

# **Waste Management Profile of Visayas State University, Baybay City, Leyte**

## **CHAPTER I**

### **INTRODUCTION**

#### **1.1 PURPOSE**

Waste minimization and recycling initiatives must be prioritized since these are considered an essential part of an integrated system for solid waste management. In addition, doable, feasible, and sustainable solid waste management is necessary to minimize and mitigate negative impacts from wastes such as acute public health, pollution, degradation of the environment, and other social impacts caused by existing dumping practices.

The Visayas State University (VSU) has encountered problems with proper solid waste management due to the growing population, inappropriate attitude, and behavior towards solid waste segregation, recycling, disposal, and a frail solid waste management system which includes the use of an open dumpsite. The VSU appoints university faculty from the different departments as an expert to be part of the Waste Management and Pollution Control Committee (WMPCC) to address the waste-associated problems. The WMPCC will spearhead the formulation of the VSU Solid Waste Management Profile (SWMP) and the VSU Dumpsite Safe Closure and Rehabilitation Plan (SCRP) and provide recommendations to the university management to have a sustainable and doable solid waste management system in the university following the mandates of the Republic Act 9003 or the Ecological Solid Waste Management Act of 2000. It is anticipated that the SWMP of the university will unravel the problems concerning solid waste management within the university and to the nearby communities in the City of Baybay. Some approaches that will be highlighted in the VSU SWMP include strict segregation at source, the establishment of MRFs, waste diversion, creation of policies, implementation of the VSU Dumpsite Safe Closure and Rehabilitation Plan.

## **1.2 GOALS**

The Solid Waste Management Profile of the Visayas State University provides relevant information used in designing approaches that will minimize the generated waste, dispose of the waste effectively and adequately in order to minimize or eliminate any adverse effects to the VSU community and the environment in general. Based on Republic Act No. 9003, VSU adheres to conduct proper waste segregation, collection, reduction, and diversion of solid waste. Furthermore, VSU will strengthen the Information, Education, and Communication (IEC) drive by incorporating ESWM Program into primary and secondary curricula, intensifying waste reduction and diversion from source to final disposal site, and creating a safe closure and rehabilitation plan for the existing open dumpsite of VSU.

The Visayas State University and the WMPCC envisions a sustainable, clean, and green environment wherein the empowered Viscans live healthy in harmony with a sound ecology and a community that is practicing solid waste management effectively. The university aimed to sustain the recognition of being a model university in the Province of Leyte and nationwide in the Ecological Solid Waste Management Program, particularly in implementing RA 9003.

## **1.3 APPROACHES**

The formulation of the VSU's Solid Waste Management Plan involves gathering information and records from the offices of the Visayas State University, such as the Office of the University Registrar, Office of the Director of Administration and Human Resource Management, etc. Key Informant Interview (KII) on experts and the former members of the solid waste committee were conducted. Some secondary data were collected from published articles and research studies (thesis) of VSU students.

## **CHAPTER II**

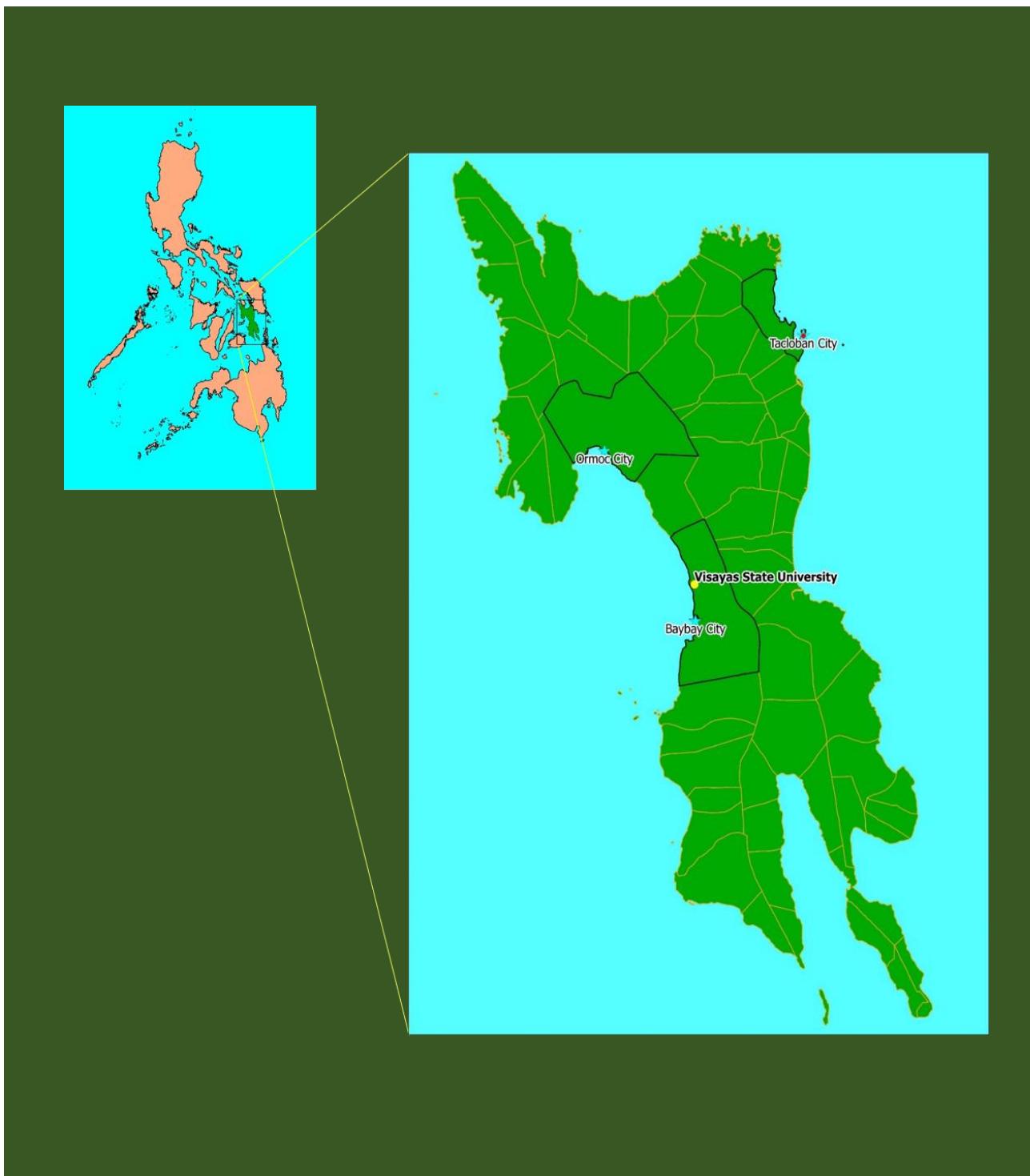
### **VSU PROFILE**

#### **2.1 BRIEF HISTORY**

The institution was established as Baybay Agricultural School (BAS) on June 2, 1924, through a Provincial Board Resolution. In 1934, it was renamed Baybay Agricultural High School (BAHS) and was later converted into the Baybay National Agricultural School (BNAS) with the approval of Commonwealth Act No. 313 in 1938. BNAS was converted into the Visayas Agricultural College (VAC) by virtue of Republic Act (RA) No. 2831, issued on June 19, 1960. The institution attained rapid growth and development following its conversion into Visayas State College of Agriculture (ViSCA) on May 24, 1974, through Presidential Decree (PD) No. 470 and amended by PD No. 700 on May 12, 1975. In 1999, four institutions of higher education in the province of Leyte were integrated into the College to create a five-campus ViSCA system. ViSCA became Leyte State University (LSU) through RA No. 9158 issued on August 11, 2001. LSU became Visayas State University (VSU) on April 27, 2007, by virtue of RA No. 9437.

#### **2.2 LOCATION**

The VSU Main Campus is well located 8 km north of Baybay City, Leyte, and 34 km south of Ormoc City between latitude 10°44'49.2" N and longitude 124°47'46.8" E at an elevation of 7 m above sea level (Fig.1). The campus distinctly possessed two important natural boundary landmarks: the Mt. Pangasugan Mountain range in the east and the Camotes Sea in the west. The solid waste facilities include open dumpsite, material recovery facilities, bio-composting, VSU hospital septic volt, and toxic storage (Fig. 2).



**FIGURE 1.** Location of the Visayas State University, Baybay City, Leyte (source: Engr. JO Pogosa).



FIGURE 2. Solid waste facilities of the Visayas State University (source: Engr. JO Pogosa).

## 2.3 POPULATION

The population data of the VSU constituents, which includes staff, faculty, and students, is based on the secondary data gathered from the Office of the University Registrar and the Office of the Director and Human Resource Management (ODAHRM) (Table 1).

**TABLE 1. Population of VSU Constituents**

Year	No. of Student	No. of Faculty & Staff	Total	Average Annual Growth Rate (%)
1999	3977	556	4533	-
2000	4092	593	4685	3.35
2001	4028	838	4866	3.86
2002	3950	739	4689	-3.64
2003	3999	582	4581	-2.30
2004	3727	774	4501	-1.75
2005	3724	753	4477	-0.53
2006	3515	737	4252	-5.03
2007	3770	745	4515	6.19
2008	3957	762	4719	4.52
2009	4458	713	5171	9.58
2010	4904	732	5636	8.99
2011	5498	752	6250	10.89
2012	5777	747	6524	4.38
2013	6310	737	7047	8.02
2014	6963	752	7715	9.48
2015	7792	730	8522	10.46
2016	6501	763	7264	-14.76
2017	5392	781	6173	-15.02
2018	5962	813	6775	9.75
2019	6757	804	7561	11.60
2020	7482	818	8300	9.77

In the year 1999, the VSU population is 4,533. Five (5) years later, in 2004, the university's population decreased to 4,501, or the population growth decreased by -1.75 percent, and the population decreased until the year 2006. Nevertheless, from 2007 to 2015, population growth increased from 4.38 to 10.89 percent. After 2015, the population count of VSU constituents showed a decreasing trend from 2016 to 2017. The lowest growth rate (-14.76 to -15.02) was recorded in 2016 and 2017 when K12 was implemented in 2016. However, the population growth rate of the university on CY 2018-2020 increased from 9.75 to 11.60 in a period of three (3) years.

## **2.4 ECONOMIC PROFILE/LAND USE**

The VSU main campus has a total land area of 1,099.4 hectares (Table 2). As of 2009, it has 193 buildings, including the administration building, six (6) colleges, seven (7) research centers/ laboratories, three (3) institutes, one graduate school, the university library, staff, and student housing facilities, and other vital structures.

The 1099.4 hectares are subdivided and allocated to the development, expansion, and function of the university's instruction, research, extension, production, and income generation in terms of land utilization. The general classification of land use is as follows:

**TABLE 2. Classification of Land Use in VSU**

Land Use	Hectare (ha)
Campus Grounds	61.6
Research and Experimental Area	94.0
Instruction	3.0
Production Area	104.3
Pasture Area	114.0
Forest Reservation	574.2
Coconut area	62.3
Abaca	25.0
Rice	7.0
Orchard	5.0
Corn	3.0
Coffee	2.0
Road, Creeks/ Marshy areas	44.0
Total	1,099.4

## **2.5 MAJOR TRANSPORTATION ROUTES**

The national road cuts the University campus and connects to major thoroughfares making VSU highly accessible from Ormoc City, Tacloban City, and Maasin City (Fig.3). VSU can be accessed from Cebu through the ports of Ormoc, Hilongos (43

km), and Bato (50 km) or from Bohol through the ports of Hilongos, Bato, and Maasin City. While from Mindanao and Manila, VSU is accessible through the ports of Liloan in Southern Leyte and through the Tacloban City Airport (116 km) or through San Juanico Bridge, respectively.



