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CHAPTER ONE:

GENERAL INTRODUCTION

1. GENERAL INTRODUCTION

1.1 BACKGROUND

The first Comprehensive Land Use Plan (CLUP) and Zoning Ordinance (ZO) of the City of San Carlos was prepared in 1977 and approved on July 31, 1980 thru Human Settlements Regulatory Commission (HSRC) Resolution No. 39-4. A second CLUP and ZO was prepared in 2000 and this plan and ordinance were enacted only after the approval of Sangguniang Panlalawigan. After more than 10 years of implementation of the second CLUP and ZO, the need to manage the continued growth of the City's population, rehabilitate the environment and improve basic services call for the revisitation and revalidation of the plan. The study shows that the City's outdated CLUP has been outpaced by the rapid urbanization and development for the past years. Currently, on the basis of the updated CLUP for San Carlos, it sets out a plan vision and associated assumptions and objectives to be incorporated in the Comprehensive Development Plan (CDP). A long-term 30 year framework was used in setting-out the vision for development and in the assessment of land requirements for housing and other infrastructure development. The planning period used for the land use plan and zoning ordinance is, however, for a shorter 10 years period in anticipation of the probable need to re-visit the CLUP within that time frame. This 10-year planning period is particularly applied in forecasting the demand for urban land.

Rapid economic and population growth exerts enormous pressure on the use of limited land resources often resulting in congestion, poverty concentration, and environmental degradation. Increasing demand for residential, industrial, commercial and institutional areas also leads to the conversion of agricultural land to non-agricultural uses. Utilizing land according to its "highest and best" use without depriving the rural sector of its basic productive and social resources and at the same time rehabilitating and protecting the physical environment is a major challenge. At the local level, this can be addressed through City Land Use Plans where more precise locations for land-using activities are defined. The local government of San Carlos, given increased authority and power, takes an active role in developing its respective areas by updating its CLUP. This allows the City to generate and mobilize resources to provide for their needs, build a stable economic base, and protect and manage the environment. The community is given the opportunity to participate in the development process in close coordination with local leadership with the end view of coming up with plans and implementing development programs.

1.1.1 RATIONALE

Republic Act 7160 of 1991, otherwise known as the Local Government Code (LGC), has given autonomy to Local Government Units (LGUs) regarding the development of their territorial jurisdictions. Section 20(c) of the Code states "... 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."

This document, the updated CLUP, is a product of the many undertakings of the City Government of San Carlos brought about by its desire to upgrade its old CLUP of 2000-2020. There was a felt need to update the CLUP because of the changes of times and events, in order to be more substantial, accommodating and realistic with the flow of events and with the current and extrapolated volume of demand for the next 30 years. While the previous CLUP served to bring

San Carlos to where it is today, there is a need to plan for the rapid changes coming in the future based on the perceived changes of the approaching years.

The preparation of this revised CLUP comes at a time when the old document (previous CLUP) needs to be revised to suit the new kinds of demand in consonance with the new environment. There are therefore significant differences between the old and the new set of plans in terms of the approaches and methodology, as well as on its spatial strategies and the scope of policy coverage.

1.1.2 GENERAL OBJECTIVES

In response to economic growth in the City, social objectives have to be met which include ensuring sufficient housing land that can be accessed by the community in response to the forecast demand; providing the conditions and incentives for improved housing conditions for the urban poor, either through in-situ-upgrading, urban resettlement and/or rural decentralization incentives; and improve and develop education, health, recreation and other community facilities in response to forecast population growth levels. By taking a preventive approach, it likewise aims to reduce the incidence of poor health conditions through improved potable water supply and sanitation. It also aims to provide conditions for a socially stable community and reduce out-migration of the young through the provision of employment opportunities, together with the essential capability support programs as well as community and recreation facilities.

The Economic development aspect aims for the optimization of the natural resource potential of San Carlos, primarily through the intensification and diversification of agriculture and through reforestation and agro-forestry schemes by identifying market opportunities for more productive agriculture relevant to the circumstances of San Carlos; identify the potential to establish an agro-processing industry in San Carlos and the means to optimize the potential for reforestation and agro-forestry in the upland areas; to identify the market opportunity for inward investment in (non-agricultural) industry and identify the market potential and focus for the exploitation of the areas for visitor and tourism development.

For Environmental sustainability, the protection of vulnerable environments and implementing proper pollution control and prevention schemes are aimed at. As such, it involves defining an appropriate strategy for the collection and treatment of liquid wastes, which will meet the needs of new development and improve conditions in the existing urban area (Poblacion).

Improving the existing integrated solid waste management program, increasing the efficiency of the existing sanitary landfill site capable of meeting forecast demand, developing an appropriate and affordable program on flood control and land drainage particularly in the affected existing and planned urban areas; ensuring non-buildable areas are clearly defined; prioritizing the need for the approval of the Coastal Resource Management Plan (CRMP), which will ensure protection of the mangrove areas and corals, that will come under pressure from planned development of the lowland corridor, for instance new airport construction; ensuring adequate protection of the watershed areas. (i.e. the Bago River Watershed Area) and lastly, taking an integrated and comprehensive approach to land use planning and land management, through the implementation of a CLUP and Zoning Ordinance, which ensures sustainable land development and development control; these are being prioritized under the new formulated CLUP in the context of environmental sustainability.

1.2 APPROACH AND METHODOLOGY

San Carlos City employed a participatory and consultative approach among the public sector for governmental and non-profit agencies, and in the private sector for businesses related to land, community, and economic development. Through research, design, and analysis of data, a plan can be created for some aspect of a community. This process typically involves gathering public input to develop the vision and goals for the City and its community. A six (6)-month workshop on CLUP preparation was facilitated that involved a diverse set of stakeholders in the planning process including government and private sectors to ensure that the final plan comprehensively addresses the study area. A combination of quantitative and qualitative research techniques was adopted to generate more comprehensive and accurate data. Geographic Information Systems, or GIS, was utilized as a very useful and important tool in land-use planning particularly for quantitative methods. On the other hand, qualitative methods dealt more on the analysis of the City's strengths, weakness, opportunities and threats or what we call the SWOT. The results of the quantitative and qualitative methods served as basis for policy recommendations put forward in the revised plan. Furthermore, the series of workshops conducted also enabled stakeholders to assess and evaluate all aspects of the plan.

1.2.1 MAJOR PROCEDURAL STEPS

Data Collection and Review

The orientation and series of workshops for CLUP formulation started in June 2012. This involved a participatory process with full teams from the staff representing the different departments of the San Carlos City Government and organized into five (5) sectors comprised of Social, Economic, Environment, Institutional and Infrastructure tasked for data gathering and inputting of information leading to the development of the CLUP. Each of the above groups met to provide inputs for questions and data for the development of the plan and each group reported during a plenary session. At the initial stages of the process, the sectors reviewed the existing CLUP document, revisited the City's vision and goals and developed new plans and strategies in a participatory and consultative approach.

Goal Formulation and Visioning

The first objective of the CLUP workshop involved goal formulation and visioning. The goals were based on the national vision for LGUs as stipulated in Section 2(a) of RA 7160: "...that (LGUs) attain their fullest development as self-reliant communities and become more effective partners in the attainment of national goals." Consideration was also given to regional and provincial development objectives and the City's role within them. The identified goals by the sectors are properly analyzed to serve as an *end* toward which all future actions specified in the plan are directed. They act as *criteria* for evaluating alternative strategies, approaches and policies and as *standard* against which success of each action are measured. These goals and vision were then compared with the results of the data gathered to determine if such vision is attainable.

Designing and characterizing alternative spatial strategies

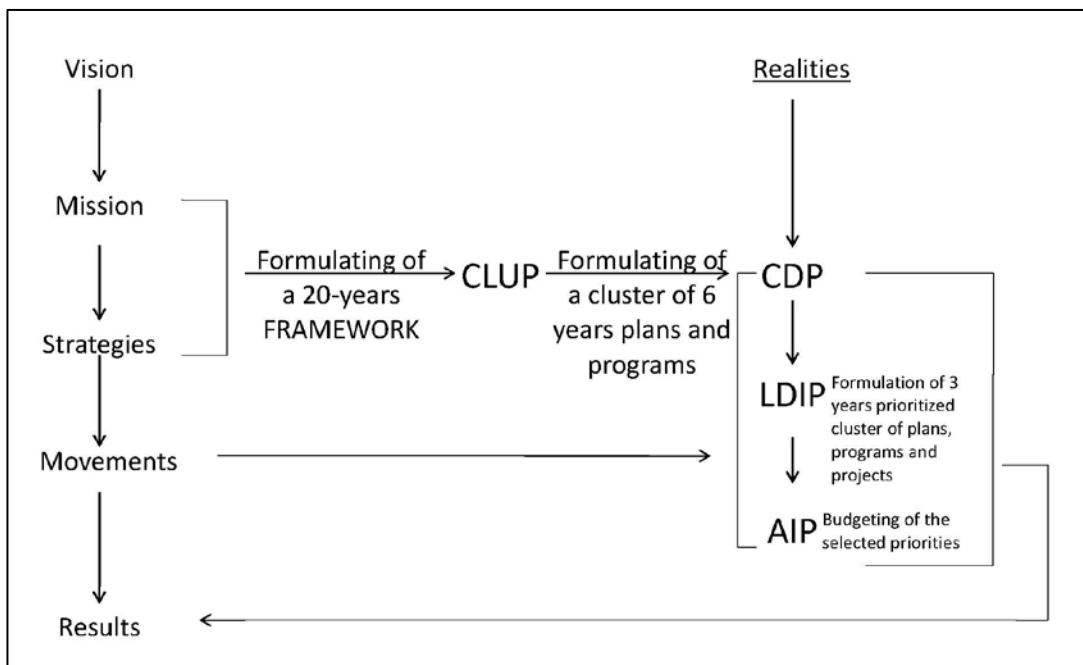
A spatial strategy is an abstract conception of the desired pattern of physical development of the City which is realized through the creative combination of built-up areas and open spaces. It is

the organizing concept that guides the location and allocation of spaces for different land-use activities, the regulation of public and private investments, and the preservation of resources that ought to be protected against unscrupulous and inimical human intrusion and other agents of destruction. Designing and selecting appropriate spatial strategies for the City of San Carlos with its continuous advocacy for, and being a long-time practitioner of, environmental conservation has been a major challenge to planning the City's physical development.

Detailing the preferred spatial strategy

The preferred spatial strategy is a multi-dimensional framework, a conceived skeletal frame that defines the desired scope of future development. Additional detailed elements and components are included in this updated CLUP. To wit, are the proposed and detailed plans for the Coastal and territorial waters of the City from the municipality of Vallehermoso in Negros Oriental which is located at its southern portion and up to the north, the demarcation line between the City and the Municipality of Calatrava then from the coastline of this stretch it goes outward for seven and a half (7.5) kilometers on Tañon Strait facing the island of Cebu. This distance of outward lay-out is the quotient of dividing the total distance between the island of Cebu and the City of San Carlos. This lay-out describes the extent of development that the City has been tasked to improve. This not only includes the surface of the sea but also beneath its surface (the seafloor). As a product of this plan, the City was able to produce a Coastal Waters Zoning Plan.

FIGURE 1.1: SIMPLIFIED CLUP - CDP - LDIP- AIP PROCESS



Formulation of land and water use policies

For effective land use regulation, the CLUP must be comprehensive in terms of territorial and policy coverage. In order that every portion of the City's territory is covered with appropriate policies, the four (4) land use policy areas adopted by the National Land Use Committee (NLUC) namely, settlements, infrastructure, production and protection, were used to organize all proposed policy interventions. These policy proposals were generated from the application of various analytical techniques in the course of the planning process notably the Problem-Solution Matrix; map overlay analysis, and the Upstream-Downstream Impact analysis. The local

implications of relevant national laws and other administrative issuances were likewise taken into account in the formulation of these policies. To facilitate their implementation the proposed policies are further classified into programs and projects, services or non-projects, and regulatory measures. The proposed programs and projects of the City are to be reflected generally in the CDP and specifically in the Local Development and Investment Program (LDIP) and finally in the Annual Investment Program (AIP) for funding by the development funds under the annual budget. The identified services needed to carry out aspects of the plan are incorporated into the regular functions of existing local government departments or offices of the City, or will serve as basis for the creation of new executive bodies. The services or non-project components of the proposed policy interventions may also guide the crafting of capability building programs for personnel of the executive branch of the City Government.

Amendments to the Zoning Ordinance

The 2000 – 2020 Zoning Ordinance (ZO) was amended in light of the updated CLUP. The salient features of the amended ZO include the integration of Disaster Risk Reduction and Climate Change Adaptation (DRR-CCA) considerations, Assumed Environmentally Critical Areas Network (AECAN) Zoning, Coastal Water Zoning and revised Urban Land Zoning. Another important feature of the amended ZO is the consideration it gives to the total catchment concept wherein policies for certain upstream areas are tested for the sensitivity to their potential impact on downstream areas. A necessary extension of the total catchment concept is the incorporation of the municipal waters under one use regulatory regime. Since the National Government has devolved its authority to the LGU to manage its off-shore areas of up to 15 km from the shoreline, coastal LGUs like the City of San Carlos is expected to manage and protect their respective portions of the national territorial sea for the benefits of small fisherfolks and coastal communities.

CHAPTER TWO:

BRIEF PROFILE

2. BRIEF PROFILE

2.1 INTRODUCTION

This chapter presents a brief situational summary of the various development sectors such as Human Resource, Physical Features, and Physical/ Infrastructure Resources (Social Service Facilities and Public Utilities). Development needs for each sector, in both quantitative and qualitative terms, are also presented. Consideration is likewise given to the national goals for physical planning as well as the development directions at the regional and provincial levels that have implications to San Carlos, particularly on the functional role that the City is envisaged to perform in the Western Visayas Region and in Negros Occidental. A review of the predecessor CLUP 2000 – 2020, particularly in terms of land use strategies and policies is also provided.

These inward and outward-looking information serve as the platform in determining the consolidated development issues and concerns that have to be addressed, as well as the City's competitive/ comparative advantages that may be capitalized on by the updated CLUP.

2.2 BRIEF HISTORY

San Carlos traces its history from being a small Negrito settlement named Nabingkalan. This settlement was later bought by Carlos Apurado who developed it into a thriving Christian village. The place was renamed San Carlos in 1856 when it was made a "pueblo" by the Spanish government. When Negros Island was divided into Occidental Negros and Oriental Negros in 1890, San Carlos was recorded as an "arrabal" or barrio of Calatrava, which is now a separate municipality on the southern side of San Carlos.

San Carlos acquired its status as a town in late 1898 when Gen. Juan Araneta of the Revolutionary Philippine Republic officially proclaimed it as a municipality. This was confirmed by the American Military Administration in 1901. It was then occupied by the Japanese Imperial Forces in May 1942 and liberated on March 1, 1945 by the First Combat Team, 7th MD (Negros) Guerilla Forces, under Major Uldarico Baclagon.

San Carlos became a city on July 1, 1960 with the passage of Republic Act No. 2643. It's ideal geographical location and financial stability has made San Carlos City the center of the Panay-Negros-Cebu economic zone. It has also since become one of the most livable cities in the world, an award accorded in 2011 by the United Nations-sponsored International Awards for Livable Communities.

2.3 HUMAN RESOURCE

2.3.1 EXISTING POPULATION

Population size and growth rate

The latest Census on Population and Housing conducted by the National Statistics Office in 2010 recorded that San Carlos City had a total population of 129,981. This represents approximately 5.42% of the total population of the province for the same census year.

The number and historical growth of total population of San Carlos City and Negros Occidental are shown in the following table:

TABLE 2.1: HISTORICAL GROWTH OF POPULATION, SCC AND NEG OCC (1960-2010)

DATE	POPULATION		GROWTH RATE	
	SCC	NEG. OCC.	SCC	NEG. OCC.
1960	124,756	1,332,323	2.55	2.10
1970	90,058	1,503,782	-3.26	1.21
1975	90,982	1,785,792	0.20	3.44
1980	91,627	1,930,301	0.14	1.56
1990	105,713	2,256,908	1.44	1.56
2000	118,259	2,565,723	1.33	1.05
2010	129,981	2,396,039	0.95	-6.01

Source of basic data: National Statistics Office¹

Population by barangay

Barangay Rizal was the most populated barangay. The highly commercialized Barangay IV was the least populated. The following table presents the City's population by barangay.

TABLE 2.2: POPULATION BY BARANGAY (2010)

BARANGAY	POPULATION 2010	SHARE TO TOTAL
I	10,376	7.98%
II	6,833	5.26%
III	3,501	2.69%
IV	1,136	0.87%
V	5,233	4.03%
VI	6,268	4.82%
Bagonbon	5,474	4.21%
Buluangan	11,752	9.04%
Codcod	12,846	9.88%
Ermita	2,150	1.65%
Guadalupe	10,765	8.28%
Nataban	4,465	3.44%
Palampas	9,246	7.11%
Prosperidad	5,163	3.97%
Punao	5,943	4.57%
Quezon	11,530	8.87%
Rizal	14,398	11.08%
San Juan	2,902	2.23%
Total	129,981	100.00%

Source: National Statistics Office

¹ Population data was taken from Negros Occidental Social and Economic Trends (NOSET); growth rate was computed manually.

Population density

The City's gross population density is about three persons per hectare. Density is highly skewed towards the urban core, comprising Poblacion barangays, which is about 101 persons per hectare or 35 times that of the City's gross density. Population density outside the urban core is two persons per hectare, which is lower than the City's average.

Considering the NSCB's new definition of urban barangays, then the City's urban area density is calculated at 2.85 persons per hectare. The average density in the rural barangays is calculated at 3.38 persons per hectare, implying denser concentrations of population. The lower density figure in the City's urban barangays is attributed to the large territorial area of barangays outside the Poblacion which have been classified urban in the new NSCB definition.

Among the barangays, density is highest in Barangay VI at 461 persons per hectare. The other five Poblacion barangays ranked second to sixth which further indicating the compaction of growth in the City's urban core. It is notable that population densities in the island barangays of Ermita and San Juan ranked next to the Poblacion barangays. This indicates incipient population pressure in the small island of Refugio (Sipaway).

TABLE 2.3: GROSS POPULATION DENSITY, PER BARANGAY (2010)

BARANGAY	AREA IN HECTARES *	RANK	POPULATION	RANK	GROSS DENSITY	RANK
<i>URBAN</i>						
I	162.32	13	10,376	6	63.92	5
II	73.33	14	6,833	8	93.18	4
III	9.60	18	3,501	15	364.68	2
IV	19.51	16	1,136	18	58.24	6
V	50.74	15	5,233	11	103.12	3
VI	13.60	17	6,268	9	460.87	1
Bagonbon	2,561.92	8	5,474	12	2.14	13
Buluangan	4,682.16	4	11,752	3	2.51	11
Codcod	8,622.84	1	12,846	2	1.49	17
Guadalupe	4,654.61	5	10,765	5	2.31	12
Palampas	5,254.51	3	9,246	7	1.76	15
Prosperidad	3,357.87	6	5,163	13	1.54	16
Punao	1,729.18	10	5,943	10	3.44	10
Quezon	8,199.42	2	11,530	4	1.41	18
Rizal	2,944.28	7	14,398	1	4.87	9
Subtotal	42,335.88		120,464		2.85	

TABLE 2.3: GROSS POPULATION DENSITY, PER BARANGAY (2010)(CONT'D)

BARANGAY	AREA IN HECTARES *	RANK	POPULATION	RANK	GROSS DENSITY	RANK
<i>RURAL</i>						
Ermita	176.21	12	2,150	17	12.20	7
Nataban	2,392.45	9	4,465	14	1.87	14
San Juan	245.46	11	2,902	16	11.82	8
Subtotal	2,814.12		9,517		3.38	
TOTAL	45,150.00		129,981		2.88	

Source: Office of the City Planning and Development Coordinator

* There is an ongoing Survey for Barangay Boundaries by LGU and DENR which will be adopted upon approval of the Map.

Household distribution

The data on the number of households per Barangay is taken from the 2010 Census individual barangay population divided by the average family size which is the result of total population over the number of total household to see how they are distributed among the City's barangays. Based on this, it may be observed that the Poblacion Barangays I – VI had the most number of households that accounted for 25.65% of the total. Individually, however, barangays with the most number of households are Barangay Rizal, Codcod, Buluangan, Quezon, Guadalupe and Barangay I.

TABLE 2.4: POPULATION AND NUMBER OF HOUSEHOLDS PER BARANGAY (2010)

BARANGAY	NUMBER OF HH	SHARE TO TOTAL (%)
I	2,306	7.98%
II	1,518	5.26%
III	778	2.69%
IV	252	0.87%
V	1,163	4.03%
VI	1,393	4.82%
Bagonbon	1,216	4.21%
Buluangan	2,612	9.04%
Codcod	2,855	9.88%
Ermita	478	1.65%
Guadalupe	2,392	8.28%
Nataban	992	3.44%
Palampas	2,055	7.11%
Prosperidad	1,147	3.97%
Punao	1,321	4.57%
Quezon	2,562	8.87%
Rizal	3,200	11.08%
San Juan	645	2.23%
TOTAL	28,885	100.00%

Source: NSO and CPDCO

2.3.2 POPULATION PROJECTIONS

Doubling time

Based on the 0.95% average annual growth rate from 2000 to 2010, it is estimated that the City's population will double in 73 years, i.e. reaching a figure of 259,962.

Geometric growth

The City's population is estimated to be about 134,991 at the start of the planning period, 2014. It is expected to reach 146,981 after ten years, i.e., 2023, which is the recommended CLUP timeframe of the Housing and Land Use Regulatory Board (HLURB). The total population is estimated to reach 177,578 by 2043 or 30 years after start of plan implementation.

TABLE 2.5: PROJECTED TOTAL POPULATION

Year	2014	2018	2023	2028	2033	2038	2043
Number	134,991	140,194	146,981	154,097	161,557	169,378	177,578

Population projection by barangay

The following table presents population projection by barangay assuming that their current shares to the City's total population are maintained for the next 30 years.

TABLE 2.6: POPULATION PROJECTION BY BARANGAY

Barangay	Year				
	2013	2014	2023	2033	2043
I	10,675	10,776	11,733	12,897	14,176
II	7,030	7,096	7,727	8,493	9,335
III	3,602	3,636	3,959	4,351	4,783
IV	1,169	1,180	1,285	1,412	1,552
V	5,384	5,435	5,917	6,504	7,149
VI	6,448	6,510	7,088	7,791	8,563
Bagonbon	5,631	5,685	6,190	6,804	7,478
Buluangan	12,088	12,203	13,217	14,605	16,053
Codcod	13,216	13,341	14,526	15,967	17,550
Ermita	2,212	2,233	2,431	2,672	2,937
Guadalupe	11,075	11,180	12,173	13,380	14,707
Nataban	4,593	4,637	5,049	5,550	6,100
Palampas	9,512	9,602	10,455	11,492	12,632
Prosperidad	5,312	5,362	5,838	6,417	7,054
Punao	6,114	6,172	6,720	7,387	8,119
Quezon	11,862	11,974	13,038	14,331	15,752
Rizal	14,816	14,957	16,285	17,901	19,676
San Juan	2,985	3,014	3,282	3,607	3,965
Total	133,721	134,991	146,981	161,557	177,578

Population projection by age group

The following table presents population projection by age-group for the next year assuming that their respective participation rates are maintained.

TABLE 2.7: POPULATION PROJECTION BY AGE GROUP

Age Group	Year				
	2013	2014	2023	2033	2043
All ages	133,721	134,991	146,981	161,557	177,578
Under 1	2,947	2,974	3,239	3,560	3,913
1-4	12,857	12,979	14,132	15,534	17,074
5-9	17,108	17,271	18,805	20,670	22,719
10-14	17,851	18,021	19,622	21,567	23,706
15-19	15,039	15,182	16,530	18,170	19,971
20-24	10,109	10,205	11,111	12,213	13,424
25-29	8,971	9,056	9,860	10,838	11,913
30-34	8,072	8,148	8,872	9,752	10,719
35-39	7,941	8,016	8,728	9,594	10,545
40-44	7,210	7,278	7,925	8,711	9,575
45-49	6,608	6,671	7,264	7,984	8,776
50-54	5,453	5,505	5,994	6,589	7,242
55-59	4,132	4,172	4,542	4,993	5,488
60-64	2,868	2,895	3,152	3,465	3,809
65-69	2,671	2,696	2,936	3,227	3,547
70-74	1,961	1,980	2,155	2,369	2,604
75-79	1,078	1,089	1,185	1,303	1,432
80 and over	844	852	928	1,020	1,121

Source: City Planning and Development Office, SCC

2.4 PHYSICAL FEATURES

Location

San Carlos City is located in the Province of Negros Occidental in the Western Visayas Region of the Philippines. San Carlos is located at 123°06'00" to 123°30'00" longitude and 10°22'00" to 10°36'00" latitude northeast of Negros. The Municipality of Calatrava defines its boundaries at the north, Municipality of Salvador Benedicto and City of Bago at the west, the Municipality of Vallehermoso (Negros Oriental) and City of Kanlaon at the south, and the 12 fathoms deep Tañon Strait at the east.

Land Area and Barangay Subdivision

San Carlos City is a 2nd Class Component City with a total land area of 45,150 hectares and a population size of 129,981 (as of May 1, 2010). It has eighteen (18) barangays, of which fifteen (15) may be classified as urban and three (3) as rural barangays. The respective land areas of these barangays are shown in the following table.

TABLE 2.8: LAND AREA BY BARANGAY (2013)

Barangay	Area (in hectares)	% of Total Area
URBAN AREAS		
Barangay I	162.32	0.36%
Barangay II	73.33	0.16%
Barangay III	9.60	0.02%
Barangay IV	19.51	0.04%
Barangay V	50.74	0.11%
Barangay VI	13.60	0.03%
Bagonbon	2,561.92	5.67%
Buluangan	4,682.16	10.37%
Codcod	8,622.84	19.10%
Guadalupe	4,654.61	10.31%
Palampas	5,254.51	11.64%
Prosperidad	3,357.87	7.44%
Punao	1,729.18	3.83%
Quezon	8,199.42	18.16%
Rizal	2,944.28	6.95%
Subtotal	42,335.88	93.77%
RURAL AREAS		
Ermita	176.21	0.39%
Nataban	2,392.45	5.30%
San Juan	245.46	0.54%
Subtotal	2,814.12	6.23%
Total Area	45,150.00	100%

Source: City Planning and Development Office, SCC

Topography

The topography of the City of San Carlos is predominantly level to undulating along the coastline and rolling to very steep along its north-western and south-western portions. Parts of Mount Kanlaon Volcano and the Balabag Mountain Ranges are within the jurisdiction of San Carlos. The Mount Kanlaon National Park, which has a geographical spread across Negros, reaches into the southwestern portion of the City. Mount Kanlaon National Park in Barangay Codcod has an elevation of 2,455 meters from the peak down, and is 1,800 meters above sea level.

2.5 PHYSICAL/ INFRASTRUCTURE RESOURCES

2.5.1 TRANSPORTATION NETWORK

Situationer

- **Roads**
The City Engineer's Office (CEO) classifies local roads into City, Island and Secondary Roads. These have a total length of about 238.6 kms. Serving the rural areas of the City, the most extensive of these are the Secondary Roads which represent 75% of the total length of local roads. About 69.6%

of the length of these secondary roads is paved with either concrete or asphalt. The Poblacion and vicinity are served by City Roads and about 78% of their total length is concrete-paved. Refugio (Sipaway) Island is, in turn, served by fully concreted Island Roads.

Transport Facilities

- Land Transport

Land-based modes of transport in the City provide access throughout Negros Island and to all its barangays. These include buses, jeepneys, for-hire-vans and tricycles.

The City also has a multi-modal San Carlos Transport Terminal located along the National Road in Barangay Palampas.

- Water Transport

There are two (2) ports in the City: one is national government-owned and the other is privately-owned (San Carlos Bio-Energy Corporation). The government-owned port, the San Carlos City Port is maintained by the Philippine Ports Authority (PPA). The port hosts ferries that transport people and goods to and from Toledo City in Cebu Province as well as commercial pump boats going to barangays Ermita and San Juan on Refugio (Sipaway) Island.

The San Carlos Bio-Energy Corporation's port is the oldest industrial port in the whole of Negros. It was built in 1946 at a time when foreign and domestic vessels docked for molasses and brown sugar and, lately ethyl alcohol.

The City's main Fishport is located in Barangay Buluangan while there are also barangay ports in Ermita and San Juan on Refugio (Sipaway) Island.

- Air Transport

The San Carlos City Community Airport has been earmarked for development on a 40 hectare site in Barangay Punao. Nearly 10 hectares of land has already been donated by Negros Fisheries Corporation. The airport is mainly oriented towards enhancing the City's national and regional linkages as well as to support the development of the San Carlos Eco-Zone. Plans for the initial stage indicate the construction of a 30 meter wide by 1,000 meter long concrete runway on a 75 meter airstrip. This was designed to accommodate small to medium passenger aircraft having 12 to 30 persons seating capacities. It was also designed to handle freight aircraft up to an all-up-weight of 12,500 pounds.

Development Needs

- Roads

The most common parameters for determining adequacy of the circulation network are road density and connectivity. Road density is indicated by the ratio of the total length of roads regardless of class or construction standards to the population with regards to urban areas and to land area with regards to rural areas. This is then compared with the standard provided by HLURB national standard of 2.4 kilometers for every 1,000 population for urban roads and 1.5

kilometers for every 100 hectares of arable land for rural roads. It should be noted that figures derived from these density standards are used as benchmarks to gain a broad indication of whether roads are adequate or not. Such density figures are then compared to connectivity conditions observed from existing and projected land use patterns. It may be that the final configuration of the road network becomes the product of iterations between quantitative density measures and qualitative connectivity observations.

Urban Roads

The City’s major urban area may be categorized into the City Proper and its Urban Expansion Area, the latter comprising Barangays Palampas and Rizal. Using road density standards, it may be calculated that there is a year 2013 backlog of about 35.3 kms of urban roads in the City Proper. With a ten-year planning horizon, this backlog will become 43.5 kms by year 2023. The backlog obviously increases along with population, and it is estimated that the City Proper will need an additional 62.3 kms of roads by 2043. The following table presents the estimated requirements for the City Proper:

TABLE 2.9: URBAN ROAD REQUIREMENTS - CITY PROPER

Parameter	Year				
	2013	2014	2023	2033	2043
City Proper Population	34,308	34,633	37,709	41,448	45,558
Urban Road Requirements (km)	82.3392	83.1192	90.5016	99.4752	109.3392
Current Length (km)	47.0520				
Backlog (km)	35.2872	36.0672	43.4496	52.4232	62.2872

Note: HLURB Standards for urban roads is 2.4km/ 1000 population

Connectivity observations, on the other hand, point out that the road network within the City Proper appears to be fairly adequate already. It may not be necessary to fully meet the calculated backlogs. What are needed are the following:

- Completion of the planned Interim and Long-Term By-Pass Roads to improve the City Proper’s connectivity to the rural barangays
- Completion of the planned Boulevard that will provide direct access from the National Road to the San Carlos City Port
- Appropriate road design (introducing service roads and ensuring appropriate pedestrian walkways), traffic management (such as designating limited access roads) and property parking and access regulations to minimize roadside friction

Except for heavily-built up areas in locations adjacent to the City Proper Barangays, there are still wide greenfield areas in Barangays Guadalupe, Palampas, Punao and Rizal that were identified in CLUP 2000 – 2020 as part of the Special Development Area with uses ranging from residential to industrial. To estimate urban road requirements with population as reference, it may be assumed that 80% of residents are within these barangays’ designated urban areas. It is may also be roughly assumed that 85% of existing roads in these barangays are within these portions. The present backlog in the Urban Expansion Area is thus calculated at 27.64 kms which is expected to reach 36 kms in 2023 and almost 52 kms in 2043. The following table presents the estimated road backlog in the Urban Expansion Area:

TABLE 2.10: URBAN ROAD REQUIREMENTS - URBAN EXPANSION AREA

Parameters	Year				
	2013	2014	2023	2033	2043
Urban Expansion Area Population (no)	30,742	31,033	33,790	37,141	40,824
Urban Road Requirements (km)	73.7798	74.4787	81.0950	89.1379	97.9776
Current Length (km)	46.1395				
Backlog (km)	27.6403	28.3392	34.9555	42.9984	51.8381

Notes:

1. Urban Expansion Area Population is 80% of total barangay population
2. Current length of roads is 85% of total.
3. HLURB Standards for urban roads is 2.4km/ 1000 population

Rural Roads

- Mainland

An indication of the rural road requirements may be obtained by applying the rural road density standard to the areas designated for agriculture in CLUP 2000 – 2020 which remains the present classification. The estimated backlog is about 145 kms as of planning year (2013) as presented in the following table:

TABLE 2.11: RURAL ROAD REQUIREMENTS - MAINLAND

Parameter	2013
Arable Lands (has)	18,433.50
• Agricultural Production Area (has)	15,898.34
• SAFDZ (has)	2,535.16
Rural Road Requirements (km)	276.5025
Current Length (km)	131.7171
Backlog (km)	144.7854

Notes:

1. HLURB Standards for rural roads is 1.5 hectares or arable lands or those suitable for agricultural purposes.
2. 85% of the length of rural roads in Barangays Guadalupe, Punao, Palampas and Rizal were deducted respectively to as these are ascertained to be within the Urban Expansion Area (previous table).

- Island

It is estimated that there is a surplus of about 7.5km of rural roads on Refugio (Sipaway) Island if the rural road density standard is applied. The formulation of transportation improvement plans, such as roads, should consider this apparent oversupply as well as the environmental sensitivity of the island. The following table presents the estimated rural road requirements for Refugio (Sipaway) Island during the planning year 2013 using density standards for arable lands.

TABLE 2.12: RURAL ROAD REQUIREMENTS – REFUGIO (SIPAWAY) ISLAND

Parameter	2013
Arable Lands	
• Coastal Management Zone	419.89
• Urban Road Requirements	6.29835
Current Length (km)	13.83
Backlog	(7.53165)

Notes:

1. HLURB Standards for rural roads is 1.5 hectares or arable lands or those suitable for agricultural purposes.
2. The area used above was that calculated for the Coastal Management Zone in CLUP 2000 – 2020. This is not too far from the total declared area of the two barangays which is 421.67 has.

- Water Transport

The following outlines the development needs for water transport:

- There is a need to address the difficulty in transporting basic commodities and emergency services, such as medical, to the island barangays in times of bad weather
- There is a need to increase the capacity of the San Carlos City Port in anticipation of increased passenger and cargo traffic

- Air Transport

Following are the development needs for air transport:

- At the short-term, there is a need to complete the acquisition of the remaining 30.55 hectares of land to complete the initial target of 40 hectares for the airport site.
- At the medium-to long-terms, the phased construction of the community airport has to be programmed to include, among others, a 30 meter wide by 1,000 meter long concrete runway on a 75 meter airstrip for stage 1 and a 450 meter extension of the runway during stage 2.

