

Draft Initial Environment Examination Report

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PHI: Mactan Cebu International Passenger Terminal Project (Philippines)

Prepared by Woodfields Consultants, Inc for GMR-Megawide Cebu Airport Corporation and the Asian Development Bank.

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Draft Initial Environmental Examination Executive Summary

Mactan-Cebu International Airport Rehabilitation, Expansion and Operation (Philippines)

December 2014

Prepared for: GMR-MEGAWIDE CEBU AIRPORT CORPORATION



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EXECUTIVE SUMMARY

1. Introduction

The Government of the Philippines through the Department of Transport and Communication (DOTC), in conjunction with Mactan Cebu International Airport Authority (MCIAA) has awarded the Project, titled "Mactan Cebu International Airport Project" to a consortium comprising of GMR Infrastructure Limited and Megawide Construction Corporation, by way of Public Private Partnership (PPP) model on 22 April 2014. To this effect, a 25 year Concession Agreement (CA) has been granted to GMR Megawide Cebu Airport Corporation (GMCAC) a company incorporated by the consortium and registered within the Philippines.

The development works are planned to be executed in two phases: Phase 1 is for the forecasted demand up to the design year 2024, and Phase 2 is for the forecasted demand of upto the design year 2039.

The operations and maintenance of the airport shall be turned over by MCIAA to GMCAC beginning November 2014. Part of the agreement stipulates that the concessionaire shall expand the capacity of the existing airport by building a new passenger terminal (T2) within 3 years and renovating the existing terminal (T1) within 4 years.

2. Brief Description of the Project

The existing airport consists of a passenger terminal building with six aerobridges (serves both the domestic and international flights), a parking bay (425 x 295 m), a parking ramp, two (2) aprons: south apron (250 x 100 m) and north east apron (220 x 95 m), a single runway, and General Aviation.

The increasing trends on the movements of passengers, both domestic and international, provide merits for the expansion of the current capacity of the existing airport by building a new passenger terminal.

By 2024, the domestic flight frequency will increase by 196.5% based on 2014 projections, and by 2039 will further increase to 276.2% based on 2024 projections.

The new passenger terminal will eventually be devoted to international flights while the renovated passenger terminal will serve the domestic flights.

3. Planned improvements for the MCIA

The general plan for the expansion and improvement of the existing airport is summarized as follows:

- Construction of T2, along with all Associated Facilities (such as car park, road network, Commercial Assets, Meeter Greeter Area)
- Renovation and expansion, but not the demolition of T1 and Associated Facilities;
- Complete reconstruction of T2 Apron;
- Capacity Augmentation in accordance with Concession Agreement;
- Development of adequate customer vehicle parking;
- Development of Commercial Assets;

Installation of all required information technology and other equipment for the proper operation and maintenance of the above facilities.

The renovation of the existing terminal (T1) will be completed in 4 years, while the new terminal (T2), will be finished in 3 years, along with the completion of the landside development. The new apron will be completed in 18 months. The development of the project will be spread into two phases: Phase 1 (2014 – 2024) and Phase 2 (2024 – 2039). Phase 1 pertains to all the developments based on the 2024 forecasted demands while Phase 2 is for all further developments based on the 2039 forecasted needs.

The master development plan of the concession is considerably anchored on the air traffic demand forecast. In 2024, the estimated annual passengers for the International and Domestic flights are 4.127 million and 11.654 million passengers, respectively. For year 2039, around 8.068 million passengers in the International flights, and about 20.244 million, for the Domestic flights.

The new terminal building shall be using state of the art technology in three levels keeping in mind the segregation of arriving and departing passengers. Other considerations in the design of the new terminal include, among others: building heights and levels, landside connectivity, passenger flows, baggage flows, provisions for the disabled/ or passengers with reduced mobility and nursing women, as well as baby changing rooms.

The landside development shall comprise of Road network, Car Park, Commercial Assets, Airport Village (Meeter-Greeter Area). Access to the airport shall be enhanced by developing the surrounding road network. For the carpark, the demand is estimated to be at 550 car park slots for design year 2024 and 650 Car park slots for design year 2039. The car parking slots will be completed and commissioned along with New Terminal T2.

4. Environmental and Social Standards, Policies and Regulatory Framework

A review of applicable legal and regulatory standards, both local and international, for environmental and social safeguards, was carried out for the existing terminal. The review also included an audit of the existing terminal's performance in accordance with the 2009 Safeguard Policy Statement (SPS) and social requirements of the Asian Development Bank (ADB), and the performance standards of the International Finance Corporation (IFC).

The operations and maintenance of the airport terminal shall be turned over by the Mactan-Cebu International Airport Authority (MCIAA) to GMCAC, beginning in November 2014, while MCIAA will continue to have responsibility for air side operations.

5. Existing Conditions

Land use. On the north and on the southwest of the airport are two Special Economic Zones. The west side MCIA is dominated by urban/commercial area. On the east and south east side, low level residential land use dominates. A few hundred meters distance on the northeast side of MCIA is the Mactan Bay Area.

Geomorphology. The entire island displays a terrain with elevations ranging from 0 to less than 10 meters above mean sea level (amsl). While the whole island is made-up

mainly of hard coralline rocks. The entire landmass belongs to a one-slope category that ranges from 0 to 3%. The entire island has no notable surface water domains that serve as the natural drainage system of the area. The shoreline is generally indicated by numerous raised corals, which makes the tidal inundated area moderately rugged in terrains.

Geology. Only two (2) rock types have been identified in the entire landmass of Mactan Island – the Alluvial deposit and the Coralline Limestone. The relatively porous characteristics of the soil make the runoff smaller around the island as the water more often seeps into the ground surface. While the whole island is basically flat, the ground slopes and its geologic topography are not susceptible to erosion.

Hydrogeology. The main aquifer or water-bearing formation in the entire Mactan Island consists mainly of the limestone unit of the Carcar Formation in a relatively flatter coastal slope. The increasing demand in the water requirements apparently calls for an effective management of the still available groundwater resources in the island as the on-going changes in the groundwater storage of the aquifer has already lead to the apparent deterioration in the quality (saline intrusion) of pumped water because of the reported localized over-abstraction of groundwater in some areas, particularly in the southern section of the island. The main current source for domestic and industrial supply of the island is groundwater through wells and from desalination plants (coastal wells) by private owners for bulk selling. The rest comes from importation of water from the mainland Cebu. Water in MCIA is both being provided by Metro Cebu Water District (MCWD) and Mactan Rock.

Seismicity. In Cebu Province, most parts of the mainland are seismically quiescent compared to the rest of the Visayas and entire Philippine Archipelago. Existing seismicity records show no sizable earthquake (magnitude ≥ 5) originating within Cebu from 1907 to present. There is no major active earthquake faults have, heretofore been identified in the island.

Terrestrial Ecology. Generally, the Project area is highly built-up with sparse vegetation, primarily for ornamental and/or orchard purposes. The vegetation present is a combination of shrubs, herbs, palms, vines, ferns, and scattered trees. Open spaces are mostly paved for access roads and parking areas with some occupied by grasses and shrubs.

Leading in the list of terrestrial flora species, in terms of their population, include Big-Leaf Mahogany, Neem Tree, Ipil-ipil, Gmelina, and Agoho. Trees are dominant in the study area primarily to provide shade for humans working in the area as well as to important structural and transportation facilities inside MCIA concession. Palms, shrubs, ferns, and other grasses are planted for their aesthetic values. There is no endemic species in the study area since most of the species recorded are common types of species and can be found all over the country.

