



Republic of the Philippines
Province of Cavite
City of Bacoor

Recd
Sept 26, 2023
9:30 am

5th SANGGUNIANG PANLUNGSOD

JOINT COMMITTEE ON AGRICULTURE & FOOD

AND

COMMITTEE ON ENVIRONMENT & NATURAL RESOURCES

COMMITTEE HEARING REPORT

NO. AAF006-2023

Subject: A City Resolution Approving the Coastal Resource Management Plan (CRMP) for the Year 2023-2025. PCR-395-2023 dated September 18, 2023.

The above mentioned proposed resolution underwent its first reading on September 18, 2023 during the 61st Regular Session of the 5th Sangguning Panlungsod presided by Honorable Reynaldo Palabrica. The said resolution was referred to this Committee for approval of the COASTAL RESOURCE MANAGEMENT PLAN (CRMP) for the Year 2023-2025.

FINDINGS:

Following discussion and instruction from the City Administrator's Office and the Office of the City Mayor, the attached aforementioned endorsement issued by the OCLS (Office of the City Legal Service), including its attachments, Endorsement No. 623 series of 2023, the proposed/draft CRMP is in line with the City of Bacoor's Comprehensive Land Use Plan (CLUP) and the vision to guide the City with its land use and development plan to become a "Model-First-Class-City" in the Bacoor City is also envisioned as a Smart City, making optimal use of all the integrated diversity of software, user interfaces and communication networks for the public.

Bacoor City will have enough space in its land use plan for commercial, industrial, residential, infrastructural, institutional parks and recreational land uses, however, it must utilize its land area wisely. The City as a Sub-Regional Growth Service to meet the demands of the of the southern regional settlements without having to travel to congested Metro Manila. It has the potential to add more commercial malls, corporate parks, and even entertainment.



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In terms of hospitals, health centers, barangay health sanitations and dialysis clinics, the City's social, health, and sanitation sectors have appropriate health facilities. Schools that provide services at various educational levels, both private and public, have a high literacy rate. A satellite state university that serving the demands of its expanding economy. In terms of peace and order, the city is a secure location with effective crime control. The drug problem appears to be under control as well. Only basketball and tennis courts are offered in terms of sports facilities and parks. The City requires parks and an urban forest.

The City has an energetic and sincere leadership team that is committed to realizing the City goal. A competent municipal bureaucracy system supports the local government well.

Bacoor, which is derived from the Tagalog word "bakod" meaning "fence", was extensively covered with bamboo groves in early Spanish times, which may assume is another explanation for Bacoor's name; Bakoor is actually a subspecies of bamboo. Bacoor was the site of many major interactions in Philippine history.

RECOMMENDATION:

Councilor Simplicio Dominguez, Chairman, Committee on Agriculture & Food recommended to PASS a resolution for the aforementioned subject matter. Acting Presiding Officer Councilor Reynaldo C. Palabrica moved for its approval, which was unanimously seconded by the Honorable Members of the 5th Sangguniang Panlungsod.

WE HEREBY CERTIFY that the contents of the foregoing report are true and correct.



Republic of the Philippines
Province of Cavite
City of Bacoor

5th SANGGUNIANG PANLUNGSOD

**Joint Committee on Agriculture & Food
AND
COMMITTEE ON ENVIRONMENT & NATURAL RESOURCES**

**COMMITTEE HEARING REPORT
NO. AAF006-2023**

Signed this 18th day of September 2023 at the City of Bacoor, Cavite.

COUN. SIMPLICIO G. DOMINGUEZ
Committee Chairman on Agriculture & Food

COUN. MICHAEL E. SOLIS
Vice Chairman

Acting Presiding Officer
COUN. REYNALDO C. PALABRICA
Member

COUN. LEVY M. TELA
*Committee Chairman on Environment
& Natural Resources*

COUN. REYNALDO FABIAN
Vice Chairman

COUN. ADRIENITO G. GAWARAN
Member



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Province of Cavite
City of Bacoor

AND
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9:30AM

5th SANGGUNIANG PANLUNGSOD

JOINT COMMITTEE ON AGRICULTURE & FOOD AND COMMITTEE ON ENVIRONMENT & NATURAL RESOURCES

EXCERPT FROM THE MINUTES OF 61ST REGULAR SESSION NO. AAF006-395-2023

Subject: A City Resolution Approving the Coastal Resource Management Plan (CRMP) for the Year 2023-2025. PCR-395-2023 dated September 18, 2023.

Honorable Reynaldo C. Palabrica, City Councilor/Acting Presiding Officer called the 61st Regular Session to order.

Atty. Khalid Atega Jr., Secretary of the Sangguniang Panlungsod, preceded with the roll call, the approval of the Journal and Minutes of the 60th Regular Session, and the reading of the referrals to committees of proposed Ordinances, Resolutions, Messages, Communications, Petitions and Memorials.

On motion by Honorable Michael Solis which was unanimously seconded by the majority of the Honorable Members of 5th Sangguniang Panlungsod, The Internal Rules were suspended.

Upon First Reading and Referral of Agenda item No., F.1.1 PCR-395-2023 – **FOR APPROVAL OF COASTAL RESOURCE MANAGEMENT PLAN (CRMP) FOR THE YEAR 2023-2025.** Honorable SIMPLICIO DOMINGUEZ and Honorable LEVY TELA moved for approval of the aboved mentioned subject matter.

The motion was unanimously seconded by the Honorable Members of 5th Sangguniang Panlungsod. The endorsement No. 623, series of 2023, issued by the Office of the City Legal Service, in relation to the proposed/draft Coastal Resource Management Plan (CRMP) for years 2023-2025 was approved.



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Province of Cavite
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5th SANGGUNIANG PANLUNGSOD

JOINT COMMITTEE ON AGRICULTURE & FOOD AND COMMITTEE ON ENVIRONMENT & NATURAL RESOURCES

COMMITTEE HEARING REPORT NO. AAF006-2023

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RECOMMENDATION:

Councilor Simplicio Dominguez, Chairman, Committee on Agriculture & Food recommended to PASS a resolution for the oforementioned subject matter. Acting Presiding Officer Councilor Reynaldo C. Palabrica moved for its approval, which was unanimously seconded by the Honorable Members of the 5th Sangguniang Panlungsod.

WE HEREBY CERTIFY that the contents of the foregoing report are true and correct.



Republic of the Philippines
Province of Cavite
City of Bacoor

5th SANGGUNIANG PANLUNGSOD

**Joint Committee on Agriculture & Food
AND
COMMITTEE ON ENVIRONMENT & NATURAL RESOURCES**

**COMMITTEE HEARING REPORT
NO. AAF006-2023**

Signed this 18th day of September 2023 at the City of Bacoor, Cavite.

COUN. SIMPLICIO G. DOMINGUEZ
Committee Chairman on Agriculture & Food

COUN. MICHAEL E. SOLIS
Vice Chairman

Acting Presiding Officer
COUN. REYNALDO C. PALABRICA
Member

COUN. LEVY M. TELA
Committee Chairman on Environment
& Natural Resources

COUN. REYNALDO FABIAN
Vice Chairman

COUN. ADRIELITO G. GAWARAN
Member



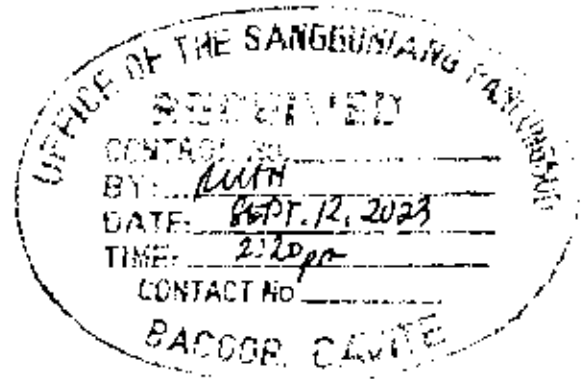
Republic of the Philippines
Province of Cavite

CITY OF BACOOR

Office of the Mayor

September 12, 2023

HON. CATHERINE SARINO-EVARISTO
Acting Vice Mayor, City of Bacoor
Bacoor Government Center
Bacoor City, Cavite



THRU: Atty. Khalid Ataga, Jr.
Sangguniang Panlungsod Secretary

SUBJECT: Endorsement Letter

Dear Hon. Sarino-Evaristo:

I hereby endorse to the esteemed members of the Sangguniang Panlungsod for appropriate action Endorsement No. 623, series of 2023, issued by the Office of the City Legal Service, relative to the proposed/draft Coastal Resource Management Plan (CRMP) for Year 2023-2025. The draft CRMP is in line with the City of Bacoor's Comprehensive Land Use Plan (CLUP) and is envisioned to guide the City with its land use and development plan to become a "model first-class city" in the South of Metro Manila.

Attached herewith is the aforementioned endorsement from the OCLS, including its attachments, for your immediate reference.

I trust that you give this matter your utmost consideration.

Sincerely yours,

HON. ROWENA BAUTISTA-MENDIOLA
Acting City Mayor

Office of the Mayor
Strike B. Revilla



SBR20231691



Address: Bacoor Government Center, Bacoor Blvd., Brgy. Bayanan, City of Bacoor, Cavite
Trunkline: 434-1111 Website: www.bacoor.gov.ph



SCAN



Republic of the Philippines
Province of Cavite
CITY OF BACOOR

OFFICE OF THE CITY LEGAL SERVICE

ENDORSEMENT NO. 623, SERIES of 2023

TO : **Atty. PAUL MICHAEL G. SANGALANG** *Paul M. Sangalang*
Office of the City Mayor

SUBJECT : **FOR ENDORSEMENT TO SANGGUNIANG PANLUNGSOD**
Re: Coastal Resources Management Plan (CRMP) for Year
2023-2025

DATE : 12 SEPTEMBER 2023

On 04 September 2023, this Office was furnished a copy of the CRMP by the Office of the City Agriculturist as reference for the review of the proposed draft City Ordinance No. 292-2023, Series of 2023.

Upon discussion with and instruction of the City Administrator's Office and the Office of the City Mayor today, 12 September 2023, we are respectfully endorsing to your good office the draft Coastal Resource Management Plan (CRMP) for Year 2023-2025, as attached.

The draft CRMP is in line with the City of Bacoor's Comprehensive Land Use Plan (CLUP) and is envisioned to guide the City with its land use and development plan to become a "model first-class city" in the south of Metro Luzon.

All things having been found to be in order, we hereby endorse to your good office the above-mentioned draft, for endorsement to the Sangguniang Panlungsod.

Thank you for your usual support and Godspeed!