2.5.2 SOCIAL SERVICE FACILITIES/ UTILITIES/ AMENITIES

Housing and Settlements

- Situationer

Latest housing data from the National Statistics Office (NSO) indicate that there were about 23,721 housing units in the City. A great majority of these (96%) are of the single house (detached) type. In terms of the tenure status, most houses occupy lots with the consent of the lot owner and without paying any rent. About a fourth of the number of lots were owned/ being amortized by the house owners.

- Development Needs

The following table presents the City's projected new housing requirements assuming a constant average HH size of four & 5/10 (4.5):

TABLE 2.13: PROJECTED NEW HOUSING REQUIREMENTS

Year	2014	2018	2023	2028	2033	2038	2043
Total Population	134,991	140,194	146,981	154,097	161,557	169,378	177,578
Projected HH	26,998	28,039	29,396	30,819	32,311	33,876	35,516
Projected Housing Requirements	3,277	4,318	5,675	7,098	8,590	10,155	11,795

Health and Sanitation

- Situationer

- Health facilities

The Health Sector of the City is overseen by two (2) health facilities, which are owned and operated by the City Government. These are the City Health Office (CHO) and the San Carlos City Hospital (SCCH). These are supported by several privately-owned health care facilities most notable of which is the 50-bed secondary grade San Carlos Doctor's Hospital located in Barangay I.

The SCCH is categorized as a primary to secondary hospital with a fifty (50) bed capacity. It is the only government hospital in the City and is entirely locally funded. It serves patients not only from San Carlos City but also from neighboring towns and cities like Calatrava, Toboso and Escalante in the north as well as Vallehermoso, Guihulngan and Canlaon from the south.

- Access to safe drinking water and sanitary toilet facilities

Most (93%) households have access to improved or safe water supply. About 39% of these are served by Level III (piped to water taps in houses) water. Most of these are located in City Proper. Households served by Level II (piped water in communal taps) represent about 46% of the total.

About 80% of households have sanitary toilets. Those who satisfactorily dispose their solid waste represent 84% of the total while 80% have access to complete basic sanitation facilities.

- Burial grounds

Cemeteries in the City are located in Barangay Rizal and Barangay 4. The City Cemetery has nearly 3,300 niches following the provision of additional blocks in recent years.

- Solid waste facilities

All barangays have already established their own Materials Recovery Facilities (MRFs). The City has also established an Eco-Center where an integrated waste management system is installed. The Eco-Center is a one stop shop disposal and recycling option for San Carlos City residents and businesses. The facility includes state-of-the-art 6,600 sq.m. Sanitary Landfill for municipal solid waste, Centralized Material Recovery Facility, Office and Motorpool, Perimeter Fence, Composting Area and Waste Water Treatment Facility.

- Wastewater facilities

The existing wastewater management system consists mainly of individually installed septic vaults whose outfall is the storm drainage system. Only the Poblacion has a piped collection system. A monitoring canal may be found at the Old Public Market area which cleanses wastewater from the market area before draining to San Carlos Bay. In many other parts of the urban area, open canals and creeks serve as drainage/sewage outfall. No treatment process is introduced before the sewage is finally thrown out to the sea.

Initiatives have already been undertaken towards the development of an appropriate wastewater management system. In 2009, the City Government, together with the DENR and ECOGOV2, signed a Memorandum of Agreement to jointly develop and implement Waste Water Management (WWM) interventions for the City. The ECOGOV2 or the Philippine Environmental Governance Project Phase 2 aims to improve the basic conditions for the development of the water sector, to introduce sustainable wastewater management and to develop and distribute customized and low cost technological solutions in order to protect the City's ground water and marine resources along Tañon Strait and to fulfill the legal requirements of the RA 9275. To date, the City is already in a strategic position towards full blown implementation of wastewater management related projects in various pilot areas such as; city hospital, public market, city abattoir and city's major resettlement sites.

- Development Needs

- Health facilities

The following table presents the projected requirements for key health personnel and facilities according to the requirements of the Department of Health (DOH) as cited in HLURB's planning guidelines.

TABLE 2.14: PROJECTED HEALTH FACILITIES & PERSONNEL REQUIREMENTS

Facilities/ Personnel	Year						
	2014	2018	2023	2028	2033	2038	2043
Facilities							
City Health Center	3	3	3	3	3	3	4
Barangay Health Center	28	29	31	32	33	34	36
Personnel							
Doctors	5	6	6	6	6	7	7
Nurses	11	11	12	12	13	14	14
Midwives	11	11	12	12	13	14	14
Sanitary Inspectors	8	8	9	9	10	10	11

TABLE 2.15: PROJECTED BHS REQUIREMENTS PER BARANGAY

Barangay	Year						
	2014	2018	2023	2028	2033	2038	2043
I	2	2	2	2	3	3	3
II	1	1	2	2	2	2	2
III	1	1	1	1	1	1	1
IV	1	1	1	1	1	1	1
V	1	1	1	1	1	1	1
VI	1	1	1	1	2	2	2
Bagonbon	1	1	1	1	1	1	1
Buluangan	3	3	3	4	4	4	4
Codcod	3	3	3	3	3	3	4
Ermita	1	1	1	1	1	1	1
Guadalupe	2	2	2	3	3	3	3
Nataban	1	1	1	1	1	1	1
Palampas	2	2	2	2	2	2	3
Prosperidad	1	1	1	1	1	1	1
Punao	1	1	1	1	1	1	2
Quezon	2	3	3	3	3	3	3
Rizal	2	3	3	3	3	3	3
San Juan	1	1	1	1	1	1	1
Total	28	29	31	32	33	34	36

- Access to safe drinking water and sanitary toilet facilities

The development needs are the following:

- o Upgrade access of HH from Level I to Level II or Level III water sources
- o 100% of HH should have access to sanitary toilet facilities
- o 100% of HH should satisfactorily dispose their solid waste

- Burial grounds

Considering the distances between barangays, it is probably more sensible to allow every rural barangay to own and manage its own public cemetery. Another challenge for the City Government is to look into the feasibility of developing and managing a public memorial park with crematorium facility that will cater to all income classes.

The following table presents the estimated land area requirements for cemeteries. This assumes a conservative arrangement of single-level burials.

TABLE 2.16: ESTIMATED LAND AREA REQUIREMENTS FOR CEMETERIES

Year	2014	2018	2023	2028	2033	2038	2043
Population	134,991	140,194	146,981	154,097	161,557	169,378	177,578
Deaths	611	634.20	664.90	697.09	730.84	766.22	803.32

Plot Size (sq.m)	1,490.02	1,547.45	1,622.36	1,700.91	1,783.25	1,869.58	1,960.09
Circulation (sq.m)	447.01	464.24	486.71	510.27	534.98	560.87	588.03
Total Cemetery Area (sq.m)	1,937.03	2,011.69	2,109.07	2,211.18	2,318.23	2,430.46	2,548.12

- Solid waste management

The following outlines the development needs for solid waste management:

- o Sustained implementation of the City's solid waste management ordinance to prevent, among others, the dumping of waste into drainage canals
- o Expand coverage of the City's solid waste management system to meet increased requirements
- o Ensure appropriate solid waste management system on Refugio (Sipaway) Island

- Wastewater facilities

There is clearly a need to prepare a master plan for a sewerage system that serves both the north and south sectors of the urban area considering the volume of storm water that will be collected and the domestic waste water that will be generated. There is also a need to adopt an appropriate low cost facility on domestic waste water treatment before disposal to public drainage.

Education

- Situationer

The Schools Division of San Carlos City was established on July 1, 1960 by virtue of Republic Act No. 2643. It is one of the seventeen (17) Schools Divisions of Region VI- Western Visayas and is also one of the high-performing divisions in terms of basic education.

Addressing the educational needs of its populace, the Division is composed of five (5) elementary school districts with fifty-nine (59) elementary schools, five (5) national high schools and seventeen (17) private schools. The latter is composed of nine (9) pre-schools, two (2) elementary with pre-schools and six (6) secondary schools. There are also four (4) colleges, one (1) computer vocational school and one (1) technical-vocational (Tech-voc) with TESDA accreditation.

The Offices of the six (6) School Districts, including public secondary schools, are found in the City with one central school. One district is composed of seven (7) to sixteen (16) schools comprising different far-flung schools on the mountain and three (3) island schools.

As of end SY 2012, the teacher: student ratio at the elementary and secondary levels was calculated at 1:31 and 1: 59, respectively. The teacher: student ratio at the elementary level was within the 1:35 target of the DepEd cited in the HLURB planning guidelines. The ratio at the secondary level fell short of the targeted 1:40 ratio. The same trend may be observed at the secondary level with respect to classroom: student ratios. The ratio at the elementary level was 1:31, well within the 1:35 target of DepEd. The ratio at the secondary level was 1:71, which was short of the targeted 1:40 ratio.

- Development Needs

The following tables present the projected requirements for teachers and classrooms:

TABLE 2.17: PROJECTED TEACHER REQUIREMENTS

Level	Year				
	2013	2014	2023	2033	2043
Elementary					
Projected population	34,959	35,292	38,427	42,237	46,425
Participation rate	70%	70%	80%	85%	90%
Projected no. of enrollees	24,471	24,704	30,742	35,901	41,783
Total Requirement	699	706	878	1026	1194
No. of Teachers (SY 2012)	722				
Backlog	-23	-16	156	304	472
Secondary					
Projected population	15,039	15,182	16,530	18,170	19,971
Participation rate	70%	70%	80%	85%	90%
Projected no. of enrollees	10,527	10,627	13,224	15,445	17,974
Total Requirement	263	266	331	386	449
No. of Teachers (SY 2012)	140				
Backlog	123	126	191	246	309

TABLE 2.18: PROJECTED CLASSROOM REQUIREMENTS

Level	Year				
	2013	2014	2023	2033	2043
Elementary					
Total Requirement	699	706	878	1,026	1,194
No. of Rooms (SY 2012)	723				
Backlog	(24)	(17)	155	303	471
Secondary					
Total Requirement	263	266	331	386	449
No. of Rooms (SY 2012)	118				
Backlog	145	148	213	268	331

Protective Services

- Situationer

The City's Police and Fire Stations are both located in the City Proper. The City's Disaster Risk Reduction and Management Office (DRRMO), on the other hand, has its Disaster Operation Center at the City Hall compound also within the City Proper. The DRRMO has 36 Primary Evacuation Areas located in all barangays. These consist of multi-purpose courts, barangay halls, health centers, and day care centers. There are also 275 public elementary and high school classrooms spread all over the 18 barangays which may be used as Secondary Evacuation Areas. Five private schools were also identified as suitable for use as Tertiary Evacuation Areas.

- Development Needs

The following table presents the projected requirements for protective services personnel:

TABLE 2.19: PROJECTED REQUIREMENTS FOR PROTECTIVE SERVICE PERSONNEL

Year	2014	2018	2023	2028	2033	2038	2043
Total Population	134,991	140,194	146,981	154,097	161,557	169,378	177,578
Policemen	135	140	147	154	162	169	178
Firemen	67	70	73	77	81	85	89

Sports and Recreation

- Situationer

Major sports and recreation facilities include the Center Mall which has landscaped boulevards, open spaces, restaurants and areas for football, biking and tennis. The People’s Park, which was built from reclaimed land in the City Proper, is another major recreational center. Its facilities and amenities include a watchtower, freshwater swimming pool, children’s playground, kiosks, gazebos, promenades, picnic areas, pavilions, outdoor café and miniatures of the City’s main establishments.

Other recreational facilities in the City include, among others, multi-purpose covered courts, tennis court, boxing gyms and concrete pavements with basketball goals in the City.

- Development Needs

Using the recommended standards of HLURB, the projected requirements for city parks and playfield/ athletic fields are presented in the following table:

TABLE 2.20: PROJECTED REQUIREMENTS FOR SPORTS & RECREATION FACILITIES

Year	2014	2018	2023	2028	2033	2038	2043
Total Population	134,991	140,194	146,981	154,097	161,557	169,378	177,578
City park (has)	6.74955	7.0097	7.34905	7.70485	8.07785	8.4689	8.8789
Playfield/ Athletic Field (has)	67.4955	70.097	73.4905	77.0485	80.7785	84.689	88.789

Social Welfare Services

- Situationer

The Social Welfare of the citizens of San Carlos City is being managed by the City Social Welfare and Development Office (CSWDO). The main objective of the CSWDO is to provide a comprehensive program of social services designed to enhance the social and economic development of individuals, groups and families particularly the most disadvantaged, the economically needy, the socially needy and the handicapped, to obtain a more meaningful, productive and satisfying way of life and ultimately enable them to become self-reliant and participate in national development.

The City's Social Welfare facilities include Day Care Centers in all barangays, a Women's Center, and a Senior Citizens Center, among others.

- Development Needs

It is essential that the delivery of appropriate social welfare services is sustained in light of expanding requirements brought about by population growth and economic development.

2.5.3 UTILITIES

Irrigation System

- Situationer

The irrigation system of the City is handled by the Local Government through a cooperative. It covers the area of Brgy Quezon, Codcod, Prosperidad, Nataban and Bagonbon which are all within the local watershed.

- Development Needs

The proper maintenance of irrigation facilities should be ensured in order to further enhance crop productivity.

Flood Control and Drainage

- Situationer

The City's flood control system comprises a network of water channels that drain into Tañon Strait. The City Government, in coordination with the Regional Office of the Department of Public Works and Highways (DPWH), undertakes riverbank stabilization projects at key segments to prevent the overflow of river channels onto settlement and agricultural areas.

The drainage system within built-up areas, particularly the City Proper, is a combination of concrete box culverts and open canals. These also drain into Tañon Strait.

- Development Needs

Following are the development needs for Flood Control and Drainage:

- To protect and/ or relocate coastal settlements located in areas highly susceptible to flooding
- To address flooding issues in the City Proper particularly during prolonged and heavy rains
- To relocate settlements or remove structures that have encroached into river easements and mangrove forests

Domestic Water Supply

- Situationer

Sources of water supply in the City include Level I (direct from source such as springs, creeks, rain, etc.), II (communal faucet), and III (individual household taps). The type of source enjoyed by most urban households is level III which is characterized by piped water directly supplied inside the household. Rural barangays, including those on Refugio (Sipaway) Island, on the other hand are supplied by level II systems wherein water is piped from the source to a common stand pipe serving a cluster of households without individual connections. To date, the most far-flung barangays in the north and in the south depend on level I.

The distinct advantage of level III over level II and level I is that the availability of flowing water inside the household is highly correlated to improved sanitation due to the ease of washing, bathing, and toilet flushing, assuming that the quality of water supplied through the three systems is the same. If the quality is not the same, level III and level II have the advantage over level I in that they allow treatment before water is distributed to the final consumers.

Domestic water supply is provided by the San Carlos Waterworks Department (SCWD) operated by the City Government. The water system of San Carlos City provides Level I, II and III services to its consumers. The SCWD's services vary from one place to another depending on the availability of the water source.

- Development Needs

The challenge for San Carlos is how to upgrade all level I to level II and some level II systems to level III for purely domestic use purposes. It is noted that where the water is partly used for agricultural purposes, level I is the preferred mode of delivery system because of the absence of chemical treatment in the latter system which might prove inimical to the growth of some plants.

Energy

- Situationer

The City's need for electricity is served by the Victorias-Rural Electric Service Cooperative (VRESCO) for 24-hours daily with its geothermal power source in Palinpinon in Negros Oriental. All barangays are presently provided with electric power. Only remote and sparsely populated sitios, especially in the upland rural areas, remain unserved. Households in those areas are too few and far between to justify extension of distribution lines to them.

San Carlos is a leader in renewable energy production. It hosts the first Bio-Ethanol Plant in the country located in the 400 hectare PEZA-approved Economic Zone. Developments are also underway for a PHP3.5 billion 18-megawatt, bagasse-fired power plant adjacent to the said Bio-Ethanol Plant.

- Development Needs

Following are the development needs for Energy:

- To ensure that proper environmental and social protection measures are in place during the development and operation of power generating facilities

- To provide adequate and reliable power supply throughout the City, including the upland and island barangays

Telecommunications

- Situationer

Telecommunications firms such as PLDT, SACATEL, Smart, Globe and SUN have been operating in the City such that subscribers enjoy easy and quick communication services. Cellular phones are so popular among the communication gadgets available and these are used by almost all members of the middle and upper class groups of individuals in the City. Smart, Globe and SUN cell sites can be found in the City that provides better services to its subscribers. The telephone density in the City is estimated at 20 lines per 380 people. Further, Smart and Globe brings Broadband Services (SmartBro and GlobeBroadband) for faster and easier internet connection.

- Development Needs

While telecommunications are largely within the domain of the private sector, the City Government should ensure that services are adequately provided. The coordination of plans of the government and various telecommunications service providers should be ensured.

2.6 THE ECONOMIC STRUCTURE

2.6.1 REVENUE SOURCES

Majority of the City's source of income is from the General Fund comprising taxes, permits and regulatory fees, among others. The next largest income earners are the City Hospital and the City Waterworks Department. The following table presents a breakdown of the City's sources of income in 2012:

TABLE 2.21: SOURCES OF INCOME (2012)

SOURCE	AMOUNT
General Fund	₱ 457,500,000.00
City Hospital	38,000,000.00
Market & Slaughterhouse	11,995,000.00
Public Transport Terminal Division	5,500,000.00
City Waterworks Department	31,990,000.00
Special Education Fund	18,275,000.00
TOTAL	₱ 573,834,449.00

Source: City Budget and Management Office

2.6.2 MAJOR ECONOMIC ACTIVITIES

Primary Sector

The major economic activities in the City are crop production and fishing with all barangays having extensive crop production areas while seven barangays, outside of the six in Poblacion, having coastal areas. The major crop is sugarcane the volume production of which is almost nine times that

of rice, the second ranking key crop. Fishery activities are limited to inland and municipal fishing. The major fishery products in the City are prawns, shrimps, bangus and tuna.

Tertiary Sector

The Tertiary or Services Sector is the second most significant economic activity in the City. Based on employment profile, this sector is being led by Public Administration (employment in government agencies), Transportation (pedicab and motorcab driving), and Retail Trade (employment in retail stores).

Secondary Sector

An upcoming coming source of economic activity in the Secondary or Manufacturing Sector is Electricity. This is due to the full operations of the Bio-Ethanol Plant which is perhaps already the largest single source of employment in the City, generating 350 jobs in 2012. Activity in the sector is expected to further accelerate with the start-up development of the 18-megawatt, PHP3.5 billion bagasse-fired power plant in Barangay Punao.

Informal Sector

While there is no quantitative information on the size of the informal sector, it can arguably be considered as constituting a significant portion of the local economy. Informal economic activities may be found at the City Proper in the form of hawking, vending and similar activities as well as in the other barangays where informal rural-based transactions remain common. Some are also found in the transportation sector such as those providing vehicles-for-hire.

2.6.3 LABOR FORCE

The estimated labor force of the City in 2012 is about 74, 304. This is expected to reach more than 100,000 in year 2043. The following table presents an estimate of the City’s labor force.

TABLE 2.22: PROJECTED LABOR FORCE

Year	2013	2014	2023	2033	2043
Labor Force	76,403	77,128	83,978	92,309	101,462

2.7 EXISTING LAND USE AND LAND USE TRENDS

2.7.1 GENERAL LAND USE PATTERN

On the overall, the general land use pattern of the City is characterized by the predominance of vast agricultural lands at the valley of the MKNP and NNNP, along the coastline and on Refugio (Sipaway) Island. Forest lands are the next prevalent and are distinctly evident on the upland portions of the MKNP at the east and on NNNP at the center of the City. The main built-up area is at the City Proper, along the coast, which hosts a variety of mixed urban uses. From here, settlements may be observed following major roads and at the barangay centers.

2.7.2 SETTLEMENT PATTERN

The City Proper

The Poblacion (consisting of Barangays I, II, III, IV, V and VI) is the City's major urban settlement area. Having an aggregate land area of about 641.26 hectares, Poblacion represents about 1.4% of the City's total land area. Settlement expansion follows a westward direction towards Barangays Rizal and Palampas, and in a northeast and southwest direction following the National Road. These areas are collectively called as the City Proper.

Commercial and institutional uses are most prevalent in the old center, comprising Barangays III, IV and VI. Residential expansion is evident in Barangay I, II and Rizal. Barangay Palampas is also experiencing urban growth anchored on the City Hall and the city's envisaged central business district.

Rural Settlement Areas

Minor settlements are scattered in the lowland barangays outside of Poblacion. These are observably clustered and are wedged between the National Road and the coastline. Notable clusters are found in the barangay centers of Buluangan and Guadalupe as well as in the eastern coastal portion of Punao.

Settlement clusters may also be found along the coastline of Refugio (Sipaway) Island, such as in barangay San Juan at the east and barangay Ermita at the west.

Upland settlement areas are, on the other hand, sporadically located along farm to market roads. Settlement concentrations may be found in the northern barangay centers of Bagonbon, Punao and Palampas. Significant clusters are also found in the western barangays of Prosperidad and Nataban as well as in the southwestern barangays of Codcod and Quezon. Small settlements may also be found within the Protection Forest areas. These are located in areas served by old logging roads.

Per the IEMF, settlements within the BRWFR reportedly "occupy the A & D lands that are titled to private individuals." It was further reported in the IEMF that about 42.21 hectares of land, with about 18 farmer beneficiaries, within the watershed have reportedly been included in the Comprehensive Agrarian Reform Program (CARP).

2.8 PLANNING CONTEXT

2.8.1 NATIONAL CONTEXT

All local government units are enjoined by the National Land Use Committee (NLUC) to carry on physical planning goals in their respective physical development plans as follows:

1. *Access to social services and economic opportunities.* This goal is achieved if appropriate social services are provided in adequate amounts at reasonable proximity to the intended users and if jobs and livelihood opportunities exist to enable the people to earn sufficient income to pay for the goods and services they need, and where opportunities are open to all regardless of race, ethnicity, gender, or political and religious affiliation.

2. *Sustainable utilization of resources.* Resources are sustainably utilized if food security is assured for all, when production processes are cost effective, when there is waste minimization and all forms of wasteful practices carefully avoided, and when every household, firm or establishment practices recovery, reuse and recycling of waste.
3. *Maintenance of environmental integrity.* This goal is attained through:
 - a) The rational distribution of the population
 - b) Access by the population to social services and economic opportunities
 - c) Sustainable utilization of resources all combined and orchestrated well.

Rational population distribution. This goal of physical planning can be pursued at different levels. At the national level, this goal is being implemented through the long-running policy of “national dispersion through regional concentration”. This entails the development of the cities of Cebu and Davao as counter-magnets to Metro Manila and the re-population of sparsely populated regions through agricultural resettlement programs. At the regional and provincial levels, rational population distribution is achieved by maintaining a functional hierarchy of urban centers, ranging from major to minor and satellite centers. Through these urban centers government services and economic opportunities are being delivered more efficiently to the regional population.

Rational distribution of the population can be achieved at the city or municipal level, through a properly conceived and designed urban form where there is a clear balance between the built and unbuilt environments, minimized impervious surfaces in the built-up areas, maximized use of renewable energy, when public and private places are litter free, and high level of biodiversity in flora and fauna is maintained.

2.8.2 REGIONAL CONTEXT

The Western Visayas region is composed of the provinces of Aklan, Antique, Capiz, Guimaras, Iloilo, and Negros Occidental as well as the highly urbanized cities of Iloilo and Bacolod. The region has a land area of approximately 2,022,311 hectares and had a population of about 6,843,643² as of the year 2007 census of the NSO. The total population of the 16 cities in the region during the same year was about 3.79 million which was about 55% of total regional population. San Carlos City may be considered as a medium-sized city in the region, ranking eighth in terms of population size. The following table presents the population, shares and relative rank of the various cities in Region VI.

TABLE 2.23: POPULATION SHARE OF CITIES IN REGION VI

City	Number	Share	Rank
Roxas City	147,737	5.87%	6
Passi City	74,045	2.94%	14
Iloilo City	418,710	16.63%	2
Bago City	159,933	6.35%	4
Cadiz City	150,750	5.99%	5
Escalante City	92,035	3.66%	12
Himamaylan City	102,014	4.05%	10
Kabankalan City	166,970	6.63%	3
La Carlota City	63,584	2.53%	16

² This was the region’s population used when the Western Visayas Regional Development Plan was prepared. Population increased to 7,102,438 per the year 2010 census of the National Statistics Office.

Sagay City	140,511	5.58%	7
San Carlos City	129,809	5.16%	8
Silay City	120,365	4.78%	9
Sipalay City	67,211	2.67%	15
Talisay City	96,444	3.83%	11
Victorias City	88,149	3.50%	13
Bacolod City	499,497	19.83%	1
Totals	2,517,764	100.00%	

Source: Western Visayas RDP, 2011 - 2016

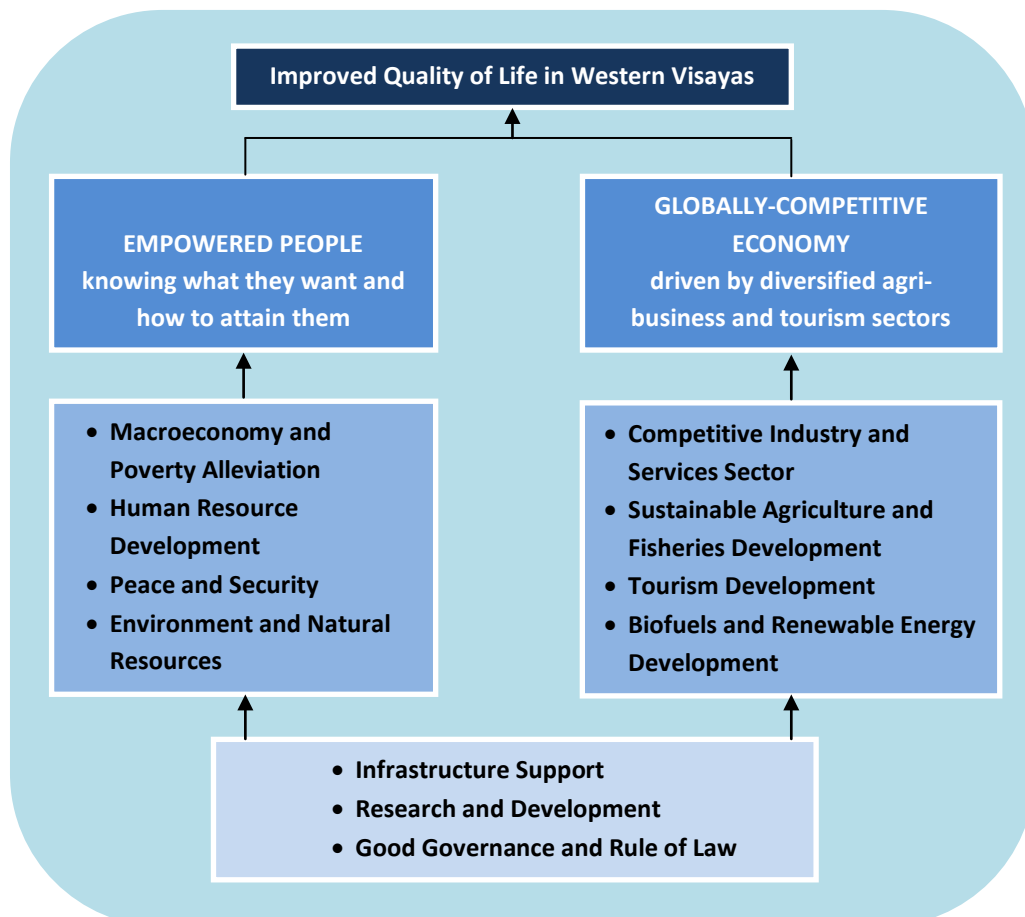
Regional Development Framework

The Regional Development Council – VI approved the Western Visayas Regional Development Plan for 2011 – 2016 in February 4, 2011. The vision for the region is as follows:

*“Western Visayas is home to an empowered and happy people who are protective of their rights, proud of their culture, and committed stewards of their heritage and natural resources.
It is a region thriving on innovation and excellence in a globally-competitive and diversified agri-based, tourism-led economy.”*

The above vision was anchored on development plan framework that seeks an “improved quality of life in Western Visayas” that will be driven by infrastructure support, research and development and good governance and rule of law. The Regional Development Plan Framework is presented in **Figure 2.1**.

FIGURE 2.1: REGIONAL DEVELOPMENT PLAN FRAMEWORK



Development Goals and Targets

The development goals and targets were made consistent with the Millennium Development Goals and the Philippine Development Plan. These are the following:

1. Sustain the region's annual Gross Regional Domestic Product (GRDP) at 6.2 percent.
2. Increase agricultural productivity for rice to 4.2 mt/ ha and for corn to four mt/ ha and sustain self-sufficiency rate from the current 123 percent for rice and 75 percent for yellow corn.
3. Reduce poverty incidence from 23.8 percent in 2006 to 18 percent by 2016.
4. Increase public-private partnership collaborations.
5. Reduce maternal mortality rate from 162 per 100,000 live births in 2006 to 50 per 100,000 live births in 2016.
6. Reduce infant mortality rate from 39 per 1,000 live births in 2008 to 18 per 1,000 live births in 2016.
7. Reduce under-five mortality rate from 43 per 1,000 live births 2008 to 25 per 1,000 live births in 2016.
8. Increase new investments, including foreign direct investments, by 35 percent.
9. Increase tourist arrivals to 2.81 million and tourist receipts to P51 billion by 2016.

Strategies and Policies

Some of the strategies and policies that have direct bearing to San Carlos' CLUP include the following, among others:

- Competitive Industry and Services Sector: "Local government units will prepare the stage for attracting more foreign direct investments in their areas to speed up the establishment of more industries and ensuring more employment opportunities for their constituents." The priority investment areas in Negros Occidental include Business Process Outsourcing, Tourism, Mining and Agri-business.
- Competitive and Sustainable Agriculture and Fisheries: The RDP called for the development of "farm to market road projects that strategically link production and consumption areas ... to provide greater access of farmers, growers, fisherfolk and agri-based traders." It likewise mentioned the rehabilitation and restoration of irrigation systems and the development of potentially irrigable areas
- Tourism Development: The RDP called for the strict implementation of built heritage laws and establishment of "tourism enterprise zones to attract foreign investors and tourists to visit places rich in history and culture." Attention was likewise given to the improvement of access to tourism destinations.
- Infrastructure Support: The RDP prioritized the development of the San Carlos City Community Airport, along with that of Kabankalan City. It also called for the exploration of "other sources of local indigenous and renewable energy" and the promotion of "investments in renewable energy..." The construction of new road networks, along with the improvement of major seaports and airports, to interconnect production and market areas were also mentioned as priority activities.

- Human Resource Development: The RDP called for the construction, rehabilitation and repair of classrooms to improve access to basic education. Government-owned and operated health facilities will, in turn, “be upgraded to expand capacity and provide quality service.”
- Bio-fuels and Renewable Energy Development: The RDP also prioritized supporting “biomass power generation (where) marginal lands for feedstock and fuel wood production will be optimized providing additional income to local communicates and fueling the rural economy.”
- Environment and Natural Resources: The RDP aims to “increase forest cover, prepare and implement Forest Land Use Plans, and establish forest plantations,” among others. Priority activities include the development and rehabilitation of forest areas “through the establishment of forest plantations under different modalities” and the preparation of Integrated Coastal Management Plans.

2.8.3 PROVINCIAL CONTEXT

Negros Occidental is composed of one highly urbanized city, 12 component cities and 19 municipalities. It has a total land area of about 792,607 hectares or 7,926.07 sq.km and a population of almost 2.9 million³ in the year 2007 census.

Similar to its regional context, San Carlos City may be considered as a medium-sized city at the provincial level. Data from the Negros Occidental Provincial Development and Physical Framework Plan (PDPFP) 2008 – 2013 showed that the City ranked fifth in terms of land area and seventh in terms of population among the 12 cities in Negros Occidental. It is considered a fast growing city along with the cities of Kabankalan, Sagay, Sibalay, Silay and the municipalities of Murcia and Binalbagan.

In terms of its position within the province’s hierarchy of settlements, the City was considered a Large Town (population ranging from 100,000 to 400,000). At this level, the City was ranked along with Kabankalan City, Bago City, etc. The Large Town category is the second tier in the hierarchy, the first being the Regional (Metropolitan) Center which is the level of Bacolod City. The following table presents information on the land area and population of the various LGUs within the Province at the time of PDPFP preparation.

**TABLE 2.24: LAND AREA OF CITIES AND MUNICIPALITIES
IN NEGROS OCCIDENTAL**

District/ City/ Municipality	Land Area (sq. km.)	Population (2007)
Bacolod City	156.10	499,497
First District		
Escalante City	125.00	92,035
Toboso	123.40	41,358
Calatrava	439.60	78,452
DSBenedicto	170.60	22,979
San Carlos City	384.00	129,809
Sub-Total	1242.60	364,633

³ This was the population size used at the time the Provincial Development and Physical Framework Plan was prepared. Negros Occidental’s population as of the latest 2010 census declined to 2,396,039.

Second District		
Cadiz City	516.50	150,750
Manapla	112.90	52,428
Sagay City	389.60	140,511
Sub-Total	1019.00	343,689
Third District		
Murcia	284.60	71,289
Talisay City	173.40	96,444
Silay City	214.80	120,365
EBMagalona	113.30	57,424
Victorias City	133.90	88,149
Sub-Total	920.00	433,671
Fourth District		
Bago City	402.10	159,933
La Carlota City	137.30	63,584
Pontevedra	112.50	46,768
Pulupandan	23.00	27,072
San Enrique	21.00	22,987
Valladolid	48.00	34,895
Sub-Total	743.90	355,239
Fifth District		
Hinigaran	160.80	80,528
Binalbagan	185.40	64,747
Himamaylan City	384.20	102,014
La Castellana	216.50	70,838
Moises Padilla	143.70	39,239
Isabela	177.40	58,819
Sub-Total	1268.00	416,185
Sixth District		
Kabankalan City	726.40	166,970
Cauayan	519.90	93,569
Sipalay City	432.70	67,211
Hinobaan	424.10	53,894
Ilog	281.70	53,460
Candoni	191.70	21,748
Sub-Total	2,576.50	456,852
Total - Negros Occidental	7,926.10	2,869,766

Source: PDPFP, 2008 - 2013

The development vision for the province guided PDPFP 2008 – 2013:

“An empowered and healthy Negrense in a globally-competitive, ecologically balanced and peaceful Negros Occidental serving as the organic food capital of Asia under a responsive and accountable governance.”