In the study area, 2 of the species found were listed under DENR DAO 2007-01 or the “National List of Philippine Plants”. It is also noteworthy that these 2 species are included in the IUCN or CITE Appendix II. The two species are Smooth Narra (*Pterocarpus indicus* spp. *Indicus*) and Manila Palm (*Adonidiamerrillii*). Narra and Manila Palm are considered to be Vulnerable and Near Threatened, respectively.

Oceanography. The nearest water body to MCIA, which also receives the storm drains from the airport, is the Mactan Bay. The current patterns along the coastal region of Mactan Bay are influenced by the tidal force and wind direction with wind

speed ranging 2-3 m/s. Current patterns can also be influenced by the temperature gradient through convection below sea surface.

Water Quality. The storm water and STP effluent discharges of MCIA go mainly to Mactan Bay, fronting Barangay Ibo. Baseline analysis of the water quality at Mactan Bay reveals that most of the parameters are within the standard limits for Class SC water of DENR, except for Total Coliform, Phosphate and Copper.

Climate and Meteorology. The climate of Mactan Island belongs to the Type IV of the Modified Coronas Classification of Philippine Climate, which is relatively dry from November to April and relatively wet for the rest of the year. Relying on information from the PAG-ASA and the MCIA, Mactan's average annual rainfall is 1,547 millimeters. The entire island is generally remote from the normal and usual path of tropical cyclones originating from the Pacific Ocean.

Wind Data. Based on meteorological data from PAG-ASA, there are two prevailing wind directions in the area. One direction is the northeast monsoon, which generally blows from November to February. The other is the southwest monsoon, from May to September.

Ambient Air Quality. The results of the baseline ambient air quality survey show that the air quality level (in terms of PM₁₀, TSP, NO₂, SO₂ and CO), in all sampled areas, are within the permissible levels of the DENR standards.

Ambient Noise. Results of the baseline data survey reveal that all of the background noise around the vicinity of MCIA are within the NPCC noise level standards assuming the green/parks and recreation buffer zone surrounding the airport is Class C.

Land area. The area of Lapu-Lapu City is around 6,400 hectares. Lapu-Lapu City is a first class and a highly urbanized city in the province of Cebu. It occupies most of the Mactan Island, and also covers the Olango Island group and a few islets. The city is also part of the Cebu Metropolitan Area.

Population. Lapu-Lapu city has a population of 350,467 (in 2010). The increase in the population count from 2000 to 2010 is translated to an average annual population growth rate (PGR) of 4.91 percent.

Economic Situation of the City. Lapu-Lapu City is a first class and highly urbanized city. Its income is derived from local and external sources. The local sources comprise of tax revenues such as property transfer tax, real property tax, and local taxes and non-tax revenues from regulatory fees, business and service income, and other income/receipts. The external sources of income are share from national tax collection (IRA), other share from national tax collection such as share from economic zones and share from national wealth, and share from government owned and controlled corporations (GOCCs) like PAGCOR and PCSO.

Labor force. Lapu-Lapu City recorded an estimated labor force of 184,232 equivalent to 63% of the total population. By the end of the planning period of City's labor force is projected to reach 334,844.

Livelihood. The main industries serving as a source of livelihood in the area include farming, fishing and manufacturing industries. Lapu-Lapu City also takes pride in its crafts and cottage Industries such as guitar making, lime manufacturing, metalworks, furniture making, shellcrafts and others.

Indigenous People. Lapu-Lapu City is a highly urbanized area and there are no indigenous peoples, ethnic groups or tribal groups in the project area that fall under the category of indigenous peoples as described in ADB's SPS Safeguards Requirement 3: Indigenous Peoples.

Health. Based on the Lapu-Lapu City Profile of 2013, there are two government-run hospitals in Lapu-Lapu City. The Lapu-Lapu City Hospital, located at Barangay Gun-ob which is secondary that provides definitive care in the four (4) basic specialties, namely: medicine, surgery, obstetrics, gynecology and pediatrics.

Transportation/Traffic Situation. Based on the Lapu-Lapu City Profile, the total road length of Lapu-Lapu City is 115.757 kilometers and almost 72% are barangay roads. However, most of its roads (52%) are still paved with gravel and only about 7% are concrete. The short Mactan-Mandaue Bridge connects Lapu-Lapu and the rest of Mactan Island with Mandaue on Cebu Island.

6. Environmental and Social Audit Findings and Areas of Concerns

Environmental, health and safety policy. As far as operation and maintenance of the passenger terminals are concerned, there are no expected overlaps in responsibilities between MCIAA and GMCAC. Availability of management plans and system manuals are discussed in the following sections.

- a. *Environmental management plan.* MCIA did not have an environmental management plan (EMP) since the start of its operation. As part of the commitment of GMCAC to ensure that the operation of the terminals will not cause any significant environmental issues, a third party contractor (SGS Philippines) was commissioned GMCAC to prepare the EMP which will be implemented at the start of the concession.
- b. *Safety management system (SMS) manual.* MCIAA has prepared a SMS manual in January 2011 for the existing terminal, which contains MCIAA's safety policies and objectives, including the company's safety commitment, corporate roles in the SMS, and documentation of aspects concerning safety. The manual provides guidelines on Safety Risk Management, which includes a process on hazard identification, and documentation of hazards and incidents. The manual also details the promotion of safety within the organization. In July 2014, GMCAC issued a new SMS manual, which has minor differences with the earlier SMS (e.g. safety risk management for Aprons). The new SMS ensures conformity with the Civil Aviation Act of 2007 and Doc. 9859 AN/474 Safety Management Manual (SMM) of ICAO.

Emergency preparedness and response plan. MCIAA has an emergency response manual that is maintained by the Crash Fire and Rescue Division, and the Medical Division. The emergency plan contains detailed emergency response procedures on various emergency cases.

Environmental clearance and other pertinent clearances. The existing facility does not have an environmental compliance certificate (ECC) since the project was established prior to the implementation of the Environmental Impact Statement System in the Philippines. The STP of MCIA was issued an ECC by the Environmental Management Bureau (EMB) Region 7, and is kept and maintained by the Environment Management and Safety Office of MCIAA. Other pertinent clearances that are being maintained are as follows: 1) Discharge permit for the Sewage Treatment Plant (STP), and 2) Permit to Operate Air Pollution Source Equipment.

Environmental Monitoring. A quarterly self-monitoring report (QSMR) for the STP is regularly prepared by MCIAA in compliance to the requirements of EMB based on the STP's ECC terms and conditions.

The existing terminal does not have an environmental monitoring plan, but upon the start of the Concession, GMCAC shall apply the environmental monitoring plan detailed in as stipulated in the new EMP.

Water quality. Water discharge from the sewage treatment plant is being monitored on a regular basis, at least once every month. Previous laboratory analyses show that all parameters monitored are within the DENR permissible level except for COD, which sometimes exceed the effluent standard. To ensure that COD will comply in future monitoring, MCIAA will make sure that all the equipment are well maintained.

Ambient Air Quality. MCIAA, at present, does not have an ambient air quality monitoring plan for the existing terminal, since an EMP was not prepared since the beginning of the terminal's operation.

For the purpose of obtaining a baseline for the ambient air quality, sampling stations were established within MCIA (2 stations), and along the airport's immediate vicinity (3 sampling stations were situated within the nearby residential, commercial, and institutional facilities.

Ecology. There are no critical habitats within the Project area. The Project site has been well developed to cater to the busy activity of incoming and outgoing traffic of planes and passengers. Trees on the landside are managed and maintained for aesthetic purposes.