Respectfully,

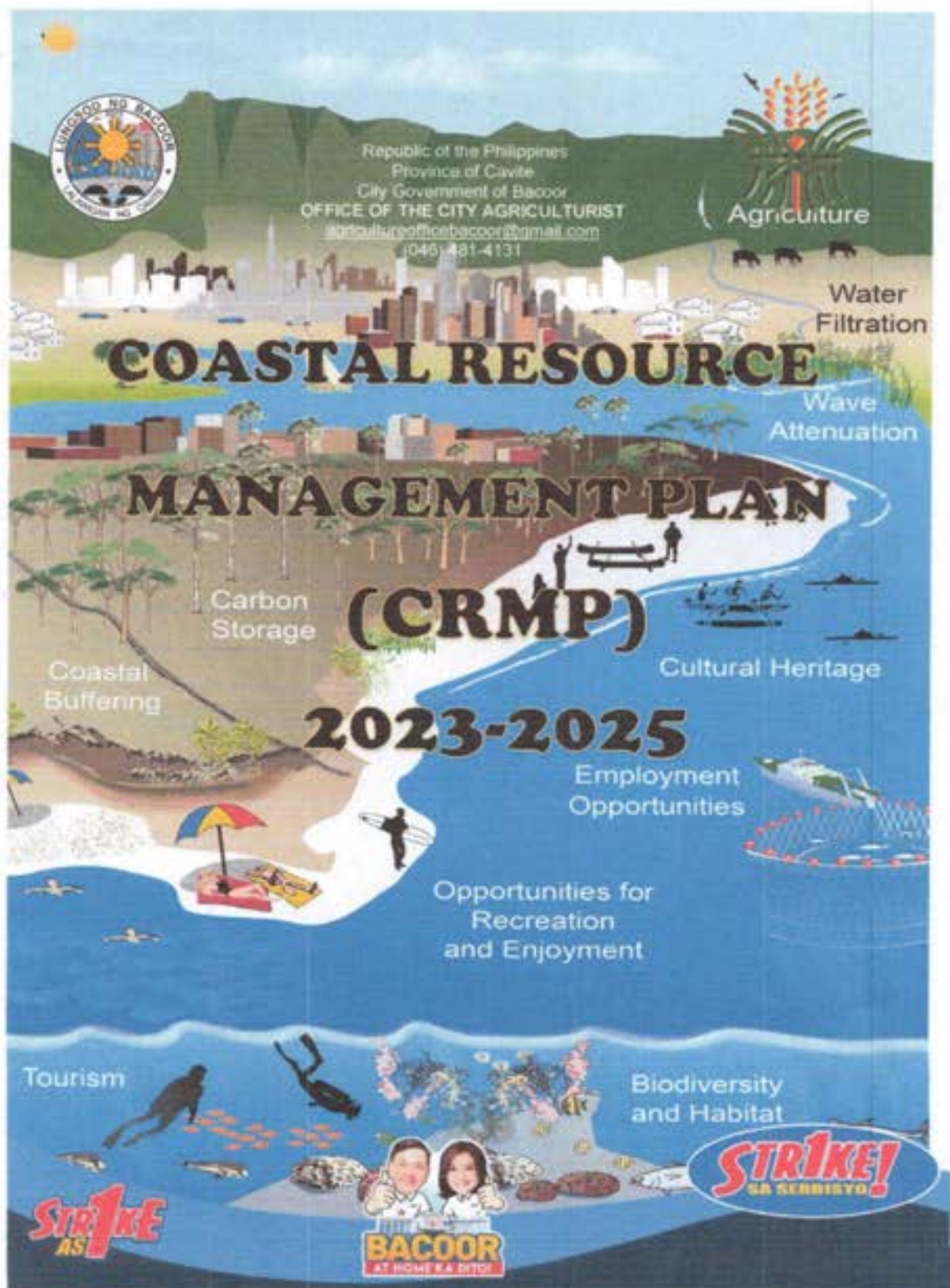
Jesily Darla Mae G. Gutierrez
ATTY. JESILY DARLA MAE G. GUTIERREZ
Office of the City Legal Service

Approved by:

Kim Nyca R. Lofranco
Atty. KIM NYCA R. LOFRANCO
City Legal Officer



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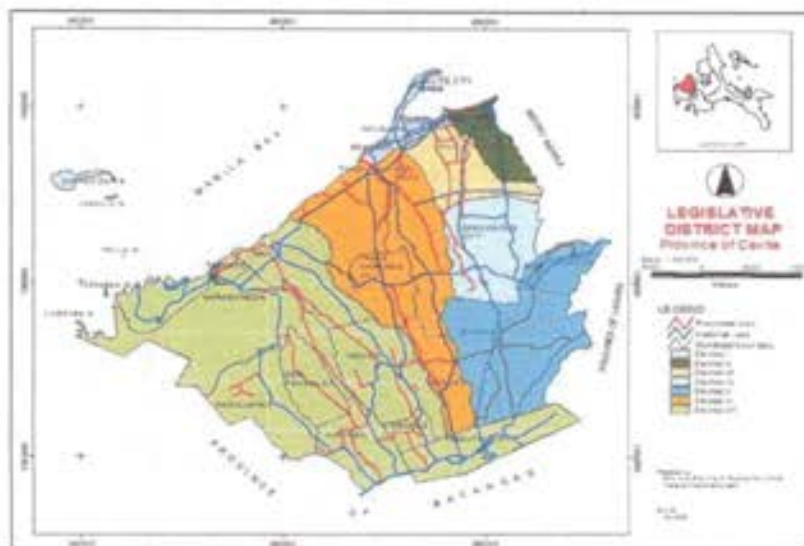
INTRODUCTION

I. LOCATIONS, LAND AREA AND POLITICAL SUBDIVISION

Located at the northeastern most corner of the Province of Cavite, Bacoor is approximately 17.5 kilometers southwest from Manila (from kilometer zero), and about 27 kilometers northeast from Trece Martires City, the Provincial Capital. Bacoor's northern section is a coast fronting Bacoor Bay and separated by the Zapote River and the Imus River on its eastern and western boundary respectively. These rivers traditionally provide salt water for Bacoor's salt farms that double as fishponds during the rainy season. Bounded west of Bacoor are the Municipalities of Imus and Kawit, on the south is the City of Dasmarinas, on the north is Bacoor Bay, and on the east are the Cities of Las Pinas and Muntinlupa. The Poblacion is located on the northern part of the municipality along Bacoor Bay. A map showing the political boundaries is found on the following pages.

Covering a total area of approximately 4,687.76 hectares (or 46.87sq.km) as per ground survey (H.O. Noveloso Surveying), Bacoor is the 14th largest municipality in all of Cavite Province. However, the original land area of Bacoor is bounded by the Imus and Zapote River and totals 52.4 square kilometers. Below is a table of Cavite municipalities and cities and their land areas.

Figure 1.1: Provincial Legislative District Map



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II. Executive Summary

The vision that will guide the City of Bacoor's land use and development plan is to become "A model first-class city" south of Metro Luzon. Because of the City's close proximity and enhanced connectivity to Metro Manila, the City can become the next business hub after Muntinlupa and the other hubs of Bonifacio Global City, Makati Central Business District, Ortigas Center and Fairview Center. City of Bacoor is also envisioned to be a Smart City, i.e., a city that makes optimal use of all the interconnected variety of software, user interfaces and communication networks alongside the Internet of Things (IoT) to deliver connected solutions for the public.

In its land use plan, the City observes a Tri-Nodal physical strategy: Waterfront, Central and Upland Nodes. All have potentials for development with the Waterfront Node good for reclamation projects, the Central Node for developing a new CBD, and the Upland Node for business hub-IT-BPM development. Based on its average annual population growth rate of 2.15 percent, the City will have enough land of 2,136 hectares by 2030 for commercial, industrial, residential, infrastructural, institutional and parks and recreational land uses. But it has to use its land area rationally, considering its relatively small area of 4687.76 hectares. It has also to drastically lower its population growth rate.

In terms of location and geo-physical factors, the government regional plan designates the City of Bacoor as a Sub-Regional Growth Center that is envisioned to serve as a center particularly for tertiary or service economic activities. It can serve as the new business hub after Muntinlupa. It has a strategic and proximate location to Metro Manila that can make it attractive as a site for the needs of the metropolis, especially as a cheaper location for IT-BPM industries. The planned transportation services such as the MRT 1 and C-5 extensions will facilitate these economic activities. As the gateway to both Metro Manila and Region IV-A, it can act as a service center for the needs of the southern regional settlements without going to congested Metro Manila. It can provide more shopping complexes, business parks, and even entertainment. It has to change its image as a "dormitory town" by restricting or controlling informal settlements through strict monitoring

Considering the City's social sector, its health and nutrition sanitation sector have adequate health facilities in terms of private hospitals, health centers, rural health centers, barangay health stations, and dialysis centers. The city still needs more physicians, dentists, sanitary inspectors, midwives, and nutritionists. Education-wise, its population 10 years old and over have a high literacy rate. There are also 173 private schools offering services at different educational levels, while there are also many public elementary and secondary schools and in addition a satellite state university that caters to the need of its growing economy. The City's housing situation, however, shows 25,496 households considered informal and there is an average yearly housing backlog of 12,340 units. Regarding the peace and order situation, the city is a safe place with crime clearance efficiency being placed in 2020 at 91.75 percent while crime solution efficiency was placed at 87.73 percent. The drug problem is also observed to be in check; however, the city police force is still short of 409 police officers. With regards to sports facilities and parks, only basketball and tennis courts are available. The City still needs parks and urban forests.

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In terms of its economic situation, the City's tertiary sector (commerce and trade) has good potential, with vacant areas classified as mixed-use and still need to be developed for businesses such as IT-BPM, shopping centers, banking, finance, insurance, MSMEs and start-ups. The primary sector (agriculture and fisheries) however, is a weak sector, with vacant areas not utilized for intensive urban agriculture. The secondary sector (industries/manufacturing) activities are not also developed. With regards to the City's infrastructure sector, it has a fairly adequate transportation accessibility/connectivity – 57 percent PUVs connect the City to Metro Manila, 22% PUVs reach other parts of Cavite, and 22 percent PUVs ply City routes. Its power supply is adequate, with MERALCO supplying electricity to 120,092 households. The communication services are also adequately provided by TELCOs. However, more connector roads are needed and existing City roads need to be concretized. Furthermore, traffic congestion needs to be lessened. A piped potable water supply system also needs to be set up in the City.

On aspects of the environment, the City has only low to moderate susceptibility to landslides, storm surge and tsunami, all of which can be further lessened by the reclamation and mangrove projects. With regard to flooding, 58 of the City's 73 barangays have moderate to high susceptibility to the hazard. In terms of other hazards, barangays have moderate to high susceptibility to liquefaction/ground shaking, being near the West Valley Fault that can occur anytime based on a PHIVOLCS study. It should be mentioned that these hazards can be effectively mitigated if the recommendations of the CDRA process will be satisfactorily implemented.

