

COMPREHENSIVE LAND USE PLAN 2018-2027

Volume 1

CITY OF CAUAYAN
ISABELA

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M E S S A G E

The City Government of Cauayan, Isabela has formulated a Comprehensive Land Use Plan for the plan period 2018-2027 in its desire to ensure its sustainable development. The primordial necessity is to balance development in order to perform its functional role as the Region's Agri-Products Marketing and Processing Center by ensuring optimum, and judicious utilization of its limited resources.

This document aims to translate the development goals, objectives, and policies into a Land Use Plan, indicating the manner in which the city's limited resources shall be put to use. This Plan gives spatial and physical dimension to the preferred development strategy adopted which is a Phased Nodal Growth Point Strategy. This strategy is also known as New Town Development Strategy.

Physical framework planning is a specialized development planning process that entails a lot in terms of research; consultation with the people, PO's and NGO's; linkage with legislators and technical line agencies. The City Development Council therefore wishes to thank all the people of Cauayan City and everyone who helped us put together this planning document.

We are deeply honored and privileged to present this document with the fervent hope that we will be given the chance to implement this plan to its fullest.

Thank you and Mabuhay!

BERNARD FAUSTINO M. DY

City Mayor and Chairman
City Development Council

Foreword

This document is consist of the Ecological Profile, the Comprehensive Land Use Plan and the Comprehensive Zoning Ordinance of the City of Cauayan using the Updated CLUP Guidebook 2013-2014 following two landmark national laws, the Climate Change Act of 2009 (RA 9729) and the Disaster Risk Reduction and Management Act of 2010 (RA 10121) which require the mainstreaming of climate change adaptation and disaster risk reduction in all national and local development plans including the CLUP.

The basic objectives of the Ecological Profile is to make a comprehensive survey of Cauayan’s resources and potentialities – present and prospective, which include in general, the physical, educational, spiritual, and economic problems, and on the basis of data gathered, formulate a development plan designed to promote the total development of the City of Cauayan.

The COMPREHENSIVE LAND USE PLAN assesses the existing land uses and pattern of development in order to come up with a policy to guide decisions about the desired physical development of the city taking into account the proper allocation of space for all land users so that the needs of the growing population are adequately met. It likewise aims to present the desired pattern of distribution of population and activities over the land area. Such pattern allows a more beneficial interaction among the people in the community and prevents the deterioration in the quality of the environment.

The ZONING ORDINANCE is a translation of the Comprehensive Land use Plan providing therein the different land use districts of the city, the boundary description of the various zoning districts and the allowable or permitted uses per zoning district aimed to protect people’s rights and the consideration of the environment. The comprehensive land use plan becomes enforceable with the enactment of the zoning ordinance and thus becomes the basis for issuance of locational clearance.

The preparation of this vital document has been guided by the overriding concern of the city government in improving the quality of life of its population within the capabilities of its limited resources.

It is our sincere hope that with this document we can ensure of the systematized and orderly development of the City of Cauayan within our means coupled with the support of both the Provincial and National governments but specifically the constituents who are the beneficiaries of all the developments to be undertaken.

BERNARD FAUSTINO M. DY
City Mayor and Chairman
City Development Council

Acknowledgement

The City Government of Cauayan profoundly thanks and acknowledges the valuable contributions, assistance, support and prayers of all those who walked with us every step of the way towards the completion of the City Comprehensive Land Use Plan CY 2018-2027. This planning document has proved to be the most exacting and stirring planning process that Cauayan has ever embarked on and it was successfully completed with the valuable contributions of several persons, groups, organizations, agencies and institutions, with special mention of the following:

Honorable Governor of the Province of Isabela, Gov. Faustino G. Dy, III, for his distinct leadership, his commitment to the development of the City of Cauayan, Isabela and make this city a livable place; the Sangguniang Panlungsod of the City of Cauayan and the Sangguniang Panlalawigan of Isabela, for their trust and confidence that this planning document will be completed and implemented;

The National Economic and Development Authority Regional Office 02 (**NEDA RO2**) in partnership with the **AusAid**, for the formulation of the Cauayan Disaster Risk Reduction and Vulnerability Assessment Report of the City of Cauayan. The undertaking was designed to document the City's hazards and vulnerabilities for easier identification of proper spatial strategies for disaster mitigation and avoidance and also as a basis in the identification of policies, actions, tools for implementation over the response and recovery efforts against natural calamities-induced harm and losses citywide that was later mainstreamed in the CLUP;

The Housing and Land Use Regulatory Board North Luzon Office (**HLURB NL**), particularly Mrs. Julie Collado, EnP; Engr. James L. Reyes, EnP; Engr. Mary Amoroso and Ms. Mely Molina for their priceless technical assistance, providing the much-needed substance that this document contains and for the patience, gentility and encouragement; Department of the Interior and Local Government (**DILG RO2**); Office of the Provincial Planning and Development Coordinator (**PPDC**), for their guidance and assistance;

All City Government Departments; Cauayan City Police Office; Cauayan City District Jail; Bureau of Fire Protection Cauayan; Cauayan City Schools Division Office (**SDO-DepEd**), National and Regional Line Agencies that provided the needed data and information, especially the Philippine Statistics Authority (**PSA**); Department of Agriculture (**DA RO2**), Department of Agrarian Reform (**DAR RO2**); Department of Environmental and Natural Resources (**DENR RO2**); Department of Public Works and Highways (**DPWH RO2**); Department of Information, Communication and Technology (**DICT**); Department of Transportation (**DOTr**); Department of Tourism (**DOT**); and the National Mapping and Resource Information Authority (**NAMRIA**);

Mines and Geosciences Bureau (**MGB**); Bureau of Fisheries and Aquatic Resources (**BFAR**); Land Management Bureau (**LMB**); Bureau of Soils and Water Management (**BSWM**); Commission on

Higher Education Regional Office 02 (**CHED RO2**), Technical Skills and Development Authority Regional Office 02 (**TESDA RO2**);

The **CLUP 2018-2027 Planning Team and Technical Working Group**, but most of all, we are indebted to the good people of Cauayan City and to our **Creator** for the gift of love and life.

EXECUTIVE SUMMARY

CITY OF CAUAYAN Planning Period 2018 – 2027

I. VISION

“Cauayan City as the **IDEAL CITY OF THE NORTH** for social amelioration, economic supremacy and infrastructure maturity; with smart and resilient citizenry; enjoying a balanced ecosystem soaring high globally led by a passionate, firm and visionary leadership”

II. BRIEF SITUATIONER

Physical Profile

Geographic Location

The City of Cauayan is one of the three cities and 34 municipalities of the Province of Isabela. It is situated in Central Isabela and is centrally located in the entire Cagayan Valley region. It is bounded by eight municipalities, on the north by Reina Mercedes; on the northeast by Naguilian; on the east by Benito Soliven; on the Southeast by San Guillermo; on the south by Angadanan; on the southwest by Alicia; and on the northwest by Luna and Cabatuan. It is located at 121-47' longitude and 16-46' latitude.

Cauayan is directly accessible to all of its neighboring municipalities. From Naguilian and Reina Mercedes, 15.04 and 11.24 kilometers respectively on the concrete-paved Maharlika Highway; from Luna, Cabatuan, and San Mateo, 7.19, 11.7, and 23.50 kilometers respectively. It is 34.5 kilometers south of Ilagan, the capital town of Isabela, about 117 kilometers away from Tuguegarao City, and approximately 375 kilometers to Manila or about 8 hours trip by land and less than an hour flight by plane.

Land Area

Cauayan comprises an aggregate area of 343.36 square kilometers representing 3.219% of the total land area of the province which is 10,664.56 sq. kilometers. It ranks tenth highest in terms of land area among the 37 Local Government Units of the province of Isabela.

Topography

The City of Cauayan has mixed topographic landscape. The southeastern portion is mountainous while the western and central portions are land or plains. Portion of the north and northeastern

areas have gently sloping relief. Moderately undulating and gently rolling areas are found on the eastern portion of the city.

Slope

The terrain of the city is generally flat with 18,502.248 hectares falling under the 0-5% slope category which constitutes about 55% of the total land area of Cauayan. The remaining 15,138.203 hectares are classified under the 5-40% slope category.

Water Resources

Owing to its geographical location, Cauayan City has abundant water resources. This includes the mighty Cagayan River whose head waters come as far as the mountainous province of Quirino. Also, river tributaries from nearby municipalities including the Santiago City drain in the City flood plains. Wetlands are also found in the City which serves as source of fresh water fish to farmers. Magat Dam serves as source of irrigation for Cauayan City.

Based on the Groundwater Resources and Vulnerability Assessment Program of the MGB, the City has a vast resource of ground water for domestic use specially drinking water. As shown in the Ground Water Potential map, the whole of the City considered local and productive aquifers which are constantly replenished through extensive surface water by the mass network of creeks and rivers. This type of aquifer covers the whole of the City. Based on MGB data, ground water is usually found within 5 to 10 meters deep in the City.

Hazard and Risk Information

Flooding

Flooding in the City comes annually as a result of heavy rains brought about by the northeast monsoon rains and typhoons. Areas along the river systems and low laying areas are most vulnerable to river inundation. The unusual heavy rainfall amount also leads to the wide spread and massive flooding in the City and aggravated sometime by the opening of floodgates of nearby dams (Magat Dam and Pantabangan Dam).

Geologic Hazards

The Philippine Archipelago occupies a segment of the western rim of the Pacific Ocean and that of the "Ring of Fire". This segment lies along a zone where two tectonic plates, the Eurasian and Pacific Plates, interact through collision and compression. With this tectonic setting, the Philippines is vulnerable to many geologic hazards such as large magnitude earthquakes. The presence of active and inactive fault had brought to the devastation of the province during the 1990 Luzon earthquake that killed many lives and destroyed millions worth of structures and facilities. This tremendous ground shaking fractured and loosen mostly the uplands rock, posing a threat for landslides and erosions.

Climate Information

Current Climate

The City of Cauayan falls under two distinct types namely Type III and Type IV. Type III is characterized by no pronounced season relatively wet from May to November, dry for the rest of the year. Maximum rain periods are not very pronounced, dry season lasts from one to three months. Area is partly sheltered from the northeast monsoon and tradewinds but open to the southwest monsoon or at frequent storms.

Type IV is characterized by the even distribution of rainfall throughout the year. The most common air currents in the country are the northeast monsoon (from the higher) pressure of Asia, to tradewinds (from the Pacific), and the southeast monsoon (from the southern hemisphere). The general direction of winds from these sources are from north to east (October to January), from east to southeast (February to April) and going south (May to September).

Rainfall Distribution

The climate is tropical in the City of Cauayan. There is significant rainfall in most months of the year. The short dry season has little effect on the overall climate. The annual rainfall here averages 1,651.4 mm or 65.023 inches. There are 144 days throughout the year and the maximum rainfall depth is 247.7 mm that recorded in November with a rainfall duration of 17 days. The dry months start from February until April and torrent rains start in the month of May. While tropical cyclones often come in the months of July to November and sometimes extends until December.

Typhoon Occurrence

An average of 19 typhoons is visiting Cauayan yearly leaving heavy toll on agricultural crops, infrastructures, and even lives and properties

Temperature

Observed temperature in the Philippines is warming at an average rate of 0.1°C/decade. Climate projections suggest continuous warming in the future. It is projected that the country-averaged mean temperature could increase by as much as 0.9°C (considering the high emission scenario, RCP8.5) in the mid-21st century (2036-2065). Warmer conditions are further expected by the end of the 1st century (2070-2099), which could range from 1.3°C-2.5°C (based on the RCP4.5) to 2.5°C-4.1°C (based on the RCP8.5) increase in mean temperature relative to the baseline climate.

Impacts of Climate Change and Hazards

The initiatives and commitments of the LGU to reduce the impact of climate change, most residents have been able to adopt with climate change resulting to the economic and livelihood resiliency of the City's stakeholders.

Demography

Population Size and Growth Rate

Historical Growth of Population

The first recorded census of Cauayan was in 1903 with a total population of 3,954 which increased to 10,083 in 1918. Latest census conducted by the NSO in 2000 shows that the City of Cauayan has a total population of 103,952. A primary survey conducted in 2005 showed Cauayan city to have a population of 116,652.

Table No. 1
HISTORICAL GROWTH OF POPULATION

CENSUS YEAR	TOTAL POPULATION	INCREASE (DECREASE)	AVERAGE GROWTH RATE
1903	3,954		
1918	10,083	6,129	5.82
1939	17,518	7,435	2.54
1948	20,486	2,968	1.80
1960	25,744	5,258	1.90
1970	40,732	14,988	4.51
1975	47,235	6,503	2.96
1980	62,224	14,989	5.48
1990	83,591	21,367	3.00
1995	92,677	9,086	2.08
2000	103,952	11,275	2.30
2005*	116,652	12,700	2.30
2007	114,254	2,398	1.36
2010	122,335	8,262	2.30
2015	129,523	7,188	1.64

Source: NSO/ *Actual Survey/
**Projected

Total Population

1995, 2000, 2005, 2010, 2015 Actual Population

Based on the last two censal years conducted by the National Statistics Office (NSO), the total population of Cauayan in 1995 was 92,677 and 103,952 in 2000 with an annual growth rate of 2.30%. In year 2005, an actual survey conducted by the city showed 116,652 population rising by 12,700 or an annual growth rate of 2.30%.

Year 2015 actual population of 129,523 showed population growth rate of 1.64% which is lower by .66% of the population growth rate in 2010.

City Vis-à-vis Provincial Population

In year 2000, the City of Cauayan has reached the 100 thousandth mark population and during the same year, the share of the City relative to the provincial population was 8.0% garnering third place in the population ranking of the 35 municipalities and two cities in the province of Isabela. In year 2015, Cauayan City was ranked third most populous cities in Isabela and 4th most populous cities in Region 2 based on the 2015 PSA actual Survey.

Population by Barangay

As shown Table No. 2, of the total 65 component barangays of the city in 2015, Barangay San Fermin shared the biggest number in terms of population with 10,856 or 8.38%, followed by District 1 with 10,662 (8.23%) and Cabaruan with 7,150 (5.52%) all situated in the urban core.

In year 2005 actual survey and 2010 census, District I topped the barangay population scoreboard as the most thickly populated barangay in the city followed barangays San Fermin and District III, all urban barangays.

Population Density and Distribution

In 2010, population density was computed at 347 persons per square kilometer while in 2015, population density was 390 persons per square kilometer. This exactly shows that as the city's population increases the higher the number of persons per square kilometer. This is attributed to population growth, in-migration and to some extent, uncontrolled birth.

The City of Cauayan is predominantly rural, wherein 51.28% or 62,737 population lived in rural areas in 2010 and 51.45% in 2015. Meanwhile, the urban population in 2000 was placed at 40.1% slightly higher than that of the 2005 urban population which was 39.98%. In 2010, the urban population constituted 59,598 or 48.72%. This is slightly higher than in 2015 which is 48.55%.

Population Density by Barangay

For year 2010, Barangay District II was the most densely populated barangay in the city with 81.56 persons per hectare followed by District III with 71.75 persons per hectare while Barangay District I came in third with 68.90 all located within the urban core. For the 2015 recent survey, the most densely-populated barangay in the urban core is Barangay District III with 114.28 persons per hectare followed by District I with 50.53 persons per hectare and Barangay District II came third with 48.57 persons per hectare.

Outside the urban core, Barangay Guayabal was the most densely populated barangay in the year 2010. For 2015 however, PSA survey showed that Barangay Duminit dislodged Barangay Guayabal in the number one slot with 12.33 per persons per hectare and Barangay Guayabal took the second slot with 11.42. The least barangay in terms of population density was Villa Flor with 0.63 followed by Dianao with 0.68 and Sinippil with 0.81 person per hectare, all of the forest region.

Age Distribution and Composition

In 2015, the child and youth composed of 0-14 age group has a total population of 39,367 comprising 30.39% of the total population. Of this figure, 20,393 or 51.80% are male outnumbering the female with 18,974 or 48.20%. For year 2010, there were 38,711 young children of 0-14 years of age or 31.65% of the total household population

Productive Age Population

PSA survey in 2015 shows that the productive population or working age group (15-64) was 84,691 or 65.39% of the total population which, consist of 43,222 male and 41,469 females showing a slight increase of 6.9% as compared to that of year 2010 which was 64.47% or 78,840.

Labor Force

Age grouping and Labor Force

Labor force refers to the population 15 years old and over that is gainfully employed or unemployed. It does not exclude those persons who are not currently seeking work such as students, housewives, retirees and the physically handicapped.

Total Labor Force

In year 2010, the total labor force in the city was 45,829 or 37.47% of the total household population of 122,293, based on the 20% household population sample of the Philippine Statistics Authority. The labor force in the city of Cauayan increased in 2015 by 42.67% or 55,071 of the total population based on PSA survey.

Age Distribution and Composition

In 2015, the child and youth comprising 0-14 age group has a total population of 39,367 comprising 30.39% of the total population. Of this figure, 20,393 or 51.80% are male outnumbering the female with 18,974 or 48.20%. For year 2010, there were 38,711 young children of 0-14 years of age or 31.65% of the total household population.

Age Group	Censal Year 2 (2015)			Censal Year 1 (2010)		
	Male	Female	Total	Male	Female	Total
Unde 1	1,281	1,238	2,519	7,068	6,536	13,604
1-4	5,616	5,368	10,984			
5-9	7,068	6,487	13,555	6,739	6,022	12,761
10-14	6,428	5,881	12,309	6,348	5,998	12,346
15-19	6,444	6,146	12,590	6,485	6,425	12,910
20-24	6,279	6,406	12,685	5,927	5,709	11,636
25-29	5,906	5,514	11,420	5,080	4,899	9,979
30-34	5,016	4,649	9,665	4,958	4,573	9,531
35-39	4,756	4,439	9,195	4,408	4,124	8,532
40-44	4,149	3,715	7,864	3,777	3,619	7,396
45-49	3,531	3,387	6,918	3,394	3,185	6,579
50-54	3,014	2,919	5,933	2,629	2,657	5,286
55-59	2,306	2,426	4,732	2,092	2,035	4,127
60-64	1,821	1,868	3,689	1,395	1,469	2,864
65-69	1,095	1,254	2,349	2,038	2,704	4,742
70-74	618	760	1,378			
75-79	396	565	961			
85 and over	271	506	777			
Total	65,995	63,528	129,523	62,338	59,955	122,293

Productive Age Population

PSA survey in 2015 shows that the productive population or working age group (15-64) was 84,691 or 65.39% of the total population which consist of 43,222 male and 41,469 females.

For year 2010, the working age population 15-64 years old decreased in percentage share with a 64.47% with a total of 78,840 working adult population.

Dependency Structure

For year 2010, total dependency ratio was 35.52%. This implies that there are 36 total dependents for every 100 productive populations. Old age dependency ratio on the other hand is .06% implying that for every 100 able-bodied, and six (6) senior citizens depend on them. Young age dependency is 49.10% meaning that 49 children depend upon every 100 productive age population.

The total dependent population for the year 2015 (0-14 and 65 and over) was 44,832 or 34.61% of the total population. Of this figure, 22,773 or 50.80% are male and 22,059 or 49.20% are female and the dependency ratio of this is 53 total dependents for every 100 productive populations.

Labor Force

Labor force refers to the population 15 years old and over that is gainfully employed or unemployed. It does not exclude those persons who are not currently seeking work such as students, housewives, retirees and the physically handicapped.

