National Environment and Planning Agency

GUIDELINES FOR CONDUCTING ENVIRONMENTAL IMPACT ASSESSMENTS

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ANNEX I

Terms of Reference for EIA for prescribed Categories pursuant to Natural Resources Conservation (Permits and Licences) Regulations (Amended)2004

- Power Generation Plants: Wind Farms, Hydrothermal& nuclear
- Electrical Transmission Lines & Substations
- Pipelines and Conveyors for Gas Transport, Underground & Underwater Cables
- Port & Harbour, Shipyards & Marinas
- Human Habitation Projects
- Hospitals & Health Services Facilities
- Recreational & Leisure Facilities
- Transportation Centres, Depots & Ports
- Ecotourism & Nature Tourism Projects
- Water Treatment & Storage
- Mining and Mineral Processing – Bauxite, Peat, Sand, Metallic, Non-Metallic Material
- Metal Processing
- Industrial Projects: Food Processing & Processing Plants – Citrus, Coffee, Cocoa, Edible Fats, Coconut, Solar Salt, Fish & Meat, Syrup. Aquaculture facilities, Breweries & Boxing Plants
- Industrial Projects: Petroleum Production, Refinery, Storage & Stockpiling
- Industrial Project: Manufacturing of paints, textiles, pulp & pesticides
- Industrial Project: Offshore drilling
- Road construction
- River Basin
- Water Management
- Drainage projects, dredging, excavation, land reclamation
- Watershed development and soil conservation projects
- Solid Waste storage, Treatment & Disposal facilities.
- Hazardous Waste Storage, Transportation, Treatment or disposal Facilities
- Agro Processing and processing of agriculture waste
- Cemeteries and Crematorium
- Introduction of Species Flora, Fauna, Genetic material & Genetically modified organism
- Abattoirs
- Felling of tress & Land Clearance

ANNEX II

Guidelines for Public Consultations

LIST OF ACRONYMS

CIDA	Canadian International Development Agency
EIA	Environmental Impact Assessment
EIS	Environmental Impact Statement
MLE	Ministry of Land and Environment
MOH	Ministry of Health
NEPA	National Environment and Planning Agency
NRCA	Natural Resources Conservation Authority
NWA	National Works Agency
JBI	Jamaica Bauxite Institute
SEA	Strategic Environmental Assessment
UKDoE	United Kingdom Department of the Environment
UNEP	United Nations Environment Programme
USAID	United States Agency for International Development
USEPA	United States Environmental Protection Agency
WRA	Water Resources Authority
GOJ	Government of Jamaica

GLOSSARY OF TERMS

(Source: Environmental Impact Assessment (EIA) Cutting edge for the twenty-first century by Alan Gilpin)

Agenda 21: A document adopted by the UN Conference on Environment and Development meeting in Rio de Janeiro in June 1992, representing a programme for the twenty-first century. The conference was held on the twentieth anniversary of the UN Conference on Human Environment, which met in Stockholm in June 1972.

Alternatives: In EIA, an examination of alternative locations, methods, and techniques for a particular project, includes the alternative of not proceeding. It may be demonstrated that a project is not actually needed if demand-management approaches (for example, curbing the demand for water or electricity) are adopted or strengthened. At regional and national levels, a choice of polices, plans and programmes, may be presented, with a range of environmental impacts and mitigation measures.

Applicant: The proponent or developer seeking approval or consent for a proposed activity/development, or seeking the issue of a permit or licence.

Biological diversity: Or biodiversity, an umbrella term to describe collectively the variety and variability of nature. It encompasses three basic levels of organization in living systems: the genetic, species, and ecosystem levels. Plant and animal species are the most commonly recognized units of biological diversity, thus public concern has been mainly devoted to conserving species diversity. This has led to efforts to conserve endangered species and to establish specifically protected areas. However sustainable human economic activity depends upon understanding, protecting, and maintaining the world's many interactive, diverse ecosystems with their complex networks of species and their vast storehouses of genetic information.

Conservation: Defined by the World Conservation Strategy of 1980 as "the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations." Conservation is, therefore, something positive embracing preservation, maintenance, sustainable utilization, restoration, and enhancement of the natural environment. This theme was further endorsed by the World Commission on Environment and Development (Brundtland Commission) in its 1987 report to the UN.

Cumulative effects: Progressive environmental degradation over time arising from a range of activities throughout an area or region, each activity considered in isolation being possibly not a significant contributor. Such effects might arise from a growing volume of vehicles, multiple sources of power generation or incineration, or increasing application of chemicals to the land. The solution is better regional planning and control.

Decision-maker: The body or person responsible for deciding whether a project shall proceed or not, or proceed subject to conditions and constraints. The decision-maker is usually an elected body or responsible agency or minister, the decision-making being essentially a function of government.

Developer: The initiator of a project; also called the proponent, or applicant for development consent.

Development: The application of human, financial, and physical resources to satisfy human needs;

inevitably, development involves modification of the biosphere and some aspects of development detract from the quality of life locally, regionally, nationally, or globally. The breadth of development is not always appreciated as the word applies not only to the growth of industry, commerce and infrastructure, but to sanitation, education, medicine, health, housing, national parks, tourist and recreational facilities.

Ecosystem: The plants and animals of an ecological community, and their environment, forming an interacting system of activities and functions regarded as a unit. There are innumerable ecosystems: for example, marine, fresh-water, terrestrial, forest, and grassland. All ecosystems together comprise the biosphere, that part of the Earth's crust and atmosphere inhabited by living things. Ecology is the study of the relationship between an animal or plant and its surrounding.

Endangered species: Fauna and flora likely to become extinct as a result of direct exploitation by humans, intrusion into highly specialized habitats, threats from other species, interruption of the food chain, pollution, or a combination of such factors.

Environment: A concept which includes all aspects of the surroundings of humanity, affecting individuals and social groupings. The EC has defined the environment as "the combination of elements whose complex inter-relationships make up the settings, the surroundings and the conditions of life of the individual and of society, as they are so as they are felt." The environment may be regarded as a parcel of things which render a stream of beneficial services and some disservices to people, though largely unpriced, and which take their place alongside the stream of goods and services rendered by real income, houses, infrastructure, transport, and other people.

