Environmental impact assesment

Environment

1. 0 Introduction

Knox community college is a co-educational institution located in Spalding, Jamaica It operates four campuses, namely, Spalding, Cobbla, May Pen and Mandeville. The College started with three academic programs: Pre-university Arts and Sciences, Secretarial Studies and Farm Management. Today, there are over fifty (50) programs in a variety of subject areas such as Continuing Education, Pre-University, Paraprofessional, Vocational, and offering Certificates, Diplomas, associate and Bachelors Degrees.

There are thirty departments and sections with closely structured teams. Each team has a department or Sectional head. The Vice -principal is the Academic dean. Knox Community College is the fastest growing community College in Central Jamaica, and probably one of the fastest growing in the island. The Ministry of Education, Youth and Culture accorded Knox Class A. Knox is regarded as a student - centered institution which is geared to meet the educational needs of all students regardless of academic or socio-economic status.

Spalding Campus is the original site of Knox Community College. It was founded in 1975 as part of the Knox Complex of Schools, and culminated the vision of the late Rev. Lewis Davidson, founder of Knox to provide education for the people of the surrounding communities and parishes " from the cradle to the grave".

The campus has a cafeteria which is used by the sporting department for a number of events such as table tennis, badminton etc. this however impedes on the dinning area as student are at an inconvenience. With this in mind it

was proposed that a gym no thorium be established adjacent to the cafeteria to exuviate the problem. The board sought the advice of the National Environmental and Planning Agency which advised that an Environmental Impact Assessment (E. I. A) was needed. Upon this notion the services of Henry's Environmental Impact Limited was sought to study and report the finding to the Board and NEPA for their approval.

1. 1 Description of Project

The project to be undertaken is that of a Gym-no-thorium which is to be constructed on the grounds of the Knox Community College (Spalding Campus). The erection of a 73. 8 square meters with two bathrooms and changing area, the hall is to be marked for badminton, volleyball and netball. The seating capacity is to accommodate approximately 300 student's maximum. A well manicured lawn at the front with exotic and erotic flora to decorate the area and serve as a welcome and inviting venture for those who will be using the facility for it designated reason/s.

1. 2 Purpose and Rationale

An EIA is a study which outlines the impacts of a proposed project is likely to have on the area in which the physical development of this project will be carried out. An EIA seeks to demonstrate sustainable development which is not just limited to the physical and biological but also the social components as well. It also outlines mitigation measures necessary to reduce the negative impact of the project. NEPA's rules and regulations are adhered to with respect to EIA's.

The board of the Knox Community College has proposed a project for a gym no thorium to be established at the Knox Community College (Spalding Campus). This researcher's team was selected to conduct an EIA to indicate if the suggested project will be undertaken at the proposed location. Of importance to this project is whether or not the physical, biological and social environment will be impacted throughout the development.

The erection of the proposed project is seen as a potential asset to the College as it seeks to provide adequate and efficient spacing and resources for the training and playing of sporting activities such as Table Tennis, Badminton and even an indoor netball court. The sub division will include two bathrooms both male and female with shower installations. A gym room will also be established for work out.

1. 3 Terms of Reference

The terms of reference as approved by the National Conservation Authority are as follows;

i) Provide a complete description of the existing site proposed for development

ii) Provide an Environmental Impact Assessment of the proposed development

iii) Provide a layout of the proposed development

iv) Identify the major environmental issues of concern and provide guidelines for the utilization of existing environmental attributes for optimum development

v) Prepare guidelines for avoiding adverse impacts due to proposed usage and/or recommendations for monitoring unavoidable negative impacts

vi) Prepare guidelines for a follow-up monitoring program.

2. 0 Description of Area

2. 1 Basic land/ geological conditions- The site is located on the main campus of Knox Community College which is in Spalding Clarendon. The project site is located west of the student center, border to the farm road and south of the ancillaries' area.

This is a disturbed area that is mostly dominated by pasture. The project area is slightly slope and is dominated by lime stone that occurs as bleach out crops fairly hard, has some amount of crystallization and not fossil bearing. The soil is dominated mainly by clay therefore it is safe that the soil is clay loam.

2. 2 Basic Climatic Conditions- The rainy season begins in June to November but there is mostly sunshine all year round, therefore the climatic condition in this area does not differ significantly. Due to the fact that this area experience convection showers which occurs mainly in the afternoon, temperature ranges between 13-25ï¿½C. Water quality will not be affected since there are no major water bodies in this area.

2. 3 Ecology- The area is dominated mainly by Bracharia (Bracharia extensa) no endemic or endangered species were found on the site. The most dominant fauna was Jamaican Mestra butterfly. A detailed list of the flora and fauna found on the project site will be listed in the appendix.

