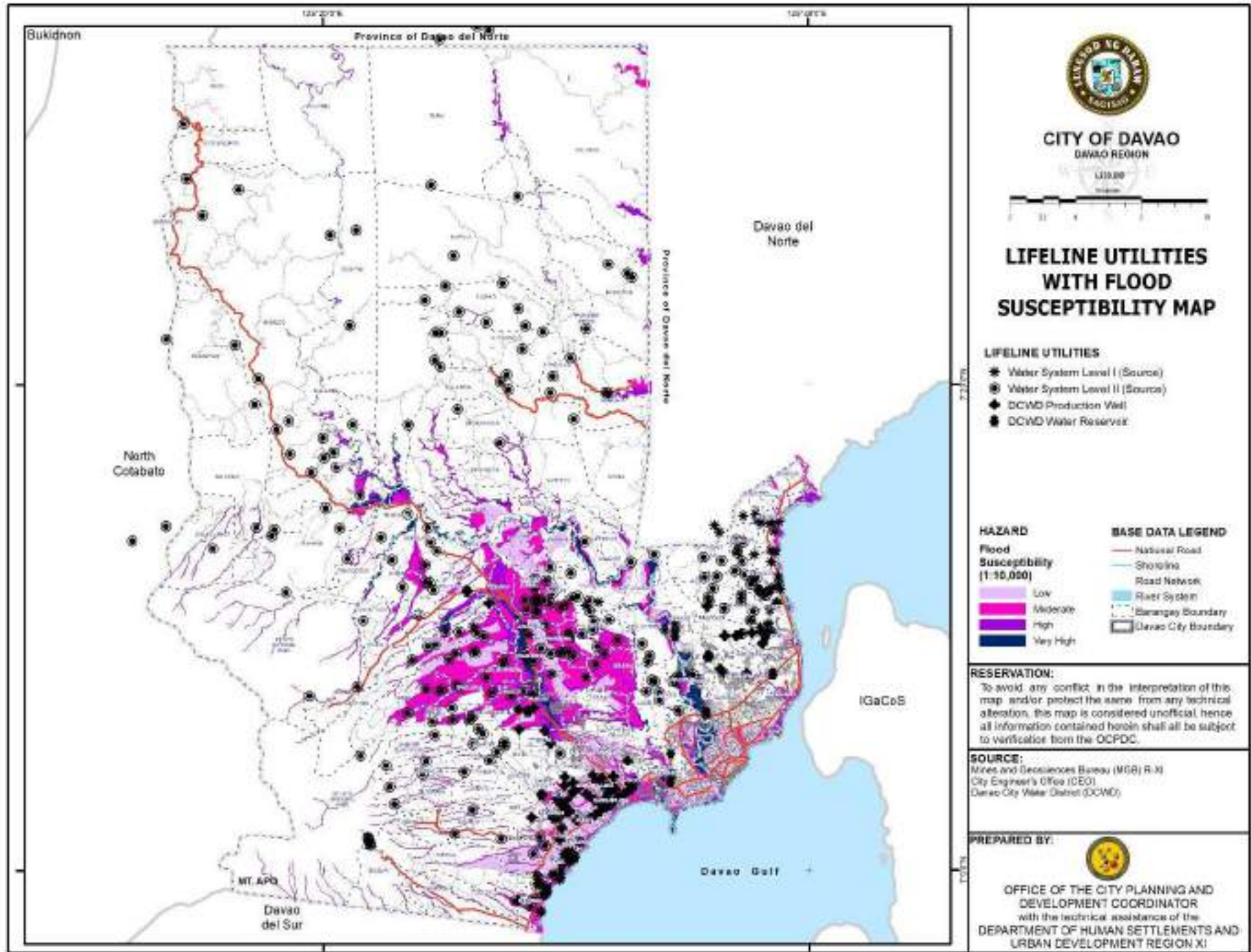
Map 2.34. Water Utilities Map



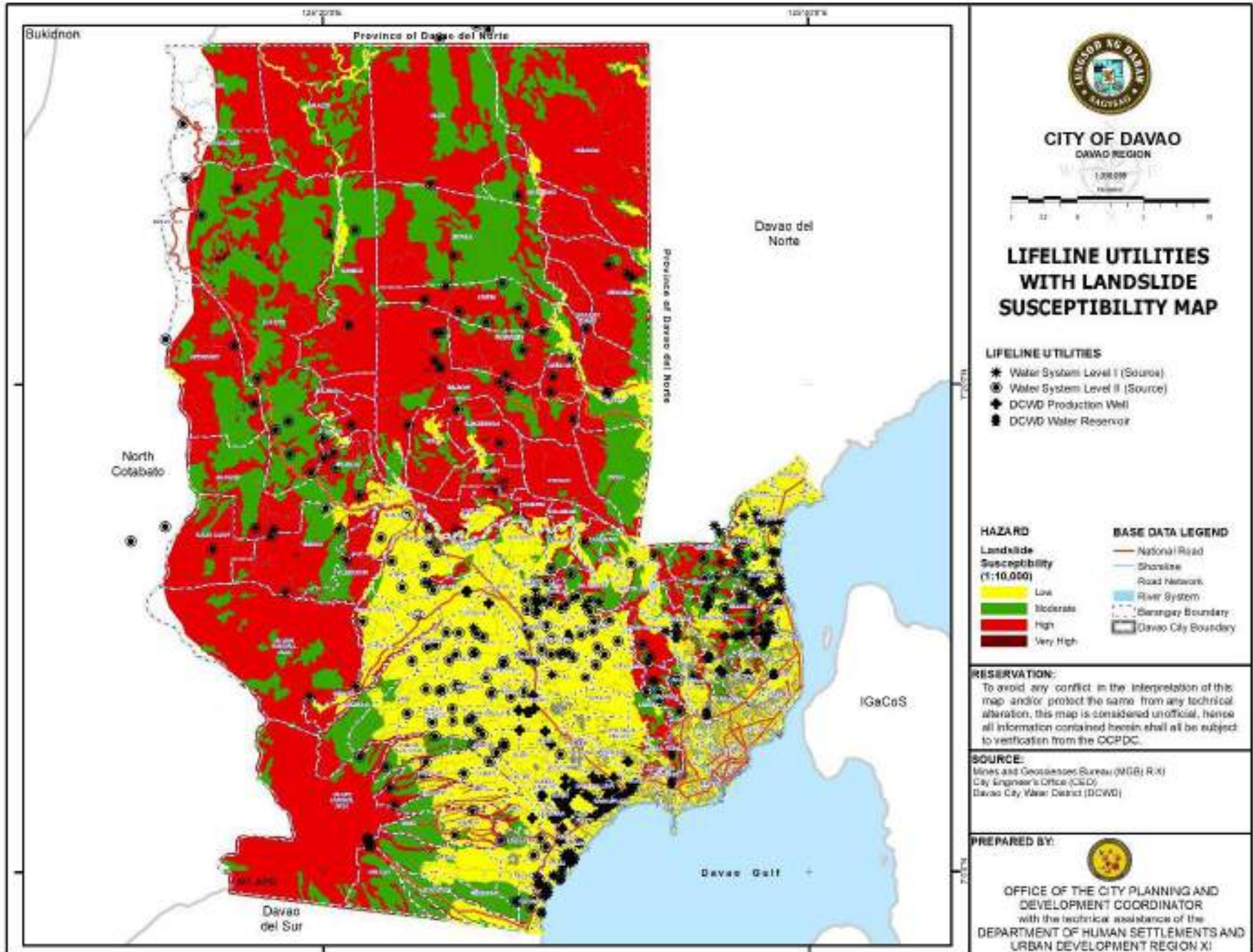
Map 2.35. Lifeline Utilities with Active Fault and Liquefaction Susceptibility Map



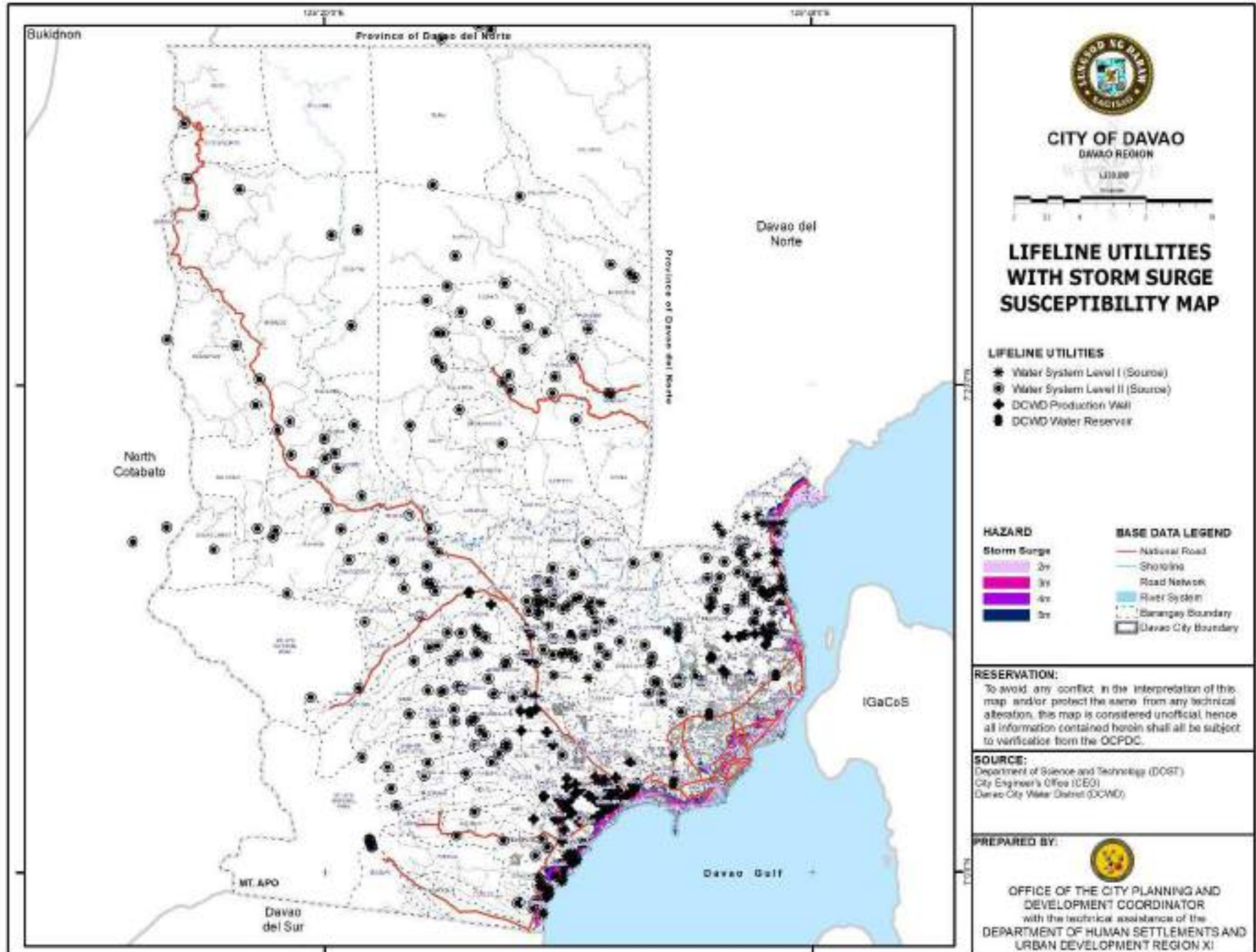
Map 2.36. Lifeline Utilities with Flood Susceptibility Map



Map 2.37. Lifeline Utilities with Landslide Susceptibility Map



Map 2.38. Lifeline Utilities with Storm Surge Susceptibility Map



Water Irrigation Systems

The National Irrigation Administration (NIA) XI recorded 153 water irrigation systems in Davao City, which are all operational except the Lupoy agri-water system that is currently under rehabilitation. Most of the water irrigation systems were established in the years 2013 and 2014. All water irrigation systems are owned by the national and local government.

Majority, or 70.59%, of the water irrigation systems are small water reservoirs, which are mostly used for vegetation. These systems are also utilized for rainwater catchment. The reservoir project with the largest area served is the Tungkalan agri-water system in Toril District, which can cover up to 150 hectares. There are also eight (8) communal projects and 37 pump irrigation projects. The communal project with the largest area served is the Nar-Con irrigation system that can cater to 234 hectares while most of the pump irrigation projects can serve up to five (5) hectares. Majority, or 67.32%, of the total water irrigation systems are impounding projects. There are also 17 water irrigation systems that are moved through gravity and 33 projects through pump irrigation.

The national government and local government shall implement disaster risk mitigating measures to prevent the projects from being damaged due to hazards, as most or 89.54% of the water irrigations systems are highly susceptible to liquefaction. There are also seven (7) water irrigation systems that are highly susceptible to floods.

Table – 54. Water Irrigation Systems, Davao City 2018

Irrigation System	No. of Units	Year Constructed	Type of Ownership	Type of Irrigation	Capacity of Irrigation System (cu3/day)	Area Served (ha)	Hazard Susceptibility (L/M/H)	
							FI	Lq
Communal								
Nar-Con Irrigation System	1	-	Public	Gravity	-	234	H	-
Cawayan Diversion Dam	1	1987	Public	Gravity	-	7	H	-
Wangan Diversion Dam	1	1997	Public	Gravity	0.2 cubic meters per second (cms)	80	H	-
Lacson Irrigation System	1	1997	Public	Gravity	0.80 cms	36	H	-
Bato Banud Diversion Dam	1	1998	Public	Gravity	0.04 cms	3	-	L
Balengaeng Communal Irrigation System (CIS)	1	1981	Public	Gravity	-	59	H	-
Callawa Water Impounding (Small Water Impounding Project (SWIP) Rainwater Catchment)	1	2012	Public	Gravity	7,500 m ³	6	-	L
Maligaya Diversion Dam	1	2001	Public	Gravity	2,000 m ³	60	H	-

Source: National Irrigation Administration XI, Davao Region

Table – 54. Water Irrigation Systems, Davao City 2018

Irrigation System	No. of Units	Year Constructed	Type of Ownership	Type of Irrigation	Capacity of Irrigation System (cu3/day)	Area Served (ha)	Hazard Susceptibility (L/M/H)	
							Fl	Lq
Small Farm Reservoir								
Langub Small Reservoir	5	1999, 2014	Public	Impounding	300 m ³	0.05 - 1	-	H
Callawa Small Reservoir	6	1999, 2013, 2016	Public	Impounding	300 m ³	0.05 - 0.50	-	H
Salukadang-Mapula Small Farm Reservoir	10	2016	Public	Impounding	300 m ³	0.05	-	H
Talomo River Small Farm Reservoir	19	1996, 2013, 2014	Public	Impounding	300 m ³	0.50	-	H
Biao Joaquin Small Farm Reservoir	5	2013	Public	Impounding	300 m ³	0.50	-	H
Lampianao Small Farm Reservoir	7	2013	Public	Impounding	300 m ³	0.50	-	H
Tacunan Small Farm Reservoir	9	2014	Public	Impounding	300 m ³	0.50 - 5	-	H
Biao Escuela Small Farm Reservoir	6	1999, 2014	Public	Impounding	300 m ³	0.50	-	H
Biao Guianga Small Farm Reservoir	26	2013, 2014	Public	Impounding	300 m ³	0.50	-	H
Los Amigos Small Farm Reservoir	1	2013	Public	Impounding	300 m ³	0.50	-	H
Ula Small Farm Reservoir	3	2014	Public	Impounding	300 m ³	0.50	-	H
New Valencia Small Farm Reservoir	1	2014	Public	Impounding	300 m ³	5	-	H
Biao Escuela High Value Crop Development	1	2015	Public	Impounding	300 m ³	0.50	-	H
IKP Lapunan Agri-Water System	1	2017	Public	Gravity	7.2 m ³	10	-	H
Aguila Agri-Water System	1	2017	Public	Gravity	65 m ³	37	-	H
Buda Agri-Water System	1	2017	Public	Gravity	15 m ³	10	-	H
Namnam Agri-Water System	1	2017	Public	Gravity	25 m ³	10	-	H
Lupoy Agri-Water System	1	2008	Public	Gravity	8 m ³	30	-	H
Tungkalan Agri-Water System	1	2012	Public	Gravity	10 m ³	150	-	H
Alambre Agri-Water System	1	2012	Public	Gravity	15 m ³	80	-	H
Los Amigos CIS	1	-	Public	Gravity	-	80	-	H
Mabuhay Agri-Water System	1	2017	Public	Gravity	10 m ³	10	H	-

Source: National Irrigation Administration XI, Davao Region

Table – 54. Water Irrigation Systems, Davao City 2018

Irrigation System	No. of Units	Year Constructed	Type of Ownership	Type of Irrigation	Capacity of Irrigation System (cu3/day)	Area Served (ha)	Hazard Susceptibility (L/M/H)	
							Fl	Lq
Pump Irrigation								
Malabog Open Surface Pump (OSP)	1	2015	Public	Impounding	300 m ³	-	-	H
Salukadang Pump Irrigation System from Open Source (PISOS)	1	2017	Public	Impounding	-	-	-	H
Upper Mapula OSP	1	2017	Public	Impounding	-	-	-	H
Lumiad OSP	1	2017	Public	Impounding	-	-	-	H
San Antonio OSP	1	2015	Public	Pump Irrigation	-	-	-	H
San Antonio Pump Irrigation Project (PIP)	1	2016	Public	Pump Irrigation	-	-	-	H
Callawa PIP	1	2016	Public	Pump Irrigation	-	-	-	H
Tawantawan Multi-Purpose Cooperative Ram PIP	2	2016	Public	Pump Irrigation	6 m ³	5	-	H
MTBKA Ram PIP	1	2018	Public	Pump Irrigation	12 m ³	5	-	H
Lampianao OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Biao Joaquin OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Wangan OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Talomo River OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Saloy OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Lampianao PIP	1	2016	Public	Pump Irrigation	-	-	-	H
Lampianao HVCDP PIP	1	2015	Public	Pump Irrigation	-	-	-	H
Talomo River HVCDP PIP	1	2015	Public	Pump Irrigation	-	-	-	H
Buda OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Mahalyang Solar PIP	1	2016	Public	Pump Irrigation	-	-	-	H
Aguila Solar PIP	1	2016	Public	Pump Irrigation	6 m ³	5	-	H
Moab Ram PIP	1	2017	Public	Pump Irrigation	12 m ³	5	-	H
Pamuhatan Ram Pump	1	2017	Public	Pump Irrigation	10 m ³	5	-	H
Sto. Niño Pump Irrigation Open Surface	1	2017	Public	Pump Irrigation	-	-	-	H

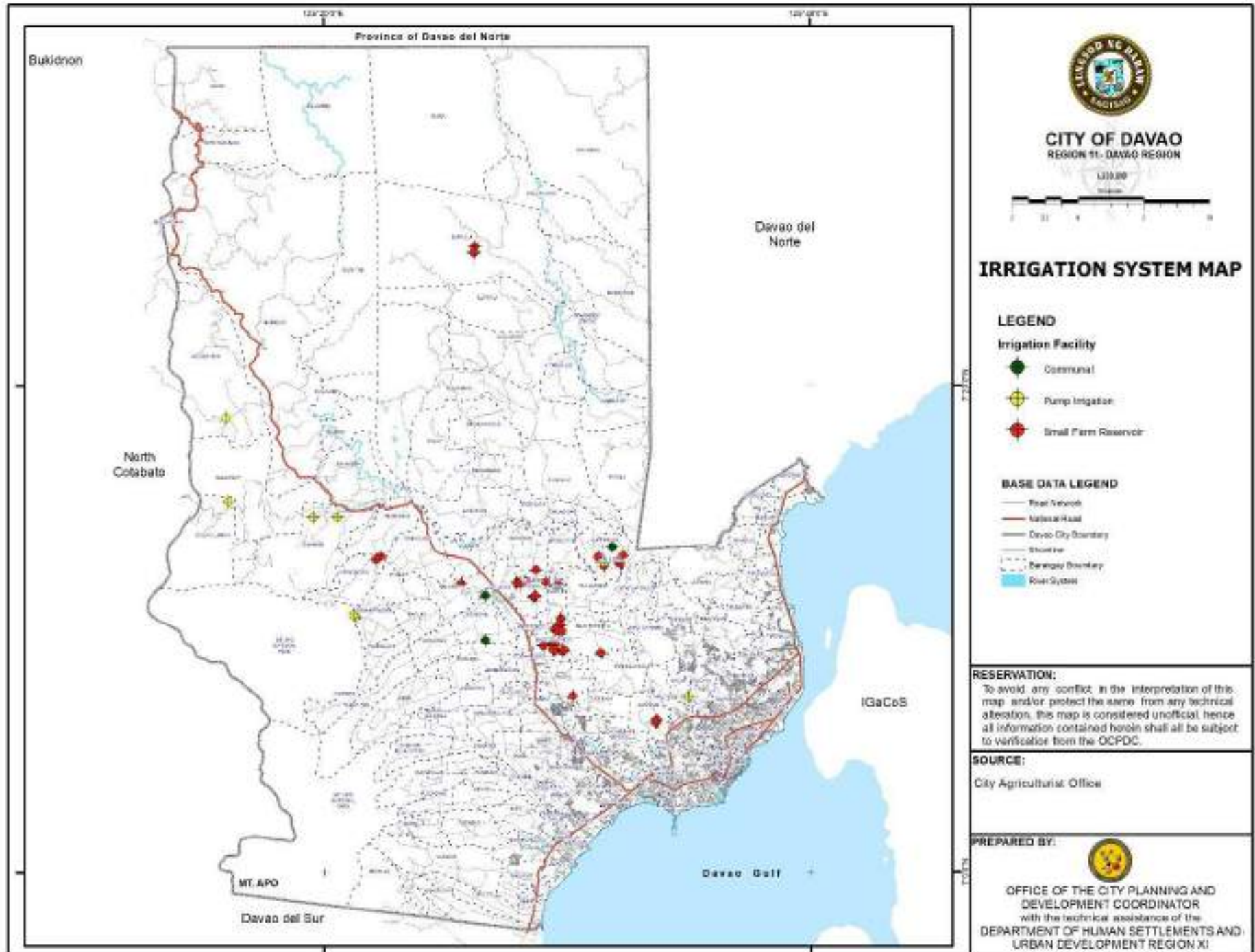
Source: National Irrigation Administration XI, Davao Region

Table – 54. Water Irrigation Systems, Davao City 2018

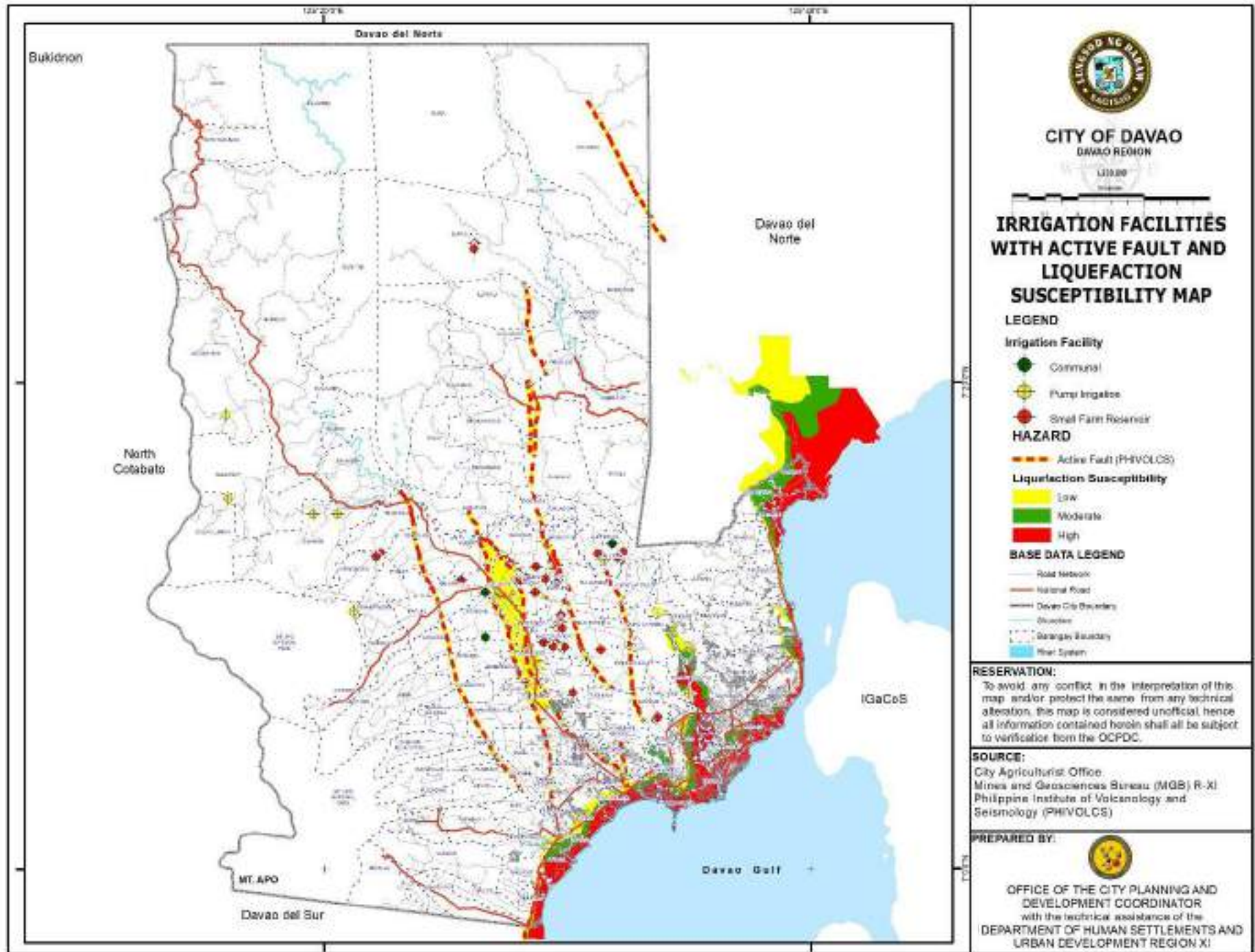
Irrigation System	No. of Units	Year Constructed	Type of Ownership	Type of Irrigation	Capacity of Irrigation System (cu3/day)	Area Served (ha)	Hazard Susceptibility (L/M/H)	
							Fl	Lq
Patag Pump Irrigation Open Surface	1	2017	Public	Pump Irrigation	-	-	-	H
Magsaysay PIP	1	2017	Public	Pump Irrigation	-	-	-	H
Barangay Los Amigos OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Biao Guianga Farmers Association	2	2015	Public	Pump Irrigation	-	-	-	H
Barangay Biao Escuela OSP	1	2015	Public	Pump Irrigation	-	-	-	H
Bonggan Solar PIP.	1	2016	Public	Pump Irrigation	6 m ³	5	-	L
Pamuhatan Ram PIP	1	2018	Public	Pump Irrigation	12 m ³	5	-	L
Mahalyang Ram PIP	1	2018	Public	Pump Irrigation	12 m ³	5	-	L
Marahan Ram PIP	1	2018	Public	Pump Irrigation	12 m ³	5	-	L
Masecampo Ram PIP	1	2018	Public	Pump Irrigation	12 m ³	5	-	L
Talandang Solar PIP	1	2018	Public	Pump Irrigation	6 m ³	3	-	H
Tigatto Solar PIP	1	2012	Public	Pump Irrigation	6 m ³	5	M	-

Source: National Irrigation Administration XI, Davao Region

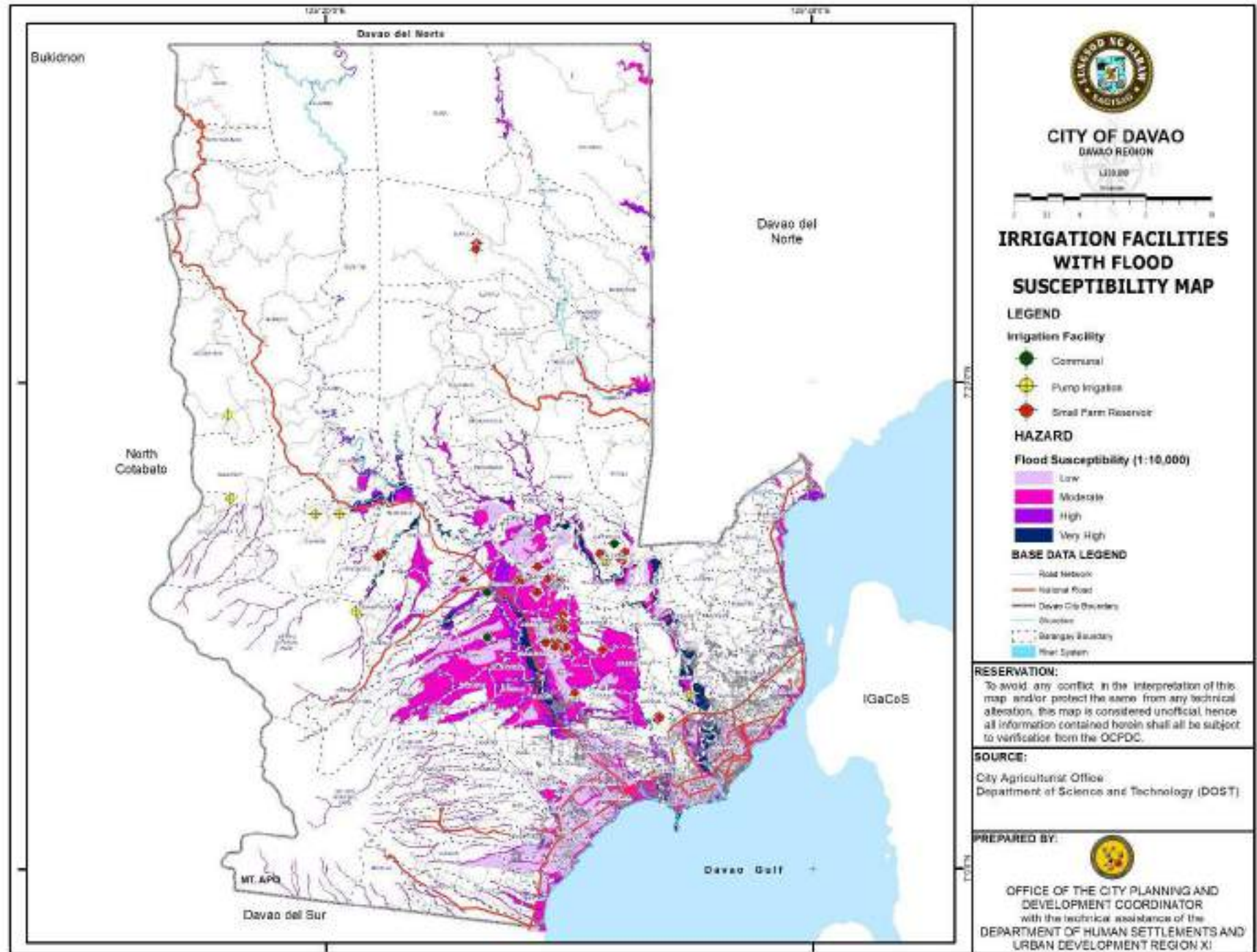
Map 2.39. Irrigation System Map



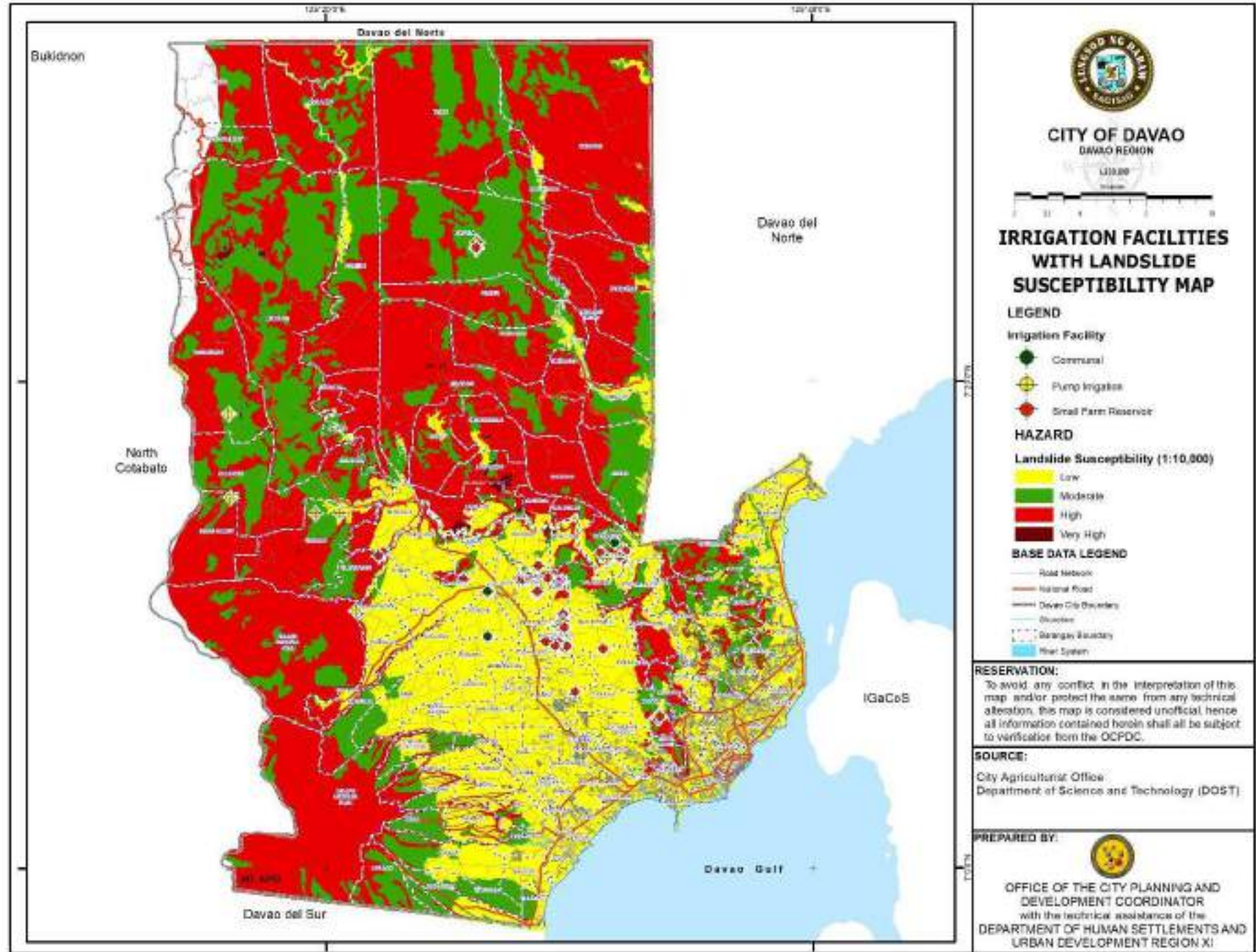
Map 2.40. Irrigation Facilities with Active Fault and Liquefaction Susceptibility Map



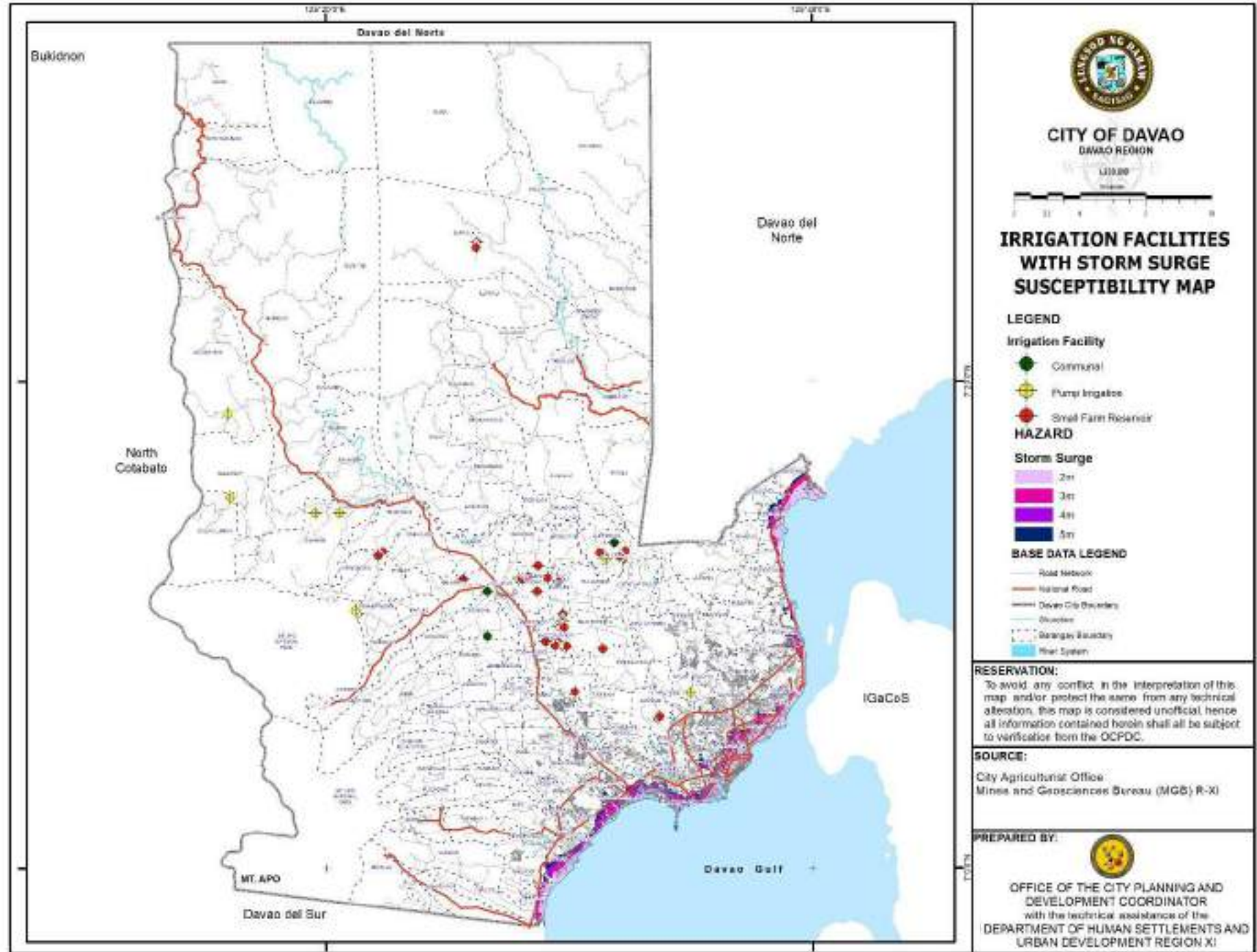
Map 2.41. Irrigation Facilities with Flood Susceptibility Map



Map 2.42. Irrigation Facilities with Landslide Susceptibility Map



Map 2.43. Irrigation Facilities with Storm Surge Susceptibility Map



Waste Management

Per City Environment and Natural Resources Office (CENRO) data, a total of 313,871 kilograms of solid waste collected from 359,813 households are disposed to the city's sanitary landfill facility while 506,244 kilograms and 192,372 kilograms of solid waste, collected from the same number of households are for composting and recycling, respectively.

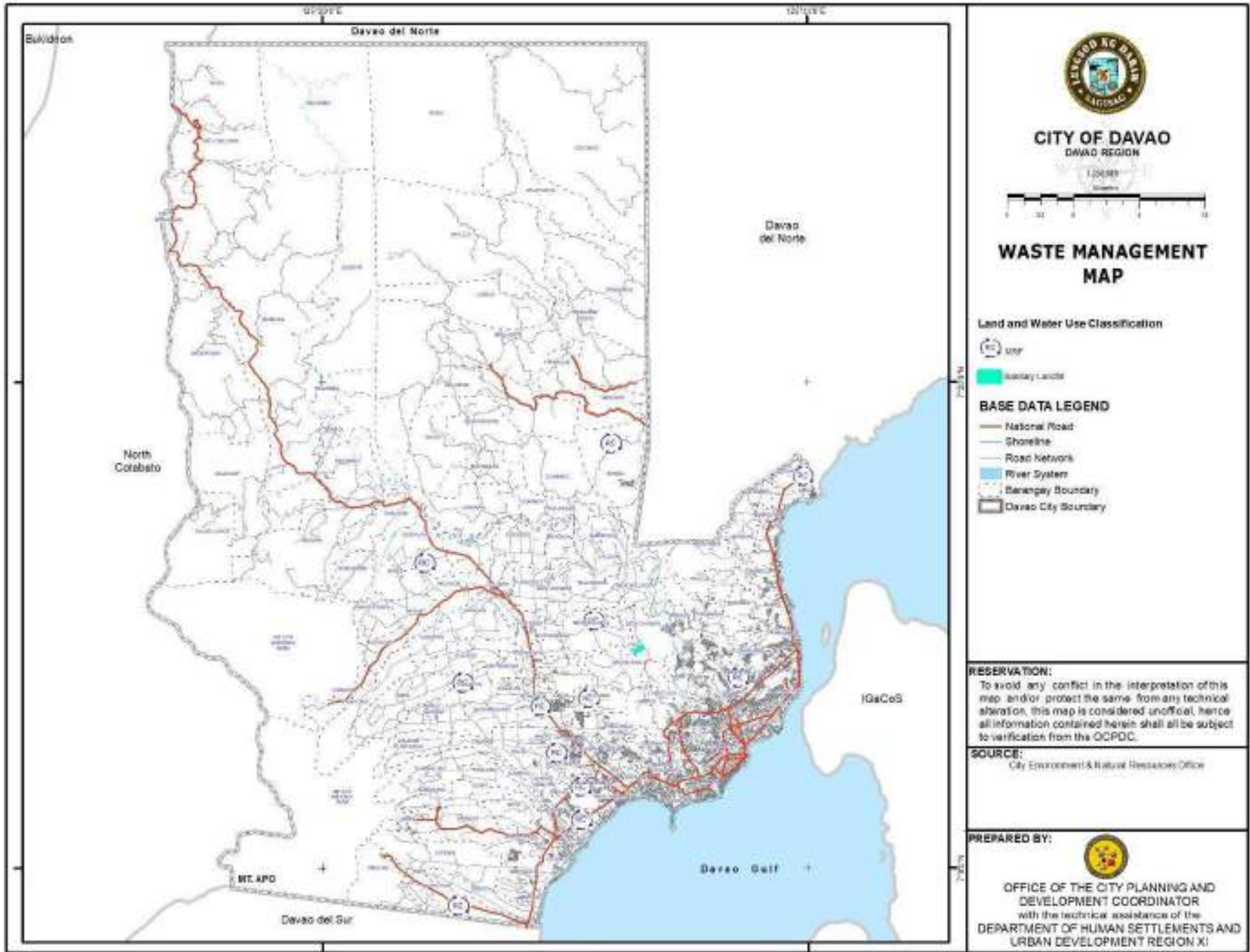
Solid wastes are generated by domestic, commercial, industrial, hospital, and other sources. Residential wastes account for the bulk of the total solid waste by 80.10% (e.g. kitchen scraps, yard waste, paper and cardboards, glass bottles, etc.) Wastes from commercial sources which include food establishments, general stores, public markets and recreational centers and memorial parks total to 12.8%. Wastes from industries, farms and service centers add up to 3.2%. On the other hand, hospital wastes generate 1.70% while those belonging to others, specifically from institutions (e.g. government offices, academic institutions) produce 1.60%. Slaughterhouses and dressing plants yield 0.60% of the total waste.

Table – 55. Methods of Solid Waste Disposal/Treatment,2018

Methods	Quantity (Total City Solid Waste Generated)	No. of Households Served	Agency Responsible
Collected and disposed to:			
-Sanitary Landfill	313,871 Kilograms	359,813	CENRO
Composting	506,244 Kilograms	359,813	Barangay
Recycling	192,372 Kilograms	359,813	Barangay

Source: City Environment and Natural Resources Office

Map 2.43. Waste Management Map



Foreshore Lease Agreement

Along the coastal areas and water channels are portion of submerged lands which can be applied for use such as beach resorts. This is the foreshore area, which is a string of land margining a body of water, the part of a seashore between the low-water line usually at the seaward margin of a low tide terrace and the upper limit of wave wash at high tide usually marked by a beach scarp or berm. This is according to Republic Act No. 8550, or the Philippine Fisheries Code of 1998, in Section 4. This is further detailed in the DENR Administrative Order No. 2004-24 as that part of the shore which is alternately covered and uncovered by the ebb and flow of the tide.

An applicant may apply for a foreshore agreement. The DENR Administrative Order No. 2020-09, Section 4.7 defines the foreshore lease agreement as an agreement executed by and between the DENR and the applicant (natural or juridical person) to occupy, develop, utilize and manage the foreshore lands, It may cover marshy lands or lands covered with water bordering upon the shores of banks of navigable lakes or rivers.

The DENR XI has its Citizens' Charter, RL11-L-01, to guide applicants on applying for foreshore lease and/or miscellaneous lease agreement, such as the checklist of requirements from the Provincial and City Environment and Natural Resources Offices and the regional office.

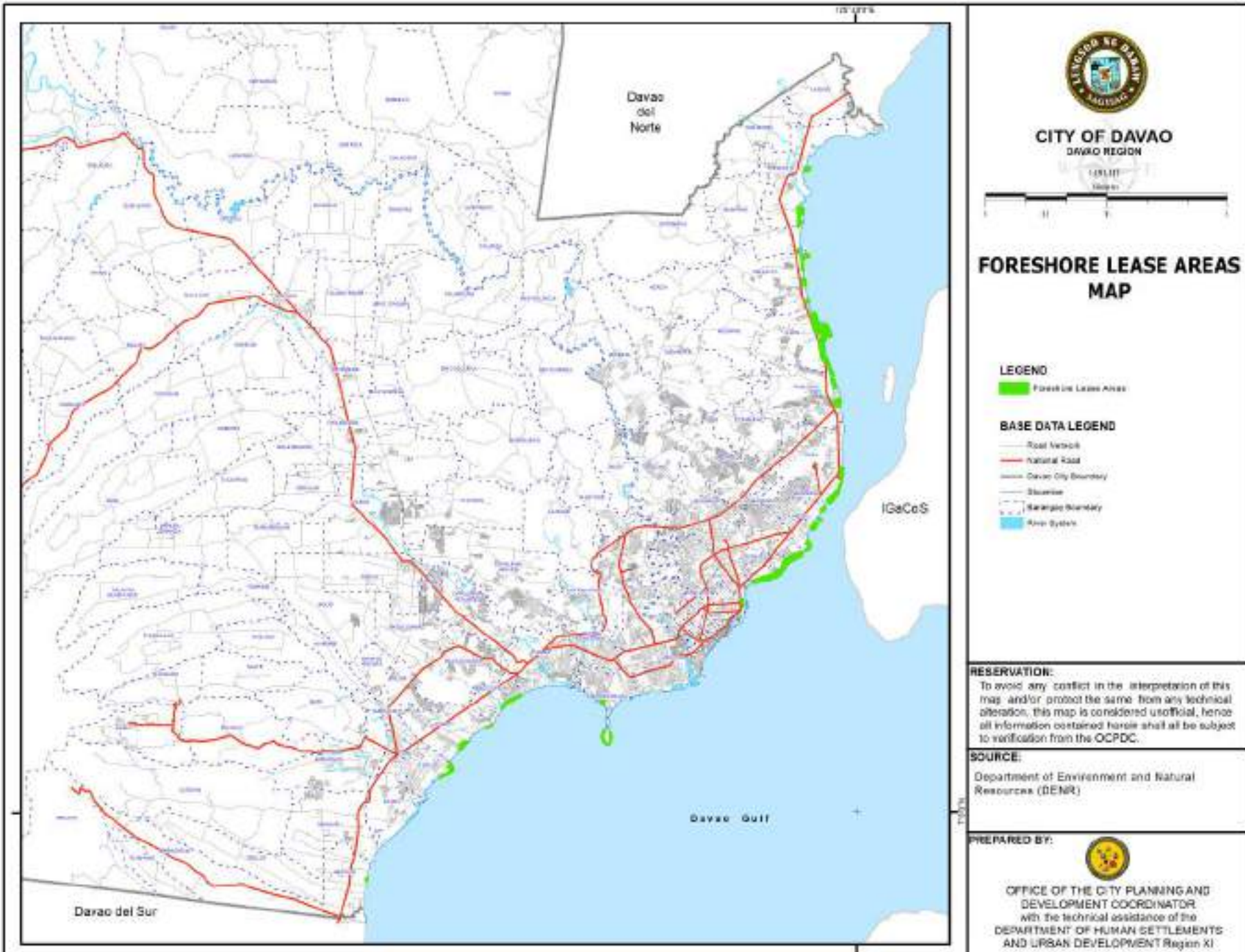
Table – 56. Foreshore Lease Areas

FLANum	SurveyArea (Has)	Location
FLA (VIII-I)-90	0.99	BUHISAN, TIBUNGCO, D.C.
FLI-112402(E)000009-D, FLA-112402(E)000009	0.89	TIBUNGCO, DAVAO CITY
FLC-112402(E)000023-D, FLA-112402(E)23	2.90	TIBUNGCO, D.C.
PLAN. FLC-(VIII-I)86	3.07	TIBUNGCO, DAVAO CITY
FLA-112412-3	0.46	CORONON, STA. CRUZ
FLC-11-01-000105-D	2.50	ILANG, DAVAO CITY
FLI-V-4523-D	5.11	ILANG, DAVAO CITY
FLC-(VIII-I)7	13.53	ILANG, DAVAO CITY
FLI-(VIII-I)-6-D	0.77	TIBUNGCO, DAVAO CITY
LOT-1, FLI-XI-14-000164-D	0.57	PANACAN, D.C.
FLC-11-000110-D	3.16	ILANG TIBUNGCO, DAVAO CITY
FLC-V-4765-D	3.84	ILANG TIBUNGCO, DAVAO CITY
FLC-V-5270 amd.	3.60	ILANG, D.C.
PLAN FLC-V-4105-D	2.72	ILANG, Davao city
PLAN FLC-11-000148-D	0.67	ILANG, DAVAO CITY
PLAN FLC(VIII-I)18	6.95	ILANG, DAVAO CITY
FLC-V-5270-AMD.(LOT-2)	8.32	ILANG, DAVAO CITY
LOT-2, FLI-XI-14-000164-D	0.53	PANACAN, D.C.
LOT-3, FLI-XI-14-000164-D	0.64	PANACAN, D.C.
Fli-XI-14-000164-D Amd.	0.02	
FLA-112402-(E)1-A	1.13	SASA, D.C.
FL 2614	0.41	SASA, D.C.
FLA-V-4245(EV)-254	1.18	SASA, DAVAO CITY
FLC-112402 (E) 29	0.48	PANACAN, DAVAO CITY

Table – 56. Foreshore Lease Areas, cont.

FLANum	SurveyArea (Has)	Location
FLA-112402(W27	0.58	BINUGAO, TORIL, D.C.
FLA-5238	1.21	CORONON, STA. CRUZ, DDS.
LOT-A, FLI-112412-000005-D	0.31	ASTORGA, STA CRUZ, DDS
FLi-(VIII-I)-62-D	2.00	BUNAWAN, DAVAO CITY
FLA-112402(E)22-A, PLA FLI-112402(E)000022-D	2.96	BUDBUD, BUNAWAN,D.C.
FLI-(VIII-I)82-DU+2026LOT - I	1.53	BUDBUD, BUNAWAN,D.C.
FLI-(VIII-I)82-DU+2026LOT - II	1.02	BUDBUD, BUNAWAN,D.C.
FLI-112402(W)-000017-D	1.44	TORIL, DAVAO CITY
FLC-8-1-D	3.41	DALIAO, TORIL DAVAO CITY
FLA_(VIII-I)49	4.77	TORIL, DAVAO CITY
FLI-11-01-000162-D	0.86	TORIL, DAVAO CITY
FLI-112402(W)000019-D	5.32	LOWER RAPNAGA
FLA-112402(W)16	1.15	MATINA APLAYA, D.C.
FLC-(VIII-1)000064-D	1.76	PUNTA DUMALAG, MATINA, DAVAO CITY
FLA(XI-4)0001	0.37	PUNTA DUMALAG, MATINA, D.C.
FLA-667(E-74)	0.21	STA ANA PIER, DAVAO CITY
FLI-V-2230(EV-92)	0.53	STA. ANA, DAVAO CITY
FLC-V-5089-D	32.29	LANANG, D.C.
FLC-112402(E) 000010-D	2.04	LANANG, DAVAO CITY
PLAN FLI-V-3971	0.99	LANANG DAVAO CITY
FLA-V-3926 (EV. 183)	0.13	SASA, DAVAO CITY
FLA-V-8-(EV-2)	3.92	SASA, D.C.
FLC-11-000027-D	1.91	SASA, DAVAO CITY
FLC-11-000053-D	0.93	SASA, DAVAO CITY
FLA-4141	5.49	SASA, DAVAO CITY
FLA-741(E-101)	0.62	BUNAWAN, D.C.
FLA-254-D(LOT-I)	1.12	PANACAN, DAVAO CITY
FLA-254-D(LOT-II)	3.25	PANACAN, DAVAO CITY
FLA-254-D(LOT-III)	1.75	PANACAN, DAVAO CITY
FLi-V-4394-D AMD	3.02	DAVAO CITY
LOT-2-C, Si-XI-14-002629-D Amd.-3	0.27	PANACAN, D.C.
LOT-2-B, Si-XI-14-002629-D Amd.-3	0.23	PANACAN, D.C.
LOT-2, FLI(XI-4C)000169-D Amd.	1.26	DAVAO CITY
FLC-V-5270-AMD.(LOT-3)	0.37	ILANG, DAVAO CITY
FLC-V-3130-D	4.73	LANANG, DAVAO CITY
FLi-112402(E)(VIII-I)000095-A-D	3.44	BUDBUD, DAVAO CITY
FLi-8-3-D	2.33	DAVAO CITY

Map 2.44. Foreshore Lease Areas Map



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The Economic Structure

Davao City operates in an open market-based economy, which commonly attracts trade, commerce and investments from both domestic and international economies. This allows the city to manage its export goods and services, as well as to import different commodities to fill in the demand of the local economy and for its entire populace.

The flexibility of the local economy is marked by its resilience to continually open its doors to big-ticket investments while providing good environment to nurture the valuable contribution of home-grown businesses as well as the small and medium scale entrepreneurs.

A. Revenue Sources

The city's revenues from different taxpayers, including businesses, amounted to ₱2,792,795,660.60 in 2018 (Table 57). Almost three-fourths of it, or 70.73%, are collected as the tax payments from the different businesses in the city. The rest of the revenues are generated from the real property tax, which totaled ₱817,555,428.49.

Of the 11 political districts in the city, Poblacion District leads in terms of revenues earned, contributing almost a third, or 31.50% out of the total revenues collected by the city government in 2018. Talomo District comes second at 19.03% followed by Buhangin District at 16.75%. Paquibato District has the least income, which covers a percentage share of only 0.04%, as most areas in the district are covered under certificate of ancestral domain title (CADT) where payment of taxes is exempted.