Solid wastes management (non-hazardous wastes). In the existing terminal, it is the responsibility of each concessionaire to regularly bring their own segregated solid wastes (garbage, trash etc.) directly to the airport's solid wastes staging area. From the staging area, a private hauler collects all the solid wastes, and then transferred to a Materials Recovery Facility. Recyclable materials are recovered and sold to recycling facilities, while materials with high calorific values (such as petroleum-based products) are sent to a cement- processing plant as refuse-derived-fuels (RDF). Biodegradable materials are sent to a composting facility owned by the hauler.

Upon the start of the GMCAC-MCIAA Concession, the management of solid wastes shall be under GMCAC's responsibility.

Hazardous wastes management. Training and awareness campaign on hazardous waste management has been provided to all concerned employees of MCIAA. A temporary storage area for hazardous wastes has been established, but plans for disposal and treatment of stored hazardous wastes (e.g. busted fluorescent lamps) are already under way.

Ambient noise level monitoring. The monitoring of ambient noise level has never been carried out outside the premises of the existing terminal. The environmental monitoring plan for the airport was not available since the start of its operation. Based on the scoping meeting with DENR-EMB Region 7 (for the proposed expansion and rehabilitation of MCIA), the environmental management and monitoring plans for the existing airport must be prepared as part of the EIA Study for ECC application.

Land acquisition and involuntary resettlement. The new terminal and other facilities will be built within the project boundary given to GMCAC by MCIAA. As of today, encroachments or claims by private individuals on these lands are not found. Also as of now no outstanding issues or claims on land on which existing facilities to be renovated are located exist. There are no other project facilities which will require any further land acquisition, land purchase or ROW acquisition or clearance.

Indigenous peoples. The Project is located in Lapu Lapu City, a highly urbanized city where there are no indigenous peoples, ethnic groups or tribal groups that fall under the category of indigenous peoples as described in ADB's SPS Safeguards Requirement 3: Indigenous Peoples.

Labor, working conditions and occupational health and safety. There are 94 MCIAA ground operations employees who are directly affected by the privatization of the terminal operations and have been offered positions at GMCAC. Out of 94, 46 accepted the offer. Those who did not accept will continue to be employed by MCIAA, hence, there are no retrenchment associated with GMCAC taking over ground operations of the airport. The HR Policies of GMCAC are compliant with the IFC Performance Standard 2 on Labor and Working Conditions. The GMCAC HR policies promote sound worker-management relationship by implementing its grievance mechanism, regular coordination meetings, performance recognition through awards system, healthy working conditions as embodied in the Work Environment Policy and protection of the right of employees. Performance incentives are very well laid out with the objective of increasing employees' efficiency levels. Capability upgrading programs are also lined up to help the employees attain their career goals. Furthermore, the benefits for employees extend to their family members, particularly education benefits for their children.

On Occupational Health and Safety -- The Occupational Safety and Health Policy of GMCAC shall demonstrate its commitment to promote high standard of safety and health to prevent personal injury or ill health resulting from work activities for the duration of the project. The project aims at zero dangerous occurrences. The existing health and safety management procedures are contained in the MCIA Safety Management System Manual.

Work Environment Measurement (WEM). WEM is performed regularly in various areas of the existing terminal as a means to monitor the safety of employees against the potential health hazards in their work place. A sample WEM report performed in July 2012, shows six (6) parameters (i.e. dust, carbon dioxide, noise measurement, illumination, heat and general ventilation) measured in six (6) different locations within the vicinity of MCIA. The methods used in the measurement and analysis of these parameters conform to the Occupational, Safety and Health Standards of the Department of Labor and Employment (DOLE).

Gender and Development. There is a difference in the distribution of employees in terms of gender. Of the 94 employees nominated by MCIAA for transfer to GMCAC, only 20% are female. Of the 46 employees who accepted the job offer, only 11% are female. Recent data on employees' gender obtained from GMCAC indicates that 42% of its total manpower requirement are females, showing a significant increase in the female-male ratio of employees as compared to the MCIAA records on female-male ratio. This is aligned with GMCAC's goal of providing "equal opportunities for employment" of men and women.

Pertaining to gender and development, it is noted that HR Policy of GMCAC covers procedures dealing with sexual harassment.

Concerning Concessionaire's design of the airport facilities, the following features are deemed beneficial to women, children and persons with disability.

- Covered walkways from car park to terminal buildings
- Expansion of terminal areas to facilitate movement of disabled persons especially those who move in wheelchairs
- Increase in number of toilet facilities in strategic location and expansion of toilet floor area, and assigning separate toilets for women and disabled persons.
- Increase in seating facilities in check-in halls
- Expansion and improvement of welcome and send-off areas to accommodate non-passengers

While the detailed design of airport facilities is in progress, the following gender sensitive features shall be considered during detailed design stage:

- Special facilities that cater to sensitive needs of women such as baby changing room, breastfeeding room, rest area suitable to persons with disability
- Separate queue and security screening for male and female
- Screening of female passengers by female security personnel only
- Provision for anti-trafficking office for women and children

Cultural heritage. There is no existing cultural heritage site in the project area. As confirmed with the Lapu-Lapu City Tourism Office, none of the affected military installations inside the Benito Ebuen airbase are considered cultural property, or declared as built heritage by the National Museum or National Historical Institute as defined in Republic Act No. 10066.

Security arrangements. MCIAA, through its Emergency and Security Services Department ESSD, is responsible for the general airport security such as airside security, security for anti-sabotage, security for anti-hijacking, and maintenance of law and order.

Consultationwithstakeholders.

Table 1 Summary of the preliminary consultation meeting

Stakeholder Participants	Issues Raised	GMCAC Reaction/ Action to Take
MCIAA officials	Narrow vehicular lanes for T1 arrival passengers.	Preliminary calculations show that capacity is adequate, but GMCAC shall validate during the Detailed Design.
	Door Frame Metal Detector (DFMDs) at T2 entrance might obstruct passenger movement with trolleys.	Requirements for DFMDs in T2 when the terminal is equipped with in-line screening will be discussed with OTS during the Detailed Design phase.
	Adequacy of GSE area availability	Adequate area is being planned.
	There is a requirement for baby care room at departure level of T2.	GMCAC shall consider this requirement in the Detailed Design.
Customs Officials	For T2, a quarantine counter facility is required in the check-in hall to	GMCAC confirmed that a space will be provided in the form of a cubicle.

Stakeholder Participants	Issues Raised	GMCAC Reaction/ Action to Take
	enable the passengers to declare forex even before they check-in. Provision for an Exclusion Room and Inter-Line baggage room in the office at T2. Need for CCTV cameras at the Customs Zone	GMCA clarified that the office space provided is large and internal partitions created can be used to divide the space as required. GMCAC has clarified that this has been noted and will be taken up during Detailed Design stage.
Immigration Officials	The immigration counters are in a bad condition including the hardware/software. Overall the immigration facility has only 6 passport readers in both arrival and departure levels. Additional Immigration manpower at Cebu airport is being requested. Immigration officials have expressed need for a few CCTV cameras at the Immigration Zone at T2 to profile the passengers. Immigration requested for Suspect Holding Rooms at Departure and Arrival levels.	GMCAC clarified that they will be provided with hardware to improve the passenger processing rate. Immigration confirmed that the average processing time achievable is 45 seconds. GMCAC clarified that this has been noted and will be discussed with them during Detailed Design stage. GMCAC clarified that this can be accommodated in the areas assigned to them.
Security Officials	On the issue of exemption from security screening in the VIP lounge, OTS clarified that only the President and Vice-President are exempted from screening.	