**FIGURE 3. Transportation Route Map** (source: Engr. JO Pogosa).

## **2.6 PHYSICAL CHARACTERISTICS**

### **2.6.1 Geology**

The bulk of Leyte Island, including the university geologically consists of andesitic, basaltic, and dacitic flows and breccia of Miocene age covered with lava flows and volcanoclastic (Asio, 1996).

### **2.6.2 Hydrology**

The Visayas State University has adequate watershed reserves, natural springs, clean and cool water from various water sources due to the abundant native trees and healthy forest ecosystem in Mt. Pangasugan and the Leyte Cordilleras. Aside from the domestic, office, and laboratory uses, the clean and cool water from the mentioned sources is used to irrigate the university's agricultural areas and used in the neighboring barangay. The water supply has not been a recurring problem of the university.

### **2.6.3 Climate**

Generally, the university's climate is characterized by a tropical monsoon climate, with no pronounced dry season, since the university's location is on Leyte Island (Kintanar, 1984). The data from the PAGASA1 Weather Station (7 m) based on the campus showed an annual average temperature of 27.4° C and average annual precipitation of 2586 mm (Langenberger & Belonias, 2011). Furthermore, based on the record, the rainfall distribution is not homogenous. The months' March to May received only 95 mm to 133 mm monthly, which is considered much less precipitation than November to January with 284 mm to 296 mm precipitation. The lower amount of rainfall in Baybay is due to its lower elevation (7 m asl) and greater distance to the mountain range. Another important event in the area is the occurrence of typhoons and the often-associated landslides.

#### **2.6.4 Soil**

The occurrence and distribution of soils in Leyte are greatly affected by geology and geomorphology. Well-developed soils are found on old stable surfaces or areas underlain by old rock formations. However, poorly developed soils also occur over old rock formations when the surface is unstable and subject to erosion, landslide, and other disturbances, as exemplified by steep slopes. In Mt. Pangasugan, where the university is situated, Alisols (Ultisols) dominate the lower slopes. These soils are acidic, red, deep with generally low nutrient status, and kaolinitic and halloysitic mineralogy. In the upper slopes (from about 300 m asl), Andosols (Andisols), which are young volcanic soils, is widespread (Jahn & Asio, 2006).

These soils have high organic matter content, contain short-range-order clay minerals (alophane and imogolite), and have relatively high nutrient status, except P, which is very low due to the extremely high P retention capacity of soil (Asio, 1996; Zikeli, 1998).

## **CHAPTER III**

### **CURRENT SOLID WASTE MANAGEMENT CONDITIONS**

The Visayas State University solid waste management has been guided by approved memorandum circulars which was formulated prior to the enactment of RA 9003.

#### **3.1 INSTITUTIONAL ARRANGEMENTS**

The Visayas State University ensures to have good solid waste management in the university. The Office of the President (OP) created and oversee the Waste Management and Pollution Control Committee (WMPCC) (Figure 4) as supported by Memorandum No. 389 series of 2021. The MC No. 389 stipulates the function of the committee. The following are:

1. Identify and quantify the waste/pollutant streams being generated in the university;
2. Review the waste/pollutant management operations of the university;
3. Formulate and recommend university waste/pollutant management plans, programs and policies; and
4. Spearhead and oversee the implementation of approved waste/pollutant management plans, programs and policies of the university.

The WMPCC is currently chaired by Dr. Eliza D. Espinosa, Director of the Institute of Tropical Ecology and Environmental Management (ITEEM) and assisted by the Co-Chair, Mr. Rafael Junnar P. Dumalan from the Department of Biological Sciences, a certified Pollution Control Officer (PCO), together with the committee members. The composition of WMPCC members are based on their professional background. Furthermore, according to DENR Administrative Order No. 2014-02, the duties and responsibilities of accredited PCO are the following:

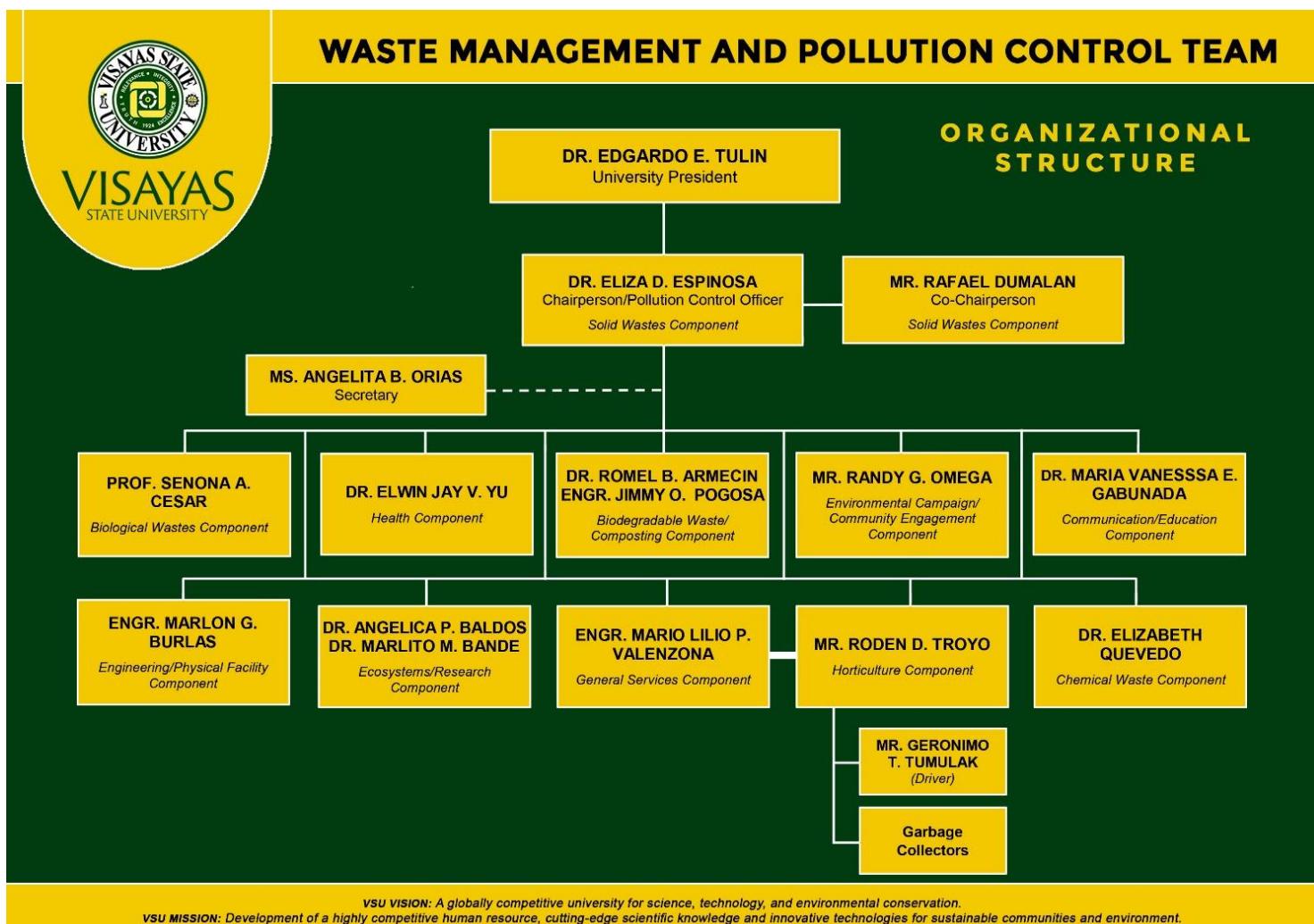
1. Together with the Managing Head, ensure compliance with the requirements of PD 1586. RA 6969, RA 8749, RA 9003, RA 9275, their respective implementing rules and regulations (IRRs), and other pertinent rules and regulations.

2. Identify significant environmental aspects and impacts of the establishment's operational activities and recommend possible mitigating measures in the formulation and preparation and/or review of the Environmental Management Plan and Contingency Plan.
3. Attend to all permitting and registration requirements of the establishment prior to the construction, installation or operation of pollution sources and control facilities.
4. Ensure the proper performance, operation, and maintenance of environmental management facilities or systems of the establishment.
5. Ensure that the hazardous wastes disposed offsite are covered by a Permit to Transport; each transport is covered by a hazardous waste manifest duly signed by the transporter and TSD facility; and with corresponding Certificate of Treatment (COT) duly signed by the TSD facility. Copies of the signed hazardous waste manifest and COT shall be submitted to the concerned EMB Regional Office in accordance with DENR Adm. Or. No. 2004-36.
6. Ensure that transport vehicles are properly operated and maintained (applicable only for hazardous wastes transporter).
7. Ensure that hazardous wastes Treatment Storage and Disposal (TSD) facilities are properly operated and maintained (applicable only for hazardous wastes TSD facility).
8. Monitor compliance to the requirements specified in the Environmental Compliance Certificate and the commitments stipulated in the Environmental Management and Monitoring Plans or Environmental Performance Report and Management Plan and report the same in the Compliance Monitoring Report (CMR).
9. Monitor activities pertaining to the installation or construction of pollution source and control facilities to ensure compliance with the National Emission Standards for Source Specific Air Pollutants and National Ambient Air Quality Standards and report monitoring results to DENR as part of the Self-Monitoring Report (SMR).

10. Monitor activities pertaining to the operation and maintenance of pollution control facilities to ensure compliance with the Effluent Standards and report monitoring results to DENR as part of the SMR.
11. Monitor the use of chemicals, especially those listed under the Priority Chemicals List (PCL) and those with Chemical Control Orders (CCO) and the generation of solid and hazardous wastes. Monitoring data shall be submitted as part of the SMR and the PCL Compliance Certificate.
12. Monitor the importation or distribution of chemicals especially those listed under the PCL and those with CCO and the generation of solid and hazardous wastes. Monitoring data shall be submitted as part of the SMR and the PCL Compliance Certificate (applicable only for importers or distributors of chemicals).
13. Promptly submit CMRs and SMRs, duly accomplished and signed by the PCOs, approved and certified correct by the Managing Head, and notarized.
14. Report in writing within twenty-four (24) hours from the occurrence of any of the following environmental incident to the concerned EMB Regional Office.
15. Report in writing within twenty-four (24) hours from securing of the results of laboratory analysis or from online monitoring instruments any exceedance to effluent and/or emission standards.
16. Submit to the Pollution Adjudication Board a copy of the SMR duly received by the respective EMB Regional Office (applicable only for establishments with pending case).
17. Attend, as duly authorized representative of the establishment, technical conferences hearings, and meetings especially on matters pertaining to pollution cases of the establishment where he/she is employed.
18. As a liaison officer to EMB, keep himself abreast with the requirements of the Department.
19. Coordinate regulatory programs, and activities with the city/provincial/municipal governments (if applicable).
20. Initiate and intensify environmental management activities including awareness campaign within their organization.

21. Participate in multi-partite monitoring team activities and meetings, where applicable.

The PCO and the Managing Head shall be held jointly and severally liable for any violation of PD 1586, RA 6969, RA 8749, RA 9003, RA 9275, their respective IRRs, and other pertinent rules and regulations, committed by the establishment.



**FIGURE 4. Waste Management Organizational Structure** (*layout by EB Gorre, 2021*)

## **3.2 INVENTORY OF EQUIPMENT AND STAFF OF WM**

### **3.2.1 Equipment of SWM**

There are two garbage trucks available in the university, one is functional, and the other needs some repairs. The capacity of the functional truck is 3 tons, while the dilapidated truck's capacity is 4 tons. The list of heavy equipment available is shown in Table 3.

**TABLE 3. List of Heavy Equipment for SWM**

<b>Unit</b>	<b>No.</b>	<b>Make/Model</b>	<b>Present Condition</b>
Garbage truck	1	Nissan	Functional
Garbage truck	1	Kama (Made in China)	Dilapidated

### **3.2.2 Actual Number of Personnel Involved in SWM services**

The Solid Waste Management Operation of the university has five (5) workers hired, one (1) garbage truck driver, and four (4) garbage collectors, with permanent and job orders, respectively, as shown in Table 4.