2. 4 Social Conditions- This is a Community College with students and staff offering a variety of programs. The community college operates Monday to Friday from 9am-5pm that is if you are day students there are also night programs offered from 5pm-8am.

3. 0 Sampling Methodologies

Biological Environment- a quadrant size (50cm*50cm) was used in sampling the flora and fauna at the proposed site location. After (6) six successive throw's the percentage of each species was tabled and recorded. A detailed list of both Flora and Fauna identified can be found in the appendix.

Physical Environment- using an auger to collect (3) three samples of soil from the project site. Samples were tested.

Social Environment- students and staff were sampled with the use of questionnaires, 20 persons in total was sampled. The duration of distributing and collecting was no more than 1 week. A sample/copy of questionnaire can be found in appendix.

4. 0 Impact Assessment:

4. 1 Methodology

This section examines the activities proposed in the development of the Gym no thorium and identifies the impact of those on various aspects of the environment. This is done by the construction of an inter-action (impact) matrix to summarize the environmental effects that are considered of most concern. In this case the effects of construction (short-term) and occupancy of the development (long-term) are examined.

The impacts of these activities on environmental parameters are related by a scoring system structured as follows:

* +3 major beneficial

* +2 moderate beneficial

* + minor beneficial

* 0 relationship exists but no impact is expected

* - 1 minor adverse

* -2 moderate adverse

* -3 major adverse

4. 2 Constructional Impacts

4. 2. 1 Land clearing: This activity involves the removal of vegetation to facilitate the construction of the Gym no Thorium. The site is to be leveled however; it's anticipated that this activity will be short term. There would be a minor negative impact on the air quality from dust generated during this activity as well as a minor negative impact on the flora and fauna due to

direct removal of habitat. These affected fauna will have to migrate to other area for which the can adapt. The adjacent flora will also be affected as leaves will be covered with dust hence affecting photosynthesis. It must also be noted that land usage is of major benefit to the social environment.

4. 2. 2 Building Construction: The construction of the Gym no Thorium will involve the permanent erection of a concrete structure which involves the incorporation of all the resources necessary to construct the building. There is an expected minor adverse effect on public health and the adjacent flora and fauna.

Due to the continuous use of cement and aggregates dust will be generated thus affecting neighbouring personnel's with respiratory illness. The social environment will gain employment thus making this process moderately beneficial.

4. 2. 3 Material Storage: Entails the appropriate storage of aggregates and other resources. Sand, marl etc. particles are fine thus when the wind blows particulates will travel via the wind. This will moderately affect persons with respiratory illness thus also moderately affect public health. Marl is soluble in water hence when the rain falls it will filter through soil affect its structure and drainage. Flora and fauna will have a minority adverse effect.

4. 2. 4 Drainage Construction: this will result in the irreversible commitment of land resources hence a loss in alternate option for land use since drainage will be permanent along with the structure. There would be a minor adverse effect on air quality, flora and fauna since the construction will entail aggregate use and some amount of digging will also contribute to the dust.

At risk person such as those with respiratory illness will be affected also but only with minor adversity. This venture will provide a minor beneficial asset to the social environment as it provide jobs for individuals.

4. 3 Operational Impact

4. 3. 1 Solid Waste Disposal: this includes lunch boxes, juice bottles and boxes, debris from preparation/constructional phase. This waste would moderate adverse the land usage as it would occupy land during the construction phase. Flora, fauna soil drainage and air quality will be affected with minor adverse. The dust generated from the waste will affect public health but with minor adverse. Due to the continuous waste build up specie would be affected i. e. flora and fauna.

4. 3. 2 Habitat Change: the habitat change will have a moderate adverse effect on the flora and fauna because they will be disturbed, this will cause migration of species to a different location. Landscaping and replanting of trees will be carried out to enhance the ecology of the area. It also will partially restore the site's natural elements as it is geared for the environment. The efficient use of resources will establish a new habitat for species wanting to niche.

4. 3. 3 Social Services: this will have a major beneficial impact on the students of the Knox Community College (Spalding) as it would serve as a permanent training area and social spot. It will also increase the efficiency of the table tennis and badminton teams. Students and teachers will no longer be at a discomfort in the cafeteria with these activities.

4. 3. 4 Landscaping: this takes into account the processes involved in the beautification of the proposed site after construction has being completed. The beautification of the land is said to be a long term action. The land will be moderate adverse as all will be used in this process. Flora and fauna are 'happy' at this time as they are to benefit with moderate adverse effect , as the replanting of flowers and grass along with appropriate vegetation helps the ecology of the proposed site. It will also benefit the social environment as it serves as a means of employment for those who are qualified.