Table – 57. Revenue Sources, Davao City, 2018

District	Revenue Sources		Total
	Business Tax	Real Property Tax	
First Congressional District			
Poblacion	697,157,060.92	182,576,000.15	879,733,061.07
Talomo	372,620,493.31	158,960,333.81	531,580,827.12
Second Congressional District			
Agdao	248,274,892.55	53,749,691.71	302,024,584.26
Buhangin	351,877,511.18	115,928,407.90	467,805,919.08
Bunawan	166,716,588.91	85,026,891.95	251,743,480.86
Paquibato	356,684.60	638,595.97	995,280.57
Third Congressional District			
Baguio	2,630,206.33	10,492,603.41	13,122,809.74
Calinan	28,261,760.41	11,325,424.19	39,587,184.60
Marilog	1,953,268.62	1,987,796.51	3,941,065.13
Toril	83,276,598.40	178,321,421.17	261,598,019.57
Tugbok	22,115,166.88	18,548,261.72	40,663,428.60
Davao City	1,975,240,232.11	817,555,428.49	2,792,795,660.60

Source: Business Bureau, Davao City

To have a stable array of revenue sources is not only beneficial to the city government for its daily operation and to finance its planned programs and projects. It is equally a dependable source for emergency expenditures as what happened during the Covid-19 pandemic in 2020-2021.

Although the city was able to collect P2.79 billion in 2018, the huge financial requirement for the construction of emergency medical facilities, social amelioration and other financial assistance to the affected sectors could be problematic.

However, the financial assistance to the local governments from the national government, called the Bayanihan Grant to the Cities and Municipalities, has helped the city tide over the challenges of the pandemic. The city got its allocation of P462,047,664.00 which the city spent on food and grocery packs (P425,383,710.00), medical supplies (P17,299,000.00), construction of quarantine facilities (P6,047,329.50), free swab tests for locally stranded individuals (P5,179,020,00), powered air purifying respirator (P960,000.00), water and light bills of Covid-19 facilities (P858,775,77) and cremation services (P6,552,000.00).

To be financially healthy is to be prepared for any eventuality. In the case of the Covid--19 pandemic, it shows how financially and resource -draining it would be.

B. Employment

Registered businesses in the city have a total number of 431,860 employees as of 2018 (Table 59, see next page). Majority of these employed workers, or 94%, are in the tertiary sector or the service sector, which includes businesses engaged in wholesale and retail, transport, storage and communication, financial intermediation, real estate, renting and business activities, public administration and defense, education, health and social work, and other community, social and personal service activities.

These employees work in 67,171 service-led business establishments, which have a combined capitalization of ₱369,297,745,057.15. A large number of the workforce, comprising of 204,002 employees, in the tertiary sector, pooled their skills and services to the 41,253 businesses involved in wholesale and retail trade.

Another economic growth driver is the secondary sector, which comprises of manufacturing, construction, electricity, gas, and water supply industries. During the same year, the businesses in the secondary sector managed to employ 17,939. This number covers 4.15% of the total employment in the city.

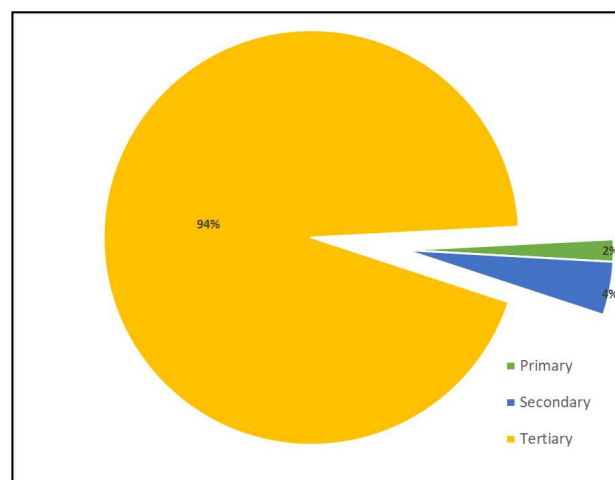
The least employment generator is the primary sector, which contributes a share of only 1.74% out of the total employment recorded from the registered businesses in the city. The sector includes businesses in agriculture, forest production, fishing and quarrying activities. The data excludes mining as the city government strongly prohibits mining operations in the city.

Table – 58. Economic Activities, By Number of Businesses, Capitalization, and Employment, Davao City, 2018

Economic Activity	Number of Establishments	Capitalization	Number of Employees
Primary			
Agriculture, Hunting, & Forestry	314	2,271,035,159.05	7,086
Fishing	13	22,180,001.00	86
Mining and Quarrying	121	72,646,445.60	321
Sub-Total	448	2,365,861,605.65	7,493
Secondary			
Construction	144	426,193,978.00	2,081
Electricity, Gas, & Water Supply	109	9,441,132,571.14	859
Manufacturing	930	14,790,728,388.47	14,999
Sub-Total	1,183	24,658,054,937.61	17,939
Tertiary			
Education	696	1,308,720,026.89	6,662
Financial Intermediation	1,861	67,401,236,506.37	16,021
Hotels & Restaurants	3,398	7,315,441,561.26	22,865
Health & Social Work	717	1,165,659,925.57	4,323
Other Community, Social & Personal Service Activities	4,027	12,029,239,980.89	43,119
Public Administration & Defense	226	146,607,628.67	1,011
Real Estate, Renting & Business Activities	11,282	137,829,773,280.30	67,994
Transport, Storage & Communication	3,711	58,847,855,326.82	40,431
Wholesale & Retail Trade/Repair of Motor Vehicles, Motorcycles, & Personal Service Activities	41,253	83,253,210,820.38	204,002
Sub-Total	67,171	369,297,745,057.15	406,428
Total	68,802	396,321,661,600	431,860

Source: Business Bureau, Davao City

Graph EC – 1. Summary of Employment Per Sector, Davao City, 2018



Source: Business Bureau, Davao City

C. Annual Average Family Income and Expenditure Vis-à-Vis Poverty Level

Throughout Davao Region, the annual average family income for a family of five (5) is ₱247,000 based on the 2015 Family Income and Expenditure Survey of Philippine Statistics Authority (PSA). This income level is an increase from ₱194,000 in 2012 and ₱166,000 in 2009 (Table EC – 3).

Annual family expenditure is pegged at ₱190,000 in 2015, which rose from ₱156,000 in 2012. This indicates a family of five is assumed to have opportunities to save at most ₱57,000 in 2015, and ₱38,000 in 2012.

Poverty incidence in Davao Region declined to 16.6 in 2015 from 25 in 2012 and 25.5 in 2009. Davaoños have to earn ₱9,481 a month to stay out of poverty and meet the annual family poverty threshold at ₱113,770 in 2015. The annual family poverty threshold in 2015 increased from ₱99,837 in 2012 and ₱85,197.08 in 2009.

Davao Region Poverty Estimates

Southern Mindanao, home to 5,243,536 million Filipinos in Mindanao, is composed of five (5) provinces and six (6) cities. Unfortunately, most of its residents are still living in poverty. The only areas with a poverty incidence of eighteen (18) percent and below are the City of Davao and Tagum City of Davao del Norte.

Among the regions in Mindanao, Davao Region remains to be the lowest in poverty incidences of both families and individuals with BARRM having the highest at 53.6 percent among families and 61.3 percent among population. Contrary to the situation in Davao City, considered as one of the more progressive cities in the country, other cities and municipalities in the region posted a relatively high poverty incidences.

Poverty incidence in Davao City declined to 9.2 in 2015 from 10.6 in 2012 and 13.2 in 2009. Variables found to be significantly related to income of families in the region include education variables, housing materials for urban areas, average family size in a barangay and presence of electric power, telephone and housing project in each of the barangays.

Table – 59. Annual Average Family Income, Expenditure and Poverty Threshold, Poverty Estimates 2009-2015

Indicator	2009	2012	2015
Annual Average Family Income (₱)	166,000	194,000	247,000
Annual Average Family Expenditure (₱)	142,000	156,000	190,000
Annual Family Poverty Threshold (₱)	85,197.08	99,837	113,770
Davao City Poverty Estimates	13.2%	10.6%	9.2%

Source: PSA, Region XI

Existing Land and Water Use

Protection

Forest and Forest Land

The city's zoned forest and forest land use in 2013 was at 13,995 but actual use in 2019 covered a significantly wider area at 135,144.66 hectares with the adoption of the Forest Land Use Plan (FLUP) delineating the city's forest and forestland areas.

Conservation Zone

An area of 60,136 hectares was zoned as conservation in 2013. In 2019, only 3,752.01 as majority of the area was already delineated as forest and forestland.

Open Space Easement

In 2013, the city zoned 418 hectares as open space/easement. Actual use in 2019 totaled 245.54 hectares as portions of the open space easement were utilized for other uses such residential and commercial, as well as for floodway mitigation.

Production

Agriculture

A total of 111,466 hectare was approved for agricultural purposes in 2013, while a total of 60,748.35 hectares was utilized in 2019 of which 54,271.71 hectares is based on the Strategic Agriculture and Fisheries Development Zone (SAFDZ) and Network of Protected Areas for Agriculture and Agro-industrial Development (NPAAAD) data provided by the Bureau of Soils and Water Management of the Department of Agriculture, and with the adoption of the Forest Land Use Plan (FLUP) in 2019, almost half of the zoned agricultural area or around 50,535.52 hectares was reverted to its appropriate zone which is forest and forestland .

Inland and Water Use

An area of 70 hectares was zoned for fish pond uses such as those in Los Amigos, Tugbok District and Dumoy, Toril District as well as to the conservation measures along the coast through the planting of mangrove trees in 2013. The area substantially increased in 2019 to as rivers, creeks, and lakes were already accounted for, with 2,633.05 hectares.

Agri-industrial

For agri-industrial activities, an area of 1,720 hectares was zoned in 2013, but in 2019 there was a recorded use of 1,789.19 hectares.

Activities include meat processing, milk processing, dressing plant, fish canning, rice and corn mill, canning, and preserving fruits and fruit juices.

The area is distributed among the following barangays: Baguio, Gumalang, Malagos, Tawan-tawan, Mandug, Bunawan, Gatungan, Lasang, Mahayag, Mudiang, San Isidro, Tibungco, Biao Joaquin, Calinan, Cawayan, Dacudao, Lacson, Riverside, Subasta, Talomo River, Wangan, Malamba, Suawan, Tamugan, Catalunan Grande, Catalunan Pequeno, Alambre, Bankas Heights, Bato, Binugao, Camansi, Eden, Kilate, Lizada, Marapangi, Mulig, Sirawan, and Tibuloy.

Industrial

Areas for industrial use are allocated in various barangays within the City's nine (9) political districts: 10-A, 11-B to 11-15, 19-B to 20-B, 26-C to 27-C, 30-C, 34-D, 4-A, 6-A, 8-A, 9-A in Poblacion District; Agdao Proper, Gov. Vicente Duterte, Lapu-Lapu, Leon Garcia St., Paciano Bangoy, Rafael Castillo, San Antonio, Tomas Monteverde, Ubalde, Wilfredo Aquino in Agdao District; Malagos in Baguio District; A. Angliongto, Buhangin, Cabantian, Communal, Indangan, Mandug, Pampanga, Sasa, Tigatto, V. Hizon in Buhangin District; Bunawan, Ilang, Lasang, Mahayag, Mudiang, Panacan, San Isidro, Tibungco in Bunawan District; Calinan, Dacudao, Riverside, Talomo River in Calinan District; Bago Aplaya, Bago Gallera, Baliok, Catalunan Grande, Catalunan Pequeno, Dumoy, Ma-a, Magtuod, Matina Aplaya, Matina Crossing, Matina Pangi, Talomo Proper in Talomo District; Bankas Heights, Bato, Binugao, Crossing Bayabas, Daliao, Lizada, Lubogan, Marapangi, Sirawan, Toril Proper in Toril District; Bago Oshiro, Los Amigos, Mintal, Tugbok Proper, Ula in Tugbok District.

Industrial operations that are classified as **non-pollutive/non-hazardous and non-pollutive/hazardous** are in Talomo district, with 20 operations, followed by Agdao with 12. A total of 63 industries of this type includes drying of fish, biscuit factory and other similar dried bakery products, dairies, and creameries.

For **pollutive/non-hazardous and pollutive/hazardous**, there are 649 businesses operating, with 164 housed in Talomo district and 125 in Buhangin Proper. These are operations of ice plant, peanuts and other nuts factories, general hardware, signages and billboards and painting shops.

Highly pollutive/non-hazardous, highly pollutive/hazardous, highly pollutive/extremely hazardous, pollutive/extremely hazardous, non-pollutive/extremely hazardous total 218, with the political districts of Buhangin hosting 58, Talomo 54, and Bunawan 41, as the top three (3) hosts. These include storage tanks, buildings for storing gasoline and liquid petroleum gas, softdrinks and carbonated water, making of instant beverages and syrups and the manufacture of fertilizer.

From an approved area of 3,707 hectares in 2013, area utilized for this particular reached 3,154.83 hectares in 2019.

Quarrying

Quarrying activities in the city involve gathering of earth fills, and sand and gravel for construction needs. The following areas have quarrying activities: Barangays 19-B in Poblacion; Callawa, Mandug, Tigatto Wa-an in Buhangin; Bunawan, Mahayag, San Isidro in Bunawan; Dalagdag, Inayangan, Lampianao, Megkawayan, Pangyan, Wangan in Calinan; Bantol and Malamba in Marilog; Paquibato and Mabuhay in Paquibato; Catalunan Grande, Langub, Ma-a, Matina Pangi in Talomo; Bayabas and Marapangi in Toril; Matina Biao, Mintal, New Valencia and Talandang in Tugbok.

There are no pre-determined and designated areas for quarrying activities due to the nature of extraction. Actual areas with quarrying activities usually depend on the applications and the approval granted by the city government. Applications are required to be renewed every year.

Quarry operations are allowed to conduct their activities at any viable area, provided that they pass the "allowable use process" which requires $\frac{3}{4}$ majority votes of the Sangguniang Panlungsod. An area of 193.53 hectares was approved in 2019.

Landslide Mitigation

Area zoned as landslide mitigation was at 12, 935 hectares. A big portion was reverted to forest and forestland use with the adoption of the Forest Land Use Plan (FLUP), thus the area was reduced to only 108.28 hectares.

Settlement

Residential

Highest concentration of land utilized for residential use is in Talomo, Poblacion and Agdao. An increase in the usage is observed in the areas of Tugbok, Buhangin, Calinan, Bunawan Marilog, Paquibato as the city's population is also on a steady rise.

A total of 16,755 hectares was recorded for residential purposes in 2019 which is slightly higher compared to the zoned area of 15,387 hectares in 2013. It should be noted that some housing development projects have not proceeded as planned. High-rise residences, which are allowed in the commercial area, augment the housing backlog and demand.

Commercial

Commercial establishments are spread in the city's eight (8) political districts, namely Poblacion, Agdao, Buhangin, Talomo, Toril, Tugbok, Calinan, Bunawan, registered a land area of 1,643.12 hectares in 2019 with the highest concentration in the Poblacion area.

This is almost 67% of the 2013-approved area of 2,624 hectares.

The activities range from low-density community and neighborhood-level trade, service, and business activities, up to high-density activities, which serve complementary or supplemental functions to the Central Business District (CBD).

Other commercial activities allowed include malls, high-rise hotels, condominiums, sports stadiums, or complexes, which are found mainly in the CBD.

Institutions

Land area utilized for hospitals, schools, government offices, and places of worship, covered 1,366.12 hectares in 2019, which is distributed in all of the city's 11 political districts.

Presence of these facilities and services is mainly influenced by the number and demand of population in the area intended for the promotion of their welfare and well-being and accessibility of services to the greater number of the city's populace.

Area recorded is higher than the zoned of 1,037 hectares in 2013.

Special Institutions

Recognizing the special needs of certain sectors of its populace, the city approved an area of 244 hectares in 2013 which mainly account for the area occupied by the UP Mindanao campus and the regional government center in Bago Oshiro.

Actual use in 2019 totaled 166.80 hectares which only account for areas utilized for facilities such as welfare homes, orphanages, homes for the aged, rehabilitation and training centers, and military camps/reservations/bases/training grounds. The UP Mindanao campus area has already been reclassified under General Institutions.

Infrastructure Development

Utilities/Transportation/Services

A total of 3,803.27 hectares in 2019 were utilized by facilities for transportation (roads and bridges), power, water, communication, irrigation as manifested by the robust urbanization and development level that the city has achieved. It is almost 20 times the approved area of 750 hectares in 2013.

Parks and Recreation

Aimed at providing an area for diversion, amusement, maintenance and promotion of ecological, and work and life balance, the city utilized 377.47 hectares of land for parks and recreational facilities development. The actual land area used is more expansive compared to 2013 approved land area of 110 hectares.

Most of the barangays in the city have already built their respective facilities while about 70 have yet to develop their own.

Planned Unit Development (PUD)

This refers to a land development scheme wherein the project site is comprehensively planned as an entity via unitary site plan which permits flexibility in planning, design, building siting, complementarity of building types and land uses, usable open spaces and the preservation of significant natural land features.

Barangays V. Hizon in Buhangin and Ma-a in Talomo have a combined land area of 531.60 hectares for this use in 2019 utilizing 60% of the zoned area in 2013 of 885 hectares.

Cemetery/Memorial Park

Cemetery/memorial parks had a zoned area of 237 hectares in 2013 and actual use in 2019 totaled 200.62 hectares as roads within the cemeteries and memorial parks have already been delineated. Areas utilized are in Barangays Buhangin Proper, Cabantian, Waan, Panacan, Tibungco, Calinan, Riverside, Wangan, Baliok, Catalunan Grande, Ma-a, Magtuod, Lubogan, Tacunan, Tagakpan, Tugbok Proper, 8-A, and 19-B.

Sanitary Landfill

In 2019, an area of 11.64 hectare have been utilized for the sanitary landfill from the approved 18 hectares in 2013, leaving an area for the expansion of the facility.

Tourism

Zoned area for tourism in 2013 was 5,835 hectares. Actual use in 2019 only totaled 2,977 hectares as portions of the zoned tourism area have been utilized for commercial use and reverted to forest and forestland use.

Eden remains a top pick for visitors of the city due to its forest and nature setting, while the Malagos Garden of Baguio District is also a favorite destination for its cutflowers and the experiential cheese and chocolate making. Also found in Baguio District is the Philippine Eagle Center, which is marketed by travel and tour operators as a must-see destination for being one of few conservation and breeding centers for eagles in the world.

Rural Settlement

Approved in 2013 as rural settlement is an area of 5,465 hectares. In 2019, actual use was at 3,205.61 hectares. The remaining part was used for institutional, commercial, and residential purposes.

Floodway Mitigation

At least 69% or 4,627.45 hectares of the zoned floodway mitigation area in 2013 at 6,697 hectares was used for institutional, commercial, and residential purposes. This significantly reduced the area to 2,069.55 hectares.

Urban Ecological Enhancement Sub-Zone

Zoned as Urban Ecological Enhancement Sub-Zone in 2013 was an area of 223 hectares which covers the whole of Shrine Hills. This increased in 2019 to include other areas with slopes at 18% and above identified in the surrounding area of the Mudiang railway station in Bunawan District.

These areas are highly susceptible to landslide.

Reclamation Area

A total of 138.86 hectares composed the reclaimed area and the coastal road with the following land use distribution: Floodway Mitigation at 10.35 hectares, Open Space with 84.45 hectares, Utilities/Transportation/Services with 2.16 hectares and Water Use with 41.9 hectares.

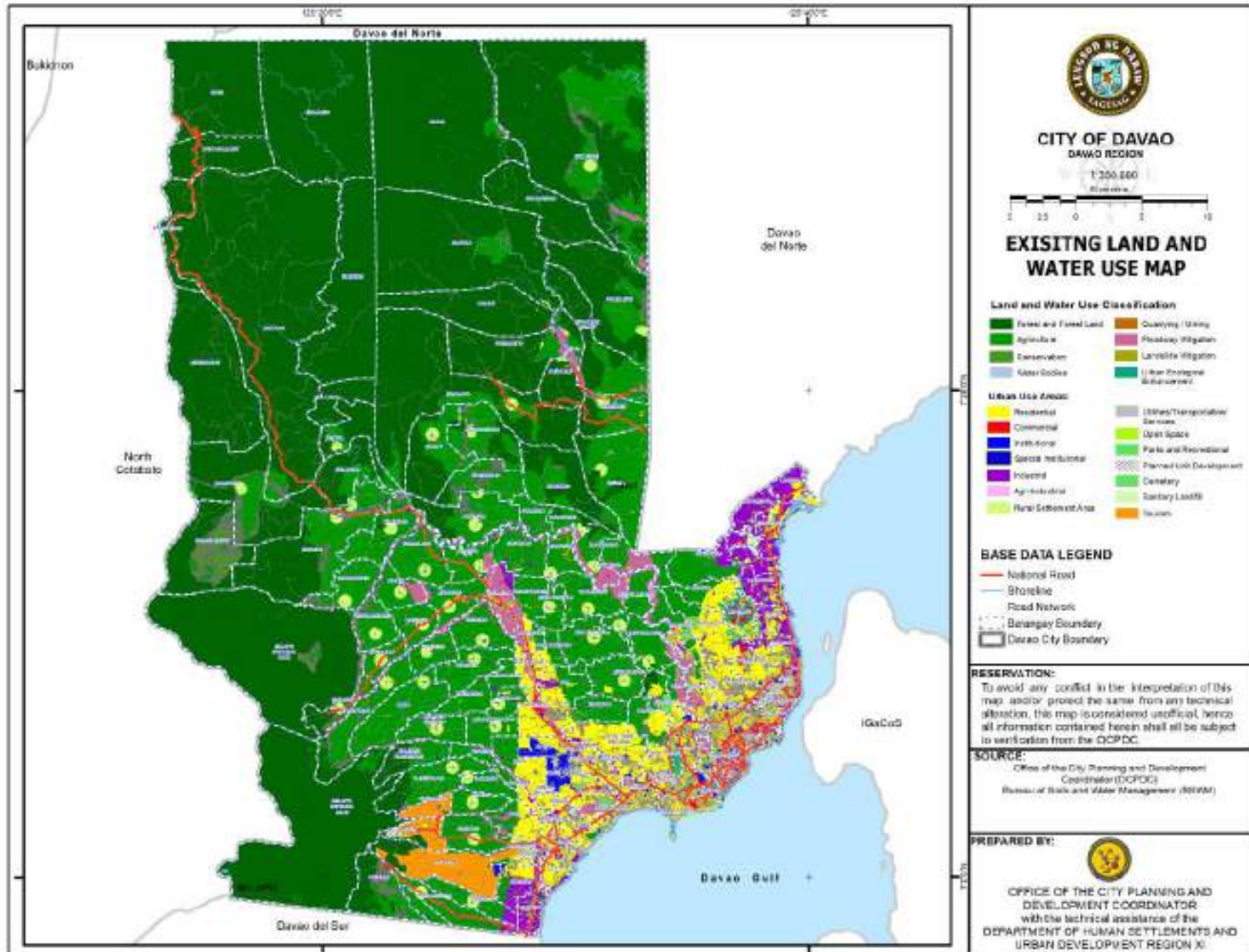
Table - 60 Existing Land and Water Use, Davao City (2019)

Approved Land and Water Use (2013-2022)		Existing Land Use (2019)			
Land Use	Area (has)	Land Use	Observed Utilization	For Development	Total Area (has)
Forest and Forest Land	13,995	Forest/ Forestland	135,144.66		135,144.66
Conservation	60,136	Conservation Zone	3,752.01		3,752.01
Agriculture	111,466	Agriculture	60,748.35		60,748.35
Inland Water Use	70	Water Use	2,633.05		2,633.05
	-	Quarrying	193.53		193.53
Landslide Mitigation	12,935	Landslide Mitigation	108.28		108.28
URBAN USE	45,401	URBAN USE			41,420.16
Residential	15,387	Residential	7,876.39	8,878.75	16,755.14
Commercial	2,624	Commercial	1,099.89	543.23	1,643.12
Industrial	3,707	Industrial	1,028.17	2,126.65	3,154.83
Institutions (Ins)	1,037	Institutional	1,366.12		1,366.12
Special Institutions (Sins)	244	Special Institutional			166.80
Parks and Recreation	110	Parks and Recreational	377.47		377.47
Cemetery/Memorial Park	237	Cemetery	200.62		200.62
Open Space Easement	418	Open Space	245.54		245.54
Easement/Buffer	44				
Urban Ecological Enhancement	223	Urban Ecological Enhancement	564.37		564.37
Utilities/Transportation/Services	750	Utilities/Transportation/Services	3,595.23	208.04	3,803.27
Tourism	5,835	Tourism	173.52	2,803.88	2,977.39
Sanitary Landfill	18	Sanitary Landfill	11.64		11.64
Planned Unit Development	885	Planned Unit Development	531.60		531.60

Table - 60 Existing Land and Water Use, Davao City (2019), cont.

Approved Land and Water Use (2013-2022)		Existing Land Use (2019)			
Land Use	Area (has)	Land Use	Observed Utilization	For Development	Total Area (has)
Rural Settlement Area	5,465	Rural Settlement Area	3,205.61		3,205.61
Agri-industrial	1,720	Agri-Industrial	375.82	1,413.37	1,789.19
Flood Way	6,697	Floodway Mitigation	4,627.45		4,627.45
TOTAL DAVAO CITY	244,003.00	TOTAL DAVAO CITY			244,000.04
		Floodway Mitigation	10.35		10.35
		Open Space	84.45		84.45
		Utilities/Transportation/ Serv*	2.16		2.16
		Water Use	41.9		41.90
		Total Reclaimed Area			138.86

Map 3. Existing Land and Water Use Map



Land Use Trend

Below is a discussion on the changes in land utilization for the following periods: 1994 and 2011, 2011 and 2019.

Forest and Forestland

The city's forest and forest land use was recorded at 27,626 hectares in 1994 based on the approved plan in 1996-2021. Land use recorded in 2011 significantly increased to 156,749.20 hectares based on the land cover data as generated by the National Mapping and Resource Information Authority (NAMRIA) covering the areas of Marilog and Paquibato districts as well as Mt. Apo Natural Park (MANP).

Forest and forestland use in 2019 decreased to 135,144.66 hectares as areas not included in the FLUP and the MANP, as well as roads and rivers within, were delineated for other uses.

Conservation

An area of 15,521 hectares has been utilized as conservation area in 1994 as recorded in the approved 1996-2021 plan. Portions were part of the forest and forestland and utilized for agricultural purposes in 2011.

With the adoption of the FLUP, a portion of the conservation zone was delineated as forest and forestland.

And in 2019, the City Council approved "An Ordinance Amending Article IV, Section 2, Article VI Section 1 and Article XII, Section 2 of Ordinance No. 0546-13 Series of 2013 or the Comprehensive Zoning Ordinance of Davao City to Delineate Areas for Eco-Tourism and Agro Tourism Activities in Marilog and Paquibato Districts". Amendment in Article IV Section 2 in particular pertains to the identification of Conservation Zone areas further subdivided into Conservation Zone 1 and Conservation 2.

Agricultural

A total of 187,470 hectares has been used for agricultural purposes in 1994 as reflected in the approved 1996-2021 plan and decreased by more than half in 2011 at 73,086 hectares. With the adoption of the FLUP, areas within forest and forestland utilized for agricultural purposes were reverted to its most appropriate use which is the latter.

Area utilized for agricultural purposes in 2019 was 60,748.35 hectares which is mainly the area covered by the Strategic Fisheries and Agricultural Development Zone (SAFDZ). And an actual ground work assessment yielded an additional available area for development of 6,476.64 hectares.

Agri-industrial

A land area of 168.36 hectares was utilized for agri-industrial use in 2011. An increase was observed in 2019 at 1,789.19 hectares with recorded actual use of 375.82 hectares and an area of about 1, 413.37 hectares still to be fully utilized for this purpose.

This is mainly due to the rise in livestock and poultry production. Other activities include meat processing, milk processing, dressing plant, fish canning, rice and corn mill, canning and preserving of fruits and fruit juices.

The area is distributed among the following barangays: Baguio, Gumalang, Malagos, Tawan-tawan, Mandug, Bunawan, Gatungan, Lasang, Mahayag, Mudiang, San Isidro, Tibungco, Biao Joaquin, Calinan, Cawayan, Dacudao, Lacson, Riverside, Subasta, Talomo River, Wangan, Malamba, Suawan, Tamugan, Catalunan Grande, Catalunan Pequeno, Alambre, Bankas Heights, Bato, Binugao, Camansi, Eden, Kilate, Lizada, Marapangi, Mulig, Sirawan, and Tibuloy.

Residential

A total of 16,755.14 hectares was recorded for residential use in 2019 which include actual areas utilized at 7,876.39 hectares as well as areas covering committed projects intended for such use but which have yet to be implemented at 8,878.75 hectares. The constant increase in land utilization since 1994 was mainly due to the steady rise in the city's population.

Commercial

Land utilized for commercial activities slightly increased in 2019 at 1,643.12 hectares compared to 1,583.32 hectares in 2011 due to the rise in commercial activities in the city. Recorded actual use was at 1,099.89 hectares while an area of 543.23 hectares have also been accounted for commercial use however the planned projects have yet to commence.

Planned Unit Development (PUD) use on the other hand recorded an actual use of 531.60 hectares in 2019 from 76.86 hectares in 2011 as numerous applications for said use was received by the city.

On the other hand, there were observed steady increases in areas for industrial, institutional, transportation, services and facilities, and roads from 1994 to 2011 and from 2011 to 2019.

Industrial

There was a growth of steel factories in the Panacan and Lasang areas of the city, thus the consistent rise in industrial area utilization which rose by 454.02 hectares from 399 hectares to 853.02 hectares between 1994 and 2011.

From 2011 to 2019, it was observed that areas for this purpose spiked to reach 3,154.83 hectares, recording an actual use of 1,028.17 hectares with still 2,126.65 hectares available for industrial development.

Institutional

Institutional use is higher in 2011 at 629.03 hectares, compared to 275.00 hectares in 1994. In 2019, an increase was again recorded at 1,532.92 hectares. This trend is due to the constant expansion of private school campuses, construction of regional offices of national agencies and establishment of new private hospitals with an actual use of 1,030.22 hectares.

A total of 502.70 hectares account for areas allocated for welfare homes, orphanages, home for the aged, rehabilitation and training centers, military camps, reservations, bases, training grounds which have yet to be started.

Tourism

In 1994, the Sasa port and airport were considered as tourism spots with a combined land area of 38 hectares. The same use increased its utilization in 2011 at 200 hectares which accounts for areas utilized for tourism purposes in Eden and Marapangi, Toril District. The same use recorded a total of 2,977.40 hectares in 2019 with actual utilization covering an area of 173.52 hectares to include Chinatown, barangays Baganihan and Datu Salumay in Marilog District while the difference, 2,803.88 hectares account for projects still at various levels of implementation.

Open Space/Easement

Open space/easement was only at 105 hectares in 1994 based on the approved 1996-2021 plan. It increased to 1,258.80 in 2011 as open/easement were observed along riverbanks and major canals. Significant decrease can be observed in 2019 as most of the areas were utilized for residential, commercial, and floodway mitigation.

Utilities, Transportation, Services

With the robust urbanization level achieved by the city, area utilized for Utilities, Transportation, Services, increased tremendously from only 250 hectares of space in 2011 to 3,803.27 hectares in 2019, registering an actual use of 3,595.23 hectares with some remaining 208.04 available for full development.

Utilization in 2019 is definitely a huge leap from the 129 hectares recorded in 1994.

Parks and Recreation

Parks and recreation utilized an area of 202 in 1994 which included parks, cemetery/memorial park and golf clubs. In 2011, cemetery and memorials parks and golf clubs were classified under special use which led to the decrease in utilization at 61.73 hectares. Same use was more expansive in 2019 at 377.47 hectares with the inclusion of the Cleaner-gy Park of the Davao Light and Power Company in Punta Dumalag, and the Crocodile Park as well as the parks and recreation within the subdivisions.

Quarrying

Quarrying land use also increased because of the construction boom and the Duterte administration's Build, Build, Build program. So far, quarrying utilized 193.53 hectares in 2019, an increase from 2011 which recorded 157.14 hectares.

Special Use/Cemetery and Sanitary Landfill

Actual use in 2019 for cemetery is at 200.62 hectares. Utilized for this particular use are areas in Barangays Buhangin Proper, Cabantian, Wa-an, Panaca, Tibungco, Calinan, Riverside, Wangan, Baliok, Catalunan Grande, Ma-a, Magtuod, Lubogan, Tacunan, Tagakpan, Tugbok Proper, 8-A, and 19-B. While 11.64 hectares was utilized for the sanitary landfill located at New Carmen, Tugbok District.

In 2011, land use for both cemetery and sanitary landfill were categorized under Special Use at 342.09 hectares.

The decrease in the land area utilized is due to the delineation of roads within the cemetery and memorial parks while the golf clubs were utilized for commercial use.

Idle Vacant Lots

Idle vacant lots recorded in 1994 had an area of 9,118 hectares which has been utilized for various urban uses in 2011 and 2019.

Barangay Settlement/Rural Settlement Area

An area of 243 hectares was used as barangay settlement in 1994 and recorded a significant increase in 2019 at 3,205.61 hectares mainly due to the increase in the city's population.

Inland Water

At least 256 hectares for inland use was recorded in 1994 which slightly went down in 2011 as portions of the wetlands were utilized for other urban uses while a significant part, 243.89 hectares were devoted mostly for fish pond uses as well as for conservation measures through the planting of mangrove trees.

This significantly increased in the 2019 as rivers, creeks, and lakes were already accounted for at 2,633.05 hectares.

Floodway Mitigation Zone

Areas highly susceptible to flooding along the major rivers cover an area of 4,627.45 hectares.

Landslide Mitigation Zone

A total of 108.28 hectares comprise the areas highly susceptible to landslide which are mostly in the higher elevation portion of the city and outside of the identified forest and forestland areas.

Urban Ecological Enhancement Sub-Zone

This currently occupies an area of 564.37 hectares covering the entire Shrine Hills as well as the areas around the Mudiang railway station in Bunawan District which are highly susceptible to landslide and with slopes 18% and above.

Others:

A total of 138.86 hectares compose the reclaimed area and the coastal road with the following land use distribution: Floodway Mitigation at 10.35 hectares, Open Space with 84.45 hectares, Utilities/Transportation/Services with 2.16 hectares and Water Use with 41.9 hectares.

Table – 61. Land Use Trend, Davao City

Existing Land Use 1994	Area (has)	Existing Land Use 2011	Area (has)	Existing Land Use 2019	Observed Utilization	For Development	Total Area (has)
Forest/ Forestland	27,626	Forest/ Forestland	156,749.02	Forest/ Forestland	135,144.66		135,144.66
Conservation	15,521			Conservation Zone	3,752.01		3,752.01
Agricultural	187,470	Agricultural	73,086.00	Agriculture	60,748.35		60,748.35
Agri-industrial		Agri-industrial	168.36	Agri-Industrial	375.82	1,413.37	1,789.19
Residential	2,484	Residential	8,382.38	Residential	7,876.39	8,878.75	16,755.14
Commercial	374	Commercial	1,583.32	Commercial	1,099.89	543.23	1,643.12
Planned Unit Development	-	Planned Unit Development	76.86	Planned Unit Development	531.60		531.60
Industrial	399	Industrial	853.02	Industrial	1,028.17	2,126.65	3,154.83
Institutional	275	Institutional	629.03	Institutional	1,030.22	502.70	1,532.92
Tourism	38	Tourism	200.08	Tourism	173.52	2,803.88	2,977.40
Open Space	105	Open Space	1,258.80	Open Space	245.54		245.54
Utilities/ Transportation/ Services	129	Utilities/ Transportation/ Services	250	Utilities/ Transportation/ Services	3,595.23	208.04	3,803.27
		· Roads		· Roads			
		· Infra/ Utilities		· Infra/ Utilities			
Parks and Recreation	202	Parks and Recreation	61.73	Parks and Recreational	377.47		377.47
Quarrying	-	Quarrying	157.14	Quarrying	193.53		193.53
Special Use	-	Special Use	342.09	Cemetery	200.62		200.62
Special Use	-	· Cemetery/ Sanitary Land-fill		Sanitary Land-fill	11.64		11.64

Existing Land Use 1994	Area (has)	Existing Land Use 2011	Area (has)	Existing Land Use 2019	Observed Utilization	For Development	Total Area (has)
Idle Vacant Lands	9,118						
Barangay Settlement	243			Rural Settlement Area	3,205.61		3,205.61
				Floodway Mitigation	4,627.45		4,627.45
				Landslide Mitigation	108.28		108.28
				UEE	564.37		564.37
Inland Water Use	256	Inland Water Use	243.89	Inland Water Use	2,633.05		2,633.05
· Fishpond		· Fishpond		· Fishpond			
· Mangrove forests		· Mangrove forests		· Mangrove forests			
Davao City Total	244,240	Davao City Total	244,041.72	Davao City Total			244,000.05
				Floodway Mitigation	10.35		10.35
				Open Space	84.45		84.45
				Utilities/ Transportation/Services	2.16		2.16
				Water Use	41.9		41.90
				Total Re-claimed Area			138.86

Note:

A difference in the totals of the city's land area can be observed in the three (3) plan periods discussed above which is mainly due to the limitation back then as assessments were made without the aid of appropriate technology and instruments.

*The Conservation Zone and UEEZ are part of the amendments of the 2013-2022 Zoning Ordinance,

Table No. 61-A shows the approved land and water uses for the planning period 1996-2021 and 2013-2022, and existing land use in 2019.

The area for forest and forestland in 1996 was 27,626 hectares and dropped in 2013 to 13,995, as the difference in the land area was zoned as conservation. This is based on the land cover data as generated by the National Mapping and Resource Information Authority (NAMRIA) covering the areas of Marilog and Paquibato districts as well as Mt. Apo Natural Park (MANP).

On the other hand, area zoned for agricultural use in 1996 was at 163, 936.26 hectares and lower by a little more than 50,000 hectares in 2013 at 111,466 hectares. The difference was allocated for conservation and built-up area use in 2013.

Per HLURB Guidebook, the Forest Land Use Plan (FLUP) approved in 2019 was mainstreamed in the CLUP. With this, almost half of the zoned agricultural area in 2013 or around 50,535.52 hectares was reverted to its appropriate zone which is forest and forestland. Other zones such as open space/ easements, roads and utilities, and protection waters, among others, comprised the difference.

The existing land use in 2019, already reflects the corrected classification for both forest and forestlands and agriculture.

As shown in the table below, actual forest/forestlands is 135,144.66 hectares while area utilized for agriculture is 60,748.35 hectares.

Approved Land and Water Use (1996-2021)		Approved Land and Water Use (2013-2022)		Existing Land Use (2019)	
Land Use	Area (has)	Land Use	Area (has)	Land Use	Area (has)
Forest and Forest Land	27,626.00	Forest and Forest Land	13,995	Forest/ Forestland	135,144.66
Agriculture	163,936.26	Agriculture	111,466	Agriculture	60,748.35

Priority Issues/Concerns Matrix

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
Encroachment of human activities other than IP settlers in protected areas	<p>Restrict commercial activities in timberlands and forestlands</p> <p>Strict enforcement of policy prohibiting the selling of rights to migrants</p> <p>Implement crackdown against tourism establishments, which operate without licenses and permits</p> <p>Pursue amendment of Tourism Code to include the need to have tourism standards compliance and require all tourism establishments advertising in social media platforms to prominently display their business permit QR codes as way to protect the consumers against scammers and unregistered tourism establishments</p> <p>Strengthen monitoring efforts in protected areas</p>	<p>DENR, NCIP, Tribal Council, Forest rangers</p> <p>LGU- Business Bureau, CTOO, Sangguniang Panlungsod</p> <p>LGU – CTOO, City Mayor’s Office</p> <p>National – NCIP, DOT, Mindanao Development Authority (MinDA)</p>
Rapid conversion of agricultural lands into commercial, residential, industrial and other uses	Sangguniang Panlungsod (SP) to pass an ordinance prohibiting prime agricultural areas from land reclassification to other uses and strict implementation of Zoning Ordinance on the issuance of permits	LGU- Sangguniang Panlungsod, Office of the City Planning and Development Coordinator (OCPDC -Zoning Division), CAgro, City Housing and Land Use Regulatory Unit (CHLURU)

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
	<p>Prohibit spot zoning</p> <p>Identify and establish area for shared service facility for animal waste fertilizer plant for proper animal waste disposal</p> <p>Regulation/restriction of the conversion of agri-land to housing subdivision (idle & non-productive can be converted socialized housing sites)</p>	<p>Department of Agriculture (DA)</p> <p>Department of Agrarian Reform (DAR)</p>
Deterioration of water quality	<p>Monitoring of wells for the underground water during operation</p> <p>Waste water treatment facility (WWTF) for the leachate during operation</p> <p>Updating of the Feasibility Study of the Sewerage System</p>	<p>LGU - City Environment and Natural Resources Office (CENRO)</p> <p>LGU – City Engineers Office (CEO)</p> <p>Department of Environment and Natural Resources – Environmental Management Bureau (DENR-EMB)</p>
Inadequate landfill for mounting garbage	<p>Identification of Waste Management Zones for:</p> <p>Junkshops & other areas for Recyclers</p> <p>Establishment of Material Recovery Facilities in every Barangay</p> <p>Creation of Residual Containment Areas to serve the other 70 Barangays</p> <p>Establishment of Communal Composting Areas at the Barangay/Community level</p> <p>Establishment of a Waste to Energy Facility</p> <p>Installation of a City-owned Facility to handle special wastes from healthcare facilities</p> <p>Establishment of 2 additional new Sanitary Landfill with the following:</p> <p>Gas vent for capturing methane gas emitted from previous controlled dump facility</p>	<p>LGU - City Environment and Natural Resources Office (CENRO)</p> <p>LGU – Sangguniang Panlungsod (SP)</p> <p>LGU – Association of Barangay Captains</p>

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
Inadequate agricultural infrastructure support	<p>Implement more FMRs</p> <p>LGU to provide shared services/facility</p>	<p>Local Government Unit (LGU)-City Agriculturist's Office (CAgrO)</p> <p>National-Department of Agriculture (DA)</p>
Congested sidewalks due to presence of street vendors	<p>Identify strategic areas for vendors</p> <p>Prohibit vendors in near cross walks with high density populated area</p> <p>Pursue a walkable city concept</p>	<p>LGU – Ancillary Services Unit – Demolition Team, City Transport and Traffic Management Office (CTTMO)</p>
Exposure to risks/hazards of institutional, residential, agricultural, forest, commercial, industrial, and tourism areas and in sites with infrastructure projects (eg, roads, bridges, utilities)	<p>Observe easements from the waterways and fault lines</p> <p>Pursue relocation for informal settlers living near danger areas/waterways</p> <p>Implement retrofitting to infrastructure projects (eg, roads, bridges, utilities)</p> <p>Pursue rehabilitation/mitigating measures to institutional projects (eg, Daycare Centers, Barangay Halls)</p> <p>Commercial and industrial establishments shall implement mitigating measures</p> <p>establishments shall have mandatory retrofitting or redesigning of structures and limiting of tourism-related activities</p> <p>Pursue planting of high value fruit trees and flood protection trees along riverbanks</p> <p>Improve forest cover in watersheds</p> <p>Improve extension of services with emphasis on climate and hazard resilient production techniques</p>	<p>LGU – Office of the City Building Official (OCBO), City Disaster Risk Reduction and Management Office (CDRRMO), City Social Services and Development Office (CSSDO), City Engineer's Office (CEO)</p> <p>National – DENR, DA, DTI, Office of Civil Defense (OCD), National Housing Authority (NHA), Department of Public Works and Highways (DPWH)</p>

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
	<p>Pursue establishment of irrigation and/or rainwater harvesting facilities</p> <p>Pursue crop diversification</p> <p>Establish warning system for agricultural crop production</p>	
Some existing sidewalks, facilities in commercial establishments not responsive/sensitive to needs of persons with disabilities (PWDs)	<p>Office of City Building Official must ensure that all establishments conform with the standards set forth by the law (non-compliance of Batas Pambansa 344)/strong implementation of Magna Carta for the Persons with Disabilities (PWDs)</p> <p>Establish/construction of center for children with disabilities based on national standards on accessibility</p>	<p>LGU – City Engineers Office (CEO)</p> <p>LGU - City Social Services and Development Office</p> <p>LGU - Office of City Building Official</p>
Traffic congestion	<p>Opening of Roads especially in heavy traffic area (malls, schools)</p> <p>Policy formulation on big SUV's entering CBD</p> <p>Construction of pedestrian overpasses</p> <p>Implementation of Public Mass Transport</p> <p>Full Implementation of IM4 Davao (Infrastructure Modernization Plan for Davao)</p>	<p>Department of Public Works and Highways (DPWH)</p> <p>City Transport and Traffic Management Office (CTTMO)</p>
Depletion of fishery resources	<p>Strict implementation of MPA Ordinance and Comprehensive Fisheries Ordinance of Davao City and Strengthening of bantay dagat/ Fishery law enforcement team</p> <p>Projects: Establishment of Marine Protected Area Network (MPAN) within Davao Gulf from Davao Occidental to Mati</p> <p>Establishment of mariculture park, which shall have proper management to prevent water pollution</p>	<p>LGU-CAgrO</p> <p>National -DA</p>

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
Need to develop City's tourism potential	<p>upgrade infrastructure to support tourism development</p> <p>Establish historical landmarks that will attract tourists</p> <p>Entice investors to venture in developing tourist attractions/ destinations/ accommodation facilities</p> <p>Designate Brgy Malagos and Marilog Proper as tourism and eco-tourism areas</p> <p>Establish community-based village museum for traditions and culture in Brgy Datu Salumay, Marilog District</p> <p>Establish Cultural and IP Knowledge Center</p> <p>implement Tourism Infrastructure Enhancement Program of DOT and City Government</p> <p>Install signages in different international languages</p> <p>Establish additional information centers</p> <p>Develop on-site and off-site facilities for tourism destination</p>	<p>LGU – CTOO, Museo Dabawenyo, City Engineer's Office</p> <p>Davao Historical Society</p> <p>National Historical Commission of the Philippines (NHCP)</p> <p>Department of Tourism (DOT)</p> <p>Department of National Works and Highways (DPWH)</p>
Need for improvement of port facilities	<p>Rehabilitation of Sta. Ana port facilities/structures</p> <p>Option to transfer ownership of Sta. Ana Wharf to Davao City</p> <p>Position the area as ecotourism</p> <p>Public-Private Partnership undertaking for the improvement of Sasa Port</p>	<p>Philippine Ports Authority (PPA)</p> <p>Department of Transportation (DOTr)</p>
Increasing housing backlog	<p>There are ISFs living in danger zones mostly in the 26 coastal barangays and 6 river channels of the city</p> <p>Flood-prone/coastal areas that are highly susceptible are occupied by ISFs</p> <p>There is also a number of city dwellers who do not own houses or land</p>	<p>LGU - City Planning and Development Office – Housing and Home site Division (CPDO-HHD), City Planning and Development Office – City Housing and Land Use Regulatory Unit (CPDO-CHLURU)</p> <p>LGU – City Assessor's Office</p> <p>National Housing Authority (NHA)</p> <p>Association of Barangay Captains</p>

Table – 62 Priority Issues and Concerns, Davao City

Priority Issues/Concerns	Proposed Policy Interventions	Responsibility Center
Need to develop City's tourism potential	<p>upgrade infrastructure to support tourism development</p> <p>Establish historical landmarks that will attract tourists</p> <p>Entice investors to venture in developing tourist attractions/ destinations/ accommodation facilities</p> <p>Designate Brgy Malagos and Marilog Proper as tourism and eco-tourism areas</p> <p>Establish community-based village museum for traditions and culture in Brgy Datu Salumay, Marilog District</p> <p>Establish Cultural and IP Knowledge Center</p> <p>implement Tourism Infrastructure Enhancement Program of DOT and City Government</p> <p>Install signages in different international languages</p> <p>Establish additional information centers</p> <p>Develop on-site and off-site facilities for tourism destination</p>	<p>LGU – CTOO, Museo Dabawenyo, City Engineer's Office</p> <p>Davao Historical Society</p> <p>National Historical Commission of the Philippines (NHCP)</p> <p>Department of Tourism (DOT)</p> <p>Department of National Works and Highways (DPWH)</p>
Need for improvement of port facilities	<p>Rehabilitation of Sta. Ana port facilities/structures</p> <p>Option to transfer ownership of Sta. Ana Wharf to Davao City</p> <p>Position the area as ecotourism</p> <p>Public-Private Partnership undertaking for the improvement of Sasa Port</p>	Philippine Ports Authority
Increasing housing backlog	There are ISFs living in danger zones mostly in the 26 coastal barangays and 6 river channels of the city	LGU - City Planning and Development Office – Housing and Home site Division (CPDO-HHD), City Planning and Development Office – City Housing and Land Use Regulatory Unit (CPDO-CHLURU)

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis Matrix

Table – 63. SWOT Analysis Matrix, Davao City

	STRENGTHS	WEAKNESSES
	<i>Economic</i>	
	<p>Large tracts of available agriculture land</p> <p>Top producers of high value crops</p> <p>Presence of agro processing plants</p> <p>Presence of major players in commercial and retail industry</p> <p>Strong service industries (tourism, BPO and financial institutions)</p> <p>Skilled labor force</p> <p>Availability of marine aquatic resources</p>	<p>74.70% of denuded upland areas</p> <p>polluted downstream rivers and coastal waters</p> <p>lack of skills required in the City’s economic drivers (e.g. agriculture, tourism, services sector, among others)</p> <p>inadequate residential care facilities</p> <p>no existing sewerage and septage treatment plants</p> <p>inadequate urban drainage systems</p> <p>city shelter plan not yet approved as of March 2019</p> <p>traffic congestion</p> <p>lack of green spaces in urban areas</p> <p>limited open space for public recreation and high dependence on paid indoor recreation</p> <p>rampant usage of synthetic fertilizers</p> <p>inadequate tourism sites</p> <p>inadequate water supply served by DCWD in 70 barangays covering District 2 and 3</p> <p>sanitary landfill already full</p> <p>solid waste management program not fully implemented</p> <p>congestion in existing government hospital (SPMC)</p> <p>no city hospital</p> <p>absence of comprehensive household profiles</p> <p>insufficient early warning system per hazard</p> <p>lack of access to markets</p> <p>significant areas highly vulnerable (high risk) to geohazards</p>

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis Matrix

Table – 63. SWOT Analysis Matrix, Davao City

	STRENGTHS	WEAKNESSES
	<i>Environment</i>	
	<p>Davao City has good under-ground water quality</p> <p>Existence of solid waste management program and policies</p> <p>Presence of facilities for disaster risk monitoring (e.g. Philippine Science High School is the mirror database of PhilVolcs Manila)</p> <p>Existence of zoning ordinance requiring property developers to allocate at least 10% of green space</p>	
	<i>Infrastructure</i>	
	<p>Adequate information communication technology</p> <p>Presence of international airport and seaport</p> <p>Infrastructure modernization plan approved by NEDA infra committee</p> <p>IM4Davao Urban Land Use Plan towards 2045</p> <p>Adequate power supply</p> <p>Presence of regional office on national line agencies</p> <p>Expansion of water service supply under medium-term develop-</p>	
	<i>Social</i>	
	<p>High quality secondary and tertiary educational institutions</p> <p>High quality tertiary health services</p> <p>Strong public safety and security command center including Central 911</p> <p>Active CSO groups</p>	

Table – 63. SWOT Analysis Matrix, Davao City

OPPORTUNITIES	SO	WO
		<p>Improve access to ODA grants (W5,W6,W8,W14,W17;O8)</p> <p>Explore PPP arrangements for the government sustainable development programs (i.e. water treatment facilities, green space, city hospital) (W5, W9, O3)</p> <p>Mass transit system (i.e. bus, rail) (W8; O3, O4, O5)</p> <p>Infrastructure transport facilities (i.e. pedestrian, bicycle lanes, walkable areas, park connector, public parking spaces)</p>
THREATS	ST	WT
<p>Climate change and disaster vulnerability</p> <p>Unstable peace and order situation in certain areas of Mindanao</p> <p>Change in national and local leaderships</p> <p>Increase in migration</p> <p>High/speculative cost of potential relocation sites</p> <p>Growing housing backlog and proliferation of ISFs</p> <p>High income from organic products</p>	<p>Provide opportunities for experts/professionals to collaborate with government agencies to introduce effective/mitigating solutions to climate change issues (T1, S18)</p> <p>Strengthen research and development and science technology and innovation program to increase productivity (T4,T2; S1-S4)</p>	<p>Protection of environment through enforcement of ridge-to-reef related laws (W1 and W2; T1)</p> <p>Establishment/construction of social service facilities in GIDAs (W4; T4)</p> <p>Promote creation of community grassroot organization and access to housing programs (e.g. SHFC, NHA) (W7, T6)</p> <p>Install additional early warning system (W19; T1)</p> <p>Establish tenement housing (resettlement; risk areas) (W7; T5 and T6)</p>
THREATS	ST	WT
	<p>Modernize the public safety systems and equipment (ie intensify border security) (T2; S20, S12)</p>	<p>Pursue housing privilege with conditions for the poor and qualified City Government employees (W7; T6)</p>

Table – 63. SWOT Analysis Matrix, Davao City

THREATS	ST	WT
	<p>Strengthen institutional capabilities (S14; T3)</p> <p>Dispersal of economic growth thru collaboration with neighboring LGUs to control in-migration</p>	<p>Strict implementation of Ecological Solid Waste Management Ordinance (e.g. but not limited to designation of specific collection points and imposition of different schedule on garbage collection) (W14 and W15; T3)</p> <p>Strict monitoring and implementation of Zoning Ordinance (W9; T1); (W10; T1)</p> <p>Delineate more green spaces to conform world standards and develop more accessible public parks (W9;T1); (W10;T1)</p> <p>Enforcement of zoning regulations and environmental laws (W1-2; T1)</p> <p>Regular conduct/updating of CDRA (W21; T1)</p> <p>Secure permeable surfaces/pavement and enhance sustainable urban drainage system (W6,W9; T1)</p> <p>Streamline land acquisition process for settlement and housing programs (W7; T5)</p> <p>Mandatory provision of easement/ riparian zones along rivers and creeks (W2, T1)</p> <p>Intensify promotion of organic farming and full enforcement of Organic Ordinance (W11; T7)</p>

Vision, Mission and Goals

In this planning period 2019-2028, Davao City is conscious of the need to pursue climate change adaptation and disaster resiliency. The proposed land uses and sectoral studies are integrated with the results of the Climate and Disaster Risk Assessment. The local government also targets to achieve an improved economic growth without compromising the environment and culture in the city. Results of the vision reality gap¹ also showed that the city already achieved what was envisioned in the previous planning period. Below are the new vision, mission, goals and objectives:

Vision

Davao City is a globally livable regional center and a center of excellence in governance, investment, tourism, climate change adaptation, disaster resiliency, and sustainable growth driven by an empowered citizenry.

Mission

- Ensure effective and efficient delivery of services through responsive leadership and competent human resources.
- Sustain the gains by ensuring that the people of Davao are empowered, protected, secured, and gender and culturally sensitive to attain the best quality of life.
- Continue to engage participative citizenry in resource-based, market-driven economic activities within the context of balanced ecology, and equity-led development.
- Develop a progressive and future-proof network of infrastructure, utilities, and support services.
- Maintain a disaster-resilient, climate change-adaptive, and ecologically balanced environment through ridge-to-reef approach, proper solid waste management, preservation of natural environment, promotion of renewable energy, and adoption of low carbon and eco-friendly technologies.
- Promote more and better opportunities and services in the city for its residents, and for non-residents coming from nearby cities and urban areas, so that as a Metropolitan center in the Davao Region, they can attain gainful living and well-rounded human development.