The PDPFP provided an overall framework to guide the planning and development of the province's component LGUs. In terms of the envisaged Settlements Framework, the highest level was accorded to Metro Bacolod, the city being the "highly urbanized capital, communication, trade and service center of Negros Occidental" as well as being "the Information Technology and Business Process Outsourcing Hub of Western Visayas." LGUs at the Third District were classified as Metro Third, anchored primarily on growth spurred by the new airport of international standards in Silay City. The PDPFP suggested that Metro Bacolod may eventually coalesce with Metro Third thus forming a relatively large urban agglomeration.

San Carlos City belonged to the third level of settlements, called Other Urban Centers, along with Victorias City and Sagay City. The PDPFP recognized these three as the three fastest urbanizing cities in the northern part of the province. Developments were to be anchored on the distinct endowments of each city, such as Victorias with its famous Victorias Milling Company, Sagay with its Marine Reserve, New City Hall, Museo Pambata and Export Processing Zone and San Carlos with its pristine Refugio (Sipaway) Island, Clean Sea Port and the first Ethanol Plant in the province. The Provincial Framework Plan is presented in **Figure 2.2**.

The PDPFP's Protection Framework called for the strict enforcement of Zoning Ordinances in protection lands particularly in buffer zones and embankments. It also called for the formation and strengthening of "various alliance for coastal resources to address other concerns of the LGUs to include waste management, environmental issues, social and economic concerns." Since the City has significant Protection Lands such as MKNP and NNNP, careful attention has to be given to ensure that its land use policies properly consider environmentally sensitive locations.

The Production Framework, in turn, envisioned Negros Island to be the organic food capital of Asia. It aims that 10% of the province's agricultural farms should already have been converted to organic agriculture at the end of the planning period. It also gave directions to address the exploration of alternative sources of energy such as water, biomass, wind, solar, ethanol, etc. This is an aspect that could be taken advantage of by San Carlos in terms of Provincial-level support, the City being a leader in renewable energy development.

In terms of the PDPFP's Transport/Infrastructure Development Framework, some of the aspects that have direct implications to the City's CLUP include the prioritization of the development of the San Carlos Community Airport. The need to improve the City's transportation and other infrastructure system was deemed a priority in order to encourage more investments and tourism traffic in the area.

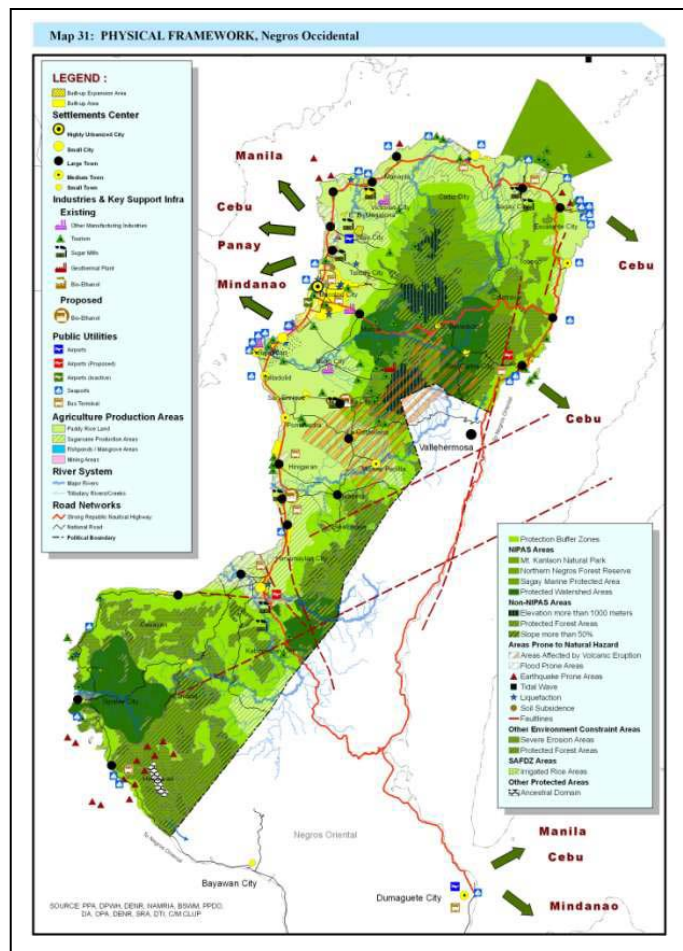


FIGURE 2.2: PROVINCIAL PHYSICAL FRAMEWORK PLAN

2.9 CLUP 2000 – 2020

2.9.1 SPATIAL STRATEGY OF THE PREDECESSOR CLUP

- The Structure Plan – Land Use Development Concept

The spatial strategy adopted in the previous Comprehensive Land Use Plan is quoted from Chapter 5 of the document and reproduced below.

“The Development Concept optimizes the opportunity for urban growth in the coastal lowland corridor and the development of growth centers in the upland rural area. The bulk of the development in the lowland corridor will be in the form of three villages/districts, separated by green buffers worked around the rivers, which naturally dissect the area in a west-east direction. At the same time, the Concept ensures the retention of a mainly open landscape in the center/south of the lowland corridor. The intention here is to provide an appropriate context for visitor/tourism development in the Buluangan area and to avoid a totally urban concept for the coastal lowland. It also provides long-term flexibility in land management.

As a response to the City government’s objective of decentralization it is envisaged that the proposed urban growth will take on a second long-term phase through the development and expansion of the Rural Growth Center in Prosperidad. Once the Trans-Link Highway to Bacolod is complete, this community will form a nodal point in the upland plateau area. There is already evidence of its growth potential through unregulated development alongside the Trans-Link Highway.

Elsewhere, the Concept supports the City government’s objectives of rural growth through a strong emphasis on a program of agricultural and forestry development and the development of the Rural Growth Center concept.

Recreation and Tourism development is also proposed through a triangular development strategy based on three interlinked areas, namely, Hacienda Fortuna (Brgy. Buluangan), the Rizal-Palampas upland area and on Refugio (Sipaway) Island.

Critical factors in developing the Concept have been locations for the proposed cargo Port and the proposed Airport. In the short-term, improved facilities at the existing port location will be used for both passenger and cargo traffic. The area will be served by the proposed new port access road, which avoids the main built-up areas of the Poblacion. In the longer term, as a response to the development of the Special Economic Zone (SEZ), it is envisaged there will be a need for a separate cargo port, which is recommended to take advantage of a good deep-water location at San Antonio. The airport is recommended to be located mainly on abandoned fishponds north of the Poblacion. The location of the proposed power plant is yet to be designated.

The increased traffic loads in the lowland corridor will be accommodated initially on a dedicated primary transport corridor utilizing the existing planned road west of City Hall. In the longer term it is expected that a north-south by-pass will be required outside of the built-up area and a preliminary

alignment is provided for this on plan. It is absolutely essential that both roads are of limited access nature.

Finally, the Concept acknowledges the need for the conservation of attractive landscapes and environmentally sensitive areas. Mt. Kanlaon National Park and Northern Negros Forest Reserve (NNFR) will not be affected by the development proposals. Sensitive coastal environments will be protected.”

- The San Carlos Development Corridor

The key development area in the previous CLUP is the San Carlos Development Corridor. The previous CLUP’s concept for the San Carlos Development Corridor is also presented below:

“The San Carlos Corridor Development Plan illustrates several key land use principles and urban design principles, for subsequent interpretation in the preparation of detailed plans and development of the urban area.

- Urban development in the Corridor will be in the form of three *villages*, each with a distinct character and separated by a parkland environment, built around the rivers which traverse the area in a west-east direction.
- The planning of the residential areas should accommodate an appropriate mix of *housing types*, including sufficient provision for the low-income market. The City government has already allocated some 20 hectares in Palampas for this purpose and in anticipation of immediate needs.
- The residential areas will be sub-divided into a series of *neighborhoods*, which will be developed to a scale and population that will encourage community spirit. Each neighborhood may be appropriate for barangay status.
- There will be a *hierarchy* in the provision of commercial, community and open space provision. The Core Village will contain the Central Business District (CBD) and the associated commercial and community facilities serving the entire City. The other two villages will contain District Centers, ... structured with an appropriate range of commercial and community facilities. Each of the neighborhoods will also have centers, containing local shopping and community facility provision.
- *Open space* provision will also be provided on the basis of a legible hierarchy, stepping down from provision to serve the whole City to neighborhood and street level provision. Open space should ideally be located around the CBD, the district and neighborhood centers. Provision will be supplemented by the City government’s waterfront park and the river-parks which will serve as landscape buffers between the villages and will be integral to the development of the floodways.
- There should be clear *road hierarchy* and maximization of the potential for *vehicular and pedestrian segregation*. Pedestrian priority should be an integral part of the planning of the residential areas, and particularly in the district and neighborhood centers.
- Strategic roads, including the proposed western by-pass route, the interim by-pass and the port access road, should have restricted access in the interests of reducing traffic congestion and vehicular/pedestrian conflict.”

- Rural Growth Centers

Three Rural Growth Centers (RGCs) were also identified in CLUP 2000 – 2020. The envisioned developments for these are also quoted below:

“The Plan proposes the prioritization of three of the Rural Growth Centers (RGC) proposed in the City’s Comprehensive Land Use Plan for priority development and expansion in association with other projects. These are *Prosperidad*, *Quezon-Codcod* and *Bagonbon*. It is envisaged, that in addition to their existing function as centers for community facilities and local housing, the RGCs will serve as centers for the proposed Agricultural Priority Areas and will therefore house the Agri-business Centers.

The future of Prosperidad is seen in the light of both agricultural and subsequently a wider range of uses. Its long-term future is as a secondary growth point to the main urban core in the lowland corridor. At Quezon, there is an opportunity to combine the RGC concept with the implementation of the proposed Upland Agriculture Project. At Bagonbon, there is the opportunity to make a similar linkage to the proposed Forestry Project.

Further farm-to-market road improvement will be an important support initiative to the proposed RGC initiatives. In this respect the current initiatives of the City government to upgrade the Prosperidad-Quezon and the Quezon-Kanlaon routes to a standard for inclusion in the national highway network is endorsed. The potential of the RGCs will be enhanced by sealed surface road connections to the coastal lowland and the Trans-Link highway. This will improve the movement of agricultural produce and open the potential for regular public transport services to the Poblacion”.

2.9.2 LAND USE CLASSIFICATION

The overall land use development concept was translated into a “comprehensive and integrated land use structure” which entailed the classification of proposed land uses into broad Policy Areas. As necessary, some Policy Areas were further divided into Secondary Policy Areas. This classification structure became the bases of land use regulations provided in the Zoning Ordinance that implemented CLUP 2000 – 2020. The land use classification in CLUP 2000 – 2020 is presented in the table below:

TABLE 2.25: LAND USE CLASSIFICATION IN CLUP 2000 - 2020

LAND USE CLASSIFICATION	AREA (HA)		SHARE %
I. FOREST PROTECTION AREA		9,400.00	20.82
a. Mt. Kanlaon National Park	2,165.00		
b. North Negros Forest Reservation	7,235.00		
II. FOREST AND MULTIPLE AGRICULTURE PRODUCTION AREA		10,668.00	23.63
a. Mt. Kanlaon National Park	4,965.00		
b. North Negros Forest Reservation	5,703.00		
III. AGRICULTURE PRODUCTION AREA		15,898.34	35.21
a. Rice	5,000.00		
b. Corn	3,000.00		
c. Cassava	2,000.00		
d. Various Crops	5,898.34		

IV. STRATEGIC AGRICULTURE AND FISHERIES DEVELOPMENT ZONE		2,535.16	5.62
a. Barangay Codcod	400.62		
b. Barangay Quezon	1,713.55		
c. Barangay Prosperidad	342.19		
d. Barangay Bagonbon	78.80		
V. RURAL SETTLEMENT AREA		505.89	1.12
a. Barangay Codcod	49.25		
b. Barangay Quezon	153.96		
c. Barangay Nataban	94.12		
d. Barangay Prosperidad	176.83		
e. Barangay Bagonbon	31.73		
VI. SPECIAL DEVELOPMENT AREA		5,631.22	12.47
a. Growth Management Zone 1	362.63		
b. Growth Management Zone 2	237.36		
c. Growth Management Zone 3	3,315.37		
d. Urban Management Zone	687.36		
e. Special Economic Zone	1,028.5		
VII. COASTAL MANAGEMENT AREA		419.89	0.93
VIII. SOCIALISED HOUSING AREA		91.50	0.20
TOTAL		45,150.00	100.00

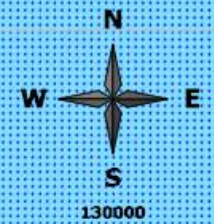
Source: San Carlos City Comprehensive Land Use Plan, 2000 - 2020

Each Policy Area and Secondary Area were briefly characterized and provided with respective Policy Directions and broad descriptions of Preferred Uses. These facilitated the translation of the CLUP into zoning regulations. **Figure 2.3** presents the Proposed General Land Use Plan 2000 – 2020 while the succeeding **Figures 2.4 to 2.9** show the breakdown of each Policy Area

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E



FIG. 2.3 PROPOSED GENERAL LAND USE PLAN City of San Carlos Province of Negros Occidental

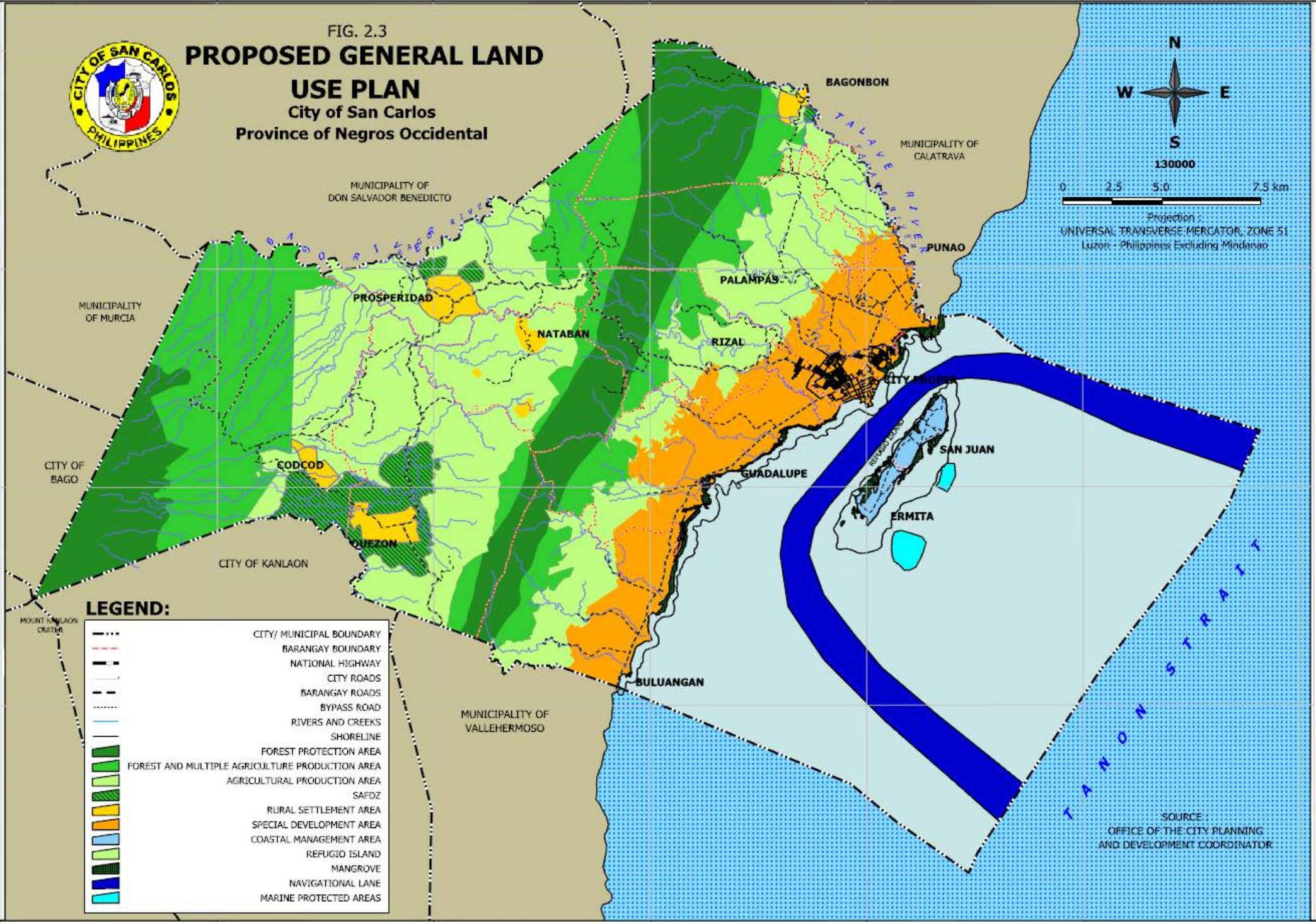


130000
0 2.5 5.0 7.5 km

Projection:
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines Excluding Mindanao

10°36' N
10°31' N
10°27' N
10°23' N

10°36' N
10°31' N
10°27' N
10°23' N



LEGEND:

- CITY/ MUNICIPAL BOUNDARY
- BARANGAY BOUNDARY
- NATIONAL HIGHWAY
- CITY ROADS
- BARANGAY ROADS
- BYPASS ROAD
- RIVERS AND CREEKS
- SHORELINE
- FOREST PROTECTION AREA
- FOREST AND MULTIPLE AGRICULTURE PRODUCTION AREA
- AGRICULTURAL PRODUCTION AREA
- SAFDZ
- RURAL SETTLEMENT AREA
- SPECIAL DEVELOPMENT AREA
- COASTAL MANAGEMENT AREA
- REFUGIO ISLAND
- MANGROVE
- NAVIGATIONAL LANE
- MARINE PROTECTED AREAS

SOURCE:
OFFICE OF THE CITY PLANNING
AND DEVELOPMENT COORDINATOR

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

10°36' N

10°31' N

10°27' N

10°23' N

10°36' N

10°31' N

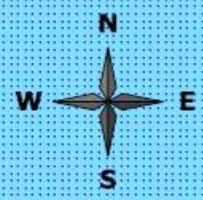
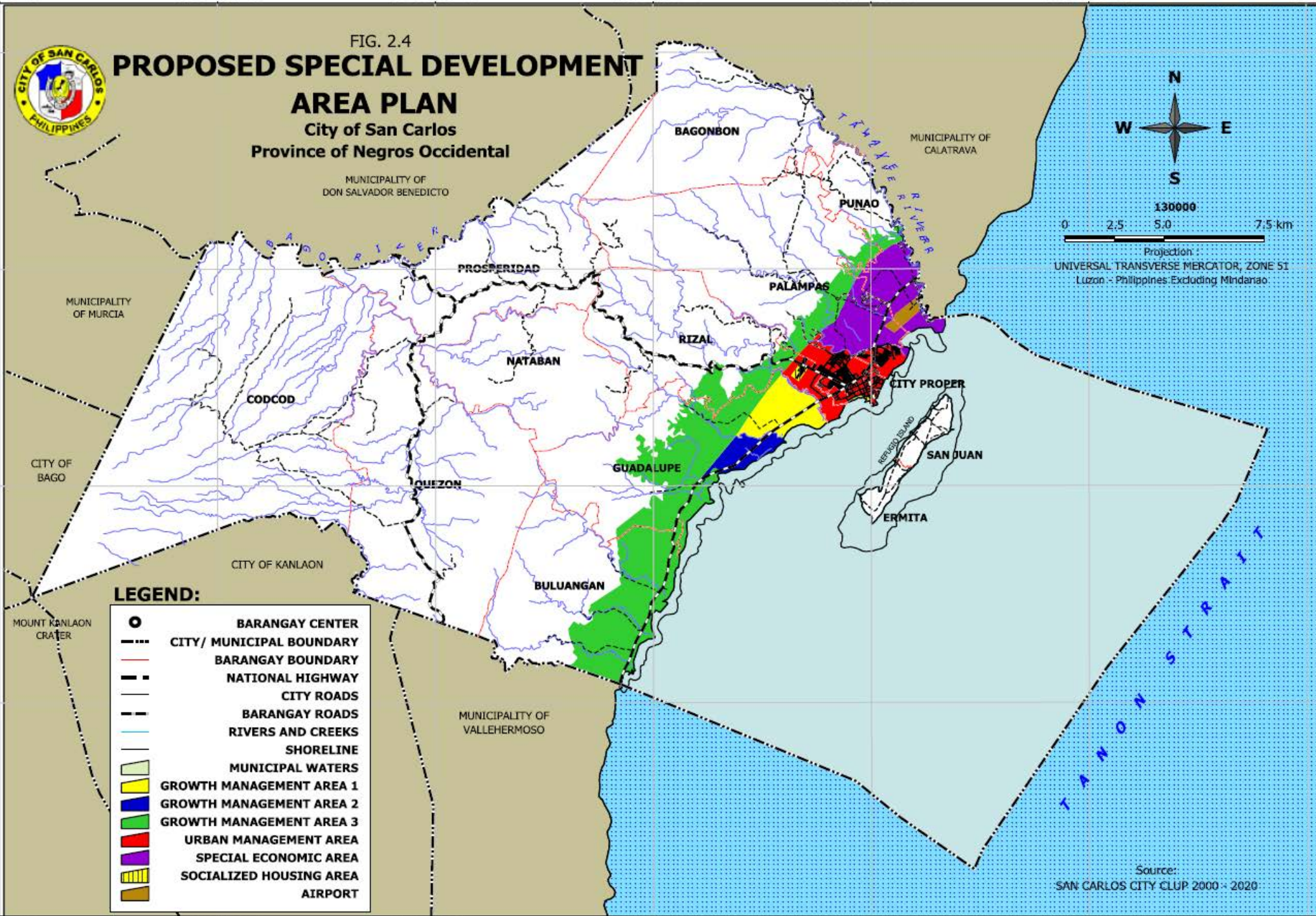
10°27' N

10°23' N



FIG. 2.4 PROPOSED SPECIAL DEVELOPMENT AREA PLAN City of San Carlos Province of Negros Occidental

MUNICIPALITY OF
DON SALVADOR BENEDICTO



130000
0 2.5 5.0 7.5 km

Projection:
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines Excluding Mindanao

LEGEND:

- BARANGAY CENTER
- CITY/ MUNICIPAL BOUNDARY
- BARANGAY BOUNDARY
- NATIONAL HIGHWAY
- CITY ROADS
- BARANGAY ROADS
- RIVERS AND CREEKS
- SHORELINE
- MUNICIPAL WATERS
- GROWTH MANAGEMENT AREA 1
- GROWTH MANAGEMENT AREA 2
- GROWTH MANAGEMENT AREA 3
- URBAN MANAGEMENT AREA
- SPECIAL ECONOMIC AREA
- SOCIALIZED HOUSING AREA
- AIRPORT

Source:
SAN CARLOS CITY CLUP 2000 - 2020

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

123°16' E

123°19' E

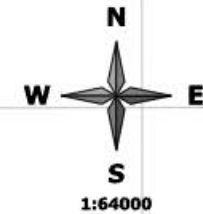
123°22' E

123°25' E

123°28' E



FIG. 2.5
PROPOSED SPATIAL DEVELOPMENT AREA
MASTER DEVELOPMENT PLAN
 City of San Carlos
 Province of Negros Occidental



0 1 km 2 km 4 km

PROJECTION :
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines Excluding Mindanao

10°31' N

10°28' N

10°25' N

10°31' N

10°28' N

10°25' N

SOURCE :
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATOR

LEGEND :

	NATIONAL HIGHWAY
	MAJOR ROADS
	RAILROAD
	CREEKS
	CONTOUR LINE
	RIVER
	RESIDENTIAL
	RESORTS
	INSTITUTIONAL AREA
	COMMERCIAL AREA
	INDUSTRIAL AREA
	MIXED USE
	CULTURAL VILLAGE
	EMPLOYEE HOUSING
	DISTRICT CENTER
	PARKS AND RECREATION/ OPEN SPACE
	RIVER BUFFER
	POND
	GOLF COURSE
	AIRPORT
	SEAPORT/ FISH PORT
	CONTAINER PORT
	GROWTH MANAGEMENT AREA
	WASTE WATER TREATMENT PLANT
	POWER PLANT
	LAND

123°16' E

123°19' E

123°22' E

123°25' E

123°28' E

Refugio Island

123°24' E

123°24' E

123°25' E

123°25' E

123°26' E

123°26' E

FIG. 2.6

PROPOSED URBAN MANAGEMENT AREA PLAN

City of San Carlos
Province of Negros Occidental



10°30' N

10°30' N

10°30' N

10°30' N

10°29' N

10°29' N

10°29' N

10°29' N

To Bacolod

To Calatrava

To Dumaguete

SCC PORT

LEGEND :

-  NATIONAL HIGHWAY
-  BARANGAY BOUNDARY
-  SHORELINE
-  RIVERS
-  PARKS AND RECREATION
-  RESIDENTIAL ZONE
-  SOCIALIZED HOUSING
-  COMMERCIAL ZONE D1
-  COMMERCIAL ZONE D2
-  INDUSTRIAL ZONE
-  INSTITUTIONAL
-  CEMETERIES
-  SCC PORT

0 1.25 2.5 <5 km

UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon Philippines Excluding Mindanao

Source :

OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATORS OFFICE

123°24' E

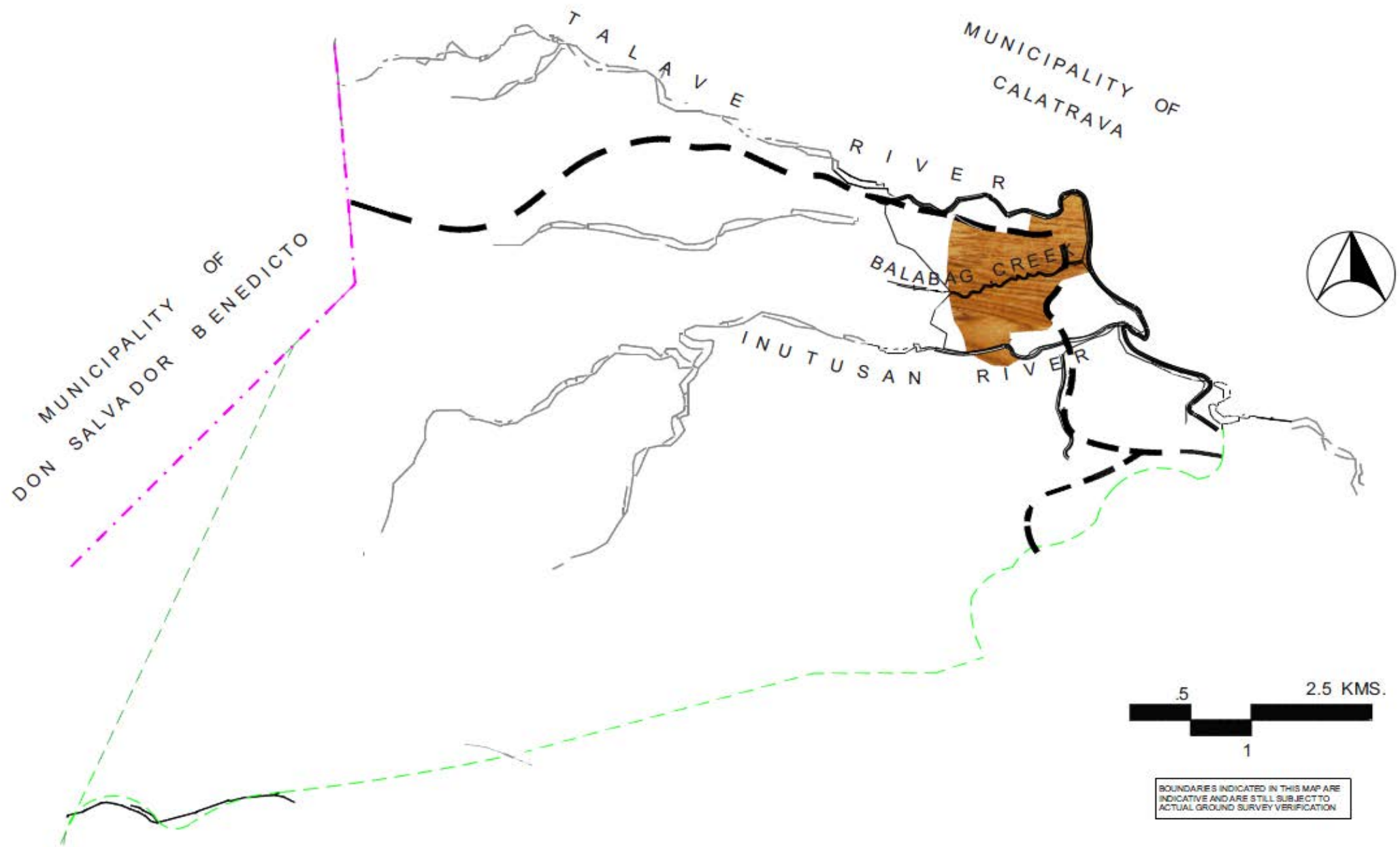
123°24' E

123°25' E

123°25' E

123°26' E

123°26' E



BOUNDARIES INDICATED IN THIS MAP ARE INDICATIVE AND ARE STILL SUBJECT TO ACTUAL GROUND SURVEY VERIFICATION

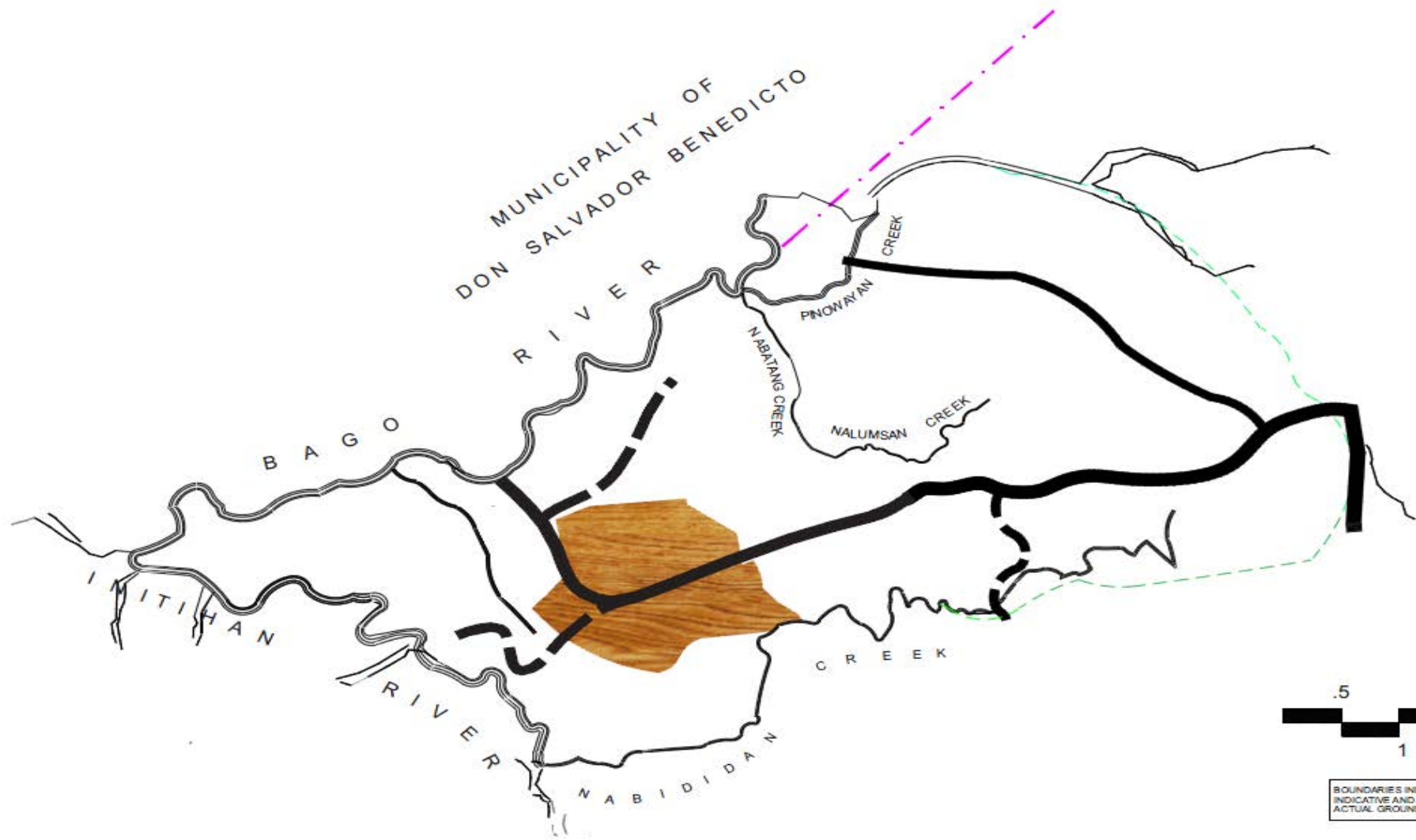
LEGEND:

-  RURAL SETTLEMENT ZONE
-  BARANGAY BOUNDARY
-  MUNICIPAL BOUNDARY
-  FEEDER ROAD
-  RIVERS, CREEKS

PROJECT TITLE: **SAN CARLOS CITY MASTER DEVELOPMENT PLAN**

DRAWING TITLE: **RURAL SETTLEMENT ZONE
BARANGAY BAGONBON**

Figure 4C



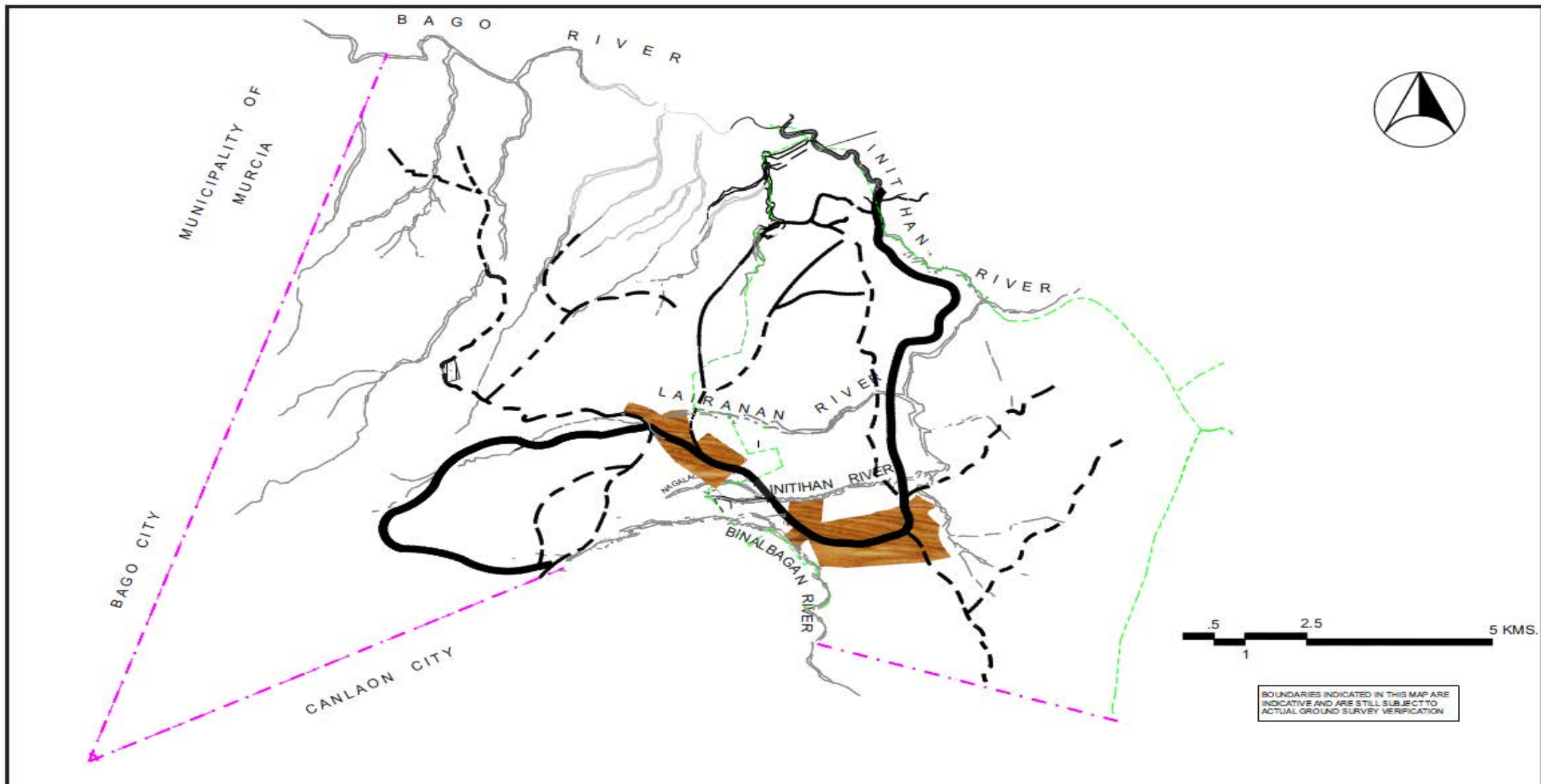
BOUNDARIES INDICATED IN THIS MAP ARE INDICATIVE AND ARE STILL SUBJECT TO ACTUAL GROUND SURVEY VERIFICATION

LEGEND:

- | | | | | | |
|--|-----------------------|---|---------------|---|----------------|
|  | RURAL SETTLEMENT ZONE |  | NATIONAL ROAD |  | RIVERS, CREEKS |
|  | BARANGAY BOUNDARY |  | BARANGAY ROAD | | |
|  | MUNICIPAL BOUNDARY |  | FEEDER ROAD | | |

PROJECT TITLE: **SAN CARLOS CITY MASTER DEVELOPMENT PLAN**
 DRAWING TITLE: **RURAL SETTLEMENT ZONE BARANGAY PROSPERIDAD**

Section 72



LEGEND:

- | | | | | | |
|--|-----------------------|---|---------------|---|----------------|
|  | RURAL SETTLEMENT ZONE |  | NATIONAL ROAD |  | RIVERS, CREEKS |
|  | BARANGAY BOUNDARY |  | BARANGAY ROAD | | |
|  | MUNICIPAL BOUNDARY |  | FEEDER ROAD | | |

PROJECT TITLE: **SAN CARLOS CITY MASTER DEVELOPMENT PLAN**

DRAWING TITLE: **RURAL SETTLEMENT ZONE
BGYS. QUEZON-CODCOD**

Section 72

CHAPTER THREE:

SPATIAL ISSUES & CHALLENGES

3. SPATIAL ISSUES & CHALLENGES

3.1 INTRODUCTION

This chapter consolidates the internal and external findings that affect the land use strategies in the updated CLUP. It takes stock of what is happening in San Carlos City, focusing on land and other natural resources. More specifically, this chapter highlights the physical constraints and opportunities for future development as inputs to the formulation of the CLUP.