Urban and Rural Population

Barangay	Population	Gross Area (H.A)	Population Density(Gross Barangay Area)
Urban			
Alicaocao	1,564	72.6433	21.53
Alinam	1,167	302.6647	3.86
Cabaruan	7,150	271.2628	26.36
District I(Pob)	10,662	211.0226	50.53
District II (Pob)	1,817	37.4128	48.57
District III (Pob)	5,465	47.8182	114.29
Marabulig I	3,993	579.9665	6.88
Minante I	6,276	234.5657	26.76
Minante II	2,642	599.5989	4.41
Nungnungan II	943	313.8278	3.00
San Fermin	10,856	972.9403	11.16
Sillawit	2,885	450.3490	6.41
Tagaran	4,271	535.4564	7.98
Turayong	3,198	140.0590	22.83
Sub Total	62,889	4,769.5880	
Rural			
Amobocan	1,151	444.9415	2.59
Andarayan	426	94.0886	4.53
Baculod	1,679	1,160.5616	1.45
Baringin Norte	231	63.9268	3.61
Baringin Sur	1,118	185.1169	6.04
Buena Surte	1,126	240.9025	4.67
Bugallon	553	64.0651	8.63
Buyon	1,255	1,060.3933	1.18
Cabugao	782	838.7614	0.93
Carabatan Chica	617	69.4971	8.88
Carabatan Grande	291	32.7002	8.90
Carabatan Punta	475	82.3232	5.77
Carabatan Bacareno	243	83.8691	2.90
Casalatan	644	722.0950	0.89
Cassap Fuera	111	94.2998	1.18
Catalina	106	46.1843	2.30
Culalabat	898	164.4664	5.46
Dabburab	1,117	216.0057	5.17
De Vera	822	829.9281	0.99
Dianao	675	999.1694	0.68
Disimuray	1,052	1,001.7349	1.05
Duminit	1,514	122.7922	12.33
Faustino	1,442	397.9073	3.62
Gagabutan	492	203.9542	2.41
Gappal	2,616	1,308.7947	2.00
Guayabal	1,275	111.6474	11.42
Labinab	2,161	464.6782	4.65
Linglingay	724	177.2372	4.08
Mabantad	1,192	108.8456	10.95
Maligaya	2,273	1,699.9495	1.34
Manaoag	1,666	723.2870	2.30
Marabulig II	1,713	452.7139	3.78
Nagcampegan	307	93.0040	3.30
Naganacan	1,338	399.7877	3.35
Nagrumbuan	3,693	1,714.8295	2.15

Nungnungan I	1,989	845.7555	2.35
Pinoma	3,606	1,008.1437	3.58
Rizal	650	192.8260	3.37
Rogus	1,528	2,021.8435	0.76
San Antonio	2,988	1,086.4398	2.75
San Francisco	2,322	479.2750	4.84
San Isidro	1,120	332.7468	3.37
San Luis	2,367	1,611.6373	1.47
San Pablo	1,736	1,401.8398	1.24
Santa Luciana	2,013	537.8679	3.74
Santa Maria	905	1,065.6621	0.85
Sinnippil	306	378.8377	0.81
Union	1,407	206.1511	6.83
Villa Conception	3,647	997.4075	3.66
Villa Luna	1,863	272.3229	6.84
Villa Flor	409	653.0760	0.63
Subtotal	66,634	29,566.2919	
Total	129,523	34,335.8799	

Urban Household Population Growth

In 2015, 62,889 or 48.55% of the total household population of Cauayan lived in urban area which is tremendously higher than the 59,598 in 2010. Barangay San Fermin shared the biggest urban population percentage with 8.38%, followed by District 1 with 8.23% and Cabaruan with 5.52% as per PSA Survey 2015. Barangay San Fermin ranked 4th with a population size of 10,856 on the Top 10 most populous barangays in Region 2 followed by District 1 with a 10,662 population size as per 2015 PSA survey.

Rural Household Population Growth

The City of Cauayan is predominantly rural in nature considering its vast area. In 2010, a total of 62,737 or 51.28% lived in the rural areas. In 2015 66,634 or 51.44% chose rural existence showing a slight increase in growth between years 2005-2010. Nagrumbuan shared the biggest rural population with 3,693 in 2015 followed closely by Villa Concepcion with 3,647. Tailing in third place is Pinoma with 3,606.

Barangays Catalina and Cassap Fuera have the least number of rural populations not even reaching the 200th mark. This situation could be attributed to their proximity to the Cagayan River that is oftentimes subjected to severe flooding.

Tempo of Urbanization

As presented in Table No. 7, from 1990 to 1995, the urban population growth rate is higher compared to the rural area with 2.97% and 1.48% respectively showing a 0.05% tempo of urbanization. However, during the period 1995 to 2000 and 2000 to 2010, the rural population growth rate is higher with 2.29% urban and 2.58% and, 1.76% urban and 1.78% rural population growth rate in 2000 to 2010 depicting a 0.06% and 0.29% tempo of urbanization. For the period 2010 to 2015, the urban population growth rate increased to 1.71% while that of the rural population growth decreased to 0.7% with a 0.14% tempo of urbanization.

Level of Urbanization

The City of Cauayan shows an increasing level of urbanization with 46.05% in 1990, it grew to 48.55% in 2015 as gleaned from Table No. 7. During the same period, the level of urbanization of the City of Cauayan is higher than that of the Province of Isabela.

2.5 Others (Religious Affiliation and Mother Tongue, migration, etc)

The Roman Catholic Church dominates all other religious affiliations with 96,202 or 74% of the total population of 129,523 for the year 2015 followed by Iglesia Ni Cristo with 6,963 or 5% share on population and Born-Again Christian came in third with 4,441 or a 3% share.

Mother Tongue

Majority of the city's population are Ilocanos with a total of 97,870 or 75.56%, followed by Tagalog 19,382 or 14.96 and Gaddang came in third with a 9,650 or 7.45% of the total population of the city.

Conservation Areas and Areas of Special Interest

Protected Areas and NAPAAD

AO No. 20 also provides the Guidelines for the Network of Protected Agricultural Areas or Network of Agricultural Areas for Development (**NPAA/NAAD**), whereby some agricultural areas are “protected” against any form of irreversible conversion such as urban uses. The main purpose of such protection is to keep and preserve the highly suitable agricultural lands for the long-term food security of the nation. The **NPAA/NAAD** categories include the following:

- All irrigated and potentially irrigable land;
- All alluvial plains that are highly suitable for agricultural production and/or can be devoted to food production, as determined by the **BSWM**;
- All suitable lands that are traditional sources of food;
- All crop land that supports the existing economic scale of production required to sustain the economic viability of agricultural infrastructure and agriculture-based enterprises in the province or region;
- All productive land in low calamity-risk areas that are suitable for the production of economic trees and other cash crops; and
- All agricultural lands that are ecologically fragile and whose conversion will result in severe environmental problems.
- All Small Water Impounding Ponds and its surrounding forest.

On the basis of these definitions, **BSWM** specified the **NPAA/NAAD** as consisting of the following categories.

- Highly restricted conversion - this covers the “most efficient” agricultural lands which are the traditional sources of food and cash crops. These are the most stable croplands and they can be grown to a wide range of crops with minimum to moderate levels of farm management requirements. These lands are usually supported by large investments in infrastructure.
- Moderately restricted conversion- this cover “moderately efficient” land planted to agricultural crops but which require high levels of farm management inputs. Various characteristics and qualities of these lands limit their use to a narrower range of crops, mainly agro-industrial crops. The conversion of these lands to non-agricultural uses will depend on the results of a comparative social benefit-cost analysis.
- Conditionally restricted conversion- this covers lands, which are marginal to agricultural use and more suited to agro-forestry projects, fishponds or salt beds to sustain production in these areas, a high level of farm management is required. The intensive analysis of the environmental impact of conversion, particularly on the stability of uplands and adjacent lowlands.

Physical/Infrastructure Resources

1. Transportation Network (Internal and external linkages)

Infrastructure refers to the services that are derived from the set of public works to enhance private sector production and to provide for household consumption. Infrastructure could be examined in two perspectives – the physical facilities themselves and the services drawn from the physical facilities. Infrastructure profiling and planning is done to enhance productivity and to improve accessibility to opportunities and services in support to production.

Infrastructure and utilities are essential to the rate and direction of growth and development. Their presence and conditions indicate a locality's development level and economic status. Included are facilities for transport, power, water, communications, liquid and solid waste, flood control, health education, recreation and leisure, protective services, and social welfare. As a service sector, infrastructure serves as the central link to the physical framework plan components for settlements and land resources.

In Cauayan City, there is a difference in the adequacy of infrastructure facilities in urban and rural areas. Generally, the closer the area is to the main service center of the city, i.e. the Poblacion, the better are the facilities for production and distribution of goods and services. The analysis in this sector is based on the existing infrastructure facilities and those considered in the pipeline for 2018 – 2027 implementation.

2. Social Welfare Facilities, Services and Clientele

The provision of social welfare services in the City of Cauayan is a prime responsibility of the City Social Welfare and Development Office (CSWDO) located at the Central transport Terminal Compound in barangay Cabaruan. The Office is headed by a City Social Welfare and Development Officer and capable work force.

A social welfare system is a program that aids needy individuals and families through programs such as health care, food stamps, unemployment compensation, housing assistance and child care assistance. The types and amount of welfare services available to individuals and families vary for the City or Province.

Alongside with the CSWDO in providing social welfare services to the residents are some government agencies and non-government organization (NGOs) such as the Department of Social Welfare and Development (DSWD), the Department of Health (DOH) and the Philippine National Red Cross (PNRC). Locally based organizations are assisting it such as the Day Care Service Parents Group (DCSPG), the Senior Citizens Association (SCA), Women's organizations and others.

3. Educational Facilities

I. EDUCATION

Article XIV of the 1987 Constitution provides, “The state shall protect and promote the right of all citizen to quality of education at all levels and shall take appropriate steps to make such education accessible to all”.

Education facilities are the facilities provided to students, so that they can use every opportunity to develop their full potential. Educational facilities include buildings, fixtures, and equipment necessary for the effective and efficient operation of the program for public education classrooms, libraries, rooms and space for physical education, space for fine arts, restrooms, specialized laboratories, cafeterias, media centers, building equipment, building fixtures, furnishing, related exterior facilities, landscaping and paving, and similar items which the Department of Education may determine necessary.

It is generally assumed that better facilities will affect the quality of education in schools, but evidence concerning this assumption is often not considered or even known. It is important to examine the influence of facilities on science teaching. Provision of good facilities may not change educational practices dramatically; they help to foster science teaching activities which involve students in a variety of stimulating activities. In general terms, the evidence reviewed in relation to science teaching is consistent with the notion that the students’ physical environment affects their study behavior.

4. Health and Social Welfare Facilities

II. HEALTH AND SANITATION

The health needs of the city is met by a government-owned, the City of Cauayan has fifty-one (51) Barangay Health Stations (BHS) two Main Health Centers namely City Health Office I located in Poblacion Area specifically at the Cauayan City Central Transport Terminal Compound in Brgy. Cabaruan and City Health Office II located at Brgy Villa Luna on the other side of the Cagayan River. The construction of a City Health Office III building is underway located in Brgy. Nnungnungan II and is expected to become operational in the middle of 2019 while the Proposed City Health Office IV building will start construction early in 2018 and will be located in Brgy. Dabburab. The Cauayan District Hospital located in Brgy. District 1 is operated by the Provincial Government of Isabela with a 50-bed capacity. There are also seven (7) privately-owned Hospitals in the City of Cauayan all located within the Poblacion Area while the Mauricio Hospital is constructing another hospital in Brgy. Alinam.

5. Protective and Safety Services

THE PHILIPPINE NATIONAL POLICE

Facilities

The Cauayan City Police Office Headquarters is located at the Central Transport Terminal Compound at Barangay Cabaruan. The City Police Headquarters is a two-story building constructed in 2015 erected on a 1,300-square meter lot. The Cauayan City Police Station falls under Class "A", hence, a Type "A" building (972 sq. m. floor area) should be constructed on a lot not less than 2,500 square meter lot area. Although the floor area is satisfied, the lot area however still fell short of the standard requirement by 1,200 square meters. The current Police Station is located on high grounds hence, is not susceptible to flooding.

The facility is manned by 83 police personnel and equipped with eleven motor vehicles and motorcycles. There are currently two Police Sub-stations. The Police Community Precincts located in Barangay Tagaran has a lot area 42 square meters and manned by 8 police personnel while that of SM City PCP has an area of 18 square meters and manned also by 8 police personnel. Both PCPs have one motor vehicle each.

Aside from the two CPCs, there are also three Police Outposts. The Outpost located at Barangays San Fermin and District-I has an area of 12 square meters each and manned by eight police personnel each while the Outpost at Barangay Minante-I has an area of 80 square meters and likewise manned by eight police personnel. Each of the two PCPs and the 3 Police Outposts have one motor vehicle each and all can be reached through radio. As of 2016, the current police force is 123 giving a police officer to population ratio of 1: 1,068 which, is slightly below the standard police to population ratio of 1: 1,000. To satisfy the requirement, eight additional police personnel should be added. None of the existing police facilities are susceptible to flooding. However, the headquarters could sustain damages if subjected to extreme events such as typhoon and earthquake.

Personnel

Data provided by Cauayan City Police Office as of end of December 2016 reveal that there are presently 123 police force manning the peace and order situation of the city. The effective and efficient maintenance of peace and order made Cauayan a two-time national, and three-time regional awardee for Best Police Office and a national and regional awardee for outstanding Peace and Order Council.

PNP Cauayan City is composed of 1 Police Superintendent, 1 Police Chief Inspector, 7 police inspectors and 118 non-commissioned officers, 7 non-uniformed personnel and augmented by 5 casual employees from the LGU assigned to boost the administrative staff of the police office.

As of 2016, the police force is serving a population of 131,401 or 1 policeman for every 1: 1,053 populations. This reflects a current deficiency of 8 policemen following the 1:1000 police-population ratio.

LOGISTICS

Firepower

To maintain its operational and administrative capability, the police station has received supplemental and timely support not only from higher headquarters but as well as from the city government, NGOs and CCS thus enabling the office to achieve its various objectives and projects. As of 20017, there are 78 Long Firearms (LFA) of different make issued to police officers of which 64 were issued by the city government. Of the total 78 LFAs, there is one Ga. 12, 44 7.62mm and 33 5.56mm caliber. For Small Firearms, there are 107 wherein 7 came from the city government. Of the total 107 SFAs, there is one 38mm, four 45mm and 102 of 9mm caliber pistol. There were also 3,418 rounds of ammunition for short firearms all issued by PNP and 6,142 rounds for long firearms wherein 4,500 rounds came from the city government.

Mobility

Mobility is likewise crucial to maintain peace and order in the city. Currently, there 8 four-wheel vehicles and 12 motorcycles. Of these, one four wheels, an Isuzu jeep which was issued in 1987 and two motorcycles, a Honda issued in 2011and a CPI issued in 2015 are unserviceable. The Isuzu jeep is declared as BER or beyond economical repair. The Toyota Innova which was issued in 2009 and the Nissan Navarra issued in 2011 as well as the four motorcycles, one issued in 2001 and three in 2010 have outlived their lifespan. Although these vehicles are still serviceable, anytime soon they may breakdown due to wear and tear and require replacement to maintain efficiency in the police force. Replacement of these unserviceable vehicles is therefore paramount if only to ensure safety of the residents especially in barangays where criminality is rather high.

Communication

Currently, there are 23 VHF/UHF base, 30 VHF/UHF handheld radios and 2 cellular phones aside from the landlines and hotline used for communication by the City Police Office.

THE CAUAYAN CITY CRIME LABORATORY OFFICE

The Cauayan City Crime Laboratory Office is currently located in a 400 square-meter lot within the premises of the Isabela State University – Cauayan Campus as its temporary location. The office was activated on February 15, 2015 under the operational control of Regional Crime Laboratory Office 2. The creation of the office was made possible when City Mayor Bernard Faustino M. Dy and the Isabela State University accepted the proposal of the Regional Crime Laboratory Office 2 to establish said office in Cauayan City and provided the basic equipment for use of Forensic Chemist.

The Cauayan City CLO currently provides Forensic Services to 10 LGUs in the province of Isabela such are; the City of Cauayan, Reina Mercedes, Cabatuan, Luna, San Manuel, Aurora including the four coastal municipalities of Palanan, Divilacan, Maconacon and Dinapigue.

THE REGIONAL TRAINING CENTER 2

Facilities and Equipment

The RTC 2 is the Training School of the Philippine Public Safety College created to assume overall responsibility for the training, human resource development and continuing education of the Philippine National Police, Bureau of Fire Protection, and the Bureau of Jail Management and Penology. The RTS 2 is established in a four-hectare lot provided by the Provincial Government of Isabela located at Minante 1, Cauayan City.

Personnel

The facility is manned by 40 personnel consisting of 2 male commissioned personnel, 17 non-commissioned personnel consisting of 11 male and 6 female; and 21 organic personnel composed of 8 regular employees – 1 male and 7 female and 13 contractual employee wherein 5 are male and 8 are female.

BUREAU OF FIRE PROTECTION

Personnel

There are currently 21 firemen including the City Fire Marshall stationed in the city of Cauayan. By standards, the current firemen-to-population ratio is 1:6,476 far below the standard ratio of 1:2,000. To satisfy this shortage, an additional 107 firemen should be employed for the current year. However, during the outbreak of fire and emergencies, fire-fighting units of the Filipino-Chinese Chamber of Commerce and firemen from neighboring municipalities quickly respond upon request.

BUREAU OF JAIL MANAGEMENT AND PENOLOGY

Personnel

The city district jail is headed by a city jail Senior Inspector and one (1) Jail Inspector plus nineteen (19) non-officers rank.

Existing Facilities and Services

The Cauayan City Jail is located at Barangay Cabaruan adjacent to the PNP building of Cauayan PNP Office. It consists of 3 cells: Two (2) for male and One (1) for female. The Cauayan City District Jail is designed to accommodate an ideal capacity of fifty (50) inmates, however, the jail population has reach to an average population of 95 per month adult inmates.

The Cauayan City Jail is surrounded with a concrete perimeter fence and have an open space wherein rehabilitation programs were being implemented like the sport activities such as boxing, chess, and dama; livelihood projects such as artificial flower making, furniture making, cock raising and pastilles making.

The BJMP maintains the “ZERO-ESCAPE” incidents, preventing any form of jail disturbances as to riot, jailbreaks & others. Routinary inspection of window grills and iron bars, frequent conduct of greyhound operation, untiring support and cooperation from GOs/NGOs, unity and camaraderie among personnel and strict implementation of Rules and Regulations of the Bureau.

SPORTS AND RECREATION

Sports and recreation plays a vital role in local development. Hence the city government of Cauayan in coordination with the DILG, DepEd, the Philippine Sports Commission, and the private sector puts premium in the promotion of sports and recreation among the city populace. Efforts of the city for the improvement of the physical wellness are in conjunction with the Batang Pinoy Program of the national government.

Numerous sports facilities are found in the city. The biggest so far is the F. L. Dy Memorial Coliseum located at the city center with an area of 2,400 square meters. The coliseum had been a witness to a lot of sports activities particularly basketball, boxing, and martial arts competition. It even boasted of hosting a PBA game. It is also where the Inter-Barangay, Inter-Office/Color or Summer League tournaments are held. Cauayan also invites annually movie personalities for an invitational basketball / volleyball tournament, chess tournaments, concerts and benefit show and even band competitions.

HOUSING

Current Housing Situation

Based on the 2015 Census the total population is 129,523 and there are 30,623 households. The occupied housing units totals to 30,207 with an average household size of 4.21 and the ratio of household sharing per dwelling unit is 1.01.