**TABLE 4. Personnel Involved in SWM services**

<b>Area of Assignments</b>	<b>Status of Personnel</b>	<b>No. of Assigned Personnel</b>
Driver	Permanent	1
Garbage Collectors	Job Order	4
Total		5

### **3.2.3 Equipment for SW in MRF**

VSU established one Materials Recovery Facility (MRF) located in the lower campus (Fig. 5). The MRF needs immediate renovation to make the facility functional, and recycling of reusable materials will be done in the university. Presently, there is no ongoing construction of MRF in the university, but it is

considered one of the priorities of VSU, and the university plan to secure a budget for the improvement of the SW facilities.



**FIGURE 5. VSU Materials Recovery Facility** (*Photo Credit: LCE Ceniza, 2021*).

### **3.2.4 Trainings for Personnel conducted**

Since the beginning, there is no training conducted for the staff responsible for collecting and segregating wastes. However, the new Waste Management and Pollution Control Team of the university attended seminars and training about present problems and practices in SWM. One of the team's necessary workshops was the "VSU Open Dumpsite Closure Planning Workshop," which highlighted the closure plan mechanics with the reputable speaker from the City Environment and Natural Resources Office of Baybay City. Moreover, the team conducted a benchmarking at the Ormoc City Sanitary Landfill and Septage Management Facility located at the City Eco-waste Center of Ormoc City. The gathered knowledge and learning will be incorporated in the Wastewater Treatment and Management Plan for VSU, especially in addressing the Environmental Compliance Certificate (ECC) required by DENR-EMB. The VSU

WMPPC is currently processing the applicable requirements for applying an ECC for some of its projects, such as piggery, poultry, tilapia hatchery, and swimming pool facilities. The WMPPC Team will also schedule training and seminars for the garbage collectors. Article 3 Section 23 of the Republic Act 9003 stated that necessary training should be given to the collectors and personnel to ensure that the solid wastes are handled correctly and in accordance with the guidelines pursuant to this Act.

### **3.3 CURRENT WASTE MANAGEMENT PRACTICES**

The discussion is divided into SWM programs, Solid waste collection, public awareness campaigns, SWM Strategies, or best practices to understand the existing practices better. Furthermore, a component such as monitoring and evaluation is also included.

#### **3.3.1 Solid Waste Management (SWM) Institution and Program**

The university has an established waste management program. There is an existing policy and memorandum requiring residents in dormitories and apartments to segregate their waste. Special committees are also formed to draft a 3-year development plan (2020-2022) addressing problems in waste disposal. Dr. Eliza D. Espinosa now heads the committee.

#### **3.3.2 Source Reduction**

There has been enforcement of Memorandum Circulars in the university. In the said Memos, violators will be penalized once caught by deputized Enforcer. The use of eco-friendly, biodegradable, reusable, and recyclable bagging and packing materials is encouraged. This is to reduce the quantity of non-biodegradable containers/bags as a potential type of waste.

Recently, through Memorandum Circular No.44, Series of 2021, the University adopted the Baybay City Plastic Bag Reduction Ordinance No. 007,

Series of 2013, otherwise called the “Plastic Bag Reduction Ordinance. The Implementing Rules and Regulations (IRR) aims to govern the reduction of the use of plastic bags for two (2) days each week in the City of Baybay. Further, stated in the IRR, all stores are mandated to provide their reusable container for wet goods/or require their customers to bring their reusable containers. The following are the Memorandum Circular enforced in the University, as shown in Table 5.

**TABLE 5. Policies, Guidelines and Memorandum and their Relevant Provisions**

Policies & Guidelines/ Memorandum & Circulars	Title	Relevant Provisions
Policies & Guidelines adopted from the Municipal Ordinance No. 001-2000: An ordinance enhancing the comprehensive solid waste management of the municipality of Baybay, Leyte on January 4, 2000	Policy Recommendations on Biodegradable Waste & Plastic Reduction	Defined the moral duties and obligations of all VSU residents, faculty, staff, students, stall owners and vendors in the proper solid waste management and imposition of fines and penalties to violators
Memorandum Circular No. 21, Series of 2002	Prohibition of the Use of Plastics Bags	Prohibition the use of plastic bags and non-recyclable synthetic containers and refraining from selling and using bags
Memorandum Circular No. 3, Series of 2006	Guidelines Governing the Use of Plastic Bags by the Market Stall Holders Including Eateries within LSU-Main Campus	Banning in the use and sale of non-biodegradable plastic materials to reduce waste and encourage stall holders to use eco-friendly/ biodegradable containers
Memorandum Circular No. 28, Series of 2006	Policy Governing the Use of Plastic Bags, Styrofoam and Other Non-biodegradable Containers	Regulation in the use and sale of non-biodegradable plastic materials to reduce waste
Memorandum Circular No. 39, Series of 2009	Prohibition of Littering, Throwing and Dumping of Waste Matter in Public Places within VSU Campuses	Regulation in the littering, throwing, dumping of waste matters in public places within VSU Campuses and imposing penalties to violators of the memorandum
Memorandum Circular No. 89, Series of 2012	Prohibiting the Use of Lightweight Plastic Bags Designed for Single-use	Prohibition to all commercial concessionaries, ambulant vendors and other retailers from using, selling or giving away lightweight plastics bags and imposing penalties to violators

Policies & Guidelines/ Memorandum & Circulars	Title	Relevant Provisions
Memorandum Circular No. 55, Series of 2013	Proper Disposal of Solid Wastes	Requiring the VSU residents in the proper solid waste segregation of biodegradable and non-biodegradable
Memorandum Circular No. 44, Series of 2021	Implementation of Baybay City Ordinance on Plastic Bag Reduction	Implementing Rules and Regulations (IRR) to govern the reduction on the use of plastic bags for two (2) days each week in the City of Baybay

### 3.3.3 Collection of Waste

The VSU has been implementing the institutionalized Regular Collection Schedules. Consistent with Memorandum Circular No. 55, "Proper Disposal of Solid Wastes" is being imposed in the university as a collection strategy. The memo provides that VSU residents and students shall segregate at source and stored for collection. Colored drums/garbage bins for specific kinds of wastes shall be placed at designated locations in the university campus for proper disposal of wastes. Also, it stated that unsegregated garbage would not be collected. The collection of garbage was done and completed by the VSU garbage collectors.

Collection of garbage by the VSU waste collectors are the following as stated in Memorandum Circular No. 55, Series of 2013:

- |   |                                |
|---|--------------------------------|
| For biodegradable/compostable wastes  | ✓ Monday, Wednesday and Friday |
| For non-biodegradable/non-compostable wastes and Recyclable and reusable wastes | ✓ Everyday                     |

However, the schedule imposed from the memo was not followed instead the current schedule are the following:

- |  |  |
|--|--|
| For biodegradable/compostable wastes         | ✓ Tuesday, Thursday and Saturday<br>✓ 8:00 a.m. until done |
| For non-biodegradable/non-compostable wastes | ✓ Monday, Wednesday and Friday<br>✓ 8:00 a.m. until don    |

However, the implementation of segregation at source is not fully implemented and sustained. VSU residents and students did not consistently observe collection schedules by type of waste. No proper segregation during the collection of waste recyclables and residuals are not separated. The final disposal area is not compliant with the provisions of RA 9003. The enforcement also of the SWM memo is not sustained.

### 3.3.4 Processing Facilities

The university has provided only one Material Recovery Facility (MRF) located at the lower campus behind the VSU market and is used as the final station for recovered recyclable materials sorted from collected non-biodegradable waste (Fig.6). Also, some students and residents throw recyclable materials directly to the donated small-size MRF located at the eco-park and near the VSU gymnasium (Fig. 7).



**FIGURE 6. Material Recovery Facility of the University** (Photo Credit: LCE Ceniza, 2021)



**FIGURE 7. Material Recovery Facility at eco-park (left) and near gymnasium (right)** (*Photo Credit: LCE Ceniza, 2021*)

However, there is a proposed construction of a materials recovery facility and wastes storage and treatment facility and laboratory with a proposed budget amounting to twenty million pesos (P 20,000.00). This project will help in the reduction of solid waste in the university. The university identifies this as one of the high-priority projects and hopes that the Department of Budget and Management provides funding to address the region's environmental issues.

#### **3.3.4.1 Bio-Composting (Vermi-composting)**

The university has a composting facility of organic waste at source through earthworms (Fig. 8). Compostable (biodegradable) waste collected from the VSU market and residents are directly placed to Eco-FARMI, wherein a properly designed vermicomposting system will process organic waste into vermicast.



**Figure 8. Facility of vermicomposting in VSU** (*Photo Credit: LCE Ceniza, 2021*).

### **3.3.5 Final Disposal**

The university currently uses an open dumpsite for the final disposal of wastes, with an area of 0.35 hectares (Fig. 9). The disposal facility mostly receives residual and non-biodegradable wastes collected from residents and biodegradable waste mixed with plastics coming from the VSU market. In contrast, special waste is contained in a block of concrete and sealed septic vault, and some of the biodegradable materials are processed as compost materials.

The aerial views of the open dumpsite on November 2014, September 2016, April 2019, and July 2021 are collected using a drone (DJI-Mavic Air 2) (Fig.11). The imagery shows the geographical location and expansion of the disposal facility.



**FIGURE 9. VSU open dumpsite, as final disposal site** (*Photo Credit: BSEM, 2017*)

According to Republic Act 9003, open dumpsites should not be allowed as final disposal sites. However, if an open dumpsite exists within the city or municipality, all open dumpsites should have been closed or converted to controlled disposal facilities (Sec. 37). Disposal facilities, especially open dumpsites, remain potential environmental hazards such as continuous production of gas and leachate, contamination of air, soil, and water, disease vector and spread of infections, animal scavenging, and loss of vegetation, bioaccumulation of harmful chemicals, etc.

The university aims to address any potential hazards from the current disposal facility; thus, as directed by the University President, the WMPCC conducted a Closure Planning Workshop for the VSU Open Dumpsite on May 26, 2021, at the ITEEM-TED Annex Building of the Visayas State University (Fig. 10). The committee invites Engr. Marivic F. Jabines, Baybay City ENRO, to be the resource person for the workshop.

The workshop aims to:

1. Prepare and formulate a Safe Closure and Rehabilitation Plan (SCRP) for the existing open dumpsite.
2. Undertake the preliminary closure assessment and a complete rundown of all possible data that needs to be covered to develop a comprehensive and relevant assessment
3. Submit the closure plan to LGU of Baybay and the EMB Regional Office for review and approval.

Engr. Jabines discuss the process in the formulation of a SCRP for VSU Open Dumpsite and the experiences of the Baybay City in the closure of the Imelda Open dumpsite. The insights from the City ENRO and the technical discussion inspired and serve as a guide to the WMPCC members prior to the closure of the VSU open dumpsite. The resource person highlighted that the university could dispose of its waste to the Baybay Sanitary Landfill located in Brgy. Buenavista, Baybay City, Leyte.



**FIGURE 10. Discussion during the workshop with Dr. Edgardo Tulin, WMPCC members and Engr. Marivic Jabines** (Photo Credit: AB Orias, 2021)



FIGURE 11. Historical aerial views of VSU dumpsite (Source: JO Pogosa)

### **3.3.6. VSU Hospital Waste**

The VSU Hospital is a ten-bed health care facility situated inside the university (Fig. 12). It caters to the health needs of the VSU populace, most especially to the students, faculty, and staff, as well as to the neighboring barangays.

Hospital's hazardous wastes are infectious, pathological, sharps, pharmaceutical, heavy metal, pressurized container, lab reagents, and busted fluorescents wastes. See the table below for the lists of generated hospital wastes and methods of disposal. All hazardous wastes are properly disposed of in the toxic storage and septic vault constructed beside the hospital building (Fig. 13).