Discussions in this chapter revolve around four sub-themes: 1) Constraints and opportunities posed by natural resource and geophysical endowments of San Carlos City, 2) Issues related to utilization and conservation of such resources, 3) estimation of the supply and demand for urban land, and 4) identification of the City's comparative/ competitive advantages.

Descriptions of status are grouped into four Policy Areas:

- 1) Settlements
- 2) Infrastructure
- 3) Production
- 3) Protection

Settlement include the Social Sector and Institutional Sector; Production include the Economic Sector; Protection the Environment Sector; and Infrastructure, the Engineering sector. Barangays were grouped into contiguous clusters and land configuration as follows:

- Cluster 1 – Island Barangays (Ermita & San Juan)
- Cluster 2 – Coastal North (Poblacion – Barangays. 1-6 & Punao)
- Cluster 3 – Coastal South (Barangays. Buluangan, Guadalupe & Rizal)
- Cluster 4 – Upland (Barangays. Codcod, Quezon, Prosperidad, Nataban, Bagonbon & Palampas)

3.2 WEAKNESSES, PRIORITY ISSUES & CONCERNS

The identified weaknesses, priority issues and concerns of the City that should be addressed in the updated CLUP are presented in Tables 3.1 to 3.4 and briefly discussed below:

3.2.1 CLUSTER 1 – ISLAND BARANGAYS

Refugio (Sipaway) Island has the two island barangays. The main concern for the island barangays in the CLUP is for improved transportation systems and environmental protection. Given the projection for climate change, the island is vulnerable to storms, high winds and flooding.

Settlements

- Provide dependable and reliable means of transportation for residents for them to have access to main land during strong winds and wave
- Training for the proper use and maintenance of these facilities
- Enforcement of policy on non-construction on the easement area and close monitoring by the assigned offices

TABLE 3.1: ISSUES AND CONCERNS: SETTLEMENTS

Cluster	Issue Observed	Explanation	Implication	Policy Options
Cluster 1 (Island Barangays – Ermita & San Juan)	<ul style="list-style-type: none"> • Prone to strong wind and big waves 	<ul style="list-style-type: none"> • Geographical location which is open to Tañon Strait 	<ul style="list-style-type: none"> • Loss of human lives and destruction of properties 	<ul style="list-style-type: none"> • Settlements should be away from risk areas • Risk reduction initiatives • Construction of break waters • Mangrove re-forestation
	<ul style="list-style-type: none"> • Lack of sanitary facilities 	<ul style="list-style-type: none"> • Most of the household don't have access to sanitary toilets 	<ul style="list-style-type: none"> • Household-members are prone to enteric diseases 	<ul style="list-style-type: none"> • Implement water-less urinals • Training for the proper use & maintenance of these facilities • Address by training the attitudinal & social aspects of this kind of toilet
	<ul style="list-style-type: none"> • Lack of potable water 	<ul style="list-style-type: none"> • Potable water is not readily available in the island 	<ul style="list-style-type: none"> • Households are prone to water-borne diseases • High-cost of drinking water since households buy from the mainland 	<ul style="list-style-type: none"> • Proceed with the expansion of the piped water supply from the mainland • Planning regulation • Proper Infrastructure Planning
	<ul style="list-style-type: none"> • Transportation during bad weather is affected 	<ul style="list-style-type: none"> • Geographical location of the island barangays; • Main source of transportation is through motorized commercial pump boats that usually transport passengers during daytime unless hired by "Pakyaw" System 	<ul style="list-style-type: none"> • Basic commodities from the mainland cannot be transported due to bad weather • Inaccessible to immediate medical response during emergencies • Medical intervention cannot be delivered on time 	<ul style="list-style-type: none"> • Immediate preparation of basic commodities • Promote home gardens & food banking • Stand-by water vehicle (water ambulance) fitted with communication & hospital for emergency cases
	<ul style="list-style-type: none"> • Sipaway Island has no police outpost 	<ul style="list-style-type: none"> • No detailed police personnel 	<ul style="list-style-type: none"> • Slow response time during emergencies 	<ul style="list-style-type: none"> • Intensify police visibility in the island
Cluster 2 Coastal North (Poblacion – Brgys. 1-6 & Punao)	<ul style="list-style-type: none"> • Portion of settlements in the coastal areas of Sitio Talave and Maloloy-on of Brgy. Punao & Purok Molave of Brgy. One & Brgy. 6) are highly 	<ul style="list-style-type: none"> • Private landowners relocate their workers/laborers to lands that are deemed unproductive, e.g., flood-prone areas 	<ul style="list-style-type: none"> • Damage to residents & infrastructure during floods • Residents are predisposed to hazard situation due to floods 	<ul style="list-style-type: none"> • Formulation of legislation to prohibit private landowners to relocate their workers/laborers to environmentally-constrained areas

	susceptibility to flooding	<ul style="list-style-type: none"> • Sugar farm workers are resettle in this area for other sources of food, e.g. fishing activities • Residents here are mostly informal settlers 		<ul style="list-style-type: none"> • Relocate settlements to an area where they will still have other sources of income
	<ul style="list-style-type: none"> • There is low to moderate susceptibility to flooding in the City Proper; most areas of the city gets flooded when there are long, heavy rains • Some communities (ie. Behind Margarita, Greenville, Maloloy-on & other human settlement areas) have no proper sewage drains & connection to city drains 	<ul style="list-style-type: none"> • Poor/old drainage system • Solid wastes are dumped into the drainage canals 	<ul style="list-style-type: none"> • Transportation is hampered during floods • Adverse effects on the economic activity in the city 	<ul style="list-style-type: none"> • IEC among residents on proper solid waste disposal • Rehabilitation and upgrading of drainage canals and channels
Cluster 3 Coastal South (Brgys. Buluangan, Guadalupe & Rizal)	<ul style="list-style-type: none"> • Settlements in the coastal areas of Hda Galicia, San Jose, San Antonio, Guadalupe Proper, Mabuni, Panoolan, Sto. Nino, Trozo and Fortuna are of high susceptibility to flooding 	<ul style="list-style-type: none"> • There is an advantage of ready supply of food (fishing) • Private landowners relocate their workers/laborers to lands that deem unproductive, e.g., flood-prone areas • Retirees of sugar farms resettle in this area for other sources of food, e.g. fishing activities 	<ul style="list-style-type: none"> • Water pollution; contamination of the coastal system • Increase in water-related diseases among residents 	<ul style="list-style-type: none"> • Strict implementation of Land Use Plan • Relocation of settlements
Cluster 4 Upland (Brgys. Codcod, Quezon, Prosperidad, Nataban, Bagonbon & Palampas)	<ul style="list-style-type: none"> • Portion of Brgy. Codcod is vulnerable to ashfall if Mt. Kanlaon erupts 	<ul style="list-style-type: none"> • Geographical location • Presence of livelihood opportunities in the area 	<ul style="list-style-type: none"> • Damage to lives & property • Incidence of Respiratory diseases 	<ul style="list-style-type: none"> • Set-up Community Emergency Evacuation Plan & Community Early Warning System • IEC on Preparedness & Mitigation • Organize & capacitate Barangay Disaster Risk Reduction Committee (BDRRC) • Regular allocation of budget
	<ul style="list-style-type: none"> • Lack of domestic & potable water 			<ul style="list-style-type: none"> • Adopt rain catchment & farm water retention pond facilities

				<ul style="list-style-type: none"> • Seek out natural water sources • Look for study & adopt low cost filtration systems from locally made clay materials or other technologies
	<ul style="list-style-type: none"> • A portion of settlements in Brgy. Codcod, Brgy. Bagonbon Proper is on an area with high susceptibility to landslides 	<ul style="list-style-type: none"> • Acquired/inherited properties are located in this environmentally-constrained area • Residents refuse to leave insisting that they have not been affected by any major landslides or soil erosions 	<ul style="list-style-type: none"> • Adverse effect as people continue to be at risk • Loss of life and property • Uncontrolled development which results to loss of productive land resources and other uses 	<ul style="list-style-type: none"> • Since the Barangay Center is located here, it will be difficult to clear the area of structures and settlements. Hence, engineering interventions should be implemented where possible
	<ul style="list-style-type: none"> • No proper sewerage system of La Vista in Brgy. Prosperidad that has a possibility of water seepage contaminating the river 			

TABLE 3.2: ISSUES AND CONCERNS: INFRASTRUCTURE

Cluster	Issue Observed	Explanation	Implication	Policy Options
Cluster 1 (Island Barangays – Ermita & San Juan)	• Fully Concreted Road Network	• Major priority program of LGU	• Convenience and accessibility	• Periodic maintenance policies
	• Sufficient Mobility Access	• Easy access of people due to frequent availability of both land & sea transport	• Demand driven	• Regulate Land Traffic Management
	• Existence of Secondary School	• Addresses the educational needs of the student-population in the area	• Higher learning opportunities	• Strict compliance to DepEd standards
	• Marine Sanctuary Preserved	• Pursuant to existing ordinance	• Biodiversity preservation	• Amendment of the ordinance whenever deemed necessary
	• Adequate Availability of Piers	• Properly and strategically located to organize transportation services	• Optimum utilization	• Periodic maintenance policies
	• Limited Power Supply	• Depends solely on generator set with a daily six-hour operation (from 6pm to 12 midnight) and explore alternative energy and tapping energy from mainland to Refugio Island	• Low probability of investment for more infrastructure establishment	• MOA with existing power provider/outsourcing
	• Absence of Water Facilities	• No aquifers available; community resorts to rainwater harvesting	• Costly considering the proximity from the city proper	• Prioritize surface water utilization
	• Absence of Covered Court, Fishport & Market	• No implementation due to budgetary constraints	• Disorganized and not well in-placed recreation or service facilities	• Inclusion in the Annual Appropriations Ordinance
	• Less Communication Facilities	• There are identified dead spots in the area caused by poor and no signal range from any network	• Underdeveloped, poor communication system lines	• Extend communication services
	• Sporadic infra establishments	• Solely lands are non-agricultural	• Disarrayed system of establishments	• Zoning Ordinance Revision
Cluster 2 Coastal North (Poblacion – Brgys. 1-6 & Punao)	• Insufficient Drainage Facilities	Current Capacity could not cope with surface run-off due to extreme rainfall	Flooding within the poblacion & other inundated areas within the city proper	Adopt a comprehensive drainage master plan

Cluster 3 Coastal South (Brgys. Buluangan, Guadalupe & Rizal)	<ul style="list-style-type: none"> • No public roads 	<ul style="list-style-type: none"> • Concreted but ROW is not acquired 		<ul style="list-style-type: none"> • Transfer of ROW to the government whatever mode of transfer
Cluster 4 Upland (Brgys. Codcod, Quezon, Prosperidad, Nataban, Bagonbon & Palampas)	<ul style="list-style-type: none"> • National road is not concreted 			<ul style="list-style-type: none"> • Make representation with DPWH; Utilization of CDF of Congressman

TABLE 3.3: ISSUES AND CONCERNS: PRODUCTION

CLUSTER	ISSUE OBSERVED	EXPLANATION	IMPLICATION	POLICY OPTIONS
Cluster 1 (Island Barangays – Ermita & San Juan)	<ol style="list-style-type: none"> 1. Land None 2. Coastal Area <ol style="list-style-type: none"> a) Fishing without mayor’s permit b) Use of banned fishing gears/illegal fishing activities 	<p>Use of land for agricultural purposes is limited to growing of coconut, mango and few livestock</p> <ul style="list-style-type: none"> • Financial constraints • Negligence on the part of the fisherman <p>Lack of information/awareness on sustainable fishing methods</p>	<ul style="list-style-type: none"> - None or minimal - Loss of revenue on the part of the LGU - Proliferation of fishermen who do not secure permits resulting to the lack of regulation by the LGU - Destruction of coastal resources resulting to low fish catch 	<ul style="list-style-type: none"> - Strict adherence to land use policies - Strict implementation of fishery ordinance - Strict implementation of fishery law and city ordinance
Cluster 2 Coastal North (Poblacion – Brgys. 1-6 & Punao)	<ol style="list-style-type: none"> 1. Land Use of residential area for commercial purposes 2. Backyard livestock raising in urban areas 3. Pollution caused by industrial waste from Ethanol Plant (abuse of natural resources) 	<ul style="list-style-type: none"> - Financial Interest - Used as a means to gain additional income for the family - Mishandling of excess industrial wastes 	<ul style="list-style-type: none"> - Public disturbance - Public disturbance - Hazardous to health - Predispose to respiratory diseases to the inhabitants of the barangay - Pollution of coastal area 	<ul style="list-style-type: none"> - Strict implementation of rules and regulations - Formulation of policy prohibiting rearing of piggery and poultry in barangays 1-6 - Strict Regulation - Proper monitoring as to compliance with the proper disposal of industrial wastes - Regulation on the part of DENR & LGU and strict implementation of pollution laws - Possible use of Environmental Guarantee Fund to mitigate the pollution effects
Cluster 3 Coastal South (Brgys. Buluangan, Guadalupe & Rizal)	<ol style="list-style-type: none"> 1. Land Decreasing yield of sugarcane 2. Conversion of sugarcane land to fish ponds and other purposes 3. Slash and burn farming within 	<ul style="list-style-type: none"> - Misuse of farm inputs such as but not limited to fertilizers and chemicals - Inappropriate farming practices like burning of sugarcane trash, irrigation techniques, etc. 	<ul style="list-style-type: none"> - Continued deterioration of agricultural lands resulting to lower yield per unit area - Decreasing land area for agricultural use - Degradation of forest land and private 	<ul style="list-style-type: none"> - Continuous Research and Development initiatives for sustainable agriculture - Regulated conversion of prime agricultural lands through policy intervention

	forestal area and private lands with more than 18% slope	<ul style="list-style-type: none"> - Due to higher land valuation and higher monetary returns - Due to financial considerations and lack of employment opportunities 	<ul style="list-style-type: none"> - lands due to severe erosion - Siltation of coastal area within the opening of the rivers 	<ul style="list-style-type: none"> - Full implementation of forestry laws and strong advocacy on the importance of the environment
Cluster 4 Upland (Brgys. Codcod, Quezon, Prosperidad, Nataban, Bagonbon & Palampas)	<p>1. Land</p> <ul style="list-style-type: none"> - Decreasing yield of agricultural crops - Misuse of agricultural inputs like fertilizers and chemicals 	<ul style="list-style-type: none"> - Non sustainable agricultural practices that depletes the land of its productive capacity - Emergence of new pests that are resistant to the present chemicals used in farming especially on vegetable production 	<ul style="list-style-type: none"> - Low income of farmers - Low productivity of agricultural land - Health hazards for consuming public 	<ul style="list-style-type: none"> - Promotion of sustainable agricultural practices like organic agriculture - Responsible and judicious use of new chemicals and fertilizers - Strict implementation of policies in the use of farm inputs like chemicals - Alternative crops like fruit trees, fuel wood - Efficient use of irrigation water (eg. Drip irrigation) - - Mechanization of sugarcane harvesting

TABLE 3.4: ISSUES AND CONCERNS: PROTECTION

Observation	Explanation	Implication	Policy Options
<ul style="list-style-type: none"> • There are already detected heavy key toxic chemical pollutants in Cluster 2 such as : <ul style="list-style-type: none"> - Ammonium (mgN/L) 43.65 - Nitrite (mgN/L) 0.1225 - Sulfate (mg SO4/L) 28.48 - Oil & Grease (mg/L) 10.325 - Cadmium (mg Cd/L) less than 0.0025 - Zinc (mg Zn/L) 0.06 - Lead (mg Pb/L) less than 0.0750 - Copper (mg Cu/L) 0.027 - Nickel (mg Ni/L) less than 0.015 - Mercury (mg Hg/L) 0.275 - Potassium (mg K/L) 298.25 - Arsenic (mg /L) < 0.01 - Boron (mg/L) 0.30 - Cyanide (mg/L) < 0.002 	<ul style="list-style-type: none"> • Due to the point key pollution source such the SCC abattoir, SCC hospital, SCC ESWM Center leachate 	<ul style="list-style-type: none"> • If not properly addressed it will contaminate another water bodies that might endanger water quality 	<ul style="list-style-type: none"> • Legislate policy for waste water management master plan • Expedite the creation of local ENRO • Formulate with the IRR of the local Environment Code (<i>to include easement</i>) • <i>Implement locational criteria for abattoir which is 50 meters away from market</i>
<ul style="list-style-type: none"> • Encroachment of settlements in river easements, road verge, coastal buffer zones, protected areas such MKNP, NNNP, mangrove forests – Cluster 1,2,3,4 (based on map overlay) 	<ul style="list-style-type: none"> • The source of living of the existing settlements are located in the protected areas 	<ul style="list-style-type: none"> • Adverse effects to the forest and biodiversity • Settlements around MKNP and NNNP are exposed to hazards such as volcanic eruption & landslide, respectively 	<ul style="list-style-type: none"> • Integrate Forest Land Use Plan (FLUP) to CLUP • Provide a resettlement site with comprehensive livelihood programs outside the protected areas • Prepare a Community Emergency Evacuation Plan for settlements within the buffer zone of Mt. Kanlaon and landslide prone areas. • Take a proactive role by formulating park-zoning that enhances community participation with the concerned LGU’s • Promote the practice of co-management of the protected areas between the LGUs and the DENR.

<ul style="list-style-type: none"> • 47.72% coral cover and reefs are not in good condition – Cluster 1 (source: REA 2002-03) – <i>get updated data from Fisheries Section</i> • 2 out of 9 endemic avian species are endangered along NNNP – Cluster 2,3,4 	<ul style="list-style-type: none"> • As a result of the illegal fishing activities in the past and use of cyanide • Continuous hunting activities that exploits the flora and fauna of the NNNP 	<ul style="list-style-type: none"> • Marine biodiversity is at risk • Contributes to the effects of global warming • Potential extinction of these species 	<ul style="list-style-type: none"> • Intensify implementation of existing policies towards marine biodiversity protection • Rehabilitate coral reefs and continue initiatives against “crown of thorns”/salanay • Provide alternative livelihoods to fisher folks and coastal communities • Strengthen existing laws in the protection and preservation of the NNNP and its flora and fauna • Support existing captive-breeding through NFEFI
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Infrastructure

- Widening of narrow road sections, correction of gradients and observing regular maintenance policies while instituting traffic management
- Implement engineering interventions on water supply provision
- Enforcement of sanitation and environment codes
- Strict enforcement of City solid waste management ordinance
- Improve power generation using renewable resources and outsource through Independent Power Producers (IPPs).

Production

- Strict adherence to existing land use policies especially on activities that will contribute to the degradation of the coastal waters.
- Strict implementation of ordinance on utilization and conservation of mangroves, and full implementation of fishery ordinance.

Protection

- Amendment of the existing Zoning Ordinance through provision of relocation sites of affected HH
- integration of disaster risk reduction measures in the affected HH
- promote advocacy and active involvement among community members in the protection of coastlines
- strictly enforce local ordinance and other related fisheries law on marine protection
- improve the incentive program on Operation Anti-Salanay
- further research on the beneficial uses of salanay as organic fertilizer
- propagate the proliferation of nautilus or “tambuli”

3.2.2 CLUSTER 2 – COASTAL NORTH

The updated CLUP recognizes the advantages of continuing the Poblacion’s development for the economy. More attention should, however, be paid to the environmental concerns particularly taking into consideration the mandate for disaster risk reduction. Also, a continuing problem in the City’s urban area that needs to be addressed is increasing number of informal settlers.

Flooding is also a concern in the Poblacion. Its occurrence is usually attributed to overflowing of rivers due to excessive runoff coupled with bad channel characteristics such as steep slopes and poor drainage capacity of the river system. According to CLUP 2000 - 2020, floods bring more damage to urban barangays especially during the high tide when floodwaters cannot flow directly to the sea. The barangays most affected are Barangays I, II and III that are found in the lowlands. Correspondingly, areas found along the riverbanks of the City’s major rivers have also been classified as flood-prone.

Settlements

- Relocation of informal settlers to better housing facilities provided by the LGU
- Strict monitoring and implementation of zoning ordinance at the Barangay level

Infrastructure

- Establishment of Water Quality Management Area Action Plans (WQMAs)
- Strict enforcement of the City's solid waste management ordinance

Production

- Relocation to safe higher grounds beyond the national highway to the hillsides.
- Adherence to existing ordinance, building codes, etc.
- Non-conversion of agricultural lands.
- Strict implementation of existing forestry laws.

Protection

- Review/Draft policy concerning maintenance of linear park at the business district
- Strict enforcement of the City's SWM Ordinance
- Introduce bio-engineering measures

3.2.3 CLUSTER 3 – COASTAL SOUTH

The coastal south barangays include areas very near to the urban development as well as more remote barangays. They include coastal as well as upland areas. These areas are populated by fisher folk. These are low areas and have possibility of flooding. Residents may have to be moved to higher ground. One of the major problems of the population is lack of access to potable water as many of the sources are suffering from salt water intrusion. Policies will support the protection of the environment against further damage by strict implementation of fishery protection as well as protection against deforestation in the higher areas.

Settlements

- Provision of alternative livelihood through conduct of training and seminar.

Infrastructure

- Establishment of WQMAs
- Strict enforcement of the City's solid waste management ordinance

Production

- Possible relocation to higher grounds.
- Non-conversion of agricultural lands.
- Strict implementation of fishery ordinance.
- Strict implementation of forestry laws.

Protection

- Review/Draft policy concerning maintenance of linear park along business district
- Strict enforcement of the City's SWM Ordinance
- Introduce bio-engineering measures

3.2.4 CLUSTER 4 – UPLAND

Much of the emphasis for the upland area is for environmental protection. Part of the area includes the national park land where a major concern is the informal settlers. Ideally land outside the protected area could be provided and a source of livelihood established. The upland area is also considered for tourism development.

Settlements

- Revisit existing zoning ordinance and update and then strict implementation
- Revisit existing zoning ordinance to ensure that settlements do not encroach into the upland particularly the national park and ensure that strict implementation of the said ordinance.

Infrastructure

- Establishment of WQMAs
- Strict enforcement of the City's solid waste management ordinance

Production

- Non-conversion of agricultural lands.
- Strict implementation of forestry laws.

Protection

- Integrate Forest Land Use Plan (FLUP) to the CLUP
- Provide a resettlement site with comprehensive livelihood programs outside the protected areas
- Prepare a Community Emergency Evacuation Plan for settlements within the buffer zone of Mt. Kanlaon and landslide prone areas
- Develop the full potential/protection of natural tourism attractions
- Take a proactive role by formulating park-zoning that enhances community participation with the concerned LGUs
- Promote the practice of co-management of the protected areas between the LGUs and the DENR.

3.3 URBAN LAND SUPPLY AND DEMAND

3.3.1 SUPPLY

Lands that are suitable of urban development are those that are relatively free from severe environmental hazards and constraints. These areas extend to about 19,114.12 has. and may be found on the eastern footslopes between Tañon Strait and NNNP and at the valley between NNNP and MKNP. Most of these areas are used for agriculture and their locations are presented in **Figure 3.1** Development Opportunity Map.

Portions of these suitable areas have already been classified for urban use, such as the San Carlos Development Corridor and Rural Settlement Areas, in CLUP 2000 – 2020 and in previous LGU legislations. It is estimated that the net area suitable for urban development is about 11,347.58 has. These are constitute the available supply of lands for urban development and are shown in **Figure 3.2** Available Areas for Urban Expansion.

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

10°36' N
10°31' N
10°27' N
10°23' N

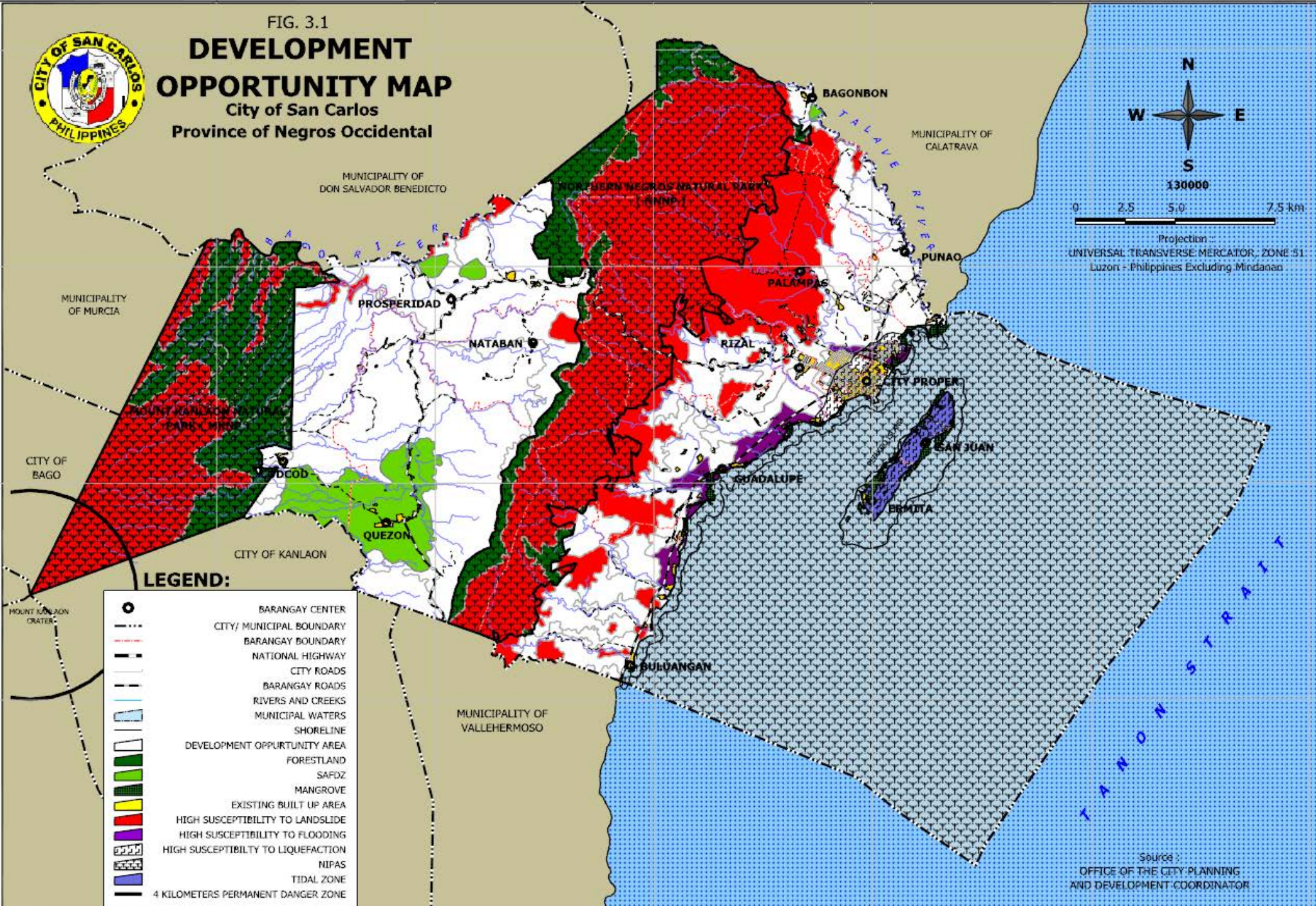


FIG. 3.1
DEVELOPMENT OPPORTUNITY MAP
City of San Carlos
Province of Negros Occidental



130000
0 2.5 5.0 7.5 km

Projection :
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines Excluding Mindanao

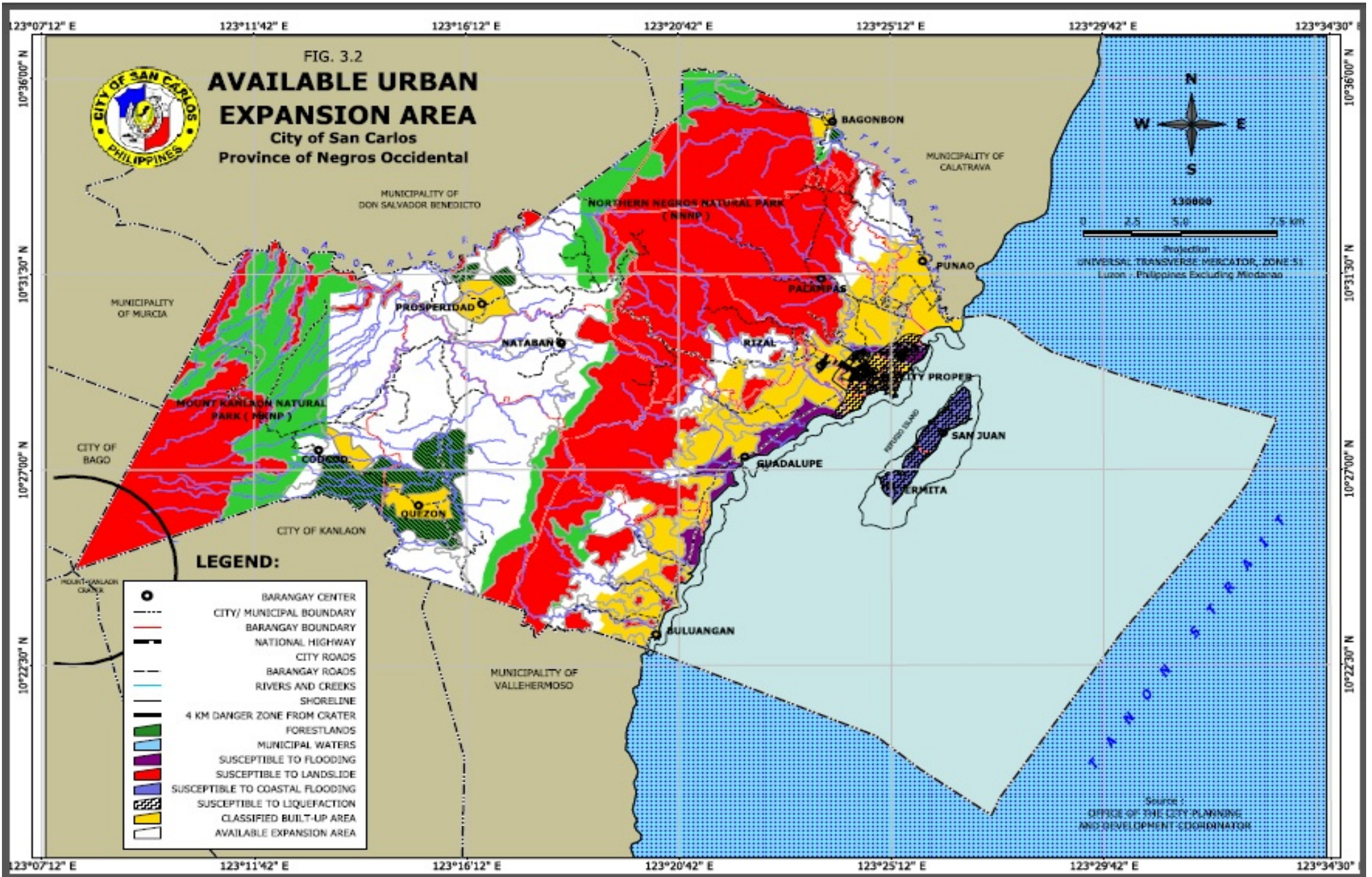


LEGEND:

	BARANGAY CENTER
	CITY/ MUNICIPAL BOUNDARY
	BARANGAY BOUNDARY
	NATIONAL HIGHWAY
	CITY ROADS
	BARANGAY ROADS
	RIVERS AND CREEKS
	MUNICIPAL WATERS
	SHORELINE
	DEVELOPMENT OPPURTUNITY AREA
	FORESTLAND
	SAFDZ
	MANGROVE
	EXISTING BUILT UP AREA
	HIGH SUSCEPTIBILITY TO LANDSLIDE
	HIGH SUSCEPTIBILITY TO FLOODING
	HIGH SUSCEPTIBILITY TO LIQUEFACTION
	NIPAS
	TIDAL ZONE
	4 KILOMETERS PERMANENT DANGER ZONE

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

Source :
OFFICE OF THE CITY PLANNING
AND DEVELOPMENT COORDINATOR



3.3.2 DEMAND

Demand for urban land within the plan implementation period of 2014 – 2023 may be estimated by dividing the City into the major planned settlement areas of CLUP 2000 – 2020. This will include (1) the San Carlos Development Corridor comprising the Urban Core or Poblacion barangays and the Urban Expansion Area, (2) Rural Growth Centers comprising Prosperidad, Quezon-Codcod, and Bagonbon, and (2) Refugio (Sipaway) Island Settlements comprising Barangays Ermita and San Juan. The following were the assumptions made in projecting urban land demand:

- San Carlos Development Corridor
 - Urban Core
 - All (100%) of the projected additional population will be residing/ using space in any of the six Poblacion barangays
 - Compact urban growth shall be promoted by adopting a policy of increasing densities to 150 persons per hectare
 - Urban Expansion Area
 - About 80% of projected additional population will be residing/ using space in the designated built-up areas of these barangays
 - Compact urban growth shall be promoted by adopting a policy of increasing densities to 75 persons per hectare
- Rural Growth Centers
 - About 80% of projected additional population will be residing/ using space in the designated built-up areas of these barangays
 - Compact urban growth shall be promoted by adopting a policy of increasing densities to 50 persons per hectare
- Refugio (Sipaway) Island Settlements
 - About 80% of projected additional population will be residing/ using space in the designated built-up areas of these barangays
 - Compact urban growth shall be promoted by adopting a policy of increasing densities to 50 persons per hectare

The following table presents the projected demand for urban land up to 2023:

TABLE 3.5: PROJECTED DEMAND FOR URBAN LAND

Location	Urban Population	Additional Urban Popn (2023)	Current Density (2010) pn-ha	Targeted Density (2023) pn-ha	Urban Land Demand (has)
San Carlos Development Corridor					
Urban Core					
Poblacion	100%	3,402	101	150	22.68

Urban Expansion Area					
Guadalupe	80%	879	2	75	11.71
Palampas	80%	755	2	75	10.06
Punao	80%	485	3	75	6.47
Rizal	80%	930	4	75	12.40
Sub-totals		6,451			63.33
Rural Growth Centers					
Prosperidad	80%	421	2	50	8.43
Quezon-Codcod	80%	1,989	1	50	39.79
Bagonbon	80%	447	2	50	8.94
Sub-totals		2,858			57.15
Refugio (Sipaway) Island Settlements					
Ermita	100%	219	12	50	4.39
San Juan	100%	296	12	50	5.92
Sub-totals		515			10.31
Totals		7,413			82.57

3.3.3 SUPPLY-DEMAND ANALYSIS

The City has a vast supply of urbanizable land with a comparatively low demand for the next ten years. Even the more than 5,000 hectare San Carlos Development Corridor, a classified urban area, still only has a built-up area of about 790.68 has. This means that there are still more than 4,000 hectares of land of still un-developed urban land. Moreover, the City Government can exercise its authority to re-classify a maximum of 10% of agricultural lands. Considering that the 11,347.58 has of land identified suitable for urban development is presently (used) classified as agricultural, this means that an additional 1,135 hectares of land can still be (provided) re-classified to urban uses (with urban development potential).

