1.0 BASIC PROJECT INFORMATION

1.1 PROJECT INFORMATION

Name of Project	:	**Renovation of the existing 18-Holes Golf Course and Construction of Clubhouse and Dormitory Project**
Project Location	:	**Binictican, Subic Bay Freeport Zone, Subic, Zambales**
Lot Area	:	**93.5 hectares**
Total Project Cost	:	**₱ 500,000,000.00**
Company Name	:	**SUBIC SMART COMMUNITY CORPORATION**
Business Address	:	**Binictican, Subic Bay Freeport Zone, Subic, Zambales**
Contact Person	:	**Engr. Ruben Bernal**
Designation	:	**Project Manager**
Consultant	:	**AFA Environmental Engineering Services**
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1.2 Proponent Profile

SUBIC SMART COMMUNITY CORPORATION is a newly registered corporation with the Securities and Exchange Commission (SEC). It is governed by a Board of Directors (BOD) composed of five (5) members.

The primary purpose of the corporation is to engage in the business of land development and leisure project.

PROJECT BACKGROUND

For years, the Subic Bay Golf and Country Club served as the U.S. Navy golf course and the go-to place for military golfers in the country. Unfortunately, due to the catastrophic eruption of Mt. Pinatubo in 1991, the 18-hole course was buried under a mound of ash and was indefinitely closed to the public.

When the new management (Subic Leisureworld, Inc.) took over in 2012, they were planning to renovate the area and utilize the golf as semi-private course and to be opened for visiting golfers under the condition that they are accompanied by at least one club member. The said

golf operation was issued an Environmental Compliance Certificate (ECC) by SBMA with ECC No. EC-ECC-96-003 issued on July 28, 2011.

On May 5, 2016, Subic Smart Community Corporation (SSCC) enter into a Lease and Development Agreement with Subic Bay Metropolitan Authority (SBMA) to renovate, develop and operate the golf course and other additional facilities.

The ECC issued to Subic Leisureworld, Inc. was amended (change name) in favor to the new Operator/Lessee Subic Smart Community Corporation (SSCC) dated June 7, 2016 *(Please see attachment G for the Amended ECC).*

Now we are applying for an Environmental Compliance Certificate (ECC) for the said renovation/development.

2.0 PROJECT DESCRIPTION

2.1 SITE LOCATION AND AREA

The project site is situated within the almost flat area with little rolling, windswept terrain located inside the Subic Freeport Zone.

Subic Bay Freeport Zone (**SBFZ**), which is known simply as Subic Bay, is the Philippines' first successful case of a military base converted through volunteerism into a tax- and duty-free zone similar to Hong Kong and Singapore, operated and managed by the Subic Bay Metropolitan Authority or SBMA. It covers the fenced area of the former U.S. Naval Base Subic Bay located in the southwest of Luzon Island in the Philippines and surrounded by the municipalities of Subic and Olongapo City in Zambales and Hermosa and Morong in Bataan, in concurrence of these municipalities' Sangguniang Bayan, pursuant to Section 12 of RA 7227. The harbor faces the Zambales Mountain Range to the west and the Subic Bay opening to the South China Sea. It is northwest of the Bataan Peninsula and southwest of Zambales Province.

SBFZ is 110 kilometers north of Manila. Manila Bay and the Bataan Peninsula separate SBFZ from Manila. Subic Bay is surrounded by the town of Subic and Olongapo City, both in the province of Zambales, and Morong in the province of Bataan. The mountain ranges around the Subic Bay area and the deep natural harbor provide excellent and protected anchorage. In addition, these features make SBFZ naturally sheltered from typhoons as well as from the effects of an eruption of nearby Mt. Pinatubo.

Subic Bay Freeport Zone is in Region III (or Central Luzon Region) of the Philippines. It is one of the points in the growth triangle (and an engine for economic development) in the region. SBFZ is a supplier of services and products for the Central Luzon Development Program, a regional growth area composed of the provinces of Bulacan, Nueva Ecija, Tarlac, Pampanga, Bataan, and Zambales.