Table 2 Summary of the First small group consultation meeting

Topic	Issues/Remarks	Recommendations
1. Project Awareness	The participants disclosed that they did not get a clear picture of	The participants recommended a continuing project orientation

Topic	Issues/Remarks	Recommendations
	the Project from the management of MCIAA. It was a simple announcement that a new management shall take over in the operations of MCIA. • They obtained more thorough information from the orientation seminars conducted by GMCAC • Other sources of information they identified were co-employees; newspaper; and internet.	among the MCIA staff including those who are not transferring to the new management outfit for better understanding of delineation of tasks and responsibilities in the entire airport operations.
2. Perceived Impacts of the Project	• The top-ranking perceived impact of the project is improvement in the airport operations and management towards achieving international standards. • The expansion or airport operations shall contribute to the city's economic growth. • A direct positive impact on the employees who accepted GMCAC job offer is the waiver of probationary status under the new management/ employer. • Also for those who will transfer, they anticipate more exposure, training, and professional growth to achieve better performance level in their respective jobs. They claimed that in the present set up, they are performing beyond their respective position and job description. • A "negative" impact mentioned by the participants is the potential increase in terminal fees. Mr. Sidhar Jayati expressed that GMCAC shall focus first on the necessary improvement in services and facilities before gradually increasing the terminal fees. • For those who accepted the job offer, a direct negative impact is their waiver of government employment benefits.	• Recommendation to change INFORMATION counter to CUSTOMER SERVICE. • Provide more informative materials especially for tourist passengers. • GMCAC to re-classify positions and clarify respective job description. • GMCAC to study the feasibility of terminal fees charged to credit cards. They indicated frequent cases of foreign passengers who are not aware of terminal fees requirement and have no ready cash upon leaving.

Second meeting

A meeting was held with the Chief Reinvention Officer of District 32, the holder of master franchise of commercial operations in the domestic and international airports. In the domestic airport, District 32 operates 65% of the stalls while 35% are allocated

to sub-lessees. In the international airport, they operate almost 80% of the stalls and only 20% are operated by sub-lessees.

The following were mentioned as some advantages of having a master franchise holder as follows:

- Zoning and classification of business stalls prevent unnecessary competition among stall operators. Stalls of the same category are limited and located strategically to avoid over supply of similar items scattered in different business areas. This strategy enables the passengers to find easily what they want to buy given their limited time for shopping.
- Price control among sub-lessees can attract passengers to spend more.
- The master franchise holder, District 32, aims to showcase Cebu culture and promote products of community or local producers in the different stalls that they operate.

Highlights of the Key Informants' Interview. Those interviewed have heard about the Project less than six months ago. The leading sources of information about the Project are local media/news and unofficial sources like friends, neighbors, and relatives. Their most common concern is getting updates and transparent information about the Project. Generally perceived beneficial impacts are a) employment opportunities for local residents; b) increase in city's revenue from tourist influx, local and foreign; and c) taking pride in having a world-class airport.

Another consultation was held last 26 November 2014 at Waterfront Hotel. There were 48 participants/ representatives from the local government offices, both city and barangay levels, homeowners' association, women and elderly, and educational institutions.

7. Gaps analysis and Corrective Action Plans

Environment Component

Based on the documented procedures, policies and records that were provided by GMCAC and MCIAA, and the information obtained from site inspection of MCIA facilities, the following gaps have been identified, and appropriate corrective actions are recommended.

- a) There is no environmental management plan and environmental compliance certificate for the existing terminal.

Corrective Action: GMCAC will prepare and EIA report and apply for an ECC that will cover both the existing and the new terminals.

- b) The effluent water quality of the STP exceeds the water quality standards (for Class SC marine water) in terms of the Chemical Oxygen Demand (COD).

Corrective Action: The damaged aerator must be fixed or replaced, and proper maintenance of all the equipment in STP must be regularly monitored. GMCAC will assist MCIA in the monitoring of the STP operations and maintenance, and independently monitor the water quality parameters of the STP effluent to ensure the facility's compliance to the ECC.

- c) There is no clear procedure or guideline in the disposal of hazardous wastes.

Corrective Action: GMCAC shall provide for the temporary storage of future hazardous wastes that will come from both Terminals 1 and 2. Accredited third party contractor(s) shall be engaged to regularly collect hazardous wastes generated by the two terminals. An environmental officer shall be assigned to monitor the treatment and disposal of these wastes.

- d) There is no monitoring of ambient noise levels in the communities near the airport.

Corrective Action: ambient noise monitoring stations shall be established by MCIAA in joint support with GMCAC. Creation of airport policies to regulate the noises coming from arriving and departing planes may be established by MCIAA upon recommendation of the MCIA Noise Management Committee. Trees planted along the perimeter of the airport may buffer some of the noise that could affect the nearby communities. Awareness program on the impacts of noise may be carried out in heavily affected areas to encourage the development of noise reducing measures, e.g. PPEs, sound proofing walls and windows.

- e) Solid Wastes are exposed to weather elements and domestic animals at the staging area.

Corrective Action: Immediate replacement of the compartment gates and installation of roofs at the staging area will help prevent the exposure of the disposed garbage/ trash. Separate secured (with enclosure) containers may also be used for certain types of recyclable wastes (e.g. papers, cans, petroleum-based food containers etc.)

- f) GMCAC does not have a Grievance Redress Mechanism to cater to communities' grievances and complaints that are directly related to the project.

Corrective Action: GMCAC needs to immediately put in place a grievance mechanism prior to start of project construction. It is proposed that GMCAC set up an office to function as a Grievance Redress Committee (GRC). The GRC shall be composed of GMCAC officers and technical staff, and MCIAA officer-representative.

Social Component.

- a) Insufficiency of information campaign about the Project particularly within the city where the Project is located.

Corrective Action Plan: There should be an effective information, education, and communication (IEC) plan to be formulated by GMCAC and disseminated to the various sectors of the city like LGUs at the city and barangay levels. There are several effective ways of disseminating information that can reach the institutions concerned as well as the barangay constituents: a) press releases; b) local tv news and occasional talk shows; c) memorandum circulars to concerned offices of the government and private sector.

- b) GMCAC's Human Resource Policy Manual lacks the section that specifically pertains to wages, salaries and other compensation benefits. Although their Human Resources Policies are generally employees' welfare oriented, there are no concrete information on employees' description of duties and responsibilities,

salary classification and detailed employee benefits that will be provided within the scope of private employment under the rules and regulations of the Social Security System. This gap particularly surfaced during the small consultation with MCIAA employees who did not accept the job offer from GMCAC. There is an element of uncertainty in their decision making process because of the absence of more specific policies pertaining to wages, salaries and benefits of employees.

Corrective Action Plan: GMCAC should hasten the market compensation study assigned to an independent consultant Tower Watson and align remuneration and benefit- schemes with the mandates of the national labor law, requirements of the Social Security System and the Department of Labor and Employment. The market compensation study is expected to be completed prior to start of construction.

8. Environmental Impact Assessment and Mitigation Measures

Noise Impact

a. Construction Phase

The greatest noise impact of construction activities in the airport will most likely be associated with the movements of heavy equipment and the transport of construction materials. Since the construction activities in T2, apron, and landside facilities will happen simultaneously with the renovation and operation of T1, the current baseline levels are expected to further increase. Impacts of the construction noise however are anticipated to be low in magnitude, localized and temporary. The delivery of construction materials will contribute to the increase in noise traffic within the area. This however is anticipated to be minimal since the materials will be transported via major thoroughfares and done in phases.