It could be observed that the estimated demand shown above was controlled by assuming a policy of compact urban growth translated into increasing population densities beyond the present level. Nonetheless, the assumed increases are still within the low density scenario if compared to the HLURB's guidelines for residential areas, as shown below:

TABLE 3.6: RESIDENTIAL AREA DENSITY RANGES

Type of Density	Density (persons per hectare of residential area)
Low	150
Medium	151 – 250
High	More than 250

Source: CLUP Guidebook, Vol. 2, 2007 edition, HLURB

Notwithstanding the abundance of open spaces, the City Government is ensuring that these are not wasted by un-planned growth. This updated CLUP carries forward the planning principles espoused in the Master Development Plan for the Corridor which, among others, calls for the development of a compact City Proper while conserving valuable surrounding open space.

The large area available for urban use also means that the City Government could seek to attract significant investments such as, for example, industrial estate or tourism estate development.

3.4 COMPARATIVE/ COMPETITIVE ADVANTAGES

Following is a broad identification of the City's major comparative and competitive advantages:

3.4.1 COMPARATIVE ADVANTAGES

As an ideal Port City

San Carlos has a fine natural harbor protected by Refugio (Sipaway) Island. Its long coastline extending up to 36 kilometers and its thriving island barangays in Refugio (Sipaway) makes it an ideal Port City.

San Carlos lies in a region with two large inter-island water bodies; the Sibuyan and the Visayan Seas which include a number of bays and coves that provide good anchorages and potentially good port areas. The 12 fathom deep Tañon Strait on the east and the depth of Tañon Strait makes San Carlos an ideal location for port development and shipping facilities. This geographic location is an opportunity for growth which may be explored.

As an Eco-tourism Destination

There are three key natural resource endowments which give San Carlos a comparative advantage in terms of being an eco-tourism destination. The first two are the MKNP and NNNP which support the largest expanses of forest left in the Visayas Region and that still harbor pristine and natural habitats with a unique assemblage of flora and fauna, many of which are endemic to Panay and Negros Island as well as the WVBZ. The third is Refugio (Sipaway) Island which is an unspoiled white-sand beach coral island that is only 3.5 kms off the coast of mainland San Carlos and has at least 14 km of coastline.

3.4.2 COMPETITIVE ADVANTAGES

One of the World's Most Livable Cities

The City takes pride in being awarded as one of the most livable cities in the world. Such stature should be maintained in order to attract more inward investments while ensuring that the factors that contribute to the City's livability are further enhanced.

City of Renewable Energy

San Carlos has the advantage of being a leader in the country's renewable energy sector, first with the Bio-ethanol plant and second with the Bio-mass facility. This will not only address energy requirements but is expected to provide substantial economic opportunities to linked agricultural and service sector activities.

Capital of Earth Construction of the Philippines

The City is also known internationally as being environment-friendly through its use of earth-based construction technology in many of its infrastructure projects. Similar to renewable

energy, cutting-edge and innovative sustainable construction technologies are expected to play key roles in the future development of cities.

San Carlos Development Corridor

The vast 5,600 hectare San Carlos Development Corridor presents an opportunity to demonstrate sustainable urban development. This area provides a high degree of flexibility for government planners and land use regulators to create compact, mixed-use communities that are conveniently accessible to high-quality open spaces.

CHAPTER 4:

THE CITY'S VISION

4. THE CITY'S VISION

4.1 INTRODUCTION

San Carlos City's vision and the national goals of physical planning are reflected in two ways. One is through the outward looking component where the City's vision statement reflects its role as an effective partner in the attainment of national goals. Through the "outward looking" component of the vision statement, San Carlos City identifies itself as the modern agro-industrial processing city, a model green city on good governance, a renewable energy hub for Asia and a sustainable tourism destination in health and wellness. These identities and services are unique contributions to the development of Negros Occidental and Region VI of which San Carlos is a part, and to the nation at large. The other way is the "inward looking" component of having a strong, diverse and viable economy and an ecologically balance and resilient environment with functional, appropriate and accessible infrastructure whose citizens are healthy and well educated, living in a harmonious and peaceful community under a dynamic and reliable leadership where the San Carlos City's vision and sectoral goals are consistently aligned and supportive of the national goals.

This chapter demonstrates how the vision of San Carlos City relates to the national goals of physical planning as adopted by the NLUC and the Disaster Risk Response Management Office (DRRMO).

4.2 CITY'S VISION FOR DEVELOPMENT

4.2.1 VISION, GOALS AND OBJECTIVES

The City of San Carlos has cultivated the vision of

"A modern agro-industrial processing city, a model green city on good governance, a renewable energy hub for Asia, and a sustainable tourism destination with strong, diverse and viable economy, and an ecologically balanced and sustainable environment with functional, appropriate and accessible infrastructure where citizens are healthy and well educated, living in a harmonious and peaceful community, under a dynamic, competent, and reliable leadership in a safe, adaptive and resilient city."

The City's inhabitants desire to keep the vision into the future, not only as an ideal to aspire for but as a reality to live with.

What does it mean for San Carlos City to be a model green city in sustainable development and balanced ecosystems? To determine the full answer is to split the question into two: 1) What services, lessons or experiences can San Carlos City offer as its unique contribution to regional and national development? 2) What kind of environment for living and for making a living can San Carlos City assure its present and future inhabitants? The first pertains to the desired roles that the City can perform in its regional context. This is known as the outward-looking component of the vision. The second embodies the desired qualities of the City as a human habitat. This part is called the inward-looking component of the vision.

Outward looking component

Notwithstanding its acquired status as a component city which confers San Carlos some degree of political independence from the province of Negros Occidental, the City's geographical, economic and cultural ties with the province and with the rest of the country remaining strong. Considerations of what the City can best contribute to the development of the province and the wider region are purposive and imperative. It fulfills one of the main objectives of devolution according to the Local Government Code (Sec. 2, a): to enable LGUs "to become effective partners in national development."

Four major roles for San Carlos City to play in the region, derived from the vision of a model green city in sustainable agro-industrial development and renewable energy have been identified, namely:

1. A sustainable tourism destination catering to health and wellness
 2. As a modern agro-industrial center
 3. A renewable energy hub
 4. A model green city on good governance
- Sustainable tourism destination catering to health and wellness

The increasing tourist traffic, both local and foreign, is contributing no doubt to increased volume of business for the local economy. San Carlos has chosen to specialize in health and wellness eco-tourism because this type of tourism is the most environment-friendly and sustainable. Among other benefits, health and wellness eco-tourism offers pleasurable experiences with minimal tourist impact upon the natural environment. Moreover, eco-tourism especially of the community-based variety, accords mutual benefits to both the tourists and the host communities.

To ensure minimal tourist footprint, the provision and positioning of support facilities are made non-intrusive. Facilities for tourist accommodation are kept at a safe distance from the tourist resource while transport and communication facilities are laid out with the most unobtrusive alignments. Visitor welfare and security are assured through professional service-oriented workers, maintenance of peace and order, adequate supply of food, water and power, and effective enforcement of standards and regulations. Finally, consistent with the role of San Carlos as a model green city, good practices are continuously documented for replication by other LGUs elsewhere.

Relative to the national goals of physical planning, this desired role of San Carlos City is seen to contribute directly and substantially to providing access to economic opportunities, to sustainable utilization of the City's resources, and to the maintenance of environmental integrity. It will, however, have a minimal contribution to the goal of rational distribution of population.

- Health and wellness tourism destination

Consistent with and complementary to its espousal of environment- and community-friendly tourism San Carlos City prides itself in being a promoter of wholesome and healthful wellness and recreation. Examples of recreational activities that are very much welcome in San Carlos include nature-oriented sports like biking, mountaineering, nature trekking, eco-camping, rock climbing, rappelling, caving, island hopping, hiking butterfly and bird watching, monkey trailing, para-

sailing, snorkeling, SCUBA diving; active indoor sports like basketball, volleyball, badminton, swimming; outdoor sports like football, tennis, golf; simple outdoor recreation like picnicking, beach swimming, and similar pursuits. Competitive sports that expose the protagonists to extreme risks such as motocross racing and sports activities that encourage heavy betting and habitual gambling such as horse racing, cockfighting, jai-alai, casino, lottery in its many forms and the like are not actively promoted in the City.

The active promotion of healthful recreation and healing wellness centers is achieved by positive programs such as infrastructure support, provision of ample space and facilities to host regular sports events, spa clinics and fitness centers, public funding for multi-level inter-jurisdictional athletic meets and competitions, as well as policies formulated and implemented to prevent unwholesome activities from taking place in the City.

This desired role of San Carlos is seen as having minimal impact on the goal of rational population distribution because the types of recreational activities being promoted are not likely to induce migration. On the other hand, it will open substantial access by the local residents and visitors alike to social services and provide the former with job opportunities. Similarly, it will redound to sustainable utilization of resources and maintain the integrity of the environment provided proper safeguards are put in place.

- Model Agro-industrial Center and Renewable Energy Hub

Model Agro-industrial center for renewable energy supports activities on climate change, sufficient energy, crop and biomass production (sugarcane, sorghum, trees, SRC, grasses), rice, corn, vegetables and fruits sufficiency level, sufficient production of high valued fruits and vegetables, sufficient agro processing facility for agro-forestry, livestock and marine products, electrical power of 50MW from renewable energy sources (solar, biomass, wind, etc.) and renewable energy to displace fuel.

A more systematic approach to playing out its role as model in sustainable development is the establishment of a "Biomass ethanol plant for renewable energy." The ethanol plant is seen functioning as the hub for the collection and exchange of scientific information in the areas of renewable energy and sustainable agriculture, climate change adaptation, ecology and ecosystems, biomass production and the application of renewable energy. The establishment of an Environment National Resource Center (ENRC) under the City Government offers scientific information in regulating natural resources development, management, preservation and other aspects of environmental governance and ecosystems. Researches in the utilization of scientific knowledge are conducted in-house by the ethanol plant staff, through collaboration with the city environment committee, ENRO and existing non-government organizations in environmental protection, watershed development, renewable energy and climate change adaptation.

Some visible outcomes of the effectiveness of this role of San Carlos City, is a more precise zoning of environmentally critical area networks (ECAN), more green forest trees and parks in protected areas established, watershed management, forest land use planning, ancestral domain delineation and management, and more relevant environmental friendly policies enacted. More extensive documentation of forestry and parks management in areas close to Kanlaon through joint environmental projects with national and international funding agencies is also an outcome, as with the number of such environmental governance initiatives that found replication, adoption or adaptation among other local government units in the province, the region and the National Capital.

This desired role of San Carlos City strongly supports the fourth goal of national physical planning, namely, maintenance of environmental integrity. To a certain degree, especially when applied researches on renewable energy can lead to improvements in their settlement patterns and quality of life, this desired role will also contribute to the attainment of the goals on rational population distribution and ensuring access to social services. However, it is seen to contribute slightly to the goal on sustainable utilization of resources.

Inward looking component

- Model Green City on Good Governance

The other half of what San Carlos City can do as a green city model on good governance and sustainable development is to secure awards and accolades from national and international bodies, accessible information on local government plans, programs, policies, events and records, participation of different sectors in local governance and development and effectiveness of the financial management system. To secure for its own inhabitants the qualities of a desirable human habitat known as the inward-looking component of the vision, it is concerned with describing the future scenario in terms of desired qualities of the various sectors comprising the totality of local development. Thus, each of the five development sectors generated a set of descriptors or desired qualities that best describe what they want their sector to be like in the future. By putting together the descriptors for the social, economic, environment, infrastructure and multi-institutional sectors, a composite picture of San Carlos City as a model green city of good governance is derived.

4.2.2 SUCCESS INDICATORS

To further facilitate monitoring and evaluation to determine progress toward attainment of the vision, each descriptor is translated into measurable and observable indicators of success. Each success indicator is then matched with each of the national goals to determine whether it is directly or indirectly supportive of the national goal, or whether it has no contribution to, or worse, it is in conflict with the national goal.

Desired qualities of the City's inhabitants

Under the old vision of the City, the inhabitants are looked upon as disciplined and responsible stewards of the City's ecosystems and resources. In the view of the Social Sector, for the people to be disciplined they must be healthy; to be responsible they have to be harmonious and peaceful; and to be able to do all these they must be well educated.

These more specific traits envisioned for the city residents are said to have been attained if the following indicators are observed to obtain:

- Peaceful and Harmonious
 - Reduced crime incidence
 - Reduced drug related crimes
 - Zero number of children in conflict with the law (CICL)
 - Zero number of dysfunctional families
 - 100% compliance with the Anti-Illegal Drug Law

- 100% compliance with various laws protecting children, women, and the family
 - 100% compliance with “No Smoking in Public Places”
 - 100% observance of curfew hours by minors
 - Zero illegal gambling
 - No tax delinquents, evaders and cheats
 - Full participation in spiritual and religious activities
- Well Educated
 - Intensified garbage education in school and barangays
 - All 13-16 year old youth are in secondary school
 - Decrease drop-out rate to 0%
 - Decreased percentage of severely wasted
 - Men and women are equal partners in development
 - All households have decent housing
 - All differently-abled persons avail of privileges and social services due them
 - Healthy
 - Control of preventable and water- born communicable diseases
 - Reduction of maternal death
 - Reduction of childhood illnesses due to malnutrition
 - Sustained socialized housing program
 - Strengthened social services for senior citizens, person with disabilities and out of school youth

Desired character of the local economy

The old vision has drawn up a scenario wherein the City’s inhabitants enjoy an improved quality of life “as they enjoy directly or indirectly the bounties of nature and the fruits of their labor with appropriate facilities for tourism, agriculture, commerce and environment-friendly industries.”

The Economic Sector has summarized this scenario into three adjectives namely, *diverse*, *strong* and *viable* and generated corresponding success indicators as shown below.

- Diverse
 - Ideal site for secondary economy such as Industry sector i.e. manufacturing and construction
 - Competitive manufacturing and processing firms
 - Potential tourism attractions developed
 - Tourist attractions diversified and fully utilized
 - Small businesses and social enterprises
- Viable
 - Sustained economic growth in old and new investments from both governmental expenditures and private investments

- Strong
 - Increased production of agricultural crops
 - Appropriate farming technologies
 - Competent agricultural extension work
 - Accessible post-harvest and processing facilities
 - Available irrigation system
 - Adaptable climate smart agriculture based Integrated Farming System & Technologies

Desired quality of the built environment

The old vision of desirable cityscape pictures San Carlos with developed boulevards, promenades and stretches of tree-lined and coastal highways interspersed with parks and resorts. The Infrastructure Sector completes the vision with the descriptors *functional, appropriate and accessible*.

- *Functional* is described as
 - Established irrigation systems
 - Improved and increased communication system and services
 - Adequate stable reliable water supply
- *Appropriate* is described as:
 - Enhanced flood control facilities
 - Effective drainage and sewerage systems
 - Adequate and efficient water supply
 - Sufficient supply of potable water at the City Proper
- *Accessible* is described as:
 - Improved environmentally sustainable circulatory system of internal and external transport linkages (roads and bridges)
 - Effective traffic management plan to decongest and increase the level of service roads
 - Established seaport and airport facilities

Desired quality of local governance

The desired quality of local governance is featured in the vision statement on institutional development. The task of generating the desired qualities of local leadership and governance process falls on the institutional sector. To determine the level of attainment of these ideals, the sector came up with the following descriptors: *Dynamic, competent, and reliable*.

- Dynamic is described as:
 - Adopted innovative and updated technologies in management systems, operations and communications
 - Consulted with different sectors in the formulation of policies in line with the provision of services in consonance with its priority trust
 - Established clear and enforceable awards, incentive and disciplinary scheme in the implementation of policies and programs

- Continued linkages with partner NGO's and PO's in program implementation
- Competent
 - Enhanced skills and training of government employee
 - Participation of stakeholders in developing programs and projects
 - Venue for feedback mechanism is readily accessible
- Reliable is seen as:
 - Self-sufficiency in the City's finances through increase in local revenue generation (RPT and business taxes)
 - Communities needs and requirements are the basis in the utilization of the City's resources
 - Honest, clean accountable and transparent delivery of services where there is no bureaucracy, absence of red tape and graft and corruption.

4.3 THE CITY'S VISION RELATED TO THE NATIONAL GOALS FOR PHYSICAL PLANNING & DISASTER RESILIENCE

Relating the foregoing success indicators for each sectoral descriptor to the four national goals of physical planning yielded the following results. (See Tables 4.1 to 4.3 for details.)

Of the total of 120 success indicators, an overwhelming 100% are deemed directly supportive of goals no. 1 and 2 of the national goals. One hundred per cent (100%) directly support national physical planning goals no. 3, 4 and 5. Most indicators relate to the goals in direct ways and some indirectly. A significant number of indicators have clear relation to and have no underlying conflict with the national goals.

The following tables present how these indicators relate to the national goals for physical planning and disaster resilience. **On the whole, the vision statement of San Carlos City is strongly supportive of the national goals of physical planning.**

TABLE 4.1: THE LGU VISION AND NATIONAL GOALS

DESCRIPTOR	SUCCESS INDICATORS	NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social & Eco Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
Modern Agro-Industrial City	Sufficient Energy Crop & biomass Production (sugarcane, sorghum, trees-SRC, grasses)	✓	✓	✓	✓
	Attained rice, corn, vegetables and fruits sufficiency level	✓	✓	✓	✓
	Sufficient production of high valued fruits and vegetables	✓	✓	✓	✓
	Sufficient processing facility for agro-forestry, livestock and marine products	✓	✓	✓	✓
Model Green City in Good Governance	Awards and Accolades Received from National & International bodies	✓	✓	✓	✓
	Accessibility of Information on Local Government Plans, Programs, Policies, Events and Records	✓	✓	✓	✓
	Participation of Different Sectors in Local Governance and Development	✓	✓	✓	✓
	Effectiveness of the Financial Management System	✓	✓	✓	✓
Renewable Energy Hub	Effectiveness of Basic Delivery Services (particularly health, education and social services)	✓	✓	✓	✓
	Electrical power of 50MW from renewable energy sources (solar, biomass, wind, etc.)	✓	✓	✓	✓

TABLE 4.1: THE LGU VISION AND NATIONAL GOALS (cont'd)

DESCRIPTOR	SUCCESS INDICATORS	NATIONAL PHYSICAL PLANNING GOALS			
	Renewable energy to displace fossil fuel	✓	✓	✓	✓
		Rational Distribution of Population	Access to Social & Eco Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
	Number of tourists	✓	✓	✓	✓
	Attractions (Natural: waterfalls, caves, hills & beaches/Man-made: People's Park, Eco-Center, Boulevard and Marina)	✓	✓	✓	✓
	Number of events and sports activities & outdoor adventure (ex. Football, motocross racing & mountain biking, trekking)	✓	✓	✓	✓
	Number of Health & Wellness Centers	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE

LGU VISION		NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
ECONOMIC SECTOR					
DESCRIPTOR 1: STRONG					
1	Increased Production of Agricultural Crops per hectare (sugar, sorghum, fruits, vegetables, rice & corn)	✓	✓	✓	✓
2	Appropriate Farming Technologies	✓	✓	✓	✓
3	Competent Agricultural extension workers	✓	✓	✓	✓
4	Accessible Post-harvest and Processing Facilities	✓	✓	✓	✓
LGU VISION		NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
5	Available Irrigation System	✓	✓	✓	✓
6	Adaptable Climate Smart Agriculture-based Integrated Farming System & Technologies	✓	✓	✓	✓
DESCRIPTOR 2: DIVERSE					
1	Ideal site for secondary economy such as Industry Sector i.e. Manufacturing, construction	✓	✓	✓	✓
2	Private investments flowing into the local economy	✓	✓	✓	✓
3	Creation of economic multiplier effect from Modern Agro Processing Centers i.e. (RE and construction Industries) operations	✓	✓	✓	✓
4	Diverse Livelihood Cropping Systems (Viable Cropping Systems)	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE (cont'd)

LGU VISION	NATIONAL PHYSICAL PLANNING GOALS			
	Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
5 Sustained Economic Growth from Increased Household Income and Diverse Livelihood	✓	✓	✓	✓
DESCRIPTOR 3: VIABLE				
1 Sustained economic growth in old and new investments from both private and governmental expenditures	✓	✓	✓	✓
SOCIAL SECTOR				
Descriptor 1: Healthy				
1 Control of preventable and water- born communicable diseases	✓	✓	✓	✓
2 Reduction of maternal death	✓	✓	✓	✓
3 Reduction of childhood illnesses due to malnutrition	✓	✓	✓	✓
4 Sustained socialized housing program	✓	✓	✓	✓
5 Strengthened social services for senior citizens, person with disabilities and out of school youth	✓	✓	✓	✓
Descriptor 2: Harmonious				
1 Compliance of ordinance and pertinent laws	✓	✓	✓	✓
2 Access to programs and social services	✓	✓	✓	✓
3 Decrease number of cases of unregistered birth, death and marriage	✓	✓	✓	✓
Descriptor 3: Peaceful				
1 Reduced crime incidence	✓	✓	✓	✓
2 Reduced drugs related crimes	✓	✓	✓	✓
Descriptor 4: Well Educated				
1 Intensify garbage segregation in school	✓	✓	✓	✓
2 Decrease drop-out rate to 0% & increase Completion Rate to 100%	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE (cont'd)

LGU VISION		NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
3	Decrease percentage of severely wasted pupils	✓	✓	✓	✓
ENVIRONMENT AND NATURAL RESOURCES SECTOR					
Descriptor 1: Ecologically-balanced					
1	Prevented/Minimized pollution (land/water/air/noise)	✓	✓	✓	✓
2	Prevented/Minimized soil erosion and siltation	✓	✓	✓	✓
3	Minimum forest cover of 40%	✓	✓	✓	✓
4	Conserved / Maximized bio-diversity	✓	✓	✓	✓
Descriptor 2: Sustainable					
1	Abundant domestic and industrial water supply	✓	✓	✓	✓
2	Sufficient energy sources	✓	✓	✓	✓
3	Air quality meets the standards	✓	✓	✓	✓
4	Abundant urban green spaces	✓	✓	✓	✓
5	Environmentally-sound practices are the norm	✓	✓	✓	✓
6	Maximum waste reduction, recycling and reuse; all hazardous waste properly managed	✓	✓	✓	✓
7	Maximum renewable energy utilization	✓	✓	✓	✓
8	All residents have a high sense of environmental responsibility and awareness	✓	✓	✓	✓
Descriptor 3: Resilient					
1	Zero casualty during natural disasters	✓	✓	✓	✓
2	Zero damage to infrastructures	✓	✓	✓	✓
3	Uninterrupted food, water and medical supply	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE (cont'd)

LGU VISION		NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
4	Full adaptive capacity to climate change and limited resources	✓	✓	✓	✓
5	All residents have a high awareness and involvement in DRRM and CCA and limited resources initiatives	✓	✓	✓	✓
INSTITUTIONAL SECTOR					
Descriptor 1: Dynamic					
1	Adopted innovative and updated technology in the management systems, operations and communications	✓	✓	✓	✓
2	Consulted with different sectors in the formulation of policies in line with the provision of services in consonance with its priority trust	✓	✓	✓	✓
3	Established clear and enforceable awards, incentive and disciplinary scheme in the implementation of policies and programs	✓	✓	✓	✓
4	Continued linkages with partner NGO's and PO's in program implementation	✓	✓	✓	✓
Descriptor 2: Competent					
1	Enhanced the skills and training of government employees	✓	✓	✓	✓
2	Participation of stakeholders in developing programs and projects is an established practice	✓	✓	✓	✓
3	Venues for feedback mechanism is readily accessible	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE (cont'd)

LGU VISION	NATIONAL PHYSICAL PLANNING GOALS			
	Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
Descriptor 3: Reliable				
1 Self-sufficiency in the City's finances through increase in local revenue generation (RPT and business taxes)	✓	✓	✓	✓
2 Communities needs and requirements are the basis in the utilization of the city's resources	✓	✓	✓	✓
3 Discard bureaucracy, red tape, graft and corruption in the delivery of services	✓	✓	✓	✓
INFRASTRUCTURE SECTOR				
Descriptor 1: Functional				
1 Established irrigation systems	✓	✓	✓	✓
2 Improved communication services and increased coverage to boost economic opportunities in the City	✓	✓	✓	✓
3 Attained adequate/stable/reliable power supply	✓	✓	✓	✓
Descriptor 2: Appropriate				
1 Enhanced flood control facilities	✓	✓	✓	✓
2 Effective drainage and sewerage systems	✓	✓	✓	✓
3 Attained adequate and efficient water supply	✓	✓	✓	✓
4 Sufficient supply of potable water and services at the city proper	✓	✓	✓	✓

TABLE 4.2: THE LGU VISION AND INDICATORS OF RESILIENCE (cont'd)

LGU VISION		NATIONAL PHYSICAL PLANNING GOALS			
		Rational Distribution of Population	Access to Social and Economic Opportunities	Sustainable Utilization of Resources	Integrity of the Environment Maintained
Descriptor 3: Accessible					
1	Improved environmentally sustainable circulatory system of internal and external transport linkages (roads and bridges)	✓	✓	✓	✓
2	An effective traffic management plan is being adopted to decongest and increase the level of service of roads	✓	✓	✓	✓
3	Established sea port and airport facilities	✓	✓	✓	✓

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
OUTWARD-LOOKING COMPONENT					
Modern Agro-Industrial Processing City					
1	Sufficient Energy Crop & Biomass Production (sugarcane, sorghum, trees-SRC, grasses)	Large sugarcane farms in support for Biomass Production/Trees for coppice	6	4	Extensive campaign and support to farmers in their production inputs especially on sorghum, trees SRC including marketing
2	Attained rice, corn, vegetables and fruits sufficiency level	Developed Post Harvest & Storage Facilities	3	7	Promote scaling-up of multi-sectoral linkages to increase production and income of farmers in natural & organic farming, likewise promote consumption by the public & marketing of fresh & processed products
3	Sufficient production of high valued fruits and vegetables	Introduction of Organic Farming in support to production	6	4	Enhance farming capabilities of farmers in the adoption of Organic Farming/Natural Farming
INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
4	Sufficient processing facility for agro-forestry, livestock and marine products	Limited food processing & storage facilities & marketing logistics	3	7	LGU, POs & NGOs active participation in the establishment of such services

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
Model Green City on Good Governance					
1	Awards and Accolades Received from National & International bodies	Received a total of 36 Awards from provincial, regional, national & international award giving bodies	7	3	Aspire to achieve 14 more awards to reach a cumulative total of 50 recognitions/awards from various award-giving bodies locally, nationally & internationally
2	Accessibility of Information on Local Government Plans, Programs, Policies, Events and Records	Available information through functional website, weekly local television program & city's quarterly publication - Tribute.	7	3	Enhance the existing tri-media to continually communicate the information to all users locally & worldwide
3	Participation of Multi-Stakeholders in Local Governance and Development	Representation of different sectors from GAs, NGAs, CSOs, POs	6	4	Agreements with multi-sectoral stakeholders in their participation & contribution to the development of the city
4	Effectiveness of the Financial Management System	Transparency in financial management with no adverse findings of COA	7	3	Promote & strengthen transparency by publishing financial statements through various venues like the city's website, city hall bulletin boards and compliance of COAs findings

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
5	Effectiveness of Basic Delivery Services (particularly health, education and social services)	Addressed basic services of the constituents with recognition from various award giving bodies	8	2	Strengthen delivery of health & social welfare services & improve education in safer schools.
Renewable Energy Hub					
1	Electrical power of 50MW from renewable energy sources (solar, biomass, wind, etc.)	Existing biomass and proximity to geothermal	4	6	Promote & scale-up multi-sectoral linkages for investor location at San Carlos City
2	Renewable energy to displace fossil fuel	Existing bioethanol production	2	8	Advocacy for sourcing & utilization of RE
3	Readiness for disaster support in contiguous outlying areas	Experience in supporting neighboring LGUs	5	5	Establish MOAs with neighboring LGUs to collectively implement
4	Strategic location of ports and proximity to Bacolod and Cebu	Natural spatial location of ports facilities & coastal protection	6	4	LGU's Disaster Risk Reduction Programs
5	Available human resources and generous attitude of citizenry to help neighboring LGUs	Trained/experienced multi-sectoral volunteers	5	5	Forge MOAs with Multi-Sectoral Groups to effectively implement the CDRRMO's Programs
Sustainable Tourism Destination Catering to Health and Wellness					
1	Number of Tourism Facilities & destinations passing DOT standards	Tourist attractions & destinations are safe	5	5	Strengthen coordination with Government Agencies
2	Number of tourists	Local & international tourists are increasing every year	5	5	and establishments to ensure safety of tourists

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
3	Attractions (Natural: waterfalls, caves, hills & beaches/Man-made: People's Park, Eco-Center, Boulevard and Marina)	Endowed with natural & man-made attractions	5	5	Institutionalized disaster programs & guidelines in all tourism attractions, events & activities in place
4	Number of events and sports activities & outdoor adventure (ex. Football, motocross racing & mountain biking, trekking)	Supportive to events & various sports activities participated by players all over the country	7	3	
5	Number of Health & Wellness Centers				
INWARD-LOOKING COMPONENT					
Economic Sector					
1	Sufficient Agricultural Production Output	Agri-production output is sizable enough with the San Carlos Agri-Consumption Per Capita i.e., 100 kgs of rice per person	5	5	Organizing the major and peripheral crops that can be scaled up within San Carlos Territory (Major Crops: Sugarcane, Coffee/Cacao, Mango, SRC-Trees and Coconut - Peripheral: High Value Vegetables, Mixed High Value Fruit Trees, Rice and Corn)

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
2	Available Irrigation System	Irrigation facilities' availability and accessibility to covered farming communities	4	6	Scaling up advocacy work and negotiation with National authorities for governmental support thru NIA in constructing and establishing additional irrigation facilities. Private sector involvement through "drip-irrigation" establishment and installation is also being encouraged.
3	Adaptable Climate Smart Agriculture-based Integrated Farming System & Technologies	Application of CSA-based farming system is being encouraged and used in a number of farming communities	4	6	Provide incentives among farmers and the next generation of farmers thru basic education in adopting CSA-based farming system.