MODE OF TRANSPORTATION

BY LAND VIA PRIVATE CAR

- Three Hours travel time
- Take NLEX via San Fernando Exit going to Subic Freeport then left turn to Binictican Drive going to the project site.

Areas of Primary and Secondary Impact

The area of primary impact considered is within the project site and up to the 50 meters radius from the property line. This is due to the air and noise to be generated of the project especially during daytime. Areas of secondary impact are delineated outside the boundary of the areas of primary impact. The extent of secondary impact varies according to the parameters and magnitude of possible impacts on socio-economy, traffic, air, water and noise. These are basically within or inside Bay Freeport Zone (SBFZ).

PRIMARY AND SECONDARY IMPACT AREA

2.2 Project Rationale

The proponent chooses Subic Bay Freeport Zone (SBFZ), because of the ready or existing facility which is for renovation and development and at the same time Subic Bay Freeport Zone (SBFZ), is identified as one of the priority areas for tourism of the Department of Tourism.

It has been projected that there will be a big need for developments that will blend the environs and at the same time provide enjoyment and satisfaction to residents and visitors.

The project will contribute to the economic growth of the area by providing first-class recreational facilities. It will definitely become a major attraction for investors and tourists both local and foreign and it will help boosts the image of Subic **Bay** Freeport Zone (SBFZ).

The project will increase job opportunities for the local communities and revenues for the local government unit. As a consequence, it will induce economic growth and will also assist the economic recovery of the country through tourism industry/development.

2.3 Project Components List

The Renovation of the existing 18-Holes Golf Course and Construction of Clubhouse and Dormitory Project is compose of 93.5 hectares lot area located at Binictican Heights, Subic Bay Freeport Zone, Subic, Zambales. Of which 82.2 hectares is occupied by the existing 18-hole golf course, clubhouse and dormitory and the remaining 11.3 hectares will be utilized for beautification, landscaping and parking area.

MAIN DEVELOPMENT PROCESS/TECHNOLOGIES

CONSTRUCTION PHASE

GOLF COURSE (RENOVATION)

GRADING AND SHAPING

The golf course will be graded to avoid excessive disturbance, produce the necessary drainage, and provide the features required by the design. The site will first undergo rough grading (i,e., bulk shaping) to accomplish the major earthwork if necessary for the renovation the of golf hole features (e.g. tees, greens, mounding, bunkers). All slopes around the tees, greens, bunkers, and mounds will not be greater than 5:1. Cut and fill slopes in fairways, roughs and non-use areas will not exceed 3:1.

Irrigation lines will be replaced if needed. Natural drainage swales will be used whenever possible. However, there are areas where the surfaces cannot be drained properly. Drainage is installed embedding a 10cm perforated drain pipe in a trench and filled with gravel. The water draining into the perforated pipe will go to the golf course lakes and utilized for irrigation purposes.

Then, each golf hole will undergo fine shaping to provide the desired strategy and character of the course. The topsoil will be spread uniformly over untopsoiled areas with the exception of tee and green surfaces (green mixture will be evenly applied to these areas instead). The green and tee mixture shall be in accordance with specifications and shall be based to the results of the soil sample analysis.

DEVELOPMENT OF GOLF COURSE

Drainage trenches will be dug in a herringbone or semi-herringbone pattern, space so that the water will not have to travel more than 6 meters to reach a tile drain. Trenches shall be 20 cm wide and minimum of 30 cm deep, the bottom of which shall produce a constant grade of not less than a 0.5% slope. Washed gravel of 9.5 to 6.4 mm in diameter will be evenly spread 7cm deep at the bottom of all trenches. On top of gravel layer, a perforated drainpipe will be laid. The drainpipe 10 cm on diameter will be made of plastic. All pipe joints will be connected by impervious sleeves. Then drain tile will be joined to one or more conduit pipes which exit the green at its low points. The conduit pipes shall extend to lakes, streams or other non-play areas.