Environmental health impact assessment (EHA): The subset of EIA, an assessment of the impacts on the environment and people of aspects of a project recognized as having potentially adverse heath effects. In 1982, WHO recommended that EHIA studies should be conducted for all major development projects. Many consider that the adverse effects of the Aswan High Dam in Egypt, such as the spread of bilharzias, were neglected in the EIA.

Environmental impact assessment (EIA): The critical appraisal of the likely effects of a policy, plan, program, project, or activity, on the environment. To assist the decision-making authority, assessments are carried out independently of the proponent, who may have prepared an EIS. The decision-making authority might be a level of government (local, state, or federal) or a government agency (at local, state, or federal level). Assessments take account of any adverse environmental effects on the community; any diminution of the aesthetic, scientific, or other environmental values of a locality; the endangering of any species of fauna or flora; any adverse effect on any place or building having aesthetic, anthropological, archaeological, cultural, historical, scientific, or social significance; any long term or cumulative effects on the environment; any curtailing of the range of beneficial uses; any environmental problems associated with the disposal of wastes; any implications for natural resources; and the implication for the concept of sustainable development. EIA extends to the entire process from the entire process from the inception of a proposal to environmental auditing and PPA.

Environmental management: A concept of care applied to individual premises, corporate enterprises, localities, regions, catchments, natural resources, areas of high conservation value, lifetime cycles, waste handling and disposal, cleaner processing and recycling systems, with the purpose of protecting the environment in the broadest sense. It involves the identification of objectives, the adoption of appropriate mitigation measures,

the protection of ecosystems, the enhancement of the quality of life for those affected, and the minimization of environmental costs.

Habitat: Or living space; all the things, which collectively make up the place in which organisms, creatures or humans live. Habitat includes non-living influences such as soils, light, temperature, humidity and other abiotic factors; and biotic factors dependent on the activities of individuals and communities. In 1976, a UN conference on human settlements took the title "Habitat."

Hazard and risk assessment: An essential component of many EISs. Such an assessment embraces the potentially adverse effects of a project involving fire, heat, blast, explosion or food, arising from a manufacturing plant or transportation system. An assessment reveals hazards to life and limb and property, and is expressed in the form of risk probability. Safety depends on the location of a plant, the safety precautions, back-up arrangements adopted, and the degree of training and alertness in the plant. Buffer zones and correct routing of vehicles are also essential.

Health: Defined by WHO as "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity." However, most assessments of health still rely upon morbidity and mortality statistics, such as infant and child mortality rates, and average expectations of life in different countries.

Mitigation measures: Action taken to prevent, avoid, or minimize the actual or potential adverse effects of a policy, plan, programme, or project. Measures might include abandoning or modifying a proposal, or relocating it, substitution of techniques; cleaner methods; recycling; pollution control methods; closure of older plant; land-scaping and rehabilitation; acquisition of properties; and better programming.

Monitoring: A combination of observation and measurement for the performance of a project and its compliance with development consent conditions. Instrumentation might be required in relation to air, water, and land pollutants; noise and blasting; radiation; transportation movements; and land subsidence. Records might be required for materials movements, raw materials, products, wastes, complaints and investigations, instrument and analysis results.

Precautionary principle: A guiding rule in EIA to protect people and the environment against future risks, hazards, and adverse impacts, tending to emphasise safety considerations in the occasional absence of clear evidence.

Project: A proposed installation, factory, works, mine, highway, airport, or scheme, and all activities with possible impacts on the environment.

Proponent: The proposer (or applicant) of an activity, policy, plan, program, or project in the private or public sectors; a proposal usually requires official approval or consent and during the process of obtaining this, the public have increasing opportunities to voice opinions of support and objection.

Public inquiry or hearing: An opportunity for members of the public, voluntary bodies, and government agencies, to express opinion before an independent and impartial commissioner of inquiry, to enable issues about a controversial proposed development to be fully discussed. The usual outcome is the submission of a report by the commissioner with recommendations to a decision-making body or minister, the report becoming immediately a public document. The success of the public inquiry hinges upon the

choice, integrity and independence of the commissioner; and upon a political and social context, which encourages full participation by all citizens, without fear of reprisal or discrimination. The public inquiry often stands at the apex of EIA processes.

Quality of life: In current usage, a concept embracing a miscellany of desirable things not always recognized, or adequately recognized, in the marketplace. It embraces such highly relevant matters as real income, housing and working conditions, health, and education services and recreational opportunities, which might be regarded as the general standard of living. Other highly relevant matters include community relationships, race relationships, civil liberties, compassion, justice, freed on, and fair play, safety and security, law and order, and environmental conditions.

Sanitation: An important health-related branch of development embracing drainage and sewage, sewage and sullage treatment and effluent disposal, safe and adequate domestic water supplies, avoidance of public nuisances and controlled tipping, and drainage facilities for floodwater and surface run-off. Few countries renowned for high-tech achievements have been able to resolve the basic requirements of sanitation, relying on primitive methods (or none).

Scoping: A procedure, carried out as early as possible, to help ensure that an EA focuses on key environmental issues associated with a proposed activity or development; scoping involves meeting between the proponent and planning or environmental agencies, members of the public, and other interests likely to be affected. The result should determine the scope and depth of the significant issues to be examined in the forthcoming EIS.

Strategic EIA (also SEA): The application of EIA not only to individual projects, but to policies, plans, programmes, activities, and regional land-use objectives. There is a growing conviction that matters cannot be completely resolved at project level when many matters have been decided already at a higher level. Matters difficult or impossible to settle at the project level relate to the cumulative effects of other projects within the same or related programs; to transportation decisions governing the modal split between road and rail movement; to energy policies relating to power generation; to greenhouse strategies; and to natural resource conservation and management.

FOREWORD

As a result of human interactions with natural systems, natural processes often experience disruptions and/or changes that affect their normal progression. These changes can in turn affect environmental quality and in turn human settlements and livelihoods. The need to manage this interaction is termed environmental management. Scientific studies on the physical, biological/ecological and social characteristics of planet earth have contributed to the understanding of environmental systems, and the results of these multifaceted and sometimes interdisciplinary studies help to guide assessments of the interaction between human endeavour and natural systems.