In Cauayan City, majority or 90% has single houses. Only a few or 5% live in duplex, multi-residential units, and rest are either living in non-residential units or unreported. The outer walls of the housing units are made of varied materials, majority of which about 70% of the total housing stocks are a combination of concrete & steel. Only 30% live in bamboo, nipa, sawali, cogon, salvaged materials and wood. The most common roofing materials used are galvanized iron/aluminum. Majority of the houses in Cauayan City were constructed between 1990 & 2015. These totals to about 18,125 units or 60% of the total housing stock. This means that most of the houses are relatively new, thus, few need major repair.

Of the 30,207 occupied housing units, 25,676 or 85% are owned or being amortized. This lends a semblance of secured tenure. The remaining are either renting, occupying the land for free with or without consent of the land owner.

As regards to lighting facility, almost all houses are energized by ISELCO I, this comprises 97.56% of the housing stock. For water facility, only 13,168 or 43 % use their own piped water system or the community water system. The rest either do have their own piped water connection or are sharing sources of water with other residents. Toilet facilities are varied. There are water-sealed toilets exclusively used by the household, water-sealed toilets shared with other households. There are also instances where the households have separate toilets but share a common depository with neighbors.

POWER

Electricity is one of the most important blessings that science has given to mankind. It has also become a part of modern life and one cannot think of a world without it. Electricity has many uses in our daily life. It is used for lighting rooms, working fans and domestic appliances like using electric stoves air-conditioning units and more. All these provide comfort to people. In factories, large machines are worked with the help of electricity. Essential items like food, cloth, paper and many other things are the product of electricity.

Modern means of transportation and communication have been revolutionized by it. Electric trains and battery cars are quick means of travel. Electricity also provides means of amusement, radio, television and cinema, which are the most popular forms of entertainment are the result of electricity. Modern equipment like computers and robots have also been developed because of electricity. Electricity plays a pivotal role in the fields of medicines and surgery too — such as X-ray, ECG. The use of electricity is increasing day by day.

The Isabela Electric Cooperative - 1 (ISELCO-1) provides electric power in the City of Cauayan. ISELCO-1 operated under National Electrification Administration (NEA), a government agency that provides financial assistance to Electric Cooperatives and other electric power providers. The distribution of electricity, maintenance of electric system, and the collection of bills is shouldered by ISELCO-1 which charges P5.33 per kilowatt hour.

As of 2016, all the 65 component Barangays in the city are energized with around 94.2% or 15,064 of the total 15,985 households in the urban area and about 74.4% or 12,765 households of the 17,160 households in the rural area are served. There are also 920 or 5.8% of the total urban households were unserved and 25.6% equivalent to 4,397 households in the rural barangays were unserved.

In totality, 27,829 or 84% of the total 33,144 households in the City of Cauayan are already served while 5,315 or 16% are unserved. The service of ISELCO-1 is available 24 hours a day and it assured every consumer of a 220 volts electric service except during summer time where power interruptions sometimes occur.

Urban Households Served and Unserved

As of 2016, there are 14 urban barangays in the City of Cauayan. Of these number, 5 barangays are fully energized specifically barangays Cabaruan, District-1, District-2, San Fermin and Sillawit.

Barangay District-3 is 96.45 energized, Tagaran has 93.2%, Turayong with 91.7% while Minante-1 and Minante-2 have energization rate of 88% and 87% respectively.

On the other hand, barangays Alicaocao and Marabulig-1 have the most number of urban households unserved with 33.2% and 23.6% respectively while Nungnungan-2 and Alinam have 17.6% and 12.8% respectively.

Rural Households Served and Unserved

In the same manner, the number of rural households with service connection per barangay. Of the 51 rural barangays in the City of Cauayan, there are 7 rural barangays that are 100% energized specifically barangays Baringin Norte, Buena Suerte, Gagabutan, Rizal, San Francisco, San Isidro and San Pablo. There are also 4 rural barangays with more than 90% of service connection rate namely: Barangay Carabbatan Grande with 95.7%, Naganacan with 91.1%, Culalabat with 90.9% while Nagcampegan has an energization rate of 90%.

Meanwhile, barangays Sinippil and Cassap Fuera have the most number of urban households unserved with 86.3% and 67.9% respectively, followed by Carabbatan Chica with 46.8% while Santa Maria and Disimuray have 48.1% and 42.7% respectively.

Number of Connections by Type of Users, 2014-2016

The total service connections in 2014 reached 166,700 with the residential consumer registering the largest number of connections with 153,724 followed by commercial consumers with 9,943 connections. On the 3rd slot was the other consumers like public buildings, facilities and street lights with 2,741 connections and the least was Industrial consumers with 292 service connections.

In 2015, the residential users still lead in the number of service connections registering an increase of 3.59% with 159,450 connections from 153,724 during the previous year. Similarly, the commercial consumers also increased by 3.88% with 9,943 in 2014, it went up to 10,344 connections. Industrial users registered the highest increase in service connection with only 292 in 2014, it went up to 306 in 2015 or a 4.58% increase. The other consumers like public buildings, facilities and street lights also increased in connections with 2,741 connections in 2014, it registered 2,832 connections in 2015 or 3.21% increase. All in all, the number of consumer for all types increased by 3.6%

For 2016, the residential users remained on top with 165,580 service connections increasing by 3.7% from the previous year. Although the commercial users remained in the 2nd slot as top user, its service connections slid down by 0.29% with 10,344 in 2015 it went down to 10,314 in 2016. The other consumers like public buildings, facilities and street lights remained as the 3rd top user registering so far, the highest increase in terms of service connections by 4.39% or 2,962 service connections in 2016 from 2,832 in 2015. Although the industrial consumer remained as the least user, it continued to increase however by 2.86% with only 306 service connections in 2015, it went up to 315 in 2016. In totality though, the total service connections for all type of consumers combined increased by only 3.48% for 2015-2016 as compared to the 3.60% in 2014-2015 period.

Average Consumption (KWH/MO), 2014-2016

During the year 2014, a monthly average of 22,701,958 KWH of electric power was consumed. Of this total, the residential users consumed a monthly average of 9,694,530 KWH or 42.70% followed by commercial consumers with 6,871,826 KWH or 30.27%. On the 3rd slot was Industrial consumers with a monthly average consumption of 4,668,783 KWH while other consumers like public buildings, facilities and street lights consumed a monthly average of 1,466,820 KWH.

Again in 2015, the residential type of users remained as the top consumer of electric power consuming an average of 11,440,634 KWH per month equivalent to 44.67% of the total monthly average consumption of 25,613,054 KWH in the entire city in 2015. The commercial users remained to be the second largest consumer of electric power with a monthly average consumption of 7,482,089 KWH followed by Industrial users with a monthly average consumption of 5,030,563 KWH. The other consumers like public buildings, facilities and street lights was the least consumer of electric power in 2015 with only 1,659,768 KWH monthly average consumption.

In 2015, the total monthly average consumption increased by 11.0% with 22,701,958 KWH in 2014, it increased to 25,613,054 KWH in 2015. However, in 2016, the total monthly average consumption decreased by 1% with a total monthly average consumption of 25,613,054 KWH in 2015, it went down to 25,451,955 KWH in 2016. This is attributed to the 25.55% decrease in the monthly average consumption of the other consumers like public buildings, facilities and street lights with a monthly average consumption of 1,659,758 KWH in 2015, it went down to only 6,472 KWH in 2016. Similarly, the residential consumers posted a very minimal increase in power consumption with only 0.013% increase in 2016.

The residential users again remained as the top consumer of electric power consuming a monthly average of 11,442,150 KWH or 44.96% of the total monthly average consumption of 25,451,955 KWH in 2016 followed by the commercial users with 29.72% or a monthly average consumption of 7,564,793 KWH. The industrial users remained on the 3rd slot with a monthly average consumption of 6,438,540 KWH or 25.30% while the other consumers like public buildings, facilities and street lights consumed only about 0.03% or an average of 6,472 KWH per month.

Power Substations, 2016

Currently there three power substations in the City of Cauayan. One located in Barangay District-1 is owned by the National Transmission Corporation (TRANSCO). It is situated in a 418-sq. meter lot and is not susceptible to flooding or any other hazard. The other two is owned by ISELCO-1 located within their Cauayan Office in District-1 occupying a 120-sq. meter lot which was constructed in 2013. The other substation of ISELCO- is in San Fermin that was constructed in 2017 occupies a 120-sq. meter lot as well. Both substations are not susceptible to flooding or any other type of hazard as well. These 3 substations have a typical voltage of 13.2 kilovolts (kV) capacity.

WATER UTILITIES

Better access to clean water, sanitation services and water management creates tremendous opportunity for the poor and is a progressive strategy for economic growth. The close link between water and the economy requires that investing in water management and services is essential for the eradication of poverty and is a necessary condition for enabling sustained economic growth.

The poor gain directly from improved access to basic water and sanitation services through improved health, averted health care costs and time saved. Good management of water resources brings more certainty and efficiency in productivity across economic sectors and contributes to the health of the ecosystem.

SOURCE OF DOMESTIC WATER

Level III Water Supply System

The Cauayan City Water District

The Cauayan City Water District (CCWD) is the only LUWA franchisee in the city of Cauayan. It is the primary supplier of potable water particularly within the urban community supplying water requirements of 11 barangays, 8 in the poblacion area and 3 outside the poblacion.

As of 2016, The Cauayan City Water District supplies 4 types of consumers with a total connection of 9,844 consuming an average of 244,270 liters per day. Of the total service connections, Domestic consumers account for 81.99% or 8,071 connections consuming 69.14% or 168,877 liters per day of the total 244,270 liters average consumption per day. The Commercial type of consumers have 16.23% share equivalent to 1,598 connections and an average daily consumption of 46,092 liters or 18.87%. Industrial connections account for only 0.76% or 75 connections with a daily average consumption of 8,577 liters per day or 3.51%. The Others meanwhile have 100 connections or 1.02% and a daily average consumption of 20,724 liters per day or 8.84%.

Almost one third of the 8,071 domestic consumer connections are accounted in Barangay San Fermin with 2,467 connections and consuming a daily average of 47,593 liters per day equivalent to 28.18% of the 168,877 liters average daily consumption of domestic consumers. This is followed by District-1 with 1,836 connections or 22.75% and an average daily consumption of 29,056 liters or 17.21%. The third major domestic consumer is Cabaruan accounting for 12.74% equivalent to 1,028 connections with a daily average consumption of 23,554 liters or 13.95%.

On the other hand, the three Barangays outside the poblacion area shared the least number of domestic consumer connections as well as in consumption. Of these three barangays, Culalabat shared the least number of domestic consumer connections with only 31 and a daily average consumption of 380 liters per day followed by Labinab with 46 connections consuming a daily average of 865 liters per day while Buena Suerte have 56 connections and a daily average consumption of 811 liters or commercial consumers, San Fermin again has the most number of connections with 438 or 27.41% of the 1,598 commercial consumer connections and a daily average consumption of 15,025 liters per day or 32.60% of the 1,598 liters daily average

consumption of commercial consumers. Similarly, District-1 shared the second slot with 249 connections or 15.58% and an average consumption of 10,466 liters per day equivalent to 22.71%. Cabaruan came in third with 204 connections and a daily average consumption of 5,746 liters. Again, the three barangays outside the poblacion area shared the least in terms of commercial consumer connections as well as consumption.

Barangay San Fermin still leads in industrial consumer connections with 24 out of the 75 industrial consumer connections or a 32% share. San Fermin also accounts for 33.76% of the 8,577-daily average consumption of industrial consumers. This is equivalent to 2,896 liters daily average consumption. District-1 occupies the second slot with 19 connections or 25.33% but came in third place in terms of consumption with only 1,600 liters daily average consumption compared to that of District-2 with an average consumption of 2,818 liters per day. District-2 came in third in terms of connections with 18 industrial consumer connections but came in second in terms of consumption.

For the other consumers, District-1, leads with 20 connections followed by San Fermin and Cabaruan with 19 connections each. Barangay District-2 however, has the highest daily average consumption with 6,238 liters or 30.11% of the 20,724 liters daily average consumption of the other consumers. San Fermin came in second followed by Cabaruan with 6,170 and 2,943 liters daily average consumption. There are no industrial and other consumers in the barangays outside the poblacion area.

Aside from the Cauayan City Water District, there are also two barangays with Level III water supply system. These are the Minante-1 Waterworks System and Rogus Waterworks System. In 2016, there were 308 households in Brgy. Rogus served with an average consumption of 122 liters per day while the Level III water supply system in Minante-1 serves 548 households. Of the total 31,691 households of Cauayan City in 2016, 8,927 households representing 28% are served by Level III water supply System.

Level II Water Supply System

The Core Shelter of the DSWD in Sitio Manalpaac, San Pablo have a Level II water supply system. Phase-1 of the project is the installation of the deep well and construction of a 20,000-liter capacity steel elevated water tank that was completed in 2016 funded by DILG-BUB and the City Government of Cauayan. Phase 2 involves the laying of distribution lines to the core shelter and Phase 3 involves the laying of distribution supply lines to the entire residents of sitio Manalpaac. Although the funding requirement for Phase 1 and 2 is not yet available, the City Government in partnership with the Isabela State University and Temasek Polytechnic of Singapore installed 5 communal faucets in 2017. The water supply system is currently serving 100 households. The project is designed to be upgraded to Level III upon completion with a target household connection of 660.

In 2017, the Office of the City Planning and Development together with the City Engineering Office prepared 5 Feasibility Studies of Level III Water System for Barangays Villa Concepcion, Linglingay,

Sinippil, Devera and Sta.Maria. These Feasibility Studies were forwarded to the Office of the 3rd Congressional District of Isabela for possible PRDP funding.

Level I Water Supply System

Table IF-20 shows that there were 9,759 shallow wells serving 17,049 households and 1,879 deep wells providing domestic water supply to 3,442 households representing 53.8% and 10.86% respectively of the total 31,691 households in the City of Cauayan in 2016. Although the table presents a seemingly satisfying level of service, it is sad to note however, that many of the shallow wells and deep wells are not working properly requiring immediate repair or replacement. Most housing subdivisions within Cauayan have their own water supply system ranging from Level I to Level III. Meanwhile, industrial establishments have their own water supply system like rice millers, ice and soft drink manufacturers.

The establishment of Level II or Level III water supply system in every barangay or cluster of barangays would be ideal since potable water supply is primordial in the daily lives of the residents.

INFORMATION AND COMMUNICATION TECHNOLOGY

Previous research has found that information technology (IT) investment is associated with significant productivity gains for developed countries but not for developing countries. Yet developing countries have continued to increase their investment in IT rapidly. Upper-income developing countries have achieved positive and significant productivity gains from IT investment in the more recent period as they have increased their IT capital stocks and gained experience with the use of IT. The productivity effects of IT are moderated by country factors, including human resources, openness to foreign investment, and the quality and cost of the telecommunications infrastructure. The academic implication is that the effect of IT on productivity is expanding from the richest countries into a large group of developing countries. The policy implication is that lower-tier developing countries can also expect productivity gains from IT investments, particularly through policies that support IT use, such as greater openness to foreign investment, increased investment in tertiary education, and reduced telecommunications costs.

Services and Facilities

The City of Cauayan enjoys the services of various Telecommunications providers like PLDT, Globe, Smart and Sun Cellular. The advent of new technology on communication gadgets and other means of communication like facebook, internet and other applications are also enjoyed by the people especially in areas where the signal is favorable. There are areas however that signal transmission is weak denying the affected residents of fast and easy access to telecommunication services. The Existing Communication Services and Facilities in the City of Cauayan.

Postal Services

As shown in Table IF-30, the Postal Corporation of the Philippines has its office along Pilar Street in District-2 just beside the F. L. Dy Coliseum. The Post Office is housed in a two-storey concrete structure with an estimated floor area of 80 square meters constructed in a 300 square meter lot and is manned by a Postmaster with three postal personnel which process incoming and outgoing mails. There is also one unit of delivery vehicle for the delivery of the mails to the different Barangays. The facilities include one (1) stamping machine, tables, chairs, filing cabinet and vault.

The advent of telegraphic and electronic technology has largely diminished the importance of public postal services in receiving letters for mailing not only in the City of Cauayan but for the entire country in general.

Aside from the Postal Corporation, there are also 22 establishments engaged in the courier/cargo services, foreign exchange, money transfer, bills payment and related services. The PLDT provides landline telephone and mobile services to its wide range of clients. It has its own office building with a signal-transmission tower mounted on its roof deck. The PLDT occupies a 450 square meter lot in District-2.

Broadcast and Television Network include the North Star Cable Vision situated in a 300-square meter lot in District-2. It is the only cable network provider in the city. Aside from cable services, NSCV also provides internet services to its clients. There are also 5 radio broadcast stations in the city consisting of 2 AM and 3 FM band. All these establishments including the cell sites occupies an aggregate area of 1.15 hectares.

Wireless Communication Facilities

One of the best-known examples of wireless technology is the mobile phone, also known as a cellular phone, with more than 6.6 billion mobile cellular subscriptions worldwide as of the end of 2010. These wireless phones use radio waves from signal-transmission towers to enable their users to make phone calls from many locations worldwide. They can be used within range of the mobile telephone site used to house the equipment required to transmit and receive the radio signals from these instruments.

Currently, there are 37 signal-transmission towers commonly known as “cell sites” in the City of Cauayan, managed and operated by the Globe with 20 towers; Smart has 9; and Sun Telecommunications has 8 towers, all having a 40-meter height. Three of these are mounted on top of existing buildings. The total area occupied by these towers reached 0.901 hectares. The use of wireless communications like mobile phones and the advent of various applications for social media and in the fields of science, technology and other fields of knowledge has made mobile phones a necessity. Of the 37 cell sites, 19 are in the poblacion area and 18 are strategically located in the various barangays outside of the city. The PLDT has its own tower on top of its building along the national road in District-2. In 2017, the PLDT installed underground fiber optics within the poblacion area to upgrade its services while Globe Telecom installed its own fiber optics to enhance its internet services.

Based from the result of the consequence analysis conducted in June 2015 by NEDA and AusAid in partnership with the city government, there are 5 signal-transmission towers that are susceptible to a 12-meter flooding such are Sun Cellular in Cabaruan, Villa Luna and San Luis; Smart tower in San Luis and Globe tower in Carabbatan Punta which was later raised and retrofitted. Cell sites' vulnerability to flooding reduces the area coverage in sustaining communications given that wireless communication had been the most common trend nowadays. Reducing communication levels increases the vulnerability of people to seek support, assistance and rescue.

SMARTER CITY

A city can be defined as 'smart' when investments in human and social capital and traditional (transport) and modern (ICT) communication infrastructure fuel sustainable economic development and a high quality of life, with a wise management of natural resources, through participatory action and engagement.

The present leadership of the City Government of Cauayan recognizes that the greatest impact of the attainment of the 17 Sustainable Development Goals (SDG) starts with the participation of the local government units. Thus, as early as 2016, the city government started initiating activities to localize these set of goals and had it mainstreamed in its local development agenda geared towards the promotion of Smarter City by providing basic services using technology and digital solutions.

Cauayan City became the First local government unit in Cagayan Valley to:

- ✓ Adopt the Public-Private Partnership
- ✓ Implement the Cauayan City Identification System
- ✓ Be ISO Certified in Quality Management System (ISO 9001:2008)
- ✓ Be adjudged as Smarter City
- ✓ Create and implement free mobile application called Cauayan City Connect
- ✓ Provide free wifi spot in the 65 barangays of Cauayan
- ✓ Implement the DOST's Juan Time campaign
- ✓ Upgrade website for E-commerce
- ✓ To launch the increased internet connectivity making Cauayan city the first Digital/Fiber City.

Being one of the fastest growing economies in Region 2, Cauayan City has been chosen as the Model for Smarter City in the Philippines and Mayor Bernard Faustino M. Dy was awarded the Science Ambassador award by no less than the DOST Secretary to promote Smarter Philippines.