**TABLE 6. Hazardous Waste in VSU hospital and methods of disposal**

<b>Hazardous Waste</b>	<b>Hazardous Nature</b>	<b>Hazardous Cataloguing</b>	<b>Method of Disposal</b>
Infectious waste, pathological wastes, sharps	Solid	Toxic	Disposed to septic vault
Pharmaceutical waste	Solid	Toxic	Expired medicine are placed in sealed container and allowed delay to decay
Waste with heavy metal content	Solid	Toxic	Batteries re sealed with masking tape and place in a box then stored in the hospital's hazardous waste storage area
Pressurized container	Solid	Corrosive	Stored and kept in the hospital's hazardous waste storage area
Chemical waste (lab reagents)	Liquid	Toxic	Properly stored in containers with proper labels
Busted fluorescents	Solid		Placed in the original container/carton, arranged properly in the hospital's hazardous storage



**FIGURE 12. Hospital building of the Visayas State University** (*Photo Credit: LCE Ceniza, 2021*).



**FIGURE 13. VSU hospital septic vault and toxic storage** (*Photo Credit: LCE Ceniza, 2021*).

### 3.3.7 Public Awareness Campaign

The Waste Management and Pollution Control Committee attended some seminars and training on SWM. However, the staff responsible for the collection of wastes have not yet undergone training regarding SWM.

The Information Education Communication (IEC) materials prepared by the university are through Memorandum Circulars. However, it was not

implemented well and sustained. Nevertheless, within the university's premises, such as eco-park, streets, beach, VSU market, etc., there are colored-coded drum or garbage bins for specific wastes (GREEN for biodegradable; BLUE for non-biodegradable and recyclable & reusable) (Fig. 14).



**FIGURE 14.**  
**Method of**  
**collecting wastes**  
(Photo Credit: LCE  
Ceniza, 2021).

## CHAPTER IV

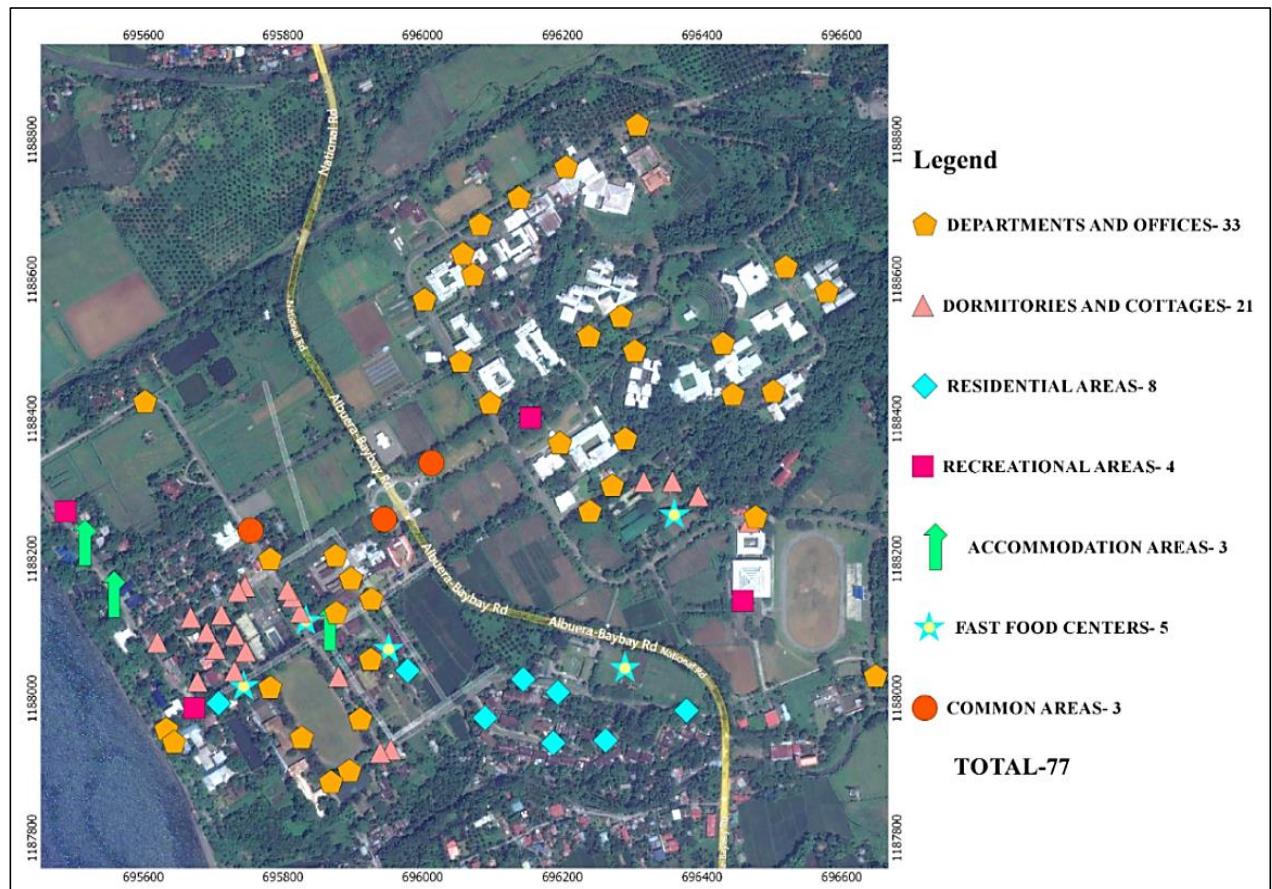
### WASTE CHARACTERISTICS

Waste assessment and characterization (WACS) was conducted by the Bachelor of Science in Environmental student batch 2017 as part of their scientific research. The scientific research was conducted in 2016 to determine the density and type of waste generated per day from different waste generators. Gathered wastes were segregated and weighed.

#### 4.1 SOURCES OF WASTE

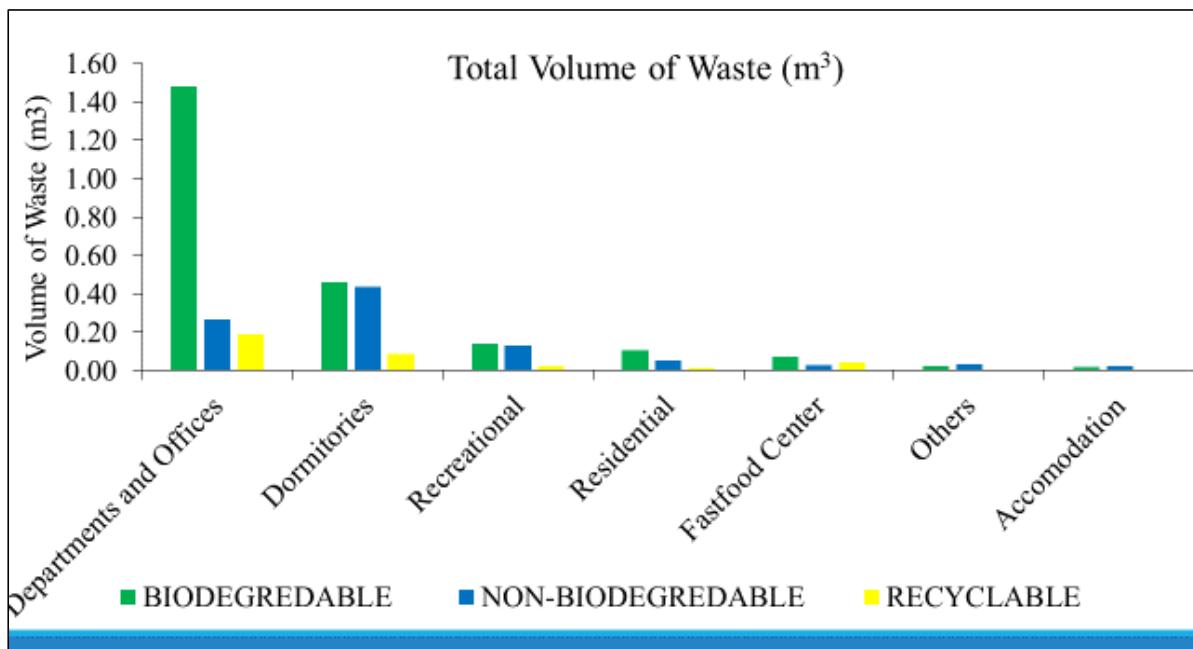
The university regularly collects residual and special waste in the entire campus and is brought to open dumpsite.

Figure 15 shows generators of waste from departments, offices, dormitories, cottages, residential, recreational areas, accommodation areas, fast foods, and common areas.



**FIGURE 15. Sources of wastes in the University** (Source: BSEM, 2017)

Figure 16 indicates the total volume of wastes in different sources. Results showed that departments and offices had a higher total volume of biodegradable and recyclable compared to other sources of waste. On the other hand, dormitories had a higher total volume of non-biodegradable compared to other sources of waste. The distribution of amount (in kg) of waste per type is also presented according to their rank

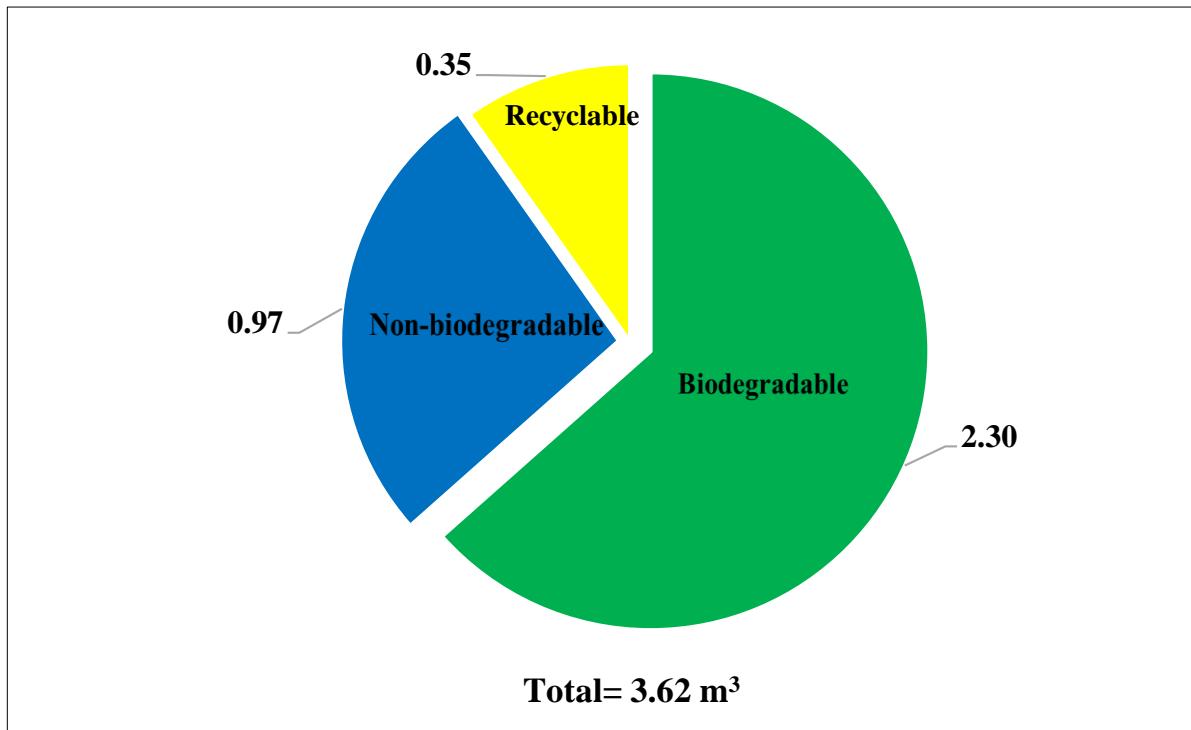


**FIGURE 16. Amount of Solid Waste by Type and Sources (in kg.)** (Source: BSEM, 2017)

## 4.2 DISPOSED WASTE

For the population of 7,264 in the year 2016, during the conduct of waste characterization, the calculated average solid waste generated per day is 3,620 kgs (Fig.17). Out of the total waste generated for the entire university, which is 3,620 kg/per day, 2,300 kg/day are biodegradable materials, followed by non-biodegradable with 970 kg/day and 350 kg/day of recyclable materials.