Within the limited land space and often fragile ecosystems of Small Island Developing States (SIDS) and the Caribbean in particular, the need to reduce poverty and all its ramifications has increased the imperative for development, and therefore the challenge to harmonise development with sound environmental management principles is often monumental. Various policies, procedures, processes and tools have evolved to assist this environmental management, and one such tool is the Environmental Impact Assessment (EIA). The EIA process has itself undergone evolutionary changes as more data have become available on natural systems, and on human development and the built environment.

This Guideline document attempts to present procedures for conducting an EIA in accordance with the legal and regulatory framework of Jamaica, ecological realities and development imperatives of the island nation, and international agreements and standards for sustainable development.

GUIDELINES FOR CONDUCTING

ENVIRONMENTAL IMPACT ASSESSMENTS

SECTION 1: GENERAL

1.1 Purpose

Guidelines for conducting Environmental Impact Assessments were first produced by the Natural Resources Conservation Authority (NRCA) in July 1997, as a means of assisting developers and environmental consultants to understand the NRCA requirements for EIAs. This followed on from the introduction of the Permit and Licence System on January 1, 1997, and which spoke to the new requirements for the conduct of EIAs for certain types of developments.

Now, some eight years later, much has been learned through the permit and licence application process as well as through the EIAs that have been conducted and submitted to the NRCA and now NEPA, over these years.

NEPA has undertaken a review of the existing EIA Guidelines in an effort to update the document, to incorporate emerging global issues, and natural hazard impacts as well as to create a more user friendly and practical set of guidelines for developers and consultants.

This document presents the revised guidelines. The purpose of the document is to provide clear guidelines for conducting and reporting on EIA study in a useful form that can guide decisions on development in Jamaica.

1.2 The National Environment and Planning Agency (NEPA)

In 1991, Jamaica promulgated the Natural Resources Conservation Authority Act by which an Authority (the NRCA) was established to provide for the management, conservation and protection of the natural resources of Jamaica. The NRCA, was also

charged with administering the Beach Control Authority Act (1956) the Watershed Protection Act (1963) and the Wildlife Protection Act (1945).

In 2001, the NRCA merged with the Town Planning Department (TPD) and the Land Development and Utilisation Commission (LDUC) to form the National Environment and Planning Agency (NEPA). As a regulatory agency NEPA therefore now has responsibility for the legislation listed above as well as the other pieces of legislation which underpinned the TPD and the LDUC, that is, the Town and Country Planning Act , and the Land Development and Utilization Act.

This new agency (NEPA) represents an amalgamation of the Natural Resources Conservation Authority (NRCA) which has a statutory mandate for the conservation, protection and proper management of the natural resources of Jamaica; the Town and Country Planning Authority (TCPA) which has the statutory mandate to ensure the orderly planning of Jamaica, and the Land Development and Utilization Commission (LDUC) with a statutory mandate to ensure that prime agricultural lands are kept in agricultural production in the interests of *inter alia* food security and self sustainability.
(***Davis-Mattis,*** 2002).

1.3 Contextual Framework

1.3.1 Environment and Development

The island of Jamaica covers a land area of 11, 500 square kilometres. Adjacent territorial seas (12 mile radius) and an Exclusive Economic Zone (EEZ) were declared in 1996 and 1991 respectively. The island accommodates a population of 2.6 million (Census 2001) with increasing numbers occupying urban spaces (52%, 2001). Settlement and livelihood patterns have influenced the state of the environment across the country, and interacting with development imperatives and the natural resource base, these patterns are increasingly aggravating environmental degradation.

Integrating environmental considerations with development planning and programme development is essential to the sustainable development of Jamaica. A small island nation with pressing problems of poverty, and social needs, Jamaica must also seek to reduce its vulnerability to external shocks from natural hazards which seem to be

increasing in frequency and ferocity. Flood damage has derailed budgetary considerations annually over the past five years in particular, and attendant slope failures have necessitated road repairs and infrastructure replacement, as well as dislocated livelihoods and loss of earnings. Sound environmental management will also reduce disasters. In that regard, NEPA has sought to enhance the environmental assessment process to meet the national mandate of balancing economic development programmes and projects with environment, economic development, and social justice.

1.3.2 The Project Cycle

It has been demonstrated that environmental assets can be enhanced and liabilities reduced if environmental assessments are appropriately integrated throughout the project cycle. Project identification should be accompanied by screening for environmental issues (including natural hazard risk), and pre-feasibility analysis should include scoping of the issues identified through the Screening process. The feasibility study that follows should then include the Environmental Impact Assessment if the screening and scoping processes identify that need. The site and project-specific assessment will undertake more detailed investigation and will identify positive and negative impacts. Mitigation measures may be suggested where deemed appropriate and these should then be integrated into project design and implementation procedures. During the operational phase of the project a monitoring and evaluation program should also include the identified and recommended environmental parameters.

1.4 What is the EIA?

The environmental impact assessment' (EIA) involves the process of identifying, predicting and evaluating potential environmental impacts of development proposals. The term describes a technique and a process by which information about the interaction between a proposed development project and the environment is collected, analysed, and interpreted to produce a report on potential impacts and to provide the basis for sound decision-making. The results of the study are taken into account by the Regulatory Authority in the determination of whether the proposed development should be allowed, and under what conditions.

The term 'environment" in this regard, includes all relevant aspects of the natural and

human or built resources on the project development site, as well as within the sphere of influence (setting/situation) of the proposed development. The EIA investigates the characteristics of the environment into which the development will be placed, and evaluates the expected interaction with the physical, biological and built environment. The EIA is therefore based on predictions, and must use informed and experienced professional judgment based on scientific method to attempt to predict the potential changes in environmental quality which could result from the proposed project/action, or the proposed challenges that the environment may present to the development.

The study therefore requires a multi- and inter-disciplinary approach to be undertaken by experienced professionals. It should be carried out as integral to the project evaluation process, adding the environmental dimension to the financial and economic feasibility analysis.