In terms of the institutional sector, the City has a dynamic and earnest leadership determined to achieve the City's vision. Assisting the local leadership is an efficient and effective local bureaucratic system. Financially, from 2015 to 2020 the total assets of the City was increased to PhP22.30 billion while the total liabilities were decreased to PhP5 billion from 2018-2020 due to the payments of loans and other accounts payable. Still, the City's total equity posted a positive growth of PhP17.3 billion. Moreover, the City recorded an IRA dependency of 60.13 percent from 20



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III. BRIEF HISTORY

Bacoor was once merged with the bustling town called Palanag, or Parañaque as it is called today. Eventually on September 28, 1671, Bacoor was incorporated and was officially separated to become a town that wedges the bigger neighboring towns of Parañaque, Cavite el Viejo (now Kawit), and Silang. Its township was officially recognized two years after the influx of the first settlers from Parañaque.

From its ancient name Bacoor, which is derived from the Tagalog word "bakod", which means fence, Bacoor is suggestive of its role as a suburb of Parañaque. It constitutes the boundary between the mother town and Cavite el Viejo. In early Spanish times, Bacoor was thickly covered with bamboo groves that ran from Sitio Zapote to Sitio Talaba, which many speculate is another reason behind Bacoor's name; bakoor is actually a sub specie of bamboo.

Bacoor became the setting of numerous historic encounters in Philippine history. The town became the site of Aguinaldo's first defeat in September 2, 1896 during the Revolution against Spain. Fortunately, due to a miscalculation by the Spanish General Aguirre whose troops rested one day in Bacoor Plaza while awaiting reinforcements from Manila. Aguinaldo was able to prepare the defense of Imus that night. A battle ensued at a bridge near the Recollect Estate House, which also became the former Philippine Constabulary Headquarters. Aguinaldo's spectacular victory in this historic battle of Imus on September 3, 1896 started the Aguinaldo legend in his military career.

Three fierce battles that took place in Bacoor also provided popular historical mention of the town. The "Battle(s) of Zapote Bridge" in 1897 and 1899 became encounters of revolting Filipinos against the Spanish and Americans, respectively. One battle took place on February 17, 1897 when the Filipino Revolutionary Army held back the advance of the Spanish invaders. It was in this battle that General Edilberto Evangelista, who was a European-educated Filipino engineer, fought and heroically died from an enemy sniper while repulsing the advance of Spanish forces. In May 1898, the second Philippine Revolution started. The Spanish volunteers detained in the Roman Catholic Church and Convent of Bacoor as well as the Spanish soldiers detained in Mabolo-Banao Bridge were attacked by the revolutionists headed by Gen. Mariano Moriel. The attack on Mabolo-Banao Bridge was headed by Lt. Col. Gil Ignacio who was aided by Capt. Ignacio "Gandong" Francisco who attacked the eastern side of the bridge. After about twenty-four hours of fighting, the Spanish soldiers and volunteers surrendered, but in the ensuing engagement Kapitan Gandong lost his life. The height of the Filipino-American War in 1899 was the second encounter by Filipino revolutionary forces in the Zapote Bridge.

"Gargano" was the revolutionary name of Bacoor in line with the victory of the Magdalo Government based in Imus to abolish every vestige of the country's colonial past. At that time, Gil Ignacio was the Katipunan Leader in Bacoor. Fierce battles ensued, and on March 26, one day after the fall of the Magdalo capital of Imus, Bacoor was recaptured by the Spaniards during a counter-offensive launched by the Spanish General Jose Achambre.

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The town is also noted in history as the first capital of the Revolutionary Government under General Emilio Aguinaldo. On July 4, 1898, General Aguinaldo relocated his headquarters from Maximo Innocencio's mansion in today's Cavite City to the home of Juan Cuenca and Candida Chavez in Bacoor. This move was a result of the general's suspicion of imminent colonialization by the Admiral Expeditionary Force of the Americans after their failure to commit to the recognition of Philippine Independence already proclaimed on June 12, 1898 in Kawit, Cavite.

Bacoor as Aguinaldo's seat of government did not remain long. On September 9, the revolutionary capital was again transferred beyond cannon range of Admiral Dewey's American Naval Squadron moored in Manila Bay. Three weeks after the perfidious capture of Manila by the American forces in connivance with Spanish Governor and Captain General Jaudines, General Aguinaldo's new capital then became Malolos, Bulacan.



Like other towns in Cavite Province, Bacoor also produced great names, among whom are the late Governor Pedro Espiritu and the late Julian Cruz Balmaceda, noted Filipino writer and Director of the Institute of National Language. The original families and settlers had the following last names: Cuenca, Payao, Farolan, Pagtakhan, de Ocampo, Gregorio, Guevarra, and Garcia. Belonging to the principalia class as early as the first decades of the nineteenth century were the Cuencas, the Espiritus, the Cuevases, the Mirandas, the Pagtakhans, and the Narvaezes. Most of them were Chinese mestizos. Felix Cuenca, the first Municipal President of Bacoor, was a direct descendant of one of the original settlers.

The historic town of Bacoor was converted into a city through the signing by President Benigno Aquino of Republic Act 10160 (also known as the "Charter of the City of Bacoor") on 25 July 2011. On 23 June 2012, the said law was overwhelmingly ratified by 38,226 of the town's 40,080 registered voters. Bacoor's conversion into a component city of Cavite Province bodes well for its sustained development. The City Government of Bacoor wasted no time in upgrading its institutional capabilities to respond to the City's rapidly increasing population. The relocation of the City government center from the historic town plaza in Barangay Tabing Dagat to the newly constructed City of Bacoor Government Center along the newly constructed Bacoor Boulevard in Barangay Bayanan would decongest the "Old Bacoor" which is prone to flooding and traffic congestion and spur new development in the southern portion of the young City.

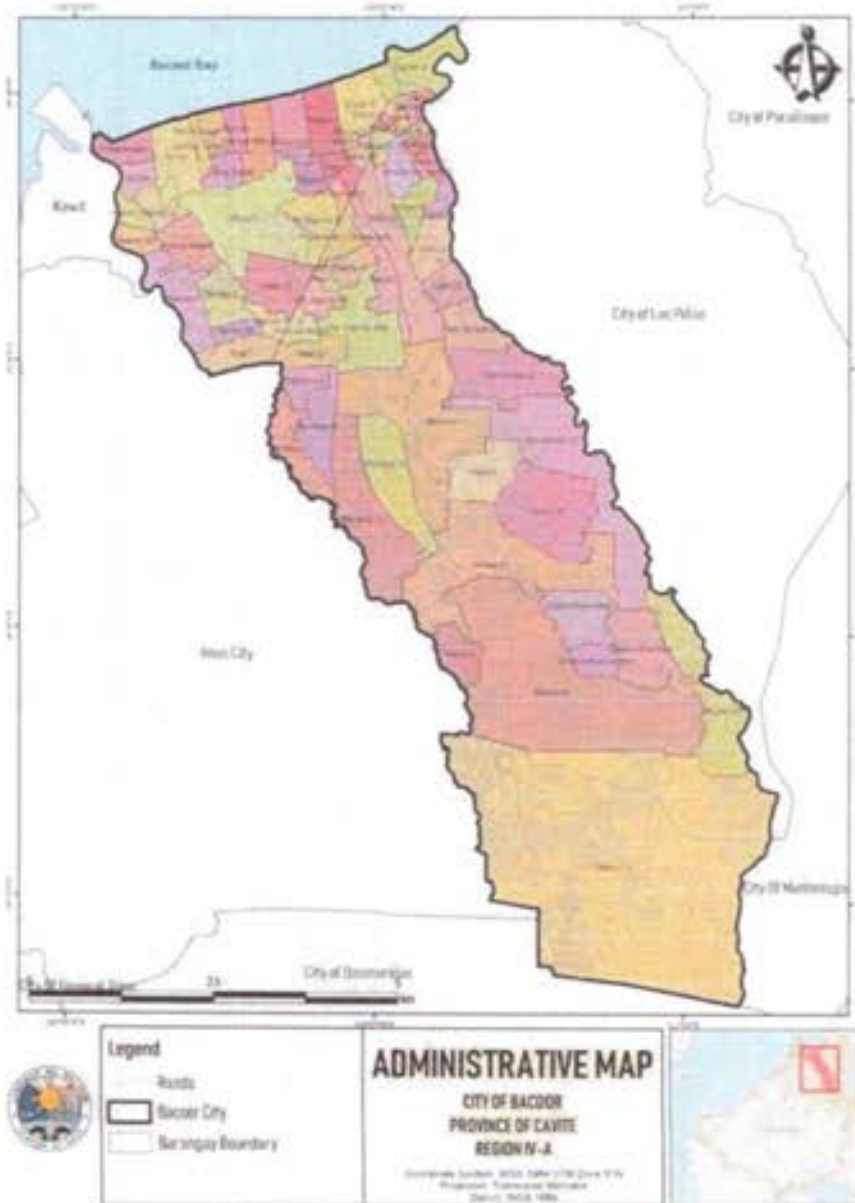
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Figure 1.2 Administrative Map of Bacoor



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IV. GEOGRAPHICAL FEATURES

IV.1 Topography

The City of Bacoor is characterized by flat terrain and the presence of a coastal area in Manila Bay. The City's topography is mostly within the slope of 0 to 3 percent, with the southern part being slightly elevated and with most of the terrain sloping down to the northern coastal area.

IV.2 Geological Profile

The City is not directly traversed by the existing Marikina Fault Line although it is located six kilometers from the City as per estimates of the Philippine Institute of Volcanology and Seismology (PHIVOLCS). Any movement of a Magnitude-7 earthquake at a depth of 10 km would generate up to a PHIVOLCS Earthquake Intensity Scale (PEIS) of Intensity 8 ground shaking in the locality. This can create liquefaction hazards, especially on the northern alluvial soil areas of the city.

The Valley Fault System (VFS) located east-northeast of the City of Bacoor is considered by PHIVOLCS as an active or an earthquake generator. Based on the records of the said agency, the VFS consists of two main north-northeast trending faults: the East Valley Fault (EVF) and the West Valley Fault (WVF).

Movements along VFS may have influenced the present morphology of the area wherein the Marikina Valley was downthrown relative to the Diliman-Pasig and Montalban-San Mateo-Antipolo areas on the west and east respectively.

IV.3 Soil Type

The soils of Bacoor have been identified by the Bureau of Soils and Water Management and these are the Hydrosol, Guadalupe Clay, Guadalupe Clay Adobe, Guadalupe Silt Loam, Obando Sand, and Carmona Clay Loam. These soil types differ from one another only in the texture of the topsoil. The most common soil types are Guadalupe Clay Adobe and Guadalupe Clay Loam (Table 1).

The Cavite Hydrosol and Obando sand is the most native type in the City of Bacoor, which consist of submerged swamp soils that are convertible into fishpond and salt beds. The remaining soil types are suitable for rice production.