Goals

Davao City ensures full compliance and implementation of the goals and objectives set forth in the succeeding items to attain efficiency and effectiveness in management and operation of city government affairs. All these efforts will redound to, and reflect, the desired state of excellence in governance.

Below are the goals per sector:

¹See annex on the results of vision reality gap as an output of the workshop

Social Sector

The social sector targets to:

- Support healthy households/families through increased access to sustainable health services;
- Ensure quality education for continuing individual and societal development;
- Maintain the improved living condition of households;
- Ensure access of the needy, disadvantaged members of society to services of the government for an improved quality of life and increased community participation;
- Deliver responsive protective services;
- Sustain environmental sanitation;
- Promote healthy environment conducive to adoption of active lifestyle.

(Note: In the aftermath of the global Covid-19 pandemic, this sector also targets to:)

- ensure compliance to health, security and other protocols to guard against occurrence and sudden surge of infection coming from the same or another disease pandemic;
- Deliver timely financial, food and other critical amelioration assistance to indigent families and families living in blighted communities;
- Identify health services and support mechanism needed during a pandemic, other disasters and calamities;

Economic Sector

- The economic sector aims to collectively contribute to the per capita income through Agriculture, Forestry, Tourism, Industry, and Commerce and Trade.
- Seize opportunity in the development of Halal industry in cognizance of the large tourism market requiring Halal practice in the destination areas.

Infrastructure

The infrastructure sector targets to:

- Build reliable, comfortable, adequate, climate resilient, and disaster-proof infrastructure that will improve the quality of life of our citizenry without compromising the environment
- Identify facilities that may serve other purposes, especially during emergencies and calamities; and to install necessary additional fixtures or retrofitting to allow easier shift of the building or facilities to an emergency use, such as for isolation, evacuation or quarantine
- Improve road access to non-riding pedestrians and residents who opt to promote a “walkable Davao City” and help contribute to lesser carbon footprint, air pollution and healthy lifestyle.

- Improve the connectivity and accessibility factor of the sidewalks and pedestrian facilities.

Ecosystem (Forest, Coastal, Biodiversity)

The sectors involved in natural environment ecosystems aim to:

- Push for stronger protection and conservation of wildlife and its habitat
- Create and recreate green spaces or urban forest to enhance biodiversity conservation;
- Restore and rehabilitate upland forest areas in Davao City;
- Enhance integrated watershed management system;
- Provide conservation incentives in conservation efforts such as forest guarding, biodiversity-friendly enterprises, and eco-cultural tourism; and
- Intensify community education and public awareness.

Special Areas (Ancestral Domain, Heritage Conservation)

The sectors under special areas target to:

- Implement approved Ancestral Domains Sustainable Development and Protection Plan (ADSDPP); and
- Develop and enhance indigenous customs and traditions.

Objectives

below are the objectives per sector:

Social Sector

The social sector's objectives include the need to:

- Establish health facilities in areas where necessary such as health stations, government-owned hospital
- Lower the gap in the need for human resource
- Improve quality of human resources
- Improve access of the community to educational facilities
- Increase literacy rate
- Reduce drop-out rate
- Improve learning conditions
- Strengthen resiliency of communities and institutional structures to the impacts of climate change and disease pandemics
- Reduce housing backlog annually
- Undertake enabling skills training for livelihood development within relocation areas
- Craft the City Shelter Plan to avoid unwarranted densities, lack of buffer, easements and open spaces
- Establish facilities to increase access of clients to particular services
- Sustain programs and empowerment interventions that increase participation of dis-

- advantaged persons and other vulnerable population
- Increase personnel engaged in protective services
- Increase awareness among personnel of their health and safety, specially during calamities and pandemics
- Upgrade equipment, vehicles, and facilities
- Enhance personnel capacity
- Fortify capability of the government to comply with the Ecological Solid Waste Management Ordinance
- Improve water quality
- Improve air quality, which results to clean and healthy urban environment
- Improve sports and recreational facilities
- Increase access to sports and recreational facilities
- Practice proper use of government facilities for sports activities/purposes

Economic Sector

The objectives of the economic sector are the following:

Agriculture

- Establish nurseries with climate-resilient seedlings
- Build resilient infrastructure/facilities (dikes and canals with water catchment system)
- Evaluate agricultural lands for reclassification

Forestry

- Enforce strictly the Watershed Management Code
- Intensify the protection of the dipterocarps from any form of destruction
- Expand the coverage of National Greening Program

Tourism

- Retrofit existing tourist establishments
- Limit tourism activities/development in hazard-prone areas
- Coordinate with the Department of Tourism and private sectors to identify areas for culinary tourism
 - Require and monitor beach resorts to put up Waste Water Treatment Facilities (WWTF) Amend Sec.4.2 of the Zoning Ordinance and designate another sub-zone for Chinatown development
 - Designate Barangay Malagos and Marilog Proper as expanded tourism zone and eco-tourism area
 - Establish community-based village museum for traditions and culture
 - Promote Halal industry to activate the 2010 city ordinance and entice more travelers from Islamic countries to come to Davao City

Commerce and Trade

- Spread growth centers in Second and Third Districts
- Improve/modernize urban public transport system

- Pursue transportation-oriented development/mixed-used development

Industry

- Set up industrial parks away from dwelling units
- Provide incentives to non-pollutant industries

Infrastructure

Below are the objectives of the infrastructure sector:

Bridges

- Retrofit and rehabilitate the 14 existing national bridges, which are vulnerable, or have high susceptibility to potential hazards that may affect the structure
- Increase the adaptive capacity of future construction of bridges especially within those areas that have been found vulnerable, or have high susceptibility to potential hazards

Roads

- Surface improvement increase the elevations of roads and rehabilitate the drainage systems within the 6.0784 km road length which have high vulnerability to flooding that may affect the road network
- Surface improvement increase the adaptive capacity and mitigated measures of the 12.6707 km road length, which are either vulnerable or have high risk to landslide that may affect the road network
- Increase the adaptive capacity of future construction of roads especially within those areas that have been found with high risk for potential hazards
- Improve walkability of certain roads and highways by establishing appropriate side-walks for walking pedestrians.

Power and Information and Communication Technology

- Retrofit and rehabilitate three (3) power substations considered moderately at risk to flooding to mitigate potential hazards to the structure
- Retrofit and rehabilitate 22 cell sites considered moderately at risk to flooding to mitigate potential hazards to the structure
- Retrofit and rehabilitate 14 cell sites considered moderately at risk to landslide to mitigate potential hazards to the structure
- Retrofit and rehabilitate four (4) cell sites considered moderately vulnerable to landslide to mitigate potential hazards to the structure
- Retrofit and rehabilitate three (3) cell sites considered moderately vulnerable to storm surge to mitigate potential hazards to the structure
- Retrofit and rehabilitate four (4) cell sites considered moderately vulnerable to liquefaction to mitigate potential hazards to the structure
- Monitor regularly the status of land use classification

Water

Level 3 Water System

- Install disaster mitigating measures to reduce damage to 97.14 meters of DCWD main-

lines moderately vulnerable to earthquake

- Increase adaptive capacity of some 15,809 meters mainlines in high risk areas of flooding. Also increase adaptive capacity of 7,392 meters of pipes within areas with moderate risk of flood
- Increase adaptive capacity of some 4,941 meters mainline pipes in high risk areas of landslide, due to occasional/ frequent likelihood of occurrence. Also increase adaptive capacity of 1715.76 meters of pipeline in moderate risk areas of landslide
- Build hazard resilient infrastructure to protect 1,398.02 meters pipelines in areas moderately vulnerable to flood; 1702.4 meters mainline with moderate vulnerability to storm surge; and 55,667.14 meters mainlines, which have moderate vulnerability to liquefaction

Level 2 Water System

- Install disaster resilient features to eight (8) wells and spring source found in high risk of flood; 29 spring by gravity source and a well which is in high risk of landslide; 101 spring source found to be highly vulnerable to landslide; two (2) wells moderately vulnerable to storm surge; one (1) well highly vulnerable to earthquake; 233 water sources moderately vulnerable to earthquake

Level 1 Water System

- Install disaster resilient features to 29 spring by gravity source and one (1) deep well in high risk of flood; 49 spring by gravity source and 5 deep well in moderate risk of flood ; 35 spring source are in high risk of landslide; 83 spring by gravity source moderately vulnerable to flood; 90 spring by gravity and wells highly vulnerable to landslide
- Install disaster resilient features 90 spring by gravity source and wells with moderately vulnerable to liquefaction; 51 spring by gravity source which are highly vulnerable to storm surge and 39 which are vulnerable to moderate storm surge

Ecosystem

The following are the objectives of the sector under natural environment ecosystem:

- Enhance and promote the protection and preservation of the flora, fauna and the entire biodiversity ecosystem
- Ensure protection and preservation of biodiversity species

Special Areas

The objectives of the sectors under special areas include the need to:

- Preserve and nurture the integrity of the ancestral domain
- Ensure preservation of indigenous peoples' cultural heritage
- Protect customs, traditions and historical sites

Scalogram

A Scalogram is an analysis tool that shows centrality of settlements (barangays), with centrality determined by the presence of functions/facilities and its ability to provide goods and services to adjacent, surrounding areas.

An analysis of the Scalogram helps determine the adequacy of services and facilities in the area as well.

The succeeding 16 tables will show the presence of the various functions used in the Scalogram in the 11 political districts as well as in the 182 barangays, as annexed.

Based on the ranking results, the city's settlement pattern is categorized in a hierarchy of growth areas, the major, minor, emerging, and satellite growth areas. This will be discussed in the succeeding section.

The variables/functions used are the following: education, health and social welfare, commerce, finance, agriculture, animal husbandry, sports and recreation, religious institutions, protective services, housing, administrative services, solid waste drainage, power and water supply, communication, transportation, and organizations.

1.) Education

The political districts of Poblacion, Talomo, and Toril all share the top spot in terms of the highest number of educational institutions, while Buhangin and Bunawan are in joint fourth spot, and Calinan and Agdao in the sixth and seventh rank, respectively.

Present in the Poblacion area are prime educational institutions such as the Ateneo de Davao University, the University of the Immaculate Concepcion, the University of Mindanao, San Pedro College, Davao Medical School Foundation, Holy Cross of Davao College, and a number of technical and vocational schools.

Table – 64. Centrality of Index in Education

Political District	Popula-tion	Education												Rank
		Daycare	Pre-School	Elemen-tary	High School	ALIVE	IPED	College/Universi-ties	Senior High School	Madras-ah	Special School	Technical - Vocation School	Centrali-ty Indices	
Poblacio n	174,121	0.581	1.449	0.629	0.971	5.263	3.571	2.632	1.111	4.348	3.704	3.125	2.489	1st
Talomo	418,615	0.581	1.449	0.629	0.971	5.263	3.571	2.632	1.111	4.348	3.704	3.125	2.489	1st
Agdao	102,267	0.581	1.449	0.629	0.971	5.263	0.000	2.632	1.111	0.000	3.704	3.125	1.770	7th
Buhangin	293,118	0.581	1.449	0.629	0.971	5.263	0.000	2.632	1.111	4.348	3.704	3.125	2.165	4th
Bunawan	152,102	0.581	1.449	0.629	0.971	5.263	0.000	2.632	1.111	4.348	3.704	3.125	2.165	4th
Paquiba-to	44,763	0.581	1.449	0.629	0.971	0.000	3.571	0.000	1.111	4.348	0.000	0.000	1.151	11th
Toril	148,522	0.581	1.449	0.629	0.971	5.263	3.571	2.632	1.111	4.348	3.704	3.125	2.489	1st
Tugbok	121,334	0.581	1.449	0.629	0.971	0.000	0.000	2.632	1.111	0.000	3.704	3.125	1.291	10th
Baguio	33,873	0.581	1.449	0.629	0.971	0.000	3.571	2.632	1.111	0.000	3.704	0.000	1.332	9th
Marilog	52,201	0.581	1.449	0.629	0.971	5.263	3.571	0.000	1.111	4.348	0.000	0.000	1.629	8th
Calinan	92,075	0.581	1.449	0.629	0.971	0.000	3.571	2.632	1.111	4.348	3.704	3.125	2.011	6th
Total Centrali-ty	-	100	100	100	100	100	100	100	100	100	100	100	-	-
Total No. of Func-tions	-	172	69	159	103	19	28	38	90	23	27	32	-	-
Weights	-	0.581	1.449	0.629	0.971	5.263	3.571	2.632	1.111	4.348	3.704	3.125	-	-

2.) Health and Social Welfare

Talomo tops the list in terms of presence of health and social welfare services such as primary and secondary hospitals, orphanage, health centers, and home for the aged, all serving a population of 418,615. This district is the most populated area among the 11 political districts.

Buhangin district comes second followed by Tugbok in the third spot with Poblacion, Toril and Calinan in joint fourth spot.

Table – 65. Centrality of Index in Health and Social Welfare

Political District	Population	Health and Social Welfare													Rank
		Primary Hospitals	Secondary Hospitals	Tertiary Hospital	Evacuation Center	Social Welfare	Orphanage	Health Centers	Private Clinics	Rehabilitation Centers	Home for the Aged	Senior Citizen Center	Cemetery	Centrality Indices	
Poblacion	174,121	4.762	9.091	12.500	1.818	10.000	0.000	0.592	2.083	0.000	0.000	0.000	3.226	3.673	4th
Talomo	418,615	4.762	9.091	0.000	1.818	10.000	100.000	0.592	2.083	0.000	12.500	0.000	3.226	12.006	1st
Agdao	102,267	4.762	9.091	0.000	1.818	10.000	0.000	0.592	2.083	0.000	0.000	0.000	0.000	2.362	8th
Buhangin	293,118	4.762	9.091	12.500	1.818	10.000	0.000	0.592	2.083	25.000	12.500	0.000	3.226	6.798	2nd
Bunawan	152,102	4.762	0.000	0.000	1.818	0.000	0.000	0.592	2.083	0.000	0.000	0.000	3.226	1.040	9th
Paquibato	44,763	4.762	0.000	0.000	1.818	0.000	0.000	0.592	0.000	0.000	0.000	0.000	3.226	0.866	10th
Toril	148,522	4.762	9.091	0.000	1.818	10.000	0.000	0.592	2.083	0.000	12.500	0.000	3.226	3.673	4th
Tugbok	121,334	4.762	9.091	0.000	1.818	10.000	0.000	0.592	2.083	25.000	12.500	0.000	3.226	5.756	3rd
Baguio	33,873	4.762	0.000	0.000	0.000	0.000	0.000	0.592	0.000	25.000	0.000	0.000	3.226	2.798	7th
Marilog	52,201	0.000	0.000	0.000	1.818	0.000	0.000	0.592	0.000	0.000	0.000	0.000	3.226	0.470	11th
Calinan	92,075	4.762	9.091	0.000	1.818	10.000	0.000	0.592	2.083	0.000	12.500	0.000	3.226	3.673	4th
Total Centrality	-	100	100	100	100	100	100	100	100	100	100	0	100	-	-
Total No. of Functions	-	21	11	8	55	10	1	169	48	4	8	0	31	-	-
Weights	-	4.762	9.091	12.500	1.818	10.000	100.000	0.592	2.083	25.000	12.500	0.000	3.226	-	-

3.) Commerce

The political districts of Poblacion, Talomo, Agdao, and Buhangin come first in terms of the number of establishments which spur economic activity (Table SC – 3b). This includes public markets, drugstores, retail stores, supermarket and food chains, to cater to a population of 102,267.

Toril, Calinan, and Bunawan districts occupy fifth to seventh spots.

Table – 66. Centrality of Index in Commerce

Political District	Popula-tion	Commerce												
		Shopping Centers	Super-market	Public Market	Appli-ance Stores	Funeral Parlor	Ware-house	Special-ized Shops	Drug-stores	Lodging Houses	Conven-ience Stores	Food Chains	Sari-Sari Stores	Chamber of Com-merce
Poblacion	174,121	7.143	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Talomo	418,615	7.143	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Agdao	102,267	7.143	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Buhangin	293,118	7.143	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Bunawan	152,102	0.000	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Paquiba-to	44,763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.549	0.000
Toril	148,522	7.143	3.846	3.704	0.000	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Tugbok	121,334	0.000	3.846	3.704	2.381	0.000	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Baguio	33,873	0.000	0.000	0.000	0.000	0.000	0.000	0.000	1.887	0.000	0.000	0.000	0.549	0.000
Marilog	52,201	0.000	0.000	0.000	0.000	0.000	0.000	1.389	0.000	0.000	0.000	0.000	0.549	0.000
Calinan	92,075	0.000	3.846	3.704	2.381	7.692	0.000	1.389	1.887	1.961	1.449	2.000	0.549	0.000
Total Centrality	-	100	100	100	100	100	100	100	100	100	100	100	100	0
Total No. of Func-tions	-	14	26	27	42	13	64	72	53	51	69	50	182	0
Weights	-	7.143	3.846	3.704	2.381	7.692	1.563	1.389	1.887	1.961	1.449	2.000	0.549	0.000

Table – 66. Centrality of Index in Commerce

Political District	Population	Commerce								
		Restaurants	Talipapa	Wellness Centers	Laundry Shops	Water Refilling Stations	Gasoline Stations	Couriers	Centrality Indices	Rank
Poblacion	174,121	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.520	1st
Talomo	418,615	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.520	1st
Agdao	102,267	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.520	1st
Buhangin	293,118	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.520	1st
Bunawan	152,102	0.000	2.703	1.852	1.299	3.333	2.500	1.538	2.082	7th
Paquibato	44,763	0.000	2.703	0.000	0.000	0.000	0.000	0.000	0.163	10th
Toril	148,522	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.401	5th
Tugbok	121,334	1.613	2.703	1.852	1.299	3.333	0.000	1.538	1.653	8th
Baguio	33,873	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.122	11th
Marilog	52,201	1.613	2.703	0.000	0.000	0.000	0.000	0.000	0.313	9th
Calinan	92,075	1.613	2.703	1.852	1.299	3.333	2.500	1.538	2.085	6th
Total Centrality	-	100	100	100	100	100	100	100	-	-
Total No. of Functions	-	62	37	54	77	30	40	65	-	-
Weights	-	1.613	2.703	1.852	1.299	3.333	2.500	1.538	-	-

4.) Finance

Ranked first with the most number of financial institutions are barangays Poblacion, Talomo, Agdao, Buhangin, Toril and Calinan. Located in the Poblacion area is the branch office of the Bangko Sentral ng Pilipinas, along with branches of various major banking institutions which main offices are located in the capital city of Manila.

Spread across these six (6) districts are pawnshops, lending institutions, rural banks, and ATMs, which serve a total combined population of 1,288,718.

Table – 67. Centrality of Index in Financial Institutions

Political District	Population	Financial Institutions							Rank
		Commercial Banks	Rural Banks	Credit Cooperative	Lending Institutions	Pawnshops	ATM	Centrality Indices	
Poblacion	174,121	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Talomo	418,615	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Agdao	102,267	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Buhangin	293,118	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Bunawan	152,102	3.226	0.000	5.882	5.556	2.273	1.538	3.079	7th
Paquibato	44,763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10th
Toril	148,522	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Tugbok	121,334	0.000	2.703	5.882	5.556	2.273	1.538	2.992	8th
Baguio	33,873	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10th
Marilog	52,201	0.000	0.000	0.000	0.000	2.273	0.000	0.379	9th
Calinan	92,075	3.226	2.703	5.882	5.556	2.273	1.538	3.530	1st
Total Centrality	-	100	100	100	100	100	100	-	-
Total No. of Functions	-	31	37	17	18	44	65	-	-
Weights	-	3.226	2.703	5.882	5.556	2.273	1.538	-	-

5.) Agriculture

Bunawan, Toril, Tugbok, and Marilog top the list in terms of agricultural offices, facilities, and services. Baguio comes next while Talomo and Calinan come in sixth place.

These four (4) districts host warehouses, demonstration plots, small-scale storage, and storage and processing facilities, among others.

Table – 68. Centrality of Index in Agriculture

Political District	Population	Agriculture								Rank
		Municipal Agricultural Offices	Storage and Processing Facilities	Cooperative Supply Centers	Small Scale Storage Facilities	Demonstration Plots	Agriculture Supplies	Food Terminal/ Trading Post	Centrality Indices	
Poblacion	174,121	0.000	2.128	0.000	0.000	0.000	0.000	5.882	1.144	10th
Talomo	418,615	12.500	2.128	3.571	0.000	5.882	1.493	5.882	4.494	6th
Agdao	102,267	0.000	2.128	0.000	0.000	0.000	1.493	5.882	1.358	9th
Buhangin	293,118	12.500	2.128	0.000	6.667	5.882	1.493	5.882	4.936	5th
Bunawan	152,102	12.500	2.128	3.571	6.667	5.882	1.493	5.882	5.446	1st
Paquibato	44,763	0.000	2.128	3.571	6.667	5.882	1.493	0.000	2.820	8th
Toril	148,522	12.500	2.128	3.571	6.667	5.882	1.493	5.882	5.446	1st
Tugbok	121,334	12.500	2.128	3.571	6.667	5.882	1.493	5.882	5.446	1st
Baguio	33,873	12.500	2.128	3.571	6.667	5.882	0.000	5.882	5.233	4th
Marilog	52,201	12.500	2.128	3.571	6.667	5.882	1.493	5.882	5.446	1st
Calinan	92,075	12.500	2.128	3.571	0.000	5.882	1.493	5.882	4.494	6th
Total Centrality	-	100	100	100	100	100	100	100	-	-
Total No. of Functions	-	8	47	28	15	17	67	17	-	-
Weights	-	12.500	2.128	3.571	6.667	5.882	1.493	5.882	-	-

6.) Animal Husbandry

Baguio district comes first with the most number of services, facilities in relation to animal husbandry, where a major dairy processing center and a research and experimental station and artificial insemination facility are located, among others.

Talomo ranks second with the presence of livestock farms, research and experimental station and marketing and transport facilities with Calinan coming in third with the slaughterhouses, cold storage, and livestock farms too.

Veterinary clinics are found in all of the eleven (11) political districts.

Table – 69. Centrality of Index in Animal Husbandry

Political District	Population	Animal Husbandry									Centrality Indices	Rank
		Research and Experimental Station	Veterinary Clinics	Slaughterhouses and Cold Storage	Marketing and Transport Facilities	Artificial Insemination	Vaccination Services	Dairy Processing Center	Livestock Farm			
Poblacion	174,121	16.667	6.250	0.000	3.448	0.000	10.000	0.000	0.000	4.546	4th	
Talomo	418,615	16.667	6.250	5.882	3.448	0.000	10.000	0.000	2.703	5.619	2nd	
Agdao	102,267	0.000	6.250	0.000	3.448	0.000	10.000	0.000	0.000	2.462	11th	
Buhangin	293,118	0.000	6.250	5.882	3.448	0.000	10.000	0.000	2.703	3.535	5th	
Bunawan	152,102	0.000	6.250	0.000	3.448	0.000	10.000	0.000	2.703	2.800	10th	
Paquibato	44,763	16.667	6.250	0.000	0.000	0.000	0.000	0.000	0.000	2.865	9th	
Toril	148,522	0.000	6.250	5.882	3.448	0.000	10.000	0.000	2.703	3.535	5th	
Tugbok	121,334	0.000	6.250	5.882	3.448	0.000	10.000	0.000	2.703	3.535	5th	
Baguio	33,873	16.667	6.250	0.000	3.448	100.000	10.000	11.111	2.703	18.772	1st	
Marilog	52,201	0.000	6.250	5.882	0.000	0.000	10.000	0.000	2.703	3.104	8th	
Calinan	92,075	0.000	6.250	5.882	3.448	0.000	10.000	11.111	2.703	4.924	3rd	
Total Centrality	-	100	100	100	100	100	0	100	100	-	-	
Total No. of Functions	-	6	16	17	29	1	10	9	37	-	-	
Weights	-	16.667	6.250	5.882	3.448	100.000	0.000	11.111	2.703	-	-	

7.) Sports and Recreation

With the most number of sports and recreation facilities, Poblacion district again tops the list as it is where most of the hotels, restaurants, cinemas are located. It also hosts the city’s public library.

Talomo, Buhangin and Toril rank second, third, and fourth respectively. Spread across these areas are gymnasiums, cockpits, basketball and volleyball courts, as well as resorts.

Table – 70. Centrality of Index in Sports and Recreation

Political District	Population	Sports and Recreation									
		Hotels	Sports Complex	Cultural Centers/Theaters	Cinemas	Parks and Open Spaces	Discotheque/Videoke Bars	Restaurants	Cockpit	Gymnasium/Auditorium	Amusement Centers
Poblacion	174,121	1.887	0.000	0.000	16.667	10.000	0.000	1.408	0.000	8.333	33.333
Talomo	418,615	1.887	0.000	0.000	16.667	10.000	0.000	1.408	20.000	8.333	33.333
Agdao	102,267	1.887	0.000	0.000	16.667	0.000	0.000	1.408	20.000	0.000	0.000
Buhangin	293,118	1.887	0.000	0.000	16.667	0.000	0.000	1.408	20.000	8.333	33.333
Bunawan	152,102	0.000	0.000	0.000	0.000	0.000	0.000	1.408	0.000	0.000	0.000
Paquibato	44,763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Toril	148,522	1.887	0.000	0.000	16.667	10.000	0.000	1.408	20.000	8.333	0.000
Tugbok	121,334	0.000	0.000	0.000	0.000	10.000	0.000	1.408	0.000	8.333	0.000
Baguio	33,873	0.000	0.000	0.000	0.000	0.000	0.000	1.408	0.000	0.000	0.000
Marilog	52,201	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Calinan	92,075	0.000	0.000	0.000	16.667	10.000	0.000	1.408	20.000	8.333	0.000
Total Centrality	-	100	0	0	100	100	0	100	100	100	100
Total No. of Functions	-	53	0	0	6	10	0	71	5	12	3
Weights	-	1.887	0.000	0.000	16.667	10.000	0.000	1.408	20.000	8.333	33.333

8.) Religious Institutions

Both Poblacion and Calinan rank first in terms of the presence of religious institutions serving a total combined population of 266,196. The San Pedro Cathedral is located at the heart of the city and is considered to be one of the oldest churches in Mindanao.

A number of temples, mosques and chapels are found in these two districts, followed by Agdao in the third place, then by Talomo, Buhangin, Bunawan, Paquibato, Toril, Tugbok in descending order.

Table – 71. Centrality of Index in Religious Institutions

Political District	Population	Religious Institutions				Centrality Indices	Rank
		Church/ Cathedrals	Mosques	Temples	Chapels		
Poblacion	174,121	1.124	2.222	25.000	0.926	7.318	1st
Talomo	418,615	1.124	2.222	0.000	0.926	1.068	4th
Agdao	102,267	1.124	0.000	25.000	0.926	6.762	3rd
Buhangin	293,118	1.124	2.222	0.000	0.926	1.068	4th
Bunawan	152,102	1.124	2.222	0.000	0.926	1.068	4th
Paquibato	44,763	1.124	2.222	0.000	0.926	1.068	4th
Toril	148,522	1.124	2.222	0.000	0.926	1.068	4th
Tugbok	121,334	1.124	2.222	0.000	0.926	1.068	4th
Baguio	33,873	1.124	0.000	0.000	0.926	0.512	11th
Marilog	52,201	1.124	2.222	0.000	0.000	0.836	10th
Calinan	92,075	1.124	2.222	25.000	0.926	7.318	1st
Total Centrality	-	100	100	100	100	-	-
Total No. Of Functions	-	89	45	4	108	-	-
Weights	-	1.124	2.222	25.000	0.926	-	-

9.) Protective Services

The top two districts with the most number of protective services are Talomo and Buhangin, which also happen to have the most number of inhabitants – 418,615 and 293,118 respectively. Present in these areas are police headquarters, police stations, security and detective agencies among others.

The City’s Central 911 station, one of the pioneering projects of the city governments, is hosted by Talomo district.

Table – 72. Centrality of Index in Protective Services

Political District	Population	Protective Services											Rank
		Police Head-quarters	City Jail	Judiciary Court	Police Stations	Fire Stations	Police Outpost	Security And Detective Agencies	911 Stations	Check-points	Task Force Davao Head-quarters	Centrality Indices	
Poblacion	174,121	33.333	0.000	0.000	5.263	10.000	0.000	3.125	0.000	3.704	0.000	5.543	5th
Talomo	418,615	0.000	100.000	100.000	5.263	10.000	0.000	3.125	33.333	3.704	0.000	25.543	1st
Agdao	102,267	0.000	0.000	0.000	5.263	0.000	16.667	3.125	0.000	3.704	25.000	5.376	6th
Buhangin	293,118	33.333	0.000	0.000	5.263	10.000	16.667	3.125	33.333	3.704	0.000	10.543	2nd
Bunawan	152,102	0.000	0.000	0.000	5.263	10.000	16.667	3.125	0.000	3.704	25.000	6.376	4th
Paquibato	44,763	0.000	0.000	0.000	5.263	0.000	0.000	0.000	0.000	3.704	0.000	0.897	9th
Toril	148,522	0.000	0.000	0.000	5.263	10.000	0.000	3.125	0.000	3.704	25.000	4.709	8th
Tugbok	121,334	33.333	0.000	0.000	5.263	10.000	0.000	0.000	0.000	3.704	0.000	5.230	7th
Baguio	33,873	0.000	0.000	0.000	5.263	0.000	0.000	0.000	0.000	3.704	0.000	0.897	9th
Marilog	52,201	0.000	0.000	0.000	5.263	0.000	0.000	0.000	0.000	3.704	0.000	0.897	9th
Calinan	92,075	0.000	0.000	0.000	5.263	10.000	0.000	0.000	33.333	3.704	25.000	7.730	3rd
Total Centrality	-	100	100	100	100	100	100	100	100	100	100	-	-
Total No. Of Functions	-	3	1	1	19	10	6	32	3	27	4	-	-
Weights	-	33.333	100.000	100.000	5.263	10.000	16.667	3.125	33.333	3.704	25.000	-	-

10.) Housing

Talomo district tops the list again in terms of the housing services present. The area is host to socialized housing projects, Slum Improvement Resettlement (SIR) program, relocation, Urban Land Reform Program (ULRP), Gawad Kalinga/cooperative housing, condominiums and high-end subdivisions, while Poblacion comes second with all the other services present, except for high-end subdivisions, which are mostly present in Buhangin and Toril districts.

Table – 73. Centrality of Index in Housing

Political District	Population	Housing									
		Socialized Housing	SIR Projects	Relocation	ULRP	Economic Housing	Gawad Kalinga/ Cooperative Housing	Condominiums	High-End Subdivisions c/o maam ann orilla	Centrality Indices	Rank
Poblacion	174,121	1.852	9.091	7.692	3.448	0.000	14.286	5.882	3.448	5.712	3rd
Talomo	418,615	1.852	9.091	7.692	3.448	3.571	14.286	5.882	3.448	6.159	1st
Agdao	102,267	1.852	9.091	7.692	3.448	0.000	14.286	5.882	3.448	5.712	3rd
Buhangin	293,118	1.852	0.000	7.692	3.448	3.571	0.000	5.882	3.448	3.237	7th
Bunawan	152,102	1.852	9.091	7.692	3.448	3.571	14.286	0.000	3.448	5.424	5th
Paquibato	44,763	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10th
Toril	148,522	1.852	9.091	7.692	3.448	3.571	0.000	0.000	3.448	3.638	6th
Tugbok	121,334	1.852	9.091	7.692	3.448	3.571	14.286	5.882	3.448	6.159	1st
Baguio	33,873	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	10th
Marilog	52,201	0.000	0.000	0.000	0.000	0.000	14.286	0.000	0.000	1.786	8th
Calinan	92,075	1.852	0.000	0.000	3.448	0.000	0.000	0.000	0.000	0.663	9th
Total Cen-	-	100	100	100	100	100	100	100	100	-	-
Total No. of	-	54	11	13	29	28	7	17	29	-	-
Weights	-	1.852	9.091	7.692	3.448	3.571	14.286	5.882	3.448	-	-

11.) Administrative Services

In terms of administrative services, the following should be present in the districts: national government services, barangay hall offices, city/district offices, tribal hall, and other multi-purpose buildings.

Baguio district is ranked first while Talomo, Buhangin and Tugbok came second.

Table – 74. Centrality of Index in Administrative Services

Political District	Population	Administrative Services						Centrality Indices	Rank
		National Government Services	Barangay Hall Offices	City/District Offices	Tribal Hall	Multi-Purpose Buildings			
Poblacion	174,121	3.030	0.549	0.000	0.000	1.042	0.924	10th	
Talomo	418,615	3.030	0.549	8.333	0.000	1.042	2.591	2nd	
Agdao	102,267	3.030	0.549	8.333	0.000	0.000	2.383	4th	
Buhangin	293,118	3.030	0.549	8.333	0.000	1.042	2.591	2nd	
Bunawan	152,102	3.030	0.549	8.333	0.000	0.000	2.383	4th	
Paquibato	44,763	0.000	0.549	8.333	0.000	0.000	1.777	9th	
Toril	148,522	0.000	0.549	8.333	0.000	1.042	1.985	6th	
Tugbok	121,334	3.030	0.549	8.333	0.000	1.042	2.591	2nd	
Baguio	33,873	0.000	0.549	8.333	100.000	1.042	21.985	1st	
Marilog	52,201	0.000	0.549	8.333	0.000	1.042	1.985	6th	
Calinan	92,075	0.000	0.549	8.333	0.000	1.042	1.985	6th	
Total Centrality	-	100	100	100	100	100	-	-	
Total No. of Functions	-	33	182	12	1	96	-	-	
Weights	-	3.030	0.549	8.333	100.000	1.042	-	-	

12.) Solid Waste and Drainage

On the top of the list with the most number of solid waste and drainage facilities is Tugbok district , where the city’s sanitary landfill is currently located. Three (3) districts are in the second spot – Buhangin, Bunawan, Marilog and six (6) districts on the third spot – Poblacion, Talomo, Agdao, Toril, Baguio and Calinan.

Table – 75. Centrality of Index in Solid Waste and Drainage

Political District	Population	Solid Waste And Drainage					Centrality Indices	Rank
		Sewerage and Drainage System	Sanitary Landfill	Material Recovery Facility	Composting Facility	Sewerage Treatment Plant/ Water Treatment Facility		
Poblacion	174,121	0.885	0.000	4.167	0.000	0.000	1.010	5th
Talomo	418,615	0.885	0.000	4.167	0.000	0.000	1.010	5th
Agdao	102,267	0.885	0.000	4.167	0.000	0.000	1.010	5th
Buhangin	293,118	0.885	0.000	4.167	16.667	0.000	4.344	2nd
Bunawan	152,102	0.885	0.000	4.167	16.667	0.000	4.344	2nd
Paquibato	44,763	0.000	0.000	4.167	0.000	0.000	0.833	11th
Toril	148,522	0.885	0.000	4.167	0.000	0.000	1.010	5th
Tugbok	121,334	0.885	100.000	4.167	16.667	0.000	24.344	1st
Baguio	33,873	0.885	0.000	4.167	0.000	0.000	1.010	5th
Marilog	52,201	0.885	0.000	4.167	16.667	0.000	4.344	2nd
Calinan	92,075	0.885	0.000	4.167	0.000	0.000	1.010	5th
Total Centrality	-	100	100	100	100	0	-	-
Total No. Of Functions	-	113	1	24	6	0	-	-
Weights	-	0.885	100.000	4.167	16.667	0.000	-	-

13.) Power and Water Supply

Toril and Baguio are the top two (2) districts with the presence of piped water supply, power supply connection, communal water source and renewable energy.

Third in rank are Paquibato and Marilog districts, followed by five (5) districts follow namely – Talomo, Buhangin, Bunawan, Tugbok, and Calinan.

Table – 76. Centrality of Index in Power and Water Supply

Political District	Population	Power and Water Supply							Centrality Indices	Rank
		Piped Water Supply	Power Supply Connection	Rural Electrification	Individual Generator	Communal Water Source	Renewable Energy			
Poblacion	174,121	0.952	0.556	0.000	0.000	0.000	0.000	0.251	10th	
Talomo	418,615	0.952	0.556	0.000	0.000	1.282	0.000	0.465	5th	
Agdao	102,267	0.952	0.556	0.000	0.000	0.000	0.000	0.251	10th	
Buhangin	293,118	0.952	0.556	0.000	0.000	1.282	0.000	0.465	5th	
Bunawan	152,102	0.952	0.556	0.000	0.000	1.282	0.000	0.465	5th	
Paquibato	44,763	0.000	0.556	0.000	0.000	1.282	6.250	1.348	3rd	
Toril	148,522	0.952	0.556	0.000	0.000	1.282	6.250	1.507	1st	
Tugbok	121,334	0.952	0.556	0.000	0.000	1.282	0.000	0.465	5th	
Baguio	33,873	0.952	0.556	0.000	0.000	1.282	6.250	1.507	1st	
Marilog	52,201	0.000	0.556	0.000	0.000	1.282	6.250	1.348	3rd	
Calinan	92,075	0.952	0.556	0.000	0.000	1.282	0.000	0.465	5th	
Total Centrality	-	100	100	0	0	100	100	-	-	
Total No. of Functions	-	105	180	0	0	78	16	-	-	
Weights	-	0.952	0.556	0.000	0.000	1.282	6.250	-	-	

14.) Communication

For presence of telephone services and print and broadcast media, Poblacion district tops the list, where offices of major local dailies, radio stations and regional stations of major television networks are located. Agdao district is second for telephone services, while Talomo is second for print and broadcast media.

Cable TV services are mostly found in Poblacion, Talomo, Agdao and Buhangin.

Table – 77. Centrality of Index in Communication

Political District	Population	Communication								
		Post Office	Telephone Services	Cellular Sites	Internet Services/ Café	Print and Broadcast Media	Handheld Radio	Cable TV	Centrality Indices	Rank
Poblacion	174,121	11.111	14.286	1.163	1.282	14.286	0.000	11.111	7.605	1st
Talomo	418,615	11.111	0.000	1.163	1.282	14.286	0.000	11.111	5.565	2nd
Agdao	102,267	0.000	14.286	1.163	1.282	0.000	0.000	11.111	3.977	3rd
Buhangin	293,118	0.000	0.000	1.163	1.282	0.000	0.000	11.111	1.937	4th
Bunawan	152,102	11.111	0.000	1.163	1.282	0.000	0.000	0.000	1.937	4th
Paquibato	44,763	0.000	0.000	1.163	0.000	0.000	0.000	0.000	0.166	10th
Toril	148,522	11.111	0.000	1.163	1.282	0.000	0.000	0.000	1.937	4th
Tugbok	121,334	11.111	0.000	1.163	1.282	0.000	0.000	0.000	1.937	4th
Baguio	33,873	0.000	0.000	1.163	1.282	0.000	0.000	0.000	0.349	9th
Marilog	52,201	0.000	0.000	1.163	0.000	0.000	0.000	0.000	0.166	10th
Calinan	92,075	11.111	0.000	1.163	1.282	0.000	0.000	0.000	1.937	4th
Total Centrality	-	100	100	100	100	100	0	100	-	-
Total No. of Functions	-	9	7	86	78	7	0	9	-	-
Weights	-	11.111	14.286	1.163	1.282	14.286	0.000	11.111	-	-

15.) Transportation

Buhangin district has the highest centrality index in terms of presence of transportation service. The area hosts the Davao International Airport; as well as the Sasa port, which houses cargoes from various areas in Mindanao as well as in the EAGA region. Coming in second is Talomo district with the most number of pedestrian overpasses. Third in rank is Poblacion having the most number of terminals.

Table – 78. Centrality of Index in Transportation

Political District	Population	Transportation										Rank
		Airport/Air Strips	Pier	Bridges	Service Stations	Terminals	Pedestrian Overpasses	Bus Stations	Roads	Tramline	Centrality Indices	
Poblacion	174,121	0.000	50.000	0.000	4.000	11.111	5.882	0.000	0.556	0.000	11.925	3rd
Talomo	418,615	0.000	0.000	1.471	4.000	0.000	5.882	100.000	0.556	0.000	18.651	2nd
Agdao	102,267	0.000	0.000	0.000	4.000	0.000	5.882	0.000	0.556	0.000	1.740	6th
Buhangin	293,118	100.000	50.000	1.471	4.000	0.000	5.882	0.000	0.556	0.000	26.985	1st
Bunawan	152,102	0.000	0.000	1.471	0.000	0.000	5.882	0.000	0.556	0.000	1.318	7th
Paquibato	44,763	0.000	0.000	1.471	0.000	0.000	0.000	0.000	0.556	0.000	0.338	9th
Toril	148,522	0.000	0.000	1.471	0.000	11.111	5.882	0.000	0.556	0.000	3.170	4th
Tugbok	121,334	0.000	0.000	1.471	0.000	11.111	5.882	0.000	0.556	0.000	3.170	4th
Baguio	33,873	0.000	0.000	1.471	0.000	0.000	0.000	0.000	0.556	0.000	0.338	9th
Marilog	52,201	0.000	0.000	1.471	0.000	0.000	0.000	0.000	0.556	0.000	0.338	9th
Calinan	92,075	0.000	0.000	1.471	4.000	0.000	0.000	0.000	0.556	0.000	1.004	8th
Total Centrality	-	100	100	100	100	100	100	100	100	0	-	-
Total No. of Functions	-	1	2	68	25	9	17	1	180	0	-	-
Weights	-	100.000	50.000	1.471	4.000	11.111	5.882	100.000	0.556	0.000	-	-

16.) Organizations

Toril district has the most number of professional, civic, religious, and political organizations as well as farmers associations. Tied for second place are Talomo and Buhangin, while Poblacion takes the fourth spot. Political and civic organizations abound in the city as they are present in all of the districts.

Table – 79. Centrality of Index in Organization

Political district	Population	Organization							Rank
		Professional Organization	Civic Organization	Religious Organization	Sports Association	Farmers' Association	Political Organizations	Centrality Indices	
Poblacion	174,121	20.000	2.564	0.000	0.000	0.000	0.549	3.852	4th
Talomo	418,615	20.000	2.564	0.000	0.000	4.348	0.549	4.577	2nd
Agdao	102,267	0.000	2.564	0.000	0.000	0.000	0.549	0.519	9th
Buhangin	293,118	20.000	2.564	0.000	0.000	4.348	0.549	4.577	2nd
Bunawan	152,102	0.000	2.564	0.000	0.000	4.348	0.549	1.244	5th
Paquibato	44,763	0.000	2.564	0.000	0.000	0.000	0.549	0.519	9th
Toril	148,522	0.000	2.564	100.000	0.000	4.348	0.549	17.910	1st
Tugbok	121,334	0.000	2.564	0.000	0.000	4.348	0.549	1.244	5th
Baguio	33,873	0.000	2.564	0.000	0.000	4.348	0.549	1.244	5th
Marilog	52,201	0.000	2.564	0.000	0.000	0.000	0.549	0.519	9th
Calinan	92,075	0.000	2.564	0.000	0.000	4.348	0.549	1.244	5th
Total Centrality	-	100	100	100	0	100	100	-	-
Total No. of Functions	-	5	39	1	0	23	182	-	-
Weights	-	20.000	2.564	100.000	0.000	4.348	0.549	-	-

Existing and Proposed Settlement Pattern

The previous section on the Scalogram helps determine the political districts with the most and least number of functions/facilities present. Result of the ranking will determine the hierarchy of settlement of the city which are as follows:

Major Growth Centers

These areas are characterized by the presence of key administrative offices and services, regional offices of national agencies, tertiary health and education institutions, processing and marketing, with the highest number of facilities, utilities, tourism facilities, comprehensive shopping. Major growth centers generate the highest employment opportunities and host facilities for information, communications and technology, particularly the BPO industry. At the same time they serve as center for commerce, conventions, leisure and recreation, sports and cultural development.

Development plans for these growth areas should give special attention to urban greening, recreational open spaces, pocket parks and parking facilities.

Below are the existing major growth centers in Davao City and their main features and opportunities:

a.) Agdao

Agdao district is closest to Poblacion and currently hosts the most number of commercial establishments in the city. It serves as the primary supplier of workers for the CBD and is home to some of the biggest shopping malls in the city, which is expected to spur more commercial activities in the area.

Business and commercial establishments, mostly in wholesale and retail trade, currently hire 33,989 employees.

b.) Buhangin

Buhangin, the second populous political district with 293,118 population, is primarily a residential and commercial area.

Subdivision projects and commercial establishments continue to sprout in the area owing partly to its proximity to the Davao International Airport. It is also traversed by the Philippine-Japan Friendship Highway that connects the national highway from the south and the north part of the city and is connected to Bunawan by a provincial or alternative road.

The wholesale and retail trade sub-sector generates the most number of employment with 32,760 workers recorded in 2018.

c.) Poblacion

Poblacion is the major center for education, financial institutions, sports, leisure and

recreation, religious institutions and communication. It also generates the biggest employment opportunities in the city.

It is the major host of facilities that provide information communication technology services, the business process outsourcing industry in particular and is the prime meeting place and cultural focus for the people of Davao City, Region XI and Mindanao.

Commercial and residential use will continue, and expansion will mainly be vertical in nature.

Of the 431,861 workers across different economic activities in Davao City in 2018, some 34.36%, or one third, are employed in different establishments in the Poblacion District.

d.) Talomo

This area tops the list as the most populated political district in the city, with 418,615 residents. It is also host to educational institutions and residential projects with a close proximity to the city center. Eco-tourism may be developed in areas in Langub and Magtuod, which can accommodate low impact activities such as hiking and biking.

Matina Aplaya is identified as among the biodiversity areas, being the sanctuary of different species of turtles and birds. Mangroves are also planted, propagated and protected along the coastal barangays to serve as breeding ground for fishes.

Economic activities in the area are mostly in wholesale and retail trade and employ a total of 92,445, according to the 2018 record of the Business Bureau.

Minor Growth Centers

Minor growth centers serve as hosts to medium scale urban amenities and facilities which are commercial, tourism and/or industrial in nature. There shall be presence of institutional facilities to include secondary or tertiary schools, hospitals, integrated food and transport terminals.

These are mainly production areas and are connected to each other by major roads to ensure efficient flow of people and goods.

Minor growth areas play hosts to complementary support services and facilities which may not be necessarily present in and serve as expansion areas of the major growth areas. Services present in minor areas serve those in the lower order centers.

Below are the existing minor growth centers in Davao City:

a.) Bunawan

This political district is designated as the city's main center for light to heavy industries, which are the main source of employment of the residents in the area.

In 2018, the number of industrial employees totaled 24,099, which may still potentially increase as industrial locators expand in the area.

b.) Toril

Toril can easily serve as the city's alternate central business district with a full range of facilities present. Agri-industrial activities abound in the area as it is the site of dressing plants and a mango-processing plant. Toril is where consolidated and semi-processed products from Marilog and Paquibato are transported to the processing plants. The political district also serves as drop-off area for other products coming from Region 12 and the Bangsamoro Autonomous Region for Muslim Mindanao (BARMM).

Toril also hosts the city's fish port, coal-fired power plant and Davao Food Terminal Complex.

The presence of two (2) shopping malls, Gaisano Mall Toril and Gaisano Grand Mall Toril, and industries such as Aboitiz Power and Interbev Philippines Inc. help generate employment in the area.

c.) Tugbok

Tugbok is considered as a residential, institutional and administrative area. It serves as the center of other higher level educational institutions and bio-technology research and development facility for Mindanao and the EAGA, with the presence of an experimental station and laboratory of the Department of Agriculture and the University of the Philippines MINDANAO campus.

This area is booming with residential projects and commercial establishments while farmlands abound in the area to supply the food requirements of the entire city.

The area also highlights its tourism potential with the presence of a wakeboard park, organic farm and restaurant, cave rock resort, and flower garden.

Located in the district is the Ohta Kyuzaburo Monument, one of the three heritage sites in the city that have been identified by the National Historical Commission of the Philippines (NHCP). It is inside the grounds of the Mintal Elementary School.

The Mindanao Science Centrum is also situated in the area which can be utilized for tourism and educational purposes.

Emerging Growth Centers

Emerging growth centers are considered to be transition barangays from satellite to minor growth center and are able to provide services to lower order centers.

There is a presence of economic catalyzers as well as other facilities. And there is adequate

linkage to the minor growth centers.

Below is the existing emerging growth center in Davao City:

a.)Calinan

Calinan is mainly an agri-industrial area where agricultural products from Marilog, Paquibato, and Baguio, and even from some barangays of North Cotabato and Bukidnon provinces are consolidated and processed.

It also serves as center for trade and services contributing to the economic growth of the area and consequently, generating employment opportunities. This is the fruit and vegetable- producing district of the city.

Business Bureau records show that 12,251 or 3.33% of the city's total number of employees come from this district.

The Tamugan river, which traverses Barangay Lacson, will be the future main source of the city's potable water requirement. The project is being undertaken by the Apo Agua Bulk Water of the Aboitiz Group.

Satellite Growth Centers

Satellite growth centers will be primarily agriculture-based production areas to serve as the city's sources of food supply as well as inputs for the food-processing industries.

These areas complement the city's tourism thrust through agri-tourism activities, and some portion of these areas, which are forest and forestland, can be promoted as nature-based tourism destinations.

The city will ensure protection of its critical areas through its policies and programs (e.g. Conservation Areas, Forest Cover, NIPAS).

The indigenous peoples are considered to be the major partners in the protection as well as the development of these areas. Mostly present in these areas are primary health care services and sari-sari stores (small retail stores). New road systems shall connect these areas to each other and to the minor and major growth areas.

Below are the existing satellite growth centers in Davao City:

a.)Baguio

Baguio district is classified as forest protection area owing to its location of being a part of the Mt.Apo National Park. Its tourism potential is brought about by the presence of a garden resort which houses a pineapple and animal production center, chocolate museum, chocolate and durian processing facility and a bamboo sanctuary resort.

It is also home to various flora and fauna species and is a watershed area, with the famous Philippine Eagle on top of the list. The Philippine Eagle Center is established here for scientific research on one of the globally famous, but endangered eagles.

Also present in the area is a farm with a processing facility for cassava, corn and dairy as well as a privately-owned farm planted with bananas, vegetables, cutflowers, fruit trees and cacao.

The district will continue to develop its agriculture sector providing the inputs for food processing industries both in Calinan and Toril areas.

Contributing to employment generation in the area is the presence of big plantations including contract growers' farms for brands such as Dole Philippines and Sumifru.

b.)Marilog

Marilog district, along with Paquibato, is designated as a focus area for agro-forestry development programs and upland agricultural development and will continue to be a major production area of the city.

Agri-forests will be encouraged and planting of permanent crops in the area is promoted to help stabilize the slopes and prevent further soil erosion. Permanent crops such as durian, coffee, cacao, rubber, banana and coconut will be prioritized in the area.

This place currently contributes to the city's tourism thrust via its river rafting. Two of its barangays, Baganihan and Datu Salumay, will be promoted as ecological and cultural tourism sites.

c.)Paquibato

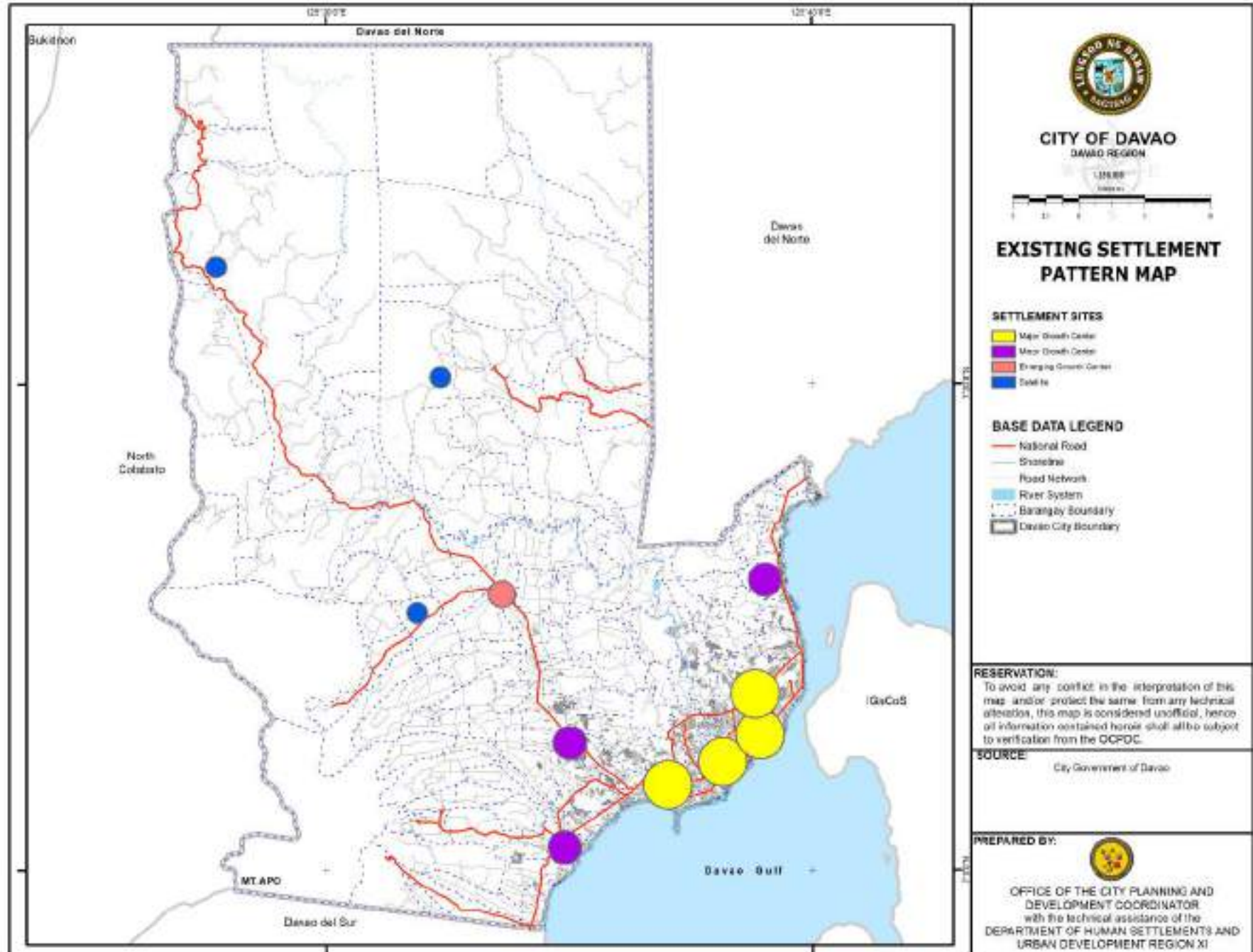
The district with its potential as a major agriculture production area serves as supplier of food and agricultural products for the processing plants in Bunawan and Toril.

Permanent crops like rubber, durian, cacao, coffee and banana are priority agro-forestry crops grown in the area.

Table – 80. Existing Settlement Pattern, Davao City

Settlement Pattern	Existing (by Political District)
Major Growth Centers	Agdao,Buhangin, Poblacion,Talomo
Minor Growth Centers	Bunawan Toril Tugbok
Emerging Growth Centers	Calinan
Satellite Growth Centers	Baguio Marilog Paquibato

Map 4.1 Existing Settlement Pattern Map, Davao City, 2018



Proposed Settlement Pattern

Table – 81. Proposed Settlement Pattern, Davao City, 2019-2028

Settlement Pattern	Proposed (by Political District)
Major Growth Centers	Poblacion, Talomo, Agdao, Buhangin, Toril
Minor Growth Centers	Tugbok, Bunawan
Emerging Growth Center	Calinan
Satellite Growth Centers	Baguio, Marilog, Paquibato

The succeeding descriptions below explain the proposed settlement pattern per political district in Davao City by 2019 to 2028 as listed in the table above (Table SP – 2).