DEVELOPMENT OF IRRIGATION WATER SUPPLY

Irrigation lakes with a depth of approximate 2.5 meters will be developed for the entire golf course. The estimated total storage capacity of the irrigation facilities shall be 150,000 cum. To minimize seepage that may lead to contamination of ground water, the lake bottom will be sealed through compaction of the base material and installation of non-permeable sheet material (high density polyethylene liner).

In order to optimize the use of water for irrigation a weather sensing, computer-controlled irrigation system that will dispense water only when the sensors detect areas with dry soil conditions will be installed.

GRASSING AND LANDSCAPPING

After the installation of irrigation and drainage systems, the disturbed areas will be prepared and planted with the recommended types of turfgrass (e.g. Paspalom grass, Tiff dwarf Bermuda grass and Tiffway 419 bermuda grass, for the greens).

Areas that are susceptible to erosion will be seeded or mulched for extra protection. All areas planted with turfgrass will be fertilized with the proper mixture of fertilizers. Achieving “soil balance” during the grow-in phase will be the first line of defense against turfgrass disease. This will translate to reduce fertilizer and pesticide use during the maintenance phase. The areas of the course that will receive the most play are the greens, which will be fumigated prior to grassing to ensure optimum conditions for turfgrass growth. The golf course will also be landscaped with trees, shrubs, and other plant material to provide the desired visual quality.

CONSTRUCTION OF INFRASTRUCTURE

Associated golf course infrastructure (e.g., golf parameter fence, concrete cart paths, etc.) will undergo parallel construction with the golf course following standard construction methods and health and safety procedures. Asphalt or concrete cart and maintenance paths, 2.5 and 3.0 meters wide, respectively, will be constructed. Proper project management will determine the optimum scheduling of construction activities to ensure the completion of all facilities in time for the opening of golf course project.

BUILDINGS – Clubhouse and Dormitory

This phase involves the following activities:

1. Mobilization
2. Clean-up
3. Excavation Works
4. Masonry Works
5. Reinforced concrete works
6. Architectural Works

7. Electrical Works
8. Plumbing Works
9. Mechanical Works
10. Fire protection works
11. Painting works
12. Landscaping works
13. Others

The following shows the description of the activities comprising the construction phase:

Mechanized equipment will be used in the entirety of the construction phase except in the finishing stage. The following are the type of equipment to be used:

1. Air compressors
2. Concrete vibrators
3. Bulldozers
4. Cement mixers, etc.

Construction materials such as cement, sand and gravel, steel frames, etc. will be purchased locally.

OPERATION ACTIVITIES

The operation and maintenance of the project will be under the management of Subic Smart Community Corporation and the golf course superintendent will oversee the application of fertilizers and pesticides.

GOLF COURSE

TURFGRASS MAINTENANCE

To maintain a first-class playing field, regular application of fertilizer is necessary. The fertilizers to be used should only be specific substances that are approved by the Fertilizer and Pesticide Authority (FPA). Prior to the application of fertilizers, soil samples will be taken and tested in the laboratory. Fertilizer formulations to be used are based on the specific deficiencies of the soil. For example, soils lacking in phosphorous (a nutrient needed in the development of roots) will use agricultural grade fertilizers (quick release). To minimize the possible contamination of groundwater by nitrate, controlled-release fertilizer will be utilized. Slow release fertilizers are balls of complete fertilizers coated with a permeable substance. When moistened, a small amount of nutrients leached through the coating until the encapsulated fertilizer is used up. Shelf life of these products is from 3 to 8 months.

WATER REQUIREMENT

Water requirement for irrigation is estimated to be between 100 to 120 cum/day depending on the season. The resources of water for the project will be incident rainfall, river and springs and the treated waste water coming the STP of Subic Water. Water harvesting will be resorted to as much as possible through the construction of lined artificial lakes for the irrigation of the golf course. Reuse of treated wastewater for irrigation is envisioned.