The EIA also compares various alternatives by which the project could be realized and seeks to identify the one, which represents the best combination of economic and environmental costs and benefits. Alternatives include location as well as approach to design, process, and construction technology. The EIA is one of the most commonly used environmental management tools to integrate environmental concerns effectively into project design and the development process. EIA means an examination, analysis and assessment of planned activities with a view to ensuring environmentally sound and sustainable development.

The EIA as a procedure is used to examine both beneficial and adverse environmental consequences of a proposed development project, and should be viewed as an integral part of the project planning process. Findings of the study should be taken into account in project design and recommendations implemented should the project be approved.

Three definitions of an Environment Impact Assessment are given below:

The EIA is the need to “identify and predict the impact of the environment and on man’s health and well-being of legislative proposals, policies, programmes, projects and operational procedures, and to interpret and communicate information about impacts”

(Munn, 1979)

"The term 'environmental assessment' describes a technique and a process by which information about the environmental effects of a project is collected, both by the developer and from other sources, and taken into account by the planning authority in forming their judgments on whether the development should go ahead".

(UK DoE, 1989)

EIA is "an assessment of the impact of a planned activity on the environment".

(UN Economic Commission for Europe, 1991)

1.5 UNEP Goals and Principles of EIA

The NRCA, since its inception has adopted the goals and principles of the EIA as articulated by the United Nations Environment Programme (1987). As UNEP has indicated these goals and principles are necessarily general in nature and may be further refined when fulfilling EIA tasks at the national, regional and international levels.

GOALS

1. To establish that before decisions are taken by the competent authority or authorities to undertake or to authorize activities that are likely to significantly affect the environment, the environmental effects of those activities should be taken into account.

2. To promote the implementation of appropriate procedures in all countries consistent with national laws and decision-making processes, through which the foregoing goal may be realized.

3. To encourage the development of reciprocal procedures for information exchange, notification and consultation between States when proposed activities are likely to have significant trans-boundary effects on the environment of those States.

PRINCIPLES

Principle 1: States (including their competent authorities) should not undertake or authorize activities without prior consideration, at an early stage, or their environmental effects. Where the extent, nature or location of a proposed

activity is such that it is likely to significantly affect the environment, a comprehensive environmental impact assessment should be undertaken in accordance with the following principles.

Principle 2: The criteria and procedures for determining whether an activity is likely to significantly affect the environment and is therefore subject to an EIA, should be defined clearly by legislation, regulation, or other means, so that subject activities can be quickly and surely identified, and EIA can be applied as the activity is being planned.

Principle 3: In the EIA process the relevant significant environmental issues should be identified and studied. Where appropriate, all efforts should be made to identify these issues at an early stage in the process.

Principle 4: An EIA should include, at a minimum:

(a) A description of the proposed activity;

(b) A description of the potentially affected environment, including specific information necessary for identifying and assessing the environmental effects of the proposed activity;

(c) A description of practical alternatives, as appropriate;

(d) An assessment of the likely or potential environmental impacts of the proposed activity and alternatives; including the direct, indirect, cumulative, short-term and long-term effects;

(e) An identification and description of measures available to mitigate adverse environmental impacts of the proposed activity and alternatives, and an assessment of those measures;

(f) An indication of gaps in knowledge and uncertainties which may be encountered in compiling the required information;

(g) An indication of whether the environment of any other State or areas beyond national jurisdiction is likely to be affected by the proposed activity or alternatives.

(h) A brief, non-technical summary of the information provided under the above headings.

Principle 5: The environmental effects in an EIA should be assessed with a

degree of detail commensurate with their likely environmental significance.

Principle 6: The information provided as part of EIA should be examined impartially prior to the decision.

Principle 7: Before a decision is made on an activity, government agencies, members of the public, experts in relevant disciplines and interested groups should be allowed appropriate opportunity to comment on the EIA.

Principle 8: A decision as to whether a proposed activity should be authorized or undertaken should not be taken until an appropriate period has elapsed to consider comments pursuant to principles 7 and 12

Principle 9: The decision on any proposed activity subject to an EIA should be in writing, state the reasons therefore, and include the provisions, if any, to prevent, reduce or mitigate damage to the environment. This decision should be made available to interested persons or groups.

Principle 10: Where it is justified, following a decision on an activity which has been subject to an EIA, the activity and its effects on the environment or the provisions (pursuant to Principle 9) of the decision on this activity should be subject to appropriate supervision.

Principle 11: States should endeavour to conclude bilateral, regional or multilateral arrangements, as appropriate, so at to provide, on the basis of reciprocity, notification, exchange or information, and agreed-upon consultation on the potential environmental effects of activities under their control or jurisdiction which are likely to significantly affect other States or areas beyond national jurisdiction.

Principle 12: When information provided as part of an EIA indicates that the environment within another States is likely to be significantly affected by a proposed activity, the State in which the activity is being planned should, to the extent possible:

a. notify the potentially affected State of the proposed activity;
b. transmit to the potentially affected State any relevant information from the EIA, the transmission of which is not prohibited by national laws or regulations; and
c. When it is agreed between the States concerned, enter into timely consultations.

Principle 13: Appropriate measures should be established to ensure implementation of EIA procedures.

SECTION 2: JAMAICA - STATUTORY REQUIREMENTS

The NRCA Act and subsequent legislation and regulations stipulate that persons undertaking new developments, which fall within a prescribed category will require a permit. Licenses will be required for the discharge of trade or sewage effluent and for the construction or modification of facilities. As part of the permit application an EIA may be required.

Sections 9 & 10 of the NRCA Act gives the Authority the power to request that an environmental impact assessment be conducted as part of a permit application. The Authority also has the power to request that the applicant furnish documents or information as the Authority thinks fit. Criteria for requesting this information may include the urgency, the level of technology employed in the operation of the project, and the likely adverse impacts to be expected from the project.

Under the Act the NRCA is also authorized to issue, suspend and revoke permits and licenses if facilities are not in compliance with the environmental standards and conditions of approval stipulated.

2.1 Prescribed Categories

The following is a list of prescribed categories under the NRCA Act.