During the conduct of the WACS, there are six (6) types of wastes generated in the university includes biodegradable, non-biodegradable, recyclable, residual, hazardous and non-hazardous. Its compositions are shown in Table 7.



**FIGURE 17. Total Volume of waste (m<sup>3</sup>) in different types** (Source: BSEM, 2017)

**TABLE 7. Type of wastes and its composition**

Type of Wastes	Composition
Biodegradable	Cartons, leaves and grasses, papers, sticks, yard wastes/wood
Non-Biodegradable	Plastic wrappers, textiles
Recyclable	Metals, cans, plastic bottles, PVC, sacks for cement, cartridge
Residual	Kitchen refuse, sanitary napkins
Hazardous	Chemical reagents, formalin
Non-hazardous	Agar and salt

## **CHAPTER V**

# **SOLID WASTE MANAGEMENT STRATEGIES/BEST PRACTICES**

## **5.1 MEMOS, POLICIES AND INNOVATIVE WAYS HELP ENFORCE WASTE SEGREGATION**

### **5.1.1 Biodegradable Waste and Plastic Reduction**

The VSU Biodegradable Waste and Plastic Reduction Management (BWPRMC) during the time of Dr. Humberto Montes as chairman conducted consultation meetings with the different sectors of the VSU community. All the VSU residents, faculty, staff, students, stall owners, and vendors were given awareness regarding segregation and storing waste generated. It had been imposed that each unit or staff home shall be responsible for waste segregation and storage in appropriate covered containers. The color-coding of containers are RED for non-biodegradable, YELLOW for recyclable, and GREEN for biodegradable. It is also emphasized that littering is prohibited. All segregated reusable and recyclable wastes shall be stored appropriately before collection. The use of plastics should also be minimized. Garbage was collected every day except on Sunday by a garbage truck owned by the university. Garbage collected from the source is dumped altogether in the VSU dumpsite, and the caretaker assigned to the area will take the segregation of waste. The income generated from the recyclable materials is given to the MRF caretaker. Biodegradable wastes generated are also used for the vermicomposting project of the Eco-FARMI. Any person who violates the provisions shall be punished by a fine or community service.

### **5.1.2 Prohibition on the Use of Plastic Bags**

The Visayas State University continues its efforts to prevent further degradation of our environment. Through memos that provide the prohibition of the use of plastic bags inside the campus specifically, Memorandum Circular No. 89, Series of 2012. In this regard, all business establishments or vendors operating inside

the VSU campus are not using plastic bags. Instead, they firmly advised their customers to bring reusable bags whenever they want to purchase any goods from the market, eateries, and ambulant vendors. The establishments avoid violating the act because they shall be forced to pay fines or revocation of contract/permit to operate within VSU Campus. Aside from that, the establishments are willing to support ecological and environment-friendly practices.

### 5.1.3 Awards and Recognition Received

The Visayas State University received awards from various agencies such as the Environmental Education Network of the Philippines, Inc., VSU as a "Dark Green School" in 2008, while the Smart Communication, Inc., and the Environmental Management Bureau-Department of Environmental and Natural Resources Region 8 proclaimed VSU as the 1st placer (regional) and 2nd placer (national) for the 2009 National Search for Sustainable and Eco-Friendly Schools (Fig. 18).



FIGURE 18. Awards received by the VSU (Designed by: EB Gorre)

#### **5.1.4 Scientific Research Conducted by the Students**

One of the best practices of Solid Waste Management in the university is allowing and assigning scientific research studies to the students concerning SWM (Fig. 19). In this way, the students enable to analyze the importance of SWM. It also gives them indispensable learnings on how they can help the university strengthen the SWM implementation. Meanwhile, the results of the students' scientific studies help the university heighten the enforcement of the SWM.



**FIGURE 19. Photographs of BSEM students conducting WACS** (Photo Credit: BSEM, 2017).

#### **5.1.5 Christmas Lantern Contest**

In December, the university conducted Christmas Lantern Contest within the campus. Each department participates in this contest. The highlight of the contest is by creating lanterns made in recyclable materials. These lanterns are open for public viewing. The most innovative and recycled lanterns will win a cash prize.



**FIGURE 20.** Christmas lanterns made by different departments of VSU (*Photo Credit: Dr. Calibo*).

### 5.1.6 Reliable, Efficient Vermi-Composting Production

Vermicomposting uses earthworms for converting biodegradable waste to organic fertilizer. The materials used as food for the earthworms include leaf litters, rice straws, and food scraps such as fruits and vegetable peelings and trimmings collected from the VSU market and other university establishments. Bedding materials can decompose in the partial decomposition bins for at least three (3) weeks (Fig. 21). Vermicast can be harvested every other day one (1) month after stocking the worms. The harvested vermicast is used for fertilizers for crops, and the excess is for sale to the farmers at low prices. This practice lessens the volume of wastes thrown in the dumpsite.



**FIGURE 21. Biodegradable wastes inside the tile bins** (Photo Credit: LCE Ceniza, 2021).

### 5.1.7 Coastal Clean-up

The Institute of Tropical Ecology and Environmental Management (ITEEM) conducted a clean-up drive and tree planting activity at Visayas State University to conclude its 23rd founding anniversary celebration (Fig. 22). The said activity joined by personnel of faculty and staff from ITEEM. Through collaborative efforts, approximately 262 kg of solid waste collected from the Lago-lago river mouth and the coast up to the Calbigaa River mouth, which contributed 169.55 kg and 92.55 kg of garbage. The collected waste was mainly composed of single-use polyethylene plastic bags, sachets, clothing items, diapers, disposable utensils, to name a few.



**FIGURE 22. Coastal clean-up drive by ITEEM faculty and staff** (*Photo Credit: ITEEM, 2021*)

### 5.1.8. Benchmarking

The WMPCC visited the City Eco-Waste Center, Brgy. Green Valley, Ormoc City on June 9, 2021 for a benchmarking at the Ormoc City Sanitary Landfill and Septage Management Facility (Fig.23). The gathered knowledge and learning during the benchmarking will be incorporated to the formulation of the VSU Open Dumpsite Closure Plan, the VSU-Wastewater Treatment and Management Plan, and during acquiring necessary certificates and permits for the operation of the university solid waste management.

During the benchmarking, the Ormoc City ENRO and staff presented the process and learnings of the Macabug Disposal Facility Closure Plan. Moreover, the Ormoc City Solid Waste Management with its theme “An ecologically healthy

Ormoc City achieved through active community participation in proper solid waste management" was also shared to the WMPCC (Fig.24). The Ormoc City Solid Waste Management highlights its SWM programs such as waste collection and transport, waste diversion, residual waste management, infectious waste management, septage waste facility, IEC, capacity-building of community champions, creation and implementation of policies.

The staff stressed various SWM lessons and the following are applicable to the university. Investment on IEC and in conducting research related to solid waste (i.e., WACS, continual monitoring and evaluation of the SWM strategies and approach, etc.) is necessary because this will serve as basis for solid waste management planning and implementation. Moreover, she mentioned that SWM facilities (i.e., composting facility, hazardous waste facility, health care waste facility, material recovery facility) plays a significant role in the continual implementation of SWM. Lastly, presence of permanent dedicated staff is significant in the operation of a SWM.



**FIGURE 23. Visitation to the SWM Facility** (*Photo Credit: AB Orias, 2021*)



**FIGURE 24. The City Administrator, staff of Ormoc City ENRO and the WMPCC during the benchmarking** (Photo Credit: AB Orias, 2021).

## 5.2 MONITORING AND EVALUATION COMPONENTS

### 5.2.1 Collection, Hauling and Transport

The university creates no multi-sectoral monitoring and evaluation team. The WMPCC and Physical Plant Office (PPO) is responsible for monitoring and evaluating solid waste management. The collection of waste was done by the garbage collectors assigned at the PPO. The collection started on all establishments, including residential, commercial, departments, VSU market, etc. After collection, it is hauling the recyclable wastes directly to MRF and the residual wastes disposed to the open dumpsite of VSU.

## **CONCLUSION**

The efficiency of the SWM dramatically relies on the proper segregation and diversion of solid waste. Proper segregation depends on the knowledge and participation of the people. The people's involvement relies on the institution's political will to implement its policies and educate its people. The reason why it all boils down to the integrity and willingness of the institution to make a difference.

The Waste Management and Pollution Control Committee (WMPCC) of the Visayas State University are serious about managing the solid wastes in the entire campus. There are best practices that are worth continuing and can be replicated in other towns. The challenges are minimal and can be mainly solved by having adequate funds and appropriate policy direction.

## **RECOMMENDATIONS**

Based on observations, interviews with the committee officials and solid waste management (SWM) workers and findings of this plan, the committee present the following recommendations:

1. Develop a Comprehensive Solid Waste Management Plan that shall ensure the long-term management of solid waste following the mandates under Republic Act 9003 or the Ecological Solid Waste Management Act of 2000.
2. For the university to push for the full implementation of the Ecological Solid Waste Management Act (RA 9003), there shall be a reactivation or build up new Materials Recovery Facility (MRF) to cater to daily generated waste. MRFs can provide livelihood opportunities and additional income by marketing recycled and processed materials.
3. The current policies, the memorandum shall be sustained and vigorously implemented. University must demonstrate a strong act of political will to enhance community acceptance and participation. No segregation, no collection!
4. A social marketing campaign shall be launched to increase people's understanding of waste segregation and reduction, proper waste management, handling special waste, and ordinances on collection and disposal arrangements. With this, a series of IEC activities should be done, including airing radio plugs, distributing print materials, conducting orientations/ briefings, and posting billboards and signages. Also, as primary waste generators and an essential part of an institution, the newly admitted students shall be well-informed about basic SWM practices. They shall undergo orientation as a prerequisite of their admission.

5. Implement an Incentive Program to encourage students, residents, and garbage generators to participate in the SWM program. Several strategies are being considered: 1) Create and sustain Search for Best and Innovative Dormitory, College and Business Establishments Practicing Solid Waste Management Program; 2) Citation and monetary incentives shall be given to enforcers based on the number of apprehensions they make. In addition, 50% of the fines from the apprehended person will be an award to the person who reported the actual violation.
6. To deter objections and prevent danger to the health of the people living in the community, especially the students, the garbage truck shall be sprayed with deodorizer/sanitizer before leaving the area. The sprayed deodorizer is biological and contains beneficial microbes. The crew of the dump truck in its daily collection routine will conduct this operation.
7. SWM personnel, including garbage collectors, shall undergo necessary training and seminars regarding solid waste management. Moreover, garbage collectors should have safety equipment and supplies to prevent exposure to the risks from wastes.
8. Benchmarking and purchasing Multi-Purpose Shredder Pulverizer or Rapid Composting reduces bulk storage of solid wastes into a controllable small waste area. This machine involves a simple crushing mechanism and compacting waste materials and shreds various types of garbage such as biodegradable, recyclable, and residual wastes.
9. The economy of the university is growing, the population is escalating, and thus waste generated will be increasing. This is the opportune time to establish an office, appoint a personnel or multi-sectoral monitoring and evaluation team to look into a more complete SWM performance and to lead and who can give substantial focus on SWM with support staff. The number of SWM workers should be increased to alleviate the existing manpower constraint on waste collection and disposal.