Major Growth Centers

a.)Agdao

The district will continue to accommodate the city’s growing need for commercial businesses and establishments. Its proximity to the Poblacion makes it an easy expansion area for the Central Business District, while still ensuring a steady source of human power for labor.

b.)Buhangin

The rising demand for more residential and commercial spaces will be accommodated in this area. It will also host facilities for information, communication and technology.

However, density control should be enforced such that concerns on availability of water in the area will be addressed.

An integrated transport terminal and a modern cargo distribution complex comprising of various warehouses and office facilities will be built in the area as indicated in the Infrastructure Modernization for Davao City (IM4 Davao).

c.)Poblacion

The future growth of the Poblacion will primarily be characterized by vertical expansion as it will remain to be the central venue for major events and conferences, host to prime educational institutions, commerce and financial institutions, as well as for sports and recreation.

Urban renewal will likely take place with the promotion of more green spaces. Vertical residential development will continue to be built in the area.

For the city to be a viable service and investment center for the EAGA, the Poblacion's capacity must be enhanced to enable it to offer a wider range of urban facilities and amenities. Special attention shall be given to recreational open spaces, civic center, pocket parks, parking facilities and other related uses.

To establish good and efficient traffic network, ease of movement, as well as proximate access from the residence to shopping centers and markets, the city will craft a transit-oriented development for both Poblacion and the suburbs. This development design will have the amenities located nearby or around train stations, bus stations and monorail transit stations. Shopping malls have their own van terminals already to ensure easy access to this particular transport mode.

This design is especially applicable to the main highways going to the central business district. Along MacArthur Highway are the presence of several secondary and tertiary schools and shopping malls. The same situation can be obtained in the J.P. Laurel Avenue, the national highway going north, where it will connecting to the Sasa Wharf. The design will approximate the possibility of a walking distance in getting to and from destinations.

Also in this district is the Sta Ana Wharf. Its conversion to an eco-tourism port complex as envisioned in the Infrastructure Modernization for Davao City (IM4Davao) shall further encourage economic activities in the area.

d.) Talomo

Talomo has been identified as an area for residential expansion, with sections of the district designated as commercial and as coastal rehabilitation, protected area.

e.) Toril

Toril will serve as an expansion for residential use while it currently enjoys the presence of almost all functions/facilities necessary to serve its residents and those in its adjacent areas.

A train station will be built in the area, in Crossing Bayabas, as part of the Mindanao Railway Project (MRP), from Tagum in the north of Davao, to Digos in the south of the city. It will also serve as an entry point of the bypass highway from Sirawan to Panabo City as envisioned in the IM4Davao.

Its potential in agri-industrial use will continue to be promoted.

It will also be a home to the Farm/Agri-tourism Circuit, IT parks/center, and the Kadawayan Cultural Village within the 10.2 hectares government property in Eden, all envisioned in the Davao City Infrastructure Development Plan and Capacity Building Project (IM4Davao).

Minor Growth Centers

a.) Bunawan

The area will be the city's main industrial center and the host to industries ranging from light to heavy.

In relation to the MRP project, a train station will be built in the area and should further strengthen support for economic activity in the immediate surrounding community.

A processing plant for cardava banana will also be built as envisioned in the IM4 Davao.

b.) Tugbok

It is envisioned that the area will be home to a world-class sports complex that is capable of accommodating local as well as international sports events. In the area will soon rise a rehabilitation center/facility and the proposed national government center.

A proposed heritage conservation area called Little Tokyo will soon be established in the district to preserve that era of partnership between the Filipinos and Japanese. The Madayaw Dabaw Station, as cited in the IM4 Davao, will also be located in the proposed development site.

The city's sanitary landfill site located in this district will undergo rehabilitation to strengthen its capacity for solid waste management.

A processing plant for cardava banana flour will soon rise in the area.

Emerging Growth Centers

a.) Calinan

The agri-industrial potential of Calinan will continue to be enhanced as products from nearby districts and areas will be packaged and processed in facilities here.

As most of Calinan is agricultural, it will remain as the city's main food basket with the abundance of its vegetables and fruits.

Satellite Growth Centers

a.) Baguio

Over the years Baguio district witnessed the steady growth of Barangay Malagos as an eco-tourism destination.

While the district is booming owing to the growth of one of its barangays, Barangay Malagos, with the presence of a dairy processing facility, a very restrictive and regulated development plan will be encouraged in the area as it is the city's main surface water source, a watershed area and a protected zone.

b.)Marilog

Marilog district will be a major agriculture production area of the city and because it is also abundant with a lush forest vegetation, development of agri-forests will be encouraged to plant permanent crops. These crops will help stabilize the slopes and prevent further soil erosion. Permanent crops such as durian, coffee, cacao, rubber, banana and coconut will be prioritized in the area.

Tourism potential of two (2) of its barangays, Baganihan and Datu Salumay, will be promoted through nature-based and cultural tourism.

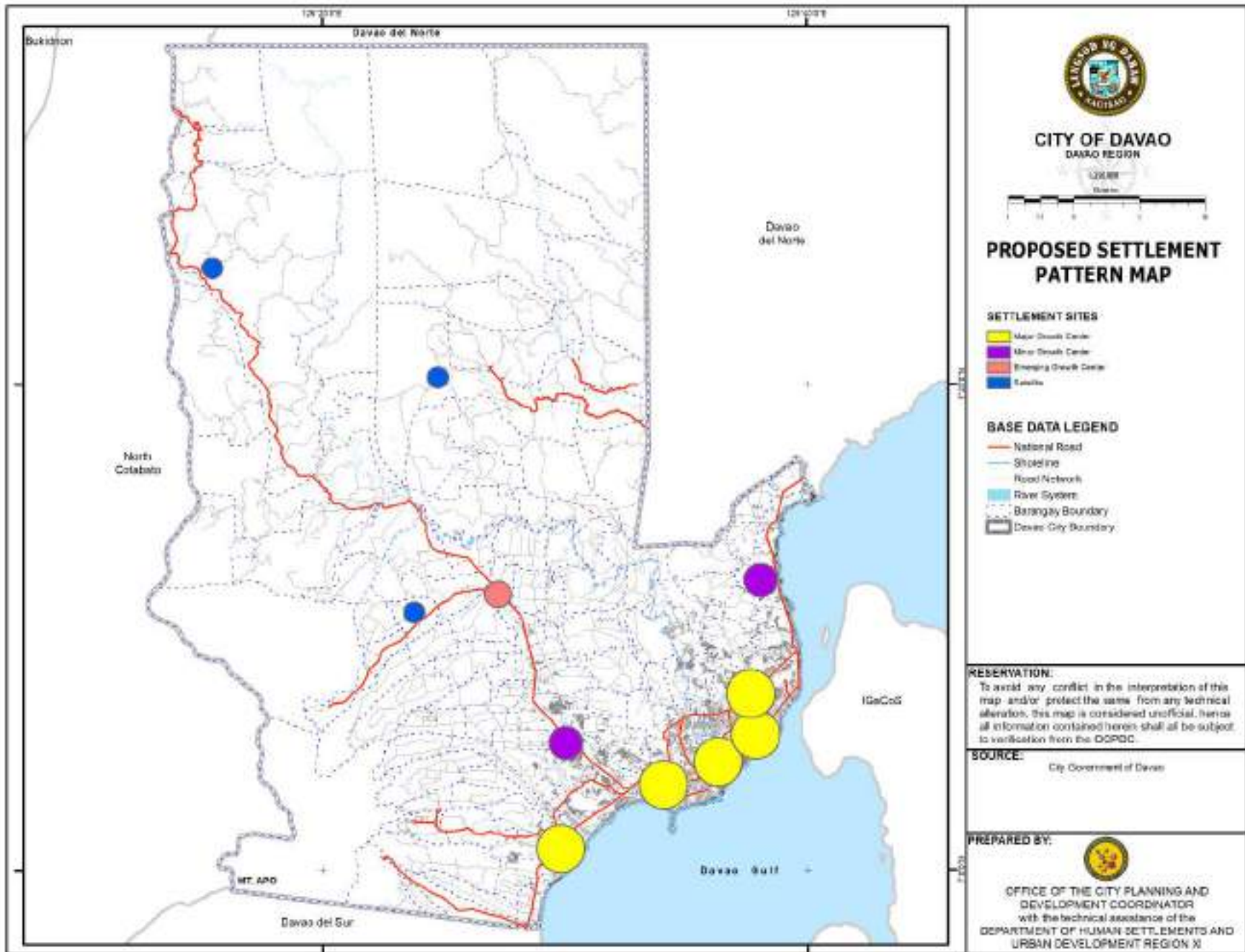
c.)Paquibato

Along with neighboring Marilog, Paquibato district will further develop its potential as a major agriculture production area and serve as supplier of food and agricultural products for the processing plants in Bunawan and Toril.

Agro-tourism shall be encouraged in the area. Permanent crops like rubber, durian, cacao, coffee and banana will be prioritized as agro-forestry crops. Road systems that will connect Paquibato district to Calinan and Buhangin districts will be built to facilitate easy transport of farm produce to the local markets.

Forest protection areas will be developed here. Its potential also lies with developing eco-tourism sites but mitigation and protection works have to be instituted due to the vulnerability of the place to landslide and flood and other hazard.

Map 4.2 Proposed Settlement Pattern Map, Davao City, 2019-2028



THE LAND USE PLAN

Rationale

The Comprehensive Land Use Plan embodies the physical development framework, the development principles and policies of the city. It seeks to accomplish the following:

- Contribute to the realization of city’s vision to be a globally livable city and a center of excellence in governance, investment, tourism, climate change adaptation, disaster resiliency, resource conservation and protection and sustainable growth driven by empowered citizenry.
- Map out the overall development strategies in attaining economic growth by becoming a well-planned investment center in Mindanao, EAGA, and the Asia Pacific economic region;
- Manage the land use sector of the city in the next nine (9) years (2020– 2028) and ensure sustainable and balanced development;
- Plan and implement the much-needed climate change resilient major infrastructure projects such as roads, communications services, power stations support facilities and utilities, with their functions defined and ideal locations identified;
- Provide development strategies and framework policies that would enhance current efforts to restore damaged natural resources and ensure optimum utilization of the city’s natural resources such as space as well as adapt measures to mitigate effects of climate change;
- Promote a sustainable environment, healthy populace, clean city, peaceful/crime free place; and
- Take account of the dynamic interrelationships between people, resources, and environment and achieve a dynamic, balance among the three.

In formulating the updated comprehensive land use plan, many factors are taken into consideration such as: (existing land use, natural hazards)

- Davao City’s role as socio-economic center
- Human need for food, shelter and work
- Basic needs like food and the attending effect on existing agricultural land
- Impact of land usage on people as identified in the framework of human needs
- Impact of climate change and incorporating and mitigating measures
- Hazardous areas predisposed to flooding, landslide, and risks
- Increasing influx of domestic and foreign tourists and its consequence on the natural habitat of flora and fauna

- Increasing demand for industrial, commercial, agricultural, residential and ICT services/and products
- Existing and future transport system

Objectives:

It is the city's objective to:

- Build a globally competitive and vibrant city
- Create a sustainable environment where areas for human activities are contained and concentrated
- Establish an attractive and lively city that is connected and easily accessible
- Transform into a city that is highly-resilient to climate change with reduced vulnerability to disaster

Methodology

The Land Use Plan evolved as a result of the integrated analyses of data relevant to slope and drainage patterns, conservation areas like Network of Prime Agricultural Areas for Development (NPAAD) and Strategic Agriculture and Fisheries Development Zone (SAFDZ), National Integrated Protected Areas System (NIPAS), Comprehensive Agrarian Reform Program (CARP), water and sewer availability, geohazard, soil characteristics, vegetation cover, the spatial distribution of population, social services and economic activities, the location and characteristics of transportation and utility networks, current land use patterns, land values, and existing zoning configurations.

a.) Research and Surveys

Information is being obtained through existing tabular statistics thematic and derivatives maps, aerial satellite photos and actual field verifications and observations conducted by the City Planning team itself. Secondary data essential in the thorough analysis of the existing situation in the physical sector included demographic data such as population profiles and projections from which can be inferred trends in population growth movement, population densities per specific area, economic base rate of urbanization, etc. Maps and aerial photos, on the other hand, provided, information on built up areas.

b.) Workshops

Series of workshops were conducted by the Technical Working Group (TWG) which was constituted to primarily lead the process of drafting the CLUP. The TWG is composed of representatives from various government offices along with other stakeholders coming from the civil society, business sector and with the Office of the City Planning and Development Officer acting as the Secretariat.

The workshops conducted were as follows: a.) Module 1: Workshop for the Preparation of Risk-Sensitive Comprehensive Land Use Plan and Zoning Ordinance of Davao City; 2.)

Module 2: Sectoral Studies for the Comprehensive Land Use Plan Revision of Davao City 2018-2027; c.) Module 3: Existing Land Use, Ecosystem Analysis and Special Concern on Comprehensive Land Use Plan Revision of Davao City for 2018-2027; d.) Module 4: Climate and Disaster Risk Assessment for the Comprehensive Land Use Plan Revision of Davao City for 2018-2027; e.) Module 4-A: Preparation of a Climate and Disaster Risk Sensitive Land Use Plan Seminar/Workshop on Comprehensive Land Use Plan Revision of Davao City for 2018-2027; f.) Module 4-B: Seminar Workshop on Comprehensive Land Use Plan and Zoning Ordinance Revision of Davao City for 2018-2027.

c.) Focus Group Discussions

A number of focus group discussions (FGD) were also facilitated by the TWG to re-validate data generated in the various workshop processes.

The Housing and Land Use Regulatory Board (HLURB) on the other hand ably assisted the TWG in all the workshops, data review and analysis, and have made themselves available for meetings and consultations in the entire crafting process of the CLUP.

Planning Considerations

a.) Population Projection

The city's population is expected to be on a steady rise as it rides on steady favorable reviews and assessment of its liveability and attraction as the preferred alternative destination for residential, business, rest and recreation and professional national and regional conferences.

With 2015 as the base year, the population of the three (3) congressional districts is projected to reach 2,194,659 by 2028 - 796,608 from 592,736 for District 1; 795,955 from 592,250 for District 2; and 602,096 from 448,005 for District 3.

b.) Functional Role of the City in Relation to the Region

When fully developed, Davao City could serve as a center for manufacturing and services for the EAGA economic influence area with special reference to Indonesia, Malaysia, Brunei, Papua New Guinea, Guam, Australia, and New Zealand.

The Philippine Development Plan envisions the City as the metropolitan center in Mindanao. Being a premier city in the south, it is designated as the priority area for investment and location for the dispersal of commerce and industries. The rationale behind is to achieve a balanced development and promote regional equity in the country.

As the regional capital of Region XI and Mindanao, the City of Davao serves as the center of services, education, recreation, commerce, and industry in the area. It is also the center of transportation and communication in the region.

c.) Development Constraints

In determining the city's land use, certain limitations were taken into consideration such that proper segregation of land will be observed and implemented as well as working parameters in designating land uses are established. These considerations are enumerated below.

- On top of the list is forest and forestland. This covers an area of 126,933.87 hectares areas 1000 meters above mean sea level (mamsl), those having slopes greater than 50%, and closed canopy forest.
- A total of 11,322.21 hectares is under the National Integrated Protected Areas System (NIPAS) which covers a section of Mt. Apo National Park in Toril bordering Davao del Sur and Malagos Watershed in Baguio District.
- An area of 54, 271.71 hectares account for the Strategic Agriculture and Fisheries Development Zone (SAFDZ).
- A critical watershed area which include areas considered critical in the replenishment of the city's groundwater source. This has a total area of 6,501.77 hectares.
- The Department of Agriculture Region XI's Davao Region Central Experiment Station (DARCES) in Manambulan, Tugbok district comprises 50.77 hectares, while lands covered by the Comprehensive Agrarian Reform Program (CARP) comprise 82 hectares.
- Irrigated and irrigable lands in both parts of Calinan and Tugbok cover 726.30 hectares, while a total of 29,739.78 hectares of land has a slope of 18% or higher in alienable and disposable lands .
- An area of 91.58 hectares are within a fault line.
- A total of 1,542.03 hectares are for easement along banks of waterways in urban, agricultural, forest and conservation areas as well as foreshore areas of the seas, lakes and similar bodies of water.
- Wetlands which serve as catchment basin cover a total land area of 6.88 hectares.
- High risk to flood areas cover 5,685.89 hectares while high risk to landslide areas total 3,677.87 hectares.
- Built up areas cover 12,544.61 hectares.
- Waterways cover 998.47 hectares

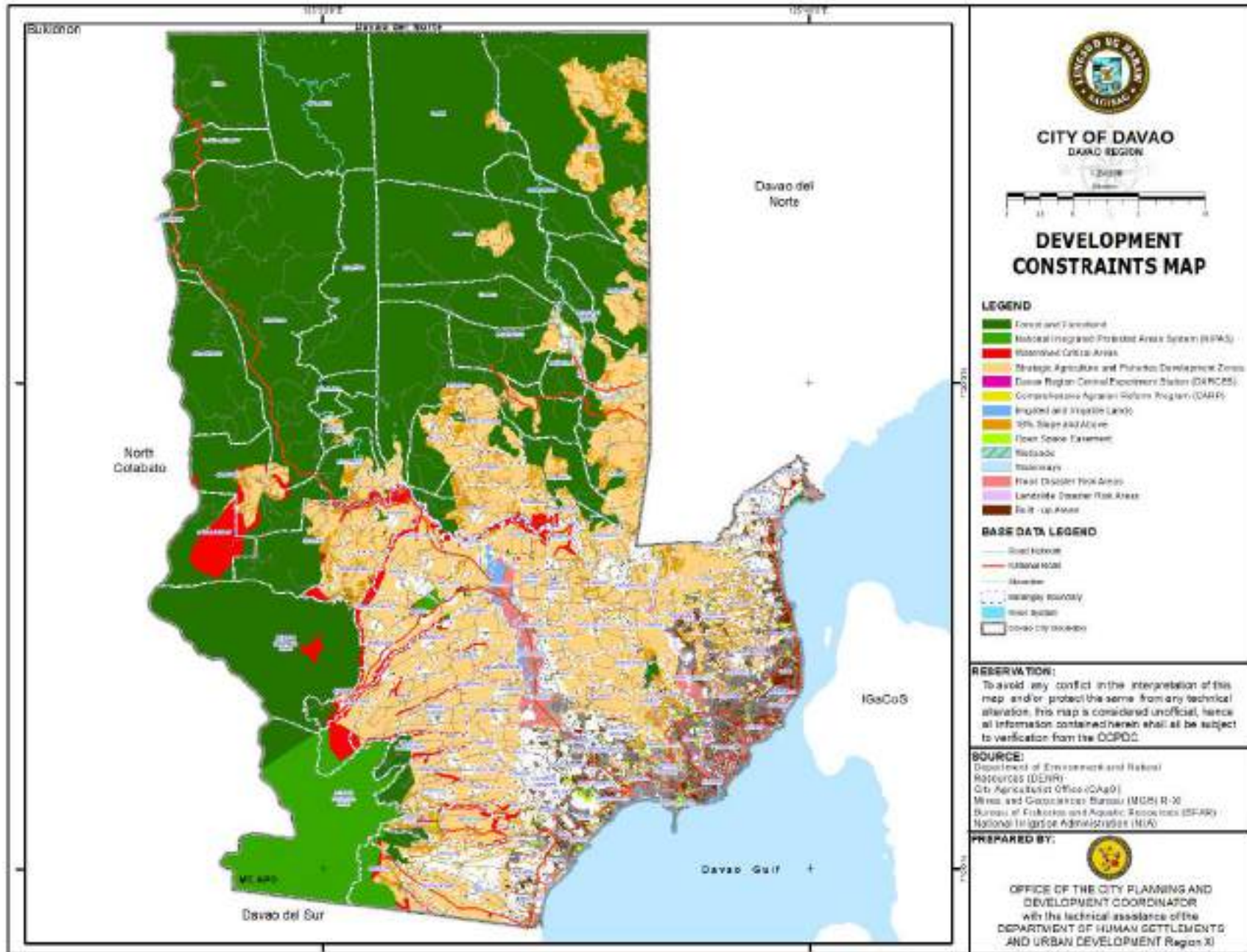
Table – 82. Development Constraints, Davao City

Development Constraints	Area (has)	Source
Forest and Forest Land	126,933.87	DENR
National Integrated Protected Areas System (NIPAS) Malagos Protected Landscape MANP	11,322.21	DENR
Strategic Agriculture and Fisheries Development Zone (SAFDZ)	54,271.71	DA-BSWM
Critical Watershed	6,501.77	
DARCES	50.77	DA
Comprehensive Agrarian Reform Program (CARP)	82.00	DAR
Irrigated and Irrigable lands	726.30	NIA
Slope 18% above (outside forest and forestland)	29,739.78	DENR
Fault line	91.58	MGB
Easement	1,542.03	
Wetlands	6.88	DENR
High Risk to Flood Areas	5,685.89	MGB
High Risk to Landslide Areas	3,677.87	MGB
Built-up areas	12,544.61	DENR
Waterways	998.47	DENR
Total Development Constraints Area	239,502.04	

Source: Department of Environment and Natural Resources XI, National Irrigation Authority XI, Department of Agrarian Reform XI, City Agriculturist's Office, Office of the City Planning and Development Office

*The total area reflected is the sum of all the development constraints with some overlapping such as SAFDZ with DARCES, CARP, irrigated areas; slope with landslide; NIPAS and Forest and Forestland

Map 5. Development Constraints Map



Land Use Issues/Problems

There are issues that impact in determining the city’s land use which may be man-made or brought about by natural hazards.

The Biophysical Environment Matrix below shows an enumeration of these issues and the suggested ways forward to avoid negative implications if not responded to appropriately.

Analysis of Biophysical Environment Matrix

MAPS OVERLAYED	ISSUES/CONCERNS	EXPLANATION	IMPLICATION/S WHEN UNRESOLVED	INTERVENTIONS/ RECOMMENDATIONS
Storm Surge Map	Coastal communities at high risk	Located near the coast	Loss of lives	Mangrove rehabilitation and planting
	Power plant at risk		Power loss	Expansion of Coastal Road
Liquefaction/ Fault	Existing subdivisions affected by hazards	Existing Subdivisions in the area	Loss of lives	Regulate development in hazard areas
	Existing condominiums/high-rise buildings		Loss of properties	Strict structural design requirements
CADT/Forest Lands	Unregulated development (tourism)	For agri-production	Environmental degradation	(FLUP) CO-MANAGEMENT AGREEMENT
	Selling of rights	--		
	Conversion of resource use (e.g. cultivation/clearing of forest cover)	-For personal/house construction; -For sale (timber)		
Landslide	Ma-a/Shrine Hills on-going development institutions in landslide and flood prone areas	New development in areas	Loss of lives and properties	Mitigating measures (Approved Resolution & Ordinance: -Resolution No. 02434-18, S. of 2018; -Ordinance No. 0557-18, S. of 2018)
Flood	Settlements along flood plains	Low lying areas	Loss of properties/lives	Relocation (ISF in riverbanks)
	Schools (e.g. UM) in very high hazard area	-Existing in flood plains; -Frequent/heavy rains	Loss of properties	-Mitigating measures; -Construction of promenade
	Implementation/monitoring of easement in rivers			Composite team for monitoring
	Inadequate funds for needed mitigating measures (DPWH)			
	Private properties with natural waterways (original or re-routed)			Riverbank protection
	Construction of structures without permit			Composite team for monitoring

MAPS OVERLAYED	ISSUES/CONCERNS	IMPLICATIONS	INTERVENTION/ RECOMMENDATION
Existing Land Use	Quarrying (Mountain mix soils)	-Constricted river/ landslide	Mitigating measures
	Batching plant	-Informal settlers; -School complaints	-Batching plant relocation procedure; -Comply the mitigating measures set by DENR
	Safe con/solid mix/batching plant along slaughterhouse road	-Constricted river	DENR and DPWH intervention
	Desiccated coconut plant	Emitting smoke/odorous smell; Oil spill @ Davao River	DOH-CHO intervention
	Monitoring of existing establishments/projects on its compliance on approved development plans	Violations that can cause pollution and health concerns	Identify responsible committee, team, or agency
	Formal settlement areas located in highly vulnerable flooding areas	Possible loss of lives and properties during disasters	Research Agenda consideration
	Land conversion from production area into commercial, residential, industrial, and other uses and increasing reclassification appeals from APR to non-agricultural use	-Reduction of agri-lands -Insufficient food production -No assurance of tenure for farm individual/ company -Prone to displacement	-SP to pass an ordinance prohibiting APR areas, including livestock, from land classification and strict implementation of ZO on the issuance of permit (LZRC and LZBA)
	Informal settlers/homeowners association application for relocation in APR	Agricultural areas will be affected by housing development -Food security problem	-Strict observance on non-conversion on agri-areas -Tenement building for informal settlers to avoid utilization of APR -LGU to look for appropriate relocation site for housing development
	Environmental health concern issues related to animal waste disposal	-Petitions of nearby communities for farm closure -Economic activity losses -Food security problem	-“Win-win” government intervention (e.g. establishment of common animal waste-to-fertilizer facility under PPP)

Pertinent Government Policies (Laws/Issues)

Policies Affecting Land Uses:

Relevant legislation pertaining to land use planning is also considered in order to attain a harmonious future desirable use of various land uses such as:

- Watershed Code** : The city has passed a watershed code in 2007 identifying protected areas, conservation areas that will limit or prohibit development in areas deemed as critical for aquifer recharging.

- Terrain Analysis Study of Davao City, EO 25 Series of 2005** : The city is currently utilizing the geohazard data obtained from MGB since 2005. This serves as a basis in granting locational clearances and development permits for development in the city.

- Fsiheries Management Code** : An Ordinance No 117-01 in 2008 providing for the sustainable development conservation and management of the fisheries and aquatic resources in the city of Davao.

- Marine Protected Area** : City Ordinance No 0375 in 2000; establishment and management of Davao City Marine Protected Areas

- Solid Waste Management Act of 2003** :

- Ord No 031-07 s. 2007** : Regulation on the Operation of Travel Agencies, Tour Operators and Tour Guides in the City of Davao

- Ord No 1650 s.1994** : Regulating the Operation of Small scale fishing and commercial fishing within the territorial jurisdiction of Davao City waters

- Ord No 170-03 s.2003** : Creation of Chinatown Development Council

- Ord No 441 s.1965** : Regulating the Use of roof gardens of buildings

- Ord No 413 s. 1983** : Requiring owners of commercial buildings in which building permits were issued pursuant to the National Building Code to provide sufficient lighting facilities at the parking lots thereof

- Ord No 999 s.1974** : Prohibiting the construction of houses and/or buildings within the 50-meter distance from the highest tide level along the seashore of Talomo Beach
- Ord No 0280-06 s.2006** : The Anti-Smoke Belching Ordinance: Protection of the air quality of Davao City
- R.A. 6657 (7/26/85)** : Otherwise known as the Comprehensive Agrarian Reform Law of 1988 (CARL) empowers the Department of Agrarian Reform to authorize under certain conditions, the classification or conversion of land is awarded to agrarian reform beneficiaries
- R.A. 7160 (10/10/91)** : Local Government Code of 1991 states that: Subject to applicable laws, rules and regulations , cities and municipalities shall combine to prepare their respective land use plans enacted through zoning ordinances which shall be the primary bases for the future use of land resources
- R.A. 7279** : : Otherwise knows as the Urban Development and Housing Act of 1992 Art IV Section 7 – mandates the various local government units to conduct inventory of lands for socialized housing and their integration into Comprehensive Land Use Plan and Zoning Ordinance of their respective cities and municipalities. This shall adhere to the site criteria: Section 8- Identification of Sites for Socialized Housing and resettlement for the immediate and future needs of the underprivileged and homeless in the urban areas taking into consideration the degree of:
- a. Availability of basic services/facilities
 - b. Accessibility
 - c. Proximity to job sites and economic opportunities
- R.A. 7586** : : Otherwise known as the NIPAS Act- an act providing for the Establishment and Management of National Integrated Protected Areas System in order to maintain the essential ecological processes and the support system to preserve genetic diversity to ensure sustainable use of resources found therein, and to maintain their natural conditions to the greatest extent possible
- P.D. 389** : : Otherwise known as the Forestry Refrom Code authorizes the President of the Philippines by proclamation upon recommendation of the Director to declare all lands of the public domain eighteen percent (18%) in slope or over as permanent forests or forest reserves, regardless of the condition of the vegetation cover, occupancy or use any kind, and thereafter such forest reserves shall not be alienated or disposed of but shall remain in public ownership as such as forest uses

Section 18 : Areas within timber concessions between 18% in slopes which are timbered and/or have adequate residual stocking and presently supporting a processing plant shall not be released as alienable and disposable but shall remain as part of the permanent forest land.

Section 22 : Local government may acquire private or public land for the purposes for establishing a municipal or city forest, tree park, watershed or pasture land

Parcels of land less than 18% in slope and less than 250 hectares, regardless of size which are founded within or surrounded wholly or partly by a body of public forest purposes shall be considered as part thereof.

Areas along streams or rivers maybe utilized as kaingin relocation centers, forest villages. A strip of land 50 meters above normal high water line on each side of rivers and streams which channels less than 5 meters wide shall be retained as permanent forest for streams bank protection. Strips of land, mangrove and swampland not less than 50 meters from the shoreline shall be retained as permanent forest for shoreline protection.

A possession of 30 years or more is needed for existing alienable or disposable lands even if 18% in slope or over but covered by approved public land application, the possession being actual continuous and averse and public.

P.D. 705

: Amends Forestry Reform Code

This provides for system of land classification into agricultural, industrial or commercial, residential settlements, mineral, timber or forest and grazing lands and into such other classes as nor or may hereafter be provided by laws, rules and regulations. Section 15 further states that no land of the public domain 18% in slope or over shall be classified as alienable and disposable nor any forest land 50% or over in slope as grazing land.

P.D. 635

: This amended Section 112 of RA 141, as amended: This section shall now read as follows:

Section 12 : said land shall further be subject to a right of way not exceeding sixty (60) meters in width for public highways, railroads, irrigation, ditches, aqueducts, telegraph and telephone lines and similar works as the government or any public service enterprise, including mining for carrying their business with damages for the improvements only.

Lands eighteen percent (18%) slope or over which have already been declared as alienable and disposable shall be reverted to the

classification of forest lands by the Department Head to form part of the forest reserves unless they are already covered by existing titles or approved public land application or actually occupied publicly for a period of not less than thirty (30) years of the effectivity of this code, where the occupant is qualified for a free patent under the Public Act Land. Provided, that said lands which are not yet part of well-established communities shall be kept in a vegetative condition sufficient to prevent erosion and adverse effects on the lowlands and streams. Provided further, that when public interest so requires, steps shall be taken to expropriate, cancel defective titles, receive public land applications or reject occupants thereof.

Section 16 : Areas needed for forest purposes

The following lands, even if they are below eighteen percent forest purposes, may not, therefore be classified as alienable or disposable land, to wit: areas less than 250 hectares which are far from or are not contiguous with any certified alienable and disposable.

Isolated patches of forest which are at least five (5) hectares with rocky terrain or which protect a spring for communal use.

Areas which have already been forested.

Areas within forest concessions which are timbered or have good residual stocking to support an existing or approved to be established wood processing plant.

Ridge tops and plateaus regardless of size found within by forest lands where headwater emanate.

Appropriately located road right of way.

Twenty meters strips of land along the edge of the normal water line of rivers and streams with channels of at least five (5) meters wide.

Strips of mangroves or swamplands at least twenty (20) meters wide along shoreline facing oceans, lakes and other bodies of water and strips of lands of at least twenty (20) meters facing lakes.

Areas needed for other purposes such as national parks, national historical sites, games and refuges and wildlife sanctuaries, forest station sites and others of public interests; and

Areas previously proclaimed by the President as forest reserves, national parks, game refuge but sanctuaries, national shrines and national heritage sites.

- P.D. 1151** : Philippine Environment Code – mandates the undertaking of environmental impact assessments for all projects which may significantly affect the environment.
- P.D. 1152** : Established specific environment management policies and prescribes environmental quality standards to provide the structure to pursue a comprehensive program on environmental management.
- P.D. 1586** : Establishing an environmental impact statement (EIS) system.
- P.D. 296** : This decree directs all persons, natural or juridical, to renounce possession and move out of portions of rivers, creeks, esteros, drainage channels and other similar waterways and encroached upon by them.
- P.D. 772** : A decree penalizing squatting and other similar acts.
- P.D. 619** : Authorizing the reclassification, reservation and development of public lands such as grazing reserve for large-scale ranching projects.
- P.D. 861** : Authorizing pasture lessees to use their pasture lands for agricultural purpose under certain conditions.
- P.D. 856** : Sanitation Code of the Philippines places responsibility on local government units for the provision of an adequate solid waste disposal system in their areas of jurisdiction.
- P.D. 1067** : Water Code of the Philippines prohibits the introduction of sewage industrial wastes or any substance that may pollute a source of water supply. It also penalizes dumping of mine tailings and sediments into rivers and waterways.

For easement requirements:

Along banks of rivers, streams and other waterways:

1.)The banks of river, streams and other waterways shall have the following easement throughout their entire lengths for maintenance and emergency operation purposes:

For creeks in urban and rural areas and subject to overbank flows a minimum easement of 4.50 meters shall be provided measured from the edge of the existing bank of the improved bank Rivers, esteros and navigated canals, not subject to overbank flows shall have minimum easements of 5.50 meters measured from the edge of the existing bank or the improved bank.

These above easements may however be increased depending upon the type of channel improvement that will be instituted if the waterway overflows its banks for the design flood and also on the public improvement plans that will be proposed for the strip of land bordering the waterways.

2.10 In agricultural and forested areas, a minimum of 20 meters and 40 meters easement respectively, shall be required measured from the upper banks of the rivers or streams (Art 51)

2.11 Along Shores of Lakes, Seas and Other Inland Bodies of Water

The shores of lakes, seas and other inland bodies of water shall have the following easements throughout their entire lengths for purposes of recreation, flood control, etc:

1. In urban and rural areas, a three (3) to six (6) meter easement shall be provided measured from the water edge at minimum level or tide level.

2. For agricultural and forested areas twenty (20) meters and forty (40) meters easement respectively shall be provided, measured from the water edge at maximum water level or tide level.

A.O. 20 : Interim guidelines on Land Use Conversion provide that all irrigated and economically irrigable lands (10/07/92) covered by irrigation project with firm funding commitment shall be non-negotiable for conversion.

M.C. 54 : Prescribing the guidelines governing Section 20 of R.A. 7160, otherwise known as the Local (06/08/93) Government Code of 1991 authorizing cities and municipalities to reclassify agricultural lands into non-agricultural uses. However, Section C and I states that such reclassification shall be limited to a maximum of the percentage of the total agricultural land of a city or municipality at the time of the passage of the Ordinance as follows:

- * 2.11.4 for highly urbanized and independent component cities, 15%
- * 2.11.5 for component cities and first class municipalities, 10%
- * 2.11.6 for fourth to sixth class municipalities, 5%
- * Provided that agricultural lands distributed to agrarian reform beneficiaries pursuant to Republic Act 6657, otherwise known as the Comprehensive Agrarian Reform Law shall not be affected by said reclassification and the conversion of such lands into other purposes shall be governed by Section 65 of said act.

E.O. 72 : Providing for the preparation and implementation of the Comprehensive Land Use Plans of Local (03/25/93) Government Units pursuant to the Local Government Code of 1991 and other pertinent laws and mandated the establishment of a Provincial Land Use Committee in every province to assist the Sangguniang Panlalawigan in reviewing the Comprehensive Land Use Plan of component cities and Municipalities.

E.O. 124 : Establishing priorities and procedures in evaluating areas proposed for land conversion in Regional (09/08/93) Agri-Industrial Centers, Tourism Development Areas and Sites for Socialized Housing projects.

R.A. 8371 : Indigenous Peoples Rights Act (IPRA) mandates the formulation of ADSPP

**Resolution No
029-19
Series of 2019** :

The Comprehensive Land Use Plan

Rapid migration and influx of commerce have placed the city into the spotlight of development. Visitors and investors alike are attracted to the vast, untapped and pristine resources, not only in the city but in the neighboring provinces as well.

But the lessons of congestion and filth currently experienced by the country's national capital region are painful reminders of how a recognized livable city like Davao City must do its homework to avoid the pitfall of unguarded development, especially in the area of land use.

Development aggression has often been associated with destruction of the environment, including the pollution of waterways, conversion of vital agricultural production areas into commercial and industrial uses, the ravage of the forests to move production areas farther away from the downtown and central business districts. This movement, in turn, invites disasters and calamities to eventually negate whatever gains and merits there are to short-lived economic boom.

For Davao City, taking care of its resource and its people is primordial and necessary.

The spatial development thrust of the city is to maximize land use and protect critical resource areas and it is currently anchored on developing its potential in agri-industry, tourism, commerce and coastal development. To ensure that development is sustainable, extreme attention has been given to avoid and mitigate recurring natural calamities from threatening or generating additional risks to facilities and development programs.

Comprehensive land use details the allocation of land that can be made available to develop the potential in agri-industry, tourism, commerce and coastal development. In identifying and allocating these areas, constraints that include vulnerability to risks have been identified as well to enable the city to find the necessary intervention to ensure a safe and sound planning of land use.

This city of 244,000 hectares is abundant with vast timber lands and watersheds and an agricultural area devoted mostly to fruits and some industrial crops. These resource-rich areas provide natural protective cover against natural calamities and changing weather patterns, and provide life-sustaining resources like water from its underground aquifers and pristine rivers. These areas are located in the northern part, and this is identified for forest protection. Certain areas may be developed for eco-tourism to impart the invaluable appreciation of the bounty of nature and the values of conservation and protection among visitors.

What has surfaced as a significant development in the city's natural resource, is that the forest and timberlands have expanded. A large section of the city is actually covered by this resource, 10.66 percent of open forest and 61.89 percent by bushes and shrubs. Twenty-two percent is accounted by agricultural production areas.

In the middle section of the city's land area are existing agricultural activities, but it will be worthwhile to note that the sector is not a net producer of cereal grains like rice and corn,

but it is known for growing fruits like durian, lanzones, mangosteen and rambutan. Mango, banana and certain industrial crops like pineapple and oil palm are also being tilled. Farmers are also turning into fishpond production of catfish, tilapia, bangus and other freshwater fish species, as demand for them is increasing from among restaurants and roadside eateries.

These areas run from Baguio to Calinan down to Tugbok and in some areas of Buhangin district.

This middle section of the city's land area has still a vast space to accommodate expansion of its agriculture while allowing space also for the development of minor growth areas, such as Calinan district, a northwestern transportation and trading center. Calinan is eyed to become an expansion area for commercial and certain industrial activities but which must be related to agriculture, such as food processing, dairy production and crop processing.

To the west of the city going to the protected Mount Apo National Park has been devoted to strict conservation measures and allows only reforestation activities within. There are two critical watershed protection areas identified, the Mt. Apo National Park and the Malagos watershed, while at its peripheries are allowed some agricultural activities but the land use has identified them as the main critical watershed protection areas in the city. They are critical because these are recharged zones, where rain water percolates down to the aquifers and from where the Davao City Water District extracts the potable water for the city residents.

The city would now allow heavy industrial activities but should be undertaken only in the area in Bunawan, 22 kilometers north of downtown.

Development Thrust and Spatial Strategy

Evaluation of Thrust/Strategies Using Goal Achievement Matrix

ECONOMIC							
Goals	Weights	Tourism		Commercial		Industrial	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
A. SOCIAL	20%	16		15		15	
Healthy households/families thru increased access to sustainable health services		2	0.025	1	0.2	3	0.6
Ensure quality education for continuing individual and societal development		2	0.025	2	0.4	2	0.4
Improved living condition of households is maintained		3	0.038	2	0.4	2	0.4
Ensure access of the needy, disadvantaged members of society to services of the government for an improved quality of life and increased community participation		2	0.025	2	0.4	2	0.4
Responsive delivery of protective services		3	0.038	3	0.6	3	0.6
Environmental sanitation is sustained		3	0.038	3	0.6	3	0.6
Promotion of healthy environment conducive to adoption of active lifestyle		3	0.038	3	0.6	3	0.6
B. ECONOMIC	20%						
Make agriculture contribute to the over-all growth of Davao City		3	0.04	2	0.4	3	0.6
Make forestry contribute to the over-all growth of Davao City		2	0.03	2	0.4	3	0.6
Make tourism contribute to the over-all growth of Davao City		3	0.04	2	0.4	2	0.4
Make commerce and trade contribute to the over-all growth of Davao City		3	0.04	3	0.6	3	0.6
Make infrastructure contribute to the over-all growth of Davao City		3	0.04	2	0.4	2	0.4

ECONOMIC							
Goals	Weights	Tourism		Commercial		Industrial	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
C. INFRASTRUCTURE	20%						
To build reliable, comfortable, adequate, climate resilient and safe infrastructure that will improve the quality of life our citizenry without compromising the environment		3	0.6	3	0.043	3	0.043
D. ECOSYSTEM (forest, coastal, biodiversity)	20%	3	0.6	3	0.043	3	0.043
E. SPECIAL AREAS (Ancestral domain, heritage, conservation)	20%	1	0.2	3	0.043	3	0.043
Total	100%	2.42	1.83	2.67	0.97	2.75	1.05

SOCIAL							
GOALS	WEIGHTS	Tourism Development		Coastal Development		Agri-Forestry Development	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
A. SOCIAL	35%	2.14	0.75	2.44	0.855	2.50	0.875
Healthy households/ families thru increased access to sustainable health services	0.05	2.20	0.11	2.40	0.12	3.00	0.15
Ensure quality education for continuing individual and societal development	0.05	2.30	0.12	2.50	0.13	2.60	0.13
Improved Living condition of households is maintained	0.05	2.00	0.10	2.80	0.14	2.60	0.13
Ensure access of the needy, disadvantaged members of society to services of the government for an improved quality of life and increased community participation	0.05	2.00	0.10	2.40	0.12	2.50	0.13
Responsive delivery of protective services	0.05	1.90	0.10	2.10	0.11	1.90	0.10
Environmental sanitation is sustained	0.05	2.30	0.12	2.40	0.12	2.30	0.12
Promotion of healthy environment conducive to adoption of active lifestyle and practice	0.05	2.30	0.12	2.50	0.13	2.60	0.13

SOCIAL							
GOALS	WEIGHTS	Tourism Development		Coastal Development		Agri-Forestry Development	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
B. ECONOMIC	25%	2.34	0.59	2.04	0.51	2.50	0.63
Make agriculture contribute to the overall growth of Davao City	0.05	2.30	0.12	1.80	0.09	2.70	0.14
Make forestry contribute to the overall growth of Davao City	0.05	2.30	0.12	1.90	0.10	3.00	0.15
Make tourism contribute to the overall growth of Davao City	0.05	2.80	0.14	2.10	0.11	2.30	0.12
Make commerce and trade contribute to the overall growth of Davao City	0.05	2.20	0.11	2.20	0.11	2.30	0.12
Make industry contribute to the overall growth of Davao City	0.05	2.10	0.11	2.20	0.11	2.20	0.11
C. INFRASTRUCTURE	20%	2.80	0.56	2.80	0.56	2.90	0.58
To build reliable, comfortable, adequate, climate-resilient and safe infrastructure that will improve the quality of life of our citizenry without compromising the environment	0.2	2.80	0.56	2.80	0.56	2.90	0.58
D. ECOSYSTEM	20%	2.60	0.52	2.50	0.50	2.65	0.53
(Forest, Coastal, Biodiversity)	0.1	2.80	0.28	2.90	0.29	2.70	0.27
E. SPECIAL AREAS (Ancestral Domain, Heritage, Conservation)	0.1	2.40	0.24	2.10	0.21	2.60	0.26
TOTAL	100%	9.88	2.42	9.78	2.43	10.55	2.61

INFRASTRUCTURE							
GOALS	WEIGHTS	Tourism Development		Coastal Development		Agri-Forestry Development	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
A. SOCIAL	15%						
Healthy households/ families thru increased access to sustainable health services	3%	1	0.03	3	0.09	2	0.06
Ensure quality education for continuing individual and societal development	2%	1	0.02	2	0.04	2	0.04

INFRASTRUCTURE							
GOALS	WEIGHTS	Tourism Development		Coastal Development		Agri-Forestry Development	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Improved living condition of households is maintained	2%	1	0.02	3	0.06	3	0.06
Ensure access of the needy, disadvantaged members of society to services of the government for an improved quality of life and increased community participation	2%	2	0.04	3	0.06	2	0.04
Responsive delivery of protective services	2%	2	0.04	2	0.04	2	0.04
Environmental sanitation is sustained	2%	3	0.06	2	0.04	3	0.06
Promotion of healthy environment conducive to adoption of active lifestyle	2%	3	0.06	2	0.04	1	0.02
B. ECONOMIC	15%						
Make agriculture contribute to the over-all growth of Davao City	3	2	0.06	3	0.09	3	0.09
Make forestry contribute to the over-all growth of Davao City	3	2	0.06	1	0.03	1	0.03
Make tourism contribute to the over-all growth of Davao City	3	3	0.09	3	0.09	2	0.06
Make commerce and trade contribute to the over-all growth of Davao City	3	3	0.09	3	0.09	3	0.09
Make infrastructure contribute to the over-all growth of Davao City	3	3	0.09	3	0.09	3	0.09
C. INFRASTRUCTURE	40%						
To build reliable, comfortable, adequate, climate resilient and safe infrastructure that will improve the quality of life our citizenry without compromising the environment	40%	3	1.2	3	1.2	3	1.2
D. ECOSYSTEM (forest, coastal, biodiversity)	15%	3	0.45	2	0.3	1	0.15
E. SPECIAL AREAS (Ancestral domain, heritage, conservation)	15%	3	0.45	2	0.3	1	0.15
Total	100%		2.76		2.56		2.18

- 1 – Option/Alternative contributes slightly
2 – Option/Alternative contributes moderately
3 – Option/Alternative contributes greatly

Summary Goal Achievement Matrix

SECTOR EVALUATING	AGRO-FORESTRY	TOURISM	AGRI-INDUSTRIAL	COASTAL DEVELOPMENT	AGRI-FORESTRY	COMMERCIAL	INDUSTRIAL
	Weighted Rating	Weighted Rating	Weighted Rating	Weighted Rating	Weighted Rating	Weighted Rating	Weighted Rating
A. SOCIAL		2.42		2.43	2.61		
B. ECONOMIC	2.83	2.74	2.43				
C. INFRA-STRUCTURE		2.76				2.56	2.18
D. ECOSYSTEM		3.00			2.86	2.35	
E. SPECIAL AREAS (ancestral domain, heritage conservation)							
Total	2.83	10.92	2.43	2.43	5.47	4.91	2.18

Spatial Strategy Evaluation

ECONOMIC							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Financial capacity of the LGU to realize the spatial option (i.e. infrastructure requirements and available public investments), Including investment requirements for mitigation and adaptation	15%	4	0.6	3	0.45	2	0.3
Impact on general image and attractiveness of the city	10%	4	0.4	3	0.3	2	0.2
Is the efficient access and linkages between the various functional zones feasible (physically and in terms of cost and potential impacts of hazards)	10%	4	0.4	3	0.3	2	0.2

ECONOMIC							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Will the option encourage the equitable distribution of economic benefits within the municipality	10%	4	0.4	3	0.3	2	0.2
Will it contribute to ecological balance and stability	10%	4	0.4	2	0.2	2	0.2
Will the spatial option significantly reduce exposure and promote long term human security from natural hazards	10%	3	0.3	2	0.2	1	0.1
Potential scale and cost for disaster response, recovery and rehabilitation given the potential exposure	8%	3	0.24	2	0.16	1	0.08
If the option is pursued, are current and future capacities enough to comply with the required risk reduction and management related land use and structural development regulations (building design, Floor Area Ratio, risk transfer mechanisms)	9%	3	0.27	2	0.18	1	0.09
Will it encourage the preservation of prime agricultural areas	8%	4	0.32	3	0.24	1	0.08
Does it ensure the uninterrupted delivery of basic social support services	10%	3	0.3	3	0.3	1	0.1
TOTAL	100%		3.63		2.63		1.55

SOCIAL							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Financial capacity of the LGU to realize the spatial option (i.e. infrastructure requirements and available public investments), Including investment requirements for mitigation and adaptation	0.15	3.00	0.45	2.88	0.43	2.63	0.39
Impact on general image and attractiveness of the Municipality	0.09	3.13	0.28	2.25	0.20	2.13	0.19
Is the efficient access and linkages between the various functional zones feasible (physically and in terms of cost and potential impacts of hazards)	0.09	2.75	0.25	2.38	0.21	2.25	0.20
Will the option encourage the equitable distribution of economic benefits within the municipality	0.10	2.75	0.28	2.50	0.25	2.50	0.25
Will it contribute to ecological balance and stability	0.10	2.88	0.29	2.50	0.25	2.29	0.23
Will the spatial option significantly reduce exposure and promote long term human security from natural hazards	0.10	3.00	0.30	2.13	0.21	2.25	0.23
Potential scale and cost for disaster response, recovery and rehabilitation given the potential exposure	0.09	2.63	0.24	2.13	0.19	2.13	0.19
If the option is pursued, are current and future capacities enough to comply with the required risk reduction and management related land use and structural development regulations (building design, Floor Area Ratio, risk transfer mechanisms)	0.08	2.13	0.17	2.13	0.17	2.25	0.18
Will it encourage the preservation of prime agricultural areas	0.10	3.00	0.30	2.50	0.25	2.88	0.29

SOCIAL							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Does it ensure the uninterrupted delivery of basic social support services	0.10	3.13	0.31	2.75	0.28	2.50	0.25
TOTAL	1.00	28.38	2.86	24.13	2.45	23.79	2.40

INFRASTRUCTURE							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
Financial capacity of the LGU to realize the spatial option (i.e. infrastructure requirements and available public investments), Including investment requirements for mitigation and adaptation	15%	3	0.45	3	0.45	3	0.45
Impact on general image and attractiveness of the city	5%	2	0.1	2	0.1	3	0.15
Is the efficient access and linkages between the various functional zones feasible (physically and in terms of cost and potential impacts of hazards)	8%	3	0.24	4	0.32	4	0.32
Will the option encourage the equitable distribution of economic benefits within the city	8%	4	0.32	2	0.16	4	0.32
Will it contribute to ecological balance and stability	15%	2	0.3	2	0.3	3	0.45
Will the spatial option significantly reduce exposure and promote long term human security from natural hazards	8%	3	0.24	2	0.16	2	0.16
Potential scale and cost for disaster response, recovery and rehabilitation given the potential exposure	8%	3	0.24	2	0.16	2	0.16

INFRASTRUCTURE							
Criteria	Weight	Multi-Nodal Concentric Urban		Centric and Nodal		Tri-Polar	
		Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
If the option is pursued, are current and future capacities enough to comply with the required risk reduction and management related land use and structural development regulations (building design, Floor Area Ratio, risk transfer mechanisms)	15%	3	0.45	3	0.45	2	0.3
Will it encourage the preservation of prime agricultural areas	8%	2	0.16	3	0.24	1	0.08
Does it ensure the uninterrupted delivery of basic social support services	10%	2	0.2	3	0.3	2	0.2
Total	100%		2.7		2.64		2.59

1 – low contribution to the achievement of desired goal; very high cost requirements to achieve goals; very limited capacities and/or capabilities of constituents or the government to achieve goals

2 – moderate contribution to the achievement of desired goals, high cost requirements to achieve goals, limited capacities and/or capabilities of constituents or the government to achieve goals

3 – high contribution to the achievement of desired goals, moderate cost requirements to achieve goals. Existing capacities and/or capabilities of constituents or the government to achieve goals are present

4 – very high contribution to the achievement of desired goals, low cost requirements to achieve goals, existing capacities and/or capabilities of constituents or the government to achieve goals are highly compatible

Summary of the Result of the Spatial Strategy Evaluation

		MULTI-NODAL CONCENTRIC URBAN	CENTRAL and NODAL	TRIPOLAR	CONCENTRIC DEVELOPMENT
1	SOCIAL	2.86	2.45	2.4	
2	ECONOMIC	3.63	2.63	1.55	
3	INFRASTRUCTURE	2.7	2.64	2.59	
4	ECOSYSTEM and SPECIAL AREAS	3.67	4		2.64
	TOTAL	12.83	11.69	6.54	2.64

Preferred Development Thrusts and Spatial Strategy

Development Thrust and Spatial Strategy (Structure/Concept Plan)

Development Thrusts:

The city derives from services sector a bulk of its annual income of P2.792 billion in 2018. Much of the activities in this sector thrive on providing vital support services to the steady growth of the city's industrial, commercial and financial sectors, including tourism and agri-forestry, which all consist the economic base of the city.

a. Tourism

Davao City continues to attract visitors as an emerging destination in the country. The leading role of the city as conference and exhibition venue for the activities of the Brunei Darussalam, Indonesia, Malaysia, the Philippines-East Asian Growth Area (BIMP-EAGA) attests to this attraction as alternate venue and destination in this part of Asia. For Davao City, it is in a good position to offer both business and leisure destinations.

To support this, facilities are growing in number, and accommodation facilities from international brands are already positioning here.

The city's focus of attracting Meeting, Incentives, Conventions and Events (MICE) is boosted by winning the bid to host MICE Con 2020. Its hosting of Asia's premier travel and tour event, the Asian Tourism Forum, received one of the most glowing praises from foreign tourism associations and Asian governments.

To increase this attraction, the city shall encourage private owners to also establish and enhance model farms for farm tours and eco-tourism trips to give additional option to go around the city, such as for educational, leisure and consciousness-raising trips to organic farming, environmental protection, and ecological biodiversity.

In eco-tourism sites, the tribes in the area may be tapped to interact with local and foreign visitors, to explain and demonstrate some of their customary and traditional activities like weaving, cooking and performing dances and community prayers to enhance multi-cultural understanding.

Medical tourism shall also be encouraged and allowed to flourish owing to the influx of more foreign visitors brought about by improvement in air connectivity. The establishment of more medical facilities with semblance of home environment allows visitors to enjoy professional medical treatment and making it feel like a a leisure trip to wellness.

Special attention shall be given to identify cultural heritage in the city, including the structures built in the 1800's or shortly before 1936, when Davao City was declared as a chartered city. Preservation processes shall be followed once declarations are in place.

These will include landmarks that have impact in shaping the history of Davao City to be declared as historical zones. , These include the areas marking the scene of the Battle of Oyanguren and the Little Tokyo in Mintal.

To define and identify these sites, a set of criteria from the National Historical Commission of the Philippines shall be used as guide, and in coordination with the Museo Dabawenyo. The criteria include the mandate of the local government units, through their cultural office, to maintain an inventory of cultural properties under their jurisdiction and to furnish the NHCP a copy of this list, and for the LGUs to continuously coordinate with them in making entries and monitoring their cultural properties.

b. Agri-forestry development

As previously stated, the city is not a net producer of grains and cereals that are the staple of the Filipino household but its fruits, mostly endemic to the city, have been a source of important income for many residents living in the northwestern part of the city.