- Development projects
    - Subdivisions of 10 to 50 lots
    - Subdivisions of 51 lots or more
    - Housing projects of 10 to 50 projects
    - Hotel resort complex of 12 to 50 rooms
    - Hotel resort complex of 51 rooms or more
- Citrus, coffee, cocoa, coconut, sugar cane processing factories
- Solar salt production
- Watershed development and soil conservation projects including river training such as river channel diversion works and works for the transfer of water

resources between river basins, check dams, and retaining walls

- Agro processing and processing of agricultural wastes
- Office complexes of 5000 square meters or greater
- Eco-tourism and nature tourism projects
- Water treatment facilities, including water supply and desalination plants
- Fish and meat processing
- Food processing plants
- Detergent manufacturing including manufacturing of soap
- Manufacturing of containers and package materials including cans, bottles, boxes and cartons
- Distillery brewery and fermenting facilities
- Manufacturing of edible fats, oil and associated processes
- Tanners
- Boxing plants
- Manufacturing of textiles
- River basin development and improvement
- Irrigation and water management and improvement projects
- Slaughter house and abattoirs
- Theme parks
- Hospitals
- Airports and air fields, including runway expansion greater than 20% of the original length
- Sewage and industrial waste water treatment facilities
- Metal processing
    - Ferrous metals
    - Non ferrous metals
    - Metal Plating
    - Foundry operations
- Industrial projects
    - Chemical plants
- Pulp, paper and wood processing
- Petroleum production, refinery, storage, and stockpiling
- Cement and lime production
- Paint manufacture

- Manufacturing of pesticides or other hazardous or toxic substances
- Construction of new highways, construction of arterial roads, construction of new roads on slopes greater than 20 degrees, major road improvement projects including construction of a road of 4 or more lanes or realignment or widening or an existing road into four lanes where such road realignment or widening would be ten (10) kilometers or more in continuous length
- Land reclamation and drainage projects
- Modification, clearance or reclamation of wetlands
- Dredging, excavation, clearing and reclamation of riverine, swamp, beach wetlands or marsh areas
- Solid waste treatment and disposal facilities including waste disposal installation for incineration and chemical landfills or systems for the destruction reprocessing or recycling of such waste
- Cemeteries and crematoria
- Introduction of flora, fauna and genetic material
- Introduction of genetically modified organisms
- Hazardous waste storage, transportation, treatment or disposal facilities
- Clear cutting of forested areas and clearing of trees on land of 3 hectares and over on slopes greater than 25 degrees
- Golf Courses
- Transportation centres for more than 10 vehicles
- Construction or demolition of reservoirs, dams, dykes and aqueducts
- Railways, tramways, and cable car operations
- Causeway and multiple span bridges
- Shopping centres
- Aquaculture facilities and ponds and intensive fish farming
- Storage of scrap metal including derelict vehicles
- Off shore drilling for extraction of oil, natural gas or minerals
- Dry cleaning operations
- Mining, quarrying and mineral processing, bauxite, peat, sand, minerals, including aggregate, construction and industrial materials
    - Metallic
    - Non metallic
- Ship yards

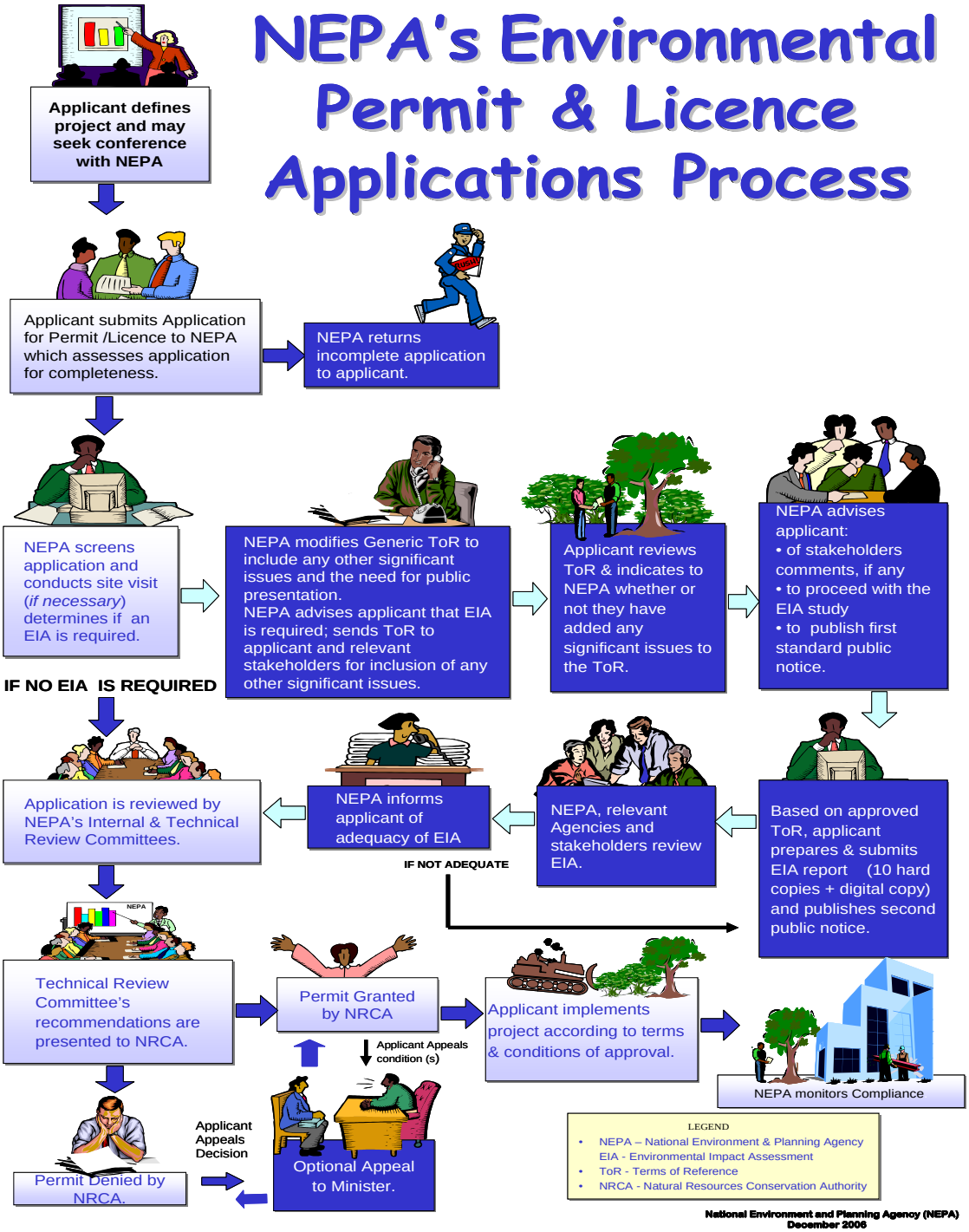
- Marinas and boat yards
- Power generation plants including hydroelectric plants and installations for the harvesting of wind power for energy production and nuclear reaction above one megawatt
- Electrical transmission lines and substations greater than 69 kv
- Pipelines and conveyors including underground cables, gas lines, and other such infrastructure with a diameter of more than 10 centimeters for the transport of gas, oil, or chemicals
- Port and harbour development