10. RA 9003 mandated that all local government units (LGUs) be responsible and accountable for ecological solid waste management within their jurisdictions. In this regard, the university does not have the power to propose or create Sanitary Landfill Facility (SLF). Furthermore, the Act stated that the existing open dumpsite should make a plan for immediate closure or eventual phase out within the period specified under the framework and according to the provisions of this Act. Therefore, make a Safe Closure and Rehabilitation Plan.

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# Appendices

## **APPENDIX A**

### **PHOTO DOCUMENTATION**



**APPENDIX FIGURE A-1.** Photographs of BS Environmental Management students conducting waste analysis and characterization study



**APPENDIX FIGURE A-2. Unsegregated wastes found on the different source representative**



**APPENDIX FIGURE A-3. VSU garbage collectors and their method of collection**

## APPENDIX B

# WASTE MANAGEMENT AND POLLUTION CONTROL DEVELOPMENT PLAN

**Waste Management and Pollution Control Development Plan (WMPCDP)**  
**Visays State University**

**Plan of Activities**  
2020 – 2022

Activity(s)	Objective(s)	Expected Output	Time Frame			Budget (PhP)	Responsible Person/Unit/Office	Remarks/Accomplishment
			2020	2021	2022			
Conduct 1 <sup>st</sup> WMPCC virtual meeting	Discuss how to comply the required documents for VSU Environmental Compliance Certificate (ECC) application as per demand letter from DENR-EMB dated September 30, 2020 and other waste management activities	- Minutes of meeting - ECC list of requirements	x				WMPCC	Oct. 16, 2020
2 <sup>nd</sup> WMPCC virtual meeting called by the President	Discuss the WMPCC suggested plans and activities regarding ECC application and other waste management activities	- Minutes of meeting - Approved WMPCC suggested plans and activities by the President	x				OP WMPCC	Nov. 11, 2020
Consultation with Baybay City ENRO regarding waste management of VSU	Seek advice on the waste disposal activity of VSU and other related environmental concerns like ECC application as required by DENR-EMB	- Guided waste management plan and activities of VSU	x				WMCC Chair & Engr. Ma. Victoria Fernandez-Jabines	Nov. 23, 2020
3 <sup>rd</sup> WMPCC virtual meeting	Introduce the new member of the committee and discuss the list of	- Minutes of meeting	x				WMPCC	Dec. 11, 2020

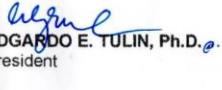
	requirements for EMB-ECC application	- # of required documents for ECC application						
VSU' Environmental Compliance Certificate (ECC) Application	Process pertinent DENR-EMB requirements for the application of ECC and other environmental permits particularly on the identified projects of VSU (poultry, piggery & other animal production)	- ECC application	x	x		150,000.00	OP, WMPCC, DGE, LUDIP, DAS, OGS/PPO & Records Division DENR-EMB	Dec. 14, 2020 Issued MEMO No. 493, s. 2020 signed by the VSU President to concerns departments
Request services of Baybay City ENRO as resource person for ECC application and other pertinent documents in compliance with PD 1586 (Philippine EIS System)	Guide WMPCC for ECC application as required by DENR-EMB	- Approved request	x	x		100,000.00 (prof. fee)	VSU WMPCC Engr. Ma. Victoria Fernandez-Jabines (City ENRO)	December 18, 2020
Request assistance from the City Mayor thru the City ENRO of Baybay on the residual waste disposal including VSU Infirmary Medical/Health Care Waste at Baybay City Sanitary Landfill in Brgy. Buenavista & other proposed activity plan (VSU dumpsite closure plan, establishment of hazardous waste storage facility, ecological waste management training and workshop, forging of agreement bet. VSU and	Address the VSU waste management and other environmental issues and concerns	- Letter request to the City Mayor of Baybay as per advised by the City ENRO - Approved request	x	x			VSU, WMPCC & Baybay City ENRO	Dec. 18, 2020

Baybay City Mayor and request services of the City ENRO with regards to ECC application								
Revisit the VSU guidelines and policies on the proper disposal of solid waste (biodegradable and non-biodegradable)	Review existing guidelines and policies on waste management implemented in VSU	- # of existing guidelines and policies issued	x				WMPCC	Dec. 21, 2020
VSU Dumpsite Closure Plan preparation	Draft closure plan for abandonment of the VSU dumpsite located on campus	- Closure Plan drafted and approved		x		10,000.00	WMPCC	As mandated in RA 9003
Establishment of a hazardous waste storage facility for chemicals, toxic substances, etc.	Secure proper hazardous waste disposal	- # of waste storage/containment facilities		x	x	100M (apply for external funding)	VSU City ENRO	RA 6969 (Hazardous Waste and Toxic Substances Act)
Conduct ecological solid waste management training-workshop with the Baybay City ENRO as resource person	Capacitate and sustainably train the VSU community particularly the Garbage Collection Team, WMPCC, various departments/units on the proper waste disposal method	- Attendance, program & invitation - # of trained VSU constituents & other stakeholders - Venue in-placed and other logistics		x		10,000.00	VSU-Garbage Collection Team; WMPCC; City ENRO & team	April 2021
Forging of agreement with Baybay CENRO bet. VSU & Baybay City LGU re: Solid Waste Disposal at the Sanitary Landfill including VSU	Strengthen local partnerships in achieving a clean and environment-friendly community	- MOU/MOA		x			VSU President & Baybay City Mayor	April 2021

Infirmary Medical/Health Care Waste								
Conduct retooling & awareness seminar (webinar) about solid waste management & the new IRR on the use of plastic bags in City of Baybay	Raise awareness on the Information, Education and Advocacy Campaign of VSU's solid waste management & ESWM of Baybay City	- Attendance - # of awareness/we binars conducted		x	x	10,000.00	All VSU Units/ Stakeholders VSU-Garbage Collection Team; & WMPCC	May 2021
Putting up of IEC signages on Solid Waste Management and posting of schedule on collection of bio-degradable and non-biodegradable wastes in the beach, apartments, markets, etc.	Communicate information about solid waste management through bulletin boards, announcement, and issuance of the memo	- # of IEC signages on Solid Waste Management constructed and established - # of billboards posted - # of MEMOs issued		x	x	50,000.00	PPO PPES & Motorpool WMPCC	May 2021
Impose penalty to non-compliant individuals/VSU residents on the proper disposal of solid waste	Start reviving and strict implementation of waste segregation	- # of penalties imposed - # of individual/VSU constituents penalized		x	x		VSU	
Process bio-degradable waste thru shredding and will be used for composting (tapping the experts from ECO-FARMI) and repair of the facility.	Minimize costs incurred in waste collection due to mandatory on-site composting being carried out	- volume of bio-degradable garbage collected and processed for compost		x	x	300,000.00	PPO PPES & Motorpool WMPCC ECO-FARMI	April 2021
Removal of garbage bin placed near the staff housing	Quickly implement segregation and eradicate stray dog messing with the garbage bins	- # of garbage bin removed		x		5,000.00	PPO PPES & Motorpool WMPCC	UADCO approval required

Regular residual garbage/waste collection and transport	Dispose garbage/residual waste including VSU Infirmary Medical/Health Care Waste at Baybay Sanitary Landfill, Brgy. Buenavista, Baybay City	- # of trips - volume of garbage collected and disposed @ designated garbage bins/MRFs; Apartments; Market & etc.	x	x	200,000.00	VSU-Garbage Collection Team; WMPCC; & VSU Community	ASAP Fuel, disposal fees (P250/disposal)
Purchase of Personnel Protective Equipment/Gear - Gloves, Boots, Facemasks/shields, Raincoats/overall	Protect the garbage collectors from any illness	- # of equipment procured - # of units	x		100,000.00	VSU PPO PPES & Motorpool WMPCC	May 2021

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President

## APPENDIX C

# POLICY RECOMMENDATION ON BIODEGRADABLE WASTE AND PLASTIC REDUCTION

### Policy Recommendations on Biodegradable Waste and Plastic Reduction

VSU Biodegradable Waste and Plastic Reduction Management Committee  
(BWPRMC)

The BWPRMC conducted consultation meetings with the different sectors of the VSU community. Based on the results of the consultations, the following recommendations were formulated:

- A. **On Waste Generation and Storage** – All VSU residents, faculty, staff, students, stall owners and vendors shall be made aware of and made to understand that waste shall be segregated and stored for collection where they are generated. Waste management in residential, office and stall units shall be conducted as follows:
  - I. To facilitate the sanitary and efficient handling, storage, collection, transport and disposal at the least cost, VSU residents shall ensure that all solid wastes shall be segregated under the following broad categories:
    - a) **Biodegradable wastes** such as agricultural or garden wastes, food or kitchen wastes, animals and human wastes which shall be collected for composting.
    - b) **Non-biodegradable wastes** which includes:
      1. **Plastic and synthetic wastes** including plastic and synthetic containers and wrappers as well as styrofoam or styropor products shall be collected.
      2. **Glass products** including bottles and shards of broken glass which shall be collected.
      3. **Metal products** including tin cans, aluminum cans and sheets, bronze and copper scraps and steel or iron scraps which shall be collected.
    - c) **Recyclable and reusable wastes** are biodegradable and non-biodegradable wastes, wherein the materials, part or whole, can be used again.
    - d) **Special wastes** include:
      1. **Hazardous biological and pathological wastes** which shall be stored in non-perishable and tightly covered receptacles located in a site that is secure and not easily accessible to the general public.
      2. **Hazardous chemical and radioactive wastes** which shall be stored, collected, transported and disposed of in accordance with applicable laws, guidelines, rules and regulations of the Environmental Management Bureau of the Department of Environment and Natural Resources (EMB-DENR), Department of Health (DOH), the Philippine Nuclear Research Institute (PNRI) and other pertinent government agencies.
  - II. **Source Segregation and Storage**- Each unit shall be responsible for waste segregation and storage in appropriate covered containers under the following categories:

- a) Every housing unit, dormitory, market stall, office, and building should secure three containers or bins for garbage segregation that should conform to the size which is **10 liter capacity per container with cover and color coding**.
- b) Color coding of containers are: **RED** for non-biodegradable; **YELLOW** for recyclable; and **GREEN** for biodegradable.
- c) Whenever appropriate, **food and kitchen refuse** shall be given directly or after processing to animals raised in the household or collected as feed materials. Food and kitchen refuse not appropriate for use as feed materials shall be collected together with other biodegradable wastes in the **GREEN** biodegradable containers.
- d) Every housing unit, dormitory, market stall, office, and building shall be responsible for the segregation, storage and positioning of the wastes for easy access and collection by the waste collectors (or waste managers).
- e) Color coded drums for specific wastes (**RED** for non-biodegradable; **YELLOW** for recyclable & reusable; and **GREEN** for biodegradable) shall be established by the university at designated location in public places like playgrounds, mall, streets, beach etc. The picture below will serve as a guide in the establishment:



- III. Littering and Scavenging-** No person shall dump, litter, scatter, dispose of or scavenge wastes in streets, highways, sidewalks, vacant lots, and other public areas, e.g. the parks, playgrounds, beach, rivers and riverbanks.
- B. Processing and Collection -** The collection, processing and resource recovery of solid wastes from units shall be as follows:
- I. Segregated **reusable and recyclable wastes** shall be properly stored before collection. These shall be collected separately and brought to designated material recycling facility for reuse, recycling or sold to junk dealers. VSU will establish buying station for recyclable & reusable garbage. The income collected shall be used to supplement the operation and maintenance of the Solid Waste Management System of the university.