PESTICIDE MANAGEMENT

As much as possible weeds will be removed manually. Although hand pulling takes time and effort, the total removal of the weeds is ensured and use of chemical herbicides will be avoided. The application of pesticide, programmed by a resident agronomist is necessary to maintain grass quality.

Only formulations certified by the Fertilizer and Pesticide Authority (FPA) will be used. All chemical containers will be labeled and disposed properly pursuant to Republic Act 6969 otherwise known as "Toxic Substances and Hazardous and Nuclear Wastes Control Act of 1990.

AERATION

Once the turf has been established, the course will be aerated using motorized aeration systems. Aeration is a method of punching holes into the turf to allow moisture, oxygen and nutrients to penetrate the soil. It breaks up thatch which hinders water absorption and root be backed combed with rake to level the ground.

MOWING

The project will be adequately equipped with state-of-the-art cutting equipment to be manned by experienced crew. Their task is to control the vegetation growth.

BUILDING

The operation phase will be composed of the following activities

Personnel Management

a) Operations
b) Marketing/Selling and
c) Maintenance to include solid waste and wastewater management.

Residual from the operation of the project are solid waste and domestic sewage. Qualified local residents shall be given preference during hiring of workforce. These include administrative and support personnel (manager, clerk, maintenance, security guard, etc.) and technical personnel.

Domestic Wastewater

The wastewater to be generated by the project operation will be coming from the comfort rooms. A sewage treatment plant will be installed to treat the wastewater to be generated.

Water Distribution System

Water will be supplied by Local Water District

Power Supply

The power supply of the project will be supplied by Local Electric Cooperative and a standby generator sets to be used during power interruption.

d) Solid Waste

e) The building will have a built-in garbage area where the future occupant can place their segregated solid waste. Installation of Material Recovery Facility (MRF) shall be done where various solid wastes to be generated such as papers, pet bottles, plastic wrappers, food leftovers and scrap materials shall be segregated, re-used or sold to interested scrappers. Non-recyclable solid wastes shall be hauled by an accredited hauler for proper disposal.

2.4 Project Phases Environmental Impact Assessment

2.4.1 Impact Identification

Numbers of potential environmental impacts have been identified to be associated with some phases along the entire project cycle.

Impact Prediction and Evaluation

Various environmental conditions would likely be generated by the project's operation. Most of these might affect the primary impact area, which is within 50 meter radius and the second impact area is outside 50 meter radius.

The following are the Environmental Impacts/Issues to be generated by the project operation:

2.4.1 Pre-Construction Phase

In the pre-construction period, the necessary permits from different government agencies will be secured first.

2.4.2 **Construction Phase**

IMPACT ASSESSMENT AND MITIGATION MEASURES

IMPACT DURING CONSTRUCTION

Impact on Solid Waste

Construction activities such as installation of temporary facilities are set to produce solid waste such as excavated soils and others.

Solid waste to be generated by the laborers is very minimal. It is mainly compost of left-over food and food wrappers such as paper, cartons and plastics.

Mitigating Measures

Excavated soils will be use as backfill material to the low-lying area of the project or to be used also as backfilling materials in the other construction project of the firm. Left-over food and wrappers will be collected. Trash cans will be placed in strategic places inside the project for collection purposes.

Impact on Noise and Air Quality

The most significant change in the air characteristic around the project site is the generation of fugitive dust arising from site clearing and construction works. Fugitive dust is mainly generated by entrainment of dust particles due to winds erosion or pulverization and abrasion of surface materials by

mechanical forces such as vehicle wheels in contact with loose surface materials.

Mitigating Measures

Watering or sprinkling of dry surfaces is the most common control techniques to minimize emission of fugitive dust. This should be strictly followed especially in cases where the wind speed is high and the ground surface quite dry. Another mitigating measure is the application of prevented techniques such as removal of mud or dirt carried out on paved roads at construction sites. The revegetation of the area should be undertaken as soon as possible to reduce dust impact.