In 2017, the City government of Cauayan in partnership with the Department of Information and Communication Technology (DICT) and Department of Industry (DTI), conducted a Rural Impact Sourcing (RIS) Program aimed to provide technical training targeting the unemployed and financially unstable. The six weeks training program consists of a 3-week hands-on and a 3-week online course with the objective of increasing one's chance to be hired by providing technical training focusing on the development and improvement of ICT skills and utilize it for employment opportunities.

The training program was attended by student-scholars that went thru series of lectures in different modules focusing on e-Commerce by MSMEs in the city. Topics that were taken up include Branding for Companies, Products and Service; Web Development; Product/Photography Content Writing; CRM and Email Follow Through or creation of E templates; Data Privacy Law; Digital Marketing Ethics, Cyber Crime Law; Search Engine Optimization and Email Marketing; Social Media Content; Planning and Calendar; Business Blogging; Social Media Content Creation and, Building Freelancer Profile.

WASTE MANAGEMENT

The old sanitary landfill started its operation in 1997 and it was permanently closed last year as it reached its capacity. But before its closure, the city government was able to acquire a 4-hectare lot adjacent to old facility and is currently constructing a sanitary landfill. Currently, the city government dump collected garbage in a temporary dump site where solid wastes are dumped and are covered daily with soil scraped from the adjacent slope within the lot. It is located in Barangay San Pablo, about 13 kilometres away from the city proper. It is centered approximately at the intersection of geographical coordinate 16° 54' 27" north latitude and 121° 49' 31" east longitude. It is accessible by any type of land transportation through a fairly-maintained gravel road that connects eastern barangays to the city proper.

Garbage Disposal System

Current Waste Generation of Various Sources

The current waste generation by major waste sources. The total waste generation of the city is 51,448 kg/day. Of this total, 77.61% or 39,930.10 kg/day comes from residential; 16.71% equivalent to 8,599.19 kg/day are waste generated by commercial establishments; industries accounts for 0.50% or 256.35 kg/day; hospital waste is 4.50% or 2,316.65 kg/day while waste from other sources accounts for 0.67% or 345.71 kg/day. Breakdown for commercial establishments, hospital waste and waste from other sources is further detailed in Table SO-18.

Composition of Solid Waste Generated in kg/day

The biodegradable component is more than half of the total waste generation which is 55.08% equivalent to 28,336.61 kg/day with the residential sector contributing most of the biodegradable wastes. The recyclable component occupies the second slot with 23.38% or 12,029.42 kg/day while residual account for 19.16% equivalent to 9,858.05 kg/day. The least composition of the waste generated is special waste with only 2.38% or 1,226.57 kg/day.

It is interesting to note that the waste generated by households constitutes 77.61% equivalent to 39,930.10 kg/day of the total waste generated in the whole city. Of this total, 54.8% are biodegradable, 23.9% are recyclable, 18.5% are residual and 2.8% are special waste.

Likewise, the public market, general stores and food establishments are also major generators of biodegradable waste.

This information clearly indicates that the City of Cauayan should focus on the households and business sectors if it wants to remarkably reduce the City's waste generation and increase its waste diversion or material recovery through recycling and composting. This does not mean though that it should not also put effort in promoting reduction of non-biodegradable, non-recyclable waste. These data also suggest that the city LGU can immediately initiate programs such as information, education, and communication (IEC) and incentives directed at the waste sources while it undertakes all the preparatory work for the establishment of the mandatory SWM facilities.

Current Waste Collection Area

Currently, the city government employed the services of a private waste collector to systematically collect garbage (*mixed wastes*) from the poblacion area and other barangays on a scheduled collection basis. There are 8 barangays covered in the Poblacion area, 16 in Tanap Region, 13 in East Tabacal and 11 in West Tabacal totaling 48 barangays of Cauayan City. The estimated daily collection based from weighing done by the City ENRO is almost 38 tons/day.

Current Waste Disposal into Dumpsite

Currently, there are about 37,769.26 kg/day or 73.41% of the total waste generation in the whole city is disposed of at the sanitary landfill daily by the private collector hired by the city government. The data indicates that about 75.26% equivalent to 28,425.15 kg/day of biodegradable and recyclables could potentially be diverted from disposal through recovery, recycling and processing. By giving preferential attention on these components, the local government can realize the 25% waste diversion rate under RA 9003.

An environmental awareness campaign would reduce waste disposal and increase material recovery. Likewise, a joint venture support on waste processing (composting) would maximize diversion and generate employment and income, thereby, pump-priming the local economy.

Waste Generation Projections, 2018-2027

The Table below presents the projected waste generation based from the actual waste data generated during the previous years. It shows waste generation over the 10-year period under a no-intervention scenario, i.e., waste generation with no reduction at source and no program for materials recovery and composting. As shown in the tables, Cauayan will be generating a total of about 58 tons/day by the time it operates its sanitary landfill in 2019. Waste generation will be more than 96 tons/day at the end of 2027.

The projections highlight the need to promote recycling and composting, and the provision of incentives to households, commercial establishments, and institutions as these are the main sources of biodegradable and recyclable waste materials. The data presented does not include wastes that comes from partner LGUs in Metropolitan Cauayan.

LGU SWM Services and Resources

Current SWM Services

Environmental management is one of the priority services being provided by the city government and barangay LGUs and this includes solid waste collection, and the cleaning of streets, esteros and canals. The city's present waste collection program covers 17 barangays while the remaining 48 barangays are covered by the private collection. Some barangays though collect and dispose their residuals in the temporary controlled dump site.

The city government regularly conducts competition on the Cleanest and Greenest Barangay with awards given during the city's foundation anniversary celebration and even included the schools in the competition aimed primarily to keep the city surroundings clean. Waste segregation at source has been introduced in households, in schools and in commercial establishments.

Currently, the city government collects commercial establishments/institutions the amount of Php735.00 per year, which is collected when these establishments apply or renew their annual business permits. Government institutions are exempted from payment of fees. Although the City Environmental Code provides for garbage fee of Php350.00 per year, households covered by the collection service pay nothing to the city government.

Existing SWM Facilities

The old sanitary landfill started its operation in 1997 and it was permanently closed last year as it reached its capacity. But before its closure, the city government was able to acquire a 4-hectare lot adjacent to old facility and is currently constructing a sanitary landfill. Currently, the city government dumps collected garbage in a temporary dump site where solid wastes are dumped and are covered daily with soil scraped from the adjacent slope within the lot. It is located in Barangay San Pablo, about 13 kilometres away from the city proper. It is centered approximately at the intersection of geographical coordinate 16° 54' 27" north latitude and 121° 49' 31" east longitude. It is accessible by any type of land transportation through a fairly-maintained gravel road that connects eastern barangays to the city proper. The current facility is not susceptible to flooding and is granted with ECC Clearance from the MGB.

The city's present waste collection program covers 17 barangays while the remaining 48 barangays are covered by the private collection. Some barangays though collect and dispose their residuals in the temporary controlled dump site.

Materials Recovery Facility (MRF)

Pursuant to Republic Act No. 9003 otherwise known as the Ecological Solid Waste Management Act of 2000, all local government units are required to set up Materials Recovery Facilities. A materials recovery facility (MRF) is a place where solid waste is delivered to be further sorted, processed and stored for later use as raw material for remanufacturing and reprocessing.

In compliance, the City Government established a Materials Recovery Facility located at Barangay Cabaruan covering an area of 300 square meters but later it was transferred to the sanitary land fill in San Pablo when the facility started operation in 2007. This project is to transform biodegradable wastes into composts which can be utilized for various purposes, such as for agricultural purpose, for garden, and for domestic field.

The activity components include the following:

Pre-Processing bio-wastes are sorted to remove contaminants such as plastics and may be shredded for size reduction. Bulking wastes such as coir dust or sawdust are added for moisture control and to ensure the right proportion of carbon rich materials in the biomass.

Bio-Processing – The bio-wastes undergo a controlled decomposition process through windrows or the use of rotary composter equipment. The process involves 7 to 10 days of proper mixing of biomass, moisture and air. The materials then undergo curing phase of at least 7 to 10 days.

Post-processing phase. The composted products are sieved and bagged at 25 kilos each.

Every barangay in the city has also established their own MRF in every purok where garbage truck will pick up garbage. The City Government also discourage residents who practice burning of waste in compliance to the National Air Act, R.A 9003 on Solid Waste Management as it greatly contributes to the depletion of the ozone layer, a condition which will surely cause a global warming phenomenon. Residents are advised to bury their respective biodegradable wastes in individual pits to be covered with earth.

Composting Project

The public market of the City of Cauayan, Isabela is the main source of the project. The public market produces and generates an average volume of about 2,300 kg of waste per day. Eighty percent of these wastes are biodegradable and is subject for composting.

The activity includes hauling and transporting these biodegradable wastes to the MRF. The MRF is manned by three job order personnel, trained to maintain and practice composting with their proper gear and health guard uniform provided by the LGU. Initially, the facility produced about 45 to 60 bags output of soil conditioner per month at 45 kg per bag, sold at a low cost of PhP1.00 per kilo.

During its first year of operation, the project generated a gross income amounting to PhP10,000.00 pesos. Fifty percent of the produce, however, was distributed to barangays for free as an incentive in the clean and green program.

The soil conditioner was introduced to the Department of Agriculture for soil testing. The result of the laboratory test dated July 18, 2003 showed that the product has the following contents: Nitrogen = 3.31%; Phosphoric Acid = 0.72%; potassium = 2.56% and with 10.00% moisture content.

The composting facility is currently producing 120 to 200 bags of output per month, at 25 kilos per bag. Compost is sold at PhP2.00/kilo.

The City Government also discourage residents who practice burning of waste in compliance to the National Air Act, R.A 9003 on Solid Waste Management as it greatly contributes to the depletion of the ozone layer, a condition which will surely cause a global warming phenomenon. Residents are advised to bury their respective biodegradable wastes in individual pits to be covered with earth.

Toilet Facilities

The data provided by the City Health Office presents the number and type of toilet facilities of households in occupied housing units. Of the total household population of 36,797 in 2016, about 35,401 households or 96.21 percent use sanitary toilet facilities while 1,396 households or 3.79 percent use unsanitary toilet facilities.

Sanitary Toilet

Of the 35,401 households using sanitary toilets, around 85.61 percent or 30,306 households own a flush type toilet while 4,305 or 12.16 percent share flush toilet and 790 households or 2.23 percent use closed pit latrine. Majority of households in Barangays Guayabal and Alicaocao still use closed pit latrine with 250 and 247 households respectively and both have only 22 households each that own flush type toilet. There were also 100 households in Pinoma, 66 in Nagrumbuan and 55 in Minante 2 that use closed pit latrine. Although most of the households in some Barangays own flush toilet, a considerable number of households in those barangays still share flush toilet such as in Nagrumbuan with 349 households, 347 in District-1, 313 in Minante-2 and 271 in Turayong. Same through with Brgys Pinoma with 212, Sta. Luciana and San Fermin with 169 and 167 respectively. More households though in Brgy Manaoag still share flush toilet with 352 and about 291 own flush toilets. More details are shown in Table SO-16.(see sectoral analysis)

Unsanitary Toilet

As of 2016, as Table SO-16 presents, there are 1,396 households using unsanitary toilets wherein 1,288 or 92.26 percent uses open pit latrines. Likewise, here are still 108 or households that have no toilet facility. Of the 1,288 households using open pit latrines, 295 are in Rogus, 146 and 145 in Villa Concepcion and Maligaya respectively, 123 in Devera, 107 in Buyon, and 101 in Villa Flor. Other barangays have less than 100 households each that uses open pit latrines.

On the other hand, of the 108 households that do not have toilets, 88 are found in Pinoma and 20 in Barangay District 1. Information and education campaign must be undertaken by barangay officials concerned on the health hazards and dangers brought about by this situation.

ECONOMIC STRUCTURE

Agriculture remains to be the backbone of Cauayan's economy. It is currently one of the priority development sectors of the city government investing in farm mechanization, climate resilient technologies and green agriculture practices gearing towards sustainable agriculture.

The City of Cauayan is identified by the Department of Agriculture as one of the Key Grain Areas in the Cagayan Valley Region. Recently, the Province of Isabela topped all other provinces in the entire archipelago in rice and corn production wherein the city contributed so much to this endeavor. Under the Strategic Agriculture and Fisheries Development Zone (SAFDZ), Cauayan, in 2014, has an aggregate total of 18,146.48 hectares intended for Strategic Crop Development Zone but this area has gradually increased to 19,959.09750 hectares in 2016 or a 7.23% increase despite settlement encroachment and land reclassification/conversion.

For the planning period 2018-2027, a total aggregate area of 215.30 hectares of crop lands will be converted to By-pass and Diversion roads. However, the construction of SWIP in the previously rain-fed areas has added 255 hectares for strategic crop sub-development zone.

Comparative Income Generation of Economic Activity, 2016

The City of Cauayan generated a total Revenue of PhP 68,741,240.73 from the various economic activities in 2016. The tertiary sector contributed the largest amount to the city coffer with PhP45,581,852.07 representing 66% of the total revenue generated from economic activities. The secondary sector contributed PhP22,786,069.87 or 33%. while the least contribution came from the primary sector with PhP373,318.79 or 1% of the total revenue generated.

The manufacturing sector contributed PhP21,518,053.91 representing 31.30% of the total revenue generated. Meanwhile, the agriculture and fishing sectors provided PhP329,777.52 and PhP43,541.27 or 0.48% and 0.6% respectively. In totality, industrial activities comprising the primary sector and manufacturing of the secondary sector contributed a total of PhP21,891,372.70 representing 31.85% of the total revenue generated from economic activities in 2016.

Employment Generated

In 2016, the Business and Trade sector has generated a total of 9,141 jobs; industrial establishments created 11,285 while Tourism Activities contributed 382.

- **Heritage Conservation Profile**

Cultural heritage is the legacy of physical science artifacts and intangible attributes of a group or society that are inherited from past generations, maintained in the present and bestowed for the benefit of future generations.

Cauayan City indeed has its own cultural heritage that the city can be proud of. There were eleven (11) tribes in the city but the dominant tribe was the Gaddang with a total population of 8,684 in 34 barangays in the city. The City of Cauayan preserved the grandeur of the past like the Hispanic Church the Our Lady of the Pillar Parish, the restoration of Tabacalera at Hacienda San Luis as Eco Tourism Park. Natural heritage of the city includes the different species of bamboo, Prawn hatchery farm and lately the Villa Concepcion Balete.

- **Land Use Development Trend**

Land Use Situationer:

The Land Use Plan is the essence of the CLUP because it gives the spatial and physical dimension to the final development strategy. The city-specific objective for land use is to ensure equitable use of land resources and protection of critical environmental values whereby conversion of prime agricultural land for urban use shall only be done as a last resort and within the limit provided for by law and 50% to 75% of development opportunity (under-used) production lands are shifted to sustainable land use.

Old Poblacion: In year 2001, the urban core was consisted of the Poblacion with its five (5) barangays District I,II,III, Cabaruan and San Fermin, and additional four (4) rural barangays adjacent to the poblacion namely: Minante I to the south; Turayong and Alicaocao to the east; and Tagaran to the north. For year 2007-2011, five rural barangays were included in the urban core which was then believed to be the future spillover of development from the existing urban area. These barangays are Marabulig I, Minante II, Sillawit, Nungnungan II and Alinam. As a result of these spatial development strategies, considerable development gains have taken place in these areas. However, the urban core is now experiencing development constraints brought about by uncontrolled development. Heavy traffic is beginning to take its toll on the residents as well as the business community. This is aggravated by encroachment of easements by business establishments particularly sidewalks forcing pedestrians to take the roads intended for vehicular traffic thereby creating traffic congestions. It has also been noticed that the other half of the city particularly the eastern portion of the Cagayan River was left lagging in development.

Core Urban Center: To spur development and to tap the underused production lands in the eastern part of the city, a shift in the development strategy has been initiated by establishing and instituting development drivers one of which is a bold move of relocating the seat of the city government in the other side of the Cagayan River particularly in Barangay San Luis. It is in this context that for the ensuing ten-year period (2018-2027). This is made possible due to the availability of vast tract of land suitable for the establishment of a planned City Center.

The old poblacion holds its status as the Central Business District while the new urban barangays will accommodate population spillover from the poblacion. Tagaran remains the Industrial center while Minante I still is the spillover of commerce and trade development.

Rural Areas: The rural areas consist of the remaining 51 component barangays where major source of livelihood comes from agriculture.

Land Use Issues:

The land use concerns that need to be addressed during the next five years include:

- Rapid and indiscriminate conversion of prime agricultural lands to urban uses.
- Low agricultural production and productivity levels.
- Inadequate irrigation facilities particularly in the vast eastern portion of the city.
- Inadequate/poor condition of farm-to-market roads.

III. DEVELOPMENT CONSTRAINTS AND LIST OF PRIORITIZED ISSUES AND CONCERNS

There are numbers of constraints that tend to limit the extent and rate of development of Cauayan City. Some of these constraints totally preclude certain areas and activities. Others are not so formidable.

These problems and constraints tend to slow down the over-all favorable impact of development efforts, both by the government and private sectors. The resulting slow pace discourages the people to fully participate in the development process, expecting the public sector to fully undertake development efforts for the city.

However, the identification and understanding of these constraints would enable the development of feasible solutions, so that the people of the City could gain control over the unfavorable conditions besetting the city and be persuaded to fully participate in the city's development.

Physical Development Problems and Constraints

- Flooding and River Erosion/Siltation
- Wind Erosion
- Inadequate Drainage Facilities
- Inadequate Roads
- Inadequate Infrastructure and Utilities

Economic Development Problems and Constraints

- Relatively High Incidence of Poverty
- Relatively High Rate of Unemployment
- Low Agricultural Production and Productivity Levels
- Limited absorptive capacity of Services, Trade and Industry sectors to accommodate the shifting labor force from Agriculture.
- Adverse effects of disasters to agriculture production

Social Development Problems and Constraints

- Increasing informal settlers
- Young Population
- Gradual Loss of the Gaddang Culture Heritage
- Increasing Informal Settlers
- Traffic Congestion
- Unsanitary Physical Conditions

IV. DEVELOPMENT OPPORTUNITIES AND CHALLENGES

Some of the problems of Cauayan City are its very potentials for growth and development, provided these resources are optimally utilized. The greatest development challenge facing the people of the city is the conversion of these development opportunities and comparative advantages into a real benefits and tangible growth and development.

Physical Advantages

- Rivers and Fertile Alluvial Plains
- The Untapped Eastern slopes
- Favorable Geographical Location
- Presence of Basic Infrastructure Support Facilities

Economic Potentials and Comparative Advantages

- Abundance of raw materials for Industrial development
- Presence of Basic Business Services and Social Amenities
- Presence of Basic Education, Government, Finance, Culture and Religion
- Establishment of Metropolitan Cauayan
- First to implement PPP in Region 02
- First Smart City in Region 02
- Presence of Professionals/Skilled Labor

Social Comparative Advantages

- High Literacy Rate
- The Presence of Good Health Services
- Higher Level Social Services

Development Administration Comparative Advantage

- Component City of the Province of Isabela

V. MAJOR DEVELOPMENT GOALS AND OBJECTIVES

General Objective:

Cauayan City is envisioned to function as the Region's Agri-Industrial Growth Corridor and Processing Center; sub-center of education, commerce, finance, technology, culture and government, providing a healthy, sustainable environment for all who call Cauayan City their home.

The Sectoral Objectives are as follows:

- **Social Development** – Equitable access to community services and facilities and promotion of community participation in social development.
- **Economic Development** – Equitable access to economic opportunities and promotion of community participation in economic development.