Noise impacts will be mitigated by minimizing the construction activities between 10PM to 5AM and by requiring construction equipment and trucks to be well maintained, including the appropriate use of mufflers. The noise generated from the use of heavy equipment and high noise producing operation will be restricted within the project boundary. During the renovation of T1, passenger traffic inside the building will be designed in such a way that intense noise generating activities will be far from the people in transit.

b. Operational Phase

During the operational phase, the major source of noise will be due to the take-off and landing of aircrafts at the runway. It is expected that additional aircraft flights will further increase the noise levels within the area. In addition, ground service equipment (GSE), auxiliary power units (APU), and landside vehicles will all contribute to the ground noise of the airport.

Using INM Version 7.0 to compute for the noise contours surrounding the MCIA, it was found that a small number of communities within Barangay, Basak are exposed to 65 and higher DNL values. The Federal Aviation Administration (FAA) has issued a guideline setting 65 DNL as the maximum threshold noise level compatible with residential land use. During noise monitoring conducted, it was found out that the areas projected to be within 65 to 70 DNL contour lines have measured values below 60 DNL. Since the noise model considered flight frequencies within the peak season

as the annual daily average, and the monitoring was conducted at the onset of the peak season, it was expected that the measured values to be lower than the model. In addition, the noise model is found useful in providing a conservative estimate of the noise impacts surrounding the airport.

Projection for 2024 peak season shows that the 65 DNL contour line will further widen covering more residential communities, and extending from Barangay Basak to a small portion of Barangay Marigodon.

In 2013 the International Civil Aviation Organization (ICAO), aware of the worldwide expansion of local airports, issued a recommending guideline to member states specifying the need for new quieter aircrafts. This guideline targets 2017 as the deadline for new large civil aircraft types to be at least 7 EPNdB (Effective Perceived Noise in Decibels) quieter than the current Chapter 4 standard. By 2020, this guideline will also be applicable to smaller aircraft types of less than 55 tonnes. With this development, it is expected that by 2020 (or 2017 the earliest) newer aircrafts will come with lesser noise generation, and hence reduced noise levels in the airport community. Hence, the actual noise level for 2024 is expected to be less than the projected level upon applicability of this guideline.

This noise reduction at source strategy, the use of quieter aircrafts, is based on the 1st Principle of ICAO “balanced approach” on noise reduction. The other “balanced approach” principles are: land-use planning and management, noise abatement operational procedures, and aircraft operating restrictions.

These other measures will be discussed with MCIAA, airline operators, Lapu-Lapu City Planning and Development Office (CPDO) and other appropriate bodies for a more concerted effort in reducing the airport noise.

GMCAC will recommend to MCIA to create an MCIA Noise Management Committee (MNMC), composed of MCIAA, GMCAC, airline operators, Lapu-Lapu City LGU, Philippine Air Force (PAF), flight training schools, the airport Tenant’s Association, and community representatives. This will be a subcommittee of the MCIA grievance committee, and will address issue related to noise concerns.

For the ground noise, all sources of noise emissions (landside vehicles, etc.) will be properly operated and maintained, and will be used at appropriate operating hours. When applicable, appropriate noise control device/s such as mufflers and sound barriers will be installed.

Planting of trees and/or provision of adequate barriers may be worked out to further mitigate the propagation of noise from aircraft and ground operations.

Landscape Character

Earthworks and site clearance operations during construction phase will have a temporary and localized impact to the landscape character of the area. Appropriate wall screens will be used to envelope all development sites to mitigate the visual impact of construction. During the operational phase, the project area will be visually enhanced with the well-designed new terminal building and of the appealing structures of the nearby Airport Village Mall at the landside.

For mitigation, specific areas within the airport will be landscaped according to landscape engineering and architectural design befitting a resort-type airport.

Seismic Design

The project will not have a significant impact to the seismic character of the surroundings since MCIA is already a built-up area with an almost flat terrain, and the buildings to be constructed will be considered low-rise.

As mitigation, the new terminal building (T2) will be constructed with due consideration of the seismic activities of the area following the National Building Code of the Philippines and of the AASHTO (American Association of State Highway and Transportation Officials) Standards to withstand any earthquake events.

Biodiversity

The impact of the project to the biodiversity of the area is low as the allotted area for expansion houses a very limited tree cover, therefore impacts to all other life forms will be minimal.

For mitigation, DENR permits will be obtained by GMCAC for all trees that will be removed, either by tree cutting or earth-balling. Earth-balled trees will be transplanted according to the specifications detailed out in the DENR Memorandum entitled "Guidelines and Procedures on the Planting, Maintenance and Removal of Trees in Urban Areas and in Areas Affected by Government Infrastructure Projects." There will be areas in the airport where biodiversity will be promoted following the local resort-theme of the Project. In landscape planting around the site, mature, and a mix of native and non-native trees, as well as shrub species, will be used, where appropriate, to provide opportunities for biodiversity to flourish in the area.

Groundwater

The use, transport, and storage of fuels, motor oils, and chemical solvents during construction and operation of airport pose a negative impact to the groundwater. If these toxic substances are not stored or handled properly, they can contaminate the land surface. From the soil, these substances will eventually seep down into the groundwater and contaminate it.

Aside from groundwater contamination, construction and operational activities in the airport will require significant volumes of water. It is projected that by 2017, both airport terminals will be requiring approximately 1,032 m³ per day of water, and discharging 826 m³ per day of waste water. Disposal of wastewater can have a considerable impact to the groundwater if this is not properly addressed. To mitigate the impacts to the groundwater, all fuel, motor oil, and chemical solvents must be sited on an impervious base within a bund and properly secured. The base and bund walls must be impermeable to the material stored. Leaking or empty containers of these materials must be removed from the site and properly disposed of by a DENR-

accredited third party contractor. Washings from concrete mixers, paint or paint utensils will not be allowed to flow into the ground.

Wastewater coming from the airport will be treated by MCIAA as stipulated under the Concession Agreement.

Surface water

Construction activities within the airport will have an eventual impact to Mactan Bay in the form of sediments reaching the built-up channels and then the Mactan Bay. Sediment runoff can come from exposed ground surfaces, stockpiles of excavated areas, and concrete and cement products attached to construction tools and equipment.

To mitigate contamination of Mactan Bay brought about by sediment transport from surface run-off, sediment traps or basins will be provided to channel storm water from the work areas and to diminish the energy of the storm water flow.

Ambient Air Quality

Construction equipment and vehicles emit air pollutants such as NO_x, SO_x, and Particulate Matters (PM) that can be both harmful to health and to the environment. Vehicles passing on dry and windy areas can generate dust and increase the ambient Total Suspended Solids (TSP). Demolition of apron, MIP, and paved areas can increase the ambient TSP due to the release of fine debris particles and the increase in exposed (un-vegetated) ground areas.

The air quality modeling of aircraft emissions were carried out using the AERMOD air quality dispersion model, and the emission factors of UK-NAEI and/or USEPA emission factors for SO₂, NO₂, PM₁₀ and PM_{2.5}.

Based on the results of the air quality model for 2014, the ground level concentrations of the emissions coming from the aircrafts during LTO will not exceed the ambient air quality standards of the DENR. The results of the ambient air quality baseline survey, carried out in September 2014, consistently shows that the air quality along the sampling stations do not exceed DENR's permissible levels. For 2024, the ground level will still not exceed the ambient air quality standards of the DENR. This indicates that the proposed expansion of the airport will not significantly contribute to air pollution along the surrounding communities of MCIA.

As for land transportation emissions, the expected concentration of pollutants emitted, based on the projected increase in the number of vehicles, will generally not contribute significantly in the overall ambient pollution concentrations.

To mitigate the impacts of air pollutants, vehicles and equipment to be used must first pass the mandatory emissions testing based on DENR/DOTC standards. During construction areas considered vulnerable to dust generation will be sprayed with uncontaminated water on a periodic basis to suppress proliferation of dust particles.