Erosion and Siltation of Water Bodies

Earthmoving during site preparation will cause erosion and deposition. Materials that find their way to the creeks particularly at the lower portion of the project area will in turn cause siltation of the water bodies and increase in turbidity and TSS levels.

Mitigating Measures

Drainage ditches and sediment traps should be installed as part of the site preparation process. Dredging of the sediment traps is necessary to avoid overflow during the rainy season.

Slope protection works will also be provided to unstable creek embankment used as drainage outfalls. Moreover, the retention or planting of buffers (50m) between construction zones and sensitive areas should be observed if possible. Buffer zones are efficient at filtering trapping silt, debris and slow surface water flow.

The earth, where laid bare, should be seeded after construction is completed.

Landslide

Landslides in the vicinity of holes where the slope are steep are more likely to occur. However, the conglomerate horizon will act as a good landslide barrier and mitigation measures like slope stabilization will still be employed.

The location of the proposed building (clubhouse and dormitory) is almost flat and landslide is unlikely to occur to the building area.

Ecological Impacts

When civil works as clearing, grading or unearthing are undertaken, affected vegetation covers will inevitably be lost. Since the proposed golf course lies on a rolling and windswept terrain, the opened up or cleared areas may be subjected to massive erosion for a limited period. Eroded materials may reach surrounding terrestrial and aquatic habitats.

To minimize or even negate the potential adverse impacts, the following measure are recommended:

1. Cutting of trees should be done only if necessary in the design of the golf course. Trees and resilient habitats or sanctuaries of unappreciated faunal populations that are links in the food web. Should be preserved as much as possible.

2. The removal of vegetation cover, especially where mature trees are present, should be kept to a minimum to maintain the floristic diversity within the golf course.

3. Cleared areas should be planted at soonest. On dry and windy days during ground preparations, cleared or exposed areas should be wetted or irrigated.

Socio – Economic Impacts

The project will have a positive effect to the nearby municipality and city as it will generate employment and will improve or uplift property valuation.

2.4.3 Operation Phase

IMPACTS DURING OPERATION

Erosion

Ninety Five (95%) of property is almost flat and the 5% has a rolling topography. Positive impact may be expected on land as turf begins to reduce the amount or erosion and stabilize the soil. Several research studies have demonstrated that a well maintained dense turf area could render runoff to near zero because turfgrass has a tremendous to absorb precipitation. Moreover, the artificial lakes will serve as huge catchment for the surface runoff.

Irrigation Demand

Among the most critical impacts of a golf course is the tendency to put stress on the water supply. In the case of the project, addressing this issue is of outmost importance. There are plenty of water sources in area. Proper planning utilization of resources shall be done.

To minimize unnecessary usage of water a computer-controlled irrigation system will be installed. The amount of irrigation water to be supplied by the system will be determined based on the observed daily weather conditions and the amount of incident rainfall. The use of turf cultivars that require less water is another measure.

Risk of Chemical Contamination

There is some concern about the use of chemicals such as pesticides and fertilizers in turfgrass management. The pesticide requirements of the golf course will be of three broad categories: insecticides to decimate arthropod pests, fungicides to attack plant pathogens and herbicides to eliminate undesirable weeds. Improper use of these chemicals can adversely affect the quality of surface and groundwater through leaching and surface water bodies through surface runoffs.

Pesticides most frequently used in golf courses are, in general, not highly mobile, not highly toxic, or very persistent are only applied when necessary. Turf grass pesticides are used during the initial fumigation of greens, and during the maintenance phase after all other non-chemical pest control measures are utilized.

In addition, chemical application is normally limited to a small percentage of the golf course site (greens, tees and approaches, typically <15% of the site

area). Moreover, turf grass pesticides are normally applied in extremely dilute solutions. Finally, a moderate thatch layer, i.e., the layer of living and dead plant material that accumulates on the soil surface, is useful in absorbing pesticide residues and preventing their leaching in the soil.