However, these fruits are either sold directly to consumers, or shipped directly to markets in Metro Manila; only a small portion of these harvests are processed into other forms of delicacies and preserved goods. Its fruits like durian, have already breached the international market, mainly in Asian countries like Singapore.

Value-adding is being promoted to increase the income of farmers and owners of these fruit farms. This is timely and significant as the city has noted a decrease in designated area for agriculture, from the previous approved area of 111,466 hectares (2013) to a proposed area of 55,824.62 hectares. This happened after actual classification of lands devoted to planting of perennial crops, such as cacao and coffee, are being taken back under the forest and forest land classification.

This must not be taken as a concern because the perennial crops, which are agricultural crops, are still being grown there although the areas are now appropriately classified and designated as production forest areas.

This means though, that there is a more compelling reason to infuse certain level of processing and value-adding to increase the market value of the products.

The strategy calls on focusing in investments in rural infrastructure, upgrading of farm technology, improvement of the value chain, extension of credit for farm input, and development of food processing industries.

Planting materials of in-demand and high-value crops will be made available to farmers and farmers associations especially in the non-tillage agriculture, now called Protection Agriculture, zones of the city. Permanent crops like rubber, cacao, coffee, coconut, and durian will be prioritized to allow farmers better return on investments.

For cereal production, a combination of organic and inorganic planting strategy shall augment the production volume. For example, the city will cultivate organic rice, corn and other crops in the farms to comply with the organic agriculture ordinance of the city (City Ordinance 0384-10, "an ordinance institutionalizing, promoting, and developing organic agriculture in Davao City and providing funds therefore and for other purposes). But at the peripheries of the city are inorganic crops, including high-yielding and climate change-resistant varieties to meet the volume of demand.

Farm-to-market roads in the major food production districts of Marilog, Paquibato, Baguio, Calinan, and Tugbok will be improved to connect them better to markets of the CBD and Toril. Farm mechani-

zation appropriate in farms will be supported through loans to cooperatives and farmers' associations. More agriculture technologists and extension specialists will be hired to provide training, consultation, and mentoring to farmers.

The manufacturing sector will be encouraged to invest in food-processing to add value to the agriculture outputs of the farms. Manufacturing of various agricultural products as well as assembly plants will be encouraged to provide employment to local residents and improve the purchasing power of households.

Processing centers will be established near the production areas where Calinan is identified as a suitable area being situated in the agricultural section of the city. Calinan is also identified as a minor growth center in the northwest part of the city and considered as a major interprovincial transportation stopover and trading center with Bukidnon and the other provinces in the northern region of Mindanao.

The areas of Marilog and Paquibato, both sources of agriculture products needed by agro-processing plants, have been identified as prone to landslide, however. This will be addressed by re-establishing the vegetative cover through agro-forestry to stabilize the steep slopes against erosion and landslide. This additional ground cover by permanent and high-value crops will also rejuvenate the soil's soaking capacity to reduce the runoff and reduce the risk of flooding downstream of the city.

Multi-cropping will be encouraged as well so farmers will have diversified sources of income. Priority crops for these areas will be coffee, cacao, rubber, durian, coconut, and banana.

c. Commerce

In Davao City, commercial areas increased by 3.7% from 2011 to its current 1,643.12 hectares. This is not a very significant leap but if the total floor spaces they occupy are to be consolidated, a major increase can be measured given the emphasis of CBD development for multilevel or vertical projects.

Commercial activities are marked mostly by wholesale and retail trade. But activities like the BPOs have also made their mark in terms of employment and consumer spending by their personnel. Just how robust the local economy is may be reflected by the big number of banking offices and financial institutions.

In the commercial district, some restrictions have been imposed, such as on parking, driveways and sidewalks especially along barangay, city and national roads. The policy is that parking should not disturb pedestrian sidewalks and will not impede flow of traffic. Sidewalk elevation should not also be altered or slanted and should always be accessible to persons with disabilities. Retail stores should provide loading and unloading areas within the premises, rather than use the sidewalk and the road-right-of-way for such purpose.

d. Coastal Development

A major policy to preserve and protect the environment will include the coastal areas and the reefs. This will avoid the usual pitfall among cities to turn their coasts into actual garbage and dumping site of both solid and liquid wastes, thus polluting the coastal waters and rendering coastal resources dead, unproductive and pose actual health risks to residents.

Mangrove planting shall be pursued for the entire shoreline, from Toril to Bunawan. Various benefits include providing a large area for fishes and other marine life to spawn and replenish their number, preventing further pollution and degradation of the coastal areas, and providing protective shield to the coastal communities against strong winds and storm surges.

The implications of the coastal road shall be taken into account in pursuing the mangrove restoration projects which can be undertaken in spaces that will be reclaimed. Beachfront development shall also be considered alongside mangrove plantation for areas right after the coastal road onwards to the sea. The coastal road development is currently underway to connect Bago Gallera to R. Castillo mainly to help decongest the existing highways and roads.

Punta Dumalag shall continue to have a biodiversity program that includes protection of the endangered marine turtles while mangrove areas will be provided protection and preservation efforts in the northern coastal areas up to Lasang, the northernmost barangay bordering with Davao del Norte's Panabo City.

The southern coastal areas have pockets of fish ponds in Dumoy and fish cages in Punta Dumalag. Rehabilitation works must be done to ensure sustainable environment for marine production.

Spatial Strategy

With complete consideration to the urban challenges such as mobility constraints and environmental concerns as well as the aim for a livable city, Davao will implement a multi-nodal concentric spatial strategy. Under this concept, the barangays that are the common convergence area for market, trade and commerce, religious, educational and social activities, will become self-sustaining commercial centers within a larger concentric area where people will be able to access their needs and avail of basic government services like health and social services. Residents will not need to go to the downtown area just to get some of essential household needs, There will be several of these self-sustaining nodes in the three districts of the city to help diffuse the concentration of people and traffic congestion in the downtown area.

These pocket centers of convergence will support the development of growth areas, and enhance the relationship between these growth and satellite areas with the downtown area. Through this multi-nodal concentric spatial strategy, there will be an improved and faster flow of farm input and services to the production areas, and accessibility of crops, fruits and other food products to the nearest market place. This will elevate livability factor by allowing nodes and districts to flourish as pocket socio-economic centers that have a complete range of goods and services.

Davao City as Metropolitan Center

This interconnectivity and transport flow, as well as the increasing number of government and private facilities, is a critical factor why Davao City has been the de facto metropolitan center in the Davao Region. This is because Davao City has the international airport and seaport as well as the regional offices of the national government and corporations, international organizations and four consulate generals, which make this city the central place for commerce, trade, and domestic and international transactions.

Residents of adjacent cities travel to Davao City to derive their livelihood or receive important services such as education and health. The transfer of regional offices of national government agencies in the designated regional government center in Bago Oshiro, Tugbok District shall ease the travel of these residents from outside Davao City, and facilitate the ease of transaction because people will have one area to go around the different government offices. This will also be beneficial to Davao City residents as well. Davao City is not only seeing an artificial increase in its daytime population, but also an actual increase in population due to migration from these adjacent cities.

That is why the roads leading to and going out of Davao City are getting congested.

The increasing number of high-rise residences and sprawling townships point to a rapid utilization of spaces that were once idle.

The city is responding to the urbanization challenge, though, by careful planning and assigning of areas for residential, commercial, and agriculture uses and avoiding further exposure of areas to natural hazards.

It has undertaken planning and identifying settlement patterns that are well within the scope and reach of utilities, such as water, power and transport. It has enacted a mining ban to withhold the extraction of minerals, soil and other natural resources;

A major contribution to the city's response to the urbanization challenge are the big-ticket infrastructure projects, many of them on roads, highways and bridges, identified in the IM4 Davao that was initiated by the Japan International Cooperation Agency.

This is here where a good multi-nodal strategy would mean a lot to decongest traffic in the central business district and start a concentric traffic movement that is confined within the nodes. Mobility thus, one of the important elements of a functioning and booming metropolitan area.

The construction of a railway system across Mindanao and passing through Davao City should complement the transport of major goods and resources needed by the city, and also goods and resources produced by farmers in Davao City that needed to be sold to other places in Mindanao. This railway network will equally address the transportation connection between Davao City, as the metropolitan center, and the adjacent cities.

One feasible way also is to tap the coastal waters to connect the southern areas of Toril to the downtown area and as far as Lasang and Bunawan in the north via fast craft. Designated jetties or small ports shall be identified in the entire stretch of the city coastal area to accommodate fast craft, motor boats or other light water craft.

Both its airport and seaport must support the growing demand for safe, efficient and rapid movement of people, goods and services. Hence, these must be equipped with the latest technology in radar and other travel monitoring and guidance systems, port handling of people, baggage and cargo, and systematic ingress and egress, or traffic of people. Appropriate number of public transport, including concourse, shuttle buses and taxis must provide fast and safe transport of passengers to their destination.

This must therefore, necessitate a feasibility study by the Department of Transportation to come up with transportation support to service the airport passengers and the upgrading of the terminal and cargo handling building to accommodate increasing capacity, as well as the other needs of an airport.

Mobility is also expected to enhance the attraction of Davao City as a destination for tourists and investors, including those interested in ecology and conservation. In the city is the Philippine Eagle Center which has been doing important conservation work to protect and help endangered eagles to reproduce and hopefully, to repopulate the wilds with their number.

The proper apportioning of production and protection areas and buffer zones should ensure the sustainability of resources for the succeeding generation, and assure mitigation and reduction of risks as the city progresses into the next phases of development.

As a metropolitan area, Davao City and the nearby cities shall plan and give attention to the following sectors, resources and strategies to: agri-forestry development; value-adding/chain for agriculture outputs; human resources development; ICT and BPO activities; and integrated coastal resource management.

Cities nearby may also be tapped for expanded urban activities and operations of Metropolitan Davao.

This means that aside from becoming satellite urban centers to Metropolitan Davao City, the adjacent cities of Panabo, Tagum and the Island Garden City of Davao del Norte, and Digos City of Davao del Sur, shall also be tapped to provide accessory or support services and land spaces wherever these are needed.

These cities may host satellite or branches of universities and corporate offices already operating in Davao City, or may support the expansion needs of factories or plantations of businesses wherever needed. These may redound to the mutual benefit of Davao City and the host adjacent cities, in terms of decongestion for Davao City and additional taxes and employment for residents of the latter.

Also, the common problem of solid waste disposal and management may be addressed by the installation of the waste-to-energy project of the Japanese government, of which Davao City is the identified beneficiary. The satellite cities and provincial capitals can contribute to meet the minimum volume requirement of garbage for the WTE. A tipping fee, or environmental management fee may be discussed among them for the use of the WTE.

These strategies shall help reduce vulnerabilities to natural hazards, such as flood, landslide and ground shaking, and health pandemic, which often affect a lot of people who are converged in big numbers in a contained or area. These strategies shall also help contain the further encroachment of settlements in protected areas and hazard-prone areas.

Development constraints, from the allocation of lands for ancestral domain, forest and watershed protection to marine protected areas, easement along river banks swamps and steep slopes, is carefully factored into apportioning land spaces for the needs of the population, as well as the current and expansion needs of its industries, agriculture and tourism included.

To apportion land spaces is to consider the projected developments, from 2019 to 2028, and to integrate the new and emerging growth areas.

Growth nodes shall also be identified in the forest and forest lands but only to accommodate the indigenous communities and their cultural needs.

In the countryside, the city shall continue to pursue and support the Peace 911 as a social and economic vehicle to confront and address insurgency as a threat to development. This program identifies the development needs of the residents, especially in the remote areas, and to bring these projects to them.

While the city maintains its human-centered development, the phenomenon of informal settlers is creating concentration of people in cramped spaces, thereby increasing the sector of indigents and generating a slew of problems, from health and unemployment to social problems and crime.

Special attention must be given to idle land spaces in the urban center and its suburbs, by encouraging land owners to utilize their spaces for productive use. Aside from turning these idle areas into productive use, this will also discourage squatting.

To prevent the phenomenon from continuing, the city shall impose a tax on idle private lands to compel them to utilize the extra spaces in their property. The city shall also ask the barangay captains to help prevent squatting by constantly monitoring on recent activities, such as construction on unutilized spaces.

As the onslaught of destructive climate change-related disasters, the city shall adapt strategies on reducing vulnerability to natural hazards by identifying where the danger lurks and providing all options for mitigation to increase resilience.

Central Business District

The central business district is currently expanding to adjacent areas due to rapid urbanization and the widening entrepreneurial character of the population.

The central business district now includes the area as far south of Talomo to Buhangin in the northeast and the barangays of Maa, and parts of Catalunan Pequeno, Catalunan Grande, Langub, Magtuod, Tigatto and Cabantian in the northern part.

While transportation in the central business district is important, constraints are seen in having additional road networks. For the existing roads, rationalizing traffic is crucial to avoid traffic gridlocks. Another is the use of the mass transit such as the High Priority Bus System. This was being tested in 2019 in two southern routes, in Toril and Catalunan Grande, in preparation for the final fielding of 1,000 buses to replace the jeepneys.

It is here where easement along river banks and waterways must be enforced and allocated to provide additional transport routes, potential tourism spots and reduce the number of families to be exposed or directly affected by flash floods and overflowing of river waters during heavy downpour and seasonal weather low pressure areas.

Highways and major streets must be clearly designated of their respective uses in relation to the entire network.

On-street and off-street parking should be considered comprehensively along the concern for the required parking spaces especially in the old road networks where business establishments have no parking spaces and the roads are not wide.

The newly created City Transport and Traffic Management Office (CTTMO) shall be tasked to spearhead a scientific study on parking spaces requirement that shall become basis for a Comprehensive Parking Ordinance of the City.

In the Poblacion area, the top commercial areas are in Barangays 19-B along Bajada, 27-C in the Quezon Boulevard area, and 1-A, 2-A, 5-A near the Bankerohan and Magallanes area.

In the Agdao area, the commercial areas are in Paciano Bangoy and Lapu Lapu, but the top five barangays in terms of the presence of several functions, services and infrastructure are Agdao Proper, Wilfredo Aquino, San Antonio, Paciano Bangoy and Rafael Castillo.

Talomo District

Going down south are many suburban and residential communities comprising Talomo District, a big portion of which has transformed into an extended central business district.

Five barangays of this district are found several government and commercial centers that have become the areas of convergence of the residents in this district. Government centers and facilities, educational institutions, business offices, transport terminals, social gathering venues and religious buildings have dotted the areas of Bucana, Ma-a, Matina Aplaya, Matina Crossing, and Catalunan Grande.

Commercial activities abound in Catalunan Pequeno, Matina Pangji, Matina Crossing Ma-a and Catalunan Grande. Bago Gallera is seen as a suitable place for expansion of the commercial center. Portion of this barangay is also appropriate for more residences.

Barangay Ma-a would continue to be an important transportation highway and a transportation hub development program should be developed here with a train station already designed to be built in the upper section of Ma-a road.

With a long coastline on its southern part, a coastal rehabilitation should be enhanced in parts of Bago Aplaya and a large section of Dumoy. A biodiversity program is suited around Matina Crossing.

Toril District

To the south and southwest of the city, in Toril District, spaces are allocated for expansion of residential areas in Marapangi, Sirawan, Binugao, Lizada and Daliao. From these areas will be the good source of the work force requirement in that part of the city.

A lot of commercial, educational and social activities will be concentrated in the barangays Toril Proper, Sirawan, Lizada, Crossing Bayabas and Lubogan due to the presence of several local government service centers as well as private facilities and institutions in this district.

Tourism destinations would be in Eden, Tagurano, and Catigan as mountain resorts and farms attract tourists with interests in agriculture, leisure and ecological resources. There is a private social enterprise being undertaken in Lubogan that hires tribal weavers and workers to produce tribal products sold in the national capital. While this is a private undertaking it is worthwhile to support this because of its promotion of tribal products from Davao City.

Farm tours may also be developed in Tungkalan as the area would continue as an agriculture production area. Tungkalan is also joined by the barangays of Camansi, Tagluno, Kilate, Bato, Bankas Heights, Alambre, and Bayabas as production areas.

One critical watershed protection area is located here, in Barangay Sibulan.

Barangay Crossing Bayabas is a transport hub development area. An area around the station will be designated as a commercial development zone.

Tugbok District

Up in the northwest section of the city is Tugbok district, which is largely an agricultural and education and research center area.

In this area are Mintal, Tugbok Proper, Sto Nino, New Carmen and Los Amigos emerging as places where people converge for various reasons such as seeking government services, looking for educational institutions, finding commercial centers and some agri-industrial activities.

Leisure and tourism also abound here in Bago Oshiro and Mintal Proper, scene of the former settlement communities of overseas Japanese workers in the early years of 1900's who worked in abaca plantations, especially in Barangay Manuel Guianga. This former abaca plantation is also a designated tourism area because of its historical significance.

Also identified as tourism areas in this district are Tugbok Proper, Manambulan, Biao Guianga, Subasta, Matina Biao, Biao Escuela and a section of Talandang, Tacunan

Agricultural development would be situated in the area in and around Angalan, a section of Talandang, Riverside, in Subasta, Ula, Tagakpan and Tugbok

Freshwater fish ponds abound and still operate economically in Los Amigos, Balengaeng and Subasta. Expansion for residential spaces would be allocated in a portion, or the whole, of New Carmen.

Buhangin District

At the northeastern part of the city are the robust commercial areas of Barangays Buhangin Proper, Sasa, Cabantian, V. Hizon, and A. Angliongto

This district has a significant importance for the city due to the location of the airport, one of the busiest in the country, and the wharf in Sasa, also one of the main seaports in the country. Expansion works are continuing in these two important facilities and the allocation of more spaces for them is crucial to meet the surging demand to accommodate more passengers, in-bound traffic of planes, ships and cargo.

Demand for more residential areas is expected to increase as commercial activities continue to mark the economic activities in this district. Barangays Mandug, Indangan and Cabantian are identified areas for residential expansion.

The northern portion of this district is also good to pursue agricultural development especially in Barangay Callawa.

Bunawan District

The industrial area is located here, with manufacturing and factories already established and operating, notably in Barangay Mahayag, Tibungco, Ilang, and Bunawan Proper.

With major company offices and factories and several private sea ports, Barangays Tibungco, Bunawan Proper, Panacan, Lasang, and Ilang have become the top five barangays in this district.

A transportation hub development area is suited for the area around the interior Barangay Mudiang, where the train station is identified to be built.

However, the location of the big manufacturing operations and factories has not stopped the city from turning a long section of its coastal areas into protection areas. A marine culture (mariculture) park is located in the Lasang area and coastal rehabilitation through mangrove protection areas have been developed and to enhanced further along the coast of Panacan, Ilang, Tibungco, Mahayag, Bunawan and Lasang.

Existing fishponds are also located in Lasang, Panacan and Tibungco.

Baguio District

Up in the northern section of Davao City are critical agriculture and forest areas that must be taken with great care for development and preservation.

In Baguio District in the northwest, agriculture abound, although the city is not known to be a net producer of the staple cereal grains like rice and corn, these crops are still planted in the district. The agricultural sector is more known for growing fruits like lanzones, durian, marang and mangosteen, for which the city is famous for during the fruiting period during the third quarter.

Existing fishponds are located in Cawayan, Tawan-Tawan, Wines, Tambobong and Gumalang.

The rich ecosystem and fruit farms in this district may provide a springboard to develop a good tourism destination especially in Baguio Proper, Cadalian, Malagos, Tawan-Tawan, Gumalang, Carmen, and Tambobong. A cutflower farm is located in Carmen.

The indigenous tribes in these places could add up to the interest of visitors.

The top commercial and transportation centers are in Malagos, Baguio, Tawan-Tawan, Cadalian and Gumalang

A critical watershed protection area is identified in Barangay Carmen.

Calinan District

Among the northern districts of the city, Calinan is identified as more progressive due to its role as major transportation stopover for interprovincial bus routes coming from the northern provinces of Mindanao going to Davao City.

An area of 94.88 hectares is being groomed for agri-industrial processing and post-harvest operations, to support the processing requirement of the farms and plantations in and around Calinan.

The commercial center is concentrated in Calinan Proper and top five barangays in terms of presence of functions are in Calinan, Riverside, Biao Joaquin, Subasta and Wangan.

Activities are largely agricultural, and agricultural development can be designed in Dalagdag, Lam-pianao and Pangyan.

Existing fishponds are in Barangays Riverside, Talomo River, and Wangan.

Tourism facilities may also be developed for Barangay Lacson, Wangan and Biao Joaquin.

While this district is a major transportation stopover, the presence of a critical watershed protection area in Barangay Tamayong demands some protection measures.

Alongside agriculture can be developed for agri-forestry activities in Barangay Megkawayan.

Marilog District

Up further north are large continuous critical watershed area in the portion of Barangay Baganihan, Tamugan, Marilog, Gumitan, Bantol, Dalag Lumot, Salaysay and Suawan. Agri-forestry activities could still be engaged in some areas.

A critical watershed area for protection is in Barangay Dalag Lumot.

Due to the presence of natural attractions like waterfalls, flora and fauna, as well as the presence of indigenous communities and their preserved customs and traditions, tourism sites and commercial activities are proposed in Datu Salumay, East Marahan and Salaysay within a regulated environment.

While this district is noted for its vegetables and legumes, it has also areas planted to permanent crops like coffee (547.25 has) and cacao (1,553 has), and industrial crops as well, like rubber (994.5 has) and abaca (24.5 has).

Some tourism spots are already existing in Barangay Magsaysay and Suawan and commercial activities are also seen in Lomondao, Tamugan and Suawan.

With the district's proximity to the closed canopy forests of Mt. Apo, forest rehabilitation is best undertaken in the edges of Gumitan to Buda and all the way to Malamba to increase the hectarage of the closed canopy forests. The whole barangay of Magsaysay is likewise suitable for the same undertaking.

Barangays Marilog, Tamugan, Datu Salumay, Salaysay and Buda are the current top areas of concentration of residents in this district.

Paquibato District

Being located in the northeastern part of the city, the critical watershed area form part of the forest cover of the city. These watershed areas are found in Tapak, Salapawan, Mapula, Pandaitan, Lumiad, Paquibato, Panalum, Paradise Embac, Sumimao, Fatima and Mabuhay

The reforestation and rehabilitation done in Marilog to increase the closed canopy forests shall be expanded to Tapak and Mapula in this district.

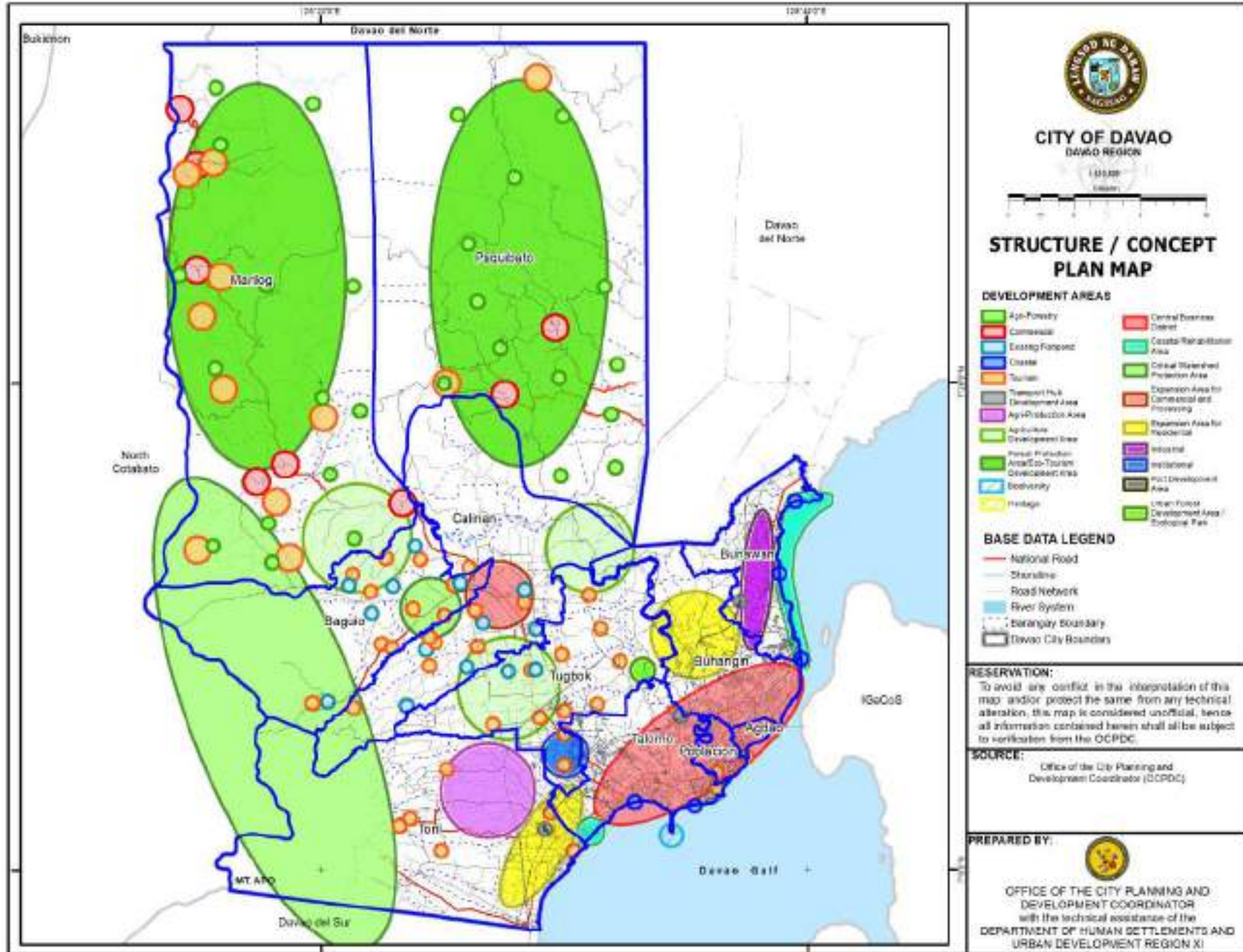
Paquibato raises coconut, cacao and coffee as its main agricultural products.

The critical watershed area in Malabog can be developed into a tourism site although. Barangay Colosas is also identified for tourism.

Agri-forestry can be undertaken along portions of the forests of this district. Commercial activities are in Paquibato Proper and Malabog.

The top five barangays in terms of presence of functions are Malabog, Paquibato, Tapak, Lumiad and Fatima.

Map 6. Structure/Concept Plan Map



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The Concept/Structure Plan of the City

Balancing Land Supply and Demand

Available Land Supply

An important ingredient in planning for a sustainable land use is to ascertain the availability of land suitable for development, and the proper and systematic way of designating and identifying areas for residential, commercial, agricultural, and industrial purposes.

Proper allocation also requires protection of its other important resources such as its water, forest, and marine life.

Identification of areas suitable for development and urbanization is done after taking out conservation, protection, other special interest areas such as those identified as National Integrated Protected Areas System (NIPAS), Ancestral Domain, Network of Prime Agriculture Areas for Development (NPAAD), Sustainable Agriculture and Fisheries Development Zone (SAFDZ), primary forest and other forest types, as well as the critical watershed areas, and development constraints.

The development constraints areas per barangay are shown in the table below.

A total of 4,497.91 can be utilized for the various urban uses as discussed in the earlier section.

Table – 83. Available Land Supply for Development, Davao City, 2019

Barangay	Land Area (in has)	Total Development Constraint Areas (in has)	Available Land Supply for Development
1-A	15.35	15.35	-
2-A	16.38	16.38	-
3-A	20.78	20.78	-
4-A	23.51	23.51	-
5-A	38.14	38.14	-
6-A	14.97	14.97	-
7-A	22.46	22.46	-
8-A	179.78	179.78	-
9-A	27.48	27.48	-
10-A	28.64	28.64	-
11-B	9.57	9.57	-
12-B	17.54	17.54	-
13-B	11.26	11.26	-
14-B	18.41	18.41	-
15-B	31.56	31.56	-
16-B	5.53	5.53	-
17-B	5.63	5.63	-

Table – 83. Available Land Supply for Development, Davao City, 2018

Barangay	Land Area (in has)	Total Development Constraint Areas (in has)	Available Land Supply for Development
18-B	19.78	19.78	-
19-B	330.58	330.58	-
20-B	56.58	56.58	-
21-C	8.56	8.56	-
22-C	8.71	8.71	-
23-C	21.60	21.60	-
24-C	7.72	7.72	-
25-C	4.96	4.96	-
26-C	8.05	8.05	-
27-C	31.02	31.02	-
28-C	15.68	15.68	-
29-C	10.16	10.16	-
30-C	23.63	23.63	-
31-D	22.60	22.60	-
32-D	17.89	17.89	-
33-D	7.74	7.74	-
34-D	19.63	19.63	-
35-D	6.98	6.98	-
36-D	6.93	6.93	-
37-D	7.11	7.11	-
38-D	9.00	9.00	-
39-D	12.78	12.78	-
40-D	10.02	10.02	-
AGDAO PROPER	38.29	38.29	-
WILFREDO AQUINO	72.26	72.26	-
PACIANO BANGOY	81.48	81.48	-
RAFAEL CASTILLO	44.54	44.54	-
CENTRO	43.48	43.48	-
GOV. VICENTE DUTERTE	52.02	52.02	-
LEON GARCIA SR.	19.62	19.62	-
LAPU - LAPU	60.01	60.01	-
TOMAS MONTEVERDE	19.52	19.52	-
SAN ANTONIO	89.87	89.87	-
UBALDE	9.98	9.98	-
BAGUIO	865.83	858.10	7.73
CADALIAN	628.15	623.69	4.47
CARMEN	806.01	802.16	3.85
GUMALANG	1,522.04	1,514.15	7.89
MALAGOS	1,164.18	1,153.14	11.03
TAMBOBONG	1,230.07	1,215.55	14.53
TAWAN-TAWAN	974.40	970.11	4.28
WINES	879.40	877.23	2.17

Table – 83. Available Land Supply for Development, Davao City, 2018

Barangay	Land Area (in has)	Total Development Constraint Areas (in has)	Available Land Supply for Development
ACACIA	805.07	802.68	2.39
BUHANGIN	672.47	672.47	-
CABANTIAN	757.97	757.97	-
CALLAWA	1,037.32	1,036.07	1.25
COMMUNAL	547.28	547.28	-
INDANGAN	1,576.81	1,565.61	11.20
MANDUG	1,019.22	1,018.09	1.14
PAMPANGA	117.64	117.64	-
SASA	769.56	769.56	-
TIGATTO	754.27	753.83	0.44
WAAN	433.33	433.07	0.26
A. ANGLIONGTO	287.62	287.62	-
V. HIZON	218.97	218.97	-
BUNAWAN	777.24	777.24	-
GATUNGAN	1,256.86	1,250.60	6.26
ILANG	579.16	579.16	-
LASANG	629.73	429.15	200.58
MAHAYAG	807.80	807.46	0.34
MUDIANG	668.92	668.92	-
PANACAN	748.24	748.24	-
SAN ISIDRO	638.62	633.01	5.60
TIBUNGCO	730.96	730.96	-
BIAO JOAQUIN	543.70	541.43	2.27
CALINAN	833.03	830.79	2.24
CAWAYAN	805.44	798.11	7.33
DACUDAO	1,213.72	1,207.60	6.12
DALAGDAG	535.12	535.08	0.04
DOMINGA	602.11	598.52	3.59
INAYANGAN	1,420.54	1,417.58	2.96
LACSON	923.83	913.90	9.93
LAMANAN	2,094.88	1,929.43	165.27
LAMPIANA O	922.30	920.82	1.48
MEGKAWAYAN	1,845.02	1,818.11	26.90
PANGYAN	708.98	701.35	7.63
RIVERSIDE	514.87	513.98	0.89
SALOY	2,291.36	2,223.39	67.97
SIRIB	2,152.65	2,145.33	7.31
SUBASTA	1,215.88	1,206.17	9.71
TALOMO RIVER	818.77	810.02	8.75
TAMAYONG	1,925.20	1,914.59	10.60
WANGAN	1,181.52	1,167.40	14.11
BAGANIHAN	1,062.62	1,062.62	-
BANTOL	1,406.56	1,389.70	16.86

Table – 83. Available Land Supply for Development, Davao City, 2018

Barangay	Land Area (in has)	Total Development Constraint Areas (in has)	Available Land Supply for Development
BUDA	4,901.59	4,901.24	0.35
DALAG LUMOT	3,183.95	3,183.36	0.59
DATU SALUMAY	2,107.50	2,107.50	-
GUMITAN	5,727.81	5,727.81	-
MAGSAYSAY	5,831.10	5,831.10	-
MALAMBA	8,429.76	8,410.76	19.00
MARILOG	18,029.70	18,029.35	0.34
SALAYSAY	4,467.83	4,465.16	2.67
SUAWAN	4,880.40	4,849.90	30.50
TAMUGAN	1,548.06	1,463.14	84.92
COLOSAS	14,296.74	14,100.01	196.73
FATIMA	3,080.27	3,072.32	7.95
LUMIAD	3,206.09	3,199.00	7.09
MABUHAY	1,421.06	1,332.75	88.31
MALABOG	8,268.79	8,262.46	6.33
MAPULA	8,957.51	8,951.57	5.94
PANDAITAN	4,078.60	4,069.86	8.74
PAÑALUM	1,131.42	1,036.53	94.89
PAQUIBATO	3,511.05	3,388.92	122.12
PARADISE EMBAC	2,743.47	2,640.47	102.99
SALAPAWAN	2,779.92	2,779.92	-
SUMIMAO	2,475.41	2,461.24	14.16
TAPAK	11,157.67	11,133.77	23.90
BAGO APLAYA	220.16	220.16	-
BAGO GALLERA	721.75	721.75	-
BALIOK	248.43	248.43	-
BUCANA	415.44	415.44	-
CATALUNAN GRANDE	1,495.07	1,495.07	-
CATALUNAN PEQUEÑO	597.10	597.10	-
DUMOY	530.78	530.78	-
LANGUB	848.44	848.17	0.28
MA-A	999.41	999.41	-
MAGTUOD	755.86	755.22	0.64
MATINA APLAYA	315.59	315.59	-
MATINA CROSSING	491.75	491.75	-
MATINA PANGI	587.49	587.49	-
TALOMO	649.85	649.85	-
ALAMBRE	327.84	312.08	15.76
ATAN-AWE	330.89	319.95	10.93
BANKAS HEIGHTS	247.29	247.29	-
BARACATAN	1,132.23	1,007.23	125.00
BATO	851.94	799.16	52.78
BAYABAS	1,201.35	1,146.37	54.98

Table – 83. Available Land Supply for Development, Davao City, 2018

Barangay	Land Area (in has)	Total Development Constraint Areas (in has)	Available Land Supply for Development
CROSSING BAYABAS	224.04	224.04	-
BINUGAO	493.45	493.45	-
CAMANSI	363.18	344.35	18.83
CATIGAN	2,401.92	1,023.65	1,378.27
DALIAO	195.08	195.08	-
DALIAON PLANTATION	1,036.93	1,033.19	3.74
EDEN	773.77	615.84	157.93
KILATE	644.89	582.88	62.01
LIZADA	443.72	443.72	-
LUBOGAN	210.29	210.29	-
MARAPANGI	711.46	642.09	69.37
MULIG	998.89	952.46	46.43
SIBULAN	1,700.55	1,681.38	19.17
SIRAWAN	972.77	832.99	139.79
TAGLUNO	564.17	507.98	56.19
TAGURANO	505.33	213.28	292.04
TIBULOY	835.44	700.51	134.93
TORIL	131.61	131.61	-
TUNGKALAN	1,783.65	1,681.44	102.21
ANGALAN	481.36	417.48	63.88
BAGO OSHIRO	637.90	637.90	-
BALENGAENG	478.85	458.64	20.22
BIAO ESCUELA	1,380.33	1,371.18	9.15
BIAO GUIANGA	483.93	481.22	2.71
MATINA BIAO	1,170.24	1,167.21	3.03
LOS AMIGOS	445.96	445.96	-
MANAMBULAN	768.54	680.51	88.04
MANUEL GUIANGA	901.32	829.37	71.95
MINTAL	744.47	744.47	-
NEW CARMEN	1,111.45	1,111.43	0.01
NEW VALENCIA	956.52	954.26	2.25
STO. NIÑO	147.22	147.22	-
TACUNAN	917.02	912.83	4.18
TAGAKPAN	749.74	738.31	11.43
TALANDANG	1,384.29	1,381.05	3.42
TUGBOK	991.34	991.34	-
ULA	931.20	929.77	1.43
Mt. Apo National Park	24,533.81	24,533.81	-
TOTAL	244,000.00	239,502.04	4,497.91

Additional Area Requirement

The table below shows the additional area requirement for the following urban uses – residential, commercial, industrial, parks and recreation, cemetery, the computation of which was determined by the city using generic formula set by the HLURB.

At least an additional 5,192.19 hectares more are needed for residential use to meet the projected area of 13,068.58 hectares by 2028 to address the expected population growth. With commerce as one of the city’s development thrusts, a boost in commercial activities is inevitable. An additional area of 1,632.41 hectares are needed to cover the estimated need of 2,732.30 hectares.

While the forecast for the area requirement for industrial use is quite high using the generic formula in the computation at 17,777 hectares, actual utilization in 2019 was only 1,403.99 hectares and only needs an additional 862.77 hectares to meet the required are until 2028. And compared to the proposed area of only 2,967.75 hectares, this is indicative of the economic trajectory of the city which is largely service-oriented. Neighboring provinces, Davao del Sur and Davao del Norte, play a complementary role as they currently host heavy industries.

For parks and recreation use, at least 52.63 hectares more are needed to satisfy the 430.10 expected utilization by 2028.

Land use for cemetery is expected to rise to 235.21 hectares from the actual use of 200.62 hectares. Thus, an additional 34.59 hectares is required, guided by the computation standard prescribed.

Land Use	Area Required for Year 2028	Area Currently Occupied Year 2019	Additional Land Requirement
Residential	13,068.58	7,876.39	5,192.19
Commercial	2,732.30	1,099.89	1,632.41
Industrial	17,777	1,403.99	862.77
Parks and Recreation	430.10	377.47	52.63
Cemetery	235.21	200.62	34.59
Total	34,243.19	10,958.36	7,774.59

Strategic Interventions for the Availability of Lands

Eminent Domain

Eminent domain is a strategic intervention that allows the city government to expropriate land if such land has been determined or proved to have a use that would benefit the greater majority. This implementation tool would be exercised only if all other options have been exhausted yet ineffective to carry out plans and programs articulated in the city's plan.

Lands which are subject to acquisition by the local government include:

- properties which are traversed by the proposed roads and bridges reflected in the road network plan;
- areas identified as part of the system of parks, open spaces, conservation areas and easements
- properties where proposed public buildings are to be located; and
- lands identified for socialized housing, resettlement and relocation sites for informal settlers.

The process of expropriation would need legislative action to authorize the acquisition and to appropriate and release funds for the purchase.

The Zoning Ordinance

The Zoning Ordinance shall serve as the strategic guide and policy intervention in the implementation of the Land Use Plan. It is a regulatory measure which is enacted to identify the various land use districts or zones, designate the allowable uses therein and prescribe physical and performance standard based on the approved general and urban land use plans as reflected in the Comprehensive Land Use Development Plan of the City.

The Local Development Investment Program (LDIP)

Local Development Investment Program is a three (3)-year rolling plan that details the cost of projects, equipment and other items necessary to implement programs and projects stipulated in the city plan. Based on the general experience of local governments, financial resources are never enough. It is vital therefore that the LDP is prepared and finalized through strict prioritization and alignment system to higher plan hierarchy.

The LDIP shall list down sectoral projects such as infrastructure, utilities, housing, livelihood, health care and other social services. The LDIP will also include capital outlays of various equipment needed for the effective operations in the various offices of the city government. Financial support needed for implementing the plan may either come from the local and national funds or other fund sources.

Increase Density of Zones to accommodate more development

Previous zonal low-density areas offer densification opportunities. Many of these low-density plots are in the outskirts of the CBD. The improvement of both infrastructure and utilities networks plus the utilization of areas for urban purposes provides an opportunity for densification and commercialization to pave the way for growth centers to emerge.

Encourage medium to high rise and mixed-use buildings within the CBD

To maintain the attractiveness of the Central Business District, mixed type of development shall be encouraged in the area. The reintroduction of residential areas or buildings within the CBD will enliven the commercial and service industries even after the regular working hours. It is seen that the current trend of establishing medium to high rise residential buildings within the CBD will revitalize the original downtown area of the city. More restaurants, shops and other service-oriented establishments are expected to be re-established in the CBD.

Promote re-use of old buildings or structures to accommodate new uses

Existing buildings and structures have about half a century life. When deemed possible, retrofitting can accommodate present trends in development and zoning. Cases in point are the movie theatres of the 1980s that have been redeveloped into shopping centers or entertainment centers. After an inventory of idle buildings, the local government can offer incentives to building owners for their redevelopment. These will allow the reutilization of existing commercial areas to accommodate new activities

Encourage development of the original CBD

The re-establishment of the original CBD as the prime commercial district will counter the magnets created by the malls in the outskirts of the city. With downtown redeveloped strategies, it is expected that commercial and residential buildings will be re-established in the area.

Taxation

The enactment of the Local Government Code of 1991 empowers the city government to explore and implement tax schemes and measures for business activities in areas that were not fully tapped before. A possible area to do this is on the CADT areas.

Another one is crafting an idle land tax policy to discourage land pricing speculations, aside from prompting land owners to make their extra land spaces productive.

Zonal values assessment values shall be updated regularly.

The city shall also explore innovative ways of regulating activities through taxation to avoid over-extraction or to ensure sustainability. One of these is imposing a height limit premium fee. Another one is a tax scheme or incentives to activities that require pollution control and provide compensation for ecosystem services.

Police Power

The zoning ordinance shall embody the police power of the city government of Davao in terms of spatial regulations and policies. The pursuit of a more rational allocation of spaces for land use purposes shall have sustainable development as the overarching theme in the crafting of specific regulatory framework. The focus on the imposition of buffer zones, easements and required greening in the urban areas shall be emphasized in the implementation and enforcement of the zoning ordinance and the CLUP as a whole. Conflicts shall be provided with remedies and/or resolutions with the City Council at the helm of the decision-making processes.

Proposed Land and Water Use Analysis

Forest and Forestland

Forest and forestland has a proposed area of 128,223.74 hectares which is considerably larger than the 13,995 hectares zoned in 2013, with the integration of the city's Forest Land Use Plan (FLUP).

The proposed land area is slightly lower than the existing use of 135,144.66 hectares since the roads and water bodies within the forest and forestland areas have been delineated and easement requirements already observed.

Of the proposed forest area, 77,688.22 hectares is designated for protection forest. This portion includes areas with elevation of more than 1,000 meters above sea level and slope of above 50% and existing closed canopy forest covering 5,977.58 hectares. Protection forest allows nature-based tourism under the condition that there shall be limited human activities.

For forests areas identified for production use, which cover some 50,535.52 hectares of

forest and forest lands, some activities for agricultural production like planting of permanent crops, would be allowed.

Reforestation would be carried out in forest and forest lands, especially in the watershed portion, to increase the health of the forest but this should be undertaken and carried out by the City Environment and Natural Resources Office.

The city government will utilize all possible resources and will fully involve the indigenous communities with ancestral domain titles for the reforestation activities and production activities supervised by the city government.

It will also explore systems that encourage the indigenous communities to become primary guardians of the forest. One of these systems may be the "payment for ecosystem services". Only when the preservation of forest is being provided premium and rewarded shall sustainability come into the picture. Tree-tagging and comprehensive inventory will also be pursued such that compensation will have basis for increases and decreases proportionate to the number of matured trees being nurtured in their respective ancestral domain.

Critical Watershed

The critical watershed area in the Mt. Apo Natural Park is strictly under prohibition that no human activities, including the raising or grazing of livestock, is allowed. This is intended for the ground recharge of the aquifers to proceed naturally without fear of contamination. This is also stipulated in the Revised Implementing Rules and Regulations of the NIPAS, or the DENR AO No. 2008-26 which prohibits any human activity in strict protection zones, like Mt. Apo, except for scientific studies, burial sites and religious ceremonies of the indigenous peoples.

Also under this strict protection is the Tamugan-Panigan watershed, classified as critical groundwater recharge area.

A total of 6,037.84 hectares compose the critical watershed area.

Agriculture

The proposed agriculture sector will cover a total land area of 55,824.63 hectares. The designated farmlands will be located in three areas: one area is in Suawan, Tamugan, Gumalang, Wines and Tambobong of Baguio District; another one in the areas of Dalagdag, Lampianao and Pangyan of Calinan District, Talandang of Tugbok and Callawa of Buhangin; and in the areas formed by Subasta, Wangan, and Riverside in Calinan District, and Tagakpan, Ula, Tugbok Proper, and Angalan in Tugbok District.

The city will delineate 583.45 hectares of agriculture lands for protection, and consists of farm lands with irrigation, areas covered by Davao Region Central Experiment Station that are used for research and experiments. These protection areas are located in the districts of Tugbok and Calinan.

Agriculture activities would be undertaken in the much bigger 55,241.18 hectares. In these areas are perennial crops and annual crops, although the city's agricultural lands are still planted with fruits like durian, rambutan and lanzones.

The proposed total land area for agriculture slightly dropped from the 2019 figure of 60,748.35, when the city adapts a policy to revert back to the forest the lands that were turned into agriculture. However, actual activities will still produce a wider area for agriculture because agricultural activities will be allowed in production forests, such as when farmers plant permanent crops in brush lands.

Municipal Water Zone

The water resource is of utmost importance for the sustainability of the city and the main focus will be the protection of this valuable resource.

A total of 2,604.35 hectares is allocated for the municipal waters protection sub zone which is comprised of mangrove areas, rivers, creeks, lakes and wetlands. These water bodies, being subjected to protection measures, will include the Matina Aplaya area, especially in the Punta Dumalag section, and along coast of Lasang and Bunawan, Ilang, Bucana, Matina Aplaya, Talomo Proper, Bago Aplaya, Lizada, Sirawan, and Binugao, where mangrove trees have been planted.

Municipal waters intended for production include aquaculture areas which raise and culture fish and other marine and aquatic species. The area covered by these fresh, brackish and marine water for aquaculture purpose is 162.13 hectares.

All in all, the proposed area for municipal water is 2,766.48 hectares.

An area of 20,060.99 hectares of coastal waters also form part of the city's water resource. This is composed of marine protected areas and marine protected area buffer with a combined coverage of 632.77 hectares and form part of the protection waters. Another set of areas, 554.84 hectares for aquaculture and 18,873.38 hectares for municipal fishing, form part of the production water area.

URBAN USE AREAS

a. Residential Areas

The city is proposing to add 621 hectares to the zoned area of 15,387 hectares in 2013 for dwelling and housing purposes, increasing the total area to 16,008.58 hectares for the 2019 -2028 period. This additional area will accommodate the expected swell of the population proportionate to the expected influx of business establishments, both domestic and foreign.

Residential areas shall continue to offer or accommodate the required or mandated open

spaces, educational facilities, local shops and stores, paved streets and pedestrian sidewalks.

As to the density of the residential areas, the building height requirement shall be observed in multi-storey buildings.

For horizontal residential areas, land use would be classified according to the density appropriate or proportionate to the requirement of the area. They are reduced to only two, the low density and high-density residential categories.

The observed use in 2019 of 16,755 is slightly higher compared to the proposed area as the latter figure accounts not only the actual area utilized but also committed projects for residential use which have yet to commence or are still at various levels of development. In the new plan period, some residential areas in Tugbok District have been reverted to agricultural use while those along the coast and major rivers, which are flood risk areas, have been zoned for commercial use.

a.1. Residential-1 (R-1) will have the proposed projects under this category that allows a maximum of only 20 dwelling units to a hectare. Development of this low density residential area assures a controlled development footprint, usually associated with high-end subdivisions. A total of 728.92 hectares is proposed for this use.

These will be located in 28 barangays: New Carmen, Bago Oshiro, Marapangi, Eden, Matina Crossing, Matina Aplaya, Magtuod, Maa, Langub, Dumoy, Catalunan Pequeno, Catalunan Grande, Bucana, Bago Gallera, Bago Aplaya, Lasang, V. Hizon, A. Angliongto, Waan, Tigatto, Pampang, Mandug, Indangan, Cabantian, Buhangin, and in Poblacion Barangays 19-B and 8-A.

a.2. Residential-3 (R-3) will accommodate additional housing projects to approximate more individuals or families seeking a house of their own. This category accommodates 66 housing units to a hectare. Contractors should still observe the mandated requirement for a live-able subdivision or housing area, including open spaces for parks and recreation, paved roads and sidewalks.

An area of 15,031.76 is proposed for this use .

The medium-density residential category, formerly designated as R2, is removed due to the usual and actual practice by homeowners in many, if not all, subdivisions of this category to construct extension structures to their existing houses. These modifications create a density impact similar to the next higher, or the high-density, category.

a.3. Socialized housing (SHZ) is proposed to be among the housing projects /to be spread in the different districts of the city, mainly to address the demand for affordable socialized housing needs including the resettlement of the underprivileged who are mostly assessed to be residing in danger zones.

This may accommodate housing program and projects undertaken by government, or the private sector for the underprivileged and homeless citizens. Housing programs for this sec-

tor is recommended to offer site development, long-term financing, liberalized terms of interest, and other benefits as contained in housing laws.

There shall be no residential development in areas identified as highly susceptible to geophysical hazards, although there will be special cases where this is allowed provided that developers and contractors are able to demonstrate engineering interventions and mitigating actions which are adequate enough to ensure safety and well-being of residents.

Expansion areas are identified in the areas of Cabantian, Indangan, Mudiang, Acacia Mandug and the eastern part of New Carmen to accommodate the housing needs of workers, who are expected to flock to the central business district and up north to the industrial district of Bunawan. Expansion is also identified in the southern barangays of Mulig, Bankas Heights, Alambre, Bago Gallera, Daliao, Marapangi, Lizada Sirawan and Binugao.

b. Commercial Areas

The proposed commercial area would total to 5,121.63 hectares, as expansion has already stretched as far south of Talomo and as far northeast to Buhangin and to the north at some areas of Catalunan Grande and Catalunan Pequeno. Except for Buhangin, which already shows robust commercial and industrial activities, the expanded central business district areas are formerly residential.

b.1. Commercial Zone 1 (C1-Z). This is a low density commercial area in the municipality or a city intended for neighborhood or community scale trade, service and business activities. This is allotted for enterprising individuals or families who opt for a small-scale or livelihood purpose. An area of 1,264.70 hectares is proposed to be utilized for this use.

b.2. Commercial Zone 2 (C2-Z). This is a medium to high density commercial area in the municipality or the city intended for trade, service and business activities performing complementary or supplementary functions to the central business district where a total of 3,748.33 hectares is proposed.

b.3. Commercial Zone 3 (C3-Z). This is a high density commercial area in the municipality or a city intended for regional shopping centers such as large malls and other commercial and business activities which are regional in scope or where market activities generate traffic and require utilities and services that extend beyond local boundaries. This may also require metropolitan level of development planning and implementation.

High rise hotels, sports stadiums or sports complexes are allowed to be constructed and established in this zone, which may likely be in the central business district, or its expansion area in the suburbs. For this use, an area of 108.60 hectares is proposed.

In areas in the commercial zone that are susceptible to flooding, owners are obliged to install mitigating measures, like constructing an additional storey, where the ground floor shall be used mainly as a garage and parking and for other services or utilities.

c. Industrial Areas

The proposed industrial area covers 2,967.75 hectares, a decrease by 2,459.25 hectares from the zoned area of 5,427 hectares in 2013. Actual use in 2019 covered an area of 4,944.02 hectares which account for industrial activities in Bunawan and Lasang, and in portions of Toril as well as documented industrial activities outside the industrial zones such as those in commercial zones. The figure also include areas intended for this use but have yet to be developed.

With the inventory for the proposed land use for the industrial sector, these areas that have not been classified as industrial but where industries and factories operate, will now be counted under industrial areas.

In the proposed plan, portions of the industrial areas in Bunawan District were reverted to agricultural use and some were zoned for residential purposes.

Also because of this practice, it has been found out that existing land use categories have not been fully subscribed, or utilized, as some businesses try to avoid the high rate in industrial areas compared to the rate in residential or commercial areas.

Existing residential areas in Bunawan shall construct or establish protective buffer or fence to avoid noise pollution and direct dust, chemical and other pollution impact from the operations of the factories in the industrial zone.

In the proposal, industries will be strictly required to install waste water treatment facilities, pollution control devices, and safety operations programs to comply with the rules and regulations of various government agencies.

The areas are categorized into three:

c.1. Light industrial, or industrial-1, would have 728.14 hectares. In this category are the both non-pollutive and non-hazardous industries, and the non-pollutive but hazardous industries and industrial activities in the different areas of the city. These will be located in nine barangays where there are still existing operations: Daliao, Lizada, Lubogan, Bankas Heights, Sirawan, Marapangi, Dumoy and Baliok in Toril District, and Panacan of Bunawan District.

Of these barangays, Sirawan has the biggest area allocation at 98.16 hectares .

c.2. Medium Industrial, or industrial-2, would have 950.94 hectares, to accommodate the pollutive but non-hazardous, and both pollutive and hazardous industries and industrial activities. These are in 14 barangays of Malagos; in Riverside of Calinan District; in Los Amigos of Tugbok District; Sirawan, Lizada and Binugao of Toril; Tibungco, Bunawan, San Isidro, Panacan, Mudiang, Mahayag, Lasang and Ilang of Bunawan District.

c.3. Heavy industrial, or industrial-3, with a proposed area of 206.87 hectares, are in Barangay Bunawan, the designated industrial zone. Factories and manufacturing companies

will operate from here, and all the other non-agricultural industrial operations will be relocated to this barangay. These factories and industries include large scale, highly pollutive but non-hazardous industries, the highly pollutive and hazardous industries, the both highly pollutive and hazardous industries, the highly pollutive and extremely hazardous industries, the non-pollutive but extremely hazardous industries, and the pollutive and extremely hazardous industries.

There are only four barangays identified to host these types of industries and these are in Binugao of Toril District, Mahayag, Lasang and Bunawan of Bunawan District.

c.4. Agri-industrial area would get 1,081.80 hectares for the operation of necessary industrial component of the operation of farms, which include the need for processing of crops and by-products, post-harvest mechanized operation, transport and storage, dressing plant for chicken and other poultry animals, slaughterhouse, desiccated coconut plants, food processing such as puree, concentrates and packed juices.

d. Institutional Areas

Institutional areas has a proposed area of 1,535.29 hectares for state universities, churches, school for the blind in Bago Gallera and a mental hospital along J.P. Laurel Ave., and other institutions.

When compared to the 2013 figure of 1,037 hectares and existing use in 2019 of 1,366.12 hectares, the area allocated to institutional use have increased. Added is the area occupied by the University of the Philippines-Mintal zoned as Special Institution in 2013.

Other land uses include the projected addition of barangay health units and sanitation facilities, barangay halls, places of worship and public school compounds.

Places that are susceptible to flood, storm surge, liquefaction and other hazards will no longer be allowed as new sites of public institutions.

e. Special Institutions

An area of 37.19 hectares is allocated for future projects such as the drug rehabilitation center in Malagos, the mega-jail in Wangan, and eight (8) residential care facilities for children in conflict with the law, abused women, senior citizens and other disadvantaged or fragile sectors of society.