- **Land Resources Development** – Equitable use of land resources and protection of critical environmental values.
- **Infrastructure Development** – Provision of efficient and adequate infrastructure for access to socio-economic opportunities, services and facilities.
- **Institutional Development** - Improvement of public-private partnerships and capabilities.

Specific Objectives

To bring Cauayan City closer to its vision in the planning period CY 2018-2027, the city's specific objectives are:

- **Social Development**
 1. Sustainable levels of urbanization
 2. Reduced number of households living below the poverty threshold
- **Economic Development employing Green Growth**
 1. Increased economic productivity and sufficiency levels promoting Green Growth
 2. Increased share of employment in secondary and tertiary sectors.
- **Land Resources Development**
 1. Minimized conversion of prime agricultural lands for urban development.
 2. Lesser population pressure on protection lands
 3. Optimum utilization of development opportunity (under-used) production lands.
- **Infrastructure Development**
 1. Maximized accessibility within development opportunity (under-used) production lands
 2. Maximized provision of irrigation coverage
 3. Improved mobility and accessibility in existing and proposed settlement areas.

MAJOR SECTORAL COMPONENT POLICIES

A proposal on the different land uses for year 2018-2027 is governed by policies to be imposed to protect abusive use and inappropriate utilization of land resources. These major policy formulations shall be anchored on the 17 Sustainable Development Goals.

A. On Protection Areas

- Strictly enforce Administrative Order No. 20, restricting the conversion of prime agricultural lands to other uses and that if conversion is inevitable it must be only 10% as allowed by law for a first-class City like Cauayan;
- Conserve lands to retain their original characteristics and productivity;
- Protect lands from destructive human activities.

B. On Production Areas

- Utilize lands within the limits of their suitability for use and apply sustainable land use Practices;
- Intensively utilize the productive capacity of irrigated lands through increased cropping Intensity;
- Construct more pre and post-harvest facilities for partially or non-irrigated lands particularly major agricultural crops

C. On Settlements

- No Build Zone on all areas highly susceptible to flooding and landslides
- Provide better basic services and facilities that will make habitation suitable for a decent, safe and secure living;
- Minimize population congestion in the urban area by providing equal opportunities for Livelihood and employment in the rural barangays;
- Ease up residential areas from pollution;
- Protect built-up areas from environmental degradation and geohazards.

D. On Infrastructure and Utilities

- Build additional inter-circulation roads for better traffic management and access between and among barangays;
- Open the city's corridors to nearby municipalities particularly Metro Cauayan and the 6th District municipalities for improved intra-circulation network;
- Fully energize all partially energized barangays;
- Expand the Level III water system to include the other rural barangays
- Develop Level II/III to barangays with difficulties on their water supply;
- Irrigate all potentially arable lands for their full productive utilization.
- Provision for water catchment for irrigation
- Implementation and Monitoring Plans

Social Development Policies

- Cauayan City shall encourage and support all barangays to develop their respective barangay development plans that are aligned with and supportive of CLUP.
- Cauayan City shall promote and support responsible family formation, maternal and childcare and women empowerment as alternatives to large family sizes that contribute poverty and environmental degradation.
- Cauayan City shall actively pursue the revival, promotion and preservation of the Gaddang Culture to renew/instill pride in being a Gaddang. With this self-respect, it is hoped that commitment to the growth and development of Cauayan shall be renewed.
- Scholarships for poor but deserving students shall be prioritized and granted to broaden the city's pool of professionals and skilled manpower.
- Schools shall be encouraged and supported to ensure the total intellectual, physical, social, emotional, spiritual and aesthetic development of school going age population.

- The Barangay Development Plans shall strictly enforce the buffer zone regulations needed for riverbank protection, industry, mobility, and other purposes to protect the settlements, especially the low-lying flood-prone and erosion areas.
- Massive reforestation and riverbank protection through tree-planting activities and structural measures shall be undertaken along the Cagayan River as a guard against further erosion.
- Bypass, Diversion and Circumferential roads interconnecting new sites development zones shall be constructed to spur and balance development in the outlying barangays.
- The city government in corroboration with poblacion barangay residents, NGOs, the civil society and other sectors shall initiate measures and undertake continuing efforts to arrest the growing traffic congestion.
- Cauayan City shall intensify its solid waste management efforts to include technology to reduce, reuse and recycle waste; introduction of green technology in solid waste management; collection equipment and procedures; landfill development; intensive Solid Waste Information Education Campaign (IEC); and strengthening of legislation regarding solid waste.
- Socialized housing sites, with services and facilities and employment generating opportunities, shall be identified, developed and integrated in the comprehensive development plan of the city.
- Cauayan City, in cooperation with barangays, shall conduct information education campaign (IEC) to disseminate and solicit mass-based support for the CLUP.
- Community participation shall be encouraged for all development projects and activities for economy, efficiency and effectivity.

Economic Development Policies

- The city shall continue to engage in the Public Private Partnership (PPP) Mode to tap the vast financial resources of the private sector in the total development of the city.
- The city government shall initiate and support community-based livelihood programs that would provide employment opportunities for all its constituents.
- It shall likewise provide public employment services, trainings and trade skills testing to increase employment.
- Local labor shall be prioritized for employment in the implementation of local programs, projects and activities.
- The city government, with private sector and the civil society's assistance, shall pursue investment promotion.
- Agricultural productivity shall be supported through agricultural inputs, mechanization, technology, irrigation and farm-to-market roads to ensure food supply and inputs to trading and industry.
- The city government, with private sector and volunteer sector's assistance preferably cooperatives, shall encourage and support the creation of more employment opportunities to meet the increasing demand of labor force.

Land Use Policies

- No Build Zone policy will be strictly implemented in highly flooding and landslide susceptible areas.
- Agricultural land conversion may be allowed only in accordance with the preferred strategy and provided the necessary services and facilities for settlements are available.
- Farming households and communities shall be provided with package of technology, infrastructure, trainings, livelihood programs, entrepreneurship development, and cooperative development in continuing efforts to strengthen the economic base of the city.
- Production activities in production forest other than afforestation, such as crop cultivation, grazing and the like, shall be limited to practices that have been tested and proven to be sustainable.
- The city government shall support research and development efforts on alternative sustainable use of production forests.
- The Zoning Ordinance shall provide for stiff penalties for violation of laws protecting the buffer strips and public easement along rivers, creeks, industrial zones, institutional, and other functional areas.
- The city shall prioritize irrigation and farm-to-market roads in prime agricultural areas, in consultation with the barangays, the DA, DAR, and other appropriate agencies.

Infrastructure Policies

- All development opportunity (under-used) production lands shall be provided with climate resilient irrigation facilities and farm-to-market roads.
- Economic infrastructure with city-wide influence like public markets, slaughterhouse, livestock market, fish depot/cold storage, bagsakan center, transport terminals, parking areas, and the like shall first be offered for Public Private Partnership scheme favorable to the city government to be able to support and sustain the local economy and enable its people to derive daily sustenance from such economic enterprises.
- Provision/upgrading of social infrastructure for education, health, social welfare, drainage, solid waste management, cemetery, flood control and sports and recreation, protective services, housing and community development.
- Provision of Building Code regarding setbacks shall be strictly enforced to allow better access in settlements and service centers.
- The City Government through the Sangguniang Panlungsod shall initiate
- Road development shall be initiated with the joint efforts of the government and the private sector to lend rationality and regularity to settlement development.
- The city government shall continually support and encourage the private sector to invest in higher level of services and facilities for telecommunications, trading and services, manpower training, research and development and other development-oriented endeavors

Institutional Development Policies

- The Top-to-Bottom and Bottom-to-Top Approach will be utilized in Local Development Planning and Management using the CBMS, the National Targeting System and PSA data and the same strategy will be used in Barangay Development Planning.
- Non-Government Organizations (NGOs), People's Organizations (POs) and the Civil Society, shall be consulted during project planning of the different development programs of the city.
- NGOs shall be encouraged to accredit for eligibility to membership in Local Special Bodies and other councils, committees, technical working groups and the similar bodies that are necessary for program planning, implementation and monitoring.
- As much as possible, city development projects shall be implemented in joint venture with the private sector and the national, regional, provincial and barangay levels of government. Priority areas for public and private joint ventures are Economic Development, Disaster Management, Environmental Management, Health Services, Infrastructure Projects and Project Monitoring.
- Inter-LGU partnerships, especially with the Metropolitan Cauayan member municipalities as well as the municipalities under the 6th Congressional District of the Province of Isabela shall be promoted in pursuance of common goals and the solution of common problems and constraints.

ALTERNATIVE DEVELOPMENT STRATEGIES

VISION/GOALS		WEIGHT -100%	ALTERNATIVE DEVELOPMENT STRATEGIES					
			1		2		3	
ELEMENTS	DESCRIPTORS		Agri-Industrial development strategy	Eco-tourism development strategy		Localize SDG development strategy		
		Rate	Score	Rate	Score	Rate	Score	
Outward Looking	ü Ideal City of the North	20	1	20	-1	-20	1	20
People as Individual	ü God centered community	10	1	-10	-1	-20	-1	-10
People as Society	ü Empowered people and the private sectors.	10	-1	10	-1	-20	-1	-10
Local Economy	ü economic progress and sustainable development	20	1	20	-1	-15	1	20
Natural Environment	ü Greenest most eco-friendly prestige City	10	1	10	-1	-10	1	10
Built Environment	ü Greenest most eco-friendly prestige City	10	1	10	-1	-15	1	10
Local Leadership	ü Honest and competent government	20	1	20	-1	-20	1	20
Total		100		80		-110		80

	Criteria	Weight	Alternative 1:		Alternative 2:		Alternative 3:	
			Concentric Development		Trend Extension		NODAL/NE W TOWN DEVELOPMENT	
			Rating	Weighted Rating	Rating	Weighted Rating	Rating	Weighted Rating
1	Cost of new support infrastructure (i.e. Transportation, Power, Communication, Irrigation)	15%	4	0.6	1	0.45	3	0.6
2	Is the option consistent with the vision and achievement of identified goals and objectives	5%	4	0.2	2	0.1	3	0.15
3	Will the option generate enough economic opportunities and improve income levels of the local inhabitants (sensitivities and enhance adaptive capacities of households and individuals)	10%	4	0.4	3	0.3	3	0.3
4	Will it generate enough local revenues/income in the form of real property taxes and business permits to support/sustain local development	5%	4	0.2	4	0.2	3	0.15
5	Does the local inhabitants have the necessary skills and capabilities to pursue the option	10%	2	0.2	2	0.2	3	0.3
6	Does the Local Government have the capacity and capability to support the development thrust in terms of policy, program and project implementation	15%	4	0.6	2	0.3	4	0.6
7	Will it encourage the sustainable and optimal use of local natural resources	5%	3	0.15	4	0.2	3	0.15
8	Is the option achievable given the hazard susceptibilities of the Municipality	15%	3	0.45	2	0.3	3	0.45
9	Is the option achievable given the projected changes in the climate (extremes and variability)	5%	2	0.1	2	0.1	3	0.15
10	Disaster risk management and climate change adaptation measures needed to pursue the option on the part of the LGU and the private sector	10%	4	0.4	3	0.1	3	0.3
11	Does it promote ecological balance and sustainability	5%	4	0.2	4	0.2	3	0.15
	Weighted Score	100%	3.05		2.45		3.3	
	Rank		2		3		1	

VI. DEVELOPMENT THRUSTS AND SPATIAL STRATEGIES

ALTERNATIVE SPATIAL STRATEGIES

What follows are alternative spatial development schemes which have been envisioned for the City of Cauayan.

Alternative 1 – Trend 2028

This form of development, otherwise known as “sprawl” development, presupposes minimal government intervention. This scheme merely follows past trends, where the expansion of the Poblacion and other population/activity centers are left to their natural tendencies. Since the basic services and economic opportunities are frequently concentrated in major settlement areas such as the Poblacion, the logical flow of development is centrifugal and linear. Because the direction and pace of urban development is often a function of the collective decisions of individual landowners, the state of infrastructure and utilities serves to preserve the existing urban pattern of the city.

Likely scenarios:

1. Rise of a haphazard type of land use pattern that tends to wipe out potential areas for planned urban development.
2. Prime agricultural areas that serve as the main source of livelihood for the locality are often exposed to strong land conversion pressures.
3. The presence of incompatible land uses whose ill effects tend to be counterproductive to the overall growth of the local community.
4. Pollution, flooding, environmental degradation, health and hygiene hazards, and impeded traffic flows, to name a few, are the consequent results: consequences that often characterize any type of uncontrolled urban sprawl.

Alternative 2 – Concentric Development Strategy

As discussed, the natural tendency for the Poblacion is to continue growing even without any form of intervention. A Poblacion – focused development scheme, however, implies some form of state intercession. This intervention is often implemented through the planning function of the office of the CPDC.

The Poblacion – centered approach is premised on the prevention of the possible adverse consequences of the first strategy. It differs in that some semblance of planning and zoning key consideration is the need to allocate limited resources within a small area and simply hope that the growth-pole “trickling down” phenomenon will take place.

Likely scenarios:

1. The rural barangays are left behind in their development growth due to limited resources that are all concentrated in the urban core. Basic services might be neglected and the trickling down effect might not be able to reinforce.
2. Opportunities for enhancing local revenue generation through rural development will be insignificant as programs and project is pursued and focused only in the urban core. The potential of rural areas to contribute to the over-all development of the city is not taken into consideration.

3. There is an apparent tendency for the rural population to depend on the urban core for all basic services and programs. This will deplete the urban core of its resources and the turnaround effect of development may ensue.
4. The inflow of people to the urban core would create problems in pollution, health, and other environmental problems.

Alternative No. 3 – Multi-Nodal Growth Corridor Strategy

This strategy envisions the development of the city that is characterized by a dominant growth pole together with six satellite growth centers. Each satellite is envisioned to contain a compatible mix of land uses. The rationale behind this strategy is to contain movement of resources, people, services, goods, trading and other opportunities within the confines of the city especially from the outlying barangays and its fringes.

The Poblacion, where the concentration of infrastructure and utilities are presently situated, shall continue its role as the dominant growth center. The continued concentration and upgrading of its infrastructure system should be given priority. The development of these satellite growth areas is envisioned to complement the Poblacion.

The main function of these satellites is to provide the needed services and opportunities in the outlying barangays within its influence or tributary area. This is aimed at reducing heavy dependence on the Poblacion. Also, it is meant to arrest the outflow of people, goods, services, trade and opportunities into the other nearby municipalities by serving as counter magnets to the attractiveness of these places.

The success of this strategy depends on the presence of a well-developed infrastructure and utilities system to ensure access within and between points in the core and satellite growth areas. Effective land use control mechanisms are critical in this strategy to prevent incompatible land uses within the respective core and satellite areas to ensure its overall complementary state. Implied, therefore, is the strong presence of the City Planning and Development Office.

The Preferred Spatial Strategy: Nodal Growth Point Strategy / New Town Development

The selection of the preferred spatial strategy was made based on several criteria using the Checklist Criteria Method, as follows:

1. It is reflective of the desired goals and aspirations of the city anchored in the 17 Sustainable Development Goals.
2. It is consistent with the provincial, regional and national goals and objectives.
3. It is realistic and achievable, and
4. It generates sufficient public support that will spur and sustain its implementation.

First, it has been made clear that the city is envisioned as the Region's Agri-Industrial Growth Corridor and Processing Center. Given this fact and after due consideration for the macro policies that brought to bear on the development of the City of Cauayan, it was decided that the progress of the city will revolve around an agri-industrial based type of development.

Second, the physical status of the city is conducive for agri-based industrial production as well as agro-forestry. The extensive flat lands and the mountains and sloping areas of the city makes agro-forestry activities a very attractive opportunity although at present there appears to be

some problems with the effectiveness of agricultural support infrastructure to augment the needs of the agricultural sector.

Third, the expansive prime agricultural lands which fall under the ambit of administrative Order No. 20 and the numerous CARP areas within the city constrain the outward development of non-agricultural activities.

And fourth, the evaluation of several spatial schemes led to the selection of a reformulated phased nodal growth point development strategy. While the resources of the city are limited as to prevent a meaningful diffusion of development over a wide geographic area, the very object of planning is to look at development over the long run. Although the dispersion of development was not an immediate concern, it was realized that it is necessary to anticipate future demands for space owing to the fact that the city is presently experiencing a fast pace of development.

STRUCTURE / CONCEPT PLAN

Detailing of the Preferred Spatial Strategy

New Town Development

The Core Urban Center

The major features of the chosen strategy are the designation of the **Core Urban Center** to become the New Poblacion and the existing Urban Core to become the Old Poblacion. The old Poblacion however will have to undergo revitalization introducing “green growth concept” to become attractive to business locators as it remains to be the Central Business District while the **Core Urban Center** is being vigorously developed. The establishment of the **Core Urban Center** is necessary to decongest the Poblacion area and primarily to spur development in the eastern side of the Cagayan River that is lagging in development. It is also envisioned to become the Regional Center under a Federal Form of Government. The **Core Urban Center** will be established in a 50-hectare land at barangay San Luis that will soon become the new seat of the City Government.

Redevelopment of the Old Poblacion

The Old Poblacion will remain as a growth center that will cover the barangays of Minante-I and Minante-II to the south; and, barangays Cabaruan and Tagaran to the north. However, in order to avoid a “sprawl” development, stringent regulatory measures will be put in place. The plan advocates for the redevelopment the Old Poblacion first over simultaneous development of the growth node areas since existing conditions and levels of demand do not warrant the rapid urbanization of the identified growth node areas.

The Secondary Growth Nodes

The six secondary growth nodes are the barangays of Villa Luna/San Pablo/San Luis in East Tabacal Region; Villa Concepcion/Maligaya/Baculod; and Gappal/Manaoag in the Forest Region; Labinab/Buena Suerte/Rizal in West Tabacal Region; and Pinoma/Naganacan in Tanap region and Marabulig-I/Marabulig 2 in Tanap Tabacal Region. However, This means that over the short and medium terms, development shall still be focused on the New and Old Poblacion area, but within the plan period, the structures and mechanisms should already be there in preparation for the transformation of the growth node areas into major hubs of activity.

To operationalize the Phased Nodal Growth Point Area Strategy, the following barangays are hereby designated as growth point areas where intermediate goods and services will be concentrated:

1. Villa Luna/San Pablo/San Luis in East Tabacal Region
2. Villa Concepcion/Maligaya/Baculod in the Forest Region
3. Gappal/Manaoag in the Forest Region
4. Labinab/Buena Suerte/Rizal in West Tabacal Region
5. Pinoma/Naganacan in Tanap Region
6. Marabulig-I/Marabulig 2 in Tanap Region

Eco-tourism Sites

Aside from these six secondary growth nodes, two eco-tourism sites will also be developed such as the Hacienda de San Luis Eco-tourism Park in Barangay San Luis and the Compania General de Tabacos de Filipinas in Barangay Tagaran. This aims to heighten tourism activities while preserving the city's cultural heritage. Tourism-related activities shall also be vigorously promoted.

Industrial Sites

Considering the fast pace of development that the City is currently experiencing, and taking into consideration the role that the City of Cauayan is designed to play in the development of the Cagayan Valley Region, the City Government has started to explore the possibility of creating a Special Agri-Industrial Eco-Zone that will be established in the Monterey Farm of San Miguel Corporation at Barangay San Luis and Cabugao. An initial 200-hectare of land has been allocated for this purpose and another 300 hectares for future expansion.

As one of the Region's Key Grain Areas, the city government also allocated agri-industrial sites in Nungnungan 2, Minante 2 and San Fermin where grains processing and commercial livestock development will be concentrated. The city government likewise maintained the vast industrial site in Barangay Tagaran to accommodate Light to Medium Industrial activities.