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Table 1. Type of Soil²

SOIL SERIES	SOIL TAXONOMIC CLASSIFICATION	LOCATION
Guadalupe Clay Adobe	Fine clay, Lithic Tropaquepts, 2-5% slopes, no erosion	Southwestern and southeastern portions of Tanza; northern portion of Dasmariñas; Imus and Bacoor up to Cavite-Rizal provincial boundary.
Guadalupe Clay Loam	Very fine clay, Lithic Tropaquepts, 2-5% slopes, no erosion	Sloping southwestern part of Tanza; northeastern portion of Dasmariñas down to Imus and Bacoor extending to the Cavite-Rizal provincial boundary

Source: Cavite-Laguna (CALA) East-West National Road Project: EIS, 2018

Guadalupe Clay Adobe is the best-suited type of soil for construction of multi-level, high-rise structures in the City of Bacoor. The structures built on the said soil can reach up to five stories and higher provided that the said soils are the predominant layer, while Obando Sand and Carmona Clay Loam are suitable for fewer-level structures only.

IV.4 Climate

In terms of climatic conditions, based on the Modified Coronas Climate Classification Scheme issued by the Philippine Atmospheric, Geophysical and Astronomical Services Administration (PAGASA), the City of Bacoor is classified under Type 1 Zone wherein there are two pronounced seasons: dry from November to April, and wet during the rest of the year. Maximum rain period is from June to September.

IV.4.1 Rainfall

Based on the Climate and Agromet Data Section Climatology and Agrometeorology Division of PAG-ASA, a total of 22 tropical cyclones crossed or directly been hit in the province of Cavite from 1948 to 2009.

The presence of Typhoon cyclones is considered as the most influential factor that brings considerable rainfall in the country. Typhoons occur from June to December and have a higher frequency during the month of July to August. As per records from PAGASA, cyclones originate from the region of Marianas and Caroline islands in the Pacific Ocean of the Philippines. The movement of the said cyclones moves a westerly or northwesterly course over the country which contributes a substantial amount of rainfall.

As per report made by PAGASA, the most frequent typhoons occur during the months of September to November. From 1948-2009, the country experiences 19.6 typhoons annually in the Philippine Area of Responsibility.



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Considering that the Philippines is a typhoon-prone area, for the year 1948-2009 the country experienced 1,038 tropical cyclones. The Province of Cavite experienced 2 tropical depression, 11 tropical storms, and 11 typhoons as per records from PAGASA.

The average duration of these typhoons is around 4.6 days which based on the records of the said office the Top 3 longest typhoons are: tropical storm Karing on May 10-16, 1979; tropical storm Ruping on September 05-11, 1982; and typhoon Reming on October 25-31, 2000.

IV.5 Mangrove Forest

Based on the Cavite Socio-Economic and Physical Profile 2017, the province has the lowest extent of lowland area particularly in the cities of Cavite and Bacoor, and municipalities of Kawit, Noveleta, and Rosario. These areas have extremely low ground levels of 0 to 2-meter elevation (warm lowland), and 0.8-meter elevation from Mean Sea Level (MSL).

Based on the Bio-Ecological Assessment of DENR-Manila Bay Coordination Office (MBCO), the City of Bacoor has 17,528 existing mangrove areas that comprise the 88.47 Hectares of the assessed area by the said office. Table 2 shows the result of the mangrove rehabilitation project that was established from 2010 to 2020.

Table 2. Existing Mangrove Resources of Cavite Province, 2010 and 2020

Location	Assessed Mangrove Areas (2010) in ha.	Mangrove Rehabilitation Plantation (ha.)	Existing Mangrove Areas (ha.)
City of Bacoor	1.08	16,448	17,528
Kawit	29.17	33,528	54,800
Cavite City	27.42	4,200	31,620
Maragondon		1,000	1,000
Ternate		1,291	1,316
Tanza		1,000	1,000
Noveleta	27.28	42,619	83,109
Rosario	3.52	1,000	4,520
Total	88.47	101,086 (old growth is at 48,413)	194,893

Source: Cavite PENRO, 2015

Location	Assessed Mangrove Areas (2010) in ha.	Mangrove Rehabilitation Plantation (ha.)	Existing Mangrove Areas (ha.)
City of Bacoor	5	32	40

Source: CENRO 2020



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The following mangrove species have been identified by DENR-MBCO in the Province of Cavite:

- a. *Bakawan Babae (R. mucronata)*;
- b. *Bakawan Lalake (Rhizophora apiculata)*;
- c. *Bakawan bato (R. stylosa)*;
- d. *Api-api (Avicennia officinales)*;
- e. *Bungalon (A. marina)*;
- f. *Piapi (A. lanata)*;
- g. *Pagatpat (Sonneratia Alba)*;
- h. *Pagatpat baye (S. ovata)*; and
- i. *Pedada (S. caeolaris)*.

IV.6 GROUND WATER RESOURCES

WELL

Artesian wells and deep wells provide water supply for both domestic and irrigation purposes in the City of Bacoor and generally in Cavite. The over-extraction of water due to the increasing population and water demand has caused saltwater intrusion in the aquifers particularly in areas facing Manila Bay as evidenced by the decreasing piezometric levels. The City of Bacoor (together with City of Imus, Kawit, Noveleta, and Rosario) forms part of the Manila Bay Alluvium aquifer system, one of the four major aquifer systems in Metro Manila alongside other major cities, particularly those bordering Manila Bay.

Infiltrated rainfall is another groundwater source. It serves as the direct source of most near-surface aquifers. Inflow from surface water reservoirs and irrigation water also contributes to the groundwater. This is exemplified by the Molino Dam which was primarily built by the National Irrigation Administration to address the City of Bacoor's irrigation requirements.

IV.7 Watersheds

The watersheds that feed the City of Imus, City of Bacoor, and Zapote Rivers are referred to as Imus River Watershed, Bacoor River Watershed, and the Zapote River Watershed.

IV.7.1 Imus River Watershed

The Imus Watershed covers areas at the mouth of the Imus River, which is its discharge point in Bacoor Bay, and originates in the south in the foothills of the elevated areas of Tagaytay City. It drains portions within the City of Imus, City of Bacoor, Dasmarinas City, Silang, Amadeo and Tagaytay City. The river has a length of approximately 60.84 km.



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IV.7.2 The Bacoor River Watershed

On the other hand, the Bacoor River Watershed located in the central portion of City of Bacoor has an approximate coverage area 26.63 sq.km. and reaches lower elevation areas of the coastal and northern barangays. Some of Bacoor River's tributaries cross the municipal boundary with Dasmarinas City. However, its width narrows down in some portions where the water drains into other adjacent watersheds.

IV.7.3 Zapote River Watershed

Lastly, the Zapote River watershed consists of areas drained by the Zapote River (approximately 22.52 sq.km.) and the Molino Dam River Systems (approximately 15.01 sq.km.), which when combined have a total land area of 37.53 sq.km. The Zapote River drains areas of Bacoor, Las Pinas, Muntinlupa and the northern portions of Gen. Mariano Alvarez. The watershed of the Molino Dam River System drains the combined southern portions of the City of Bacoor and the central portions of Dasmarinas City.

IV.7.4 The Molino Dam

The Molino Dam is fed by two river systems, namely: the Don Cella River which drains the eastern portion of the southern watershed, and the Molino River which drains the western portion of the southern watershed. Spills from the Molino Dam's major spillway flow through the numerous creek systems and join the Zapote River in San Nicolas. Several gates of the Molino Dam discharge waters to other creeks within the City of Bacoor that have been previously intended for agriculture. The aggregate watershed area totals approximately 1,250 has. when all watershed areas feeding the surface waters flowing into the City of Bacoor are combined.

IV.7.5 Rivers and Creeks

The City of Bacoor has many rivers, creeks, and other tributaries. The Zapote River passes through Brgys. Zapote, Aniban, Ligas, San Nicolas, and Molino on the eastern boundary of the City. One tributary to the Zapote River runs across the Zapote River and the Brgy. Talaba area while another tributary of the same river goes out directly to Bacoor Bay by traversing Brgys. Zapote, Talaba, and Maliksi. The Molino River, which comes all the way from the Dasmarinas City area (meeting with the Don Cella River at the Molino Dam), spills into the Zapote River in the area of Brgy. San Nicolas. Ilat Creek is another tributary to the Zapote River which also comes all the way from the Dasmarinas City area. The Zapote River serves as the boundary between Las Piñas City and the City of Bacoor, and consequently, between Metro Manila and Cavite.



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On the other hand, the Imus River traverses Brgys. Sineguelasan, Banalo, Mabolo, Salinas, Real and parts of Molino on the western boundary. It serves as the boundary between the cities of Imus and Bacoor on the western side. Imus River runs all the way from the foothills of Tagaytay City, crossing portions of Silang, Dasmariñas City, City of Imus and the City of Bacoor until it discharges finally to Bacoor Bay.

Within the City of Bacoor, its major tributary is the Bacoor River (also known as Mestizo River), which drains areas of Brgys. Alima, Banalo, Mabolo, Daang Bukid, Habay and other parts of Panapaan. The Daang Bukid Creek, which is a tributary of Bacoor River, traverses many coastal barangays such as Brgys. Alima, Campo Santo, Daang Bukid, Dulong Bayan, Kaingin and Maliksi. The Imus River has many other tributaries throughout the town.



Figure 2 Surface Water Map

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V. Territorial Jurisdiction and Barangay Subdivision

Located at the northeastern most corner of the Province of Cavite, the City of Bacoor is approximately 17.5 km. southwest from Manila (from kilometer zero), and about 27 km. northeast from Trece Martires City, the provincial capital.

The City of Bacoor's northern section is a coast fronting Bacoor Bay and separated by the Zapote River and the Imus River on its eastern and western boundary respectively.

These rivers traditionally provide saltwater for Bacoor's salt farms that double as fishponds during the rainy season. The western part of the City of Bacoor is bounded by the municipalities of Imus and Kawit, while on the south lies the City of Dasmarinas, on the north Bacoor Bay, and on the east the cities of Las Piñas and Muntinlupa. The Poblacion is located in the northern part of the City along Bacoor Bay. **Figure 3** shows the political boundaries among the barangays of the City.

Covering a total area of approximately 4,687.76 has. (or 46.87sq.km) based on a ground survey (H.O. Noveloso Surveying), Bacoor City is the 14th largest municipality in all of Cavite Province. However, the original land area of the City of Bacoor as bounded by the City Imus and Zapote River totaled 52.4 sq. kms. **Table 3** shows the land areas of Cavite municipalities and cities while **Figure 4** shows the legislative districts of the province.

Table 3. Cavite Municipalities/Cities and their Land Areas

Municipality/City	Land Area (has.)
Maragondon	16,549
Silang	15,641
Gen. Trias	11,768
Imus	9,701
Tanza	9,630
Indang	8,920
Naic	8,600
Dasmarinas	8,234
Magallanes	7,860
Tagaytay City	6,615
Alfonso	6,460
Gen. Aguinaldo	5,103
Amadeo	4,790
City of Bacoor	4,687.76
Ternate	4,350
Trece Martires City	3,917
Carmona	3,092
Mendez	1,667
Kawit	1,340
Cavite City	1,163
Gen. M. Alvarez	938
Rosario	567
Noveleta	541

The City of Bacoor is a Component City located within the 2nd District of Cavite province. The city has a total of 73 barangays, of which 10 are coastal and 63 are inland.