The actual use in 2019 of 166.80 hectares on the other hand account for the committed area of the UP Mindanao campus.

f. Utilities/Transportation/Services

A bigger area is allocated to this use at 5,951.66 hectares compared to the existing use of 3,803.27 hectares in 2019 as well as the zoned 750 hectares in 2013 due to the need for designated terminals for interprovincial destinations at the entry points of the city as well

as the provision for depots and terminals for the city-wide operations of city buses. Three train stations of the Mindanao Railway are also identified to be placed in Mudiang, Maa and Crossing Bayabas.

The proposed additional areas have been allocated to the construction and operation of the waste-to-energy facility, the bypass road funded by the JICA, the Mindanao railway and the road projects under the IM4Davao. The three stations in Davao City for the Mindanao railway have also been identified in Mudiang in Bunawan, Maa and Crossing Bayabas in Toril. A one-kilometer radius around these stations would be dedicated as commercial zone.

However, the proposal for three interprovincial bus terminals to cater to the southern (Cotabato and General Santos areas), northern (Bukidnon and Misamis Oriental) and north-eastern routes (Davao del Norte, Agusan, Davao Oriental) have not been identified yet, including the areas they cover. But they are likely to be located near the boundaries, like Toril for the southern route, Buda for the northern route and Panabo City of Davao del Norte for the northeastern routes.

The High Priority Bus System will likewise need designated passenger terminals, whose platforms should suit the level of the floor of the buses for the safety and ease of access, especially for the women, the elderly and persons with disabilities. The city has updated its operation, from 2019 to preparation period of 2021-2023 and target operation by 2024.

The bigger land allocation will include spaces for the continuing widening of existing roads, construction of the bypass road connecting Toril in the south with Bunawan in the north-east, the proposed radial road parallel to the Diversion Road and the construction of an additional, or annexed passenger waiting terminal at the Davao International Airport.

Improvement in water and power utilities, such as the ongoing shift from underground water to surface water, and the ongoing underground cabling of electric wires in downtown area, need additional areas.

g. Tourism

This is given a land space of 1,774.24 hectares, to include Eden in Toril, whose nature park will be developed further into a tourism zone, along with Tamayong in Calinan District, where a prayer mountain has been established for followers of a religious sect, and in Malagos, where the cacao and chocolate center has been established by the Puentespina family.

The land use will also come from constructing view decks and exposition room for artifacts and native products.

This is a big decrease in land allocation, from the zoned area of 5,835 hectares in 2013 and the existing use in 2019 of 2,977 hectares after the former tourism-designated areas of Baganihan and Datu Salumay of Marilog district, are reverted to forest. Tourism spots in this district covered a wide area because most establishments are into mountain resorts. These tourism spots are being reverted to protection forest, where slopes slant to more

than 18 percent, and to production forest.

Chinatown also zoned as tourism in 2013 is reverted to commercial zone in 2019, thus contributing to the decrease in the land area for tourism development.

The mountain resorts in Catigan, Tagurano and portion of Marapangi are reverted to production forest use. Under production forest, eco-tourism can be allowed on a limited scale.

h. Cemetery/Memorial Parks

This is allocated with 208.70 hectares in 2019, down from the 2013 zoned area of 237 hectares. The reduction is explained by the intention of the city to uphold its nature as a watershed area, and to avoid any or all forms of activities, including the establishment of cemeteries, that may disrupt the conservation or contaminate the underground water.

The area in the proposed plan is higher compared to the recorded existing use in 2019 with an area of 200.62 hectares as it already includes the Davao Orchard cemetery in Barangay Langub, Talomo District. The establishment of cemeteries and memorial parks in and near the watershed areas, areas where the aquifers are located and beside or near residences.

The city will propose to developers and owners to construct columbariums and other similar schemes that will maximize utilization of available spaces. Re-designing the 20 city-owned cemeteries shall be considered to accommodate the increasing demand.

i. Buffer/Greenbelt Area

This has an allocation of 1,237.49 hectares to ensure that agricultural production areas do not intrude into the nearby forests. A buffer shall be established between conflicting zones, e.g., residential and industrial. A similar buffer should be identified to avoid intrusion into the protected and critical watershed areas.

A greenbelt zone must be observed by housing areas and subdivisions for a mini-forest or vegetation.

j. Open Space/Easement

There shall be easement along river banks and major canals. Aside from protecting the waterways and help reduce pollution, the easement may also provide various uses, including possible new public transport routes, recreational or food strips.

A major project, for example, is the construction of the coastal road, from Bago Aplaya to R. Castillo which is expected to add land space through the reclamation of the areas for the road.

An area the size of 11,164.08 hectares is expected to be freed up to observe the open

space requirement of housing and subdivisions and the enforcement of easement along the waterways. This has exponentially increased compared the existing use in 2019 which totaled 245.56 hectares only.

The easement requirement implementation will require the relocation of informal settlers to more appropriate residential areas.

The policy is to have the easement in all the rivers in the city. Along the downstream areas of the major rivers.

The policy to require easements and open spaces is a basic tool in providing for a more organized and balanced transformation. Easements, unless specified in the local council, shall have the required measurements as provided for by the national government.

k. Parks and Recreation

Some 414.11 hectares will be dedicated to parks and playgrounds, more expansive compared to the zoned area of 110 hectares in 2013 as well as the existing use in 2019 of 377.47 hectares in 2019.

The existing ones in the urban area are Rizal Park, Quezon Park, Osmena Park, Freedom Park, Mabini Pocket Park, Magsaysay Park and the People's Park.

The city will transform open spaces of subdivisions that have been turned over to the city government into parks and playgrounds.

Some residential areas that are perennially submerged during heavy rains, and whose mitigation and other interventions have not provided adequate safety and relief to home-owners and residents, may also be converted into parks and recreation.

Jade Valley is one classic case where there will be no more building permits for residential purposes. Located in the former path of the Davao River in one of its lowest portions, this residential area has been pestered by recurring floodwaters that submerge practically the entire community. The restrictions through zoning policy will gradually transform the area into spaces for park and recreation.

l. Urban Ecological Enhancement Zone

This is the answer to the concept of urban forest, to refer to the environmentally critical areas in the urban center such as pocket ridges, sharp slopes of 18 percent or higher that pose hazard to people but can serve as areas where vegetation and natural greening can be nurtured not only for aesthetics but also for environmental purposes.

These places may be turned into other allowable use, such as for tourism, commercial enhancement of business establishments such as when they would be used as view decks or extension of open area dining.

Where feasible, these areas may be filled with vegetation to strengthen their formation, and provide an ecological breathing space in the urban centers.

The total proposed allocation to this special item is 4,681.07 hectares, five (5) times bigger compared to the existing use of 564.37 hectares and almost 21 times more expansive than the zoned area of 223 hectares in 2013. The biggest area is in Shrine Hills, areas in Langub, Punta Dumalag, and in the urban area with their sharp ridges and ravines, as well as those which are 18% or higher.

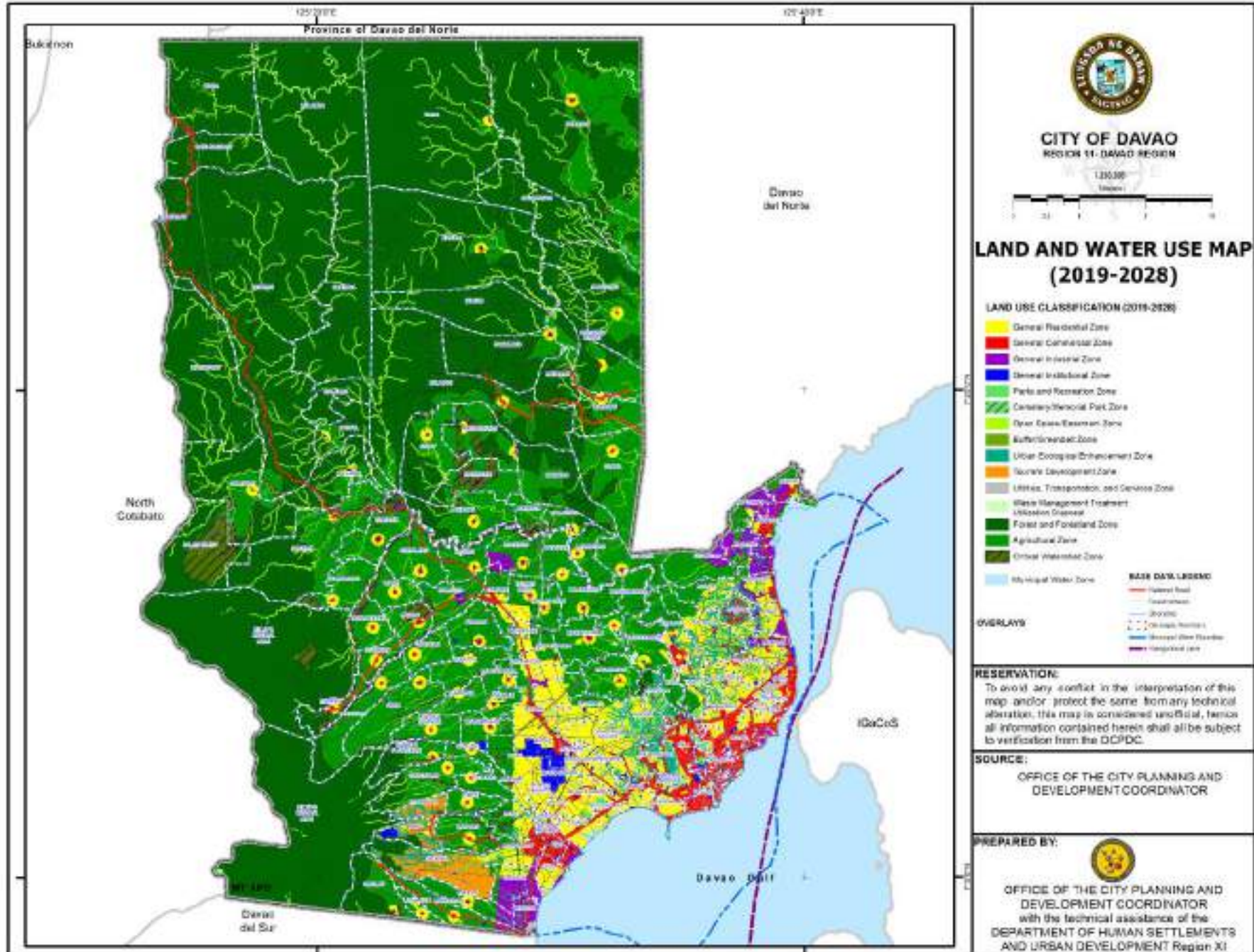
m. Waste Management, Treatment, Utilization, Disposal Zone

This refers to areas intended for waste segregation, separating the reusable and recyclable materials before final disposal of residual waste; for treatment of medical, toxic, and hazardous solid and liquid waste before proper disposal; for composting of biodegradable waste; for treatment of sewerage and septage waste before proper disposal and possible utilization of waste as source of energy. This zone is allocated an area of 45.53 hectares compared to the 11.64 hectares in 2019 which only cover the area utilized by the sanitary landfill in New Carmen, Tugbok District.

Proposed Land and Water Use Analysis

Land Use Category	Area (has)
Forest and Forest Land	128,223.74
Protection Forest	77,688.22
Production Forest	50,535.52
Critical Watershed Zone	6,037.84
Agriculture	55,824.63
Protection Agriculture	583.45
Production Agriculture	55,241.17
Urban Use Areas:	51,147.31
General Residential	16,008.58
Residential-1 (R1)	728.92
Residential-3 (R3)	15,031.76
Socialized Housing	247.90
General Commercial	5,121.63
Commercial -1 (C-1)	1,264.70
Commercial -2 (C-2)	3,748.33
Commercial -3 (C-3)	108.60
General Industrial	2,967.75
Industrial-1 (I1)	728.14
Industrial-2 (I2)	950.94
Industrial-3 (I3)	206.87
Agri-industrial	1,081.80
General Institutions (Ins)	1,572.48
Institutions	1,535.29
Special Institutions (Sins)	37.19
Parks and Recreation	414.11
Cemetery/Memorial Park	208.70
Open Space/Easement	11,164.08
Buffer/Greenbelt	1,237.49
Urban Ecological Enhancement	4,681.07
Utilities/Transportation/Services	5,951.66
Tourism Development	1,774.24
Waste Management, Treatment, Utilization, Disposal Zone	45.53
Municipal Water (Inland Area)	2,766.48
Total	244,000.00
Municipal Water	20,060.99

Map 7.1 Proposed Land and Water Use Map (2019-2028)



OVERLAY AREAS

Below is a list of overlay areas requiring an additional set of regulations in determining its land use.

Landslide Overlay Areas

Landslide overlay areas are those identified by the city as highly susceptible to landslide and where specific regulations are provided in order to minimize its potential negative effect to developments.

There are areas with high and moderate risk to landslide. High risk areas cover 26,951.03 hectares while areas with moderate risk total to 149,790.10 hectares.

Flood Overlay Areas

Flood overlay areas are those identified by the city as prone to flooding and where specific regulations are provided in order to minimize its potential negative effect to developments.

High risk to flood areas are sections of 56 barangays with a total land area of 6,993.17 hectares. Talomo tops the list with 1,799.82 hectares, followed by Bucana with 1,144.06 hectares and Matina Aplaya with 881.51 hectares, while sections of 104 barangays have moderate risk to flood with a land area of 928.71 hectares.

There are also areas with moderate risk to flood with a total land area of 19,589.12.

Storm Surge Overlay Areas

There are 75 barangays which are vulnerable to storm surge with a combined land area of 9,753.36 hectares. Topping the list are barangays Talomo with 1,710 hectares, Bucana with 1,141.53 and Matina Aplaya with 851.20 hectares.

Liquefaction Overlay Areas

A total of 162 barangays are vulnerable to liquefaction, the total land area of which is 10,631.72 hectares affecting the same areas as that of storm surge, with again Talomo, Bucana, and Matina Aplaya as the top three barangays.

Active Fault Overlay Areas

These refer to areas in the city defined by five (5)-meter wide strips on both sides of and running along identified earthquake faults which require regulations to minimize the possible harmful effects of fault movements to properties.

Sections of 55 barangays are within the active fault with a total land area of 147.80 hectares.

Heritage Overlay Areas

These are areas in the city that refer “to historical, anthropological, archaeological, artistic geographic areas and settings that are culturally significant to the country, as declared by the National Museum and/ or the National Historic Institute.” The following are the heritage site in the city: Andres Bonifacio Monument in Toril, City Hall of Davao in Barangay 2-A, and Ohta Kyozauro Marker, in Mintal with a combined land area of 0.135424 hectares.

Transit Oriented Development (TOD) Overlay Areas

The Transit-Oriented Overlay Areas cover all properties having a radial distance of one kilometer from the city’s Multi-Modal Terminal. TOD areas total 1,061.68 hectares comprised by sections from the following barangays: Acacia, Bato, Crossing Bayabas, Langub, Lubogan, Ma-a, Magtuod, Marapangi, and Mudiang.

Billboards Overlay Areas

These are areas in the city designated for the regulated placement of billboards which are in barangays 40-D, Bucana, Lasang, and Talomo with a combined land area of 2.42 hectares.

Cultural Tourism Overlay Areas

These are areas in the city designated to host cultural tourism activities with a land area of 89.57 hectares composed of sections from barangays 13-B, 14-B, 15-B, 23-C, 26-C to 30-C, 32-D, Leon Garcia Sr., and Tomas Monteverde

Biodiversity Overlay Areas

These areas are composed of closed forest with 5893.55 hectares, Malagos Watershed Reservation 221.90 hectares, Mt. Apo National Park 11,138.09 hectares, the Obu-Manuvu Ancestral Domain Watershed 13,109.39 hectares and Open Forest 20,522.11 hectares. The combined total land area is 50,885.04 hectares.

Ancestral Domain Overlay Areas

These refer to all areas generally belonging to Indigenous Cultural Communities/Indigenous Peoples (ICCs/IPs) comprising lands, inland waters, coastal areas, and natural resources therein, held under a claim of ownership, occupied or possessed by ICCs/IPs.

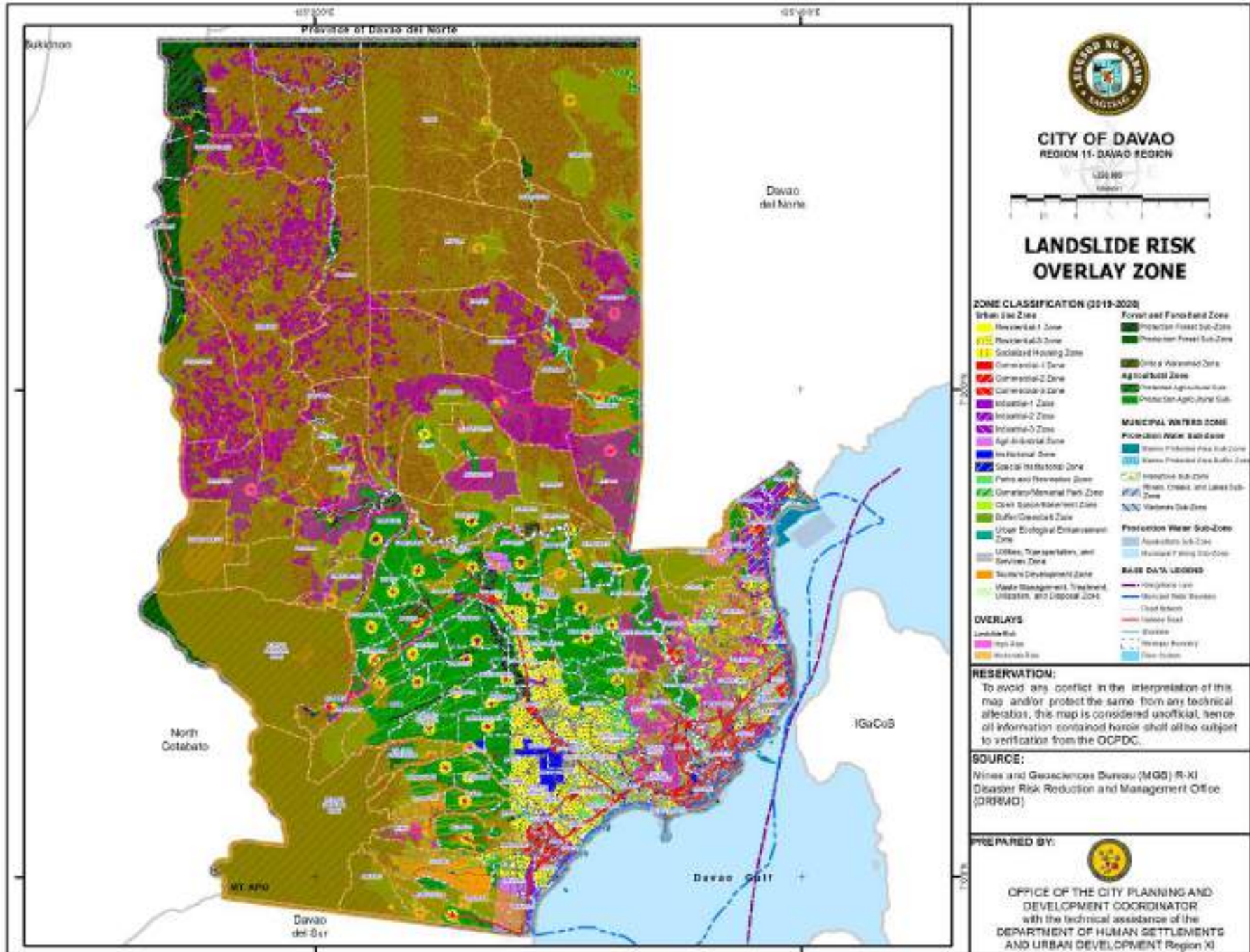
The total land area is 159,877.72 hectares composed of the following: Ata with 75,795.88, Bago Tagabawa Mt. Apo 8,188.37, Bagobo Klata 9,548.76, Bagobo Tagabawa 2,882.87, Matigsalug Manobo 24,729.06, and Obu Manuvu 38,732.78 hectares respectively.

Water Resource Overlay Areas

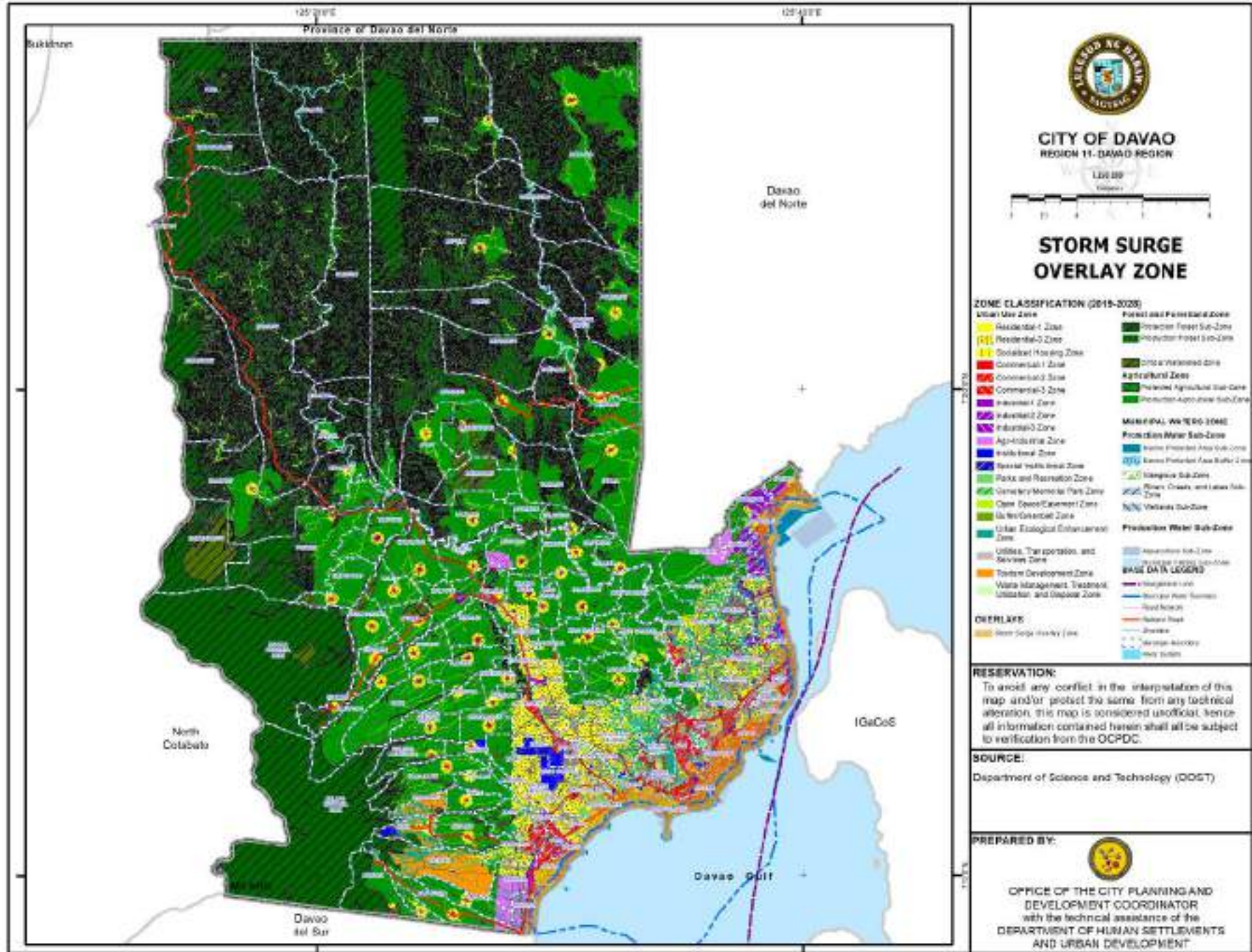
These are areas identified as location of principal source of drinking water of the city containing huge volume of water available for appropriation. The Davao City Water District has existing planned/proposed production wells with a 25-meter radius buffer for each well. Areas within the water resource zone are hereby declared as protected areas.

Water resource overlay areas is composed of sections of 73 barangays with a total land area of 47,625.51 hectares.

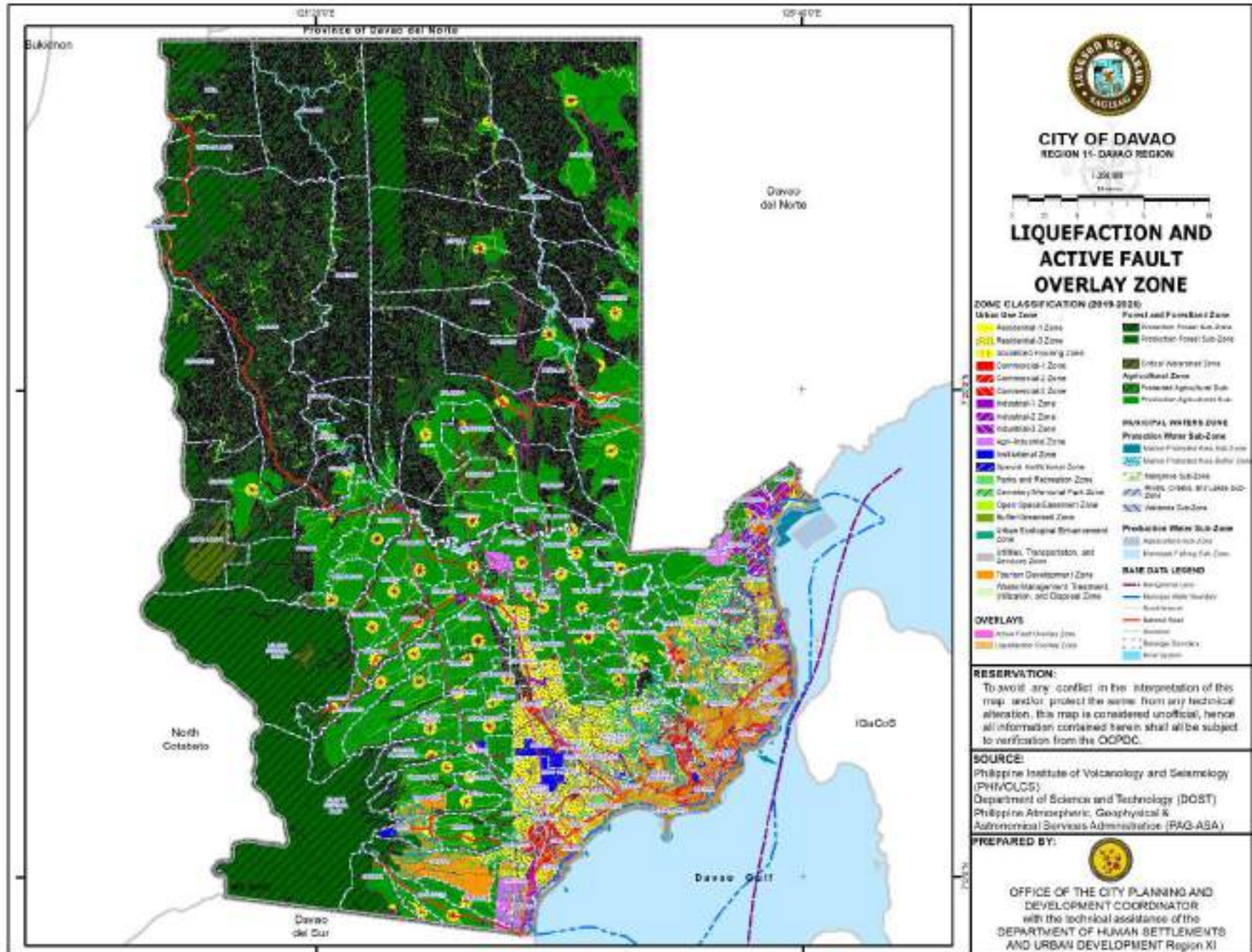
Map 7.2 Landslide Overlay Zone



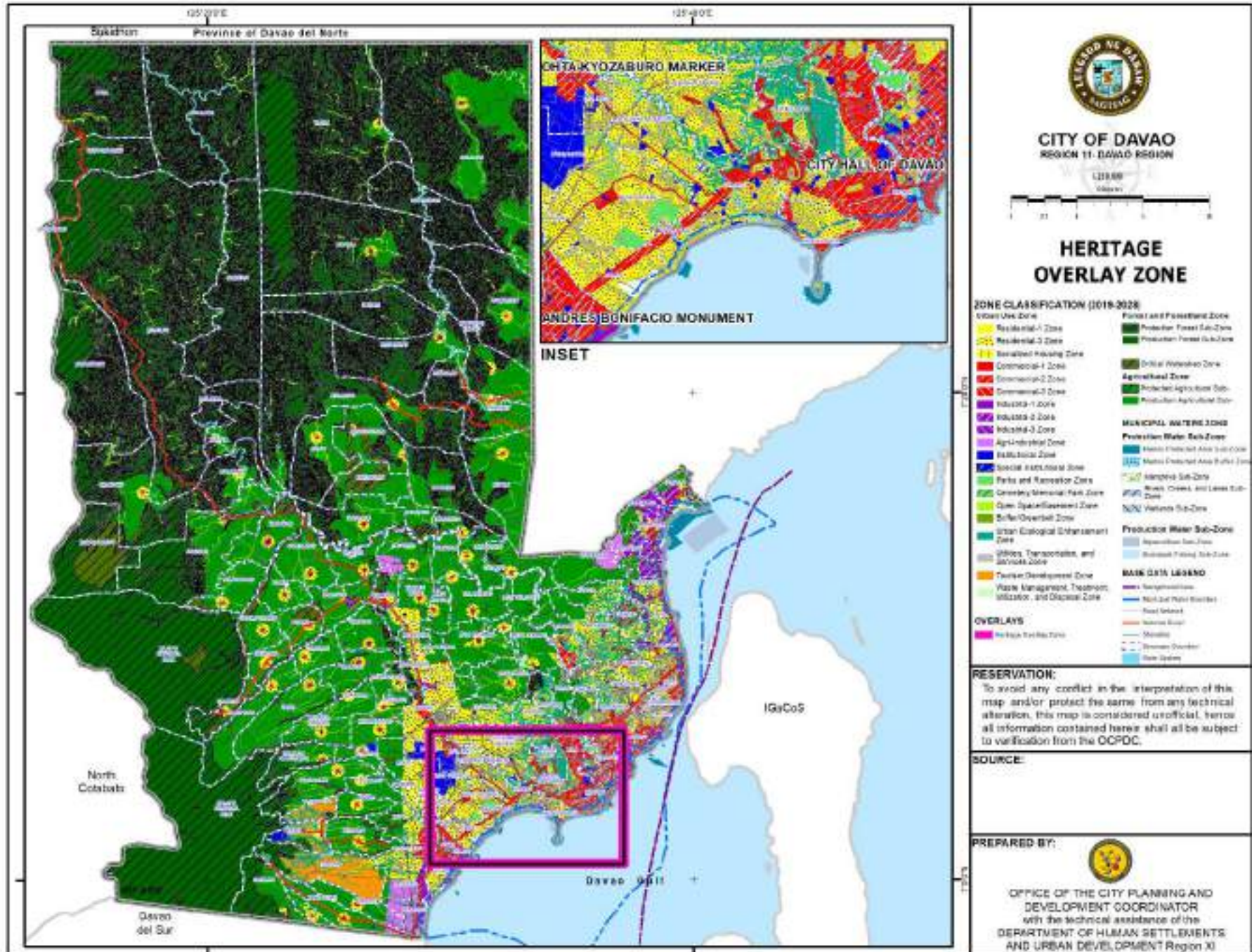
Map 7.4 Storm Surge Overlay Zone



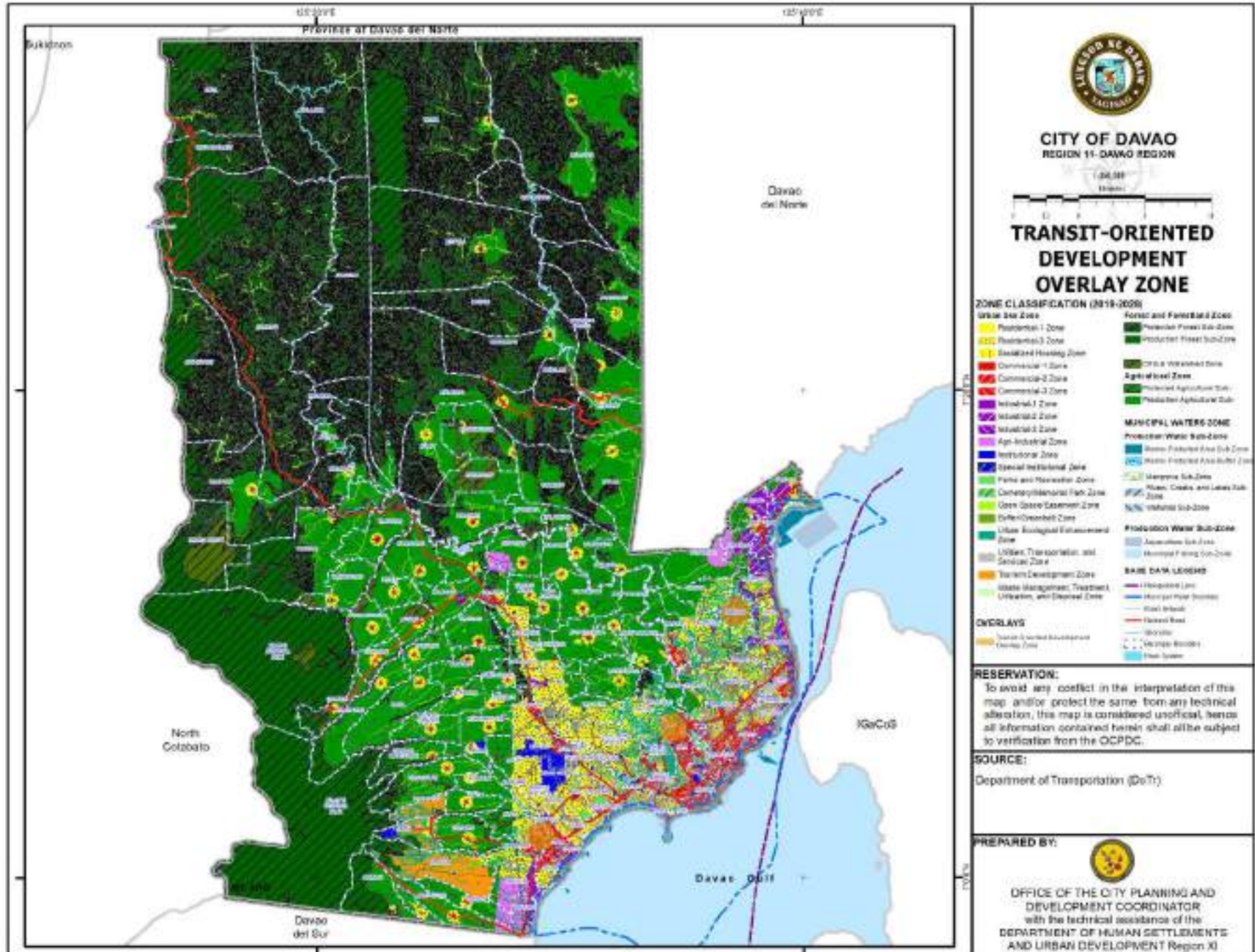
Map 7.5 Liquefaction and Active Fault Overlay Zone



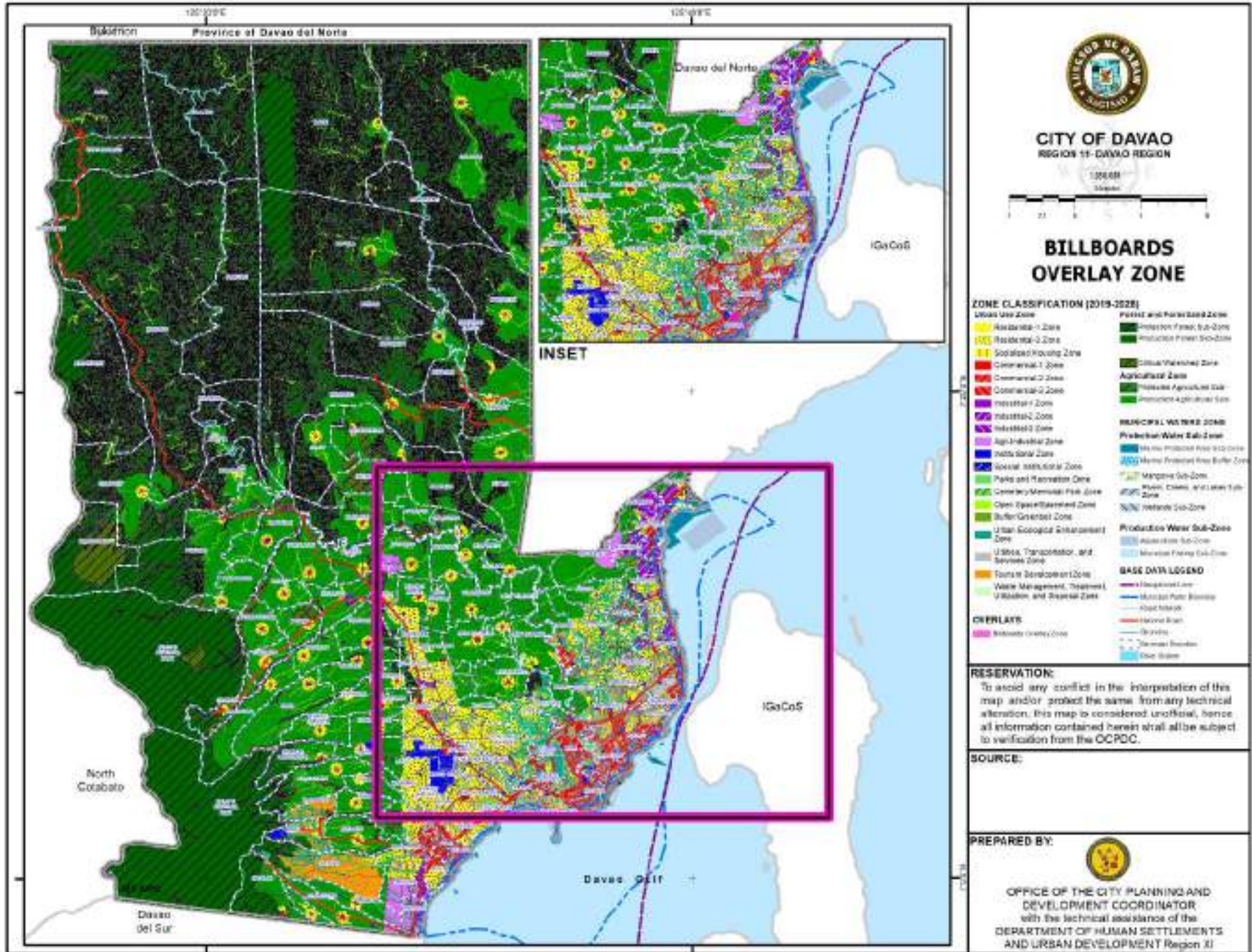
Map 7.6 Heritage Overlay Zone



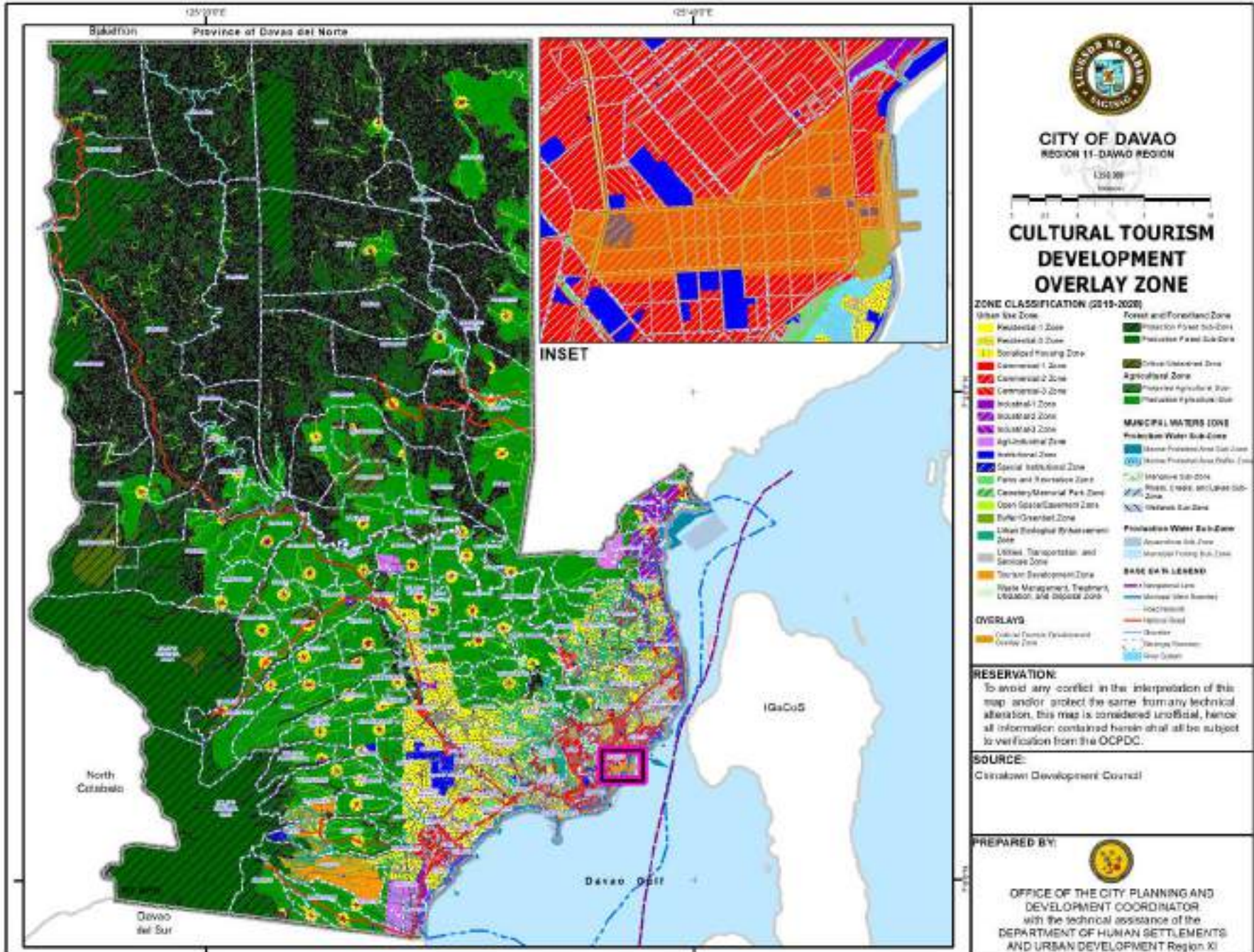
Map 7.7 Transit-Oriented Development Overlay Zone



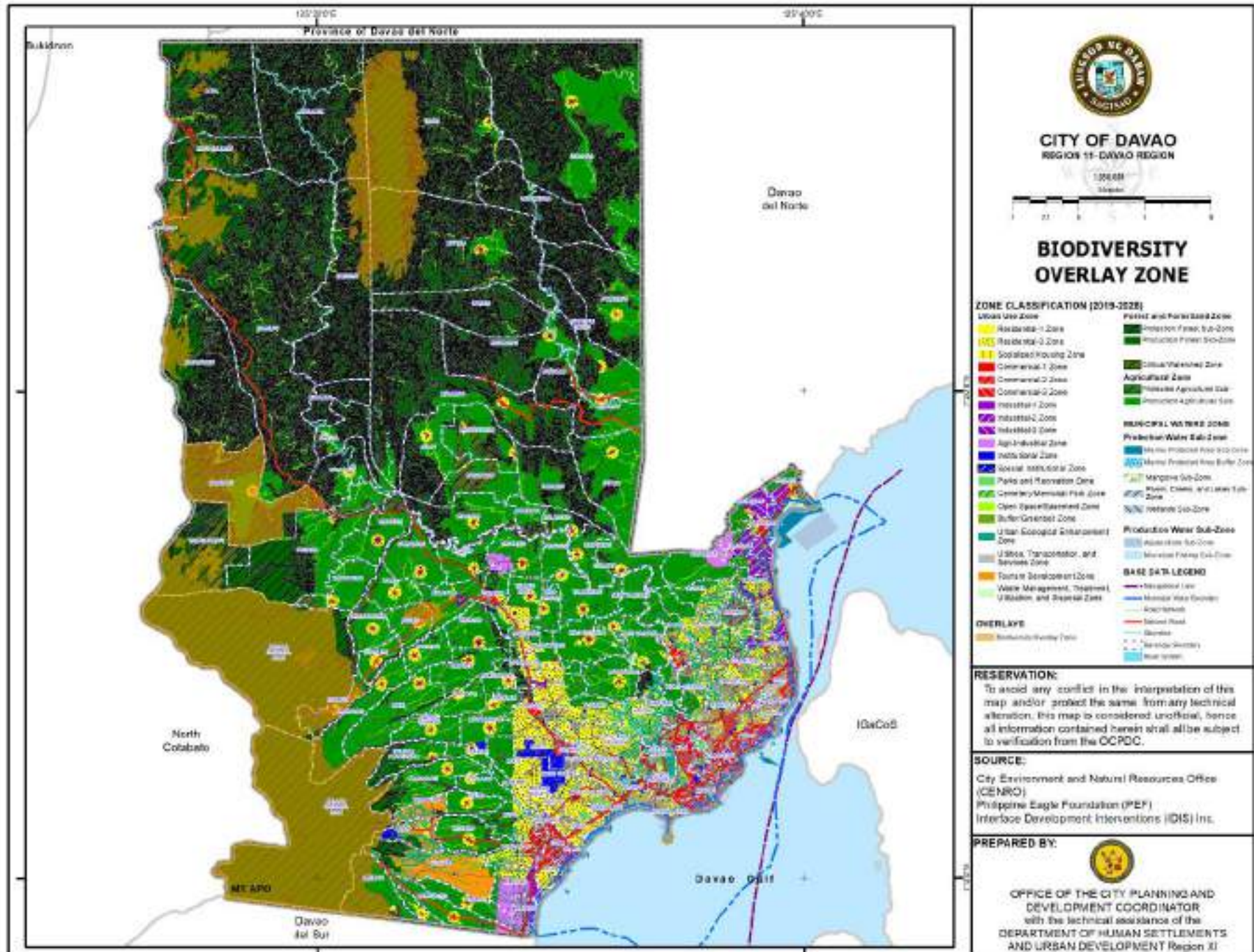
Map 7.8 Billboard Overlay Zone



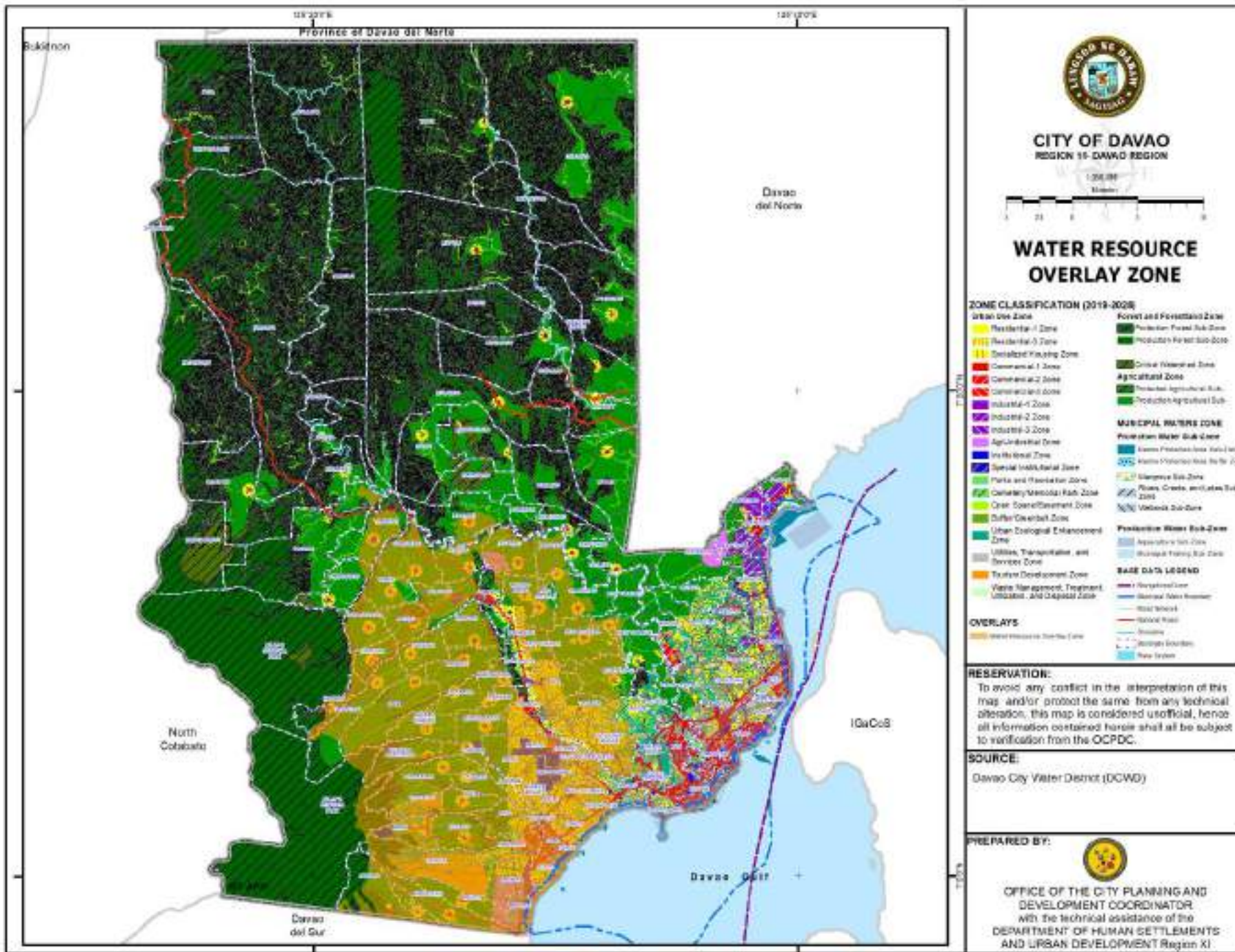
Map 7.9 Cultural Tourism Development Overlay Zone



Map 7.10 Biodiversity Overlay Zone



Map 7.12 Water Resource Overlay Zone



Land and Water Use Policies

General Policies for Urban Areas

The city encourages growth in urban areas by providing a mix of land uses within the urban center. These mixed land uses include commercial, retail and residential uses where these are appropriate, and which are supplementary to and compatible with the primary land use (e.g industrial zone) through the following urban center policies:

Promote high density accommodation that is associated with primary land use (zone) within the urban center with medium-density housing in surrounding areas where possible and appropriate

Enhance and strengthen the urban centers by expanding or enhancing existing policies where and when needed by activities related to business, commerce and trade, incorporating a mix of other uses including activities after office hours and to further provide housing opportunities and improving access to and within the urban centers

Promote more “live near work” opportunities by increasing the level of medium-density housing matched to the types of employment activity created

Ensure commercial and industrial activity within urban centers as regard to the amenities of adjacent residential areas

Provide retail development at urban centers that gives direct support to activities or amenities for residents within the area

Promote and encourage the use of Geographical Information System (GIS)- related or linked technology to detect climate-change aberrations, choose appropriate location for settlement, and for other urban use activities.

Prepare structured planned development for urban centers

Discourage “ribbon type” development along main roads

Encourage Transit-Oriented Development (TOD) in urban centers where appropriate

Ensure that there is no reclassification and /or rezoning from one use to another for a period of five (5) years

Ensure that there is no exemption for a period of three years

Urban Areas

- Minimize urban exposure to hazards, to be able to avoid risk;
- Relocate existing settlements and demolish substandard buildings in identified high risk

areas;

- Encourage densification of identified safe areas;
- Prioritize situating or locating residential areas to relatively safe areas;
- Prioritize safety over accessibility when it comes to location standards;
- Reduce vulnerabilities through mitigation measures (spatial or non-spatial, structural or non-structural);
- Cost for mitigation shall be shared by both the LGU and the community;
- Situate settlement areas away from environmentally-critical and sensitive areas
- Provide incentives instrument to establishments adopting on-site innovative climate smart and eco-friendly technologies and practices with emphasis on energy-efficiency (using on-site renewable energy generation technologies) and water management;
- There shall be no industrial activities to be located in the urban area.
- There shall be no future development in the river floodway within urban areas, except those that enhance the environment such as mangrove reforestation, promenade and similar activities.
- Mix uses are allowable provided they conform to land use standards;
- Building of any structures shall conform to the Green Building Code as Referral Code of the National Building Code (PD No. 1096), Sanitation Code and other hazard mitigating standards;
- Parking regulations shall be strictly followed;
- Non-conforming structures shall be relocated in appropriate area subject to procedural standards;
- Establishments shall promote green growth development;
- Drainage systems shall conform to hazard mitigating standards;
- Strict enforcement of the provisions of RA 9003;
- All structures shall employ hazard mitigating standards;
- No new structures will be permitted if not in conformity with the land use standards;
- Prohibit the extension of all existing non-conforming structures;
- Regulate the installations of power and telecommunication distribution lines according to standards;
- Increase density through infill development;
- Construct risk-mitigation structures to protect important urban use areas (i.e. flood control, sea wall, slope stabilization mitigation structures);
- Readiness to the establishment of redundancies or back-up systems for important socio-economic support facilities such as hospitals, schools, commercial areas, government facilities;
- Prioritize residential and critical point facilities to be located in relatively safe areas or areas where mitigation is feasible
- Impose hazard-resistant building design regulation for areas prone to hazards;
- Minimize density in hazard prone areas and increasing density in relatively safe areas;
- Employ mitigation, warning and evacuation systems for existing settlements within the river floodway to ensure their safety;
- Commercial use shall be within the area zoned as commercial or in other zones as may be allowed in the zoning ordinance;
- Institutional use shall be allowed within the institutional zone and in areas where there is an obvious lack of presence of such institution, through an allowable use, and mandatory retrofitting of structures based on the hazards affecting the area shall be done to

- structures which shall be retained;
- Densification in areas with lower risk to floods;
- Control growth in flood plains

Infrastructure and Utilities

- Strategic establishment of transportation access/routes to redirect settlement growth;
- Strategic establishment/upgrading of utility distribution systems;
- Mitigation measures shall be adjusted to cushion the magnitude and severity of impact of existing hazards;
- Climate proofing/mitigation of key distribution and access systems; Zoning provisions for flood-resistant construction design (building height, adhering to flood design standards prescribed by the Structural Code of the Philippines);
- Locate the construction of critical point facilities in relatively safe areas;
- Apply concept of service redundancy to ensure continued area access;
- Provide social and economic support services;
- Strict imposition of hazard-resistant building and structural design standards for critical emergency management services and government facilities;

Residential Area

- Allow mix uses only if they conform to land use standards
- Declare “No Habitation Zone” and No Build Zone in high hazard vulnerable areas
- Impose mandatory relocation of settlements in moderate to high risk areas
- Situate or locate residential uses in and away from the environmentally critical and sensitive areas.
- Provision of socialized housing sites to accommodate families affected by major infrastructure projects, those located in danger zones, the homeless and those who would possibly be affected by any fortuitous event.
- Situate settlement areas outside of flood-prone areas. For existing ones, institute other risk mitigation measures such as density control and building design regulations, establishment of evacuation routes, and/or establishment of flood control infrastructure;
- Redirect settlement growth by locating propulsive centers and central facilities outside or in low susceptible flood prone areas where risks can be managed

Socialized Housing

- Enforce the provisions, particularly of Republic Act 7279;
- Provide or facilitate socialized housing for the poor and the informal settlers;
- Promote on-site housing through the Community Mortgage Program (CMP);
- Resettle displaced residents affected by urban development, those living along the right-of-way and danger zone areas and along environmentally critical areas, through appropriate government programs where applicable;
- Foster partnership with concerned government agencies, private entities and urban poor sector in the comprehensive and continuing urban development program to address housing problems;
- Strictly comply with Presidential Decree 957 (regulating the sale of subdivision lots and

- condominiums);
- Strictly comply with Batas Pambansa 220 (providing standards ,and technical require- ment for economic and socialized housing projects);
- Strictly comply with Presidential Decree 1096 or the National Building Code (containing specific provisions relevant to traffic-generation, advertising and business signages, fire zones, erection of more than one principal structure, dwellings or near lots, access yard requirements and dwelling groups);
- Strictly comply with Presidential Decree 1216 (requiring a 30 per cent open spaces in a subdivision and amending Presidential Decree 957 with regard to the provision of roads, alleys, sidewalks and open spaces);
- Strictly comply with Presidential Decree 953 (requiring the planting of trees in subdivi- sions, open spaces and roads/streets);
- Strictly comply with Presidential Decree 296 (prohibiting reclamations or occupancy of portions of rivers, creeks, esteros, and drainage channels);
- For private subdivisions, government actions will focus on the proper enforcement and implementation of the provisions of Presidential Decree 957 and *Batas Pambansa 220*.