These barangays shall be the sub-urban cores which are envisioned to foster economic growth in outlying areas. The choice of the barangays as growth has been on the following factors:

1. size and population
2. existence of transport system
3. existence of educational or medical facilities
4. availability of water sources
5. availability of power supply; and
6. potentials for development

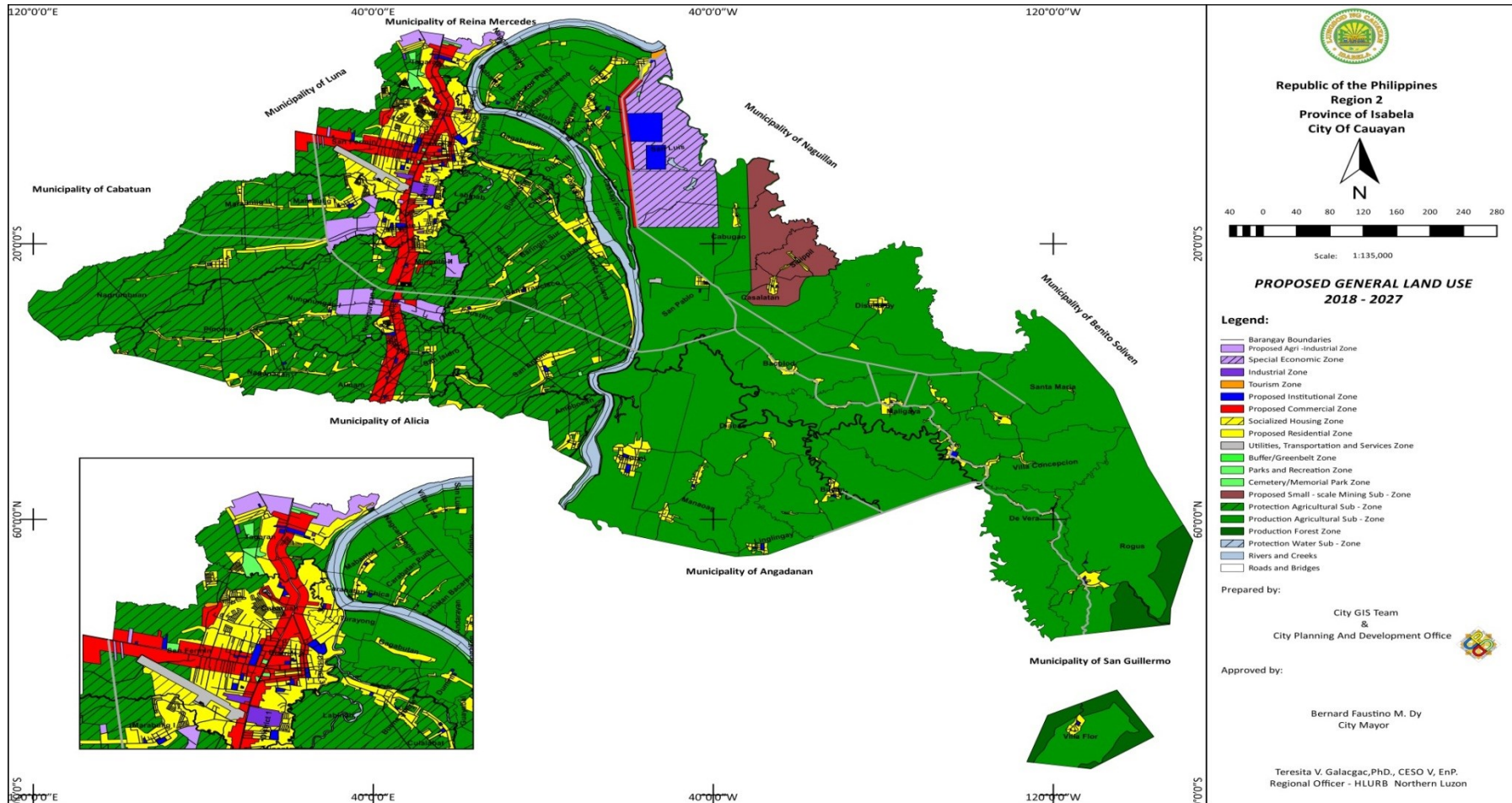
The Core Urban Center shall become the new focal point of growth within which higher level of goods and services shall be concentrated. Only the following uses will be allowed therein: residential, commercial, institutional, functional open spaces and utilities.

The areas along both sides of the Maharlika Highway leading to Ilagan in the north and Santiago City on the west along the Gov. Faustino N. Dy. Avenue will serve as an expansion area of the old poblacion/urban core.

For these selected sub-urban centers to fully function as growth point capable of attracting business or industries to locate therein and to succeed in fostering economic growth in adjacent barangays and contribute to the overall growth and development of the city as well to the entirety of Metropolitan Cauayan, the following must be insured:

1. The cooperation and active participation of barangay officials and residents in these growth points especially in the decision – making process. Maximum progress depends on maximum participation, a situation in which all members of the community realize they have a stake in that progress and contribute to it.
2. Construction of an all-weather bridge at Sta. Luciana-San Pablo and construction of an additional lane of the existing overflow bridge at Alicaocao
3. Upgrading and Expansion of power service coverage.
4. Construction of by-pass and diversion roads linking the identified growth corridors including external links connecting the other municipalities of Metropolitan Cauayan and the 6th Congressional District of Isabela;
5. Improvement and maintenance of existing transportation network and the availability of efficient transport services in order that the growth points and the urban core will reinforce each other towards a unified growth and development.
6. Availability of adequate supply of potable water and irrigation purposes.
7. Expansion and improvement of educational facilities.
8. Expansion and improvement of medical services and facilities including the availability of adequate medical supplies.
9. Provision of sanitary toilet facilities in every household.
10. Provision of adequate sports facilities and equipment.
11. Establishment of training centers for out-of-school youth and needy adults.
12. Availability of adequate supply of farm inputs.
13. Availability of an extensive and intensive extension services.
14. Expansion in the operation of existing industries to increase employment opportunities.
15. Availability of adequate space for future small and medium scale industries and cottage industries.

THE PROPOSED GENERAL LAND USE MAP



Derivation of the Proposed Land Use Scheme

Before a rational land use scheme was formulated for the city, a thorough analysis of physical, socio-economic, hydrological and geophysical, legal as well as practical planning considerations were undertaken. The process of identifying the best use and distribution of land resources was facilitated by the systematic use of the eco-engineering approach to map analysis. Also known as the sieve-mapping technique, this composite mapping tool involved the overlaying of selected inventory and criteria maps to derive analytical decision maps.

The composite analytical map is derived by delineating specific categories on the relevant thematic maps based on particular factors or features. The analytical maps are then used as inputs in the derivation of more composite maps. Refinement to each subsequent iteration is done by applying ecological and engineering principles as well as practical planning considerations using the Geographic Information System (GIS) specifically the Q-GIS which employs the same methodology using state-of-the-art computer technology.

Basically, the derivation process hinges on the identification of constraints to development. The first set of constraints may be classified as purely dictated by the physical environment. Examination of climate predictions, geologic properties, erosion potentials and slope categories provided the data for the first iteration. The geologic map reveals the suitability of the structural properties of the rock formations underlying the city for land development. The erosion potential of the area likewise reveals the logic of restraining high-intensity development. The slope map reveals that development may be encouraged only in areas indicated by the gentle slopes.

Aside from physical considerations, there are certain development constraints that limit the optimum use of land. Among these development constraints are the existing land uses. As a general policy, existing uses, particularly agricultural and residential and commercial zones, are maintained provided they pose no threat or do not conflict with adjacent zones. Also, the protected agricultural areas have been afforded due considerations.

The special techniques and procedures to make programs and action plans for Cauayan City work were determined through focused group discussions, sectoral Technical Working Groups, multi-sectoral consultations, City Comprehensive Land Use Plan – Technical Working Group, City Special Bodies. Strategy development consultations with regional and provincial line agencies, recommendations submitted by the public and through public meetings.

Development strategies were streamlined to include the following:

- Poverty Alleviation through
 1. Agricultural Modernization
 2. Cooperative Development
 3. Technology Transfer
 4. Livelihood Projects
 5. Mobile City Government Services
 6. Scholarships

- Investment and Employment Generation through
 1. Commercial Development
 2. Promotions (local and global)
 3. Physical Upgrading
 4. Public Employment Services
 5. Kabuhasan/Display Center
 6. Cultural Heritage Development

- Capability Building through
 1. Information Technology
 2. Barangay Development planning
 3. Values renewal
 4. Continuing professional/Technical Education

- Development Administration through Total Quality Management
- Public-Private Partnership
- Inter-LGU Partnerships

CHAPTER VII PROPOSED LAND USE AND ZONING ORDINANCE

The development thrust of the city government to convert Cauayan as the Regional Agri-Industrial Growth Center requires that the preferred spatial strategy will intensify its growth and must match a proposed land use plan that ushered in significant great changes on its existing and actual land uses. The following are the policies and land use measures that have been introduced:

- The conversion of idle and open grasslands to agricultural or production areas. As such, there will be idle lands to reckon. These areas shall all be converted for cultivation purposes as these were identified as development opportunity land for agriculture;
- The conversion of 10% of the total prime agricultural land within the urban poblacion into residential, commercial and other urban uses. This includes the new streets, Farm-to-market roads, by-pass and diversion roads needed for internal circulation as well as inter-town connectivity taking into consideration the development of Metro Cauayan;
- The Industrial Site in barangay Tagaran, shall be maintained with plan to revitalize said area intended to accommodate low and medium intensity agri-industrial activity;
- Alternative Industrial sites has been designated to enhance the current industrialization program of the city
- The increase in the commercial and agro-industrial areas are due to the expected growth in commerce, trade and agri-processing plants with the revitalization of the proposed Isabela Special Ecozone;
- The conversion of agricultural area in some barangays is proportionately compensated by the increase of the residential, commercial, and institutional areas.
- The existing forest and forestland areas as delineated by the CENRO-Cauayan shall be developed and managed sustainably to preserve the endemic species of plants and wildlife that could possibly serve as source of propagation.

THE PROPOSED GENERAL LAND USE ALLOCATION

Land Use Category	Sub-Categories	Area in Hectares					
		Existing	%	Proposed	%	Increase	Decrease
FOREST AND FORESTLAND							
Protection							
	Forest Reserve						
	National Park						
	Military and Naval Reservation						
	Civil Reservation						
	Forest Buffer						
	NIPAS: Strict Protection Zone						
Production							
	NIPAS: Multiple Use Zone						
	Fishpond	41.35	0.12	117.64	0.34	76.29	
	Mining	430.00	1.25	588.55	1.71	158.55	
	Plantation	1,700.00	4.95	668.95	1.95		1,031.05
	Other Uses *(Pls. specify)						
AGRICULTURE							
Protection							
	NPAAAD						
	SAFDZ						
Production							
	Crops	27,352.05	79.66	26,248.38	76.40		1,103.67
	Pasture	1,030.76	3.00				
	Special Economic Zone			996.24	2.90		
	Other Uses *(Pls. specify)						
WATER							
Protection							
	Foreshore Land						
	Fishery Reserve						
	Delta/Estuary						

	Lagoon			15.50	0.05		
	Mangroves						
	Seagrass Beds						
	Reef Systems						
	Sand Dunes						
	River and Creeks	662.66	1.93	647.00	1.88		15.66
	Algae Forest						
Production							
	Aquaculture						
	Commercial Fishing						
	Municipal Fishing						
	Other Uses *(Pls. Specify)						
TOURISM/ECO TOURISM							
	Eco Tourism	3.28	0.01	10.30	0.03	7.02	
	Residential	1,815.40	5.29	2,367.34	6.89		
	Socialized Housing	18.89	0.06	43.39	0.13	24.50	
	Informal Settlements						
	Commercial	352.99	1.03	1,046.14	3.05	673.65	
	Agri Industrial	61.76	0.18	304.94	0.89	243.18	
	Industrial	29.17	0.08	6.16	0.02		

Land Use Category	Sub-Categories	Area in Hectares					
		Existing	%	Proposed	%	Increase	Decrease
	Institutional	125.42	0.37	326.72	0.95	190.52	
	Parks and Recreation	11.55	0.03	31.62	0.09	20.07	
	Cemetery/Memorial Parks	26.14	0.08	37.69	0.11	11.55	
INFRA/UTILITIES							
	Infrastructure/Utilities	27.77	0.08	60.57	0.18	32.80	
	SWIP	13.38	0.04	16.23	0.05	2.85	
	Roads and Drainage	347.47	1.01	549.51	1.60	202.04	
LANDFILL/DUMPSITE							
	Sanitary Landfill	12.00	0.03	12.00	0.03		
OTHER USES*BUFFER/GREENBELT							
	Buffer/Greenbelt	273.84	0.80	256.51	0.75		17.33
TOTAL		34,335.88	100.00	34,335.88	100.00		

The changes above resulted to the new area allocations for the different land use categories, as follows:

1. FISHPOND

The present utilization of fishpond has a total area of 41.35 has. To satisfy the fish meat requirements of the city 's population the proposed land use has to increase at about 117.64 has. to raise and catch fish as alternative source of income.

2. MINING & QUARRYING

The proposed Isabela Coal-Fired Power Plant covering the municipalities of Naguilian, Benito Soliven and Cauayan City will remain in the CLUP as well as in the Regional Development Plan of Region 2. A total aggregate area of 588.55 hectares is within the jurisdiction of the city with 265.93 hectares is in barangay Sinippil, 226.1 and 96.52 hectares in Cabugao and San Luis respectively. The sand and gravel found in the Cagayan River will be utilized for quarrying taking into consideration its sustainability.

3. AGRO-FOREST

The present utilization of the declared 1,700 hectares forestland has been reduced as it was encroached by settlements. Currently, a total aggregate area of 364 hectares is being developed for agricultural crops while 336 hectares is utilized for reforestation activities by the six Integrated Social Forestry (ISF) Project beneficiaries. The City Government has recently formulated a Forest Land Use Plan with technical assistance from the CENRO Cauayan Office purposely to ensure the sustainability of the forest and forestland. Based from the FLUP, there is a current total aggregate area of 668.95 hectares of forest and forestland in the city. These areas are found in Barangay Faustino with 13.23 hectares, 32.35 hectares in San Francisco, 262.77 hectares in Villa Flor while the remaining 360.6 hectares are in Barangay Rogus. These forest and forestlands will be planted with different varieties of trees endemic to the place and other fruit-bearing trees. Close coordination between the city government, the DENR, the CENRO and the DA is enjoined to ensure programs toward ecological balance be implemented.

4. AGRICULTURE

Cauayan City must give way to settlement expansion because of population increase. Some agricultural areas, specifically a three-hundred (300) meters strip on both sides along the Maharlika Highway going to Santiago City on the south, Ilagan on the north and another 300-meter strip on both sides along Gov. Faustino N. Dy Avenue going to Cabatuan on the west will be reclassified into built-up areas. However, vast tracts of open grasslands located in the Forest Region will be utilized for crop production.

A reduction in agricultural area is expected to give way for the construction of By-pass and Diversion roads estimated to reach 215.3 hectares that will later serve in transporting farm produce as it will cross vast agricultural area. However, this reduction will be compensated by the reclassification of open spaces to agriculture hence, the total agricultural area remains at 26,232.88 hectares representing 76.44% of the total land area of the City of Cauayan.

5. SPECIAL ECONOMIC ZONE

A total area 996.24 hectares equivalent to 2.90% of the total land area of Cauayan is delineated for this purpose. The provincial government of Isabela and the city government of Cauayan are currently collaborating with PEZA and San Miguel Corporation, being the project developer, is vigorously working together towards the establishment of Special Economic Zone in the city particularly in Barangays San Luis and Cabugao.

Various types of SEZ are intended to be established such as Agro-Industrial Ecozone, IT Park (ICT Manufacturing Hub), ICT Parks with Business Process Outsourcing Facilities, KIST Park (Knowledge, Innovation, Science & Technology Park), Renewable Eco-Industrial Park and Tourism Ecozones (Tourism Enterprise) preferably Eco-Tourism/Cultural Village/Heritage Park: Medical Tourism and, Retirement Village with Health, Wellness & Naturopathy Facilities.

6. RIVER AND CREEKS/LAGOON

There are 647 hectares or 1.89% that comprises the Cagayan River and its tributaries. Moreover, a 15.50 hectares of lagoon is also found in the wetlands of San Luis. Structural and non-structural measures must be introduced to protect the Cagayan River to prevent soil erosion so that the area of existing rivers and other waterbodies shall be maintained. The Cagayan River Master Plan may be of great help in this endeavor.

7. TOURISM/ECO TOURISM

There are 10.3 hectares or 0.03% allocated for tourism purposes particularly the development and promotion of the Hacienda de San Luis Eco-tourism Park. Moreover, tourism support services and facilities will be established in the commercial areas earlier identified.

8. SETTLEMENT AREAS

Settlement areas consist of residential, commercial, institutional, industrial and agri-industrial areas. There are increases in settlement or built-up area in anticipation of increase in household population requiring dwelling areas.

The settlement expansion will occur within the periphery of the urban center and in the eastern part of the city specifically in the surrounding of the Proposed Core Urban Center and the Isabela Special Agri-Ecozone in Barangays San Luis and Cabugao. The urban core remains to be the main central business district as an offshoot of the current move of the LGU to spark agri-industrialization and commercialization while the development of the New City Urban Center is being aggressively pursued.

Built up or settlements areas shall increase to 5,228.23 hectares representing 15.23% of the total land area of Cauayan City. The Residential land use remains to be the major user with 2,410.73 (46.11%) which is further classified into Low Density Residential (R-1) with 1,506.11 hectares or 28.81% and Medium Density Residential (R-2) with 904.62 hectares representing 17.30% of the total settlement area. The next largest user is Commercial with 1,046.14 hectares representing 20.01% of the total settlement area. Although this area

exceeded the required allocation for the next ten years, it is necessary to open around 692.94 hectares (13.25%) for Low Density Commercial (C-1) and 353.20 hectares (6.76%) Medium Density Commercial (C-2) use. Adjacent lots particularly in Barangays San Pablo and San Luis were also identified as commercial expansion area purposely to entice businessmen to locate near the proposed ISAEZA and the creation of a New City Urban Center in San Luis that will eventually contribute to the realization of the proposed nodal growth development in that area.

The 3rd major user is the Special Economic Zone with 996.24 hectares or 19.06% of the total settlement area. This vast tract of contiguous land is located in Barangays San Luis and Cabugao while the remaining 295.9 hectares will be allocated for grains processing, poultry and livestock development.

This strategy aims to decongest the poblacion area and create new sites for development aside from bringing closer the needed services to the residents of the eastern part of the city.

One of the current expansion of settlements particularly residential and commercial is Barangay San Fermin allocating 182 hectares medium density commercial use. Same through with Barangays Cabaruan with 82.82 hectares; District 1, 2, & 3 with 47.1, 19.54 and 3.68 hectares respectively. Likewise, a total aggregate area of 336.58 hectares of low density commercial (C-1) area will be allocated particularly in the barangays along the Maharlika Highway.

It is for this reason that a 300-meter strip on both sides along the Gov. FN Dy Avenue and along the Maharlika Highway was allocated.

9. COMMERCIAL AREA

The existing commercial area within the Urban Core warrants a larger expansion considering the current influx of business locators to invest in the area. The business potential of the strategic location of the Urban Core being located at the center of the province will be fully utilized. However, existing commercial areas located in flood-prone areas, although very minimal, are recommended to relocate in suitable areas. If not, they shall be restricted to upgrade or expand unless retrofitting or mitigating measures shall be introduced to protect themselves and their investment as well as the buying public.