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
4	Cohesive Farmers' Organizations and Network	Operational and functional farming organizations collaborating with LGUs' agri-development priorities	5	5	Creation of an effective communication program that would encourage organizational cohesiveness synthesizing governmental policies on agri-development priorities such as village level agri-enterprise implementation and operation
5	Creation of economic multiplier effect from Modern Agro Processing Centers i.e. (RE and construction Industries) operations	Multiplier effect of RE-related industries in terms of business creation is still being worked-out	2	8	Ensure (both National and Local Policy Support) that existing RE industries shall be further enhanced making the industry viable in creating more down-stream industries and enterprises.
Social Sector					
1	Control of preventable and water- borne communicable diseases	Available resources and supplies to address outbreak of diseases and other medical condition	8	2	Continuity of available funds to address the requirements & needs

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
2	Sustained socialized housing program	Continued efforts to address the homelessness problem of the city are on-going.	2	8	In consulting the hazard map it should be taken into consideration the location of the housing program
Environment and Natural Resources Sector					
<i>Ecologically-balanced</i>					
1	Prevented/Minimized pollution (land/water/air/noise)	Multipartite Monitoring Teams formed	4	6	Creation of the ENRO office, adopt policies, public information (IEC) and drills, program implementation of mitigating and adaptive strategies
2	Prevented/Minimized soil erosion and siltation	Strengthen initiatives directly addressing soil erosion	3	7	
3	Minimum forest cover of 40%	Strengthen initiatives directly addressing soil erosion and land slides	3	7	
4	Conserved / Maximized bio-diversity	City's active participation in conservation through 2 Natural Parks	4	6	
<i>Sustainable</i>					
1	Abundant domestic and industrial water supply	Barangays and City proper vulnerable to loss of supply if main pipe is severed	2	8	
2	Sufficient energy sources	Limited access to alternative power when main source is cut	2	8	
3	Air quality meets the standards	Solely reliant on LTO vehicle emissions testing and industry's MMT	3	7	
4	Abundant urban green spaces	Old city proper has limited urban green space	2	8	

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
5	Environmentally-sound practices are the norm	Limited advocacy for environmental awareness for waste management	4	6	
6	Maximum waste reduction, recycling and reuse; all hazardous waste properly managed	Exceeded the mandatory 25% waste diversion target and operating SLF and MRF in place	7	3	
7	Maximum renewable energy utilization	Limited local source of renewable energy	2	8	
8	All residents have a high sense of environmental responsibility and awareness	Most policies in place, lack of enforcement	6	4	
<i>Resilient</i>					
1	Zero casualty during natural disasters	Lack of community awareness for disaster readiness	2	8	
2	Zero damage to infrastructures	Lack of disaster proof infrastructure	2	8	
3	Uninterrupted food, water and medical supply	Lack of redundancy to address disaster related consequences	2	8	
4	Full adaptive capacity to climate change and limited resources	Lack of community awareness and support system	2	8	
5	All residents have a high awareness and involvement in DRRM and CCA and limited resources initiatives	Lack of community awareness for disaster readiness	2	8	
Institutional Sector					
1	Continued linkages with partner NGOs , Pos, NGAs and International Donor Agencies (WB/ADB)	Existence of disaster programs in coordination with partner NGO's and PO's.	5	5	Improve coordination with other support groups in the disaster programs especially in the additional funding source

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
2	Comprehensive System on Disaster Risk Reduction and Management (preparedness, prevention/mitigation, response, relief/rehabilitation)	Multispectral groups in placed trained and experienced	5	5	Enhancement of existing system for further improvement
3	High level commitment of LCE and City Officials in disaster risk reduction programs and thrust	LGU Officials are leading in the implementation of the disaster programs	9	1	Continued support of both executive and legislative bodies in formulation of disaster programs and legislations
4	Presence of active Disaster Council and Secretariat	Existence of CDRRMC	9	1	Continuous training of council members, office staff and volunteers
5	Availability of funds to finance the disaster programs	Built-in funding in the budget for disaster programs	9	1	Proper monitoring on the utilization of resources; consistent implementation of the DRRMM Plan
Infrastructure Sector					
1	Established Disaster Operation Center	Disaster Centers In Placed	4	6	Fully operationalization of the Disaster Risk Reduction & Management Office with Policy Guidelines, Programs, Structure & Budget
2	Established Evacuation Centers with Nursing Stations	Evacuation Centers In Placed	5	5	
3	Guidelines and Standards for Construction for Earthquake Proof Buildings	Existing Policy Guidelines	5	5	

TABLE 4.3: THE LGU VISION AND INDICATORS OF DISASTER RESILIENCE (cont'd)

INDICATORS OF "DISASTER RESILIENT"		CURRENT REALITY	LEVEL OF ATTAINMENT	VISION- REALITY GAP	WHAT TO DO TO FILL THE GAP
Infrastructure Sector					
4	Provision of Container Vans for Mobile Clinic & Portable Toilets & separate Bath Facilities for men, women and children	Avalable Container Vans, Mobile Clinics and Portable Toilets	2	8	
5	Provision of Amphibian boats & Scuba Gears for Disaster Response	Amphibian Boats and Scuba Gear (budget appropriated)	4	6	
6	Availability of Tents for Relief/Rehabilitation and Settlement	Canopies Tents in placed (Overnight tents for budget request)	4	6	
7	Availability of Water Delivery System for Relief (Water Tankers) and Power Generators	Water Delivery System (water tanks) in placed	4	6	
8	Availability of Power Generators for Relief	Power Generator (budget to be requested)	2	8	
9	Availability of School Building/Rural Health Centers for Relief Operation and Evacuation	School Building/Rural Health Centers in placed	9	1	
10	Availability of Multipurpose Halls for Relief Operation and Evacuation	Multipurpose Halls in placed	5	5	

CHAPTER 5:
THE CHOSEN SPATIAL DEVELOPMENT
STRATEGY

5. THE CHOSEN SPATIAL DEVELOPMENT STRATEGY

5.1 INTRODUCTION

This chapter elaborates on the spatial strategy or urban form that shall guide the location of future land uses in relation to the existing ones. The present CLUP exercise does not supplant or replace the salient features of the predecessor CLUP 2000 - 2020. Rather, it seeks to extend, amplify, or modify its predecessor, as the case may be. This is to ensure continuity and rationality of public and private investments considering that physical development projects invariably take a long time to gestate and that once the projects are established these will have a fairly long economic life, adding to the community's fixed assets, defining the shape, intensity and direction of the built environment and altering the landscape of the City more or less permanently.

5.2 SPATIAL DEVELOPMENT OPTIONS

Using the information available from the assessment of buildable lands and the thematic maps, several land use options were developed:

- OPTION 1 – Linear Extension of the Urban Corridor
- OPTION 2 – Old Barangay Expansion – Prosperidad & Quezon
- OPTION 3 – One new big settlement in the confluence of Prosperidad, Quezon & Nataban

5.2.1 *OPTION 1 – LINEAR EXTENSION OF THE URBAN CORRIDOR*

General Description

Also known as the ribbon or strip development, the linear urban form is characterized by concentration of development along both sides of major transportation routes such as roads or navigable rivers. Residential, commercial, institutional, industrial and mixed-use developments intensify along these areas through time. But the extent of development will be limited within reasonable distance from the road or river easements. This form is patterned after what Kevin Lynch calls the Urban Star simply because of its strong feature of “a dominant core surrounded by centers distributed along main radials”. In the case of San Carlos City, such development pattern is characterized by the core in addition with the linear expansion described by the existence of the Poblacion and corridor development which will intensify along the north and south coastal clusters traversing the City. These corridors include the national highway’s access to Bacolod and Dumaguete through the coastal route and the Translink Highway connecting Bacolod City via the hinterland section. Spatial Development Option 1 is presented as **Figure 5.1**.

123°16' E 123°21' E 123°25' E 123°30' E

10°32' N

10°27' N

10°32' N

10°27' N

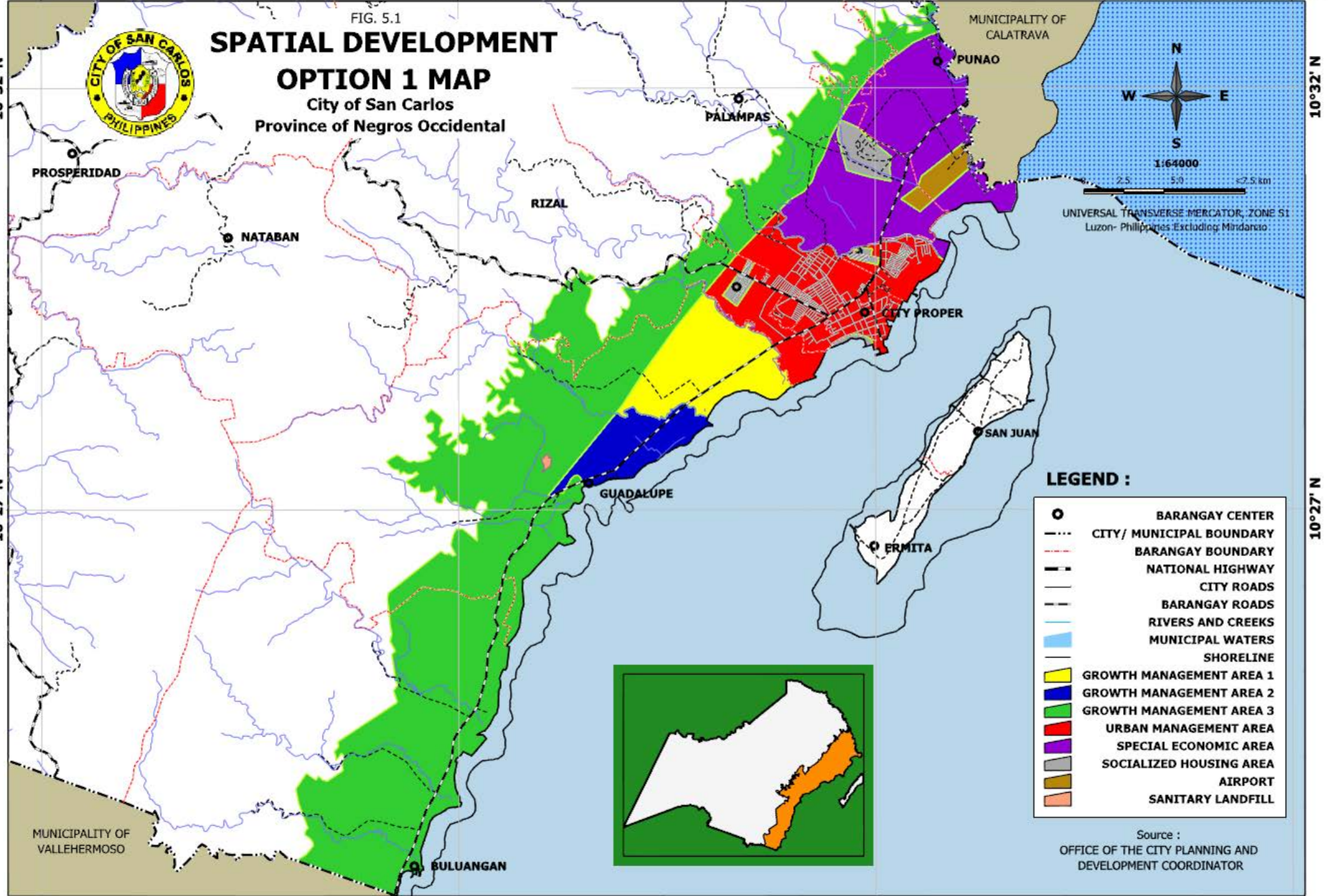


FIG. 5.1

SPATIAL DEVELOPMENT OPTION 1 MAP

City of San Carlos
Province of Negros Occidental



LEGEND :

- BARANGAY CENTER
- CITY/ MUNICIPAL BOUNDARY
- BARANGAY BOUNDARY
- NATIONAL HIGHWAY
- CITY ROADS
- BARANGAY ROADS
- RIVERS AND CREEKS
- MUNICIPAL WATERS
- SHORELINE
- GROWTH MANAGEMENT AREA 1
- GROWTH MANAGEMENT AREA 2
- GROWTH MANAGEMENT AREA 3
- URBAN MANAGEMENT AREA
- SPECIAL ECONOMIC AREA
- SOCIALIZED HOUSING AREA
- AIRPORT
- SANITARY LANDFILL

Source :
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATOR

123°16' E 123°21' E 123°25' E 123°30' E

What it takes to realize this urban form

- Cost of new roads and other infrastructure

Minimal national government investment required for construction of new arterial roads but high local government investment needed for construction of new local roads parallel to arterial roads (to include the development of three Circumferential roads namely; C1, C2 & C3) to separate local traffic from through traffic.

Moderate investment required to upgrade existing utilities.

- Community adjustment to risks

Approximately 25% of the development area will be located in areas prone to environmental hazards such as ground shaking, liquefaction and flooding (including the effect of sea level rise), particularly along the Coastal North, Coastal South and Refugio (Sipaway) Island barangays.

Proper density controls and appropriate engineering designs and mitigation will be strictly enforced in these vulnerable areas.

- Preservation of protected croplands and fishponds

Encroachment on environmentally critical areas and productive agricultural lands continue to threaten the natural environment, thus strong land use policy adjustments and IEC campaigns will be required. Existing agricultural areas will be converted for urban expansion, thus requiring strong government and community interventions.

- Strict government enforcement of regulations

Existing laws (e.g., water, air, environment, sanitation, and building codes) and local ordinances may be difficult to enforce in already built up areas. However, in new development areas, it would be easier to enforce provisions of local and national laws.

- People's compliance with regulations desired

Compliance with regulations will be difficult especially if problems already exist. With better information, however, future developers will find it easier to comply with regulations.

Implications when this urban form is realized

- Access of people to city-wide services

Easy access of people to City-wide services especially for the island barangays which will be fully provided with potable water system and other utility related services.

Availability of basic social services such as education, health, housing, sports, recreation and others will be limited along the major routes.

- Amount of air and water pollution produced

High vulnerability of residents to air, water and noise pollution as development will occur along the major routes along the urban centers.

Domestic and industrial wastewater contamination is expected in the Coastal North and Coastal South cluster barangays due to the extension of the urban corridor.

- Sustainable use of natural resources

Areas already severely damaged may be difficult to rehabilitate. Aquaculture operations become unsustainable if not adequately regulated.

Over withdrawal of ground water may create water shortage or aggravate salt water intrusion.

- Traffic problems reduced

Traffic Congestion within the City center is minimized due to the establishment of circumferential roads and other major arteries (local and national road widening).

Traffic management schemes are likewise to be intensified in order to deal with traffic problems.

- Overall attractiveness of the City

Attractiveness of the City is high with effective building density and design restrictions/controls, coupled with a mix of compatible uses.

- Potential for increased LGU revenue

Increased in local government revenues will accrue from real property taxes due to optimum use of lands.

- Prospects for more jobs and higher income

Increase in households' income will depend on their ability to see market opportunities in areas of population concentration.

5.2.2 OPTION NO. 2: BI-NODAL URBAN FORM (OLD BARANGAY EXPANSION- PROSPERIDAD & QUEZON)

General Description

The bi-nodal urban form will redirect development away from the City center toward identified urban growth areas. It matches the Galaxy form of Kevin Lynch, which is characterized by clusters of development with each cluster having its own specialization. Under this alternative, two additional self-contained growth areas will be developed outside the Poblacion area, namely: 1) Prosperidad Growth Center, which lies on the western edge of San Carlos City, adjoining the Translink Highway to Bacolod City which will play host to agri-industry and light industry initiatives engaged in primary processing activities and to specialize in tourism and recreation; and 2) Quezon Growth Center, which will serve the southwest area in supporting the surrounding agricultural priority programs and encourage settlement growth and resettlement away from Mt. Kanlaon National Park. The two growth centers will have residential components accompanied by related social infrastructure. The Bi-Nodal Urban Form will improve transport system and possibly

provide alternative means of transportation, that is, a cable car system within the vicinity of Quezon-Codcod area. Spatial Development Option 2 is presented as **Figure 5.2**.

What it takes to realize this urban form

- Cost of new roads and other infrastructure

High cost of public investment on road and other infrastructure in the initial stage as there is a need to link the identified growth centers:

- Huge capital expenditures on road building and improvement and utilities maintenance,
 - Development and improvement of circumferential routes or new sections that will link barangays to the rest of the City, and
 - Provision of alternative means of access, possibly cable car traversing major rivers and steep terrains.
- Community adjustment to risks
 - Inhabitants are relatively safe from natural and man-made disasters as hazard-prone areas are intentionally avoided.
 - Preservation of protected croplands and fishponds
 - High degree of preservation of croplands will occur in the new growth areas with minimal and controlled land use conversion on flat lands will be expected to cater eventual other land use development.
 - Strict government enforcement of regulations
 - City-wide programs and activities to foster social cohesion and integration among City inhabitants will be needed.
 - People's compliance with regulations desired
 - Full people's compliance with regulations necessary
 - Proper mix of social/income classes will have to be promoted to prevent the formation of enclaves.

Implications when this urban form is realized

- Access of people to City-wide services
 - Greater access of people to City-wide services due to decentralized frontline offices of city hall, public markets, shopping centers, tertiary schools and even a hospital
- Amount of air and water pollution produced
 - Areas of concentration of air and water pollution are easily identified and therefore mitigation measures can focus on these areas.

123°15' E

123°16' E

123°18' E

123°19' E

123°21' E

10°35' N

10°33' N

10°32' N

10°30' N

10°35' N

10°33' N

10°32' N

10°30' N

FIG. 5.2

SPATIAL DEVELOPMENT OPTION 2

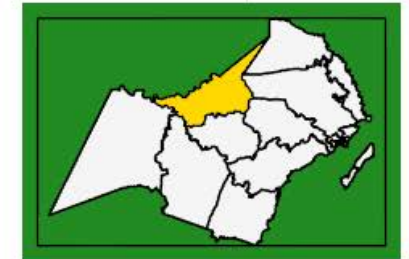
City of San Carlos
Province of Negros Occidental



1:37000



UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon Philippines Excluding Mindanao



LEGEND :

	BARANGAY BOUNDARY
	NATIONAL HIGHWAY
	BARANGAY ROAD
	PROPOSED ROAD
	RIVERS AND CREEKS
	SITIO
	RESIDENTIAL AREA
	COMMERCIAL
	INSTITUTIONAL
	PROPOSED GOVERNMENT CENTER
	LIGHT INDUSTRIAL ZONE
	EXPANSION AREA
	RURAL AGRI BUSINESS CENTER
	OPEN SPACE
	RESETTLEMENT SITE
	NNNP

Source :
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATOR

123°15' E

123°16' E

123°18' E

123°19' E

123°21' E

- Sustainable use of natural resources
 - More open space and wildlife habitats can be recovered and preserved.
- Traffic problems reduced
 - New urban nodes intercept inbound traffic from the west relieving traffic in the City center
- Overall attractiveness of the City
 - Large open spaces and visual breaks and sceneries along road network contribute to overall attractiveness of the City.
- Potential for increased LGU revenue
 - Decentralized city services help intensify local revenue collection.
- Prospects for more jobs and higher income
 - More jobs generated resulting in higher household income due to increased investments in the new urban nodes.
- San Carlos City's leading role in the north maintained
 - New growth centers with specialized functions and the availability of more expansion areas for tertiary schools, a hospital, shopping centers, non-pollutive industrial estate, and residential subdivisions will contribute to maintaining San Carlos City's leading role in North Negros.

5.2.3 OPTION 3: ONE NEW BIG SETTLEMENT IN THE CONFLUENCE OF PROSPERIDAD, QUEZON & NATABAN

General Description

Also known as the ribbon or strip development, the linear urban form is characterized by concentration of development along both sides of major transportation routes such as roads. Residential, commercial, institutional, industrial and mixed-use developments intensify along these areas through time. But the extent of development will be limited within reasonable distance from the road or easements. This form is patterned after what Kevin Lynch calls the Urban Star simply because of its strong feature of "a dominant core surrounded by centers distributed along main radials". In the case of San Carlos City, such development pattern will intensify along its western edge adjoining the Translink Highway. The growing importance of the Translink Highway bolsters the expectation of Prosperidad to have medium to longer prospects as a Secondary Urban Growth Center. The reason for this consideration stems from a number of significant locational factors. First, Prosperidad is situated at the junction of the rural road network and the Translink Highway. This vital road infrastructure has implications on trading and transport of goods from production areas of Nataban and Quezon to the markets. Second, its location can facilitate a rural "hub" function beyond barangay boundaries. Third, Prosperidad is accessible to agricultural production areas with the possibility of establishing agri-industry and

light industry initiatives that can engage in primary processing activities. The longer-term growth scenario envisions an industrialization component. Spatial Development Option 3 is presented as **Figure 5.3**.

What it takes to realize this urban form

- Cost of new roads and other infrastructure
 - Minimal national government investment is required for maintaining the Translink Highway but high local government investment is needed for the development and improvement of local roads leading to the main arterial highway. Moderate investment is required to upgrade existing utilities.
- Community adjustment to risks
 - The development area will not be situated in a location prone to environmental hazards such as landslide, ground shaking, liquefaction and flooding. Proper density control and appropriate engineering designs will be strictly enforced in vulnerable areas, if any.
- Preservation of protected croplands and fishponds
 - The need for reclassification/conversion of agricultural lands is low as development will be confined along the Translink Highway and the rural road network.
- Strict government enforcement of regulations
 - Strong political will may be needed to enforce limits within the designated urban development corridors.
- People's compliance with regulations desired
 - Moderate compliance with regulations will be required because only minimal changes will be introduced to the current development trend.

Implications when this urban form is realized

- Access of people to city-wide services
 - Availability of basic social services such as education, health, housing, sports, recreation and others will be limited along the highway and major routes.
- Amount of air and water pollution produced
 - High vulnerability of residents to air and noise pollution as development will occur along the major routes. Rise in levels of air and water pollution is expected in the northwestern part due to industrialization as Prosperidad becomes a major transshipment point and provide a context for local processing.

123°11' E

123°14' E

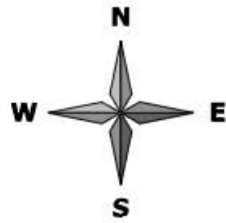
123°17' E

123°20' E

FIG. 5.3

SPATIAL DEVELOPMENT OPTION 3

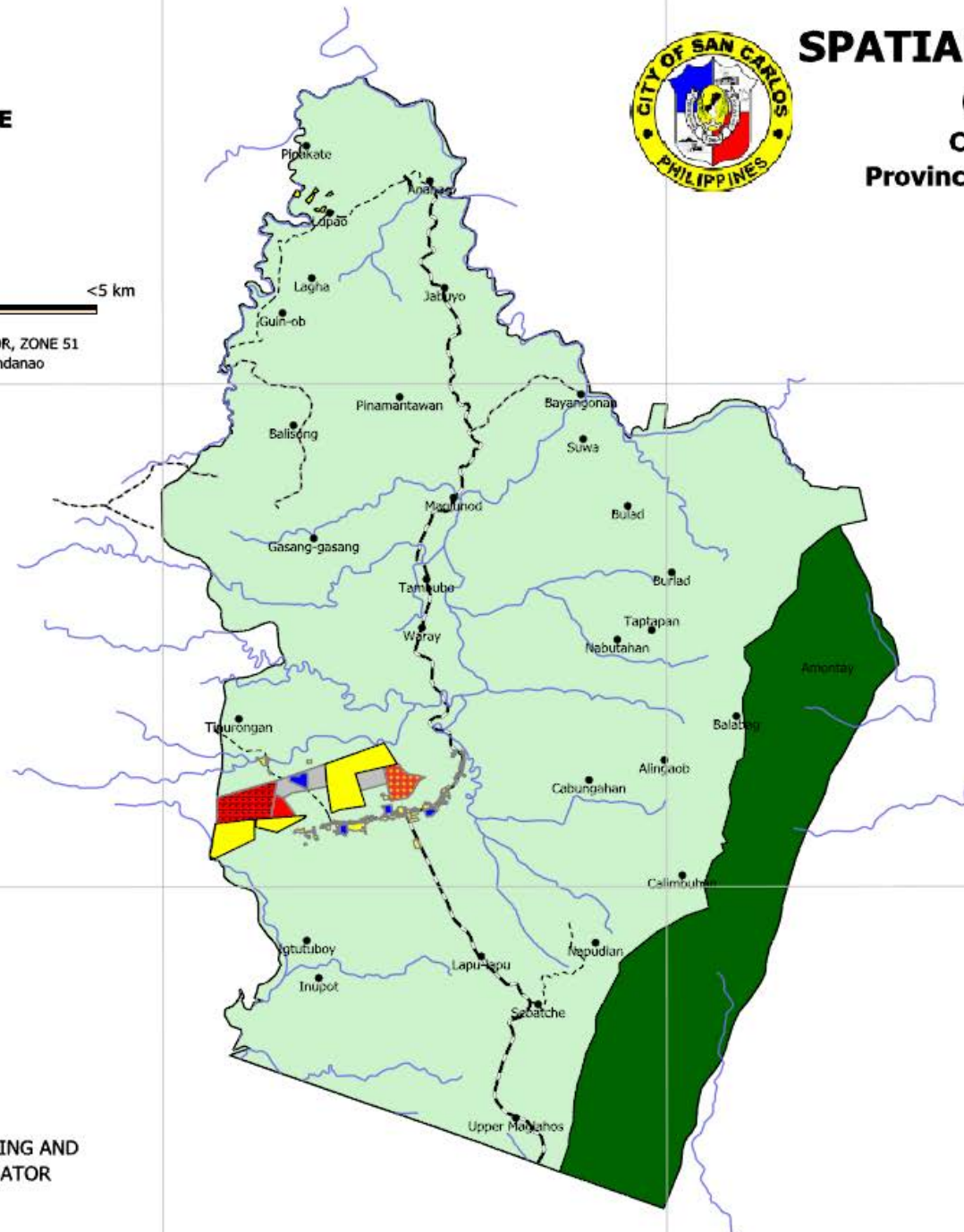
City of San Carlos
Province of Negros Occidental



1: 37000



UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon Philippines Excluding Mindanao



LEGEND :

	NATIONAL HIGHWAY
	BARANGAY ROADS
	RIVERS AND CREEKS
	RESIDENTIAL
	INSTITUTIONAL
	COMMERCIAL
	OPEN SPACE
	RESETTLEMENT ZONE
	RURAL AGRI BUSINESS CENTER
	AGRICULTURAL AREA
	NNNP

Source :
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATOR

123°11' E

123°14' E

123°17' E

123°20' E

10°29' N

10°29' N

10°26' N

10°26' N

Sustainable use of natural resources

- Moderate impact on natural resources will be expected. Wide expanse of open spaces will be preserved beyond the built-up areas resulting in the protection of croplands.
- Traffic problems reduced
 - Access is high for the movement of people and goods, provided roads are developed connecting along existing major arterial roads and the highway. Traffic congestion will be experienced in certain.
- Overall attractiveness of the City
 - The image of the City will not be easily appreciated by the passers-by because, seen from the arterial roads, the City might appear to be a mere continuous row of structures. Hence, the design and provision of visual breaks in certain areas will be necessary.
- Potential for increased LGU revenue
 - Increased in local revenues will accrue from the real property taxes due to optimum use of lands.
- Prospects for more jobs and higher income
 - Increase in households' income will depend on their ability to see market opportunities in built-up areas where population is concentrated and development happens.
- San Carlos City's leading role in the north maintained
 - This urban form will have little contribution toward maintaining the role of San Carlos City as leading business, educational and health services center of North Negros.

5.3 EVALUATION OF OPTIONS

A description of each of the development options was supplemented with criteria under what it would take to achieve and the implications if it was realized. Each of the criteria was rated as high moderate or low for each of the options. The above described tool was used to survey among the various stakeholder groups in the City and the Goal Achievement Matrix (GAM) was developed. The groups surveyed included academe, women, government, business, CSO's, farmers, fisher folks, informal settlers, NGOs/POs and youth. The scores for each were used to rank the three different options. The ranking was:

1. Linear Extension of the Urban Corridor (Option 1)
2. Old Barangay Expansion – Prosperidad & Quezon (Option 2)
3. One new big settlement in the confluence of Prosperidad, Quezon & Nataban (Option 3)

The following tables show the comparative characterization of alternatives and summary of GAM Scores:

TABLE 5.1: COMPARATIVE CHARACTERIZATION OF ALTERNATIVES

CHARACTERISTICS	Option1 Extension of the Urban Corridor	Option 2 Brgy Expansion of Prosperidad & Quezon	Option 3 New Settlement confluence Prosperidad, Quezon & Nataban
1) What it takes to realize this urban form			
Cost of new roads and other infrastructure	Moderate	High	High
Community adjustments to risks	High	Moderate	Moderate
Preservation of protected croplands and fishponds	Moderate	High	High
Strict government enforcement of regulations	Moderate	High	High
People’s compliance with regulations desired	Moderate	High	High
2) Implications when urban form is realized			
Access of people to city-wide services	High	High	Low
Amount of air and water pollution produced	High	Low	Low
Sustainable use of natural resources	Moderate	Moderate	Moderate
Traffic problems reduced	High	Moderate	Moderate
Overall attractiveness of the city	High	Moderate	Moderate
Potential for increased LGU revenue	High	Moderate	Moderate
Prospects for more jobs and higher compensation	High	Moderate	Moderate
San Carlos City’s leading role in the North maintained	High	Moderate	Low

TABLE 5.2: SUMMARY OF THE GAM SCORES

PROJECT NAME	STAKEHOLDER RATING										GRAND TOTAL SCORE	RANK
	Academe	Women	Government	Business	CSOs	Farmers	Fisherfolk	Informal Settlers	NGO/ POs	Youth		
1. Linear Extension of the Urban Corridor	2.71	0.63	1.93	2.80	2.65	1.73	2.44	2.00	2.25	2.30	21.44	1
2. Old Barangay Expansion – Prosperidad & Quezon	1.92	1.75	2.30	2.60	2.20	2.08	2.16	1.95	1.55	1.98	20.49	2
3. One new big settlement in the confluence of Prosperidad, Quezon & Nataban	2.30	2.35	2.30	2.20	0.00	1.92	1.60	1.80	1.55	1.98	18.00	3

5.4 THE CHOSEN SPATIAL STRATEGY

The grand total score for each of the options was close, especially between Options 1 and 2. It was thus decided to implement a combination of both Option 1 and Option 2. This will provide the efficient development of the urban area with the various benefits including increase in employment, increase in the attractiveness of the city and the increase in LGU revenue. Including Option 2 provides for flexibility and preparedness for rural development opportunities.

While the CLUP may be similar to past development plans, the land use plans now have more detail with regard to development planning to take into consideration disaster risk and thereby reducing the risks. This is especially important given the latest projections of disaster caused by climate change. There is a much higher awareness level of the implications of growth and development in areas of steep slope or in low lying areas that could prone to flooding.

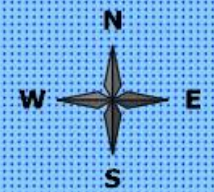
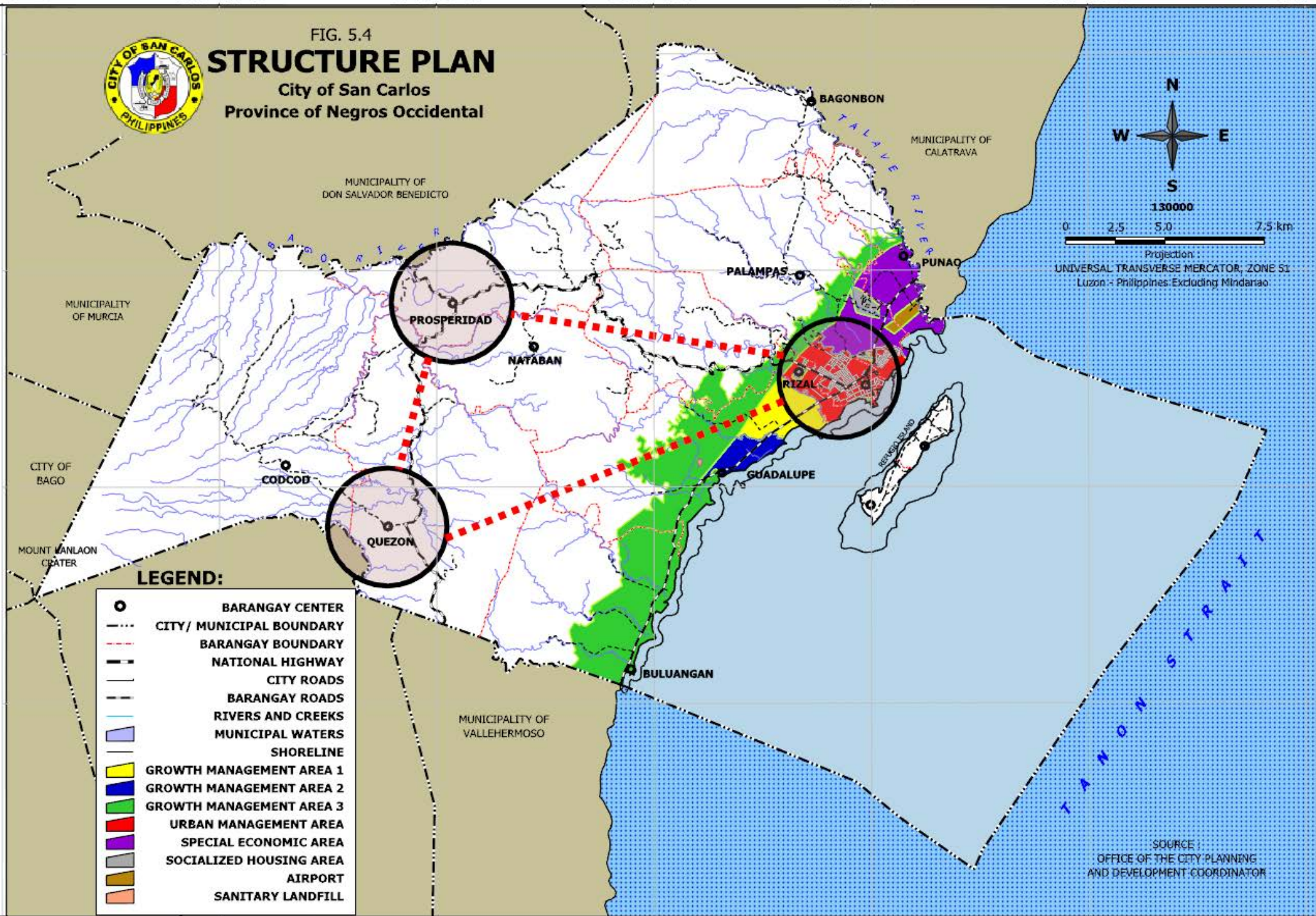
The conceptual presentation of the chosen spatial strategy is presented in **Figure 5.4 Structure Plan**.