- II. **Plastic and synthetic wastes** which are non-reusable and non-recyclable shall be segregated and disposed at the designated dumpsite.
- III. **Food and kitchen refuse** shall not be disposed in sewers, drainage canals or the landfill. It may be collected as feed materials. The concerned unit shall make appropriate procedure on the mode of storage, collection and transport of food and kitchen refuse as feed materials. Food and kitchen refuse **not appropriate for use as feed materials** shall be collected together with other biodegradable wastes for composting or for generation of biogas.
- IV. **Schedule of garbage collection-** The VSU waste collectors shall strictly follow the following schedule of collection:
  - Biodegradable (Green)- Mondays, Wednesdays, & Saturdays
  - Non-biodegradable (Red)- Tuesdays & Thursdays
  - Recyclable & Reusable (Yellow)- Fridays
- VIII. Solid wastes which have **not been segregated** and placed in approved containers **shall not be collected** and shall be treated as violation of this policy.
- IX. The waste managers shall announce and/or post the specific hour of collection for particular locations in the campus.
- X. **Hazardous chemical, radioactive, biological and pathological wastes** shall be disposed in a special procedure to be developed by the university in compliance with the rules and regulations formulated by appropriate national government agencies such as the EMB-DENR and the DOH. Whenever necessary, hazardous wastes shall be pre-treated or properly disinfected, placed in impermeable disposable packages and shall be disposed of under the guidance of, and in compliance with the rules and regulations formulated by the concerned national agency. The collection and transportation shall be coordinated with government agencies who are responsible or concerned with the disposal of such wastes.
- XI. The university shall identify a strategic location which shall serve as hosts for collection bins for all types of **discarded batteries**. The university shall formulate a system of transportation and disposal of these wastes.

#### C. Transport, Disposal and Resource Recovery

- I. Collected biodegradable wastes shall be transported and processed at the Composting Facility of the university for generation of composts.
- II. Segregated plastics and non-biodegradable wastes which are non-reusable and non-recyclable from the designated material recycling facility (MRF) shall be disposed of in a sanitary dumpsite to be established by the university. (*In the absence of suitable lot for sanitary landfill, the current dumpsite of the university should be concreted and compartmentalized for the segregated non-biodegradable wastes*).
- III. Open burning of solid wastes shall be discouraged.

#### D. Plastic Reduction- The use of plastics should be minimized.

- I. Plastics should not be allowed to be used as wrappers or bags for dry goods/items at VSU stores, market, technomart, carenderias, cafeterias and stalls.
- II. The use of biodegradable (e.g. papers) and recyclable/reusable bags (e.g. flour & rice sacks, net bags) are encouraged. The Office of the Vice President for Planning and Resource Generation through the Income Generating Project Office (IGPO) will be in-charge for the outsourcing on the production of biodegradable and recyclable/reusable bags.
- III. Plastic bags can only be used for sold wet items like fishes and other seafoods, chicken, pork and beef.
- IV. Liquid juice, coffee, chocolate, milk and beverages should not be sold using plastics.

**V. Penalties For Violations:**

- a) Unsegregated garbage will not be collected.
  - b) For selling/using of plastics at the VSU market:
    - 1<sup>st</sup> offense: warning
    - 2<sup>nd</sup> offense: penalty of P 10 -1,000 for both seller and consumer
    - 3<sup>rd</sup> and succeeding offenses: 3 hrs community service.
  - c) The security guard on duty will be in-charge of monitoring usage of plastics; he will also be penalized if caught allowing buyers using plastic.
  - d) The Income Generating Project Office (IGPO) will collect all the money imposed from penalties.
  - e) The landscaping and garbage section of PPO will determine the kind of community service that the violators will render.
- a. Any person, commercial establishment, industrial firm or institution who violates any provision of this ordinance for the first time shall upon conviction, be punished, be a fine not less than Php 100.00 but not more than Php 500.00 or by imprisonment of one (1) day but not more than (3) days, or by both fine and imprisonment at the discretion of the court;
  - b. Second time violators shall, upon conviction, be fined of not less than Php 200.00 but not more than Php 1,000.00 or by imprisonment of three (3) days but not more than seven (7) days, or both fine and imprisonment at the discretion of the court;
  - c. Third time violators shall, upon conviction, be fined of not less than Php 300.00 but more than Php 1,500.00 or by imprisonment of seven (7) days but not more than fifteen (15) days, or both fine and imprisonment at the discretion of the court;
  - d. Habitual violators or those who willfully violate any of the provisions of this Ordinance shall, for more than three (3) times upon conviction, be punished by a fine of not less than Php 500.00 but not more than Php 2,500.00 or by imprisonment of not less than fifteen (15) days but not more than one (1) month, or both fine and imprisonment at the discretion of the court;

- e. If the violator is a corporation, firm or other corporate entity, the maximum penalty of Php 500.00 – Php 2,500.00 shall be imposed upon the officers such as president, manager, director or persons responsible for its operations;
  - f. Habitual violations by a commercial establishment, industrial firm or institution and officers such as president, manager, director or persons responsible for its operations shall constitute grounds for the cancellation permits issued by the municipality;
  - g. The collected fines and penalties shall be used to supplement funds for the continuing information, education and communication campaign to increase awareness to proper solid waste management and for the improvement of the system of monitoring and evaluation including the provision if incentives for the proper implementation of this Ordinance.
- Failure of the commercial establishment, industrial firm or institution to inform the Municipal Mayor regarding the presence of hazardous biological and pathological wastes or the generation of hazardous chemical and radioactive wastes in their operation shall constitute a violation of this Ordinance and shall be a ground for the non-issuance or non-renewal of the applicable municipal business permit or the revocation of an existing business permit.

**SECTION 13** – The amount of fifty thousand pesos (Php 50,000.00) is hereby initially allocated out of the current operation budget of the Municipality to cover express to be incurred in carrying out the information, education and communication campaign regarding the provisions of this Ordinance. The amount necessary to carry out the provision of this Ordinance shall be charged to the current fiscal year appropriations of the General Services Department of the Municipality. Thereafter, such sums as may be necessary for the implementation of this Ordinance shall be included in the Annual Budget Ordinance.

**SECTION 14** – Repealing Clause – Ordinance rules and regulations contrary to or inconsistent with the provisions of this Ordinance are hereby amended, repealed or modified accordingly.

**SECTION 15** – Separability Clause – If any provision of this Ordinance is declared unconstitutional, the remaining provisions shall not be affected by such declaration and shall remain valid.

**SECTION 16** – Effectivity – This Ordinance shall take effect on 1 March 2000 and after the completion of an information, education and communication campaign regarding the provisions thereof.

- Each commercial establishment, industrial firm or institution shall designate a waste manager who shall have the following functions:

- a. Monitor the compliance to the provisions of the Ordinance in the segregation, storage, collection and transport of solid wastes;
- b. Oversee the collection, assembly and recovery of factory returnable and recyclable; and
- c. Coordinate with Barangay and Municipal Waste Managers in the collection, transport and disposal of solid wastes.

Note: Some policies were adopted from the Municipal Ordinance No. 001-2000: An ordinance enhancing the comprehensive solid waste management of the municipality of Baybay, Leyte on January 4, 2000.

1. Identify items/goods from VSU market and stalls allowing use of plastics
    - refer to the plan for minor corrections as highlighted
  2. Production and outsourcing of biodegradable-reusable bags
    - No corrections done
  3. Penalties for violations of the 2 systems
    - penalties should be implemented as stipulated in the plan if seller/vendor/consumers found violating
  4. Investment plan for implementation of the 2 systems.
    - refer to the plan for minor corrections as highlighted
- A. *Schedule of the following activities:*
- May 29, 2012 – consultation with market vendors
  - May 30, 2012 – consultation with employees at Convention Center
  - May 31, 2012 – survey within offices
- 11:30 – meeting adjourned:

## APPENDIX D MEMORANDA CIRCULAR



**VISAYAS**  
STATE UNIVERSITY

**OFFICE OF THE PRESIDENT**  
2/F Administration Building  
Visca, Baybay City, Leyte, PHILIPPINES  
Telefax: +63 53 563 7067  
Email: op@vsu.edu.ph  
Website: www.vsu.edu.ph



Management  
System  
ISO 9001:2015  
www.tuv.com  
ID 910555749

29 April 2021

rec'd A. 4/20/21  
v8

**MEMORANDUM CIRCULAR NO. 44**  
Series of 2021

- T O: All VSU Faculty, Staff, Students, Residents, Market Vendors and Persons Sojourning In the University**
- R E: Implementation of Baybay City Ordinance on Plastic Bag Reduction**

Pursuant to the Baybay City Plastic Bag Reduction Ordinance No. 007, S. 2013, otherwise called the "Plastic Bag Reduction Ordinance", with its Implementing Rules and Regulations (IRR) to govern the reduction on the use of plastic bags for **two (2) days each week** in the City of Baybay, the VSU Waste Management and Pollution Control Committee (WMPCC), thru the Chairman, Dr. Eliza D. Espinosa, is requesting everyone's participation to its implementation. Beginning May 4, 2021, all **Tuesdays and Saturdays** are declared "**Environment-Friendly Days**" in Baybay City as stated in the IRR. To reduce the use of plastics, it is mandatory to use eco-bags and other alternative packaging materials to pack groceries, foods and other goods during these days. Further, in the IRR all stores are mandated to provide their own reusable container for wet goods/or require its customers to bring their own reusable container for the same.

Attached is a flyer provided by Baybay City LGU for information dissemination, and for our strict compliance.

**EDGARDO E. TULIN,**  
President

**Vision:** A globally competitive university for science, technology, and environmental conservation.  
**Mission:** Development of a highly competitive human resource, cutting-edge scientific knowledge and innovative technologies for sustainable communities and environment.

Page 1 of 2

FM-OOP-02  
v2 04-27-2020

No. 21-44



# Visayas State University

Visca, Baybay City, Leyte 6521-A

Philippines

Tel: +63 53 335 2600; Fax: +63 53 335 2601

website: [www.vsu.edu.ph](http://www.vsu.edu.ph)

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## Office of the President

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2 October 2013

MEMORANDUM CIRCULAR NO. 55

Series of 2013

T O: All VSU Constituents

R E: Proper Disposal of Solid Wastes

The Visayas State University continues its efforts to prevent further degradation of our environment. In this regard, it institutes steps towards ecological and environment-friendly practices. The OP Memorandum Circular No. 89, Series of 2012, OP Memorandum Circular No. 21, Series of 2002, OP Memorandum Circular No. 3, Series of 2006 and OP Memorandum Circular No. 28, Series of 2006 spell out guidelines and policies in the proper use and disposal of plastic materials. However, it has come to the attention of this Office that solid waste problems in the campus have not been given proper attention.

In our continued efforts to address this problem, the VSU Biodegradable Waste and Plastic Reduction Committee has been created to conduct consultation meetings with the different sectors of the VSU community. Based on the results, the following are formulated and shall be enforced effective immediately:

1. All VSU residents shall segregate at source and stored for collection. To facilitate the sanitary and efficient handling, collection and disposal, all solid wastes shall be segregated into Biodegradable (papers, plant parts, etc.) and Non-biodegradable (plastic and synthetic materials, glass and metal products). Unsegregated garbage will not be collected.
2. Each resident unit shall provide their own waste segregation and storage containers with appropriate covers until being collected to prevent waste scavengers from getting access to the wastes.
3. Food and kitchen refuse may be collected together with other biodegradable wastes, unless they are kept by the household for appropriate composting. Collected biodegradable wastes shall be processed at the Composting Facility of the University.

4. No person shall dump litter, scatter, dispose of or scavenge wastes in streets, highways, sidewalks, vacant lots and other public areas, e.g. parks, playgrounds, beach, rivers and riverbanks. (Please see attached OP Memo 39, Series of 2009). Colored drums/receptacles or garbage bins for specific kind of wastes shall be placed at designated locations in the university campus for proper disposal of wastes.
5. Recyclable wastes shall be collected separately and brought to designated Material Recover Facility (MRF) established by the University for reuse, recycling or turn over to junk dealers.
6. Open burning of solid wastes is strictly prohibited.
7. Collection of garbage by the VSU waste collectors are the following:
  - a. Biodegradable wastes – Mondays, Wednesdays and Fridays
  - b. Non-biodegradable wastes – Everyday
  - c. Recyclable and reusable wastes – Everyday

Attached are copies of the Memoranda for your guidance.