2.2 The Application Process

An applicant is required to complete an application form (for permit and or licence) and a Project Information Form (PIF) for submission to the NEPA. The Permit Application and Project Information forms require description of the project as well as selected aspects of the existing biophysical and built environment into which the project will be placed. These forms can be obtained at NEPA and at the regional offices of the Jamaica Information Services. Guidelines for Project Proponents are issued along with application forms.

The Application Process as managed by NEPA is governed by the Permit and License System, which came into effect on January 1, 1997, and is shown in Figure 2.2. The Permit & License System (P&L) is a mechanism to ensure that all Jamaican facilities (developments), within the prescribed categories, meet required standards in order to minimize negative environmental effects.

Figure 2.2: The Application Process



The System seeks to:

- Ensure compliance with Sections 9 & 10 of the NRCA Act of 1991, which gives the NRCA the right to issue permits to persons undertaking new developments and request EIA studies where necessary.
- Ensure that environmental considerations are taken into account early in the planning of new projects.
- Monitor the discharge of certain waste into the environment.
- Ensure compliance with established NRCA environmental standards and conditions of approval.
- Ensure that goods and services are produced in an environmentally sound manner.
- Bring existing facilities into compliance with environmental standards.

Persons undertaking new developments that fall within a prescribed category are required to obtain a permit. Licences will be required for the discharge of trade or sewage effluent and for the construction or modification of facilities.

2.3 The NEPA Screening and Scoping Process

The application forms when received by NEPA are examined by the relevant technical officers within NEPA and in association with the respective technical support GOJ agencies. This screening seeks to identify aspects of the development, and their predicted interaction with the existing environment, and the findings help to determine the level of investigation required to inform the permitting process. Where potentially significant environmental issues are identified further study through an environmental impact assessment may be required. Where potential environmental impacts are deemed minimal, no EIA may be required. Should an EIA be deemed necessary the project proponent and their representatives will be provided with the Terms of Reference generic to the category of development with issues highlighted for particular attention.

NEPA has developed ***Generic Terms of Reference (ToRs)*** for different categories of development, (Annex I). The respective ToRs need to be modified as appropriate to the

respective development project to include any significant issues. The final TORs for the EIA study will be agreed between the project proponent and NEPA, and the EIA study will then proceed in accordance with these TORs.

A public presentation is a requirement as part of the EIA process. However, the Authority from time to time may waive this requirement, if deemed appropriate. The public presentation gives the proponent an opportunity to present to the public the finding of the EIA. It also provides additional avenue for the public to raise questions about the proposed project and for the proponent to respond to these issues and make any necessary changes to the project and the EIA report.

If an EIA is required, the applicant will be notified within ten (10) working days of NEPA's receipt of the application.

The applicant will then be required to post two notices to the public. The first public notice (Sample 1) will indicate that

- an EIA has been requested by NEPA
- how and where the public can access the ToRs for review.

This will allow the public to do their own research/gather information on the project/site and to comment on the draft ToRs, if they wish to do so.,

The second public notice (Sample 2) will indicate that

- the EIA Report has been submitted to NEPA;
- where the public can access the EIA Report for perusal

This second public notice may include information about when and where the public presentation will be convened.

The public presentation should be conducted no less than 3 weeks after the EIA has been made available to the public and no less than 3 weeks after the first notice announcing public presentation has been published.

Sample Public Notice (#1)

Notice of Intention for Environmental Impact Assessment Study
Public Comment Invited

- Insert Name of Development, Parish –

In accordance with the Natural Resources Conservation (Permits and Licences) Regulations of the Natural Resources Conservation Authority (NRCA) Act 1991, the NRCA has exercised its right to require an environmental impact assessment (EIA) of the above-captioned development proposal before a decision to issue a Permit or Licence is made.
This development is proposed by – ***insert name of developer*** – on – ***insert details of parcel of land*** – located – ***insert details of the project location -***, as shown in the map below. The proposal entails – ***insert details of development. Insert name of developer*** – has retained – ***insert name of consultant*** – to assist them with the conducting of the EIA study.

These draft ToRs are available for public inspection at the following locations.

- ***Insert names, address and opening hours of public library closest to the project site;***
- ***Insert the name of the consultant or developer, their address and opening hours; and***
- NEPA Documentation Centre, 11 Caledonia Ave., Kingston 5, open 9-4.
- NEPA Web Site

If you wish to comment on the draft ToRs for this project, please do so within **7 days** of the date of the publication of this notice. Comments should be addressed to:

Manager
Applications Secretariat Branch
Insert name of project
National Environment and Planning Agency
10 Caledonia Ave.
Kingston 5
Tele: (816) 754-7547 0
e-mail: applications@nepa.gov.jm

If you do not wish to comment on the draft terms of reference, but wish to stay apprised of project developments, please contact – ***insert name of developer*** –at the above-noted address.
(Add map of proposed development site here)
Date of Notice: _____

Sample Public Notice (#2)

Notice of Completion of Environmental Impact Assessment Study
Public Comment Invited

- - Insert Name of Development Parish –

In accordance with the Natural Resources Conservation (Permits and Licences) Regulations of the Natural Resources Conservation Authority (NRCA) Act 1991, the NRCA has exercised its right to require an environmental impact assessment (EIA) of the above- captioned development proposal before a decision to issue a Permit or Licence is made.