Climate Change Impact

Mactan Island is one of the few areas in the Philippines assessed to have a low impact risk to typhoons. In the past 5 years, two typhoons went over Cebu: Typhoon Bopha in December 2012, and Typhoon Haiyan in November 2013, two of the

Philippines' worst storms in recent history. In both events, no significant damage has been reported in MCIA, or in any of its immediate surroundings.

Mactan Island is at low risk when it comes to the projected change in rainfall. However, when the topography of the area is considered, flood simulation suggests that majority of the airport area is at moderate risk when it comes to flooding, with a few segments within the airport at high risk. Overall, MCIA is assessed to face low to moderate risks.

To mitigate the risks associated with climate change events and natural disasters, GMCAC will ensure that the final design of T2 will be storm resilient.

Health and Safety hazards

Construction activities within the airport have the potential to negatively affect the health and safety of both workers and passengers. Unsafe activities and improper use of tools and equipment may result to accidents. People will also be exposed to high noise, vibrations, and air pollution while construction and renovation are on-going. There is also a possibility that fire, explosion, or chemical spillage will happen due to the presence of fuel storage area.

To mitigate the impacts of these hazards, construction workers will be given the necessary training in Health and Safety applicable to their respective line of work. They will be provided the necessary PPEs (Proper Protective Equipment) such as ear muffs, safety shoes, masks, and goggles. Baseline noise and air quality will be determined and monitored regularly to determine exposure levels of pollution to workers during the construction period. Fire fighting plan will be developed and fire fighting facilities will be provided in the fuel storage area to mitigate the hazards associated with the presence of the fuel storage area. To mitigate the impact to health and safety of airport staff and passengers during the operational phase, all buildings (T1, T2, Airport Village Mall, and support facilities) will be designed in such a way that the impact of fire, earthquake, and extreme weather events will be minimized. Proper evacuation plan during emergencies will be developed for every building.

Energy Efficiency

Based on the Visayas Power Supply-Demand Outlook for 2012 to 2030, the Visayan region has a peak demand growth rate of 4.45%. If the demand is projected and compared against the future power supply in 2024, the estimates indicate that there will be power shortage in the whole of the Visayan region.

One of the best ways to reduce its environmental impact is by reducing its overall energy consumption. GMCAC is planning to apply for at least a Leadership in Energy and Environmental Design (LEED) Silver Certification Rating for the new Terminal. The certification follows the LEED-US Green Building Rating System.

Road Network Traffic

Each lane of the access roads leading towards MCIA has an estimated capacity of 1400 to 1500 vehicles per hour. Based on projections the maximum capacity of the road lanes will not be exceeded, thus the impact of the expansion of MCIA on the road network capacity will not be significant, even in the long-term. However, measures to ensure and maintain the efficiency of traffic flow, especially in all intersections, must be put in place.

As a mitigation measure, GMCAC may regularly coordinate and discuss with the traffic authority of Lapu-Lapu City to ensure that the traffic management plan for roads leading to and exiting from the airport are updated. GMCAC may also collaborate with MCIAA in formulating airport landside policies to limit the loading and unloading time of passenger vehicles at the arrival and departure areas. Parking of vehicles in all roadways should not be allowed, and all road obstructions must be removed.

Domestic Water Discharge

The expansion of the passenger terminal would entail increase in water demand, which in turn would increase the domestic water discharge. The existing STP has a capacity of 900 m³ /day, and the present discharge of the existing terminal is less than 300 m³ /day. By 2017 the total daily water discharge rate would be 825.6 m³/day, which is already near the maximum design capacity of the STP. By 2022, the daily water discharge rate would increase to 1060 m³/day, an amount way beyond the capacity of the existing STP.

To mitigate the impacts, MCIAA has an obligation, to enhance the capacity of the existing STP. The new STP shall be in place well before the existing STP reach its peak capacity.

Greenhouse Gases (GHGs)

The planned expansion of MCIA is predicted to contribute to the increase of GHGs emitted to the environment due to airport-related activities. To assess the environmental impacts of the planned expansion of airport operations at the MCIA the magnitudes of CO₂, CH₄ and N₂O emissions that will be potentially released were calculated using IPCC methods. The aviation industry has been identified as one of the major sources of greenhouse gases that significantly contribute to global warming. Airport-specific emissions are important since these directly contribute to the local air quality and have the potential to affect climate at the global level. The airport was evaluated based on four sources of emissions:

- a. Source 1 Emissions: Emissions due to ground access modes
- b. Source 2 Emissions: Emissions due to electrical energy consumption for airport operations
- c. Source 3 Emission: Emissions due to landing, take-off, taxiing on-ground aircraft (LTO)
- d. Source 4 Emissions: Emissions due to ground service equipment

Table 3 shows the summary of the total equivalent CO₂ emissions from the four sources considered in the analysis. The results show that LTOs have the highest contribution (from 75 to 82%) which is consistent with previous reports.

Table 3 The annual CO₂e produced from the four sources of airport-specific GHG emissions from years 2014 – 2039

Year	CO ₂ e (metric tons)				Total
	*Source 1	*Source 2	*Source 3	*Source 4	
2014	1,172.89	24,986.35	85,600.27	1,065.82	112,825
2024	2,636.67	54,991.27	182,059.24	2,334.00	242,021
2039	4,730.30	65,610.05	354,597.60	4,451.00	429,389
*Note: Source 1 – Ground access vehicles; Source 2 – Electricity consumption for airport terminal operations;					

	CO ₂ e (metric tons)				
Year	*Source 1	*Source 2	*Source 3	*Source 4	Total
Source 3 – Aircraft Landing and Take-off (LTO) cycles; Source 4 – Ground service vehicles					

As mitigation for Source 1, MCIAA and GMCAC can regulate the entry of taxis into the airport premises, e.g. vehicles operating at substandard conditions will not be allowed to enter. Private vehicles on the other hand must be strictly discouraged from lingering in the airport premises with their engines turned on. The MCIA should explore partnerships with mass transport companies to further lower the GHG emissions at the airport.

For Source 2, to control or minimize the GHG emissions due to electricity consumption, the MCIA should implement power-saving guidelines and invest in energy-efficient equipment and devices.

For Source 3, MCIAA must optimize the duration of the LTO cycle for every aircraft to minimize the corresponding GHG emissions. It can also impose penalties or levy environmental taxes to operators based on the emission factors specific to the aircraft model.

For Source 4, lower GHG emissions may be achieved by utilizing a fleet of vehicles with higher fuel economies. These vehicles must also be selected based on the emission factors of its fuel requirement such that lower GHGs will be produced. Proper vehicle maintenance should also be strictly observed.

Other Airside Operations

One of the significant hazards associated with airport operation is from fuel storage and spillage which MCIAA deals with. The presence of fuel tanks and depots within the airport premises poses incalculable risks to health, safety, and environment due to possible fire, explosion, and fuel spillage.

MCIAA currently addresses this with a Letter of Agreement between MCIAA and all fuel service providers. Contained in the agreement is the Fuelling and Spill Control Procedures covering Aircraft Fuelling, Spill Prevention, and Spill Control and Clean-up.