For strict compliance.

JOSE L. BACUSMO  
President



# Visayas State University

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## Office of the President

20 December 2012

MEMORANDUM CIRCULAR NO. 89

Series of 2012

**T O:** All Commercial Concessionaires, Ambulant Vendors Doing Business in VSU

**R E:** Prohibiting the Use of Lightweight Plastic Bags Designed for Single-use

In an effort to prevent further degradation of our environment, the Visayas State University (VSU) is instituting steps towards ecological and environment-friendly practices. Effective January 1, 2013, VSU hereby prohibits commercial concessionaires, ambulant vendors and other retailers from using, selling or giving away **lightweight plastic bags designed for single use**-plastic bags with (sando bags) or without handles that are made of polyethylene polymer less than **35 microns thick**.

No business establishment or vendor operating inside VSU campus shall utilize such plastic bags as primary packaging materials for dry goods.

The following bags are **NOT** banned:

- Cloth bag [a.k.a. "katsa"] – refers to reusable packaging material made of cloth [biodegradable] used in the packaging of flour, wheat and other similar goods
- Reusable "Net bags" – refers to reusable heavy polypropylene knitted plastic bags
- Paper or cartoon boxes
- Woven bags [a.k.a. "bayong"] - refers to biodegradable packaging material made of woven abaca, pandan, buri leaves, water lily and other similar materials

Lightweight plastic bags for single-use maybe used as packaging materials for powdery and granulated dry products, for liquid products and for wet fresh produce (fish and meat).

Students, faculty members, staff and the general public are advised to bring reusable bags whenever they purchase any goods from the market, eateries and ambulant vendors.

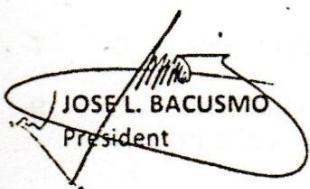
#### **FINES AND PENALTY**

Any establishment and vendor who shall violate the prohibited act stated above shall be punishable through the imposition of the following:

- First Offense - PhP1,000.00
- Second Offense - Revocation of contract/permit to operate within VSU Campus

The Security Office, IGP Office and the Solid Waste Management Committee are tasked to strictly implement this order.

For strict implementation and compliance.



JOSE L. BACUSMO  
President

cc: Security Office  
IGPO  
Solid Waste Management Committee  
Records  
File



# Visayas State University

Visca, Baybay, Leyte 6521-A  
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## Office of the President

3 August 2009

### MEMORANDUM CIRCULAR NO. 39

Series of 2009

T O: All Students, Faculty Members, Staff, Residents & Visitors of VSU

R E: Prohibition of Littering, Throwing and Dumping of Waste Matter in Public Places within VSU Campuses

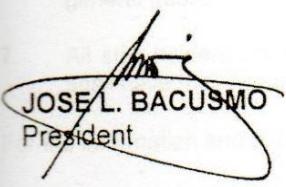
In compliance with Republic Act No. 9003 otherwise known as the "Ecological Solid Waste Management Act of 2000," any person caught littering, throwing, dumping of waste matters in public places within VSU Campuses, such as roads, sidewalks, beach or parks, and establishment, or causing or permitting the same shall be punished with a fine of not less than Three hundred pesos (P300.00) or render community service for not less than one (1) day.

The VSU General Services Office is hereby directed to maintain garbage receptacles/bins in strategic places of the campuses.

Also, the VSU Security Personnel are directed to secure the name(s) of students, faculty members, staff, residents, visitors or any person caught littering, throwing, dumping of waste matters in public places within VSU Campuses and to forward the same to the Office of the VSU President.

All VSU Faculty members, Staff and Residents are enjoined to report to the VSU Security Office any observed violation to this memorandum.

For guidance and immediate compliance of all concerned.

  
JOSE L. BACUSMO  
President



# LEYTE STATE UNIVERSITY

Visca, Baybay, Leyte 6521-A

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Tel: +63 53 335 2600; Fax: +63 53 335 2601

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*Office of the President*

18 January 2006

MEMORANDUM CIRCULAR NO.           

Series of 2006

T O: All Concerned

R E: Guidelines Governing the Use of Plastic Bags by the Market Stall Holders Including Eataries Within LSU-Main Campus

To ensure the smooth implementation of OP Memorandum Circular No. 21, s. 2002, the following Guidelines have been formulated to regulate the use of plastic bags by market stall holders including eataries within the Leyte State University.

## GUIDELINES

1. Effective immediately, all market stall holders including eataries within the Main Campus are directed to stop using plastic bags of all kinds in wrapping/dispensing goods for sale to the general public. Instead, paper bags or other appropriate containers shall be used.
2. Eataries selling take-out food shall be required to wrap their dry take-out food in paper bags suitable for that purpose. All other non-dry cooked food excluding soup shall be appropriately wrapped in cut-rite paper or other suitable biodegradable wrapper. Take-out soup products can only be dispensed if the buyer brings an appropriate container for it.
3. All employees, students as well as other interested buyers of non-dry cooked food products from eataries within the campus are directed to bring with them appropriate containers to hold the cooked food products being purchased.
4. Vendors of fresh fish and meat including poultry are permitted to use plastic bags but are encouraged to use appropriate alternative containers in the sale of their products.
5. The LSU Meat Shop is likewise directed to use paper bags in wrapping food products including eggs sold to the general public.
6. The Cooperative Store is likewise directed to use paper bags in wrapping products sold to the general public.
7. All stall holders are given until February 1, 2006 to fully implement this directive. Violators shall have their license or permits revoked or cancelled.

For the information and guidance of all concerned.

PACIENCIA P. MILAN  
President



## LEYTE STATE UNIVERSITY

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*Office of the President*

30 June 2006

MEMORANDUM CIRCULAR NO. 25

Series of 2006

**T O:** All Faculty, Staff and Students in Dormitories, Staff Houses  
and Others Concerned

**R E:** Policy Governing the Use of Plastic Bags, Styrofoam and Other  
Non-biodegradable Containers

Memorandum Circular No. 3, Series of 2006 was issued spelling out guidelines in the use of plastic bags by Market Stall Holders and Eateries within the LSU campus. Implementation of said policy, as observed, provided positive results.

It has been noted, however, that faculty, staff and students in dormitories and staff cottages continue to use these plastic bags and even insist on their use contrary to our policy of protecting the environment and to the demoralization of market stall holders and eateries who religiously follow the above guidelines. In addition, some ambulant vendors still continue using plastic bags.

This office therefore reiterates its policy against use of plastic bags as spelled out in MC No. 3, Series of 2006. In addition the use of styrofoam and other non-biodegradable containers is also prohibited.

All Security Guards are therefore requested to apprehend ambulant vendors and other LSU constituents doing business inside but are still using plastic bags and styrofoams for their products. The IGPO is likewise directed to implement the above-mentioned policy and to refrain from renewing the contract of stall holders who are not following this directive. Ambulant vendors are also required to follow th s guidelines, otherwise, their permit will not be renewed.

For strict compliance.

PACIENCIA P. MILAN  
President



## **LEYTE STATE UNIVERSITY**

Visca, Baybay, Leyte 6521-A  
Philippines

*Office of the President*

7 March 2002

**MEMORANDUM CIRCULAR NO. 21**  
Series of 2002

**T O: All Concerned**

**R E: Prohibition of the Use of Plastic Bags**

In line with LSU's drive for a clean, green and pollution-free campus, effective May 1, 2002, the use of plastic bags is discouraged.

As plastic bags and non-recyclable synthetic containers like styrofoam are non-degradable, difficult and bulky to dispose, they are filling up our dumpsite and are carried to the ocean through rain and wind. This scenario is unacceptable if we wish to maintain our marine life and cleanliness of the campus.

All enterprises and households are therefore advised to refrain from selling and using plastic bags. This strategy shall be discussed by the IGP Director.

For strict compliance.

  
**PACIENCIA P. MILAN**  
President

cc: Dr. N. P. Pascual  
Asst. to the President for Planning & IGP Director

## **APPENDIX E**

# **VSU OPEN DUMPSITE CLOSURE PLANNING WORKSHOP PROGRAM**

The booklet cover features a yellow and brown design. At the top left is the logo of the Environment and Natural Resources Office, City of Baybay. To its right is the logo of Visayas State University. Below these, the title "VSU Open Dumpsite CLOSURE PLANNING WORKSHOP" is prominently displayed in white and yellow text. Underneath the title, the date "26 MAY 2021" and location "ITEEM-TED ANNEX BLDG VSU, VISCA, BAYBAY CITY, LEYTE" are listed. The main body of the booklet is titled "PROGRAM" and includes a "9 a.m." start time. The program details include:

- Prayer**  
DR. VANESSA GABUNADA, Member, Waste Management Pollution Control Committee (WMPCC)
- Message**  
DR. EDGARDO E. TULIN, President, VSU
- Rationale**  
MR. RAFAEL JUNNAR DUMALAN, Co-Chairman, WMPCC
- Introduction to Resource Persons**  
DR. ELIZA D. ESPINOSA, Chairman, WMPCC
- Closure Plan Mechanics**  
ENGR. MARIA VICTORIA F. JABINES, City Environment and Natural Resources Officer, Baybay
- Workshop proper and tasking**  
The WMPCC
- LUDIP Requirement**  
DR. ELIZA D. ESPINOSA
- Closing Remarks**  
DR. ROMMEL B. ARMECIN, Director, Eco-FARMI
- Moderator**  
MS. ANGELITA B. ORIAS  
Secretary, WMPCC

A yellow bar at the bottom contains the text "TO:".

## APPENDIX F

### ECO-WASTE BENCHMARKING



### ORMOC CITY ECO-WASTE CENTER SITE VISIT

June 9, 2021

TIME	ACTIVITY	PERSON(S) RESP.
8:30 AM	VSU TEAM COURTESY CALL TO ENRO	For. R.Sanchez
9:00 AM	WELCOME REMARKS	Hon. Lalaine A. Marcos
9:15 AM	PRESENTATION OF ORMOC CITY ECO-WASTE CENTER OPERATION	Ms. I.Macabare & Engr. R.P.Sacay
10:30 AM	VERMICOMPOSTING: VSU EXPERIENCE	Dr. Romel B. Armeclin
11:00 AM	OPEN FORUM	VSU-WMPCC & LGU Team
12:00 PM	LUNCH BREAK	
1:00 PM	SITE VISIT TO ORMOC CITY ECO-WASTE CENTER	VSU-WMPCC & LGU Team
2:30 PM	DISCUSSION OF OBSERVATIONS AND TAKEAWAY LESSONS	VSU-WMPCC & LGU Team
3:00 PM	HOMEBOUND	VSU-WMPCC

#### VSU WASTE MGT. AND POLLUTION CONTROL COMMITTEE

- |                                 |                                   |
|---------------------------------|-----------------------------------|
| 1. Dr. Eliza Dadole-Espinosa    | 8. Mr. Randy G. Omega             |
| 2. Mr. Rafael Junnar P. Dumalan | 9. Engr. Marlon G. Burlas         |
| 3. Dr. Senona A. Cesar          | 10. Dr. Angelica P. Baldos        |
| 4. Engr. Jimmy O. Pogosa        | 11. Engr. Mario Lito P. Valenzona |
| 5. Dr. Romel B. Armeclin        | 12. Mr. Roden D. Troyo            |
| 6. Dr. Ma. Vanessa E. Gabunada  | 13. Dr. Elizabeth S. Quevedo      |
| 7. Dr. Marlito M. Bande         | 14. Ms. Angelita B. Orais         |

#### ORMOC CITY ENRO

1. For. Rosilyn C. Sanchez
2. Ms. Ingrid G. Macabare
3. Engr. Jocelyn A. Fiel
4. Engr. Rick Paolo D. Sacay
5. Mr. Jay Scotch Betonio