Running along both side of the Maharlika Highway at a 200-meter lot depth to the boundary of Alicia is a proposed commercial area aside from the 200-meter lot depth commercial strip identified along both sides of the Gov. Faustino N. Dy Avenue.

Commercial areas considerably increased allocating 1,046.14 hectares. The proposed urban land use for medium density commercial use is 353.20 and another 692.94 hectares is allocated for low density commercial use.

10. AGRI INDUSTRIAL

The rising number of rice milling and grains drying activity and the growing number of investors in commercial piggery and poultry farms require suitable and adequate expansion area in support to the agri-industrialization goal of the city. A total of 795.90 hectares is allocated.

11. INDUSTRIAL AREA

The land area allocated for Industrial use 6.16 hectares located at Barangay Tagaran.

12. INSTITUTIONAL AREA

The institutional area requirement for the urban core in the next ten years shall be provided with an allocation of 326.72 hectares of the proposed urban land use intended to accommodate the growing space requirement of public and private institutions.

13. PARKS AND RECREATION

An aggregate area of 31.62 hectares is likewise proposed to be utilized for parks and recreation. These areas are situated in Barangays District 1 with 15.62 hectares, 8.82 hectares in San Luis, 7.17 hectares in Tagaran and 0.01 hectare in Turayong.

14. CEMETERIES/MEMORIAL PARKS

The closure of two major cemeteries in the poblacion area in 2016 necessitates the allocation of land for this purpose. An aggregate area of 37.69 hectares is allocated for this purpose. A proposed cemetery, the Grandview Memorial Park will soon be established comprising 2.88 hectares located near the existing Cauayan Memorial Park in Brgy San Fermin.

15. INFRASTRUCTURE AND UTILITIES

A total of 60.57 hectares is allocated for transport, power, communication and other utilities.

16. SMALL WATER IMPOUNDING PROJECT (SWIP)

A total of 16.23 hectares is allocated for small water impounding project thereby minimizing soil erosion and silting of fertile bottom lands. The SWIP is a supplemental source of water for agriculture and is also used for fisheries.

17. ROAD NETWORK/DRAINAGE

The area for roads shall increase to 539.76 hectares representing 1.57% of the total land area of Cauayan to pave way for new farm to market roads as well as urban roads that are needed to improve mobility and inter-circulation. This includes the ongoing construction of By-pass and Diversion roads with an estimated area of 215.3 hectares aside from the proposed conversion of the Provincial Road into a National Road.

18. SANITARY LANDFILL

Environmental management is one of the priority services being provided by the city government and barangay LGUs and this includes solid waste collection, and the cleaning of streets, esteros and canals. The allocated area for sanitary landfill is 12 hectares of the total proposed land use.

19. BUFFER & GREENBELT

A total aggregate area of 250.76 hectares is likewise delineated in the proposed land use plan. These areas include the easements of waterbodies purposely to protect it from encroachment, and areas identified with conflicting uses. Planting of different varieties of trees and bamboos in these zone must be aggressively pursued to protect our sub-watersheds.

B. PROPOSED URBAN LAND USE

The Urban Land Use Plan of Cauayan, a broad delineation of land uses within the Urban Core, aims to promote desirable and rational pattern of development; protect the essential character of the community; direct the rate and growth of such factors as population density, social services and infrastructure; and prevent the intrusion of conflicting and unwanted land uses into the orderly pattern of development within the locality. Of necessity, it is supportive to the development of the functional areas (growth points) identified in the general land use plan as it pinpoints the direction for expansion and designated zones or districts wherein particular use are permissible.

In the formulation of the Urban Land Use Plan, due consideration has been given to the following factors; existing land uses and trend of development; population density and its distribution; population-land ratio and the desired densities in each zone; demand or need for particular land uses and compatibility of existing and proposed uses which are adjacent to each other and, other considerations that are deemed necessary in the realization of special concerns of development.

The Proposed Cauayan Urban Land Use and Area Allocations:

1. RESIDENTIAL AREA

The residential area will include all areas currently occupied by dwelling units and other areas that are designated as residential uses of future households over the Plan period.

By the end of the plan period, the Urban Core is expected to accommodate 16,958 households. This requires the expansion of the existing residential to 1,020.99 hectares accounting to 21.41% of the urban area to accommodate these new households.

Residential Sub-Zone R-1

To minimize sprawl and uncontrolled development in settlement area, an R-1 Residential Sub Zone is delineated comprising 156.77 hectares or 3.29% of the total urban area intended for low density residential use of 20 dwelling units per hectare. Per the National Building Code, R-1 Zone is characterized mainly by low-rise single-detached and duplex residential buildings for exclusive use as single (nuclear) family dwellings with allowable uses as defined in the Zoning Ordinance.

These R-1 residential areas are in barangay Tagaran with 88.86 hectares, 31.65 hectares in Minate-2, Sillawit and Marabulig-1 has 14.37 and 10.0 hectares respectively while barangays Alinam, Turayong and Nungnungan-2 have 7.13, 4.29 and 0.47 hectares respectively.

Residential Sub-Zone R-2

A medium density Residential Sub Zone (R-2) is likewise delineated intended for medium density residential use. Per the National Building Code, R-2 Zone is characterized mainly by low-rise single attached, duplex or multi-level structures residential buildings for exclusive use as multifamily dwellings where use must comply with the relevant provisions of the NBC, PD 957 and this Ordinance specifically the number of allowable storeys/floors above established grade is five (5) and the Building Height Limit is 15.00 meters above highest grade. The greater number of households to be formed within the next five years shall come from the rural barangays and shall be accommodated within the existing built-up areas having wide spaces.

The Urban Core is composed of 14 barangays with a total aggregate area of 4,769.59 hectares. An aggregate area of 864.22 hectares representing 18.12% of the total urban land area is allocated for residential Sub-Zone R-2. Barangay San Fermin has the largest in terms of land area hence, it is planned to host a total aggregate area of 263.33 hectares of medium density residential use followed by Cabaruan with 144 hectares. Marabulig-1, District-1 and Minante-1 shared 95.21, 95.08 and 91.01 hectares each respectively. All the urban core barangays have allocation for R-2 use except for Nungnungan-1.

2. COMMERCIAL AREA

The existing commercial area within the Urban Core warrants a larger expansion considering the current influx of business locators to invest in the area. The business potential of the strategic location of the Urban Core being located at the center of the province will be fully utilized. However, existing commercial areas located in flood-prone areas, although very minimal, are recommended to relocate in suitable areas. If not, they shall be restricted to upgrade or expand unless retrofitting or mitigating measures shall be introduced to protect themselves and their investment as well as the buying public.

Running along both side of the Maharlika Highway at a 200-meter lot depth to the boundary of Alicia is a proposed commercial area aside from the 200-meter lot depth commercial strip identified along both sides of the Gov. Faustino N. Dy Avenue.

Commercial areas considerably increased allocating 337.02 hectares or 7.07% of the total proposed urban land use for medium density commercial use and another 321.31 hectares representing 6.74% is allocated for low density commercial use.

Commercial Sub-Zone C-1

The low density commercial sub zones use is hereby introduced to deter residential and commercial users from occupying prime agricultural areas within the poblacion area. This low density commercial area (C-1) is intended for neighborhood or community scale trade, service and business activities. An aggregate area of 321.31 hectares representing 6.74% is allocated for low density commercial use.

Barangay Tagaran has the biggest allocation for this use with 74.08 hectares followed by Sillawit with 71.01 hectares. Minante-2 and Minante-1 have 64.52 and 50.26 hectares respectively while Alinam and Nungnungan-2 shared 34.31 and 25.55 hectares

respectively. Minimal area of 1.56 and 0.02 hectares is allocated for Alicaocao and Cabaruan.

Commercial Sub-Zone C-1

Likewise, a medium to high density commercial area sub zone (C-2) is also delineated intended for trade, service and business activities performing complementary/supplementary functions to the CBD. This strategy is adopted to discourage the conversion of agricultural lands to urban uses to protect the prime agricultural lands surrounding these built-up areas.

Barangay San Fermin allocated the largest area with 181.94 hectares followed by Cabaruan with 82.82 hectares. District-1 and District-2 shared 50.0 and 17.14 hectares each respectively while District-3 and Turayong allocated 3.68 and 1.44 hectares respectively.

3. SOCIALIZED HOUSING

A component of the residential use, Socialized housing use shall be established in the Residential Sub-Zone R-1 delineated in the Official Zoning Map and as described in the Zoning Ordinance. This is to facilitate the housing program of the LGU in providing a house for informal settlers attracted to the city and as a housing intervention to the 30% of the bottom poor of the city.

4. INSTITUTIONAL AREA

The institutional area requirement for the urban core in the next ten years shall be provided with an allocation of 95.89 hectares or 2.01% of the urban area intended to accommodate the growing space requirement of public and private institutions.

5. URBAN PARKS AND RECREATION

A total of 12.18 hectares is allocated for Urban Parks and Recreation which, will serve as critical public places for recreation and civic engagement that is essential to quality of life in urban centers. Parks help provide solutions to a myriad of national and community issues like providing healthy places to exercise, managing storm water runoff and helping clean the air, catalyzing economic and community development, and providing safe, close to home recreation options.

6. BUFFER AND GREENBELT

The ever-changing climate necessitates the provision of buffer strips or greenbelt gardens as they help prevent erosion, which is more vastly cost-effective than providing structural remedies. It also improves water quality by absorbing excess sediments and nutrients before they reach the water and it also attracts birds, butterflies and other wildlife. A total aggregate area of 32.96 hectares is allocated for this purpose.

7. INFRASTRUCTURE AND UTILITIES

A total of 61.68 hectares or 1.29% is allocated for transport, power, communication and other utilities.

8. WATERBODIES

Through the different infrastructural interventions to prevent erosion, soil degradation and siltation of the Cagayan River and its tributaries, it is hoped that the area of 66.82 hectares or 1.40% shall be stabilized utilizing greenbelt buffers where applicable and structural measures where necessary.

9. AGRI-INDUSTRIAL

The rising number of rice milling and grains drying activity and the growing number of investors in commercial piggery and poultry farms require suitable and adequate expansion area in support to the agri-industrialization goal of the city. A total of 296.82 hectares or 6.22% of the urban area is allocated.

The bulk of this area is in Tagaran, the site of the proposed Cauayan Regional Agri-Industrial Growth Center with 101.68 hectares. Nungnungan-2, Minante-2 and Minante-1 currently host a considerable number of grains processing and commercial livestock and poultry industries have allocated 63.42, 52.11 and 26.99 hectares respective. Marabulig-1 and San Fermin also allocated 39.73 and 12.89 hectares, respectively.

10. TOURISM

A total area of 2.46 hectares is designated for tourism activities located in San Fermin.

11. INDUSTRIAL AREA

The land area allocated for Industrial use 1.89 hectares located at Barangay Tagaran.

12. AGRICULTURE

The urban core has a total agricultural area of 2,347.70 hectares representing 49.22% of the total urban land area. Of this area, a total of 1,803.42 hectares is irrigated by the National Irrigation Authority and 141.03 hectares is planted to corn while the remaining 403.25 hectares are utilized for fishery and other crops.

Based from the previously approved 2007-2011 CLUP of Cauayan City, there was a total 25,992 hectares of agricultural lands in 2005. With this figure, a total aggregate area of 2,599.20 hectares representing 10% of the total agricultural area is allowable for conversion into other land uses. Records provided by the City Council shows that from 2004 up to the present, a total aggregate area of 179.17 hectares equivalent to 6.89% of the 2,599.20 hectares of agricultural lands have been reclassified into other land uses since 2004. Of the total 179.17 hectares reclassified into other land uses, 31.90% representing 57.16 hectares were reclassified into residential use, 56.16% or 100.61 hectares were reclassified into commercial use while 11.92% equivalent to 21.36 hectares were reclassified into industrial use and a minimal 0.02% or 0.03 hectares were reclassified into institutional use.

The City Government is cautious in reclassifying agricultural lands into other land uses especially those that are deemed non-negotiable believing that agriculture is indispensable for the sustainable development of the city as stated in the SDGs.

13. CEMETERIES

The closure of two major cemeteries in the poblacion area in 2016 necessitates the allocation of land for this purpose. An aggregate area of 10.86 hectares is allocated in San Fermin and Tagaran. A proposed cemetery, the Grandview Memorial Park will soon be established comprising 2.88 hectares located near the existing Cauayan Memorial Park in Brgy San Fermin.

14. ROAD NETWORK

A total of 161.01 hectares representing 3.38% is allocated for road network. This comprise the 141.46 hectares of urban roads and 19.55 hectares of By-pass and Diversion Roads to assure convenience and mobility.

THE PROPOSED URBAN LAND USE

LAND USES	URBAN BARANGAYS														TOTAL	% TO TOTAL
	Alicaocao	Alinam	Cabaruan	District 1	District 2	District 3	Marabulig 1	Minante 1	Minante 2	Nungnung an 2	San Fermin	Sillawit	Tagaran	Turayong		
INSTITUTIONAL	1.06	0.79	1.28	36.60	2.21	1.96	3.01	10.40	0.46	1.66	16.01	4.77	7.39	8.31	95.89	2.01
RESIDENTIAL																
MEDIUM	33.66	7.57	144.00	95.08	14.33	37.53	95.21	91.09	15.42		263.33	25.74	0.02	41.24	864.22	18.12
LOW		7.13					10.00		31.65	0.47		14.37	88.86	4.29	156.77	3.29
COMMERCIAL																
MEDIUM			82.82	50.00	17.14	3.68					181.94			1.44	337.02	7.07
LOW	1.56	34.31	0.02					50.26	64.52	25.55		71.01	74.08		321.31	6.74
CEMETERY											4.74		6.12		10.86	0.23
BUFFER GREENBELT	3.75	0.04	2.00	1.13			1.55	2.86	3.36	2.45	1.87	1.54	8.34	4.07	32.96	0.69
PARKS & RECREATION				5.00									7.17	0.01	12.18	0.26
TOURISM											2.46				2.46	0.05
INDUSTRIAL													1.89		1.89	0.04
INFRA & UTILITIES			1.92	1.20							58.56				61.68	1.29
AGRO-INDUSTRIAL							39.73	26.99	52.11	63.42	12.89		101.68		296.82	6.22
AGRICULTURE	21.53	250.29	20.35	4.86	-0.00	-0.02	411.56	39.01	411.52	203.27	395.88	320.18	202.35	66.92	2,347.70	49.22
ROADS																
URBAN	0.88	2.52	16.40	14.89	3.74	3.05	11.65	10.35	13.80	6.19	32.83	11.31	11.72	2.13	141.46	2.97
BY-PASS & DIVERSION							4.95		2.00	8.22			4.38		19.55	0.41
RIVERS & CREEKS	10.20	0.02	2.47	2.27		1.62	2.31	3.61	4.76	2.60	2.43	1.42	21.46	11.65	66.82	1.40
LAND AREA	72.64	302.67	271.26	211.02	37.41	47.82	579.97	234.57	599.60	313.83	972.94	450.35	535.46	140.06	4,769.59	100.00

The Urban Core lies in a flat land with slope characteristics falling under the 0-3 percent slope category categorized as highly sustainable for intensive urban development.

The existing Urban Core is composed of five urban barangays which is the Poblacion; and 9 barangays along the Maharlika Highway that include barangays, Alicaocao, Turayong and Tagaran going north to Ilagan City and Minante I, Minante II, Nungnungan II, Marabulig I, Silawit and Alinam south of the poblacion heading towards Santaigo City. With the current fast pace of commercialization of the city, these urban barangays became the recipient of the spillover effect of development from the Central Business District. With a household population of 66,228 and a total urban area of 4,642.34 hectares, gross urban density is 14.27 persons per hectare.

Over the Plan Period, the population of the Urban Core will increase to 72,921 because of demographic changes and heavy in-migration to the urban centers. This very scenario brought up the strategy to develop a New Town Center aimed to decongest the poblacion, protect its remaining prime agricultural lands and prevent land over-use thereby ensuring its sustainability.

The Plan to Create a New Town Center

Rationale

The project stems from the fact that the current situation in the Poblacion or the Central Business District, where the seat of the City Government is located, has surpassed its carrying capacity, since the basic services and economic opportunities are concentrated in this area. As a result, pollution, flooding, environmental degradation, health and hygiene hazards, and impeded traffic flows, to name a few, are beginning to manifest. These consequential results tend to be counter-productive to the overall growth of the local community.

Likewise, the rural barangays are left behind in their growth and development since limited resources needed are all concentrated in the urban core. Opportunities for enhancing local revenue generation through rural development are insignificant as programs and projects are pursued and focused only in the urban core. The tendency for the rural population to depend on the urban core for all basic services will deplete the urban core of its resources and the turnaround effect of development may ensue.

The existing City Hall could not accommodate all the city government department employees as well as the growing volume of its daily clients as it was not designed to be. Furthermore, it lacks parking space for employees and clients and other amenities that a city hall should possess such as parks and open spaces as well as sufficient parking space. Finally, renovating and expanding the current city hall will not solve the current issues such as parking space since the lot is not sufficient unless the expansion is vertical, but this is costly.

With its current predicament, the city government sought the benevolence of the SMC officials to donate a 50-hectare lot from their 1,200-hectare pasture land in Barangay San Luis and Cabugao. Succeeding negotiations proved fruitful as collaboration between the City Government of Cauayan and the San Miguel Corporation is continuing. A draft Deed of Donation and a scheme for the New Town Center are currently under study by the SMC Planning and Legal Departments.

The New Town Center or Core Urban Center is envisioned to be the Center of Region 02 in terms of government and economic activities under a Federal Form of Government as it is centrally located in the Province of Isabela and at some point, in the entire Cagayan Valley Region, hence, the new focal point of growth within which higher level of goods and services shall be concentrated. The Project will create new opportunities for all areas of our governance will produce tangible development outcomes, including job creation, new commercial space, increased tax revenues, and availability of goods and services for all.

THE CONCEPT PLAN

Features

The New Town Center has for its features a New City Hall that can accommodate all the city government departments with provision for all the amenities and space requirement of the transacting public. A separate Legislative building; an auditorium spacious enough for assemblies, a covered stage where concerts and other forms of entertainment may be held; a monument structure; green parks and open spaces; establishment of Regional Satellite Offices of National Government Agencies so that transacting public may not need to go to Tuguegarao City anymore.

Commercial residences will also be put up such as hotels and apartments connected by covered walkways to a pocket mall and retail stores including the provision of space for mixed use activities so that all the necessary requirement of a town will be available.

A University was initially planned to be built inside the [New Town](#) Center but considering space requirements, it was decided to be established instead in a 100-hectare lot adjacent to the City Center.

Aside from these features, a 50-meter wide and 200 meters long urban forest buffer zone that may also serve as "[Nature or Tree Park](#)" will be established between the New Town Center and the proposed Isabela Special Agri-Economic Zone Authority. A 100-meter deep commercial strip along the Provincial road fronting the New Town Center is also allocated for new business locators.

Relocation meant that the seat of the City Government had to move across the Cagayan River - and virtually leave behind the transacting public? But we believe this will not be the case.

The city government has started putting in place various infrastructure support such as concrete-paving of roads, establishing an eco-tourism destination in Hacienda de San Luis, the Science Centrum, also in Hacienda de San Luis that was inaugurated just recently; same through with the construction of the Regional Evacuation Center in Sitio Manalpaac that is almost complete.

Moving and expanding the seat of the city government to a new location will make it a lot more convenient for both the employees and clients to access the services any time they want. Always take into consideration the fact that not everyone lives in the same area or has access to a vehicle of their own. Some people might have to take public transit or a tricycle to get to work, so no matter where the city hall is located, we're not going to be able to please everyone.