9. Summary of Environmental Impact Assessment and Mitigation

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
CONSTRUCTION PHASE			
Construction of Passenger Terminal Building: Terminal 2 (2015-2017)	Hazardous Materials	Paints, solvents, batteries, and fluorescent lamps will be used during the construction phase. Improper use, handling and storage of these may result to health and environmental risks.	All hazardous materials will be stored in a special facility appropriate for hazardous materials. Every type of item will have an MSDS (material safety data sheets) label attached. The facility will be provided with the suitable safety and protection equipment. An environmental officer shall be assigned to monitor the quantity of the generated hazardous wastes, and the performance of the 3rd party contractor to treat and dispose these wastes.
Renovation and Expansion of existing Passenger Terminal Building: Terminal 1 (2015-2018)	Air Quality	- Construction equipment and vehicles emit air pollutants that can be harmful to health and the environment such as CO, NO_x, SO_x, PM₁₀, and PM_{2.5}. - Vehicles passing by dry and windy areas generate dust which can increase the ambient Total Suspended Solids (TSP). - Demolition of apron, MIP, and paved areas can increase the ambient TSP due to the release of fine debris particles and the increase in exposed (un-vegetated) ground areas.	- Vehicles and equipment to be used must first pass mandatory emissions testing based on DENR/DOTC standards. - Areas considered vulnerable to dust – generation will be sprayed with uncontaminated water on a periodic basis.
Complete reconstruction of Terminal 2 Apron (2015-mid 2016)	Noise	Construction activities such as the movement of heavy equipment and the delivery of construction materials to and from the site may cause noise and vibration to the surrounding communities.	- Noise generating activities will be minimized during the night time period (10PM – 5AM). - During the renovation of Terminal 1, passenger traffic inside the building will be designed in such a way that noise will be far from the people in transit. - Delivery of materials will be properly scheduled such that traffic is minimized during night time.
	Surface Water	Sediments reaching surface water via runoff during rainfall events can come from exposed ground surfaces, stockpiles of excavated areas,	Sediment traps / sediment basins / energy dissipating areas will be provided to channel storm water from the work areas and to diminish the

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
		and concrete and cement products attached to construction tools and equipment.	energy of the storm water flow and thereby control the movement of sediments that can affect the quality of the nearby body of water.
	Solid Waste	▪ Solid wastes coming from the construction such as scrap wood, packaging materials, scrap metal, building rubble, gypsum wall board, asphalt, and concrete will be accumulated through time.	▪ A strategic solid waste management plan will be implemented which gives hierarchy to the recycling and reuse of materials. ▪ All building rubble and other suitable organic-free solid wastes will be used as backfill materials. ▪ Waste containers will be placed at specific points for the segregation and collection of solid wastes. Other solid wastes not recycled/reused will be handled and disposed by a third party contractor.
	Hazardous Waste	▪ The use, transport, and storage of fuels, motor oils, and chemical solvents may pose a negative impact to the groundwater. If these toxic substances are not stored or handled properly, they can contaminate the land surface and seep down into the groundwater and contaminate it.	▪ All fuel, motor oil, and chemical solvents must be sited on an impervious base within a suitable bund and properly secured. The base and bund walls must be impermeable to the material stored. Leaking or empty containers of these materials will be removed from the site and properly disposed of by a DENR-accredited third party contractor.
	Terrestrial Biology	▪ A number of trees will be affected in the construction of Terminal 2. Initial tree inventory shows the presence of the following tree species in the area: fire tree, gemelina, bo tree, nara, talisay, mahogany, acacia, agoho, ipil-ipil, and neem.	▪ All trees to be removed/balled will be addressed as per DENR standards.

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
	Public Health and Safety	<u>Construction Phase</u> Construction activities pose a serious impact to public health and safety since there is a high possibility that accidents can occur within and the surrounding construction site. With an impending short-term increase in vehicular traffic, there is a high tendency that vehicular and pedestrian accidents will occur. In addition, this traffic issue will also cause disruptions and delays to the other road users. It also has the potential to damage road infrastructures because of the increase road usage of heavy construction vehicles.	A safety management program will be implemented to reduce the associated risks (such as accidents) in the construction area. There is an on-going vehicular traffic study to address the issues surrounding the impending short-term increase in vehicular traffic. Proper planning and scheduling of the use of heavy construction vehicles will be implemented such that the impact in the volume of traffic, possibility of vehicular accidents, and damage to road infrastructures will be alleviated
	Occupational Health and Safety	Influx of workers from other towns/provinces may increase incidence of communicable diseases. If safety policies will not be observed, there is a high possibility that accidents may occur within and the surrounding construction site.	Contractors to conduct seminar awareness/trainings on communicable diseases. A safety management program will be implemented to reduce construction accidents.
OPERATIONAL PHASE	Hazardous Materials and Wastes	Used batteries, busted fluorescent lamps, and obsolete computers are expected to be generated within the operational phase. Improper disposal of these may result to health and environmental risks.	An environmental officer will be assigned to monitor the quantity of the generated hazardous wastes. Collected wastes will be disposed by a 3 rd party DENR accredited contractor and will be disposed in an appropriate recycling or landfill facility.
	Air Quality	Passenger vehicles going to/leaving the airport emit air pollutants that can be harmful to health and the environment such as CO, NO_x, SO_x, PM₁₀, and PM_{2.5}. Areas considered vulnerable to dust – generation such as un-vegetated areas may increase the ambient TSP.	Trees and shrubs will be planted within the concession agreement boundary according to the landscape engineering design to enhance the airport's air quality. Areas considered vulnerable to dust – generation will be covered with grass according to the airport landscape engineering design and will be sprayed with uncontaminated water on a periodic basis.
	Noise	The major source of noise will be coming from the take-off and landing of aircrafts at the runway and	An MCIA Noise Management Committee (MNMC) will be created, composed of MCIAA, GMCAC, airline

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
		will further increase with the projected growth in aircraft flights. Ground service equipment (GSE), auxiliary power units (APU), and landside vehicles will all also contribute to the ground noise of the airport.	operators, Lapu-Lapu City Planning and Development Office (CPDO), Philippine Air Force (PAF), flight training schools, the airport Tenant's Association, and community representatives Noise reduction strategies will be employed following the ICAO "balanced approach" which are: noise reduction at source (use of quieter aircrafts), land-use planning and management, noise abatement operational procedures, and aircraft operating restrictions. These noise reduction measures will be brought for discussion with MCIAA for appropriate actions and for a more concerted effort in reducing the airport noise ICAO, aware of global expansion of local airports, issued a recommending guideline to member states specifying the need for new quieter aircrafts. This guideline targets 2017 as the deadline for new large civil aircraft types to be at least 7 EPNdB (Effective Perceived Noise in Decibels) quieter than the current Chapter 4 standard. By 2020, this guideline will also be applicable to smaller aircraft types of less than 55 tonnes. With this development, it is expected that by 2020 (or 2017 the earliest) newer aircrafts will come with lesser noise generation, and hence reduced noise levels in the airport community. For the ground noise, all sources of noise emissions (landside vehicles, etc.) will be properly operated and maintained, and will be used at appropriate operating hours. When applicable, appropriate noise control device/s such as mufflers and sound barriers will be installed. Planting of trees and/or provision of adequate barriers may be worked out to further mitigate the propagation of noise from aircraft and ground

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
			operations.
	Water	There is a projected increase in water demand that might be a source of water competition. There is a projected increase in BOD load due to sanitary discharges.	Require a number of water meters in the different sections of the airport terminal buildings and landside facilities to monitor water usage and adopt appropriate water conservation measures. Ensure efficient operation of MCIAA STP by holding periodic meeting/consultation with MCIAA.
	Solid Wastes	There is a projected increase in the quantity of solid wastes with an increase in the number of passengers entering and leaving the airport.	Ensure efficiency and capacity of the private hauler to segregate, recycle, and dispose solid wastes. Promote the 3-R (reuse, reduce, and recycle) concept within the airport.
	Biodiversity	It is expected that the airport will have a low biodiversity value since it is considered a built environment. With the airport expansion, biodiversity may be affected if no mitigating measures will be put in place.	GMCAC and MCIAA will develop a long-term sustainable biodiversity plan that is compatible with the airport operational constraints and commercial development.
	Energy Use	There is a projected increase in the energy demand with an increase in the number of passengers entering and leaving the airport.	GMCAC will strive to commit to the principles of sustainable development by minimizing the environmental impacts of its daily operations through reduction of its overall energy consumption. GMCAC will apply for a LEED (Leadership in Energy and Environmental Design) Silver Certification Rating.