Utilization of new organic pesticides, which are less toxic and more easily broken down by natural processes, should reduce the possibility of biological accumulation even if these escape to the environment. Frequent inspection of the condition of the soil and vegetation will limit chemical usage since chemicals will only be applied when and where it is necessary. Weeds are to be removed by hand.

Finally, only chemicals that are allowed by Fertilizers and Pesticides Authority (FPA) should be utilized. Even if the proponent guarantees that no prohibited chemicals will be used, care and vigilance, and awareness of the increasingly strict standards of golf keeping, together with modern health and safety regulation, are essential factors in eliminating residual risk of pollution through the use of chemicals.

Ecological Impact

After the ground preparation and other civil works are completed, the revegetation of the fairways, greens and other cleared areas will secure the site from further erosion and in due course preserve its vast spaces. The introduced plant cover will also protect the topsoil from other degradative process such as salination and acidification.

If the design or plan of the project includes the planting of a wide variety and big number of trees and other species, especially across out-of-play sites, the canopies or covers may provide extended sanctuaries for the wildlife from surrounding habitats. The golf course will likewise serve as a sanctuary for unique or rare plant species that may be introduced into the area. If the canopies of the trees to be planted are highly and extensive, their foliage will serve as sinks, filters or buffers for air pollutants and thus contribute towards the improvement of their air quality.

Once the golf course becomes operational, there will be a need to apply fertilizers as well as pesticides to maintain a wholesome and enjoyable playing field for the game. The regulated or even limited use of fertilizers through time may cause the accumulation of nutrients residues in the soil which may be carried by run-off to nearby waterways. The golf course is incidentally situated at some distance from major rivers in the area. The distance of the major river systems as well as the currents in the creek waters may preclude the build-up or accumulation of fertilizers residues. Hence, the hazards posed by the potential eutrophication due to nutrient enrichment in aquatic habitat may be minimal, if not negligible.

To minimize or negate the aforementioned potential adverse impacts, the following measures and recommendations are suggested:

1. The most desirable species and cultivars of the turf grass to be planted should be chosen in terms of the following physiological or ecological parameters:
    - High resistance to drought to minimize water requirements
    - Soil-binding capacity to minimize soil erosion
    - Low nutrient (nitrogen, phosphorus and potassium or NPK) requirements for optimal growth to minimize application of fertilizers
    - High resistance to pests and pathogens to reduce the application of pesticides, and

- Low water requirement for normal growth to reduce the need for irrigation

2. A wider diversity of plant species, including those indigenous to the project site, should be selected in the revegetation of the out-of-play portions of the course or where turf grass will not be planted. Monocultures or the culture of just a few species may render the plant communities more susceptible to pest or pathogen infestation.

3. The application of fertilizers should be kept to a minimum and only if necessary. If possible, organic forms of NPK should be selected over the inorganic types because they are more soil friendly.

4. The following approaches or guidelines on the use of pesticides on the golf course should be considered:

    - Only pesticides registered with the Fertilizer and Pesticide Authority of the Dept. of Agriculture should be used.

    - The effective frequency of application as well as dosages of the selected pesticides must be kept to a minimum. An effective minimum concentration is one that can bring down the population abundance of a pest to non-nuisance or tolerable levels.

    - The schedule of pesticide application should be anchored on the life cycle of the pest. Hence, some ecological studies on the population dynamics of the more troublesome pest species are worth pursuing.

    - Through time, the repeated use of a specific pesticide against a specific pest species may induce tolerance or even the evolution of individuals among the population of the targeted species that are resistant to the chemical. This may necessitate the use of different pesticides against the same pest at different time periods. Hence, it may be prudent to vary the active ingredients of the pesticide used against a particular pest species in the course of time.

5. Because of the inevitable hazards associated with the use of pesticides, an integrated control approach that uses a mix of biological methods (such as the introduction of non-nuisance natural enemies or predators of a target pest) and chemical biocides has often been proposed in the literature. Such approach, however requires basic studies on the life cycle of target pests vis-à-vis their hosts. Hence, it may be a good investment to initiate an integrated pest control research program which will certainly be more environment friendly.