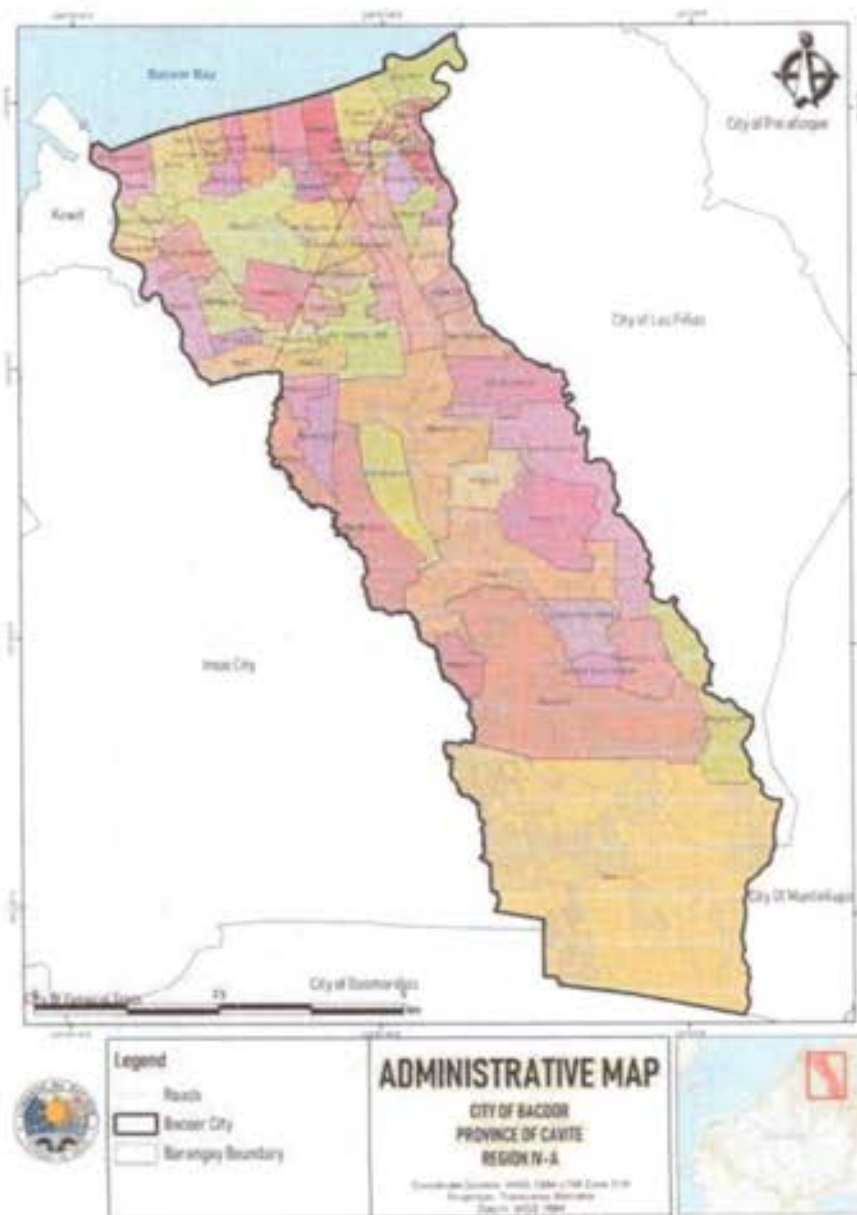
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Figure 3

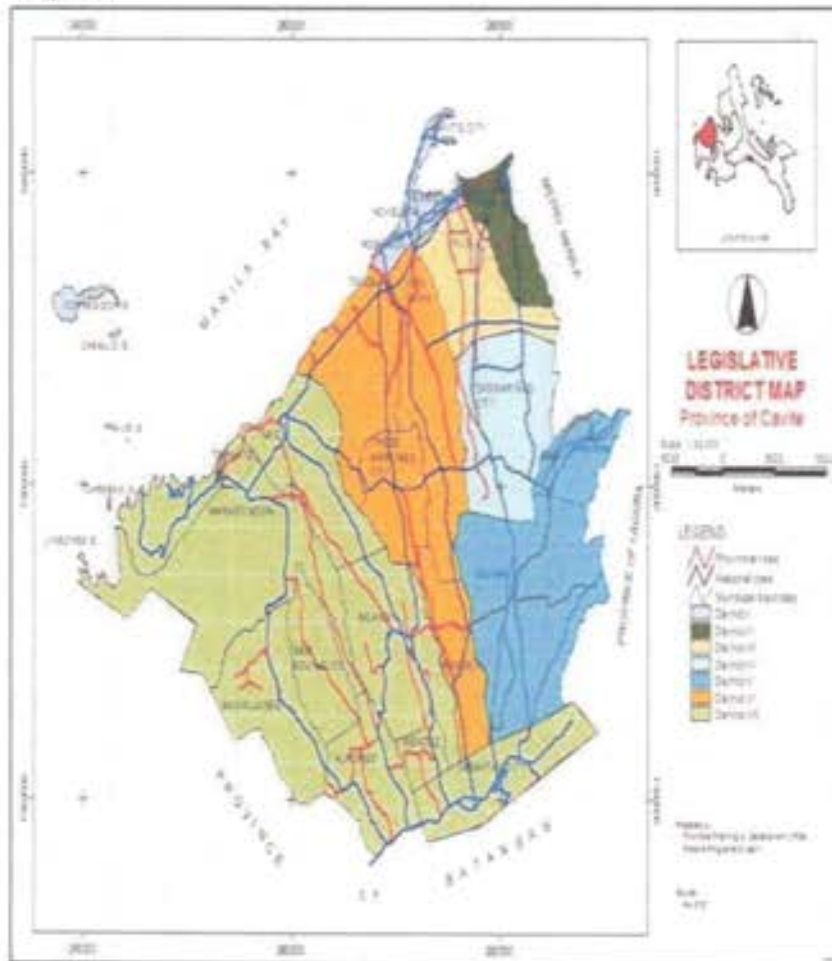


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Figure 4



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VI. Municipal Water of Bacoor Bay

The terms "Municipal water" as used in this ordinance shall include not only streams, lakes, inland bodies of water and tidal waters within the City Bacoor which are not included within the protected areas as defined under RA no. 7586 (the "NIPAS LAW"), public forest, timber lands, forest reserves or fishery reserves but also marine waters included between two (2) lines drawn perpendicular to the general coastline from points where the boundary lines of the city touch the sea at low tide and a third line parallel with the general coastline including offshore islands and fifteen (15) kilometers from such coastline as well as all lands devoted to aquaculture or businesses and activities relating to fishery, whether private or public lands located within the territorial jurisdiction of City of Bacoor, Cavite.

Point	Latitude	Longitude	Remarks
Beginning at 1	14° 27' 48" N	120° 55' 25" E	
thence 2	14° 28' 35" N	120° 55' 22" E	
thence 3	14° 29' 34" N	120° 56' 33" E	
thence 4	14° 29' 38" N	120° 56' 36" E	
thence 5	14° 28' 37" N	120° 56' 08" E	

Coastal terminal point thence following the coastline to 1



Figure 6

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VII. Municipal Water Zonation

The Municipal Water of the City of Bacoor are hereby classified according to the priority coastal zone

VII.1 Zone 1 (NAVIGATIONAL ZONE) – covers the Municipal water with the area of 320 meters in width bordering the barangays of Alima and Zapote preceding the Municipal water boundaries.

a. NAVIGATIONAL WAY 1 (Alima) -150 meters

Waypoint	Latitude	Longitude
1	14.463611°	120.934722°
2	14.463889°	120.936111°
3	14.484328°	120.932328°
4	14.483372°	120.931179°



Figure 7

b. NAVIGATIONAL WAY 2 (Zapote) - 170 meters

Waypoint	Latitude	Longitude
1	14.492778°	120.942500°
2	14.493889°	120.943333°
3	14.476234°	120.969900°
4	14.475171°	120.968715°



Figure 8

VII.2 Zone 2. (Water Channel) – covers an area of 100 meters and is delineated by the following coordinate

Waypoint	Latitude	Longitude
1	14.467083°	120.948719°
2	14.467503°	120.949975°
3	14.468299°	120.949824°
4	14.468783°	120.949337°
5	14.469161°	120.949139°
6	14.469575°	120.948922°
7	14.470078°	120.948574°
8	14.470508°	120.948208°
9	14.470974°	120.947750°
10	14.471449°	120.947244°
11	14.471914°	120.946749°
12	14.472398°	120.946271°
13	14.472837°	120.945896°
14	14.473365°	120.945389°
15	14.473838°	120.944927°
16	14.474321°	120.944606°
17	14.475228°	120.944446°
18	14.475714°	120.944182°
19	14.475984°	120.944031°
20	14.476425°	120.943860°
21	14.477039°	120.943808°
22	14.477637°	120.943960°
23	14.478064°	120.944216°
24	14.478627°	120.941250°
25	14.476769°	120.941826°
26	14.476592°	120.942310°
27	14.476217°	120.942805°
28	14.475732°	120.943124°
29	14.475336°	120.943341°
30	14.474716°	120.943672°

Figure 9



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31	14.474077°	120.944021°
32	14.473233°	120.944511°
33	14.472639°	120.944896°
34	14.471957°	120.945431°
35	14.471392°	120.945965°
35	14.471392°	120.945965°
36	14.470855°	120.946545°
37	14.470291°	120.947144°
38	14.469735°	120.947659°
39	14.469233°	120.948044°
40	14.468684°	120.948355°
41	14.468314°	120.948460°

VII.3 Zone 3. (FISHING GROUND) – covers the area of 233 hectares (approx) located in the northern municipal waters excluding reclamation area and aquaculture and delineated by the following coordinates:

Waypoint	Latitude	Longitude
1	14.484324°	120.932329°
2	14.492774°	120.942501°
3	14.484476°	120.954857°
4	14.482843°	120.950271°
5	14.481421°	120.946654°
6	14.479777°	120.947779°
7	14.478664°	120.940366°
8	14.477995°	120.937648°
9	14.477301°	120.935324°
10	14.477123°	120.934837°
11	14.476676°	120.934548°
12	14.476095°	120.934551°
13	14.464890°	120.937432°
14	14.464474°	120.936012°