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

10°36' N
10°31' N
10°27' N
10°23' N



FIG. 5.4 STRUCTURE PLAN City of San Carlos Province of Negros Occidental



130000
0 2.5 5.0 7.5 km

Projection:
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines, Excluding Mindanao

LEGEND:

- BARANGAY CENTER
- CITY/ MUNICIPAL BOUNDARY
- BARANGAY BOUNDARY
- NATIONAL HIGHWAY
- CITY ROADS
- BARANGAY ROADS
- RIVERS AND CREEKS
- MUNICIPAL WATERS
- SHORELINE
- GROWTH MANAGEMENT AREA 1
- GROWTH MANAGEMENT AREA 2
- GROWTH MANAGEMENT AREA 3
- URBAN MANAGEMENT AREA
- SPECIAL ECONOMIC AREA
- SOCIALIZED HOUSING AREA
- AIRPORT
- SANITARY LANDFILL

SOURCE:
OFFICE OF THE CITY PLANNING
AND DEVELOPMENT COORDINATOR

123°07' E 123°12' E 123°16' E 123°21' E 123°25' E 123°30' E 123°35' E

CHAPTER SIX:

**UPDATED
COMPREHENSIVE
LAND USE PLAN 2014 - 2023**

6. UPDATED COMPREHENSIVE LAND USE PLAN 2014 - 2023

6.1 INTRODUCTION

This updated CLUP mainly carries the policy directions provided in the predecessor CLUP forward. A major addition is the sub-delineation of the Coastal Area which is intended to provide a stronger mechanism for the LGU's development and implementation of regulations in the said area. Developments which have occurred since the formulation of CLUP 2000 – 2020 were also included particularly in Poblacion.

Aside from land use policies, this chapter also mentions key transport plan projects identified in the previous CLUP but were yet un-completed or un-implemented. This is in recognition of the strong link between land and transport development.

6.2 GOALS AND OBJECTIVES

The goals and specific objectives of this updated CLUP 2014 – 2023 remains consistent with that of its predecessor, as provided below:

Goals

- To guide and manage land use development over the plan period
- To provide local administrators, private agencies and the public with a solid development framework on the basis of properly accommodating population and urban growth

Specific Objectives

- To allocate sufficient development land to meet the programmed needs of the City.
- To indicate where major areas of urban growth should be concentrated in the San Carlos coastal lowland.
- To indicate where settlement expansion should take place in the key rural settlements.
- To provide a stable land use context for urban renewal in the Poblacion.
- To ensure the cost-effective provision of transport, community and utility infrastructure through a concentrated pattern of land allocations for development.
- To encourage the development of green and open spaces within built-up and between environmentally sensitive land use activities;
- To prevent urban sprawl, particularly around the Poblacion, the coastal lowland and along the main transport corridors.
- To conserve land for agriculture and forestry purposes and provide a sound base for investment in these sectors.
- To conserve the City's natural resources and environmentally critical areas, including the Northern Negros Forest Reserve, Refugio (Sipaway) Island and other sensitive coastal environments.
- To complement and add strength to the conservation of the Mount Kanlaon National Park, within the City's boundary.

6.3 LAND USE CLASSIFICATION

6.3.1 LAND USE CLASSIFICATION 2014 – 2023

This updated CLUP builds on the Policy Areas of the predecessor CLUP. Major difference lie in the following:

- Expanded area coverage of the Rural Settlement Area in Barangay Prosperidad and Growth Management Area 2 where the City Government reclassified areas equivalent to 6% of the Agricultural Areas that were zoned per CLUP 2000 – 2020 due to a policy of dispersing growth to rural service centers;
- Inclusion and delineation of sub-areas within the Municipal Waters
- Changes in nomenclature of land uses due to the updating of HLURB’s CLUP preparation guidelines

The various classifications the City’s Policy Areas are presented in the table below:

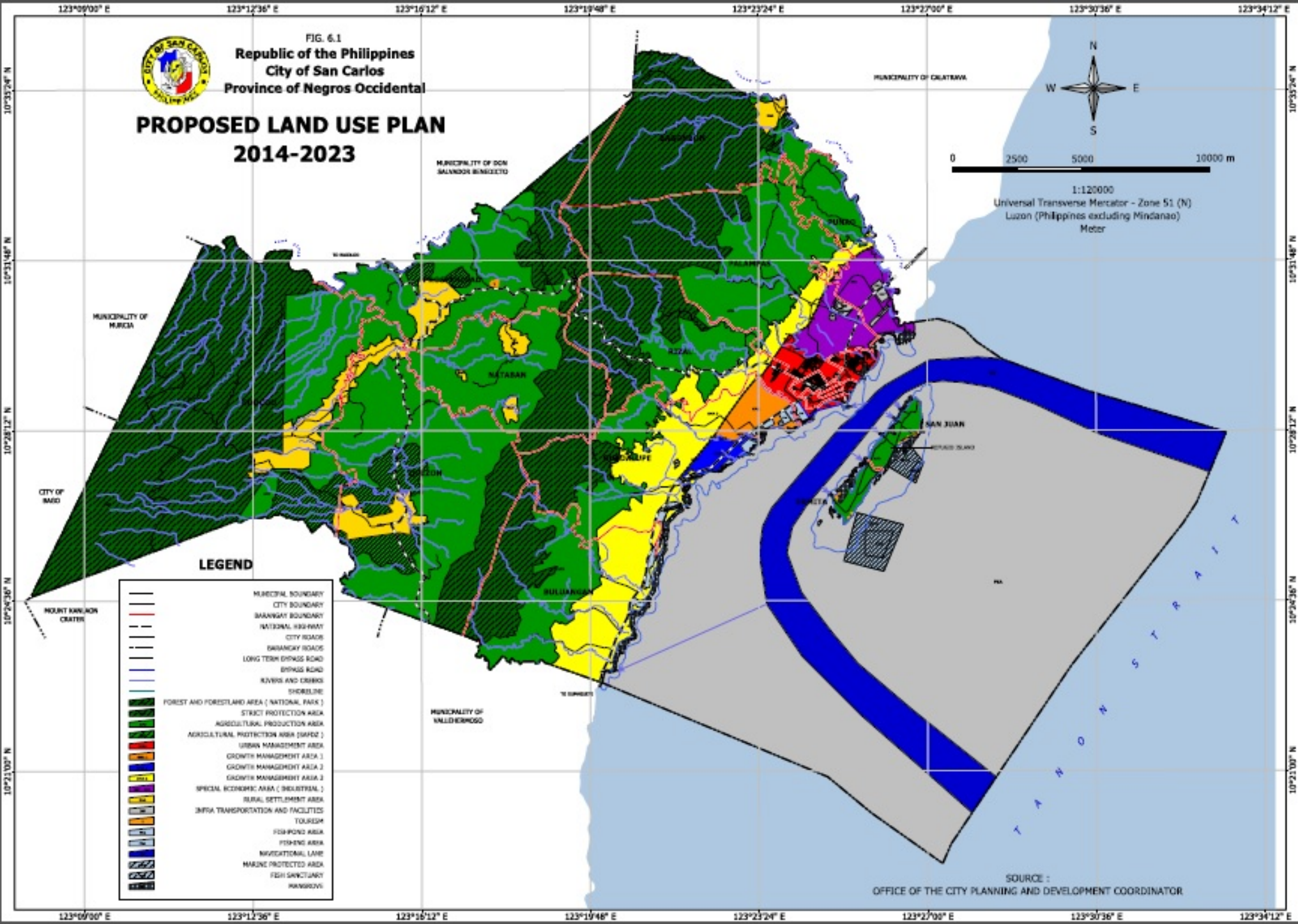
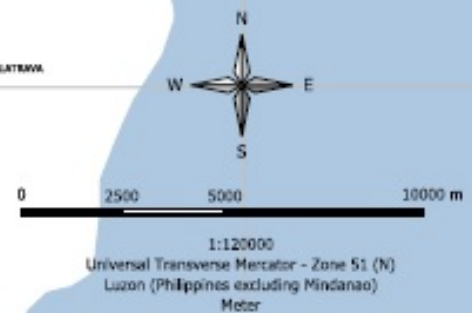
TABLE 6.1: LAND USE CLASSIFICATION, CLUP 2014 - 2023

LAND USE CLASSIFICATION	AREA (HA)	SHARE %
I. FOREST AREA	20,068.00	44.45%
a. Mt. Kanlaon National Park Strict Protection Area	2,165.00	
b. North Negros Forest Reserve Strict Protection Area	7,235.00	
c. MKNP Multiple Use Area	4,965.00	
d. NNFR Multiple Use Area	5,703.00	
II. AGRICULTURAL AREA	17,298.50	38.31%
a. Agricultural Production Area	14,763.34	
b. Agricultural Protection Area	2,535.16	
III. RURAL SETTLEMENT AREA	1,640.89	3.63%
a. Barangay Codcod	616.75	
b. Barangay Quezon	437.71	
c. Barangay Nataban	94.12	
d. Barangay Prosperidad	460.58	
e. Barangay Bagonbon	51.73	
IV. SPECIAL DEVELOPMENT AREA	5,703.79	12.63%
a. Growth Management Area 1	362.63	
b. Growth Management Area 2	237.36	
c. Growth Management Area 3	3,311.36	
d. Urban Management Area	778.86	
e. Special Economic Zone	1,013.78	
V. UTILITIES, TRANSPORTATION & SERVICE AREA	18.73	0.04%
VI. Refugio (Sipaway Island)	419.89	0.93%
Total Land Area	45,150.00	100%
VI. MUNICIPAL WATERS	32,020.98	SHARE %
a. Mangrove	304.08	0.95%
b. Marine Protected Area	193.14	0.60%
c. Fish Sanctuary	69.74	0.22%
d. Sealane	4,298.67	13.42%
e. Municipal Fishing Area	27,155.35	84.80%
TOTAL MUNICIPAL WATERS AREA	32,020.98	100%
TOTAL AREA LAND AND MUNICIPAL WATERS	77,170.78	



FIG. 6.1
 Republic of the Philippines
 City of San Carlos
 Province of Negros Occidental

PROPOSED LAND USE PLAN 2014-2023

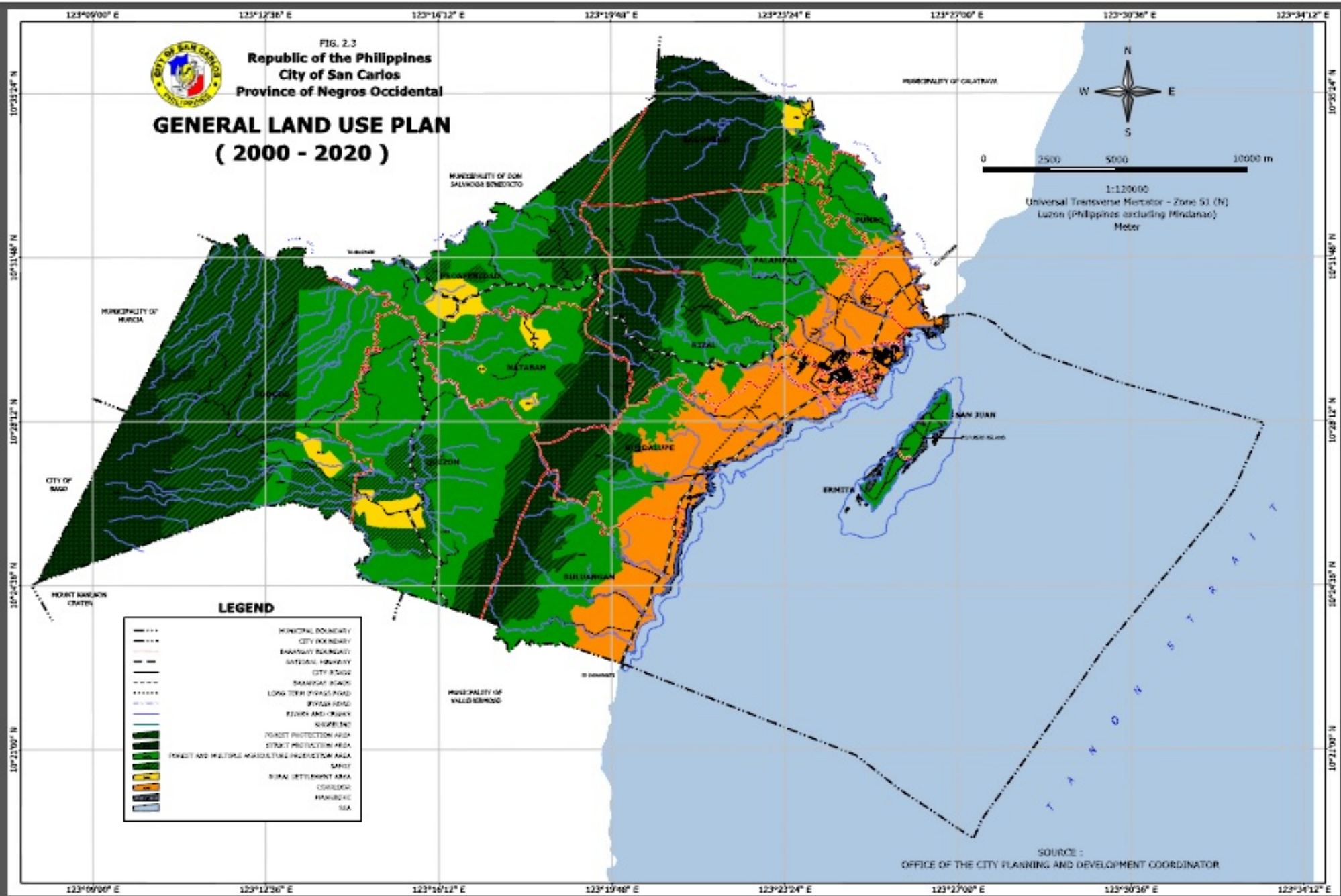


SOURCE :
 OFFICE OF THE CITY PLANNING AND DEVELOPMENT COORDINATOR



FIG. 2.3
 Republic of the Philippines
 City of San Carlos
 Province of Negros Occidental

GENERAL LAND USE PLAN (2000 - 2020)



LEGEND

	MUNICIPAL BOUNDARY
	CITY BOUNDARY
	BARANGAY BOUNDARY
	NATIONAL HIGHWAY
	CITY ROAD
	BARANGAY ROAD
	LONG TERM DIVERSION ROAD
	RIVER/STREAM
	BOUNDARY AND CHANNEL
	FOREST PROTECTION AREA
	FOREST AND MULTIPLE AGRICULTURE PROTECTION AREA
	RURAL SETTLEMENT AREA
	RESIDENTIAL
	SEA

SOURCE :
 OFFICE OF THE CITY PLANNING AND DEVELOPMENT COORDINATOR

123°16' E

123°19' E

123°22' E

123°25' E

123°28' E

10°31' N

10°28' N

10°25' N

10°31' N

10°28' N

10°25' N

FIG. 6.2



PROPOSED SAN CARLOS CITY MASTER DEVELOPMENT PLAN

City of San Carlos Province of Negros Occidental

SOURCE :
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDINATOR



1:64000

0 1 km 2 km 4 km

PROJECTION :
UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon - Philippines Excluding Mindanao

LEGEND :

	NATIONAL HIGHWAY
	MAJOR ROADS
	RAILROAD
	CREEKS
	CONTOUR LINE
	RIVER
	RESIDENTIAL
	RESORTS
	INSTITUTIONAL AREA
	COMMERCIAL AREA
	INDUSTRIAL AREA
	MIXED USE
	CULTURAL VILLAGE
	EMPLOYEE HOUSING
	DISTRICT CENTER
	PARKS AND RECREATION/ OPEN SPACE
	RIVER BUFFER
	POND
	GOLF COURSE
	AIRPORT
	SEAPORT/ FISH PORT
	CONTAINER PORT
	GROWTH MANAGEMENT AREA
	WASTE WATER TREATMENT PLANT
	POWER PLANT
	LAND

Refugio Island

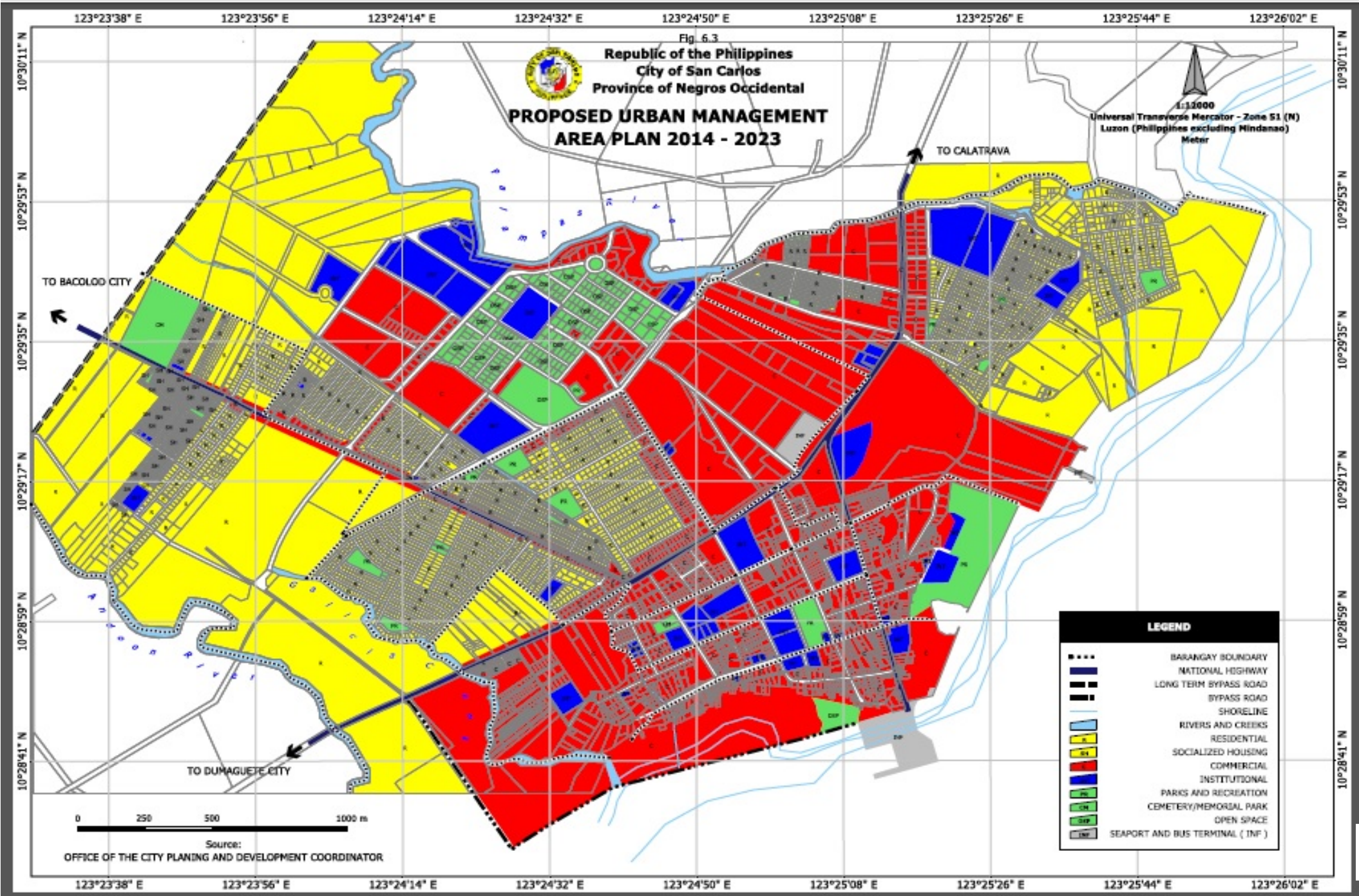
123°16' E

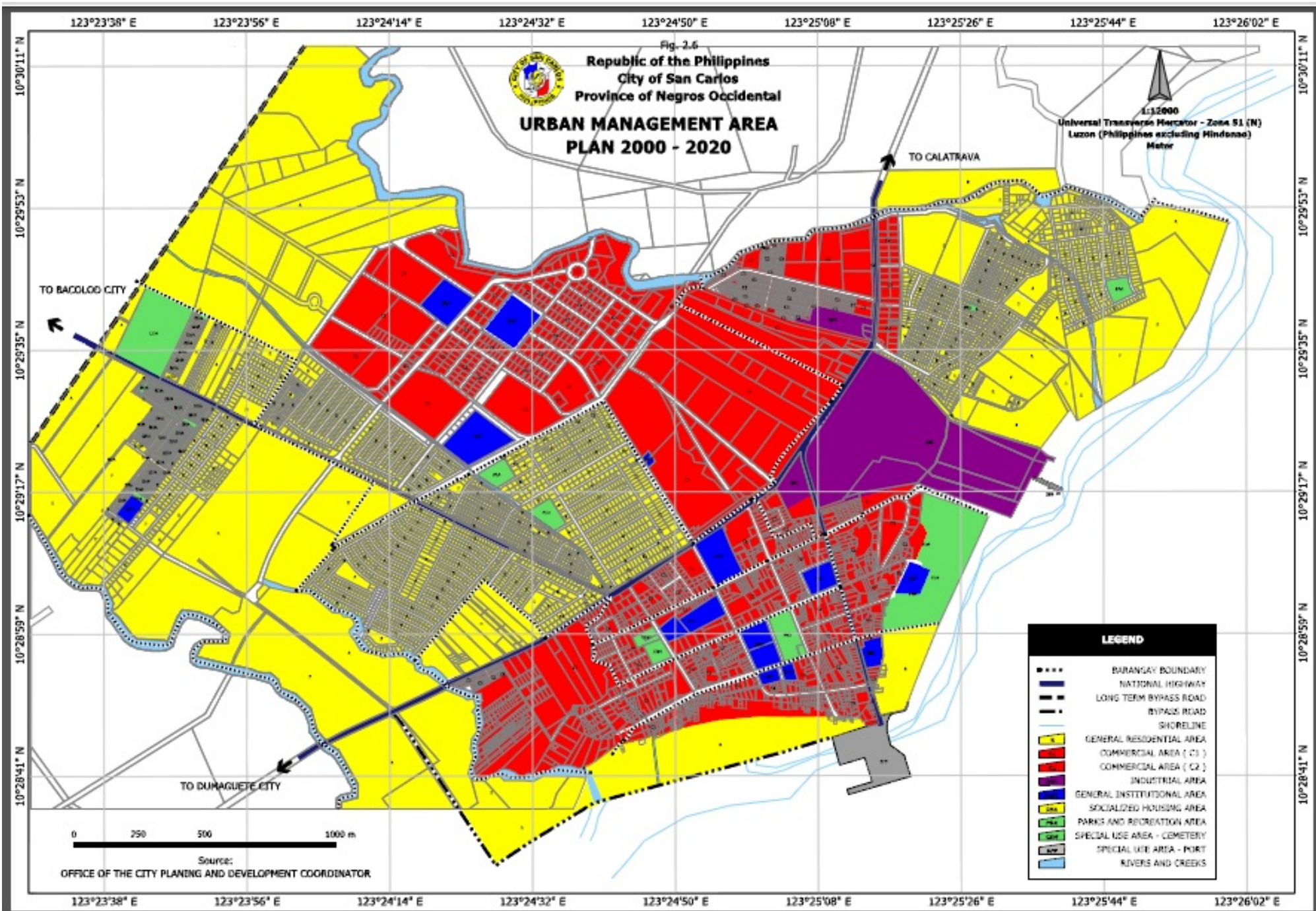
123°19' E

123°22' E

123°25' E

123°28' E





123°20' E

123°21' E

123°22' E

123°23' E

123°24' E

FIG. 6.4

**PROPOSED RURAL SETTLEMENT AREA:
BAGONBON , 2014-2023**
City of San Carlos
Province of Negros Occidental



0 1.25 2.5 <5 km

UNIVERSAL TRANSVERSE MERCATOR, ZONE 51
Luzon Philippines Excluding Mindanao

LEGEND :

- BARANGAY PROPER
- SITIO
- MUNICIPAL BOUNDARY
- BARANGAY BOUNDARY
- BARANGAY ROADS
- RIVERS AND CREEKS
- SETTLEMENT AREA

10°36' N

10°35' N

10°34' N

10°36' N

10°35' N

10°34' N

MUNICIPALITY OF DON SALVADOR BENEDICTO

TALAVE RIVER

MUNICIPALITY OF CALATRAVA

BAGONBON PROPER

BAGONBON

BARANGAY PROSPERIDAD

BARANGAY PUNAO

BARANGAY PALAMPAS

Source:
OFFICE OF THE CITY PLANNING AND
DEVELOPMENT COORDIANTOR



123°20' E

123°21' E

123°22' E

123°23' E

123°24' E

123°09' E

123°12' E

123°15' E

123°18' E

123°21' E



PROPOSED RURAL SETTLEMENT AREA PROSPERIDAD, QUEZON, CODCOD AND NATABAN City of San Carlos Province of Negros Occidental

FIG. 6.5

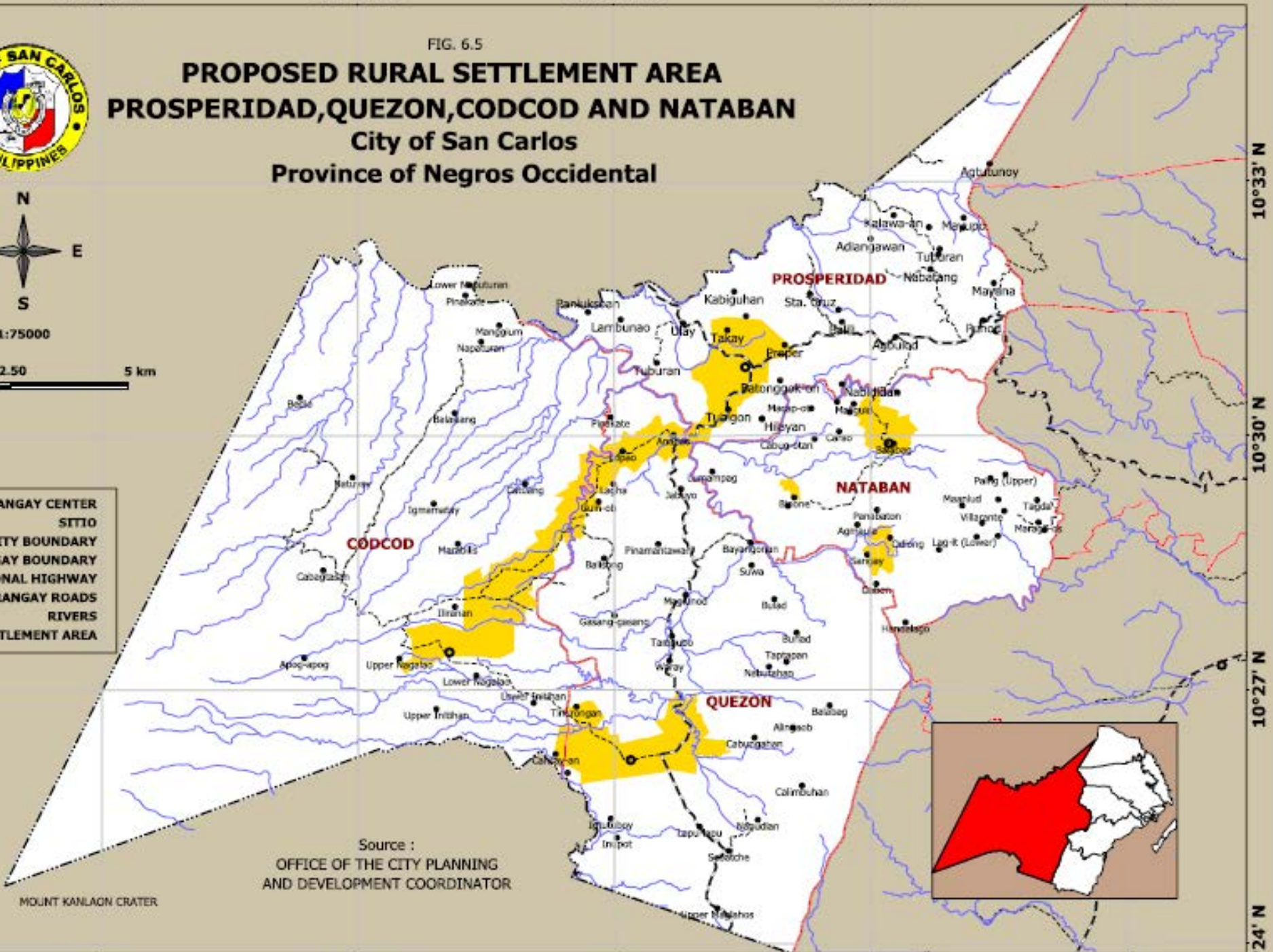


1:75000

0 1.25 2.50 5 km

LEGEND :

- BARANGAY CENTER
- SITIO
- CITY BOUNDARY
- BARANGAY BOUNDARY
- NATIONAL HIGHWAY
- BARANGAY ROADS
- RIVERS
- RURAL SETTLEMENT AREA



Source :
OFFICE OF THE CITY PLANNING
AND DEVELOPMENT COORDINATOR

MOUNT KANLAON CRATER



10°33' N

10°33' N

10°30' N

10°30' N

10°27' N

10°27' N

123°06' E

123°09' E

123°12' E

123°15' E

123°18' E

123°21' E

10°24' N

6.3.2 COMPARATIVE LAND AREAS

A comparison of areas per land use classification between CLUP 2014-2023 and CLUP 2000-2020 is provided in the table below:

TABLE 6.2: COMPARATIVE AREAS, CLUP 2014 – 2023 & CLUP 2000 - 2020

CLUP 2014 – 2023			CLUP 2000 – 2020		CHANGE (%)
LAND USE CLASSIFICATION	AREA (HA)	SHARE %	LAND USE CLASSIFICATION	AREA (HA)	
I. FOREST AREA	20,068.00	44.45%	COMBINES FOREST PROTECTION AREA & FOREST AND MULTIPLE AGRICULTURE PRODUCTION AREA	20,068.00	0%
a. Mt. Kanlaon National Park Strict Protection Area	2,165.00		Mt Kanlaon. National Park (Protected Area)	2,165.00	
b. North Negros Forest Reserve Strict Protection Area	7,235.00		North Negros Forest Reservation (Protected Area)	7,235.00	
c. MKNP Multiple Use Area	4,965.00		MKNP (Forest and Multiple Agriculture Production Area)	4,965.00	
d. NNFR Multiple Use Area	5,703.00		NNFR (Forest and Multiple Agriculture Production Area)	5,703.00	
II. AGRICULTURAL AREA	17,298.50	38.31%	COMBINES AGRICULTURE PRODUCTION AREA & SAFDZ	18,433.50	-7%
a. Agricultural Production Area	14,763.34		Agriculture Production Area	15,898.34	
b. Agricultural Protection Area	2,535.16		(Formerly SAFDZ)	2,535.16	
III. RURAL SETTLEMENT AREA	1,640.89	3.63%	RURAL SETTLEMENT AREA	505.89	224.36%
a. Barangay Codcod	616.75		a. Barangay Codcod	49.25	
b. Barangay Quezon	437.71		b. Barangay Quezon	153.96	
c. Barangay Nataban	94.12		c. Barangay Nataban	94.12	
d. Barangay Prosperidad	460.58		d. Barangay Prosperidad	176.83	
e. Barangay Bagonbon	31.73		e. Barangay Bagonbon	31.73	
IV. SPECIAL DEVELOPMENT AREA	5,703.99	32.63%		5,631.22	1%
a. Growth Management Area 1	362.63		a.Growth Management Area 1	362.63	
b. Growth Management Area 2	237.36		b.Growth Management Area 2	237.36	
c. Growth Management Area 3	3,311.36		c.Growth Management Area 3	3,315.37	
d. Urban Management Area	778.86		d.Urban Management Area	687.36	
e. Special Economic Zone	1,013.78		e.Special Economic Zone	1,028.5	
V. UTILITIES, TRANSPORTATION & SERVICE AREA	18.73	0.04%	(New classification)		
SOCIALIZED HOUSING AREA			(Subsumed in UMA)	91.50	

VI. Refugio (Sipaway) Island	419.89	0.93%			
TOTAL LAND AREA	45,150.00	100%			
VII. MUNICIPAL WATERS	32,020.98				
a. Mangrove	304.08	0.95%	(New classification)		
b. Marine Protected Area	193.14	0.60%	(New classification)		
c. Fish Sanctuary	69.74	0.22%	(New classification)		
d. Sealane	4,298.67	13.42%	(New classification)		
e. Municipal Fishing Area	27,155.35	84.80%	(New classification)		
TOTAL LAND AREA INCLUDING MUNICIPAL WATERS	77,170.98				

Notes:

1. The City's total land area is estimated at 45,150 has. This is composed of Items I, II, III, IV, V and sub-items a of item VI.
2. The City's total municipal water area is estimated at xx has. This is composed of sub-items b, d, e, f and g of item VI.

6.3.3 DEVELOPMENT CONTROL AREAS

Developments in areas with identified environmental hazards shall be controlled. These include the following:

- Areas that are highly susceptible to landslides and with critical slopes
- Flood prone areas
- Areas affected by tidal flows/ surges
- Areas prone to liquefaction

6.4 POLICY DIRECTIONS

This updated CLUP also continues the Policy Directions for each land use that were provided in the previous CLUP. Most of the provisions below were lifted from CLUP 2000 – 2020 with the exception of the newly identified Policy Areas within the Municipal Waters.

6.4.1 NIPAS FOREST AREA

The City of San Carlos adopts a Protection policy for its Forest Area, as briefly discussed below.

MKNP and NNFR Strict Protection Areas

- Area Characteristics

The area is covered by the Balabag Mountain Ranges and Mt. Kanlaon, and the Northern Negros Forest Reserve, with a combined area of about 9,400 hectares. These areas have been classified as protection areas under the NIPAS. Its coverage embraces steep terrains and highlands of Barangays Codcod, Prosperidad, Nataban, Rizal, Buluangan, and Bagonbon. The area is characterized by steep terrain of over 18%, and denuded hill slopes, rapid run-off and erosion. The area presents low development potential but high environmental conservation and landscape value.

- Policy Direction

Protection areas of the NIPAS Area are delineated to conserve environmentally sensitive areas, through soil, forest and watershed protection, together with the conservation and enhancement of visual amenity and areas of high landscape value. There will be a strong emphasis of forestry and reforestation projects together with optimizing eco-tourism opportunities. The interests of the indigenous communities in the Mount Kanlaon National Park will be maintained.

- FLUP

The Local Government Unit of San Carlos City and DENR, Negros Occidental formulated a Forest Land Use Plan (FLUP) for the City. The plan will form part to this CLUP document.

The City's Forest Land Use Plan (FLUP) shall be made consistent with the provisions and intentions of this updated CLUP.

- Preferred Uses

Preferred uses should therefore normally be restricted to those associated with forestry, eco-tourism/countryside recreation and sustainable practices associated with indigenous communities.