6. Should the golf course be the only point source of fertilizer and pesticide residues in the area, it is recommended that a long-range monitoring program on the levels of these agricultural chemicals, at least across adjacent habitats and especially those on lower grounds be initiated and maintained during the operational phase of the project.

Water Availability and Quality

The proposed project site is far from the community and will not affect the water supply of the community. To ensure the availability of water, man-made lakes will be built in the golf course to serve as water reservoirs.

A proposal of using the treated wastewater of the industrial zone is being planned.

Solid/Liquid Waste Generation

Domestic Solid Waste

Solid waste to be generated will come from the clubhouse and it is dependent to the number of guest/players that will come to the proposed project.

Mitigating Measures

Green Waste

Another significant garbage is the “green waste” generated from the golf course area consisting of grass clippings, leaves, brush and other vegetative trimmings.

Mitigating Measures

As far as green waste handling is concerned, the Consultant proposes to the Proponent the method recommended by the Golf Course Superintendent Association of America (GCSAA) encouraging to recycle green waste generated on the golf course.

- Whenever possible, grass clippings are not collected. Clippings allowed to fall to the soil will remain nutrients and organic matter. This practice is sometimes limited by the aesthetic and playability demanded on certain areas of the golf course as tees and greens. And, at times, clipping return may encourage the spread of turf disease to certain times of the season. For these reasons, returning clippings to the turf may be limited to roughs and fairways and the time of season. Mowing frequently to keep clippings short is a method of enhancing the appearance of the turf as it encourages rapid clippings degradation on the playing surface.

- Heavy leaf drop in the fall presence challenging management options for their removal. One option is to mulch the leaves with mowers directly on the turf. Similar to grass clippings, leaves provide nutrients and organic matter for the soil. Also similar to clipping return, mulching leaves is limited to fairways and roughs because of playability constraints. Many superintendents blow leaves off fine turf areas into roughs and then proceed with mulching. Mulching mowers can expedite the exercise of grinding the leaves into fine particles.

- Brush can be shredded for use as landscape mulch. When processed through grinding and shredding equipment, woody brush and trimmings make an excellent landscape mulch to use around plantings and walkways. Mulch conserves soil moisture, prevent weeds and adds valuable organic matter to the soil.

- Green wastes can be composted on the golf course. If clippings, leaves, and brush cannot be directly added back to the course because of operational constraints, they can be composted in a compost pile. Such materials readily degrade to rich organic composts to use as soil amendment when a few key management techniques are use. These include grinding all coarse materials, blending green fleshy materials with woody materials, providing frequent turning of the pile, and providing adequate moisture.

Impact on People and its Socio-Economic Conditions

The stakeholders who are likely to be affected by the project in as much as they have important institutional role and/or direct stakes in the development of the project:

1. Residents of Forest View Leisure Residences as well as the workers and their families employed in the project.

2. The business/institution community which includes Subic Smart Community Corp., Brent International School, the landowner [Subic Bay Freeport Zone (SBFZ)] and developer; motorists; and the small and large scale suppliers and dealers.

3. The local government of Subic, as well as the national government offices including its field offices such as the Bureau of Internal Revenue, Department of Tourism, Department of Environment and Natural Resources, the Department of Public Works and Highways, the Department of Health, the Department of Labor and Employment, and the Department of Agriculture.

During operations, the project is estimated to employ 300 workers. This number is expected to increase since it still does not include the number of caddies and workers in the clubhouse. The workers will predominantly come from the nearby communities.

Lifestyle and Social Values

With the project there is an expected change in the lifestyle and social values of the community such as:

- Increases contact with different cultures and lifestyle of workers, golf players and tourists may influence some cultural changes in the resident workers.