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
	Labor	About 300-400 workers are expected to be employed during the construction period and it is expected that contractor ensure that labor conditions for the workers are at par with national labor standards. Influx of workers from other towns/provinces may increase incidence of STDs/AIDs	GMCAC to ensure contractors/subcontractors compliance with the national labor laws (mandated wages and benefits, number of hours worked, living conditions, etc) and undertake measures to comply with the core labor standards (prohibition on child labor, forced labor, discrimination, and workers rights for free association). Contractor contract to reflect labor clause and ensure monitoring. Contractors, in collaboration with relevant government units, to conduct seminar awareness/trainings on HIV/AIDS/STD. GMCAC contractors and subcontractors give priority to local labor from nearby barangays
	Labor restructuring resulting from the handing over of the Terminal operations	The wide gap in male-female employees' ratio under the MCIAA operation is now greatly reduced with GMCAC's "equal opportunity" policy, i.e. percentage of female employees increased from 20% to 42%.	GMCAC to conduct appropriate trainings to increase the female employees' capability to handle their assigned tasks in the new operational set-up.
	Public Health and Safety	Airport facilities that cater specifically to the needs of women, elderly, and disabled persons may not be sufficient to address the increase in local and foreign passengers resulting from the expanded airport operations. The increase in tourist influx may result in increased activities related to prostitution.	Implement design features that will cater to the needs of women and disabled including separate toilet facilities for women and disabled people, baby changing and breast feeding rooms, rest area suitable for persons with disability, separate security checks for women, among others. In collaboration with the relevant government agency organize orientation and training programs on specialized topics such as HIV/AIDS awareness and anti-trafficking of women and children among airport personnel especially those who are assigned to ground terminal operations.
	Occupational Health and Safety	More passenger needs especially for women, elderly, and disabled persons to be addressed while in transit. The anticipated increase in tourist influx	GMCAC to implement design features that will cater to the needs of women, disabled, and elderly. GMCAC to organize, in collaboration with relevant

Project Phase	Key Environmental and Social Aspects	Impact Assessment	Mitigation/Beneficial/Measures
		may also result in higher incidents and activities that might compromise their health. There will be an increase in risk to public safety with more passengers entering the airport.	government agency, orientation/ training programs on sensitive health topics and anti-trafficking of women and children. Safety management manual to be always updated and strictly implemented.

10. Preliminary INFORMATION, EDUCATION AND COMMUNICATION (IEC) PLAN

Target Sector Identified as Needing Project IEC	Major Topic/s of Concern in Relation to Project	IEC Scheme/ Strategy Method	Information Medium	Indicative Timelines/ Frequency	Indicative Expenses	Source of Funding
1.LGU of Lapu-Lapu City; (City Planning and Development Council, Tourism Council)	1. General project orientation 2. Project implementation status 3. Project Impacts and Benefits 4. Roles & Responsibilities of concerned agencies in the implementation of the project 5.. Social development program (CSR) 6. Job opportunities during construction and operating stages of the project	- Meeting with local officials GMCAC Information/ and Inquiry Desk	Handouts - Audio-Visual Presentations	Prior to start of project construction; Construction, and Operation phases	Supplies/ Communication Cost Design/Layout/ Printing costs Publication costs	GMCAC
2.Barangay leaders and residents from Bankal, Buaya, Basak;	1.Project status. 2. Project Impacts and Benefits 3.Social Development Program (CSR) 4. Job opportunities during construction and operating stages of the project	-Barangay assemblies	-Hand-outs -Audio Visual presentations	Prior to start of project construction/ Twice a month until CSR Program/ Plan is developed	FGD logistics	GMCAC
3.Business sector representatives from Lapu-Lapu City	1.Potential business gains 2.Roles and responsibilities of concerned business operators in the implementation of the project 3.Investment potentials	GMCAC Information/ Inquiry Desk	Hand-outs	Prior to start of project construction, during construction and during project operation	Printing and publication costs	GMCAC
4.Women's groups and local	Social Development Program (CSR) Small-scale business opportunities	FGD; Barangay assemblies	-Hand-outs -Audio visual	Prior to start of project	FGD expenses like food and	GMCAC

entrepreneurs from Bankal, Buaya, Basak			presentation	construction	venue; Printing costs	
5.MCIIAA employees to be affected by the project	Scope of GMCAC operations in MCIA	Office assemblies within MCIIAA	Posters; Bulletin Boards; Audio visual presentation			GMCAC
6. GMCAC employees	HR Policies such as those consistent with ILO core labor standards (Safety Management; Employee benefits and responsibilities; Position/job description and salary scales; policies and procedures for promotion)	Orientation meetings with individual employees	Posters Bulletin Boards Audio-Visual Presentations Employees' Handbook Memorandum circulars or staff directives.			GMCAC

11. Indicative Social Development Framework/ Corporate Social Responsibility

CONCERN	Government Agency/ Non-government Agency and Services	PROPONENT	Indicative Timeline	Source of Funds
Support services for the tourism sector in Lapu-Lapu City in particular, and Cebu Province in general. Potential support areas: 1) Promotion of Cebu cultural heritage in collaboration with Lapu-Lapu City Tourism Office.	City and Provincial Tourism Council	Lapu-Lapu City Tourism Office (Mr. Hembler Mendoza)	Prior to project construction phase, hold coordination meetings with City Tourism Office for potential CSR planning.	GMCAC
2) Facilitation of training program with tourist transport operators to facilitate safe and easy access of tourist transport requirement	City Tourism Council; Local tourist transport operators	Local Tourist Transport Operators	Prior to project construction phase, hold consultation meetings with City Tourism Office and representatives of Local Tourist Transport Operators to develop appropriate training program.	GMCAC
3) Capability upgrading of hotel management operations particularly in Lapu-Lapu City	City Tourism Council; Local hotel operators	Local Hotel Operators	Prior to project construction phase, hold consultation meetings with City Tourism Office and representatives of Local hotel operators to develop appropriate training program.	GMCAC
4) Social development project (s) in Bankal, Buaya, Basak, Pajo, Pusok, Pajac, and Ibo	Relevant government agency	Barangay officials of Bankal, Buaya, Basak, Pajo, Pusok, Pajac, and Ibo Homeowners associations, women and youth groups	Construction and operations phase	GMCAC

GMCAC will conduct follow-up consultations with various stakeholders including nearby communities to prepare the Social Development Plan for implementation during the construction and operations phases. GMCAC may update the SDP on an annual basis.

12. Grievance Redress Mechanism (GRM)

GMCAC has established its Grievance Management Policy contained in the Human Resources Policy Manual. Specifically, it applies to individual employee's grievances and complaints which are primarily a manifestation of dissatisfaction about working conditions and managerial decisions, that, if not promptly addressed may affect morale and productivity. However, there is a need for GMCAC to establish a Grievance Redress Mechanism for communities to cater to grievances and complaints that are directly related to the project cycle in its various stages. Some environmental impacts like noise and dust pollution, among others, may trigger complaints from nearby settlements even if they are located outside of the airport boundaries.