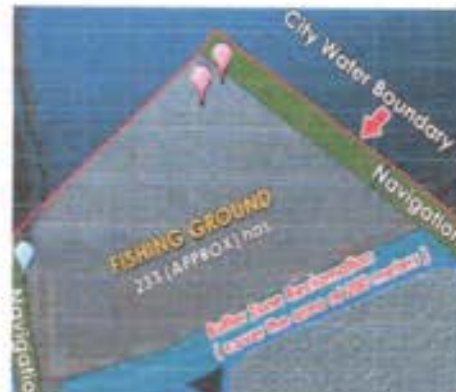


Figure 10

BACK

VII.4 Zone 4. (**AQUACULTURE ZONE**) - covers the area of 156 hectares (approx) located in the northern municipal waters excluding mangrove area, reclamation area and fishing ground and delineated by the following coordinates:

Waypoint	Latitude	Longitude
1	14.476389°	120.922778°
2	14.483370°	120.931179°
3	14.464102°	120.934639°
4	14.463382°	120.931721°
5	14.468211°	120.931353°
6	14.467807°	120.923327°

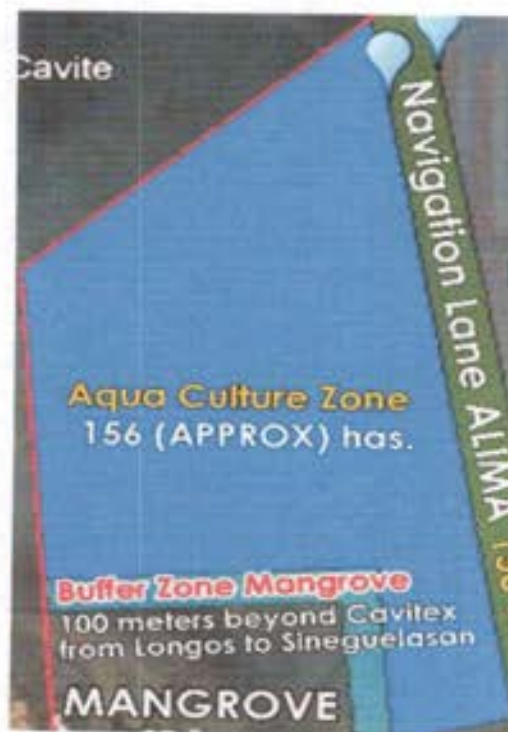


Figure 11



BACK

VII.5 Zone 5. (**MANGROVE AREA**) - covers the area of 40 hectares of shoreline of Sitio Dulong Pulo Barangay Sineguelasan declaring as Bacoor Bay's Marine Protected and Bio-Diverse Area and a portion of the City's Artificial Reef zone:

Waypoint	Latitude	Longitude
1	14.46146	120.92720
2	14.46301	120.93085
3	14.46725	120.93048
4	14.46689	120.92343
5	14.46332	120.92360



Figure 12

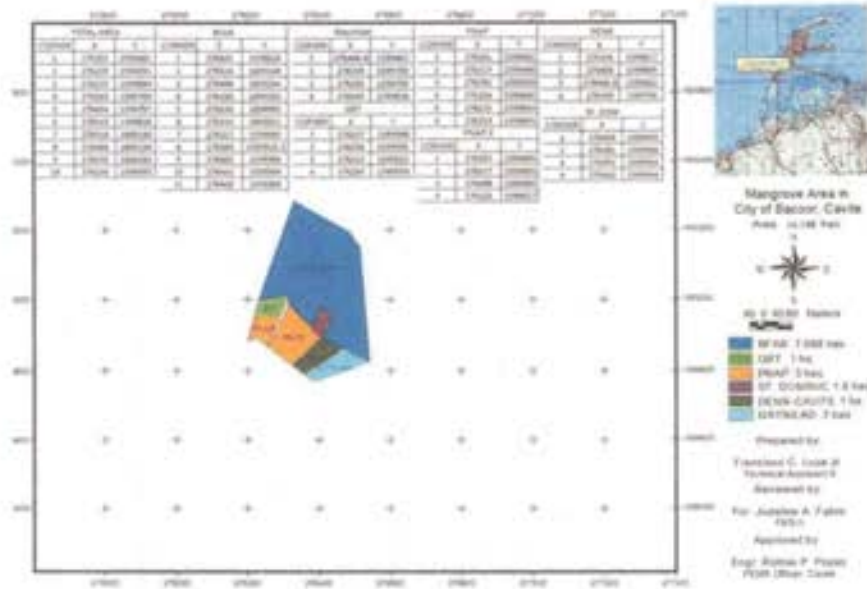


Figure 12.1



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VII 6 Zone 6. (RECLAMATION AREA) -covers the total area of 420 hectares. They are located on both sides of CAVITEX along Bacoor Bay.

b. The bigger area of 230 hectares located in the eastern half of the fishing ground area and delineated by the following coordinates:

WAYPOINT	LATITUDE	LONGITUDE
1	14.476809°	120.966133°
2	14.476309°	120.96587°
3	14.475925°	120.967403°
4	14.475574°	120.967573°
5	14.475177°	120.967604°
6	14.474833°	120.967533°
7	14.474488°	120.967323°
8	14.474214°	120.967001°
9	14.473847°	120.966429°
10	14.473453°	120.965728°
11	14.473158°	120.965156°
12	14.472973°	120.964619°
13	14.472913°	120.96398°
14	14.473088°	120.96332°
15	14.473346°	120.962808°
16	14.473423°	120.962306°
17	14.473264°	120.96163°
18	14.473007°	120.961271°
19	14.47248°	120.960933°
20	14.472019°	120.960835°
21	14.47153°	120.960747°
22	14.471257°	120.96049°
23	14.471083°	120.960341°
24	14.47086°	120.959621°
25	14.470481°	120.958614°
26	14.470093°	120.957625°
27	14.46964°	120.956424°
28	14.469131°	120.955009°
29	14.468685°	120.953706°
30	14.468351°	120.952707°
31	14.468137°	120.951967°
32	14.468003°	120.951051°
33	14.468104°	120.950271°
34	14.468299°	120.949824°
35	14.468783°	120.949337°
36	14.469161°	120.949139°
37	14.469575°	120.948922°
38	14.470078°	120.948574°



Figure 13



[BACK](#)



39	14.470508°	120.948208°
40	14.470974°	120.94775°
41	14.471449°	120.947244°
42	14.471914°	120.946749°
43	14.472398°	120.946271°
44	14.472837°	120.945896°
45	14.473565°	120.945389°
46	14.474338°	120.944927°
47	14.474923°	120.944606°
48	14.475228°	120.944446°
49	14.475714°	120.944182°
50	14.475984°	120.944031°
51	14.476425°	120.94386°
52	14.477039°	120.943608°
53	14.477637°	120.943396°
54	14.478064°	120.944216°
55	14.478392°	120.944528°
56	14.478675°	120.944896°
57	14.478923°	120.945302°
58	14.479125°	120.945736°
59	14.479458°	120.946359°
60	14.479754°	120.947381°
61	14.480106°	120.94837°
62	14.480513°	120.949452°
63	14.481003°	120.950699°
64	14.481447°	120.951836°
65	14.4819°	120.952973°
66	14.482326°	120.954156°
67	14.482586°	120.95496°
68	14.482753°	120.955563°
69	14.482832°	120.956266°
70	14.482694°	120.957074°
71	14.482348°	120.957764°
72	14.481956°	120.95837°
73	14.48139°	120.958802°
74	14.481207°	120.958534°
75	14.480879°	120.958194°
76	14.480497°	120.957938°
77	14.480071°	120.957766°
78	14.479437°	120.957679°
79	14.478995°	120.95772°
80	14.478454°	120.957864°
81	14.477977°	120.958091°
82	14.477393°	120.958332°
83	14.476892°	120.959084°
84	14.4765°	120.959737°

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85	14.47621°	120.960621°
86	14.476144°	120.961335°
87	14.476193°	120.961863°
88	14.476398°	120.962501°
89	14.476737°	120.963046°
90	14.477201°	120.963459°
91	14.477755°	120.963732°
92	14.478056°	120.964026°
93	14.477825°	120.964584°
94	14.477388°	120.965238°

- c. The smaller area of 100 hectares located in the western half of the fishing ground area and delineated by the following coordinates:

WAYPOINT	LATITUDE	LONGITUDE
1	14.470291°	120.947144°
2	14.469735°	120.947659°
3	14.469233°	120.948044°
4	14.468684°	120.948355°
5	14.468314°	120.94846°
6	14.467944°	120.948445°
7	14.467526°	120.948245°
8	14.467198°	120.947868°
9	14.466949°	120.947286°
10	14.466733°	120.946407°
11	14.466573°	120.945601°
12	14.466354°	120.944416°
13	14.466212°	120.943629°
14	14.466079°	120.94287°
15	14.465809°	120.942028°
16	14.465777°	120.94138°
17	14.46566°	120.940426°
18	14.465745°	120.939785°
19	14.466227°	120.939127°
20	14.466676°	120.938886°
21	14.467163°	120.938761°
22	14.467767°	120.938607°
23	14.468191°	120.938501°
24	14.469327°	120.938213°
25	14.470463°	120.937924°
26	14.4716°	120.937644°
27	14.472718°	120.937365°
28	14.47398°	120.937057°

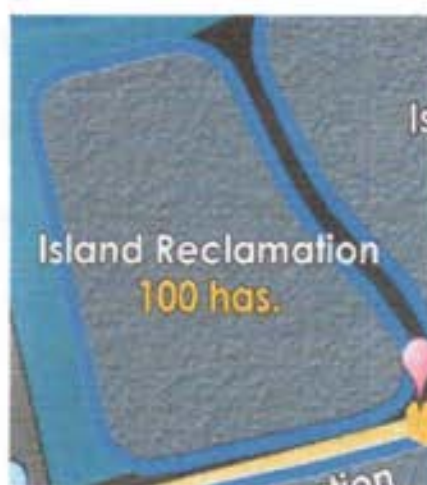
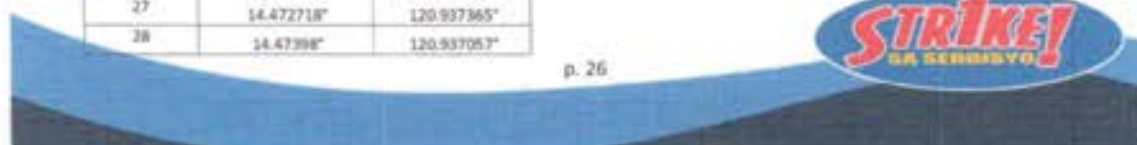


Figure 14



[BACK](#)

29	14.47453°	120.936913°
30	14.475044°	120.936834°
31	14.475488°	120.936931°
32	14.475788°	120.937151°
33	14.476017°	120.937492°
34	14.476174°	120.937871°
35	14.476324°	120.938519°
36	14.476448°	120.939213°
37	14.47658°	120.939889°
38	14.476713°	120.940565°
39	14.476827°	120.94125°
40	14.476769°	120.941826°
41	14.476592°	120.94231°
42	14.476217°	120.942805°
43	14.475732°	120.943124°
44	14.475336°	120.943341°
45	14.474716°	120.943672°
46	14.474077°	120.944021°
47	14.473223°	120.944511°
48	14.472639°	120.944896°
49	14.471957°	120.945431°
50	14.471392°	120.945965°
51	14.470855°	120.946545°

C. The area of 90 hectares is located below CAVITEX in Brgys. Alima, Tabing Dagat, Digman, Kaingin, Maliksi 3, Maliksi 1 and Talaba 2 and delineated by the following coordinates.