Having our brand presence in a new location will create new opportunities for all areas of our governance functionality. We will just keep an open mind and positive attitude. The New Town

Center project will continue to produce significant tangible community development outcomes, including job creation, new commercial space, increased tax revenues, and increased availability of goods and services for low-income families.

Residents from the surrounding area used to have to drive over to access the retail shopping and professional services that are only available at the Central Business District.

The Plan to Establish an Entertainment Center

Rationale

The current location of the “Red Light District” has become an eye sore especially so that is located along the Airport Road which, aside from the traffic it creates, it might as well spell a negative impression for the people of Cauayan City. Aside from this, entertainment workers and even customers also deserve a decent place to work, relax and enjoy. The Proposed Entertainment Center has been offered to various prospective locators during previous PPP Summits to partner with the City Government aimed at giving solution to the issue and earning a profit for the city coffer.

THE CONCEPT PLAN

Features

The Proposed Entertainment Center will be located in a spacious place in San Fermin. The proposed facility comprises three two-story buildings complete with amenities and adequate parking space where families or customers can have a wholesome entertainment.

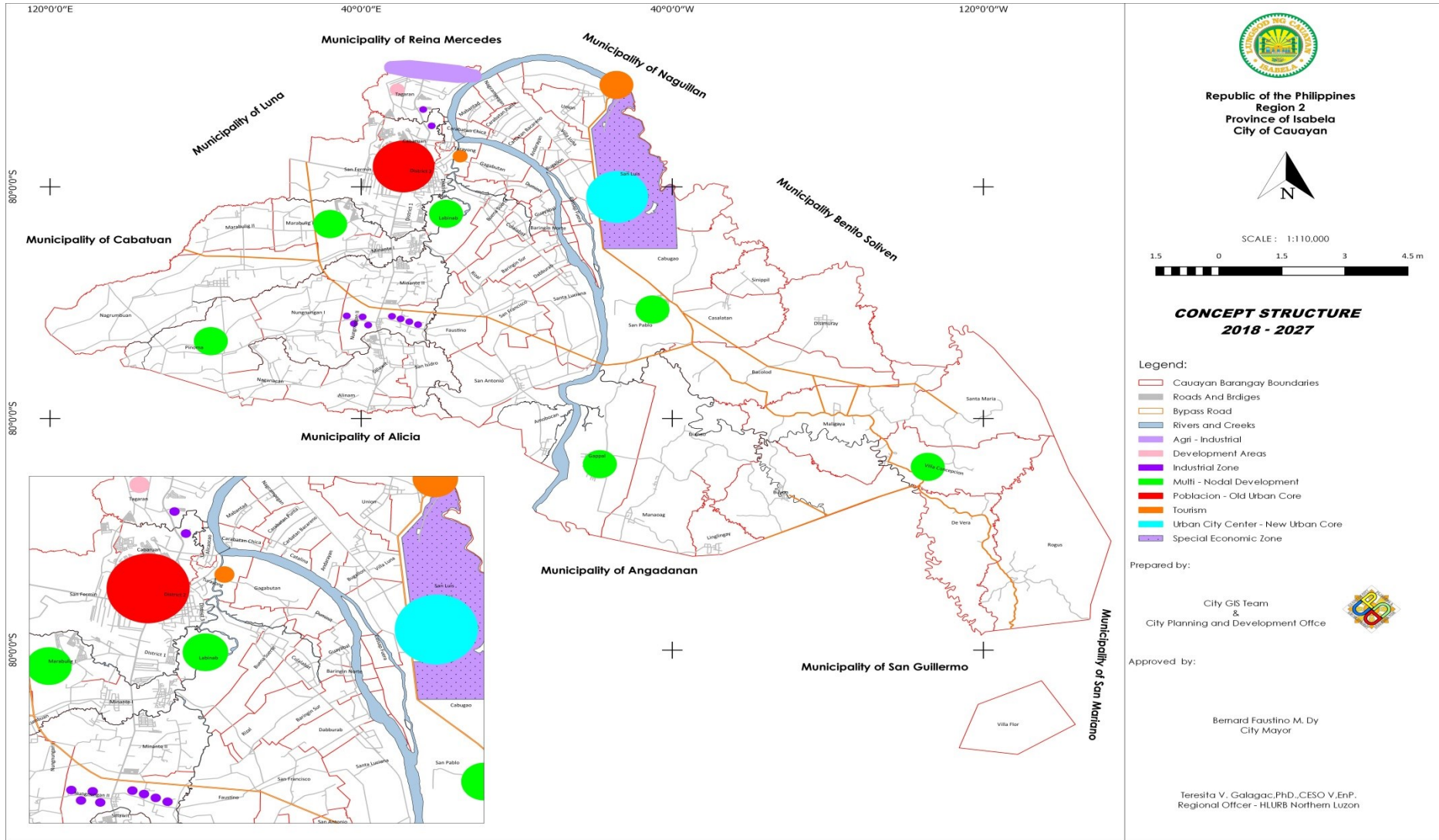
A portion at the back of the facility is where the previous red light district locators will be relocated. It has a two 2-storey buildings and a parking space.

The measures to observe in the proposed urban land uses are the following:

- A “no build zone” policy shall be strictly implemented in areas that are highly susceptible to flooding and other risks or hazards as delineated in the hazard map.
- Currently undeveloped areas classified as open spaces or vacant lands shall be used for spatial allocation for social services and infrastructure sectors
- Agricultural lands which are not productive or will have more economical value shall be converted to buildable areas but shall be limited to 15% of the total built up area of the urban core
- Commercial development is intensified by increasing tremendously its spatial allocation.
- Mixed-use will be allowed as a form of incentives to prospective investors in trade and industry if they are in conformity with land use compatibility.
- Agri-industrial use shall be confined in specific areas outside the “Poblacion” specifically in a 500-hectare land in Barangay San Luis and some parts of Nungnungan-2, Minante-1, Minante-2 and San Fermin.
- Road Infrastructures must be built for good transport system, circulation and traffic management.

- Population density will be maintained at 150 persons per hectare or a low-density area to arrest the concentration of population within the Urban Core for an orderly and peaceful existence of the residents therein.

CONCEPT STRUCTURE



VIII. PROPOSED MAJOR SPATIAL PROGRAMS AND PROJECTS

CAUAYAN CITY: THE IDEAL CITY OF THE NORTH

It is the thrust of Cauayan City to make it the ideal place where everything you are looking for can possibly be found; the center for business, education, career opportunities, leisure and recreation; the best place for building a family life, a God-centered community of empowered citizenry with rich culture, living in a healthy, clean and peaceful environment, under the leadership of an honest, innovative, and citizen-oriented government.

Among the 37 local government units of Isabela province, Cauayan City has been a fast-growing agri - industrial center and this is attributed to the city's geographic location. Cauayan City lies at the heart of Isabela province and even in the entire stretch of Cagayan Valley. It is about 375 kilometers northeast of Manila; 34.5 kms. south of Ilagan; about 48 kms. North of Santiago City; and roughly 117 kms. away from Tuguegarao City in Cagayan province. It is bounded by the town of Reina Mercedes on the north, Naguilian on the northeast, Benito Soliven on the east, San Guillermo on the southeast, Angadanan on the south, Alicia on the southwest and Luna and Cabatuan on the northwest. The town, which got its name from the word "Cauayan" meaning bamboo in the dialect of Gaddangs who were the early settlers of the place, has a total land area of 34,335.88 hectares with 65 barangays; 14 of which are urban and the remaining 51 are rural barangays. Cauayan comprises an aggregate area of 343.358799 square kilometers representing 3.219% of the total land area of the province which is 10,664.56 sq. kilometers. It ranks tenth highest in terms of land area among the 37 Local Government Units of the province of Isabela engaged in agriculture, trade and commerce, and services. The first recorded census of Cauayan was in 1903 with a total population of 3,954 which increased to 10,083 in 1918. Latest census conducted by the NSO in 2000 shows that the City of Cauayan has a total population of 103,952. A primary survey conducted in 2005 showed Cauayan city to have a population of 116,652. As of 2015, Cauayan City has a total population of 129,523. The city ranks 3rd place among the 37 LGU's of Isabela in terms of population.

The health needs of the city is met by a government-owned, the City of Cauayan has fifty-one (51) Barangay Health Stations (BHS) two Main Health Centers namely City Health Office I located in Poblacion Area specifically at the Cauayan City Central Transport Terminal Compound in Brgy. Cabaruan and City Health Office II located at Brgy Villa Luna on the other side of the Cagayan River. The Cauayan District Hospital with a 50-bed capacity. There are also seven (7) privately-owned Hospitals The Cauayan City Emergency Rescue Service, more commonly known as Rescue 922, is a Unit created to cater the needs of Cauayenos for quick response to emergencies, disasters and destructive climate occurrences. The Cauayan City Police Office Headquarters is located at the Central Transport Terminal Compound at Barangay Cabaruan. There are currently 21 firemen including the City Fire Marshall stationed in the city of Cauayan. During outbreak of fire and emergencies, fire-fighting units of the Filipino-Chinese Chamber of Commerce and firemen from neighboring municipalities quickly respond upon request. The Cauayan City Jail is located at Barangay Cabaruan just beside the PNP building of Cauayan PNP Office.

The City of Cauayan is identified by the Department of Agriculture as one of the Key Grain Areas in the Cagayan Valley Region. Recently, the Province of Isabela topped all other provinces in the

entire archipelago in rice and corn production wherein the city contributed so much to this endeavor. Under the Strategic Agriculture and Fisheries Development Zone (SAFDZ), Cauayan, in 2014, has an aggregate total of 18,146.48 hectares intended for Strategic Crop Development Zone but this area has gradually increased to 19,959.09750 hectares in 2016 or a 7.23% increase despite settlement encroachment and land reclassification/conversion.

The urban barangays District I, District II, District II, Cabaruan, and San Fermin are the major commercial areas of the City. Produce coming from the neighboring municipalities, the outlying and interior barangays for marketing are brought to the public market or in other private enterprises adjacent and/or near the public market. In 2015, the City Government of Cauayan entered into a Public-Private Partnership scheme with SM Prime Holdings to develop a new Public Market replacing the old one. This undertaking is the realization of the proposed redevelopment of the public market as envisioned in the CDP. The new Public Market is now known as Primark. It is located at Barangay San Fermin. It has a wet and dry market, and a bagsakan area. It also houses the Savemore Market, Mc Donald and BDO. The new facility is complete with water, toilet and power utilities and also provided with parking space for customers. It operates daily with ambulant vendors and traders come to sell their produce and to buy their needs. Transient businessmen from neighboring municipalities also come to the area to do their business activities. This public-private partnership has garnered for the LGU as “best practice” in economic development conferred by the DILG Region 02 in 2017. Another major business establishment operating in the city is the SM City Cauayan located at Barangay District II. Other establishments located in the CBD include Talavera Supermart, Mart One, Uno, Puregold with two stores, various fast food chains and major banking institutions.

The City of Cauayan has only 1,700 hectares of forest lands found at the southeastern part of the city known as the forest region. Owing to its geographical location, Cauayan City has abundant water resources. This includes the mighty Cagayan River whose head waters come as far as the mountainous province of Quirino. Also, river tributaries from nearby municipalities including the Santiago City drain in the City flood plains. Wetlands are also found in the City which serves as source of fresh water fish to farmers. Magat Dam serves as source of irrigation for Cauayan City. The city government and barangay LGUs and this includes solid waste collection, and the cleaning of streets, esteros and canals. The city’s present waste collection program covers 17 barangays while the remaining 48 barangays are covered by the private collection. Some barangays though collect and dispose their residuals in the temporary controlled dump site.

The Cauayan City Hall, grandly standing at the center is the representation of a unified, transparent, accountable, steadfast, and compassionate administration that governs Cauayan City. The City Government is in strong cooperation with the officials of the Liga ng mga Barangay, the Barangay Councilors League, Federation of Student Government Council, city departments and other organizations in programs with respect to nutrition, education, security, tourism, social welfare, local governance, environment and sanitary management, and economic development. Cauayan City is the first city in the Northern Philippines to adopt the Public-Private Partnership Code to involve the private sector in the implementation of projects and social services. The City Mayor, Hon. Bernard Faustino M. Dy, with the support of our City Vice-Mayor, Hon. Leoncio “Bong” A. Dalin, Jr., together with the members of the city council, commits himself with great enthusiasm to take into account every concern of every sector, in the crafting of policies and

decision-making processes, thus, serving as the medium in building the city a home to a progressive and vibrant economy with empowered citizenry.

PROPOSED MAJOR SPATIAL PROGRAMS AND PROJECTS

SOCIAL SECTOR	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
Housing - 1	Resettlement Program	R1 Zone		/		
Housing - 2	Socialized Housing Program	R1 Zone	/			
Health - 1	Construction of Hospital	Core Urban, San Luis		/		
Health - 2	Construction of Children's Hospital	Core Urban, San Luis		/		
Health - 3	Completion of City Health Center III	Nungnungan 2		/		
Health - 4	Construction of Health Center IV	Dabburab		/		
Sanitation - 1	Construction of Sanitary Landfill (Phase 3)	Callague, San Pablo	/	/		
Sanitation - 2	Completion of City Cemetery	San Francisco				
Sanitation - 3	Upgrading/Expansion of Cemeteries	Various Cluster Barangays		/		
Sanitation - 4	Establishment of Memorial Garden		/			
Education - 1	Construction of School Buildings	Various Schools	/	/	/	
Education - 2	Construction of School Libraries	Various Schools	/	/	/	
Education - 3	Construction of Industrial Arts Building	Various Schools	/	/	/	
Education - 4	Construction of Home Economic Buildings	Various Schools	/	/	/	
Social Welfare - 1	Construction of Halfway House	Manalpaac, an Pablo		/	/	
Social Welfare - 1	Construction of Day Care Centers	Various Barangays		/	/	
Social Welfare - 1	Construction of Reading Centers	Various Barangays		/	/	
Protective Services - 1	Construction of Police Outposts	Core Urban, San Luis		/	/	
Sports & Rec - 1	Construction of Basketball Courts	Various Barangays		/	/	
Sports & Rec - 2	Repair/Rehab of Multi purpose Halls	Various Barangays		/	/	
Sports & Rec - 3	Construction of Sports Complex	San Fermin		/	/	

INFRASTRUCTURE AND UTILITIES	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
Transportation - 1	Construction of By Pass and Diversion Roads	Nungnungan 2 - Tagaran, Nungnungan 2 - Sta. Luciana, Nagrumbuan - La Paz, Cabatuan and Buyon -		/	/	
Transportation - 2	Construction of Farm to Market Roads	Various Barangays	/	/	/	
Transportation - 3	Road Concreting Program	Various Barangays		/	/	
Transportation - 4	Construction of Gov. Ben G. Dy Bridge	Various Barangays		/	/	
Transportation - 5	Construction of One Lane OFB with Pedestrian Lane	Various Barangays		/	/	
Transportation - 6	Hybrid Electric Road Train	Poblacion		/	/	
Water - 1	Construction of Level III Water Supply System	Cluster Barangays		/	/	
Water - 2	Construction of Level II Water System	Cluster Barangays		/	/	
Water - 3	Installation of Shallow/Deep Wells	Cluster Barangays/Schools		/	/	
Power - 1	Establishment of Power Sub - Stations	San Luis, Villa Concepcion		/	/	
Comm/Info	Establishment of Techno Hub			/	/	
Comm/Info	Smart Technology			/	/	

ECONOMIC SECTOR	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
Agriculture - 1	Construction of Small Water Impounding Project			/	/	
Agriculture - 2	Establishment of Solar Irrigation System		/			
Tourism - 1	Hacienda De San Luis Eco Tourism Park Development	San Luis		/	/	
Tourism - 2	Installation of Solar Street Lights			/	/	
Tourism - 3	Tourism Development Program			/	/	
Industry - 1	Establishment of Eco Zone	San Luis and Cabugao		/	/	
Industry - 2	Agri Processing Center	San Francisco		/	/	
Industry - 3	Meat Processing Center	Cluster Barangays		/	/	
Industry - 4	Fruit Processing Center			/	/	
Industry - 5	Small Scale Industry Development Program			/	/	
Industry - 6	Medium Scale Industry Development Program			/	/	
Forestry - 1	Reforestation Program	Core Urban, San Luis		/	/	
Forestry - 2	Riparian Zone Program	Along River and Creeks		/	/	
Commerce and Trade - 1	Construction of Mega Market	Minante 1	/	/	/	
Commerce and Trade - 2	Construction of Convention Center	San Fermin				
Commerce and Trade - 3	Establishment of Community Mall	Tagaran	/	/	/	
Commerce and Trade - 4	Establishment of Financial District	Tagaran	/	/	/	
Commerce and Trade - 5	Establishment of Entertainment City	San Fermin	/	/	/	
Commerce and Trade - 6	Revitalization of CBD	Poblacion	/	/	/	

GREEN GROWTH	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
Urban Development - 1	Revitalization of Poblacion/CBD			/	/	
Urban Development - 2	Establishment of Green Parks/Green Spaces		/	/	/	
Urban Development - 3	Green Development Solar Farms		/	/	/	
Urban Development - 4	Green Agriculture		/	/	/	
Urban Development - 5	Green Buildings		/	/	/	

DRR-CCA	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
DRR-CCA - 1	Demolition of Illegal Structures along Natural Waterways			/	/	
DRR-CCA - 2	Rehabilitation and Extension of the Urban Drainage System		/			
	-Replacement and dredging of drainage pipes and channels			/	/	
	-Upgrading and improvement of drainage system			/	/	
	-Development of flood control basins and regulating ponds					
	-Adapting and renewing design capacity accounting for the future climate change impact			/		
DRR-CCA Health - 1	Development of Hospital/Medical Facilities					
DRR-CCA Health - 2	Improvement/Expansion of Healthcare Equipment for existing facilities					
DRR-CCA Farming - 1	Green House Farming					
DRR-CCA Farming - 2	Precision Agriculture					
DRR-CCA Farming - 3	Installation and Operation of Post Harvest facilities for Prevention of Quality degradation					
DRR-CCA Water - 1	Development/Extension/Reinforcement of Groundwater Resource Facilities					
DRR-CCA Water - 2	Introduction of Irrigation and Drainage Facilities					
	Development of small to medium scale irrigation and drainage facilities					
DRR-CCA Water - 3	Development of Hygiene Management Facilities					
	Development of Shallow wells, water supply, sewerage systems and public toilets					

DRR-CCA	PLANS PROGRAMS PROJECTS	LOCATION	FUNDING SOURCE			
			PRIVATE	LGU/PROV'L	NGA	ODA
DRR-CCA Infra - 1	Development of Rural Road and Bridge					
	-Development of Inter Village Roads					
	-Development and Rehabilitation of access roads connecting to trunk roads					
	-Rehabilitation and extension of water supply system and development of alternative water sources to increase supply capacity of urban areas					
	-Development rehabilitation and extension of sewerage system to improve drainage and treatment capacity of urban areas					
	-Development rehabilitation and extension of Roads and Bridges raising existing roads, building overpass, conducting slope protection works, installing windbreak walls and developing road drainage networks.					
DRR-CCA Flood Control - 1	Development/Improvement of Flood Control Facility					
DRR-CCA Flood Control - 2	Development of Urban Disaster Management Facilities (Structural Measures)					
	-Strengthening and rehabilitating riverbank protection works such as dike and gate for flood control					
	-Developing slope protection and drainage works, forestation to mitigate sediment discharge and landslides in mountainous areas.					
	-Developing and extending designated evacuation centers					
	-Developing and extending emergency storage for relief goods					