- When local residents are employed in the project and in related sectors, there could be a change in their preferences and consumption patterns because of cash income, e.g., preference for imported goods, a heavy reliance on cash income, new opportunities for social mobility and social differentiation in the community.

- Employment of immigrant workers may cause social gaps especially if they are given higher level jobs than the local residents. To avoid this, local residents qualified for the supervisory positions will be accepted.

Project Phases, Key Environmental Aspects, Waste, Issues, Built-in Measures

Project Phase	Brief description of process/Activities involved	Key Environmental Aspect	Waste / Pollution Generation	Built-in Measures
Construction	Site clearing, filling, excavation and construction of the different facilities	Solid Waste	Due to domestic waste from contractors, removal of vegetation, excess building materials including packaging and hazardous wastes from the use of fertilizers and pesticides.	• Solid Waste Management Plan prior to start of the construction. • Coordination with the SBMA Ecology Center on solid waste management policies of the SBMA.
		Water quality	Surface run-off due to disturbance in the top soil that is excavated and hazardous chemicals from the use of fertilizers and pesticides.	• Erosion control measures should be put in place during the construction period
		Ambient air quality	Dust generation will be the main concern with regards to ambient air quality	• Scheduled sprinkling of roads and exposed soil due to excavation activities.
		Noise Quality	Noise levels will become elevated due to the different machineries and vehicles that will be used for the construction phase.	• Health and Safety program should be put in place to protect all the workers and visitors who will be going to the construction site.
Operation	Operation of all the facilities	Solid waste	Generation of solid waste from the different aspects of the project inclusive of offices and residential areas	• Solid Waste Management Plan that includes the operation phase
			Generation of solid waste from the wastewater facility and the handling of chemicals from fertilizers and pesticides.	• Solid Waste Management Plan that includes the operation phase.

Project Phase	Brief description of process/Activities involved	Key Environmental Aspect	Waste / Pollution Generation	Built-in Measures
		Water Quality	Generation of wastewater from the operation of the different facilities	Septic vault for the domestic wastewater, as well as coordination with the SBMA on the use of their wastewater treatment plant.
			Generation of wastewater from the operation of the golf course inclusive of water extraction for the maintenance of the golf course.	• Strict monitoring of water volume extracted in coordination with the Subic Water. • Re-use and recycle of water will be prioritized by the proponent. • Water valves for monitoring will be installed in appropriate areas to determine whether there are leakages in the water distribution system of the facility.
		Surface and Groundwater quality	The use of pesticides, fertilizers, and other chemicals during Operation Phase may contaminate runoff (surface water quality effects) and percolate through the soil (ground water quality effects).	• Reduce use of pesticides through the IPM program • Use organic, slow-release, and FPA-approved pesticides • Provision of drainage system in areas where pesticides are applied
Abandonment	Removal of equipment, other items that can be removed by the proponent	Solid Waste	Items that will be left by the proponent that is attached to fixed structures could be considered as potential solid waste. The proponent will also generate documents, containers and other items that are not useful	• The proponent will provide a system of segregating and labeling these unusable materials for proper disposal. • Coordinate with SBMA Ecology Center for proper waste disposal.

Aesthetic Quality

With the project, the site's topography will be enhanced. Its development design will conform to the natural terrain. Revegetation and returfing will follow immediately after earthwork to minimize erosion in prone areas. Tree seedlings, ornamental plant species and turfgrass will increase vegetation cover. Slopes will be stabilized through rip-rapping and other soil erosion control measures.

The project is expected to cause an increase in the real estate values of land in the area and environs. More real estate taxes will accrue to the local government of Subic.

Health and Hazard

With respect to health hazards, the project will have two concerns. First, maintenance workers who handle pesticides bear the risk of chemical inhalation or dermal contact if proper handling procedures are not followed and proper PPE are not used. Second, golfers, caddies, umbrella girls, and others are at risk of getting hit by wayward golf balls unless the proper course etiquette is enforced.

2.5. **Project Cost:** Php 500,000,000.00
Project Duration: 5 years