Figure 15

BACK



WAYPOINT	LATITUDE	LONGITUDE
1	14.467333°	120.958225°
2	14.469089°	120.957542°
3	14.469403°	120.958309°
4	14.469644°	120.958983°
5	14.469848°	120.959556°
6	14.47008°	120.960231°
7	14.470209°	120.960583°
8	14.470267°	120.961055°
9	14.470127°	120.961548°
10	14.469886°	120.961838°
11	14.4695°	120.962147°
12	14.469089°	120.961641°
13	14.468778°	120.961245°
14	14.46844°	120.960793°
15	14.46812°	120.960342°
16	14.467808°	120.959881°
17	14.467524°	120.959439°
18	14.467258°	120.958987°
19	14.466919°	120.958387°
20	14.466222°	120.950612°
21	14.466655°	120.949904°
22	14.466814°	120.950533°
23	14.467207°	120.952105°
24	14.467634°	120.953335°
25	14.468098°	120.954704°
26	14.468848°	120.956839°
27	14.467011°	120.957551°
28	14.466734°	120.956895°
29	14.466402°	120.956073°
30	14.466226°	120.955602°
31	14.465773°	120.954393°
32	14.465403°	120.953421°
33	14.464858°	120.952137°
34	14.464535°	120.951379°
35	14.46113°	120.937027°
36	14.461779°	120.9369°
37	14.462339°	120.936775°
38	14.462888°	120.936631°
39	14.463636°	120.936392°
40	14.463795°	120.936984°
41	14.464121°	120.938122°
42	14.464346°	120.938963°
43	14.464817°	120.941148°
44	14.465156°	120.942758°
45	14.465603°	120.945304°

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46	14.466074°	120.94747°
47	14.466459°	120.949191°
48	14.466711°	120.949899°
49	14.466962°	120.94989°
50	14.463836°	120.948909°
51	14.463611°	120.947929°
52	14.463319°	120.946577°
53	14.463036°	120.945207°
54	14.462762°	120.943847°
55	14.462591°	120.942949°
56	14.46244°	120.94218°
57	14.462289°	120.941421°
58	14.461988°	120.940135°
59	14.461708°	120.93908°
60	14.461456°	120.938174°
61	14.461306°	120.937594°
62	14.461068°	120.936941°
63	14.461651°	120.936531°
64	14.462307°	120.932203°
65	14.462789°	120.93358°
66	14.463217°	120.935097°
67	14.463422°	120.93568°
68	14.4629°	120.935851°
69	14.462278°	120.936033°
70	14.46171°	120.936159°
71	14.460943°	120.936305°
72	14.460754°	120.935435°
73	14.460483°	120.934371°
74	14.460288°	120.933733°
75	14.46°	120.932911°
76	14.459852°	120.932495°
77	14.459648°	120.931875°
78	14.459471°	120.931237°
79	14.459385°	120.930802°
80	14.45929°	120.930151°
81	14.459313°	120.929746°
82	14.459471°	120.929206°
83	14.459728°	120.92861°
84	14.459931°	120.928136°

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VII.7 Zone 7. BUFFER ZONE

a. (MANGROVE BUFFER ZONE)- covers the area of 100 meters beyond Cavitec and delineated by the following coordinates.

Waypoint	Latitude	Longitude
1	14.466890°	120.923430°
2	14.467791°	120.923365°
3	14.468204°	120.931362°
4	14.463385°	120.931713°
5	14.463010°	120.930850°
6	14.467250°	120.930480°



Figure 16

b. (RECLAMATION BUFFER ZONE)- covers the area of 200 meters and delineated by the following coordinates:

Waypoint	Latitude	Longitude
1	14.465660°	120.940426°
2	14.465745°	120.939785°
3	14.466227°	120.939122°
4	14.466676°	120.938886°
5	14.473980°	120.937057°
6	14.474530°	120.936913°
7	14.475044°	120.936834°
8	14.475488°	120.936931°
9	14.475788°	120.937151°
10	14.476017°	120.937492°
11	14.476174°	120.937871°
12	14.476627°	120.941250°
13	14.478064°	120.944216°
14	14.478392°	120.944528°
15	14.478675°	120.944896°
16	14.478923°	120.945302°
17	14.479571°	120.946854°
18	14.480596°	120.949056°
19	14.481970°	120.953150°
20	14.482753°	120.955562°
21	14.483231°	120.956724°
22	14.484476°	120.954857°
23	14.482843°	120.950271°
24	14.481421°	120.946654°
25	14.479777°	120.942779°
26	14.478664°	120.940366°
27	14.477995°	120.937648°
28	14.477391°	120.935324°
29	14.477123°	120.934837°
30	14.476676°	120.934548°
31	14.476095°	120.934551°
32	14.464890°	120.937432°



Figure 17

VII.8 Zone 8. (MARINA)-covers the area of 25.7 hectares (approx) located in the eastern part of municipal waters beyond CAVITEX and delineated by the following coordinates.

Waypoint	Latitude	Longitude
1	14.478056°	120.964026°
2	14.477755°	120.963732°
3	14.477201°	120.963459°
4	14.476737°	120.963046°
5	14.476398°	120.962501°
6	14.476193°	120.961863°
7	14.476144°	120.961335°
8	14.476210°	120.960621°
9	14.476500°	120.959737°
10	14.476892°	120.959084°
11	14.477393°	120.958532°
12	14.477977°	120.958091°
13	14.478454°	120.957864°
14	14.478950°	120.957720°
15	14.479437°	120.957679°
16	14.480071°	120.957766°
17	14.480497°	120.957938°
18	14.480879°	120.958134°
19	14.481207°	120.958534°
20	14.481390°	120.958802°
21	14.481576°	120.959177°
22	14.478240°	120.964144°



Figure 18



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VII.9 Zone 9. (FISHERMAN'S WHARF & DORMITORY) - located in Brgy. Sineguelasan in the western part of the City coastal area near the Mangrove Sanctuary and delineated by the following coordinates. Currently, there is no fisherman's wharf and dormitory that can serve the needs of the fishermen who conduct fishing activities in the fishing ground aquaculture zone and even in the Manila Bay area.

Figure 19



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VIII. COASTAL RESOURCES

VIII.1 Fisheries

Throughout the years, the City of Bacoor is known for its mussel production. However, due to rapid urbanization and its impacts, the economic activities in the fishing industry have declined. Due to this trend, plenty of agricultural areas were converted to residential subdivisions.

In 2020, **Table 4** shows that there were three (3) fishing grounds in the City, and these were located in the bay, inland waters and fishponds or cages oversea. These data need to be updated and validated to identify the changes through the years. The fishing ground yield only serves the local market. These fishing grounds produce mussels, cocked shells, *bangus*, *sugpo*, and *tilapia*.

In addition to the impacts of urbanization and the demand for land conversion, offshore and coastal fishing were also affected by the construction of the Manila-Cavite Coastal Road and the Reclamation Project.

Table 4. Fishery Area Size and Production Capacity, 2020

Fishing Ground	Area (has)	Production		Product Market	
		Volume	Value	Local	Export
Bay	132.22	237.2 MT	1.022M	x	
Inland					
Fishpond/Cage	10	6.45	97.909	x	

Source: Bacoor City Agricultural Office

The updated data as shown in **Table 5** indicate the aquaculture production from 2017 to 2018 and how it has contributed to the fisheries sector in the City. Despite the urban challenges, Bacoor still produces mussels the most in the bay area. However, most of the mussel farms have expired permits to operate. **Table 6** and **Table 7** show the banca operators, their production and the number of registered bancas.

Table 5. Aquaculture Production, 2018

Product	Area (Ha)		Production (MT)		Operators/Cooperators		Amount Collected	
	2017	2018	2017	2018	2017	2018	2017	2018
Fish (Tilapia, Bangus, Prawn)	85.6	85.6	88.45	88.45	57	123		
Mussel Farm (with Permits)	63.105	5.5517	1,893.15	166.55	66	13	315,525.00	27,758.50
Mussel Farm (with Expired Permits)	125.25	225.25	3,757.50	6,757.74	347	349	626,250.00	126,291.50

Source: Bacoor City Agricultural Office



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Table 6. Registered Banca Operators,

Year	Motorized	Production (MT)	No. of Operators
2017	632	1,191.6	526
2018	528	1,285	520
2019	579	1,012	570
2020	523	1,301	523
2021	568	1,213	555
2022	515	1,178	500
Non-Motorized			
2018	25	5.76	25
2017	16	5.76	16
2018	15	5.2	15
2019	15	5.3	15
2020	0	0	0
2021	10	4.6	10
2022	16	5.0	16

Source: Bacoor City Agricultural Office, 2018

Table 7. Registered Bancas

	2017	2018
Newly Registered Banca	290	190
No. of Operators (New)	285	188
Amount Paid	67,000	57,000
Renewal		
No. of Banca	342	338
No. of Operators	335	335
Penalized	79	45
Amount Paid	33,679	22,500
No. of Coastal Barangays	10	10
No. of Registered Fisherfolk	3,307	3,370

Source: Bacoor City Agricultural Office, 2018

Table 8. Registered Banca

	2019	2020
Newly Registered Banca	211	169
No. of Operators (New)	210	169
Amount Paid	63,300	50,700
Renewal		
No. of Banca	368	354
No. of Operators	360	430
Penalized	0	32
Amount Paid	0	16,000
No. of Coastal Barangays	10	10
No. of Registered Fisherfolk	3,385	3,393



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Table 9. Registered Banca

	2021	2022
Newly Registered Banca	198	79
No. of Operators (New)	198	79
Amount Paid	59,400	39,500
Renewal		
No. of Banca	370	436
No. of Operators	365	430
Penalized	53	45
Amount Paid	26,500	22,500
No. of Coastal Barangays	10	10
No. of Registered Fisherfolk	3,405	3,416

VIII.2. Fisherman's Wharf and Dormitory

Currently, there is no fisherman's wharf and dormitory that can serve the needs of the fishermen who conduct fishing activities in the fishing ground aquaculture zone and even in the Manila Bay area. There is a community fish landing center but it is just intended to serve the green mussel farms in ten (10) coastal barangays. Currently, there is no wharf where the 436 bancas of 430 operators (as of 2022) can efficiently dock their fishing boats and unload their fish catch or also load their fishing equipment.