MKNP and NNFR Multiple Use Areas

- Area Characteristics

These areas cover the slopes and hills between the NIPAS Protection Area and the predominantly agricultural areas, with slopes mainly ranging from 6 to 18%. A number of settlements are situated in the Multiple Use Area. The main source of living in the area has been logging, crop farming and some backyard livestock and poultry raising. The area is mainly devoid of forest cover. It is in part affected by NIPAS status (MKNP and NNFR).

- Policy Direction

The area shall act as a buffer to the NIPAS Protection Areas and for areas within the MKNP and NNFR, it is envisaged that a multiple use zone concept will be applied (as defined in the NIPAS rules and regulations). In this context the area presents potential for reforestation and agricultural development, including inter-cropping, and countryside recreation and tourism.

- FLUP

The Local Government Unit of San Carlos City and DENR, Negros Occidental formulated a Forest Land Use Plan (FLUP) for the City. The plan will form part to this CLUP document.

The City's Forest Land Use Plan (FLUP) shall be made consistent with the provisions and intentions of this updated CLUP.

- Preferred Uses

Low intensity development in support of the forestry, agriculture and recreation/tourism are preferred. There will be tolerance of existing legitimate settlements/communities and planned expansion implied by the needs natural resource development.

6.4.2 AGRICULTURAL AREA (AA)

There are two policy areas within the AA, namely, Agricultural Protection Area and Agricultural Production Area. These policy areas define the sub-classifications of the AA, as briefly discussed below:

Agricultural Protection Areas (APtA)

These are the prime agricultural lands (irrigated and irrigable) that were delineated in CLUP 2000 – 2020 as the City’s SAFDZ.

- Area Characteristics

Agricultural Protection Areas areas have been identified in Brgys. Cocod, Quezon, Prosperidad and Bagonbon for agricultural conservation and development. These are primarily areas of good agricultural potential declared in accordance with the requirements of the NIPAS Act (1992), AFMA (1997) and MC No. 54 (1993) Prescribing the Guidelines governing Section 20 of RA 7160 (Local Government Code of 1991) authorizing cities and municipalities to reclassify agricultural lands into non-agricultural uses. These areas are non-negotiable for conversion and may not be re-classified into other uses.

- Policy Direction

Following AFMA provisions, these areas shall “serve as centers where developments in the agriculture and fisheries sectors are catalyzed in an environmentally and socio-culturally sound manner”. Priority will be given to agricultural investment in these areas and to their protection from non-agricultural development.

- Preferred Uses

Identified Agricultural Protection Areas shall be devoted principally to agricultural development.

Agricultural Production Areas (APdA)

The delineation of APdA is similar to that in CLUP 2000-2020 except for some areas in Brgy. Prosperidad, Quezon and Codcod that are re-classified into Rural Settlement Areas in this updated CLUP 2014-2023.

- Area Characteristics

The area consists of two main sub-components; the upland plateau and hill slopes, and the coastal lowland area. The upland plateau is characterized by smallholdings growing staple crops and a variety of vegetables and fruit. There are also substantial areas of non-productive land. The coastal lowland is mainly sugar cane plantation.

- Policy Direction

The Tranklink Highway and farm-to-market roads encourage sustainable agricultural development in both areas. Retention of its present use is encouraged with the intention of supporting policies on agricultural intensification and diversification as part of a program of rural development and improvement. Agro-processing will be encouraged in the APdA areas, together with a full range of agricultural research, training and support services.

- Preferred Uses

The preferred uses will be agriculture and agriculture related activities, and other uses, which will benefit the rural economy.

6.4.3 RURAL SETTLEMENT AREA (RSA)

Except for expansions in Brgys. Prosperidad, Quezon and Codcod, the RSAs' delineation remains largely similar to that in CLUP 2000-2020.

Area Characteristics

The proposed growth of the rural area will be concentrated around the existing village settlements and in particular priority Rural Growth Centres in Brgys. Prosperidad, Quezon/Codcod and Bagonbon.

Policy Direction

The City had already invested in the rural settlements and the designation of the four priority Rural Growth Centers will facilitate cost-effective investment in comprehensively planned development and infrastructure. These settlements will be the economic and social hubs for the agricultural and forestry development programs and as such will also be the focus for population growth. To meet the implied demand for land, each of the four Rural Growth Centers will include a RSA, where properly serviced development can take place.

Preferred Uses

The preferred uses in RSA shall be low to medium density residential, socialized housing, commercial, institutional, recreational uses, agricultural processing, research and support, and light industry.

6.4.4 *SPECIAL DEVELOPMENT AREA (SDA)*

Area Characteristics

The delineated SDA is similar to that provided in CLUP 2000-2020. The SDA covers the whole of the coastal plain, referred to as the San Carlos Development Corridor. The SDA accommodates the entire low-lying area from the coast until the edge of the hills where the topography changes drastically. The existing Poblacion and other major and proposed projects, particularly the Special Economic Zone (SEZ), are located in this area. The area includes all the urban Brgys 1-6 and parts of Brgys Buluangan, Guadalupe, Rizal, Palampas, and Punao.

The area contains a wide range of land uses and includes the Poblacion and several other coastal settlements. Outside the urban area, most of the land is devoted to sugar cane plantation farming and there are a few large landholdings favoring the planned development of the area. Bordering the coastline are a number of fishponds, many of which are not used. There is also a substantial area of mature mangrove, north of the Poblacion.

Policy Direction

The SDA is divided into six secondary policy areas, where it is possible to indicate in broad terms the nature and extent of the proposed urban land uses. The secondary areas are 1) Growth Management Area 1, 2) Growth Management Area 2, 3) Growth Management Area 3, 4) Urban Management Area 3, 5) Special Economic Area, and 6) Utilities, Transportation and Service Area.

- Growth Management Area 1 (GMA-1)

The area is located immediately south of the Poblacion. The policy intent for GMA-1 is that it should be developed as a residential community with a full range of supporting commercial and community support facilities. In particular the area will contain a District Center, where the support facilities will be located. Industrial uses will not be favored in this area.

It is anticipated that the development of this area will be medium/long-term, so the continued investment in agriculture as an interim use is favored.

- Growth Management Area 2 (GMA-2)

The planned intention for this area to the immediate south of the Andoon River is to develop a deep-water port and port related facilities, together with industrial development, which can take advantage of a waterfront/port location.

The development of this area is viewed as a medium/long-term venture, responding to progress in industrial development and agriculture/agro-processing. Interim agricultural uses are therefore favored.

- Growth Management Area 3 (GMA-3)

GMA 3 lies south and west of the Poblacion and covers land areas between the coastline and the 100m contours. It also includes the Hacienda Estate at its southern end.

Much of the area is of high landscape value, with fine hill-slopes and mountain areas, together with an attractive coastline. It is therefore proposed to use the area for a combination of

recreation/tourism development, high-end residential development and plantation agriculture. The recreation and tourism development will be concentrated in the Hacienda Estate area. The expansion of the existing rural settlements, particularly Buluangan will also be incorporated in the detailed planning for this area.

- Urban Management Area (UMA)

The area consists mainly of the Poblacion, the Central Business District (CBD) and planned new residential areas. It also includes the sugar mill site. The general policy intent is to expand the Poblacion and to upgrade the existing urban fabric.

New development will be concentrated in the CBD and in planned new residential areas to the south and west of the existing built-up area. The CBD is intended to accommodate a variety of commercial, community and residential uses at medium to high densities. An area to the north of the CBD is intended for secondary commercial and business uses (e.g. lumber showrooms, repair workshops and yards, building supply and lumberyards).

Three urban renewal areas are proposed to re-invigorate the Poblacion. Two will be focused on the upgrading of existing residential areas, the other on the improvement of the old Poblacion commercial and market center. It is assumed the sugar mill will remain in-situ, but in anticipation of other development on the site it is proposed that any further industrial development should be restricted to a light industrial category.

The UMA is further sub-classified into:

- General Residential Area
- Socialized Housing Area
- Commercial 1 Area
- Commercial 2 Area
- General Institutional Area
- Parks and Recreation Area
- Industrial 1 Area
- Utilities, Transportation and Service Area
- Cemetery

Other land use designations are made for institutional uses (e.g. City Hall), parks and recreation, commercial and cemeteries.

This general intent is shown on the UMA Plan, which incorporates a series of sub-policy areas, with specific land use intent and which set the context for the detailed definition of allowed uses in sub-zones listed in the Zoning Ordinance.

- Special Economic Zone (SEZ)

The SEZA is located immediately north of the Poblacion and is intended as a comprehensively planned industrial area, with a full range of supporting commercial, community and residential uses. Some 445 hectares have PEZA status and the total industrial land provision will be around 311 hectares.

Residential development will be planned in conjunction with the growth of the industrial area. Commercial development and community facilities will be concentrated in a planned District

Center. The area will also include land set aside for a potential Government/Provincial Government Complex. The boundaries of the industrial land will be specified through substantial landscape buffer areas.

This is already the site of the Bio-ethanol and Bio-mass power plants.

The proposed airport will be located in the SEZA and will be developed in compliance with the standards and practices of the ICAO and the requirements of the Philippine Air Transportation Office.

6.4.5 UTILITIES, TRANSPORTATION AND SERVICE AREA (UTSA)

These are sites intended for major public utilities, transportation and services. These include the sites of the Bio-ethanol and Bio-mass power plants, Eco-Center, proposed San Carlos City Community Airport, San Carlos City Port, Buluangan Fishport, barangay fishports in Ermita and San Juan and San Carlos Transport Terminal.

6.4.6 MUNICIPAL WATERS AREA (MWA)

This is a new area designation in line with the ridge-to-reef approach per HLURB's new planning guidelines.

Area Characteristics

In all areas, the coastal resources are under threat from development and poor fisheries practices. The reef surrounding Refugio (Sipaway) Island is severely damaged. The CMA is sub-classified into the following areas:

- Mangrove
- Marine Protected Area
- Fish Sanctuary
- Sealane
- Municipal Fishing Area

Policy Direction

The primary intention of the area is conservation and enhancement of the natural resources. Economic activity will therefore be driven towards sustainable fisheries development.

Preferred Uses

Preferred uses will be community based and include fisheries related livelihood and recreation and tourism. Uses, which enhance the environment and benefit the community, will be favored.

6.4.7 REFUGIO (SIPAWAY) ISLAND

Area Characteristics

Being a small island, this is an environmentally-sensitive area that is susceptible to coastal erosion and flooding. The island hosts two barangays and the immediate concern is how to ensure sustainable development practices borne by residential expansion and influx of tourism activities.

Policy Direction

The primary intention for the area is also to conserve and enhance its natural resources as well as ensure the protection of settlements thereat. Developments within the island shall closely be related to those in the MWA.

Preferred Uses

Preferred uses will be community based and include fisheries related livelihood and recreation and tourism. Uses, which enhance the environment and benefit the community, will be favored.

6.5 TRANSPORT PLAN

6.5.1 GENERAL

Several relevant key Transport Plan proposals are carried over from the previous CLUP. These are still deemed important in realizing the overall goals and objectives of this updated CLUP. These are included in the City's Comprehensive Development Plan (CDP).

6.5.2 AIR TRANSPORT

The proposed San Carlos Community Airport (located in the SEZ) will cater for both domestic passenger and freight traffic. It is included as a priority item in the CDP.

6.5.3 PORT DEVELOPMENT AND SHIPPING

Port Improvement

Improvement of the existing facilities at the San Carlos City Port, to include the provision of proper loading/unloading facilities and equipment for freight and passenger traffic, should be provided.

Deepwater Port

A second (and longer-term) deep water cargo port is proposed in San Antonio in response to planned economic growth in the City and the surrounding municipalities. Development of this facility will permit the existing port to be mainly for passenger use.

6.5.4 ROAD DEVELOPMENT

Completion of Port Access Road

The completion of this road is a priority to serve the port expansion area. This should be a “limited access” road in the interests of highway safety and reduced traffic congestion.

Poblacion Interim By-Pass Road

The project will provide an alternative route for access into the City and for through traffic. It will have the effect of diverting traffic from the potentially congested national highway in the existing and proposed urban area. This should be a “limited access” road in the interests of highway safety and reduced traffic congestion. A road line (right of way) will be maintained in advance of construction.

San Carlos Long-term By-Pass Road

This long-term project will provide a dedicated new road outside the urban area and will cater for both north-south through traffic and will intercept traffic from the Trans-link Highway. Access from this road into the City will be from a limited number of key junctions. The project is expected to be long-term as a response to City growth and a general increase road traffic usage. A preliminary road line (right of way) should be delineated to ensure long-term project feasibility.

National Highway Expansion

The City proposes to continue the development of the rural road system through the upgrading of the Prosperidad-Quezon, Quezon-Codcod and Punao-Bagonbon linkages to national highway status.

Rural Access Roads

Rural access roads will continue to be upgraded under the City’s ongoing program, with priority being given to linkages to the Rural Growth Centers and agricultural development areas. The program will include both new roads and the upgrading of existing farm to market routes.

Traffic Management

A traffic management program will be introduced in the UMA to meet the increased usage of the existing road network that is anticipated in response to City growth and a general increase in road usage.

6.5.5 ROAD TRANSPORT FACILITIES

Community Transport Program

As programmed in the predecessor CLUP and in conjunction with the rural access road improvement program, the development of the Rural Growth Centres and investment in agriculture and forestry the City will promote the introduction of regular community/public transport services. It is intended that the major rural settlements will eventually be connected to the national highway network and the main urban area by regular passenger services, through either private sector, or community led investment.

6.5.6 RAIL TRANSPORT

Plans for Rail Transport follows those programmed in CLUP 2000-2020. The existing sugar cane railway will be retained and opportunities sought to increase its usage for the carriage of sugar cane and other agricultural produce. The City will encourage the sugar mill operators to adopt a policy of preference for rail borne access, including potential financial benefits such as preferential market rates offered to users of the railway.

In the longer term the feasibility of its use as a passenger link between the proposed recreation and tourist facilities on the Hacienda Estate and the main urban area will be explored.

Non-railway development will not be permitted on any sugar cane rail alignment.

CHAPTER SEVEN:

IMPLEMENTATION STRATEGY

7. IMPLEMENTATION STRATEGY

7.1 INTRODUCTION

This final chapter outlines the processes and procedures necessary to carry out the proposed intervention measures enumerated in Chapter 6. The major downstream activities to implement this CLUP consist of zoning and other regulatory measures, detailed area, system or thematic master planning, and development administration and governance.

7.2 REVISION OF THE ZONING ORDINANCE

As one of the key implementation tools, the San Carlos City Zoning Ordinance (ZO) 2001 has likewise been revised to maintain consistency with the updated CLUP. The revisions revolve around the calibration of certain zones, such as the Special Development Zone (SDZ) to reflect post-2001 developments, expansion of the SDZ in Barangay Punao and the Rural Settlement Zone (RSZ) in Barangay Prosperidad, and the detailed delineation of the Coastal Management Zone in consonance with the need for strengthened regulation in this area.

7.3 OTHER NEEDED REGULATORY MEASURES

Some of the needed regulatory measures to implement the CLUP include the following:

- A Sanggunian Panlungsod Resolution adopting the San Carlos City Forest Land Use Plan (FLUP) and directing its provisions to be integrated into the update CLUP and ZO. The preparation of THE FLUP is already underway and its provisions are important to provide more details to the regulation of uses and activities in the Forest Protection and Production Areas.
- An ordinance or ordinances to enhance groundwater resources by requiring households and establishments to install rain water collection systems, making it mandatory for establishments to provide themselves waste water collection and disposal systems, to use permeable materials for paving, and regulating the rate of extraction of groundwater by establishments, among others.
- An ordinance imposing penalties for encroachment into public easements such as sidewalks, buffers along or around utility installations such as communication towers, power transmission and distribution lines, etc.
- Ordinances seeking to strengthen the management of protected areas such as:
 - Demarcation of municipal waters
 - Delineation and bio-fencing of MKNP and NNNP
 - Identification and demarcation of important sources of water
 - Identification of heritage sites, including tribal heritage sites
- Ordinances to improve the urban form and urban design such as:
 - Requiring all streets and roads to be named
 - Requiring house tagging and numbering

- Requiring that all houses front on roads and streets
 - Regulating all boarding houses
 - Regulating the size and locations of billboards
 - Requiring all establishments along main thoroughfares to plant ornamentals in pots or plant boxes
- Resolution authorizing the City Mayor to provide annual funds for land banking which may be developed into public parks or social infrastructure facilities.
 - Ordinance for a San Carlos City Tourism Code which will, among others, provide incentives of Health and Wellness and eco-tourism investments as well as provide standards and guidelines on the design, construction and operations of facilities.

7.4 PROPOSED PROGRAMS AND PROJECTS

Key capital investment programs and projects are needed to implement the updated CLUP. These include provisions for transport infrastructure such as roads, seaport expansion, airport construction, etc. These also include provisions for social and economic infrastructure such as hospitals, barangay health centers, public markets and the like. These programs and projects are provided in a companion document – Comprehensive Development Plan (CDP).

7.5 DETAILED MASTER PLANNING

More detailed master plans, adopted by Sanggunian Resolutions for implementation, should be prepared for the following:

Rural Settlement Areas

The identified RSAs should be made viable rural growth centers. Thus, individual master plans should, among others, provide for more precise delineation of zoning boundaries within each RSA as well as more specific lists of allowed uses and building density regulations. Each master plan should likewise include utility infrastructure provisions, such as roads, drainage, water supply, etc. as well as socio-economic infrastructure such as barangay centers, schools, parks, markets, etc. Strategic sites may have to be acquired by the City Government. A program for investment should be developed for each.

Urban Design of the City Proper

Proper urban design increases the functional efficiency of cities as well as makes them attractive places to work and live in. The master plan should focus on creating a highly walkable City Proper with people-friendly streets and sidewalks, lush landscaping, accessible pocket parks and appropriate street furniture. It may also include typical road configuration designs that may increase the functionality of the urban roads. An example is to provide service roads along critical segments of major roads such as the National Road and proposed by-pass roads. Intended to minimize future roadside friction, the division between the main and service roads could also serve as landscaped linear parks. The right-of-way of the sugar railway track could also be transformed into an interesting linear park suitable for biking and jogging.

Special Economic Zone

The recent establishment of the Ethanol Plant has provided employment opportunities replacing the San Carlos Sugar Mill. The plant brought in additional real estate revenue and tax income for the City. However, it has its downside in terms of controlling air emission and waste management. It is about time the City puts in place an environment friendly anti-pollution air emission and waste treatment plan suitable for the special economic zone to manage the air and solid waste pollution. Other concerns that the anti-pollution plan should address include:

- How to link the said anti-pollution plan with other sources of pollution such as the hospitals, abattoir, wet market and food processing facilities.
- How to link the anti-pollution plan with solid waste management and sanitation practices.
- To avoid concentration of agro-industrial pollution and industrial waste in the northern coastal part of San Carlos City, what agro-industrial products with non-pollutant effect/impact can be developed in the other clusters: central poblacion, upland, island and coastal south? How do you bring environment friendly agro processing livelihood to those low income areas?
- Given the existing challenges in air pollution and waste treatment, design immediate term solutions that can result to clean air, clear water and safe sanitary waste treatment with other LGUs in similar condition of agro industrial development

Master Planning for Green City Sustainable Tourism Health and Wellness Center

The recent inclusion of the image of San Carlos as a Sustainable Tourism Health and Wellness center has been drawing positive support from the citizens of San Carlos. The type tourism that San Carlos wants to develop are long term regular tourists that come for health and wellness respite from the city life. With a sustainable green city tourism, this niche in tourism development in the Visayas is expected to boom. However may have its downside in terms of service sector professionals from other provinces or cities coming in for massage and spa services. Training San Carlos residents to develop the skills in health and wellness services must be put in place. The existing capacity of San Carlos working class may still not be geared towards a green city tourism of health and wellness services until purposively planned and implemented. It is about time the City put in place a master plan for a green city world-class tourism destination for health and wellness. A major component is how to establish and manage the operations accompanying the health and wellness services. Other concerns that the tourism master plan should address include:

- How to link the Health and Wellness services with other San Carlos green destinations such as the People's Park, MKNP, NNNP and Refugio (Sipaway) resorts with their high-end clientele.
- How to link the Health and Wellness Green City experience with the equally popular Pintaflores festival and other island tours of Tañon Strait and San Carlos Bay.
- To avoid over-concentration of tourist traffic in the Poblacion and northern coastal part of San Carlos and thereby spread the benefits to other areas of the City as well, what tourism products can be developed in the other clusters: island, coastal south and upland? How do you bring tourists to those relatively less frequented areas?
- Given the variable length of stay of visitors, design health and wellness green city tourism circuits good for a one-day, two-day and three-day trip with meals accommodation and tourist guides.

The following discussions represent the initial thinking of the different functional committees in response to the above concerns.

1. Refugio (Sipaway) Island Area Development – an important strategy to develop Refugio (Sipaway) area is to provide comfortable suitable accommodation, meals, swimming, diving, snorkeling and other water and beach sports where visitors are relaxed and at the same time active provided functional access to various holiday activities. This needs a variety of experiences to be provided making visitors stay longer or await their next holiday regular stay at the City. Some of the must-provide items include the following:
 - a. On-line booking to San Carlos Green City Health & Wellness Tourism /computerized system, setting up of Tourism Information Centers, Comfort Rooms, Information Sheds and other visitor facilities
 - b. Development of alternative tourism adventure packages within Refugio (Sipaway) Island - Local Village Tour (e.g. visit to ethnographic museum/ local farms, cultural presentation, bird watching, mangrove paddle boating)
 - c. Development of alternate routes from San Carlos to Refugio (Sipaway) Island going to beachfronts and recreational SPA centers providing a combination of experiences such as zipline, boardwalk, jungle trek, hammock, carabao-driven cart, etc. (separate entrance and exit boardwalk)
 - d. Upgrading of facilities such as spacious waiting area with mini lecture and information materials, world-class restrooms and tourist guide info services
 - e. Upgrading of seacraft going to Sipaway (ferry boat with entertainment and restaurant)
 - f. Provision of additional upgraded boats with clean and well-maintained protective gear
 - g. Provision of additional workers to maintain cleanliness and orderliness within the Refugio (Sipaway) area
 - h. Regular clean-up of beachfronts and sea water laden with seaweeds and water lilies
2. Linking Refugio (Sipaway) Island to Health & Wellness Centers and Upland tours– to enable the clientele of Refugio (Sipaway) resorts to include Tourism sites in the Poblacion center and upland areas in their itinerary:
 - a. Encourage investors to invest in fast craft from Upland areas to Refugio (Sipaway)
 - b. Provide facilities for high-end water transport such as an all-weather boat landing in Sipaway or a marina in nearby San Carlos Bay
3. Linking Refugio (Sipaway) Experience with other tourism experiences in San Carlos
 - a. From Pinta Flores to Refugio (Sipaway) and San Carlos Bay Island Hopping through River with jump off point at River Cruise Station; From River Station, land trip through a new road to be opened trekking, ziplines, walking trails and bird watching experience in Sipaway
 - b. Kayak from _____ River to _____ River to Refugio (Sipaway) Island
 - c. San Carlos Bay to _____ River to _____ to Refugio (Sipaway) Island.
 - d. San Carlos Bay to _____ (Jungle trek) to Refugio (Sipaway) Island to _____ (jungle trek) to _____ (bird watching) to Refugio (Sipaway) Island.
 - e. San Carlos Bay to Mt Kanlaon.
 - f. Upland trekking to Poblacion for health & wellness services, organic herbal medicinal plant and flowers then take a boat going to Sipaway.
 - g. From Salvador Benedicto Deck to San Carlos to Refugio (Sipaway) Island.
 - h. San Carlos Bay to Quezon Codcod (Caves and jungle trek) to Refugio Sipaway Island.

- i. San Carlos Bay to river and Water Falls to jungle trekking to caves to Refugio (Sipaway) Island

All of activities can be accompanied with SPA massage and herbal detoxing health experience and healthy nutritious meals.

4. Developing Tourism Products in Other Clusters – to spread the benefits of tourism to other parts of the City the natural attractions of the other clusters need to be identified and promoted. The following table presents some of the products that the different clusters can offer visitors.

TABLE 7.1: CLUSTER TOURISM PRODUCTS

Cluster	Tourism Products
Poblacion – Barangays 1-4 to Punao	<ul style="list-style-type: none"> • Agri-tourism (farm visits) snorkeling, diving, sports fishing, swimming, San Carlos Bay Tour • Safari development in green forest park • SPA and massage parlors • Herbal and organic farms • Organic sustainable agriculture restaurants
Upland Cluster	<ul style="list-style-type: none"> • Sustainable agriculture vegetable and fruit farm visits, zipline, spelunking, trekking, bird watching, Nature Trekking
South coastal clusters	<ul style="list-style-type: none"> • Diving, ecotourism, jungle trekking, spelunking, bird watching, cultural heritage, river cruise , Development of Caves and Historical Park, Marine Sanctuary and Boat Sailing

4. Suggested Tourism Circuits – of variable length, the following tourism circuits will cater to the needs of visitors who have only one, two or three days stay in San Carlos (See table below).

TABLE 7.2: TOURISM CIRCUITS

Tourism Circuits	Tour Packages
Tourism Circuit 1	<ul style="list-style-type: none"> • <i>One Day Tour</i> – Refugio (Sipaway), rock climbing, zipline, spelunking or trekking, swimming, View Deck • <i>Two-Day Tour</i> – Refugio (Sipaway), Peoples Park, caves, rock climbing, zipline, spelunking, trekking, bird watching, swimming, View Deck • <i>Three-Day Tour</i> - Refugio (Sipaway), rock climbing, zipline, spelunking, trekking, bird watching, swimming, Mountain View Deck, diving, snorkeling
Tourism Circuit 2 – San Carlos Bay	<ul style="list-style-type: none"> • <i>One Day Tour</i> – San Carlos Bay, rock climbing, zipline, spelunking or trekking, swimming, Mountain View Deck • <i>Two-Day Tour</i> – San Carlos Bay, caves, rock zipline, spelunking, trekking, bird watching, swimming, Mountain View Deck • <i>Three-Day Tour</i> - San Carlos Bay, caves, rock climbing, zipline, spelunking, trekking, bird watching, swimming, Mountain View Deck, diving, snorkeling
Tourism Circuit 3 – City Proper	<ul style="list-style-type: none"> • <i>One Day Tour</i> : City tour, SPA & health & wellness centers for massage n organic healthy drinks and food, Peoples Park, swimming or downtown eco tour to green farms (thru tricycles)

	<ul style="list-style-type: none"> • <i>Two-Day Tour</i> : City tour, SPA & health & wellness tours, organic healthy drinks and food, Peoples Park, swimming, historical cultural promenade
Tourism Circuit 4 – Upland clusters (Quezon, Codcod, __, __, __)	<ul style="list-style-type: none"> • <i>One Day Tour – Mt Kanlaon</i>, caves, rock zipline, spelunking or trekking, swimming, Mountain vista View Deck • <i>Two-Day Tour – Mt. Kanlaon</i>, caves, rock climbing, zipline, spelunking, trekking, bird watching, swimming, Mountain vista View Deck, Upland farm visits • <i>Three-Day Tour - Mt. Kanlaon</i>, Ugong rock zipline, spelunking, trekking, bird watching, swimming, waterfalls, upland farm visits Mountain View Deck, diving, snorkeling, picnicking, camping

5. How to Bring Tourists to Less Frequented Areas

- a. Intensive promotion and marketing
- b. Production of collaterals
- c. Development of tour packages
- d. Virtual marketing
- e. Participation in national and international events
- f. Road improvement leading to destinations
- g. Provision of utilities and communication facilities
- h. Provision of 24/7 tourist police services
- i. Creation of barangay tourism promotion and monitoring board
- j. Installation of a world-class tourism information center
- k. Provision of world-class rest rooms

7.6 MANAGEMENT OF PLANNED CHANGE

Finally, how will all these proposed changes be managed? This section discusses the following concerns:

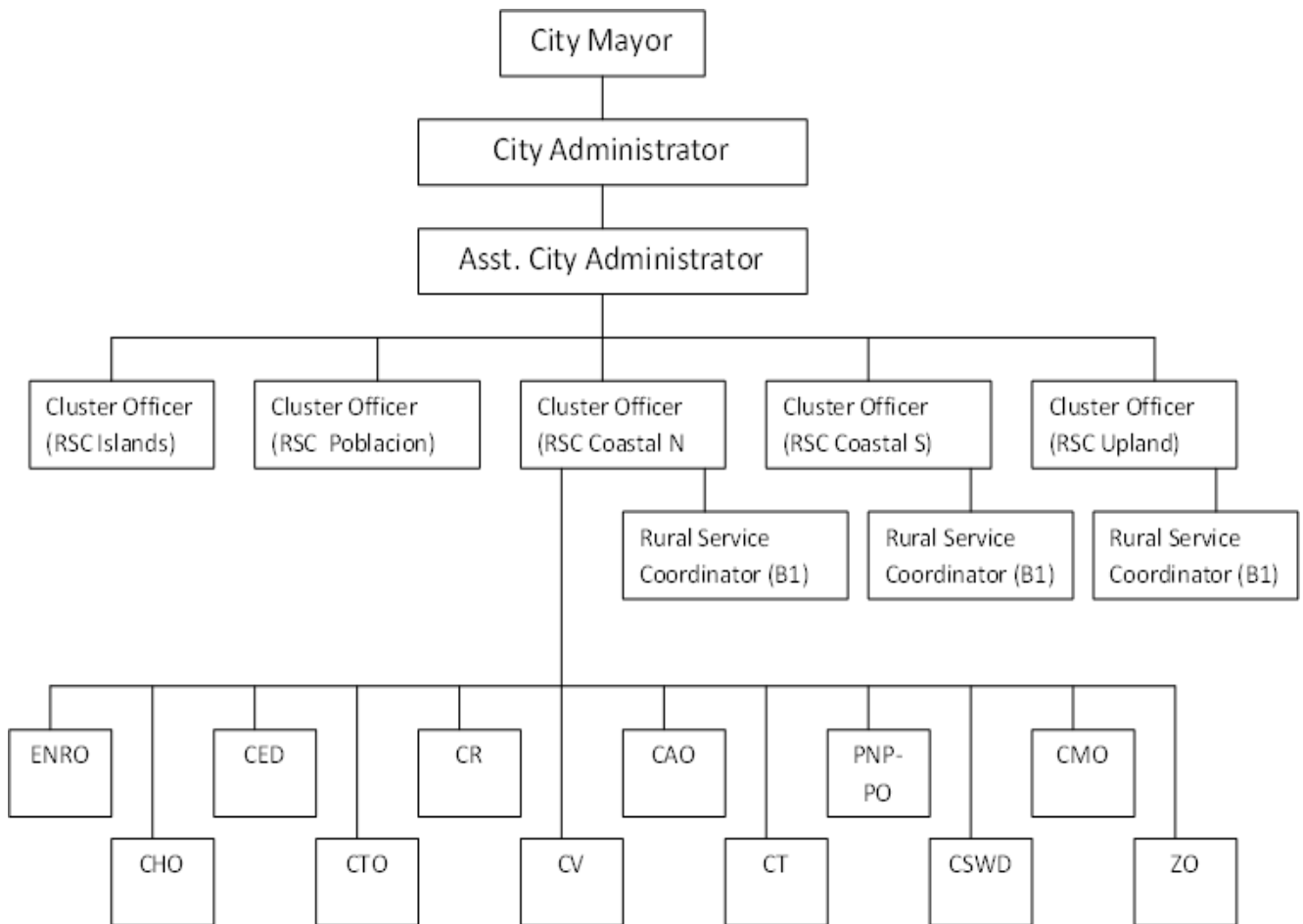
1. The design of an administrative structure for the governance of each of the clusters and the relationship between the cluster structure and the component barangays, on one hand, and the City Government on the other.
2. What city-level services to decentralize to the cluster centers.
3. How to foster a “cluster spirit” among the residents of component barangays.

7.6.1 THE PROPOSED ADMINISTRATIVE STRUCTURE

Shown in Figure 7.1 below is the proposed administrative structure for each of the five clusters. The whole structure will be under the over-all direction of the City Mayor, under the direct supervision of the City Administrator through a suitable assistant. The Cluster Officer for each cluster shall be designated by the Mayor from among the city government functionaries. The Cluster Officer shall initially head a cluster management council consisting of the barangay chairmen of component barangays. Later on, the Cluster Officer shall be elected from among the chairmen of the component barangays. Field Officers of offices and departments with decentralized functions shall be assigned by the head of office concerned from among the existing staff or from new recruits as funds warrant. Additional staff from City Hall may be fielded on rotation basis.

The cluster governance structure shall not be construed as another layer of the City Government bureaucracy. It is simply an extended arm of the city government to bring it closer to the people. It should not entail too much cost to the City. The benefits of this policy of city dispersion through cluster concentration are already discussed in previous chapters of this CLUP but it can be added that, from the standpoint of local governance, the cluster approach offers an excellent opportunity for barangay leaders to overcome parochial views and to look at issues and concerns beyond their barangay boundaries. It is hoped that barangay leaders who are given the chance to take on responsibilities in cluster-level governance are better prepared to handle leadership positions at the city level and beyond.

FIGURE 7.1: PROPOSED ADMINISTRATIVE STRUCTURE FOR GOVERNANCE OF CLUSTERS



7.6.2 CITY SERVICES TO BE DECENTRALIZED

The following services of the city government will be decentralized to each cluster center. Some services may be withdrawn or added as the need for these arises according to the peculiar requirements of specific clusters. For example, an office of tribal affairs may be needed in Codcod-Quezon cluster where sizeable tribal populations are found.

- a. Health Services
- b. Social Welfare and Development Services
- c. Registration of Birth, Death, Marriage
- d. Peace and Order Management

- e. Tourism Services
- f. Agriculture and Veterinarian Programs operation/management
- g. Assessment and Collection of Realty and Business Taxes
- h. Processing of Licenses and Business Permits
- i. Infrastructure management/ service/ operations
- j. Zoning enforcement

7.6.3 HOW TO FOSTER CLUSTER SPIRIT

Some ideas to help the cluster residents develop a feeling of oneness and team spirit are listed below.

- a. Intensify IEC on this initiative
- b. Provide transportation facility on schedule basis – barangay to cluster center
- c. Facilitate release of barangay share and aid from the tax collections to their respective barangays
- d. Provide and establish recreation facilities and amenities in their cluster centers
- e. Ensure peace and security through police visibility
- f. Regularly provide operational/mobilization fund
- g. Schedule regular cultural festivals and trade fairs promoting each cluster's strength and marketability and competitions with high value rewards
- h. Develop satisfaction index and regularly conduct client satisfaction survey
- i. Regularly conduct sports competitions by cluster rather than by barangay