This development is proposed by – *insert name of developer – on insert details of parcel of land – located – insert details of the project location -*, as shown in the map below. The proposal entails – insert *details of development.*

- ***Insert name of developer*** – has retained – ***insert name of consultant*** – to assist them with the conducting of the EIA study. A final EIA report of this proposed development has now been completed. A review of this study will be the basis upon which a decision is made by the NRCA to grant a permit and/or licence for the development or not. Accordingly, the EIA report needs to be reviewed by the relevant government review agencies and interested members of the public. The report is available for public inspections at the following locations:

- ***Insert name, address and opening hours of the public library closest to the project site;***
- ***Insert the name of the consultant or developer, their address and opening hours; and***
- NEPA Documentation Centre, 11 Caledonia Ave., Kingston 5, open 9—4

If you wish to comment on the EIA report please do so within 3 weeks of the publication of this notice and address them to:

- ***Insert information about when and where of the public presentation will be convened if available. (Refer to Guidelines for Conducting Public Presentation)***

Manager
Applications Secretariat Branch
Insert name of project
National Environment and Planning Agency
10 Caledonia Ave.
Kingston 5
Tele: (816) 754-7547 – 40
e-mail: applications@nepa.gov.jm

(Insert map of proposed development site here)

Date of Notice: _____

SECTION 3: THE EIA STUDY

3.1 The EIA Methodology

The EIA methodology includes a number of steps as outlined below.

3.1.1 Steps in Data Collection and Analysis

The EIA study is based on a systematic process which includes the following steps:

a. Description of the proposed project
b. Description of the proposed site location
c. Liaison with NEPA to determine legal requirements
d. Determination of the Terms of Reference and Scope of Work (NEPA Generic Terms of Reference for different types of development are presented in Annex II)
e. Collection and Analysis of Baseline Data Conditions
f. Identification and Description of Applicable Legal and Regulatory Framework
g. Identification of Critical Issues
h. Determination of Potential Impacts
i. Determination of Relevant Mitigation Measures
j. Consideration of Project Alternatives
k. Determination of Environmental Quality Objectives (Recommendations for Sound Environmental Management/Best Practices)
l. Identification of Post Permit Requirements

The presentation of data for the EIA must include information from existing studies and reports as well as current data from field research. All information should be properly sourced to indicate accuracy on the level of information and the date of the information being presented.

3.1.2 Data Sources

Information should be obtained from recognized and specialized sources such as the following:

a. Libraries at universities and other academic institutions (University of the West Indies, University of Technology, etc.)
b. Government agencies (Water Resources Authority, National Works Agency, Public Health Department, National Environment and Planning Agency, Mines and Geology Division, Office of Disaster Preparedness and Emergency Management, Meteorological Office, Forestry Department, etc.)
c. Non-governmental Organisations (Jamaica Environment Trust, Jamaica Conservation and Development Trust, Friends of the Sea, Northern Jamaica Conservation Association, Caribbean Coastal Area Management, etc.)
d. Internationally funded projects (Coastal Water Quality Improvement Project, Trees for Tomorrow, etc)
e. Legal Instruments, Policies and Regulations from NEPA and other relevant agencies should also be consulted and referred to.
f. International documents relevant to the proposed development

Additionally, a list of recommended texts, which details aspects of EIA Methodology, are given below:

Y. J. Ahmad and G. K. Sammy: ***Guidelines to Environmental Impact Assessment in Developing Countries*** UNEP Regional Seas Reports and Studies No. 85, UNEP, 1987.

World Bank Technical Paper Number 139: ***Environmental Assessment Sourcebook, Vols. I - III,*** Environment Department, World Bank, Washington D.C., December 1991.

Jones Williams, Margaret. *Environmental Impact Assessment EM614. Course Material* M.Sc. Natural Resources Management, UWI Mona 2004.

Glasson: John, Riki Therivel and Andrew Chadwick ***Introduction to Environmental Impact Assessment: The Natural and Built Environment***- Series 1, (1994)

Caribbean Development Bank ***NHIA-EIA Sourcebook*** (in progress)

3.2. Description of the Existing Environment – Baseline Studies

An EIA must be a site specific and project specific study. An EIA for a particular development in a particular setting cannot be transferred either to another development or even the same development in another setting.

The EIA is a multi-disciplinary study that must span the relevant aspects of the natural and built environments. Critical areas to be studied will be dependent on the project site and the project details. A checklist gives some of these critical factors, which should be considered as may be relevant in describing the environment. This description of the environmental setting is a record of conditions prior to implementation of the proposed project. It is primarily a benchmark against which to measure environmental changes and to assess potential impacts.

Data Collection and Interpretation should involve a combination of: desktop research including satellite imagery, project related documents, review of relevant literature, topographical maps and site plans; field reconnaissance and investigation; and structured interviews. Each of the realms of environmental data should be investigated, *viz.* physical, biological and human, and the relevant aspects included in the study.