Easements/Buffers

- Banks of streams, creeks, and rivers shall have an easements both sides of three (3) me- ters in urban areas, except for the easement of the Davao River from the mouth all the way up to the area of Marfori Bridge in Maa where the effective easement is 30 meters; 20 meters in agricultural lands, and 40 meters in forestlands as provided for under the Water Code of the Philippines;
- These areas shall be declared “No Habitation” and No Build Zone”;
- These areas shall be planted with suitable vegetation to enhance its aesthetic values;
- Except for navigational, research and other scientific purposes, these areas shall be prohibited from any activities;
- Buffer zone shall be provided between two conflicting uses
- Encourage expanded easements as an effective strategy in reducing exposure;
- Maintain and protect the surrounding natural environment, including open and green spaces; promote clean environment.
- Establish greenbelts along shorelines or coastal areas to serve as wall or blocks against big waves, storm surge, tsunamis and other related hazards. These will also enhance the aesthetic value of the ecosystem.

Tourism Areas

- Only low density structures shall be built within tourism areas to preserve its natural and aesthetic scenery;
- Promulgate provisions for coastal and nature-based tourism;
- Develop the area that will conform with International Standards;
- Retain the indigenous qualities, attributes, and characteristics of the area;
- Respect the culture - indigenous knowledge, systems, practices, and beliefs of the Indige- nous Peoples located in the area;
- Tourism activities shall conform to prescribed standards;
- Strictly enforce solid waste management measures;

- Activities shall be ecotourism-oriented, strictly preserving existing natural conditions of the area, with minimal environmental disruption; activities would be eco-friendly;
- The use of semi to non-permanent structures shall be ensured to minimize and curb the degradation of the tourism sites and its environs;
- Develop standards and regulations for environmental and cultural impact assessments, monitor existing and proposed tourism developments, and ensure that carrying capacities defined for tourism destinations reflect sustainable levels of development;
- Design and implement educational and awareness programs to encourage people to go for sustainable tourism development issues;
- Develop design and construction standards to ensure that tourism development projects do not disrupt local culture and natural environments;
- Regulate and control tourism in environmentally and culturally sensitive areas;
- Modify legislation pertaining to tourism to include environmental protection clauses for natural areas;
- Ensure that environmental impact studies are part of any development project that deal with natural areas;
- Ensure that environmental impact and carrying capacity studies are undertaken for all nature-based tourism sites;
- Create management plans for each protected area, highlighting tourism needs for those with substantial visitation;
- In the aspect of ecotourism, activities shall include: sightseeing or viewing, bird watching, trekking, hiking, research or educational purposes, and other activities that do not inflict detrimental impacts to the ecology.

Industrial Areas

- Agro-Industrial use shall be confined only in agro –industrial zone;
- Expansion or extension of existing industrial buildings within the nonconforming land use shall not be allowed;
- Industrial use shall be allowed within the industrial zone and shall install necessary pollution control systems;
- Industrial structures and activities shall be located only in the designated industrial zone.
- Buffer zone of 20 meters will be required to separate the industrial zone from other zones.

Drainage and Sewerage

To ensure proper sanitation and appropriate collection, transmission, treatment and disposal of rainwater and sewerage or domestic wastewater from industrial establishments, the following policies shall be adopted:

- Installation of separate drainage and sewerage pipes in preparation for the establishment of a sewerage treatment plant to arrest pollution of the main waterways;
- Establishment of an integrated river-wide water quality management system in conformance with Republic Act 9275 or the Clean Water Act;
- Compliance with existing national regulations on sanitation and wastewater disposal systems;

- Installation of waste water treatment facilities in the public market and slaughterhouse;
- Formulation and adoption of a Comprehensive Drainage Master Plan;

SLOPE AREAS

1. No development or expansion on 18% and above steep slope areas for urban development. Properties with slope of 18% and above shall not be developed and shall be declared as green space and declared as Urban Ecological Enhancement Subzones
2. Indicate and include the zone and hazards/risks in the zoning certification for information purposes. (overlay hazard maps in the issuance of zoning certifications)

MAJOR TRANSPORTATION PROJECTS

- The city will handle and develop major transportation projects.
- Crossing Bayabas, Ma-a, and Mudiang and all other areas identified as appropriate terminal transport stations shall become a Transport Oriented Development (TOD) area.

Disaster Risk Areas

1. No developments will be allowed within hazard or high risk areas.
2. No project applications for housing and settlement in identified high risk areas will be approved.
3. Strict implementation of 30 meters easement from the mouth of Davao River all the way up to the F. Torres Bridge in Maa will be observed. The wider easement shall accommodate medium-rise tenement buildings for onsite relocation, roads, bike lane and river promenade.
4. Existing structures or houses will be retrofitted to adapt to hazards.

Settlement Area Expansion

TORIL

1. Green spaces shall be utilized for expansion of agri-industrial development areas.
2. R3- high density residential areas are designated here to support the labor and residential needs of its commercial and agri-industrial activities. Priority shall be given to socialized housing and housing projects which have 65 lots per hectare.

TALOMO

Catalunan Grande and Baliok are identified as expansion areas for residential facilities.

BUHANGIN

Indangan and Acacia are also expansion areas for residential facilities.

Settlement Areas

1. Design of new settlement areas shall not compromise the natural landscape of the areas, especially natural waterways.
2. Strict enforcement of rainwater catchment facilities for new and future construction of residences, tenements, office and other buildings shall be implemented.
3. Green designs such as installing solar panels and white-colored roofing, ensuring natural lighting indoors, and proper ventilation shall be incorporated in new project developments. Other options include permeable pavements, wall gardens, urban greening, skylight, open space within the structure, insulated roofings. Materials shall be locally sourced.
4. CENRO shall be part of CHLURU.
5. CENRO will coordinate and oversee the strict implementation of 10% open spaces and ensure the development of the open spaces into a functional park prior to turnover to the homeowner's association.
6. Medium-rise buildings will be encouraged for residential purposes.
7. Tap available and reliable technology, including the use of local sturdy materials, such as bamboo and coconut, for low-cost and socialized housing.

Forest and Forestlands

1. Forest lands encroached by agricultural activities shall be converted to their original land use.
2. There shall be a buffer zone between protection and production areas.
3. Reforestation shall be done in upland forests to enhance vegetative cover, increase water absorptive capacity of watershed areas to manage the volume and the delay arrival of runoff in the lowlands.
4. Protection of critical watersheds to manage potable and surface water resources will be ensured.
5. Rehabilitation of upland forests as a strategy for managing lowland flooding will be pursued.
6. Quality of the natural environment will be enhanced.
7. Strategies that will contribute to the mitigation of greenhouse gases will be implemented.
8. Expansion of easements and designation of areas for open spaces will be implemented.
9. Field demarcation/delineation of hazard-prone areas will be observed.
10. Synergy and convergence of protection policies with adjacent LGUs with the same land uses within the boundaries will be ensured.
11. Conservation efforts may allow limited recreation and encourage co-management of forest land.
12. Strict protection of existing natural forests will be implemented.

Protection

1. The distance of settlements or areas of development from the identified water aquifers shall be identified.
2. Strict enforcement of regulations in the upstream will be implemented.
3. No chemical-based monocrop plantations in the upstream will be allowed. Said plantations will be encouraged to transition to organic over a specific time period
4. No reclassification of existing agriculture-zoned areas will be allowed.
5. Strict implementation of existing environmental laws will be pursued.
6. Livestock and poultry operations will be encouraged to adopt new mitigating measures or shift to new technologies
7. Funds for Greenhouse Gas Emissions mitigating measures for research and development (Under Agri-Production) will be allocated.
8. Continue greening programs, such as tree and mangrove planting. (Under Agro-Forestry)
 - a. Activities are strictly prohibited within the biodiversity conservation areas except for activities allowable under the MHRWS management and conservation plan and other appropriate policies;
9. Utilization and development of areas under the ancestral domain shall be governed by the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) and Indigenous Peoples Rights Act (IPRA);
10. Recognize and respect traditional utilization of resources by ICCs/IPs within their ancestral domains that is governed by customary laws, traditions, and practices of the IP/IC community.
11. Disallow settlements or declaration of “No Settlement Areas”;
12. No human activity is allowed in biodiversity conservation and preservation areas, except for scientific studies, burial sites and religious ceremonies of ICCs/IPs;
13. Under the Revised Implementing Rules and Regulations of NIPAS (DENR AO No. 2008-26) which divides the protected areas into strict protection zones and multiple use zones, basically, no human disturbance, except for allowed scientific studies/researches, biological monitoring and IP accepted practices are permitted;
14. Protect forests/watersheds;
15. Protect ecologically sensitive and critical habitats;
16. Maintain vegetation within buffer zones of water bodies and surface drainage within the forestlands;
17. Strictly prohibit cutting of vegetation or trees surrounding the water sources within forestlands;
18. Any disruptive activities shall be strictly prohibited within the protected forestlands.
19. Cutting of trees and major human activities are not allowed in these areas.

Cultural Heritage Sites

1. Identification of cultural heritage structures built in 1800's or early 1936 (when Davao City was declared as a chartered city).
2. Setting the criteria for the identification of the Heritage Sites and Trees (in coordination with Museo Dabawenyo) Consider the structures built during the declaration of Davao as chartered city in 1936
3. Identification of landmarks as historical zones which have an impact in the history of Davao City. Ex. Battle of Oyanguren, Little Tokyo in Mintal
4. Classify as Cultural Heritage Sub-Zone (Under Tourism Zone)

Production Areas

1. Utilization and development shall be governed by the provisions under specific tenurial instruments;
2. Renewal of IFMA, mining and other tenement orders will be discouraged.
3. Utilization and development of areas under the ancestral domain shall be governed by the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) and Indigenous Peoples Rights Act (IPRA)
4. Recognition of and respect for traditional utilization of resources by ICCs/IPs within their ancestral domains that is governed by customary laws, traditions and practices of the IP/IC community will be upheld.
5. Promotion and preservation of cultural heritage will be undertaken.
6. Sustainability of the city's water resources will be ensured.
7. Policies on mining activities should be in accordance with the provisions of the Philippine Mining Act of 1995 or Republic Act 7942 and other existing laws;
8. Mining activities shall be governed by Mining Act and other related regulations
9. Land utilization shall promote the implementation of AFMA & NAPAAD.
10. Agro-forestry plantation and crop diversification/diversified farming system in upland or sloping areas will be promoted, as well as industrial plantation.
11. Cultivation in areas beyond 45% slope will be strictly prohibited; otherwise necessary mitigating measures should be employed.
12. Hazard-mitigating production practices will be observed in all high risk areas.
13. Cultivation should regard the established buffers to prevent infringement in protected areas.
14. Cultivation of areas under the ancestral domain shall be governed by the Ancestral Domain Sustainable Development and Protection Plan (ADSDPP) and Indigenous Peoples Rights Act (IPRA).
15. Land conversion shall be subject to a 10% limitation and will be limited to marginal lands.
16. Malpractices such as slash and burn will be strictly prohibited.
17. Settlements are allowed in non-hazard vulnerable areas.
18. There shall be no future development in the river floodway within agricultural areas and

easements shall be maintained accordingly.

19. Climate proofing production support facilities shall be strategically located.
20. Management of water resources shall be a prime concern to sustain the supply of water requirement for domestic and industrial purposes.
21. Post-disaster economic protection measures or safety nets (i.e. crop insurance, building insurance) will be promoted.
22. Resource-production support infrastructure such as irrigation and water impoundments when feasible, will be established.
23. Sustainable and/or climate resilient resource production techniques such as the use of hazard resistant varieties and climate sensitive production technologies will be promoted.
24. Urban expansion will be confined in each of the designated growth area/node.

Water Use

1. Utilization and development of water resource shall be strictly governed by Fishery Code of the Philippines (RA 8550)
2. Settlements along coastal areas is strictly prohibited.
3. Utilization and development within mangrove areas shall be governed by PD 705, National Building Code of the Philippines or PD 1096 and other local policies.
4. Preservation of coastal wetlands and mangrove areas will be promoted.
5. Building of structures shall be governed by appropriate regulations.
6. Issuance of Foreshore Lease Agreement and Special Application for Protected Areas and other tenurial instruments will be regulated.
7. Foreshore areas will be protected from building developments and inappropriate activities that will diminish the environmental and aesthetic values of the area.
8. Activities in all ecosystems which may compromise the coastal zone will be regulated.
9. Promotion of marine-based recreation and protection of beach areas will be pursued based on national laws and policies.
10. All projects shall pass through the suitability and feasibility assessment before approval.
11. All types of commercial fishing activities should not encroach municipal waters.

Agricultural Production Areas

Baguio District

1. There shall be no further expansion for industrial (or agri-industrial) companies in Malagos, Carmen, Tambobong and Tawan-Tawan
2. Organic farming technologies shall be adopted in Tamugan-Panigan Watershed.
3. The projected industrial requirement of Malagos, Carmen, Tambobong, and Tawan-Tawan will be lumped in Wines. Thus, Wines will have a total proposed industrial site of 57 hectares.

Calinan District

1. There shall be no further industrial or agri-industrial expansion in Biao Joaquin, Calinan Proper, Dacudao and Dalagdag.
2. The projected industrial requirement of Biao Joaquin, Calinan Proper, Dacudao and Dalagdag will be pooled in Dominga. Thus, Dominga will have eight (8) hectares for its agri-industrial use.
3. A total of 15 hectares are proposed for socialized housing but only two (2) hectares are allowed for residential use in Subasta. Should this be pursued, there shall be residential-farm approach.
4. Only new applications for agricultural processing plants shall be allowed in Sirib.

Tugbok District

1. There shall be no further industrial expansion in Bago Oshiro as this is the identified hub for National Government Center (this is where the sports complex is located); considering that Mintal is a heritage conservation site, and Sto. Niño a residential-filled barangay.
2. Sto. Niño, which is already an existing relocation site, is found suitable for further resettlement. Proposed socialized housing projects can be accommodated in the barangay.

Key Policy Interventions

1. Reclassification of prime agricultural lands to other uses shall be disallowed.
2. New applications for quarry, sand and gravel, and batching plant shall be allowed, provided that these shall be subjected for review with the regulatory offices (e.g., City Mining Board, DENR-MGB).
3. Agri-industrial companies shall be required to establish wastewater treatment plant.
4. Commercial zones shall be near residential zones under the walkability concept.
5. Industrial companies shall be far from residential areas.
6. Poultry/piggery shall strictly observe 500-meter distance from one poultry/piggery to another. They must have state-of-the art facilities (e.g., tunnel ventilated poultry building, wastewater treatment plant etc.).

7. Strictly enforce easements along waterways.
8. Vertical development and green technology (rainwater catchment system, other measures) shall be implemented in residential sites.
9. Adopt new institutional and agri-industries green technology.
10. Areas already saturated with livestock facilities/farms shall not be expanded for piggeries, dressing plants, poultry and other livestock facilities. Existing facilities must adopt climate smart technologies.

Agricultural Protection Areas

Paquibato And Marilog District (Forest and Forestland)

Problems:

1. Misuse of natural resource such as rivers, trees, caves and lakes
2. Illegal resorts and establishment within forestland and ancestral domain
3. Rampant land selling of rights (NO USUFRUCT)
4. Illegal settlers
5. Illegal expansion of resorts in Marilog and Paquibato
6. Use of chemical-based farming

POLICIES

1. Strictly follow the FPIC and Indigenous Polices and its process. There shall be mandatory review of usufruct agreement and clear MOA w/ land occupants based on ADSDPP.
2. Implementation body to implement MMT (Multi-partite monitoring team) shall be strengthened. This shall be subject for validation with CENRO and DENR if the same program already exists.
3. Provide tax exemption (real property tax) per number of hectares that are spared by the title holder of alienable and disposable land for the purpose of flood control and wildlife habitat preservation- carbon sink.
4. Strong regulation of tourism or eco-tourism policy activity in the forest area. (Adopt the rules and regulations to govern accreditation of ecoguides, ecotours, ecolodges and eco-tour facilities pursuant to the provisions of Republic Act 7160, Executive Order No.120 And Executive Order No.111 Series Of 1999)
5. Strong indigenous organic ordinance implementation in Marilog, Paquibato protection area.
6. Engage in indigenous and organic farming in production areas.
7. For Agri-forestry, allow the planting of abaca, cacao, coffee, tahiti in production forest.
8. Strictly implement buffer zone easement policy based on existing zoning ordinance. Establish policy for residential areas within biodiversity sites (Datu Salumay, Dalaglumot, Salaysay).
9. Avoid gathering of plants/orchids and other teridophytes.
10. Implement the seasonal hunting of animals. Observe laws on hunting and gathering

critical and endangered species.

11. Preserve tribal medicinal plants and practices.
12. Discourage charcoal industry.
13. Preserve and protect the seven (7) caves located along the Davao River.
14. Assess and classify caves and waterfalls as potential tourism areas. The assessment should be done in partnership with the Department of Tourism.
15. Cave and Waterfalls Development Management Plan (spearheaded jointly by City Tourism Operations Office (CTOO) and City Environment and Natural Resources Office (CENRO) shall also be put in place to ensure the sustainability and to establish guiding policies in operation and management of these eco-tourism sites.
16. Assess for feasibility study the identified waterfalls which have potential for hydropower development.
17. Farm tourism of agri-forest plantation is also considered for tourism development.

Paquibato And Marilog District (Forest and Forestland)

Problems:

1. Misuse of natural resource such as rivers, trees, caves and lakes
2. Illegal resorts and establishment within forestland and ancestral domain
3. Rampant land selling of rights (no usufruct)
4. Illegal settlers of IP and non-IP migrants
5. Illegal expansion of resorts in Marilog and Paquibato
6. Use of chemical based farming

Priority Programs and Projects

Issue and Concerns	Programs and Projects
Encroachment of human activities other than IP settlers in protected areas	Inventory of non-IP settlers
Rapid conversion of agricultural lands into commercial, residential, industrial and other uses	Program on monitoring of developments in agricultural lands
Deterioration of water quality due to absence of sewerage system	Establish Waste water treatment facility (WWTF) Full implementation of the ordinance

Priority Programs and Projects

Issue and Concerns	Programs and Projects
Inadequate landfill for mounting garbage	<p>Identification of Waste Management Zones for: Full implementation of the ordinance Junkshops & other areas for recyclers Establishment of Material Recovery Facilities in every barangay. Creation of residual containment areas to serve the other 70 barangays. Establishment of communal composting areas at the barangay/community level. Establishment of a Waste to Energy facility. Installation of a city-owned facility to handle special wastes from healthcare facilities. Establishment of 2 additional new Sanitary Landfill with the following: Gas vent for capturing methane gas emitted from previous controlled dump facility.</p>
Inadequate agricultural infrastructure support	Implement more farm to market roads (FMRs) and other agri-infrastructure projects
Congested sidewalks due to presence of street vendors	<p>Designate strategic areas for vendors Enforce clearing operations Enforce frontage clearance requirements per Building Code</p>
Exposure to risks/hazards of institutional, residential, agricultural, forest, commercial, industrial, and tourism areas and in sites with infrastructure projects	<p>Easement development from the waterways and fault lines</p> <p>Retrofitting of all affected structures (such as but not limited to roads, bridges)</p> <p>Rehabilitation of institutional projects</p> <p>Relocation of settlers at risk</p>
Existing sidewalks, facilities in commercial establishments not responsive/sensitive to needs of persons with disabilities (PWD)	Require establishments to establish/follow provisions in the Accessibility Law (e.g., accessible ramps, hand rails)
Traffic congestion	<p>Construction of pedestrian overpasses Implement mass transport system Pursue transport-related projects identified in IM4 Davao (Infrastructure Modernization Plan for Davao)</p>
Depletion of fishery resources	<p>Establishment of Marine Protected Area Network (MPAN) within Davao Gulf from Davao Occidental to Mati</p> <p>Establishment of mariculture park, which shall have proper management to prevent water pollution</p> <p>Alternative livelihood project (micro-enterprises) for fisher folk</p> <p>Mangrove rehabilitation Program</p>

Priority Programs and Projects

Issue and Concerns	Programs and Projects
Need to develop city's tourism potential	<p>Inventory of historical sites</p> <p>Protection of historical sites through policy</p> <p>Introduce protective structures surrounding the historical sites/areas</p> <p>Identify historical landmarks that will attract tourists and develop the surrounding area to house cafes/restaurants, install facilities such as phone booths, recharging stations, and picnic areas)</p> <p>Designate Baguio, Paquibato and Marilog Districts as cultural tourism and nature-based tourism areas</p> <p>Install tourism infrastructure support</p> <p>Introduce protective structures surrounding the historical sites areas</p>
Need for improvement of port facilities	<p>Rehabilitation of Sta. Ana port facilities and structures</p> <p>Improvement of Sasa cargo port</p>
Increasing housing backlog	Identify and develop resettlement areas

Climate and Disaster Risk Assessment Summary

Risk Assessment

Flood

Moderate Susceptibility	High Susceptibility	Very High Susceptibility	Moderate Risk	High Risk
8,679.25 has	8,442.75 has	1,591.72 has	928.71 has	6,059.44 has

Exposed Element	No. of Barangays at High Flood Risk
Population	22
Urban Use	17 for residential;
	8 for agri-industrial;
	1 for cemetery;
	8 for commercial;
	7 for industrial;
	7 for parks and recreational; 7 for tourism
Lifeline Utilities	4 for Bridges
	7 for Level I Water
	5 for Level II Water
	9 for Level III Water
Critical Point Facilities	10
NRBPA	25

Landslide

Moderate Susceptibility	High Susceptibility	Very High Susceptibility	Moderate Risk	High Risk
45,699.36	103,671.87	418.87	1,763.11	49,734.59

Exposed Element	No. of Barangays at High Landslide Risk
Population	3
Urban Use	21 for residential;
	2 for commercial;
	1 agri-industrial;
	2 for cemetery;
	5 for industrial;
	2 for parks and recreation; 4 tourism
Lifeline Utilities	1 Road (6 moderately at risk)
	4 Level I Water;
	10 Level 2 Water;
	3 Level 3 Water;
Critical Point Facilities	10
NRBPA	24

Vulnerability Assessment Active Fault

Exposed Element	No. of Barangays Highly Vulnerable
Population	4
Urban Use	4 residential use
Lifeline Utilities	(15 moderately vulnerable)
Critical Point Facilities	-
NRBPA	-

Storm Surge

Exposed Element	No. of Barangays Highly Vulnerable
Population	53
Urban Use	71 residential use
Lifeline Utilities	For roads: 2 meter wave- 57; 3 meter wave-48; 4-meter wave- 41; 5-meter wave- 36
Critical Point Facilities	10
NRBPA	-

Liquefaction

Exposed Element	No. of Barangays Highly Vulnerable
Population	20
Urban Use	79 for residential;
Lifeline Utilities	71 for roads
Critical Point Facilities	2
NRBPA	-

The Integrated Major Decision Areas, categorized into Major Decision Area-1 (MDA-1), Major Decision Area-2 (MDA-2), and Major Decision Area-3 (MDA-3), summarizes the priority areas for intervention of the local government in terms of policies and projects for the next ten (10) years as a result of the Climate Disaster and Risk Assessment made, based on the five (5) exposed elements: Population, Critical Point Facilities, Lifeline Utilities, Natural Resource-Based Production Area and Urban Use.

After the assessment, Suawan, Matina Crossing, Talomo, Marilog, Tigatto, Ma-a, Matina Pang, Panacan, Tamugan, Calinan, 19-B, Mintal, Tugbok, Bunawan, Bucana, Matina Aplaya were identified as Integrated Major Decision Areas-1. MDA-1 are the top priority areas for immediate attention, and implementation of risk mitigation projects and programs.

On the other hand, Buhangin, Leon Garcia Sr., 8-A, Los Amigos, Malabog and Salaysay are identified as Integrated Major Decision Areas-2. These barangays are the second highest priority, while barangays 1-A, 2-A, 5-A, 21-C, 22-C, 23-C, 31-D, Centro, Waan, Lasang, Bago Aplaya, Catalunan Pequeño are identified as Integrated Major Decision Areas-3, the third highest in priority for risk and disaster mitigation projects.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
SUAWAN	This barangay has been identified as Major Decision Area-1 for Critical Point Facilities, Lifeline Utilities and NRBPA because of high landslide risk of facilities and land area.	<p>Critical Point Facilities:</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure that employs hazard resilient design. ● Future construction of critical point facilities should follow standards for hazards resiliency. ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>For Lifeline Utilities:</p> <ul style="list-style-type: none"> ● Crafting of contingency plans for emergency situation. ● Strengthen the slope protection projects by concerned agencies. ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk ● Road concreting and increase road elevation above the flood height. ● Establish road embankment protection ● Improve drainage to allow flood waters to flow through culverts. <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Establishment of irrigation and/or rainwater harvesting facilities to sustain 1,684.68 hectares of high value fruit tree production. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements ● Establishment of early warning system for agricultural crop production ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establishment of warehouses for temporary storage ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan)

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
SUAWAN	<p>This barangay has been identified as Major Decision Area-1 for Critical Point Facilities, Lifeline Utilities and NRBPA because of high landslide risk of facilities and land area.</p>	<p>For population</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure that employs hazard resilient design. ● Implement slope protection measures (e.g., installation of geo-nets in slopes) ● Landslide mitigation design shall be included in the local and national budgets ● Enforce the National Greening Program ● Relocation program for informal settlers shall be implemented ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center ● Set up state-of-the-art early warning device system
MATINA CROSSING	<p>This barangay has been identified as Major Decision Area-1 for Population and Lifeline Utilities because of high flood and landslide risk. The Urban Uses particularly the Residential use is also at high risk to landslide leading it to be identified as MDA-3 for urban use. This barangay is also identified as MDA-3 for critical point facilities because of one (1) police substation, one (1) health center, and two (2) school facilities are at high risk to flood.</p>	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk <p>Urban Use</p> <ul style="list-style-type: none"> ● Mandatory retrofitting of existing structures; formulation of flood contingency plans ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● LGU to regulate illegal construction of houses on steep slopes. ● Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; ● Encourage structure owners to secure building insurances. ● Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads. ● Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas. <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
		<ul style="list-style-type: none"> • Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards • Strengthen the coordination and service delivery system of agencies and LGU to the affected community. • Enhance the early warning system and disaster preparedness of the communities.
TALOMO	This barangay has been identified as Major Decision Area-1 for Population and Lifeline Utilities, and Major Decision Area-3 for Critical Point Facilities and Urban Use because of moderate to high flood risk and landslide risk of exposed area.	<p>Critical Point Facilities</p> <ul style="list-style-type: none"> • Rehabilitation and retrofitting of existing structure with hazard resilient design • Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations • Regular declogging of canals and other water ways • Future construction of facilities buildings should adopt hazard resilient designs • Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) • Strengthen community early warning system and disaster preparedness activity in the community • Establish service delivery networks • Forging partnerships with private and non-government organizations in construction of new facilities. • Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards • Strengthen the coordination and service delivery system of agencies and LGU to the affected community. • Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> • Mandatory retrofitting of existing structures; • LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; • Educate residents on natural warning signs & the severity of disasters; • LGU to regulate illegal construction of houses on steep slopes. • Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; • Encourage structure owners to secure building insurances. • Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads. • Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> • Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk <p>NRBPA</p> <ul style="list-style-type: none"> • Improve extension services with emphasis on climate and hazard resilient production techniques. • Encourage the use of risk transfer instrument (i.e. crop insurance) • Improve extension services with emphasis on climate and hazard resilient production techniques. • Encourage the use of risk transfer instrument (i.e. crop insurance) • Crop diversification • Changing crop and/or those crops with reduced water requirements • Provision of forestry based alternative and/or non-agriculture based livelihood opportunities • Reduced run-off through watershed reforestation or agro-forestry production • Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan)

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
		<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
MARILOG	This barangay is identified as Major Decision Area-1 for Critical Point Facilities and Urban Use, and Major Decision Area 2 for Natural Resource Based Production Areas and Population because of high landslide risk.	<ul style="list-style-type: none"> • Rehabilitation and retrofitting of existing structure that employs hazard resilient design. • Future construction of critical point facilities should follow standards for hazards resiliency. <p>Population</p> <ul style="list-style-type: none"> • Forging partnerships with private and non-government organizations in construction of new facilities • Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. • Strengthen the coordination and service delivery system of agencies and LGU to the affected community. • Enhance the early warning system and disaster preparedness of the communities. <p>NRBPA</p> <ul style="list-style-type: none"> • Rehabilitation and retrofitting of existing structure that employs hazard resilient design. • Future construction of critical point facilities should follow standards for hazards resiliency. • Forging partnerships with private and non-government organizations in construction of new facilities • Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. • Strengthen the coordination and service delivery system of agencies and LGU to the affected community. • Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> • LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; • Educate residents on natural warning signs and the severity of disasters; • LGU to regulate illegal construction of houses on steep slopes; • Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
TIGATTO	<p>This area has been identified as Major Decision Area-1 for Population and MDA-2 for NRBPA, Lifeline Utilities, because of the flood risk and vulnerability to storm surge. This barangay is also identified as MDA-2 for Urban Use because of high landslide risk for industrial and residential areas.</p>	<p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Hazard retrofitting of existing structure ● Hazard retrofitting of existing structure ● Establishment of alternate roads parallel to existing bridge, to ensure uninterrupted linkage <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. Encourage the use of risk transfer instrument (i.e. crop insurance); Improve extension services with emphasis on climate and hazard resilient production techniques. ● Establishment of irrigation and/or rainwater harvesting facilities to sustain 354.51 hectares of high value fruit tree production. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements ● Establishment of early warning system for agricultural crop production ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establishment of warehouses for temporary storage ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan) <p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Urban Use</p> <ul style="list-style-type: none"> ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● LGU to regulate illegal construction of houses on steep slopes.; ● Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; ● Encourage structure owners to secure building insurances. ● Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads.; ● Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
MA-A	<p>This barangay has been identified as Major Decision Area-1 for Population and Urban Use and Major Decision 2 for NRBPA and Lifeline Utilities because of high flood and landslide risk.</p>	<p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> ● Mandatory retrofitting of existing structures; formulation of flood contingency plans ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter bufferzone; ● imposition of hazard resistant design standards/regulations within flood susceptible areas; ● conduct site specific flood mapping as basis for the establishment of structural design regulation ; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● LGU to regulate illegal construction of houses on steep slopes. ● Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; ● Encourage structure owners to secure building insurances. ● Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads. ● Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas. ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Improve extension services with emphasis on climate and hazard resilient production techniques. Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
		<ul style="list-style-type: none"> • Provision of forestry based alternative and/or non-agriculture based livelihood opportunities • Reduced run-off through watershed reforestation or agro-forestry production • Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan) <p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
MATINA PANGI	This barangay identified as Major Decision Area-1 for lifeline utilities and population and Major Decision Area 2 for Urban Use because of high flood and landslide risk.	<p>Critical Point Facilities</p> <ul style="list-style-type: none"> • Rehabilitation and retrofitting of existing structure with hazard resilient design • Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations • Regular declogging of canals and other water ways • Future construction of facilities buildings should adopt hazard resilient designs • Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) • Strengthen community early warning system and disaster preparedness activity in the community • Establish service delivery networks • Forging partnerships with private and non-government organizations in construction of new facilities. • Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. • Strengthen the coordination and service delivery system of agencies and LGU to the affected community. • Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> • Mandatory retrofitting of existing structures; formulation of flood contingency plans • LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; • Educate residents on natural warning signs and the severity of disasters; • LGU to regulate illegal construction of houses on steep slopes. • Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; • Encourage structure owners to secure building insurances. • Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads. • Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> • Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
		<p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification Changing crop and/or those crops with reduced water requirements ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan) <p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council
PANACAN	<p>This barangay has been identified as MDA-1 for Urban Use because of 67.73 ha of residential area at high risk to landslide. This barangay is also identified as Major Decision Area-1 for Population and Major Decision Area-2 for Lifeline Utilities.</p>	<p>Population</p> <ul style="list-style-type: none"> ● Forging partnerships with private and non-government organizations in construction of new facilities ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk. <p>Urban Use</p> <ul style="list-style-type: none"> ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● LGU to regulate illegal construction of houses on steep slopes ● Imposition of hazard resistant design standards/regulations within susceptible areas; ● Conduct site specific hazard mapping as basis for the establishment of structural design regulation; ● Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
TAMUGAN	This barangay has been identified as Major Decision Area-1 of Critical Point Facilities and Lifeline Utilities, Major Decision Area-2 for NRBPA, and Major Decision Area-3 for Population because of high landslide risk.	<p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure that employs hazard resilient design. ● Future construction of critical point facilities should follow standards for hazards resiliency. ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Crafting of contingency plans for emergency situation. ● Strengthen the slope protection projects by concerned agencies. ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk Road concreting and increase road elevation above the flood height. ● Establish road embankment protection ● Improve drainage to allow flood waters to flow through culverts. <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Establishment of irrigation and/or rainwater harvesting facilities to sustain 1,684.68 hectares of high value fruit tree production. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements ● Establishment of early warning system for agricultural crop production ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establishment of warehouses for temporary storage ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan) <p>For Population:</p> <ul style="list-style-type: none"> ● Implement slope protection measures (e.g., installation of geonets in slopes) ● Landslide mitigation design shall be included in the local and national budgets Enforce the National Greening Program ● Relocation program for informal settlers shall be implemented ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center ● Set up state-of-the-art early warning device system

Integrated Major Decision Areas-1

Barangay	Technical Findings	Policy Interventions
CALINAN	<p>This barangay is identified as Major Decision Area-1 for Population and Urban Use and Major Decision Area-3 for Critical Point Facilities due to high flood risk.</p>	<p>Population</p> <ul style="list-style-type: none"> ● Forging partnerships with private and non-government organizations in construction of new facilities ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure that employs hazard resilient design. ● Future construction of critical point facilities should follow standards for hazards resiliency. ● Forging partnerships with private and non-government organizations in construction of new facilities ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities <p>Urban Use</p> <ul style="list-style-type: none"> ● Mandatory retrofitting of existing structures; formulation of flood contingency plans ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● Encourage structure owners to secure building insurances. ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● imposition of hazard resistant design standards/regulations within flood susceptible areas; ● conduct site specific flood mapping as basis for the establishment of structural design regulation; ● Imposition of hazard resistant design standard regulations within flood susceptible areas;

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
19-B	<p>This barangay has been identified as Major Decision Area-1 of Population and Major Decision Area-3 for Urban Use due to high flood risk. Same barangay is also identified as Major Decision Area-2 of Lifeline Utilities because of the presence of main line pipes which area at high risk to food.</p>	<p>Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; formulation of flood contingency plans; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● Conduct site specific flood hazard mapping as basis for the establishment of structural design regulation ● Educate residents on natural warning signs & the severity of disasters; ● Encourage structure owners to secure building insurances. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Establishment of alternate routes. ● Hazard retrofitting of existing structure ● Strengthen contingency plans for alternative methods of water supply delivery to affected areas; ● Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Water works Association; Standard Specifications and American Society for Testing and Materials). <p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
MINTAL	This barangay has been identified as Major Decision Area-1 for Lifeline Utilities and Population and MDA-3 for Urban Use because of the presence of moderate to high flood risk.	<p>Urban Use</p> <ul style="list-style-type: none"> ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; formulation of flood contingency plans; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● conduct site specific flood hazard mapping as basis for the establishment of structural design regulation ● Educate residents on natural warning signs & the severity of disasters; ● Encourage structure owners to secure building insurances. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Establishment of alternate routes. ● Hazard retrofitting of existing structure ● Strengthen contingency plans for alternative methods of water supply delivery to affected areas; ● Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Water works Association; Standard Specifications and American Society for Testing and Materials). <p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council

Integrated Major Decision Areas-1

Barangay	Technical Findings	Policy Interventions
TUGBOK	<p>This barangay identified as Major Decision Area-1 for Lifeline Utilities and Population because of high flood and landslide risk.</p>	<p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like riverbank riprapping ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks <p>For Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● Plant more trees; ● maintain and monitor structure; Imposition of hazard resistant design standard regulations within flood susceptible areas; ● conduct site specific flood hazard mapping as basis for the establishment of structural design regulation ● Hazard retrofitting of existing structure <p>For Lifeline Utilities:</p> <ul style="list-style-type: none"> ● Crafting of contingency plans for emergency situation. ● Strengthen contingency plans for standby 24/7 services for water supply in case of interruption. ● Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Water works Association; Standard Specifications and American Society for Testing and Materials). ● The concerned agency should have an allocation for the repair and replacement of mainline pipes in case it will be hit by hazards. ● Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk. <p>For Population:</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines. ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue disaster control measures. ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded. ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms. ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council.

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
BUNAWAN	<p>This barangay has been identified as Major Decision Area-1 for Population; Major Decision Area-2 for Lifeline Utilities; and Major Decision Area-3 for Urban Use because of moderate to high flood risk and vulnerability to storm surge.</p>	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Hazard retrofitting of existing structure Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk <p>Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; formulation of flood contingency plans; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● conduct site specific flood hazard mapping as basis for the establishment of structural design regulation ● Maintain and monitor structure; ● Educate residents on natural warning signs & the severity of disasters; ● Encourage structure owners to secure building insurances. <p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Strengthen contingency plans for alternative methods of water supply delivery to affected areas ● Strict implementation of material specification standards and construction (National building code of the Philippines) ● Establishment of alternate roads parallel to existing bridge, to ensure uninterrupted linkage ● Construct flood resistant river dike system especially before and after bridges that have been classified into moderate/high risk ● Retrofitting of existing bridge to accommodate 100 years of floods. ● Strengthen contingency plans for alternative methods of water supply delivery to affected areas ● Follow National Structural Code for Buildings; American National Standard Institute/American Waterworks Association; Standard Specifications and American Society for Testing and Materials. <p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council

Integrated Major Decision Areas-1

Barangay	Technical Findings	Policy Interventions
BUCANA	<p>This barangay is identified as Major Decision Area-1 for Population, Major Decision Area-2 for Urban Use and Major Decision Area 3 for Critical Point Facilities.</p>	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Programs ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; conduct site specific flood hazard mapping as basis for the establishment of structural design regulation

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
MATINA APLAYA	This barangay is identified as Major Decision Area -1 for Population, Major Decision Area 3 for Critical Point Facilities and Major Decision Area 2 for Urban Use because of high flood risk.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● Conduct site specific flood hazard mapping as basis for the establishment of structural design regulation

Integrated Major Decision Areas-1		
Barangay	Technical Findings	Policy Interventions
MATINA APLAYA	This barangay is identified as Major Decision Area -1 for Population, Major Decision Area 3 for Critical Point Facilities and Major Decision Area 2 for Urban Use because of high flood risk.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>Urban Use</p> <ul style="list-style-type: none"> ● Implement mandatory evacuation/relocation policy on affected structures/dwellings; ● For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e. construction of at least 2-storey structures only must be followed and the 30-meter buffer zone; ● Mandatory retrofitting of existing structures; ● Imposition of hazard resistant design standard regulations within flood susceptible areas; ● Conduct site specific flood hazard mapping as basis for the establishment of structural design regulation

Major Decision Areas-2		
Barangay	Technical Findings	Policy Interventions
BUHANGIN	This barangay is identified to be Major Decision Area 2 for Lifeline Utilities and Natural Resource Based Production Areas and Urban Use. It is also identified as Major Decision Area 3 for Population.	<p>Lifeline Utilities</p> <ul style="list-style-type: none"> • Establishment of alternate routes. • Hazard retrofitting of existing structure • Establishment of alternate roads parallel to existing bridge, to ensure uninterrupted linkage <p>NRBPA</p> <ul style="list-style-type: none"> • Improve extension services with emphasis on climate and hazard resilient production techniques. • Encourage the use of risk transfer instrument (i.e. crop insurance) • Improve extension services with emphasis on climate and hazard resilient production techniques. • Encourage the use of risk transfer instrument (i.e. crop insurance) • Crop diversification • Changing crop and/or those crops with reduced water requirements • Provision of forestry based alternative and/or non-agriculture based livelihood opportunities • Reduced run-off through watershed reforestation or agro-forestry production • Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan) <p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. • Pursue flood control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Urban Use</p> <ul style="list-style-type: none"> • LGU to conduct census tagging along landslide prone areas at the earliest possible time and relocate qualified beneficiaries to their safe dwellings; • Concerned gov't agency to strictly monitor developmental activities such as construction of buildings, embankments, road cutting, cut and fill which may cause modification of natural slopes and blocking of surface drainage; • Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas; • Rehabilitation support through immediate replacement of lost or damaged land and facilities; • Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.

Major Decision Areas-2		
Barangay	Technical Findings	Policy Interventions
LEON GARCIA SR.	This barangay is identified as Major Decision Area - 1 for Population and Major Decision Area 3 for Critical Point Facilities.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. ● Pursue flood control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities.
8-A	This area is identified as Major Decision Area-1 for Population and Major Decision Area-3 for Urban Use because of high risk to flood.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Urban Use</p> <ul style="list-style-type: none"> ● Mandatory retrofitting of existing structures; formulation of flood contingency plans; Imposition of hazard resistant design standard regulations within flood susceptible areas; conduct site specific flood hazard mapping as basis for the establishment of structural design regulation

Major Decision Areas-2		
Barangay	Technical Findings	Policy Interventions
LOS AMIGOS	This area is identified as Major Decision Area-1 for Population and Major Decision Area-3 for Urban Use because of high risk to flood.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>Urban Use</p> <ul style="list-style-type: none"> ● Mandatory retrofitting of existing structures; formulation of flood contingency plans; Imposition of hazard resistant design standard regulations within flood susceptible areas; conduct site specific flood hazard mapping as basis for the establishment of structural design regulation
MALABOG	This barangay is identified as Major Decision Area 1 for Lifeline Utilities, Major Decision Area 2 for Critical Point Facilities and Natural Resource Based Production Areas.	<p>Lifeline Utilities</p> <ul style="list-style-type: none"> ● Establishment of alternate routes.. ● Hazard retrofitting of existing structure ● Establishment of alternate roads parallel to existing bridge, to ensure uninterrupted linkage <p>Critical Point Facilities</p> <ul style="list-style-type: none"> ● Rehabilitation and retrofitting of existing structure with hazard resilient design ● Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations ● Regular declogging of canals and other water ways ● Future construction of facilities buildings should adopt hazard resilient designs ● Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program) ● Strengthen community early warning system and disaster preparedness activity in the community ● Establish service delivery networks ● Forging partnerships with private and non-government organizations in construction of new facilities. ● Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards. ● Strengthen the coordination and service delivery system of agencies and LGU to the affected community. ● Enhance the early warning system and disaster preparedness of the communities. <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawayan)

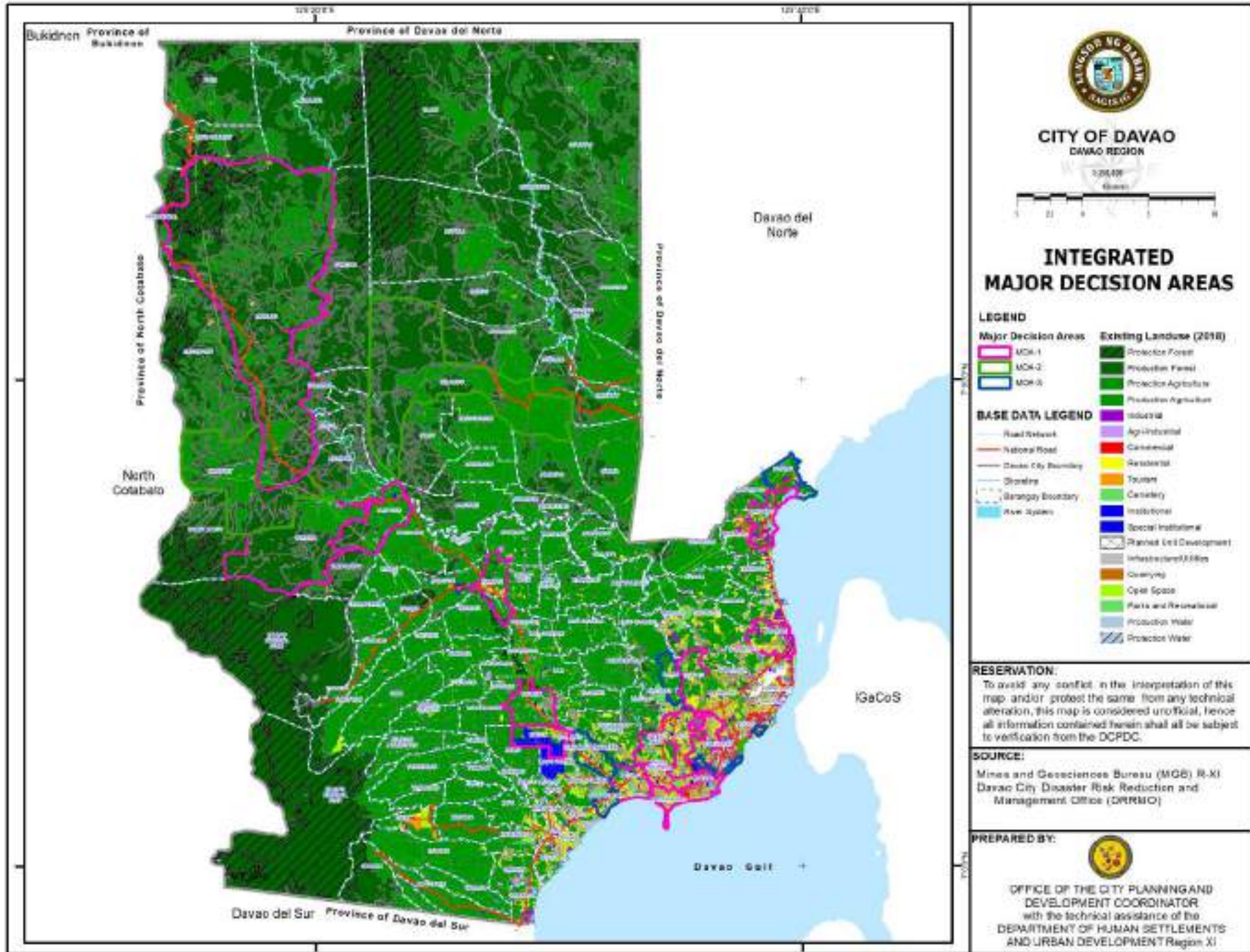
Major Decision Areas-2		
Barangay	Technical Findings	Policy Interventions
SALAYSAY	This area is identified as Major Decision Area 2 for NRBPA and Population and Major Decision Area-3 for Urban Use because of high landslide risk.	<p>Population</p> <ul style="list-style-type: none"> ● Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shorelines ● The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway ● Pursue disaster control measures ● The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded ● Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms ● Set up state-of-the-art early warning device system ● Strengthen the Barangay Disaster Risk Reduction and Management Council <p>NRBPA</p> <ul style="list-style-type: none"> ● Improve extension services with emphasis on climate and hazard resilient production techniques. ● Encourage the use of risk transfer instrument (i.e. crop insurance); Improve extension services with emphasis on climate and hazard resilient production techniques. ● Establishment of irrigation and/or rainwater harvesting facilities to sustain 354.51 hectares of high value fruit tree production. ● Encourage the use of risk transfer instrument (i.e. crop insurance) ● Crop diversification ● Changing crop and/or those crops with reduced water requirements ● Establishment of early warning system for agricultural crop production ● Provision of forestry based alternative and/or non-agriculture based livelihood opportunities ● Reduced run-off through watershed reforestation or agro-forestry production ● Establishment of warehouses for temporary storage ● Establish riverbank easement (i.e. planting of malibago and fruit trees and kawaya <p>Urban Use</p> <ul style="list-style-type: none"> ● LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; ● Educate residents on natural warning signs & the severity of disasters; ● LGU to regulate illegal construction of houses on steep slopes.; Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas; ● Encourage structure owners to secure building insurances. ● Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads.; ● Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.

Major Decision Areas-3		
Barangay	Technical Findings	Policy Interventions
1-A	This barangay has been identified as Major Decision Area-1 for Population because of high flood risk.	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway. • Pursue flood control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
2-A	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
5-A	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council • Population • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council

Major Decision Areas-3		
Barangay	Technical Findings	Policy Interventions
21-C	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
22-C	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
23-C	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
31-D	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council

Major Decision Areas-3		
Barangay	Technical Findings	Policy Interventions
CENTRO	This area is identified as Major Decision Area-1 for Population.	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
WAAN	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
LASANG	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
BAGO APLAYA	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council
CATALUNAN PEQUEÑO	This area is identified as Major Decision Area-1 for Population	<p>Population</p> <ul style="list-style-type: none"> • Strict implementation of Urban Development and Housing Act, which mandates that there shall be no dwelling units in danger areas like waterways, riverbanks, and shore-lines • The informal settlers shall be relocated in tenement housing building, which should be set up within the barangay but observe an easement from the waterway • Pursue disaster control measures • The National Greening Program, which is targeted to prevent soil erosion and flooding, shall be expanded • Establish evacuation center equipped with utilities and other amenities like comfort rooms, and conjugal rooms • Set up state-of-the-art early warning device system • Strengthen the Barangay Disaster Risk Reduction and Management Council

Map 8. Integrated Major Decision Areas



CLUP/ZO Plan Implementation, Monitoring and Evaluation Plan

Plan Implementation Scheme

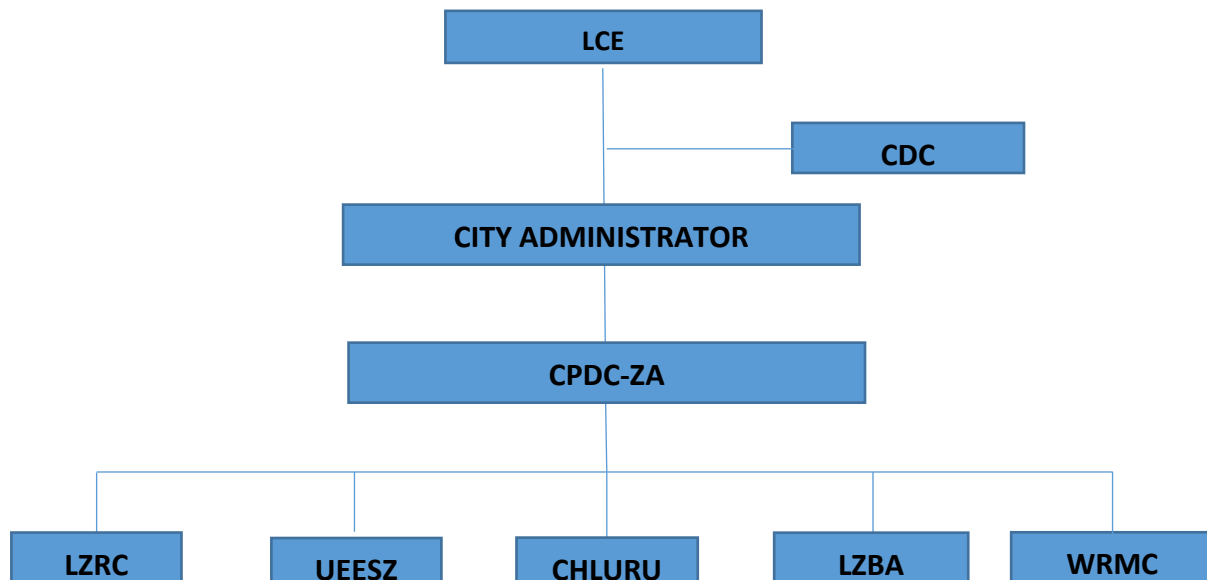
The Comprehensive Land Use Plan lays the strategic direction in utilizing city’s land and water resources. To aid in the successful implementation of the CLUP, necessary and appropriate mechanisms will have to be in place to ensure the smooth roll out of the plan.

There are at least five (5) components to be considered:

- CLUP/Zoning Ordinance (ZO) Implementing Structure;
 - Information, Education and Communication Plan/Advocacy;
 - Establishment of an LGU/Inter-LGU Partnership;
 - CLUP/Zoning Ordinance to be Localized in the Barangay level;
- Other tools and instruments.

1. On the CLUP/ZO Implementing Structure. This serves as the primary mechanism and will engage the participation of key offices concerned. The Local Chief Executive will have the decision-making authority, City Planning and Development Coordinator and Zoning Administrator as the lead officers in implementing the CLUP, and their offices will serve as consultative bodies to oversee the whole implementation of the CLUP/ZO.

Below is the Organizational Structure:



1.1. Review of Organizational Structure. To ensure the unhampered performance of the involved offices and bodies, a review of their current capacities will have to be done and identify areas for improvement and further strengthening.