There is currently a plan to establish a wharf measuring around 281 meters long, 14 meters wide (base) and 5 meters high which can accommodate 300 bancas. There is also a plan to set up a fisherman's dormitory which measures 32.15 meters long, 6 meters wide, and 3.7 meters high. There are 11 rooms with 4 beds in each room that can accommodate 120 fishermen. The wharf and dormitory will be located beside the mangrove sanctuary zone. There is also a proposed boardwalk connecting the facility to the Sinaguelasan barangay hall as well as a proposed access road connecting the facility to Brgy. Sinaguelasan across the CAVITEX.

VIII.3. Agricultural Support Facilities

The City has also support facilities for agriculture and these are the six depuration facilities for green mussel culture and also a fish landing center especially for mussel production (Table 10 and Table 11).



a. Production Support Facilities

Table 10. Depuration Facility for Green Mussels

Year	No. of Actual Operation	Volume of Green Mussels Accommodated	Farm Served
2019	6	1.2 Tons	3
2020	0	0	0
2021	2	0.84 tons	3
2022	3	0.81 Tons	3

Note: Depuration Facility is currently under a systematic study conducted and facilitated by CvSU Naic, and not yet catering Green Mussels for commercial use.
Source: Bacoor City Agriculture Office

b. Post-harvest Facilities

Table 11. Community Fish Landing Center

Year	No. of Actual Operation	Volume of Green Mussels Sold	Farm Served
2019	All-Year-Round	1152.1 Tons	Green Mussel Farmers (10 Coastal Barangays)
2020	All-Year-Round	1392.2 Tons	Green Mussel Farmers (10 Coastal Barangays)
2021	All-Year-Round	1128.4 Tons	Green Mussel Farmers (10 Coastal Barangays)
2022	All-Year-Round	1102.3 Tons	Green Mussel Farmers (10 Coastal Barangays)

Source: Bacoor City Agriculture Office



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IX. MANGROVES

Since 2010, the City Government of Bacoor through the Office of the City Agriculturist together with various government and non-government institutions and organizations conducted countless numbers of Mangrove Planting Activities in the area. The so-called mangrove Forest is now home to thousands of true Mangrove species and Mangrove associates. This strategic fisheries development zone became the new sanctuary of fisheries and aquatic resources and other wild species of terrestrial, avian and other animals.

The Bureau of Fisheries and Aquatic Resources (BFAR) a line Bureau of the Department of Agriculture in collaboration with LGU implement Mangrove Reforestation Project in preparation for the Aquasilbiculture Project and which aims to ensure resource sustainability to attain food security and to alleviate poverty at the City of Bacoor.

Both parties agree to extend full support and cooperation for the effective implementation & operation of the abovementioned project.

X. Fisheries and Shellfish

The City Government of Bacoor through its active City Agriculture Office administers, direct and manages the seaborne mandate of the City's municipal waters. With the help of the trained Deputy Fish Wardens, permit-to operate issued by the CAO to the registered fishing operators are checked and examined by the Bantay Dagat. If there are irregularities with the papers presented or lack of it, penalization in accordance with the Fisheries ordinance of the City are imposed.

All programs in regards with the improvements of the current facilities engaged in the production, marketing and protection of Fisheries and Aquatic Resources of Bacoor City are still under the process of development. The strong support and plan for the Fisherfolks Cooperative (Mamamayan Para sa Lambat at Dagat Multi- Purpose Cooperative), Community Fish Landing Center, Depuration Facility and future programs from partner stakeholders of the City Agriculture Office are endless.

The Fisheries supply and production of the City are closely monitored by the City Fisheries Technologist with the help of the BFARMC Chairmen of the City and are reflected through the MANA Report submitted to the Office of the Provincial Agriculturist on a monthly basis.

The Shellfish supply and production of the City are closely monitored by the City Fisheries Technologist with the help of the BFARMC Chairmen of the City and are reflected through the MANA Report submitted to the Office of the Provincial Agriculturist on a monthly basis.



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XI. ECONOMIC SECTOR

XI.1. City Fisheries Development Plan:


Includes Registered Fisherfolks Welfare, Inland and Marine Aquaculture, Enforcement of Local Fisheries Statutes, Promotion and Advertisements of Modernized Mussel and Oyster Culture Systems

Figure 22 City Fisheries Development Plan


City Fisheries Development Plan CY 2023 - 2027		Target	Budget
Updating Registration of Fisherfolk	Registration of Fisherfolk	1,000 Fisherfolk	n/a
Establishment of Credit Assistance Facilities	Organize and Reactivate CFARMC & BFARMC	100 Members	500,000
Livelihood Projects	Marginalized Fisherfolk	1,000 Fisherfolk	1,000,000
Training and Seminars	CFARMC & BFARMC	200 Members	100,000
Information Dissemination of new Comprehensive unified City Ordinance	New Comprehensive City Ordinance were implemented	Bacoor Bay	n/a
Registration of Fishing Banca 3 gross tonnages below and non-motorize	Banca	800	100,000
Establishment of Demo Farm on Oyster and Mussel Culture	Bacoor Bay Area	3.0 ha.	300,000
Mangrove Reforestation	Mangrove Area	40.0 ha.	200,000
Maintenance	Bantay Dagat Head Quarters	2 HQ	500,000
		TOTAL	2,700,000.00

The City of Bacoor FARMC actively participated in the formulation of the City Fisheries Development Plan which has been approved and implemented by the Local Government Unit (LGU) through the Office of the City Agriculturist.

Prepared by:


Marlon P. Labornay
Clerk

Approved by:


ALLAN G. CHUA
OIC-City Agriculturist



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XI.3. CAPTURE FISHERIES (2022)

Captured Methods (Fishing Gear) (a)	Types of Boats	Coastal Barangays of Bacoor City engaged in the said Capture Methods
Bottom set Gillnet	Motorized Non-Motorized	Talaba 2, Tabing Dagat, Maliksi 3, Kaingin, Banalo
Hook & Lines	Motorized Non-Motorized	Zapote V, Alima, Banalo
Spear Gun	Motorized Non-Motorized	Alima, Sineguelasan, Zapote V, Tabing Dagat, Talaba 2, Maliksi 1
Bintol	Motorized Non-Motorized	Banalo, Alima, Maliksi 3, Sineguelasan
Dala	Non-Motorized	Alima, Maliksi 1 and 3 (Fisherfolks of Dulong bayan and Aniban)
Sapra	Motorized	Alima (Fisherfolks only)
bakiad	Motorized	n/a
Sudsod	Motorized	n/a
Bubu	Motorized	n/a
Dynamite Fishing	Motorized	n/a

XII. INSTITUTIONAL AND LEGAL FRAMEWORK

A. COASTAL ZONE LAW

1. R.A 10654 (Amended R.A 8550)
2. City Ordinances No. 278-2023 series of 2023
 - AN ORDINANCE PROVIDING FOR SUSTAINABLE MANAGEMENT, DEVELOPMENT AND CONSERVATION OF THE BACOR MUNICIPAL WATER AND ITS FISHERY RESOURCES, HARMONIZING AND INTEGRATING ALL ORDINANCES

B. LOCAL GOVERNMENT CODE

1. R.A. 7160 LOCAL GOVERNMENT CODE OF THE PHILIPPINES

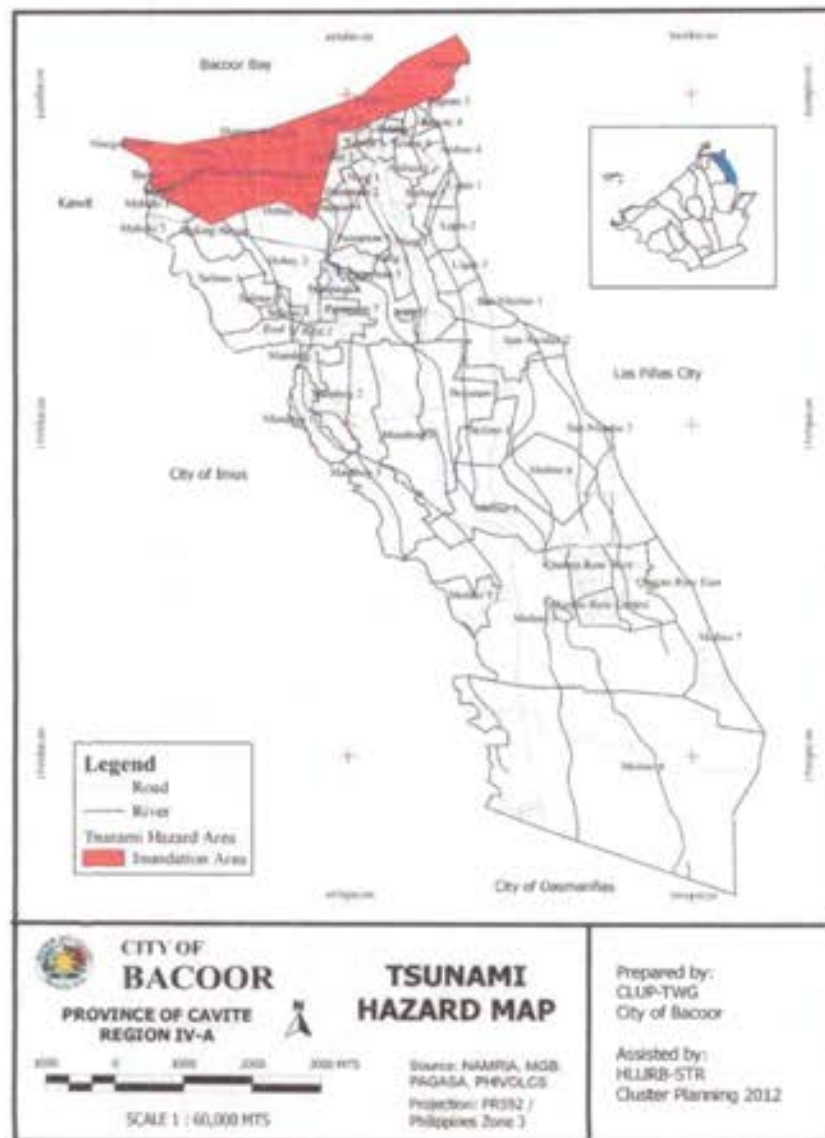


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XIII. HAZARD MAP

Figure 23



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Bacoor City- The City of Transformation offers promising improvement in a span of 3 years, of which involving every sector that will commit to its transfiguration. Careful consideration in every aspect was examined to assure that there will be no gray area. The designed plan made sure that it will not only benefit the economy of Bacoor City perse but also to ascertain that the environment especially its marine resources will be taken care of. Three years from now upon the full support of its great leaders of Bacoor City, this plan will reap its fruition.

Submitted by:


MARLON M. CABORNAY
Clerk

Noted by:


ALLAN G. CHUA
OIC- Office of the City Agriculture

Approved by:

HON. STRIKE B. REVILLA
City Mayor-
City of Bacoor

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