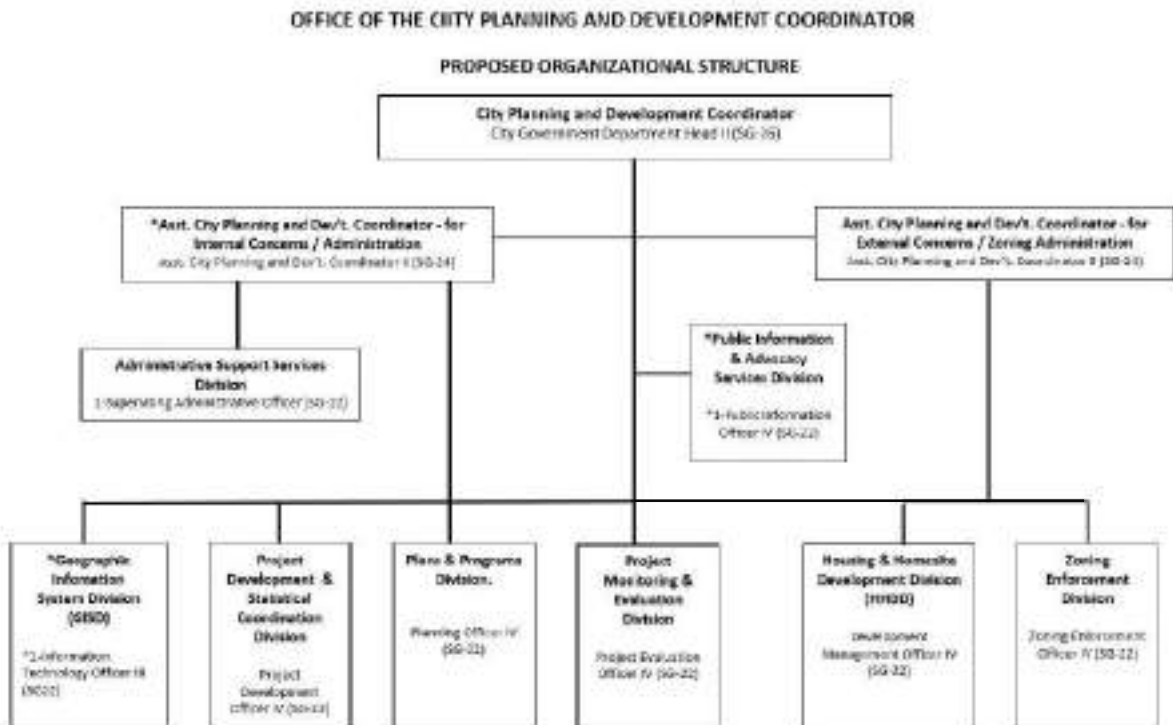
Office/ Ad Hoc Committees Implementing CLUP	Issues and Concerns	Recommended Actions
City Development Council (CDC)	Need to improve participation of civil society organizations in the planning process	Forge collaborative linkages with civil society (academe, faith-based, non-government, professional and people’s organizations) and business
Sangguniang Panlungsod (SP)	<p>Some representatives of councilors in meetings do not relay information; (during SP deliberations, concerned official/s raise issues/concerns which have already been resolved in the committee meetings)</p> <p>Documentation protocol every end of term is not well disseminated</p>	<p>Identify a permanent technical staff as representative to ensure continuity of discussions</p> <p>Office of the SP Secretary should ensure that all the offices are informed of the documentation</p>
City Planning and Development Office (CPDO)	<p>Absence of monitoring of compliance after approval of locational clearance</p> <p>Inadequate technical staff</p> <p>lack of capacity building program</p> <p>need to review the approved organizational structure and staffing requirement of CPDO to meet its multifarious functions, including consideration on spacing and crowding</p>	<p>Creation of monitoring team within the Zoning Enforcement Division</p> <p>Develop a staff capacity building program</p> <p>Re-organization of CPDO and improvement of physical working environment to safeguard health, public welfare and consistent with the principles of environment management and control and</p>

Office/ Ad Hoc Committees Implementing CLUP	Issues and Concerns	Recommended Actions
Local Zoning Review Committee (LZRC)	Difficulty in securing certification from the Department of Agriculture due to cumbersome requirements	Consult the City Legal Office on how to streamline the process
Local Zoning Board of Appeals (LZBA)	Finality in the decisions made by the board	Decisions by LZBA should be final and executory
Urban Ecological Enhancement Zone Committee (UEEZ)	On-going amendment of the Resolution	Finality of the Amendment of the Resolution
Water Resource Management Council (WRMC)	Lack of detailed scientific data on aquifers and water resource zone sites	Obtain information from DCWD or NWRB on the major aquifers in Davao City
City Engineer's Office (CEO)	<p>Road projects duplication between the City and DPWH</p> <p>The CEO has no survey stationing, they only use name of puroks for project location.</p>	<p>The CPDO, CEO and DPWH shall have a regular meeting to reconcile projects</p> <p>GPS and geo-tagging of projects to avoid overlapping of projects.</p>
City Transport and Traffic Management Bureau (CTTMB)	<p>Inadequate/lack of IEC on traffic rules and regulations</p> <p>Increasing traffic congestion in major intersections</p>	<p>Enhance the information, education, and communication for a more effective performance of traffic enforcers</p> <p>Implement the transport modernization program (e.g., rapid bus system)</p>
Disaster Risk Reduction Management Council (DRRMC)	94 barangays are identified at risk of flooding, 19 of sea swells (monsoon waves), 77 of fire hazards, 55 of earthquakes, and 13 of strong winds	<p>Regulate issuance of locational clearances and building permits</p> <p>Strict enforcement of the Zoning Ordinance</p>

Office/ Ad Hoc Committees Implementing CLUP	Issues and Concerns	Recommended Actions
Local Housing Board (LHB)	<p>Growing housing backlog due to squatting along danger areas (water ways, open canal, road right of ways, river banks and privately owned properties)</p> <p>Delayed submission of requirements to the Technical Working Group by the proponents on their request for demolition.</p> <p>Insufficient workforce for LHB concerns</p> <p>Non provision of honorarium to NGO members of the LHB</p>	<p>Identify and prioritize affected ISF based on the Vulnerability Assessment/DRRM Plan/CCA Plan</p> <p>Return the complaints to the proponents including all documents submitted.</p> <p>Request for additional personnel</p> <p>Request funds from the Local Finance Committee</p>
City Housing and Land Use Regulatory Unit (CHLURU)	Lack of personnel to help deliver the tasks assigned to the Technical Working Group members	Hiring of additional technical staff
Business Bureau	Need to align the business lines classification as provided in the Philippine Standard Industry Classification (PSIC)	Institutionalization of business lines classification according to PSIC
City Environment and Natural Resources Office (CENRO)	Weak appreciation of solid waste management	Information, Education Campaign-IEC (barangays, communities)
City Agriculturist Office (CAgrO)	Conflict between agricultural and residential areas due to foul odor coming from farms due to improper waste disposal	Conduct seminars on the utilization of green technology (odor-free feeds and effective microorganisms)
City Health Office (CHO)	<p>Inadequate human resources for health, particularly in geographically isolated and disadvantaged areas or GIDAs.</p> <p>Inadequate health budget that is below the DOH-recommended 22% of the total LGU budget could mean inadequate delivery of quality health services particularly for the poor.</p>	<p>Fill vacant positions</p> <p>Additional budget for health care facilities.</p>

Office/ Ad Hoc Committees Implementing CLUP	Issues and Concerns	Recommended Actions
City Tourism Operations Office (CTOO)	Absence of Tourism Development Plan	Crafting of the City's Tourism Development Plan
	Issuance of an IRR for the Tourism Code	Crafting of the City's IRR of the Tourism Code
Task Force of Relocation and Re-settlement (TFRR)	Insufficient workforce for TFRR concerns	Request for additional personnel

With the CPDO acting as the lead implementing office of the CLUP/ZO, below is a proposed organizational structure aimed to enhance the efficient performance of its functions.



Legend:
With Asterisk (*) = New Division/Position

1.2.Reconstitution/Strengthening of a Multi-Sectoral Special Bodies

The City of Davao has the following multi-sectoral special bodies complementing the other offices and agencies mentioned earlier in the implementation of the CLUP.

1.2.a. Local Housing Board (LHB)

The Local Housing Board was created by Davao City Ordinance No. 014-07, otherwise known as the “Shelter Code of Davao City”, and acts as a policy-making body and board to the City Housing Office and is tasked to formulate the Local Comprehensive Shelter Plan and assist in the updating of the residential land zoning classification of the CLUP, among others.

1.2.b. Task Force on Relocation and Resettlement (TFRR)

Executive Order No. 19 Series of 2016, also created the Task Force on Relocation and Resettlement to ensure that the implementing rules and regulations on the eviction of families and demolition of structures are adhered to and that there is smooth and effective implementation of all relocation and resettlement operations.

1.2.c. Committee Against Squatting Syndicates and Professional Squatters (CASSPS)

The CASSPS is primarily responsible in ensuring that the necessary measures to identify and effectively curtail the activities of professional squatters and squatting syndicates, including the names of public officials and/or private individuals or entities suspected of abetting or tolerating the commission of said acts are adopted.

1.2.d. Local Climate Change Technical Working Group

On December 28, 2018, City Mayor Sara Z. Duterte signed Executive Order 40 creating a Technical Working Group (TWG) to facilitate the preparation of the Local Climate Change Action Plan (LCCAP) focusing on Greenhouse Gas Inventory Mitigation and Adaptation.

1.2.e. Cooperative Development Council

Executive Order No.35 Series of 2019 reconstituted the Davao City Cooperative Development Council as a people’s organization to assist the local government in the formulation of cooperative development policies and shall serve as mechanism for collaboration, consultation and coordination in the implementation of cooperative development programs and projects in Davao City

2. Private Sector/Civil Society Organization Participation

Representatives coming from accredited private sectors or civil society organizations (CSO) and non-governmental organizations (NGOs) have been called to be part of the City Development Council (CDC) in the implementation of the CLUP. These special bodies have been actively participating and are involved in the consultation process of the CLUP and ZO.

3. Coordination with City and National Government Agencies, Offices

The city government shall coordinate its offices with national government agencies and offices, and vice versa, in promoting or finding appropriate technology to suit the city's various activities. In the case of the city's adaptability to disasters, it may consider the various available technology with the DOST, DTI and other agencies with technologies, to tap indigenous or locally available clean energy, abundant and available sturdy local materials for housing, and for critical disaster and climate prediction capability. Coordination shall also be done here with agencies like the DOT and the DENR to ensure harmony in policies in promoting tourism and environmental protection. This coordination and cooperation may be tap to project future land and housing requirements by describing the population growth and the quality of the existing housing needs. The city and these government agencies shall also help and augment each other to upgrade, upscale or conduct retooling of their respective frontline personnel to meet the contingencies of responding to disease outbreaks and pandemics, and calamitous events.

4. On Information, Education and Communication Plan/Advocacy

To popularize the CLUP and Zoning Ordinance and engage the support of the key stakeholders to the same, an information, education and communication plan will be developed with specific messages and call to action.

Objectives:	Generate support on the CLUP from the various stakeholders Promote awareness on the CLUP in the communities and among the general public						
Audience	Message/ Call to Action	Activities	In-Charge	Time-line	Resources Needed		
					Materials	Financial	Personnel
Legislators	Pass the CLUP! Approve the Zoning Ordinance!	CLUP orientation prior to public hearing	CPDO and CIO				
Sectoral Groups	Support the CLUP!	Public hearing	CPDO and CIO				
Business community	Support the CLUP!	Public hearing	CPDO and CIO				
Private companies	Support the CLUP!	Public hearing	CPDO and CIO				
Association of Barangay Council		CLUP orientation prior to public hearing	CPDO and CIO				

<p>Communities/ barangays</p>	<p>Support the CLUP!</p>	<p>Public hearing</p> <p>Conduct of Technical Orientation and Briefings to the barangay level</p> <p>Posting of the CLUP/ Zoning Ordinance in the LGU's Website</p> <p>Posting of approved land use and zoning maps in conspicuous places in the municipality</p> <p>Conduct of information dissemination /Video presentation on the salient points of the CLUP/ZO to be provided to every BLGU for presentation during General Assembly or any other activities</p> <p>Production of IEC materials (i.e. leaflets, posters, flyers, etc) for distribution to different BLGUs</p>	<p>CPDO and CIO</p>				
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General public	Support the CLUP!	<p>Broadcasting CLUP/ZO at the local broadcast station</p> <p>Posting of the CLUP/Zoning Ordinance in the LGU's Website</p> <p>Conduct of information dissemination / Video presentation of the salient points of the CLUP/ZO in schools, malls and other strategic public places</p> <p>Production of IEC materials (i.e. leaflets, posters, flyers, etc) for distribution</p>	CPDO and CIO				
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A communications pool will be organized and composed of CPDO and CIO staff to spearhead the CLUP briefing/orientation sessions in the barangay level.

5. On the Establishment of an LGU/Inter-LGU Partnership

Alliance-building or inter-local partnership is considered important in addressing common issues and problems in implementing programs and projects in partnership with the different stakeholders concerned. Economic development, environmental protection and management and integrated health development are the most common purposes of establishing partnerships.

Thus, forging of a Memorandum of Agreement (MOA) or Memorandum of Understanding (MOU) with other LGUs, national government agencies (NGAs), NGOs and the local stakeholders is important by committing themselves to working together to develop and implement a specific program/project under this long-term plan.

6. CLUP/Zoning Ordinance to be Localized in the Barangay Level

Since the CLUP outlines the general land use and strategic development spatial strategies of an LGU over a specific period of time, the revised development plans of the barangays should be scrutinized over their compliance and observance of the approved land uses and zoning policies of the city.

A series of technical orientation sessions and briefing of local barangay officials on the CLUP and ZO will be conducted in coordination with the Association of Barangay Councils.

7. Other Tools and Instruments

- a. Zoning Ordinance and other city ordinances Strict imposition of the idle land tax will be observed Industries which are highly pollutive will be taxed higher (e.g. agri-based industry, coal industry, wood-based fuel)
- b. Any development, project operation which result to the destruction of city properties, utilities and services (e.g. roads) should be sanctioned/fined and be held responsible in the repair and restoration of the property to its original form
- c. Capital Investment Program/Local Development Investment Program
- d. Annual Investment Program
- e. Forest Land Use Plan and other plan documents of the LGU Payment for ecosystem services as revenue source will be imposed on companies tapping water sources in the city’s forest areas.
- f. Giving of tax incentives
 Permitting System as presented in the table below:

Locational Clearance of Development Projects	Zoning Administrator
Building Permit	Office of the City Building Official
Development Permit for subdivisions, condominiums, malls, etc.	Sangguniang Panlungsod
Business Permit and Investment Potentials	CMO- Permits and Licensing Division
Real Property Revenue Assessment	City Assessor’s Office

Solid Waste Certificate	CENRO
Quarry Permit (commercial sand and gravel. Earthfill, limestone, gabbro, volcanic tuff)	City Mining Regulatory Board
Drainage Clearance	City Engineer's Office
Sanitation Clearance	City Health Office
Procurement Clearance and Permits	Bids and Awards Committee

g. Conduct of One-Stop-Shop

One stop shops for LGU permits and licenses will be observed by the city all-year round involving the following agencies:

City Mayor's Office - Permits and Licensing Divi-	Business One Stop Shop (BOSS)
Office of the Building Official	One Stop Construction Permit (OSCP)

h. Working with National Agencies

The city should work hand-in-hand with the following agencies for the effective implementation of the CLUP and Zoning Ordinance, to wit:

Concerns	NGAs
Infrastructure	Department of Public Works and Highways Department of Agriculture Department of Health Department of Education
Forest Management	Department of Environment and Natural Resources National Commission on Indigenous Peoples
Ancestral Domain	National Commission on Indigenous Peoples
Tourism	Department of Tourism
Agriculture	Department of Agriculture National Irrigation Administration Philippine Fiber Industry

Monitoring and Evaluation

As part of the over-all implementation plan of programs, projects, and activities of the CLUP and ZO, their monitoring and evaluation (M&E) will be an important aspect. An effective M&E system is a guide for the LGU to focus their development efforts and interventions towards the achievement of their vision.

Anent to section 109 of RA 7160 or Local Government Code of 1991, it states that the CDC shall “*coordinate, monitor, and evaluate the implementation of development programs and projects*”, thus, it will be responsible to establish ME system and implementing structure. Hence it is within the purview of CDC to create the M&E body whose membership shall be identified and functions defined, and shall undertake the monitoring, review and evaluation of the implementation of the CLUP and ZO..

Monitoring and Evaluation Implementing Structure

The city government has established its implementing structures to oversee the monitoring and evaluation process of CLUP and ZO. As mentioned above, the creation of Monitoring and Evaluation Implementing structure must be within the CDC body as well, in which below we present the members and functions of CDC and of Project Monitoring Committee:

City Development Council (CDC)

- Chairperson** : City Mayor or her alternate, the City Administrator
- Vice-Chairperson** : CSO Representative to be selected during the Organizational Meeting/General Assembly
- Members** : All Barangay Captains
 - Chairman, Committee on Finance, Ways and Means
 - Congressman of each legislative district or their representatives
 - Representative of non-governmental organizations operating in the city, who shall constitute not less than one fourth (1/4) of the members of the fully organized council

Objective:

As provided by the House Bill No. 3804 the City Development Council is to assist the Sanggunian in setting the direction of the economic and social development of the local government unit and to coordinate development efforts within its territorial jurisdiction, and to formulate a comprehensive multi-sectoral development plan which shall be approved by the Sanggunian.

Functions:

The above members shall perform the following functions:

- a. Formulate the long-term, medium-term and annual socio-economic development plans and policies
- b. Formulate the medium-term and annual public investment programs
- c. Appraise and prioritize socio-economic development programs and projects
- d. Formulate local investment incentives to promote inflow and direction of private investment capital
- e. Coordinate, monitor, and evaluate the implementation of development programs and projects
- f. Perform such other functions as may be provided for by law.

Project Monitoring Committee (PMC)

Chairperson : City Mayor

Co-Chairperson : City Administrator

Vice-Chairperson : City Planning and Development Coordinator

Members : One (1) Representative of NGO/PO elected to the Project Monitoring Committee by all the NGOs in the City Development Council

One (1) Representative of NGO member in the City Development Council

City Development Council Chairperson of the Social Development Committee

City Development Council Chairperson of the Economic Development Committee

City Development Council Chairperson of the Infrastructure Development Committee

City Development Council Chairperson of the Environment Development Committee

President of the Association of Barangay Captains as member of the City Development Council Executive Committee

City Engineer

City Accountant

City Budget Officer

DILG City Director

Objective:

The programs, projects and activities (PPAs) to be monitored by the Project Monitoring Committee shall include all foreign and nationally-funded projects; including funds directly downloaded to the city which are implemented within the Local Government Unit (LGU). It shall also monitor PPAs funded from the Annual Development Fund (ADF) and locally generated resources, including those that are funded at the barangay level.

Functions:

The above members shall perform the following functions:

- a. Provide up-to-date and relevant information on the over-all status of project implementation at each level for timely program/project adjustments, planning and budget allocation;
- b. Ascertain issues and concerns which impede project implementation for remedial actions at the City Development Council and Committee levels and to elevate unresolved issues and problems at the appropriate offices and institutions at the city level for resolution and final action;
- c. Institutionalize problem solving session (PSS) as a mechanism to address issues and concerns related to the implementation of programs, projects and activities (PPAs); and
- d. Assess and ascertain whether development programs and projects implemented are delivering results in support of city development goals and plans as well as regional and national development thrusts and priorities.

Moreover, the LDC has envisioned Barangay Monitoring and Evaluation Team, where its main objective is to broaden the M&E arm of the Project Monitoring Committee (PMC) on both Infrastructure and Non-Infrastructure Development Projects. Furthermore, the Barangays are urged to submit quarterly status reports of development projects within their area of jurisdiction thru the PMC as conformance to City Development Council Resolution No. 22 series of 2018.

Barangay Project Monitoring and Evaluation Team

The members of the BMET are the following:

Chairperson : Barangay Chairman

Vice-Chairperson : Barangay Kagawad for Infrastructure

Members : 5 members composed of the following:

- One (1) Civil Society Organization/ Non-Governmental Organization member,
- One (1) Barangay Kagawad for Social Development,
- One (1) Barangay Kagawad for Economic Development, and
- Two (2) members to be appointed by the Barangay Development Council

The proposed monitoring and evaluation is yet to be introduced in the Barangay level. Thus, there is a need to orient the Barangay Development Councils on the process of the Project Monitoring Committee and on the creation of the BMET and its functions.

The PMC-COA Form, the prescribed form of the city, shall be accomplished by the BMET and will be submitted every 10th day of the ensuing month of the quarter thru the PMC Secretariat at the Project Monitoring and Evaluation Division of the City Planning and Development Office.

MONITORING AND EVALUATION SYSTEM AND PROCEDURE

The conduct of M&E, which has been established by LDC will be based on the established parameters. For monitoring and review, the Local Planning and Development Council shall:

- Coordinate with all relevant local and national agencies, including research/academic, private sector, NGOs/CSOs groups, to generate and consolidate necessary information for Monitoring, Review and Evaluation (MRE).
- Prepare the CLUP Progress Report Card in cooperation with other relevant local and national agencies and institutions.
- Provide monitoring reports to the SB, LDC and LCE on an annual basis.

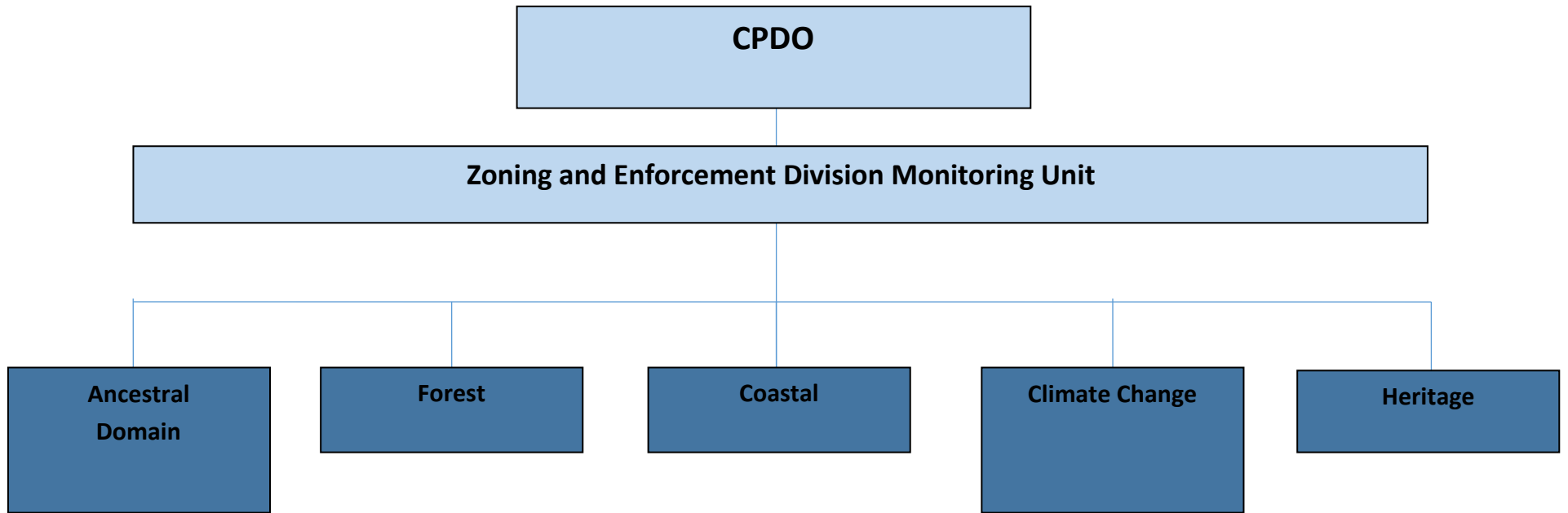
The M&E body shall also evaluate the results of the monitoring activities. Evaluation may be done in two ways:

- **During the period of implementation** – periodic evaluation is conducted to provide early feedback to project management on the following concerns: policies affecting the project; attainment of sectoral goals and objectives; adequacy of institutional arrangements; and the appropriateness of project design and the level of resources.
- **After the period of implementation (Post Evaluation)** – post evaluation involves the systematic and objective assessment of completed development projects. It may be done at the end of the project or sometime thereafter. It analyses project outcomes and the underlying factors which contribute to the project's success or failure so that it can identify the features that deserve replication in future projects as well as the pitfalls that need to be avoided.

Under the Local Government Code, the Local Development Council (LDC) is responsible for LGU plan preparation and MRE. Within the LDC, an MRE body shall be created, whose membership shall be identified and functions defined. An MRE body shall be organized to undertake the monitoring, review and evaluation of the CLUP and ZO implementation.

To further strengthen the monitoring and evaluation capacity of the city, a Multi Sectoral Monitoring Body will be created to be composed of agency representatives from the following thematic areas: Ancestral Domain, Forestry, Coastal, Climate Change, Heritage.

The Monitoring Body headed by the Local Chief Executive have the following members and structure:



Proposed Composition of Multi-Sectoral Monitoring Body

Thematic Area	Additional Members
Ancestral Domain	National Commission on Indigenous Peoples (NCIP), Ancestral Domain Management Office (ADMO), Indigenous Peoples Mandatory Representative (IPMR)
Forestry	City Disaster Risk Reduction and Management Office (CDRRMO)
Heritage Conservation	Museo Dabawenyo, Davao Historical Society
Coastal, Marine and other Water Bodies	City Agriculturist’s Office – Fisheries and Aquatic Resources Section Department of Agriculture –Bureau of Fisheries and Aquatic Resources (DA-BFAR)
Climate Change/ Disaster Risk	CDRRMO Mines and Geosciences Bureau (MGB)

Davao City Planning Information System (DCPIS)

The city government has developed Davao City Planning Information System (DCPIS) to centralize the submission of accomplishment reports of the 43 departments and units of the city government aimed at monitoring the progress of plans, programs, and projects of the City. A modern and systematic way of organizing file structure, and real-time data collection of reports.

The DCPIS shall develop a system of information storage, transmittal and accessing by other agencies who may want to obtain some or certain data and information for their specific needs. It shall also craft methodologies at ways to conduct information and education drive, what materials are appropriate to support such activities and to tap any and all forms and platforms as maybe required and necessary for an efficient, easy to understand and widespread dissemination, These may include using transport vehicles, audio equipment, visual aid materials, learning sessions, and even tapping the digital and electronic platform and social media applications in the Internet, especially during certain critical situations such as a disease outbreak and pandemic, or situations of conflict.

The DCIPS must also include the nature of work and function of the different and various city government offices and national government agencies, such as the proposed reorganization of the Zoning Enforcement Division, which includes the monitoring unit whose main function is to monitor actual land uses.

Intelligent Community-based Monitoring System (ICBMS)

The city government conducts regular census through the ICBMS, which includes the geo-tagging of structures in the barangays, and the areas highly exposed to disasters. In the case of the latter, the Barangay Disaster Risk Reduction and Management Office shall plot the coordinates of the areas affected by flood, for example, and provide the City Planning with these coordinates for the Geographic Information System unit to plot the general affected area.

The information gathered in the census of ICBMS shall form the database of the city and shall be updated regularly. The ICBMS is covered by Republic Act 11315, An Act Establishing A Community-Based Monitoring System and Appropriating Funds Therefore. President Rodrigo Duterte signed this into law on April 17, 2019. The law enables the Philippines’ adoption of a community-based monitoring system which generates updated disaggregated data necessary in targeting beneficiaries, conducting more comprehensive poverty analysis and needs prioritization, designing appropriate policies and interventions and monitoring impact over time.

Developed CLUP Progress Report Card or Citizen’s Report Card

A CLUP Report Card has been developed to be used to track progress and resulting to desired results of the CLUP. It shall monitor projects, programs, and the activities implemented through these sectors such as the social, economic, infrastructure, ecosystem, and the special areas.

The CDC will be developing indicators which will be utilized in the continuous monitoring and evaluation of CLUP outcome and the operationalization of the different implementing mechanisms, including local citizen bodies created for monitoring the implementation that would make the review or updating of the CLUP more effective and systematic.

The MRE of the CLUP and ZO implementation is an important aspect of the over-all plan. Thus, an effective MRE system has to be in place to track the progress of the CLUP.

Below is the report card indicating the objectives per sector and the corresponding indicators and means of verification:

Social Sector		
Objectives	Indicators	Means of Verification
Establish health facilities in areas where necessary such as health stations, government-owned hospital	<ul style="list-style-type: none"> -Percentage of barangays with health facilities with disaster-resilient standards <ul style="list-style-type: none"> * Government-owned hospital * Rural Health Units * Urban Health Centers * Barangay Health Stations - Proportion of areas with access to health facilities <ul style="list-style-type: none"> * Geographically Isolated Disadvantaged Areas (GIDAs) - Number of newly constructed health facilities with disaster-resilient standards - Percentage of health facilities retrofitted with disaster-resilient 	City Health Office Accomplishment Report

Social Sector		
Objectives	Indicators	Means of Verification
Improve access of the community to educational facilities	<ul style="list-style-type: none"> -Number of school buildings/classrooms constructed with disaster-resilient standards in Geographically Isolated Disadvantaged Areas (GIDAs) -Proportion of school buildings/classrooms retrofitted with disaster-resilient standards to total number of school buildings/classrooms - Proportion of ECCD centers with disaster-resilient standards to total number of ECCD Centers - Proportion of public schools with connection to electricity to total number of public schools (% cumulative) - Proportion of public schools with adequate water and sanitation facilities to total number of public schools (% cumulative) - Proportion of public schools with internet access to total number of public schools (% cumulative) 	<p>City Engineer's Office Monthly Report</p> <p>City Engineer's Office Monthly Report</p> <p>City Social Welfare and Development Office Accomplishment Report</p> <p>DepEd Basic Education Information System</p> <p>DepEd Basic Education Information System</p> <p>DepEd Basic Education Information System</p>
Improve learning conditions	<p>Classroom to pupil ratio</p> <ul style="list-style-type: none"> * Elementary School * Junior High School * Senior High School <p>Proportion of classrooms with standard student-classroom ratio</p> <ul style="list-style-type: none"> * Elementary School * Junior High School * Senior High School 	<p>DepEd Basic Education Information System/DepEd Annual Report</p>
Strengthen resiliency of communities and institutional structures to the impacts of climate change		
Reduce housing backlog annually	<p>Percentage of Housing backlog addressed</p> <p>Number of housing units provided to the informal settler families</p> <ul style="list-style-type: none"> * In danger areas * In lands affected by government projects * In public lands (national and local government) 	<p>CPDO-HHDD Accomplishment Report, Housing Census Survey</p>

Social Sector		
Objectives	Indicators	Means of Verification
	* In private lands Proportion of urban population living in slums, informal settlements or settlements in danger areas decreased. Number of socialized housing units constructed	
Undertake enabling skills training for livelihood development within relocation areas	- proportion of beneficiaries within relocation areas to total number of beneficiaries under livelihood program - number of livelihood trainings provided to relocatees	City Social Welfare and Development Office Accomplishment Report, City Agriculturist's Office Accomplishment Report, City Veterinarian's Office Accomplishment Report, City Cooperative Development Office Accomplishment Report
Craft the City Shelter Plan	- Approved City Shelter Plan	CPDO-HHDD Accomplishment Report; Local Housing Board Resolution, City Council Ordinance
Establish facilities to increase access of clients to particular services	- proportion of residential facilities retrofitted with disaster-resilient standards to total number of residential facilities - number of additional residential facilities constructed with disaster-resilient standards	City Engineer's Office Monthly Report
Sustain programs and empowerment interventions that increase participation of disadvantaged person, vulnerable population	-number of disadvantaged person served -number of disadvantaged person benefitted with sustainable programs	City Social Welfare and Development Office Accomplishment Report
Upgrade equipment, vehicles, and facilities /Upgrade protective facilities	- Number Police Stations - Number of Fire Stations - Number of Jail Facility - Proportion of Existing Protective Service Facility Retrofitted with disaster-resilient standards - Protective Services Facilities Constructed	Davao City Police Office Accomplishment Report Bureau of Fire Protection Report Bureau of Jail Management and Penology Report City Engineer's Office Report
Fortify capability of the government to comply with the Ecological Solid Waste Management Ordinance	- Total urban solid waste generated (mt) - Urban solid waste regularly collected with adequate final discharge (mt) - Volume of Waste Water generated (tons/day) by domestic, commercial, industrial, and hospital sources	City Environment and Natural Resource Office Accomplishment Report DENR-EMB Report City Environment and Natural Resource Office Accomplishment Report

Social Sector		
Objectives	Indicators	Means of Verification
	<ul style="list-style-type: none"> - Number of Sanitary Landfill Sites with disaster-resilient standards - Number of Material Recovery Facilities established with disaster-resilient standards - Number of waste treatment facilities with disaster-resilient standards - Percentage of households with sanitary toilet facilities 	City Health Office Annual Report
Improve water quality	<ul style="list-style-type: none"> - Total urban solid waste generated (mt) - Urban solid waste regularly collected with adequate final discharge (mt) - Volume of Waste Water generated (tons/day) by domestic, commercial, industrial, and hospital sources - Number of Sanitary Landfill Sites with disaster-resilient standards - Number of Material Recovery Facilities established with disaster-resilient standards - Number of waste treatment facilities with disaster-resilient standards - Number of Toilet Facilities 	<p>City Environment and Natural Resource Office Accomplishment Report</p> <p>DENR-EMB Report</p> <p>City Environment and Natural Resource Office Accomplishment Report</p> <p>City Health Office Annual Report</p>
Improve air quality, which resulted to clean and healthy urban environment	<ul style="list-style-type: none"> - Air quality index - New urban green spaces developed - Adopt environment friendly transportation using Euro 4 engines 	<p>Department of Environment and Natural Resources-EMB Report</p> <p>City Environment and Natural Resource Office Annual Report</p> <p>City Health Office- Sanitation Division Accomplishment Report</p>
Improve sports and recreational facilities	<ul style="list-style-type: none"> -Number of public sports facilities with disaster-resilient standards -Number of private sports facilities -Percentage of public sports facility retrofitted with disaster-resilient standards 	<p>City Mayor's Office- Sports and Development Division Accomplishment Report</p> <p>City Engineer's Office Monthly Report</p>
Increase access to sports and recreational facilities	<ul style="list-style-type: none"> - Number of Sports and recreational facilities with disaster-resilient standards by barangay - Number of newly constructed sports and recreational facilities with disaster-resilient standards - Number of barangay with parks and recreational facilities Percentage of subdivision compliant with the required 15% additional green space for parks 	

Economic Sector		
Agriculture		
Establish nurseries with climate resilient seedlings	Number/area of climate resilient nursery per district	Report from CAgriO
Build resilient infrastructure/facilities (dikes and canals with water catchment system)	Number of resilient infrastructure facilities built	Accomplishment report of CEO/DPWH/NIA/City AgriO
Evaluate agricultural lands for reclassification	Total area (sq.m.) reclassified to other uses	Report from CPDP-ZED/GIS, CAgriO and SP
Forestry		
Enforce strictly the Watershed Management Code	Total watershed area protected thru NGP and other local initiatives	Report from DENR/City ENRO and NGO
Intensify the protection of the dipterocrops from any form of destruction	total areas of dipterocrops protected from destruction Increase reforestation Decrease in the number of permits granted in cutting of trees	Reports submitted by concerned agencies (DENR, CENRO, Barangay council). CENRO report Records from DENR/CENRO
Expand the coverage of National Greening Program	Number/Area covered by the NGP Increased area covered for greening program	Annual Reports by DENR/City ENRO/NCIP and Associations
Tourism		
Retrofit existing tourist establishments	number/land area of tourist establishments retrofitted	Report from the Office of the City Building Official
Limit tourism activities/development in hazard-prone areas	Number/land area tourism activities/development in hazard prone areas /total area classified as hazard prone	Reports from CMO- Permits and Licenses Division (Business Bureau)/CPDO-ZED/CLUP/DOT
Coordinate with the Department of Tourism and private sectors to identify areas for culinary tourism	Areas identified as culinary tourism area	Approved Project Proposal from CTOO/DOT
Require and monitor beach resorts to put up Waste Water Treatment Facilities (WWTF) Amend Sec.4.2 of the Zoning Ordinance and designate another sub-zone for Chinatown development	Number of beach resorts with WWTF	Monitoring report from DENR/CEO/CENRO/JICA
Expand tourism and eco-tourism areas in the city	Designated Barangay Malagos and Marilog Proper as expanded tourism zone and eco-tourism area	Reports from CMO –Permits and Licenses Division, (Business Bureau)/CPDO-ZED

Economic Sector		
Establish community-based village museum for traditions and culture	Number/area of community based village museum established	Approved Project Proposal of CTOO CTOO Status Report of Existing Projects
Commerce and Trade		
Spread growth centers in Second and Third Districts	Number of business establishments per year in particular area	Report from CMO – Permits and Licenses Division
Improve/modernize urban public transport system	High Priority Bus System (HPBS) implemented	City Mayor’s Office (CMO)-Project Management Team
Pursue transportation-oriented development/mixed-used development	Number of transport/bus stations accessible and walkable to mix-used development (residential & commercial)	DoTr, DPWH, and CEO
Industry		
Set up industrial parks away from dwelling units	Number/land area of industrial parks established away from dwelling units	Zoning Map
Provide incentives to non-pollutant industries	Number/land area of non-pollutive industries provided with incentives	DENR-EMB report/CMO-Permits and Licenses Division
Reduced green house gas emission coming from pollutive industries	Number of highly pollutive industries which adopted measures to reduce green house gas emissions	DENR-EMB Report/CMO-Permits and Licenses Division

Infrastructure		
Transportation		
Public Transport Modernization	<p>Implementation of HPBS</p> <p>Airport modernization</p> <ul style="list-style-type: none"> - expansion of airport passenger terminal - expansion of airport taxi way - Disaster preparedness response per ICAO standard (international civil aviation organization) 	<p>City Mayor's Office (CMO)- Project Management Team</p> <p>Project Report – CAAP, DoTr</p>
Roads		
Surface improvement increase the elevations of roads and rehabilitate the drainage systems within the 6.0784 km road length which have high vulnerability to flooding that may affect the road network	<ul style="list-style-type: none"> • Number of road projects with pavement surface improvements • Number of road projects with increased elevations • Number of road projects with surface drainage system that would prevent rainfall on a roadway 	<p>Department of Public Works and Highways (DPWH) City</p> <p>Engineer's Office (CEO)</p>
Surface improvement increase the adaptive capacity and mitigated measures of the 12.6707 km road length, which are either vulnerable or have high risk to landslide that may affect the road network	<ul style="list-style-type: none"> • Number of road projects with surface drainage system that would prevent rainfall on a roadway • Number of slope drainage systems constructed to protect slopes from erosion or stability decline 	<p>DPWH</p> <p>CEO</p>
Increase the adaptive capacity of future construction of roads especially within those areas that have been found with high risk for potential hazards	<p>Number of road projects constructed to incorporate drainage of structures (such as: retaining walls, and to consider the following data, to wit: data on groundwater level, groundwater movement, spring water condition, location of permeable layer and its permeability coefficient, and the depth of impermeable layer should be obtained), for the purpose of removing stored water</p> <p>Number of projects using eco-friendly construction materials</p>	

Infrastructure		
Bridges		
Retrofit and rehabilitate the 14 existing national bridges, which are vulnerable, or have high susceptibility to potential hazards that may affect the structure	Number of bridges retrofitted which are high susceptibility to potential hazards	DPWH CEO
Increase the adaptive capacity of future construction of bridges especially within those areas that have been found vulnerable, or have high susceptibility to potential hazards	Number of permanent bridges constructed to areas with high susceptibility to potential hazards	DPWH CEO
Power		
Retrofit and rehabilitate three (3) power substations considered moderately at risk to flooding to mitigate potential hazards to the structure	Number of power substations retrofitted to mitigate potential hazards to the structure	Aboitiz Power Corporation (APC) Davao and Light Power Company (DLPC)
Information and Communication Technology		
Retrofit and rehabilitate 22 cell sites considered moderately at risk to flooding to mitigate potential hazards to the structure	Retrofitted/Rehabilitated all 22 cell sites considered moderately at risk to flooding to protect the electronic communications equipment are placed which are the Cell tower and Cellular base station	Telecommunication Companies (TelCos) providers: Fixed Lines – Globe/PLDT (Digitel/Bayan Tel Mobile Lines- Globe/TM; and PLDT/Smart/Sun/TNT
Retrofit and rehabilitate 14 cell sites considered moderately at risk to landslide to mitigate potential hazards to the structure	Retrofitted/Rehabilitated all 14 cell sites considered moderately at risk to landslide	TelCos
Retrofit and rehabilitate four (4) cell sites considered moderately vulnerable to landslide to mitigate potential hazards to the structure	Retrofitted/Rehabilitated all four (4) cell sites considered moderately vulnerable to landslide	TelCos
Retrofit and rehabilitate three (3) cell sites considered moderately vulnerable to storm surge to mitigate potential hazards to the structure	Retrofitted/Rehabilitated all three (3) cell sites considered moderately vulnerable to storm surge	TelCos
Retrofit and rehabilitate four (4) cell sites considered moderately vulnerable to liquefaction to mitigate potential hazards to the structure	Retrofitted/Rehabilitated all four (4) cell sites considered moderately vulnerable to liquefaction	TelCos

Infrastructure		
Water		
Level 3 Water System		
Install disaster mitigating measures to reduce damage to 97.14 meters of DCWD mainlines moderately vulnerable to earthquake	Number of installed disaster mitigating measures of DCWD mainlines moderately vulnerable to earthquake	Davao City Water District (DCWD)
Increase adaptive capacity of some 15,809 meters mainlines in high risk areas of flooding. Also increase adaptive capacity of 7,392 meters of pipes within areas with moderate risk of flood	Number of adaptive capacity on DCWD mainlines affected by high and moderate risk of flooding.	DCWD
Increase adaptive capacity of some 4,941 meters mainline pipes in high risk areas of landslide, due to occasional/ frequent likelihood of occurrence. Also increase adaptive capacity of 1715.76 meters of pipeline in moderate risk areas of landslide	Number of adaptive capacity on DCWD mainlines affected by high and moderate risk of landslide	DCWD
Build hazard resilient infrastructure to protect 1,398.02 meters pipelines in areas moderately vulnerable to flood; 1702.4 meters mainline with moderate vulnerability to storm surge; and 55,667.14 meters mainlines, which have moderate vulnerability to liquefaction	Number of adaptive capacity on DCWD mainlines affected by high and moderate risk of liquefaction.	DCWD
Level 2 Water System		
Install disaster resilient features to eight (8) wells and spring source found in high risk of flood; 29 spring by gravity source and a well which is in high risk of landslide; 101 spring source found to be highly vulnerable to landslide; two (2) wells moderately vulnerable to storm surge; one (1) well highly vulnerable to earthquake; 233 water sources moder-	Number of installed disaster resilient features to Level 2 water source which are vulnerable to the following natural hazards, to wit: Landslide Storm surge Earthquake	Barangay Council Barangay Water and Sanitation Associations (BAWASA) City Health Office (CHO) City Engineer's Office (CEO) – Waterworks Division

Infrastructure		
Water		
Level 1 Water System		
<p>Install disaster resilient features to 29 spring by gravity source and one (1) deep well in high risk of flood; 49 spring by gravity source and 5 deep well in moderate risk of flood ; 35 spring source are in high risk of landslide; 83 spring by gravity source moderately vulnerable to flood; 90 spring by gravity and wells highly vulnerable to landslide</p> <p>Install disaster resilient features 90 spring by gravity source and wells with moderately vulnerable to liquefaction; 51 spring by gravity source which are highly vulnerable to storm surge and 39 which are vulnerable to moderate storm surge</p>	<p>Number of installed disaster resilient features to Level 1 water source which are vulnerable to the following natural hazards, to wit:</p> <ul style="list-style-type: none"> * Flooding * Landslide * Storm surge * Liquefaction 	<p>Barangay Council</p> <p>Barangay Water and Sanitation Associations (BAWASA)</p> <p>City Health Office (CHO)</p> <p>City Engineer's Office (CEO) – Waterworks Division</p>
Ecosystem		
Enhance and promote the protection and preservation of the flora, fauna and the entire biodiversity ecosystem	Percentage increase in the current closed canopy forest area	Report from DENR
Ensure protection and preservation of biodiversity species	Increased number of species	Report from the Philippine Eagle Foundation
Special Areas		
Preserve and nurture the integrity of the ancestral domain	Decrease in the number of migrants and development migrants in ancestral domain areas	Inventory report from NCIP/ADMO
Ensure preservation of indigenous peoples' cultural heritage	Number of cultural-friendly socioeconomic projects in the CADT areas	Reports from CENRO, NCIP, IPMR
Protect customs, traditions and historical sites	<p>Number of heritage sites identified</p> <p>Number of schools of living traditions</p>	NCIP report

Sustainable Development Goal

Apart from ensuring the progress of the programs, projects, and activities through ME indicators, the goal of M&E is to ensure the quality of these projects, programs, and activities are not only beneficial to the economic progress but also in other sectors conforming to the 17 sustainable development goal, which was laid out by the United Nations (UN), *to wit*;

- a. No Poverty
- b. Zero Hunger
- c. Good Health and Well-being
- d. Quality Education
- e. Gender Equality
- f. Clean Water and Sanitation
- g. Affordable and Clean Energy
- h. Decent Work and Economic Growth
- i. Industry, Innovation and Infrastructure
- j. Reduced Inequality
- k. Sustainable Cities and Communities
- l. Responsible Consumption and Production
- m. Climate Action
- n. Life Below Water
- o. Life on Land
- p. Peace and Justice Strong Institutions
- q. Partnerships to achieve the Goal

Review of the CLUP and ZO

A CLUP and ZO review shall be conducted every four years or as the need arises. The continuous monitoring of CLUP outcome and results indicators and the operationalization of the different implementing mechanisms, including local citizen bodies created for monitoring the implementation, would make the review or updating of the CLUP more effective and systematic.

Report, findings and recommendations should be submitted to the Mayor, SP for consideration and appropriate action.

Annex:

POLICY INTERVENTIONS PER EXPOSED ELEMENT

POPULATION

Policy Interventions for high risk areas to flood:

- * Pursue flood control measures
- * strictly enforce “no habitation zone” near waterways (Republic Act No. 7279 or Urban Development Housing Act).
- * Enforce eminent domain to have buffer areas/easements
- * Relocate the affected settlers and establish tenement housing for the affected settlers, especially the ISFs, provided that it shall be built away from the waterways/risk areas
- * Build evacuation center equip with different facilities (e.g., comfort rooms, conjugal rooms)
- * Install early warning device (e.g., river/coastal cameras)
- * Empower barangay disaster council

Policy Intervention for areas moderately at risk to flood:

- * Increase vegetative cover through the implementation of massive reforestation in upland areas
- * Strictly enforce “no habitation zone” near waterway
- * Enforce eminent domain to have buffer areas/easements
- * Relocate the affected settlers and establish tenement housing for the affected settlers, especially the ISFs, provided that it shall be built away from the waterways/risk areas
- * Continuously pursue national greening program
- * Build evacuation center equip with different facilities (e.g., comfort rooms, conjugal rooms)
- * Install early warning device (e.g., river/coastal cameras)
- * Empower barangay disaster council

Policy Interventions for areas in moderate and high risk to landslide

- * Implement slope protection measures (e.g., installation of geo-nets in slope)
- * Landslide mitigation design shall be included in the local and national budgets
- * Enforce the National Greening Program
- * Prohibit planting of cash crops and corn in high sloping areas. Only forest trees shall be planted in elevated areas
- * Pursue proper mitigating measures to prevent landslides
- * Relocate informal settlers living in landslide prone areas

Policy interventions for active fault

- * Observe 5-meter easement from the fault line
- * Set up a building design that can withstand Intensity 8 jolt

Policy Interventions for liquefaction

- * Pursue proper mitigating designs/interventions to prevent liquefaction
- * Proper resting of aquifers to prevent destruction

Policy Interventions for storm surge

- * There shall be proper implementation of solid waste management.
- * Strict implementation of environmental policies
- * Relocate informal settlers
- * Acquire lands, which are not prone to hazards, for informal settlers
- * Require the establishment of risk-resilient structures

LIFELINE UTILITIES

Policy Intervention for high risk to flood

- * Re-routing scheme within the affected areas.
- * Crafting of contingency plans for emergency situation
- * Maintain/Upgrade all power utilise from time to time in order to cope with the current climate change.
- * Government interventions by way of securing these facilities from man-made hazards.
- * Ensure that contingency plan is ready when disaster occurs.
- * Strengthen contingency plans for alternative methods of water supply delivery to affected areas
- * Strict implementation of material specification standards and construction (National Building Code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Waterworks Association; Standard Specifications and American Society for Testing and Materials.
- * Strengthen contingency plans for standby 24/7 services for water supply in case of interruption.
- * Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Water Works Association; Standard Specifications and American Society for Testing and Materials.
- * The concerned agency should have an allocation for the repair and replacement of mainline pipes in case it will be hit by hazards.

Policy Interventions for moderate risk to flood

- * Maintain/Upgrade all power utilise from time to time in order to cope with the current climate change.
- * Government interventions by way of securing these facilities from man-made hazards.
- * Ensure that contingency plan is ready when disaster occurs.
- * Immediate actions and alternative solutions like mobile towers in terms of telecommunication interruptions.
- * Government interventions by way of securing these facilities from man-made hazards.
- * Government should provide technical assistance relative to hazards and risks and possible interventions for mitigation control.

Policy Interventions for Active Fault, Liquefaction and Storm Surge

- **Active Fault**
 - * Crafting of contingency plans for emergency situation.
 - * Re-routing scheme within the affected areas.
 - * Strengthen contingency plans for alternative methods of water supply delivery to affected areas.
 - * Strengthen contingency plans for alternative methods of water supply delivery to affected areas.
 - * Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Waterworks Association; Standard Specifications and American Society for Testing and Materials.
- **Liquefaction**
 - * Crafting of contingency plans for emergency situation.
 - * Re-routing scheme within the affected areas.
 - * Maintain/Upgrade all power utilities from time to time in order to cope with the current climate change.
 - * Government interventions by way of securing these facilities from man-made hazards.
 - * Strengthen contingency plans for alternative methods of water supply delivery to affected areas.
 - * Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Waterworks Association; Standard Specifications and American Society for Testing and Materials.
 - * Immediate actions and alternative solutions like mobile towers in terms of telecommunication interruptions.
 - * Ensure structural mitigation to withstand the impact of the identified hazards.
 - * Government should provide technical assistance relative to hazards and risks and possible interventions for mitigation control.
- **Storm Surge**
 - * Crafting of contingency plans for emergency situation.

- * Government interventions by securing these utilities from man-made hazards.
- * Maintain these utilities to cope with the current climate change impacts.
- * Maintain/Upgrade all power utilities from time to time in order to cope with the current climate change.
- * Strengthen contingency plans for alternative methods of water supply delivery to affected areas.
- * Strict implementation of material specification standards and construction (National building code of the Philippines; National Structural Code for Buildings; American National Standard Institute/American Waterworks Association; Standard Specifications and American Society for Testing and Materials.
- * Immediate actions and alternative solutions like mobile towers in terms of telecommunication interruptions

CRITICAL POINT FACILITIES

Critical Point Facilities with Flood and Landslide Risk

Policy interventions for flood risk:

- * Rehabilitation and retrofitting of existing structure with hazard resilient design
- * Construction of flood control projects like river/ seawalls, riverbank riprapping, and flood control gates and pumping stations
- * Regular declogging of canals and other water ways
- * Future construction of facilities buildings should adopt hazard resilient designs
- * Partnership with private and business organization for the construction of flood control projects (Adopt-A-School Program)
- * Strengthen community early warning system and disaster preparedness activity in the community
- * Establish service delivery networks

Policy Interventions for landslide risk:

- * Rehabilitation and retrofitting of existing structure that employs hazard resilient design.
- * Future construction of critical point facilities should follow standards for hazards resiliency.
- * Forging partnerships with private and non-government organizations in construction of new facilities.
- * Conduct of Inventory and regular monitoring and evaluation of Critical Point Facilities to assess its structure and resiliency to hazards.
- * Strengthen the coordination and service delivery system of agencies and LGU to the affected community.
- * Enhance the early warning system and disaster preparedness of the communities.

NATURAL RESOURCE BASED PRODUCTION AREAS

Policy Interventions for Flood

- * Extension services for climate sensitive crop production.
- * Establishment of rainwater catchment.
- * Improve forest cover in watershed areas using indigenous forest species.
- * Encourage planting of high value fruit tree crops and flood protection trees along riverbanks.
- * No cutting of trees in the watershed areas.
- * Provision of alternative livelihood.
- * Adapt soil and water conservation practices recommended and appropriate in sloping lands.
- * Encourage crop insurance.

- * Strict implementation of riparian zone (20 meters A&D and 40 meters timberland; Planting of species appropriate in the easement zone (riparian) such as malibago, bamboo and fruit trees instead of cash crops;
- * Establishment of rainwater catchment; Massive tree planting and stop cutting of trees) ;
- * Adapt cropping pattern;
- * Access to alternative livelihood and Access to Crop insurance (PCIC).

Policy Interventions for landslide

- * Improve forest cover in watershed areas by planting of indigenous forest species.
- * Encourage planting of high value fruit tree crops.
- * No cutting of trees in the watershed areas.
- * Provision of alternative livelihood.
- * Adapt soil and water conservation practices recommended and appropriate in sloping lands.
- * Encourage crop insurance.
- * Introduced more livelihood options compatible to the present condition of the area.

Other policy interventions for Landslide.

Moderate Vulnerability

- * Adapt conservation farming practices in the forest production areas; Planting of agro-forestry trees instead of cash crops;
- * Access to Crop insurance (PCIC; Access to alternative livelihood.

High Vulnerability

- * Strict implementation of no tillage in sloping areas;
- * Adapt conservation farming practices in the forest production areas;
- * Planting of agro-forestry trees instead of cash crops; Access to Crop insurance (PCIC; Access to alternative livelihood; Plant more trees stop cutting of trees.

Storm Surge

- * Access to Crop insurance (PCIC; Access to alternative livelihood
- * Change crop (planting of saline tolerant varieties)
- * Enhance planting of mangroves

URBAN USE AREAS

Policy Interventions:

High Flood Risk:

- **Agri-Industrial, Industrial and Commercial**
 - * Imposition of hazard resistant design standard regulations within flood susceptible areas;
 - * conduct site specific flood hazard mapping as basis for the establishment of structural design regulation
 - * Mandatory retrofitting of existing structures
- **Cemetery**
 - * no additional development to cemetery area susceptible to flood
- **Parks and Playground**
 - * Plant more trees; maintain and monitor structure

- **Residential**
 - * For titled properties, strict implementation of the zoning ordinance for structures within flood prone zone i.e construction of at least 2-storey structures only must be followed and the 30-meter buffer zone
 - * Implement mandatory evacuation/relocation policy on affected structures/dwellings
 - * Mandatory retrofitting of existing structures
 - * Formulation of Flood Contingency plans
- **Tourism**
 - * Imposition of hazard resistant design standards/regulations within flood susceptible areas

High Landslide Risk

- **Agri-Industrial**
 - * Concerned government agency to always allocate for immediate rehabilitation of roads affected by landslides;
 - * Promote reforestation on steep slopes.
- **Cemetery**
 - * Rehabilitation support through immediate replacement of lost or damaged land and facilities.
- **Commercial**
 - * Concerned agencies to require mitigating measure plan to building permit applicants for projects within landslide prone areas;
 - * Encourage structure owners to secure building insurances.
- **Industrial**
 - * Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.
- **Parks and Recreation**
 - * Government to provide structural mitigating measures such as drainage, erosion protection, vegetation, ground improvement, retaining walls/structures at the affected areas.
- **Residential**
 - * LGU to provide proper evacuation plan and integrated emergency management mechanism to communities; Educate residents on natural warning signs & the severity of disasters; LGU to regulate illegal construction of houses on steep slopes.
- **Tourism**
 - * Rehabilitation support through immediate replacement of lost or damaged land, facilities and access roads.
- **Vulnerable areas for Active Fault**
 - * conduct site specific hazard mapping as basis for the establishment of structural design regulation; no future developments within the identified area
- **Vulnerable areas for Storm Surge**
 - * Strengthen EWS and formulation of contingency plans to prevent fatalities and injuries due to potential changes in tidal pattern during sudden onset of hazards;
- **Vulnerable areas for Liquefaction**
 - * conduct site specific flood hazard mapping as basis for the establishment of structural design regulation.