BASIC CHECKLIST OF CRITICAL ASPECTS TO BE CONSIDERED IN EIA

Box I. PHYSICAL ENVIRONMENT

a. Climatic variables
Rainfall patterns – mean, mode, seasonality
Temperature patterns
Extreme events
Climate change projections
Prevailing Wind - direction, speed, anomaliesns

b. Geology
Underlying rock type
Surficial material
Geologic structures (faults etc.)
Geologic resources (minerals,etc.)

c. Topography
Slope form
Landform and terrain analysis
Specific landform types

d. Coastal dynamics and morphology
Wave patterns
Currents
Shoreline morphology – nearshore, foreshore
Sediment – characteristics and transport

e. Soil
Type and characteristics
Porosity and permeability
Sub-soil permeability
Run-off rate
Effective depth (inches/centimetres)
Inherent fertility
Suitability for method of sewage disposal

f. Drainage
Surface hydrology
Drainage network
Rainfall runoff relationships
Hydrogeology
Groundwater characteristics – springs, etc.

g. Water Quality
Terrestrial - rivers, lakes, ponds, gullies
Coastal

h. Air Quality
Ambient
Respirable
Airshed Importance
Odour levels

i. Noise

j. Natural Hazard Risk - See Box II

BOX II **NATURAL HAZARD RISK**

a. **Seismicity**
Earthquake hazard; liquefaction potential, tsunami

b. **Slope stability**
Landslide potential

c. **Soil erodibility**

d. **Flood hazard**
Extreme events
Drainage network and storm water runoff potential

e. **Hurricanes**
Wind
Extreme rainfall
Storm waves and surge potential

f. **Elements of Environmental Protection**
Reefs, Wetlands, Watershed conditions, Forest/vegetation cover

Box III **BIOLOGICAL ENVIRONMENT**

a. Flora

General type and dominant species
Densities and distributions
Habitat value
Historically important specimen
Watershed value
Introduced species
Rare and Endangered species (location, distribution and conditions)
Fire potential
Timber value
Specimen of scientific or aesthetic interest

b. Fauna

General types/dominant species
Densities and distribution
Habitat (general)
Migratory species
Exotic (introduced) species
Rare and endangered species
Commercially valued species

c. Terrestrial ecology

d. Marine/coastal Ecology

e. Riverine ecology

f. Nuisance species
g. Aesthetic appeal
h. Landscape vistas

Box IV **Human Environment**

a. Sphere of Influence
b. Land Use – Site and Situation
c. Zoning and Density Regulations
d. Livelihoods
e. Demographics
f. Community Structure
g. Proposed Developments
h. Transportation and Traffic Patterns
i. Settlement patterns and Social structure
j. Water supply
k. Energy supply
l. Telecommunications
m. Services – health, educational facilities, recreational facilities
n. Archaeological heritage
o. Cultural values
p. Natural Hazard Vulnerability and History

3.2.1 Physical Environment

As indicated in the checklist **(Box I)**, several aspects of the physical environment must be considered. The presentation of the information may follow the basic sequence below:

- Climate, including the relevant hydrometeorological considerations for the project and climate change scenarios (within the scope of data available)
- Topography and soils
- Geology/ geomorphology
- Drainage
- Natural hazard risk
- Ground water - hydrogeology
- Coastal morphology
- Air quality
- Noise
- Landscape
- Aesthetic appeal

3.2.2 Biological Environment

The biological environment includes several inter-related components, which are based on the physical supporting structure. The components of the biological environment may be presented in the following sequence:

- Habitats
- Flora
- Fauna
- Endangered species
- Commercial species
- Endemic species
- Nuisance species
- Parks and Protected Areas

3.2.3 Human Environment

The human environment may also be described as the socio-economic or the built

environment. Aspects of the human environment will be determined by the physical and biological environments, and the information may be presented according to the following sequence:

- Population and Demographics
- Land and Livelihood /Employment
- Settlement patterns and Social structure
- Services – health, educational facilities, recreational facilities
- Natural Hazard Vulnerability and History
- Recreational activity
- Archaeological heritage
- Cultural values

3.2.4 Description of the Proposed Project

This is a detailed statement of all the critical components, attributes or phases of the proposed development. This should also include pre-construction, and construction phase activities, through commissioning, to the operational phases of the development

3.2.5 Legislative and Regulatory Framework

This section of the report should present information on the regulatory framework within which the potential development will have to operate. This should include:

- Policy framework for conducting EIAs
- The EIA process
- Relevant statutory designations (nature reserves, parks and protected areas, heritage sites, listed buildings, monuments, protected species)
- Relevant national and regional legislation, regulations, and policy initiatives
- Relevant international legislation

3.2.6 Potential Impacts

3.2.6.1 Prediction of Impacts

The objective of prediction is to identify the magnitude, significance, and other dimensions of potential change in and interaction with the environment given the project intervention. This should be an objective exercise utilizing scientific knowledge with a combination of informed professional judgment according to accepted procedure.

The following aspects should be covered in impact prediction:

Direction	Positive Or Negative
Duration	Long-, Medium- Or Short - Term, Episodic
Location	Direct or Indirect Project On Environment Environment On Project
Magnitude	Large Or Small – Major, Minor
Extent	Sphere Of Influence - Local, National, Regional

Impact identification is a critical step in an EIA. An Impact Matrix should be used to document the impacts according to the criteria above.

The impacts are selected, based on magnitude, significance, extent and special sensitivity, for further study.

- Magnitude is measured on a selected scale and the impact ranked accordingly. Magnitude refers to the amount of change to be created by the project-environment interaction
- Significance refers to the level of change especially as it relates to environmental quality objectives
- Extent refers to the area to be affected.
- Quantification of impacts is a difficult technical aspect of an EIA. For some impacts, the theoretical basis for computing the magnitude does not exist. Such

impacts may have to be addressed in a qualitative way.

Natural Hazard Impact is an essential consideration. The natural hazards within the project environment should have been identified in the physical baseline descriptions, and the impact assessment ought to consider vulnerability of the project site and situation to natural hazard impact. An assessment of the extent to which the project may exacerbate hazard vulnerability must also be assessed.

3.2.6.2 Cumulative Impacts

In addition to the potential and site specific impacts, Cumulative Impacts should also be identified when appropriate. Cumulative Impacts are those impacts which will show an increase over time as a result of successive additions to the environmental changes. Cumulative Impacts are particularly important for projects which are large in size, scale and geographic range. Cumulative Impacts will also be important for areas which have limited development and in which the proposed project may make a significant change in character or resource base. Conversely, Cumulative Impacts will also be important for areas which are already extensively developed, or which have several other developments proposed, and in which the proposed project may add to or exacerbate existing environmental conditions.

3.2.6.3 Positive Impacts

Positive impacts to be derived from the implementation of the project should also be described. These may include the following:

a. Improved land use options
b. Improved character of a community
c. Provision of jobs in the short term and/or long term
d. Creation of opportunities for improved environmental awareness
e. Creation of opportunities for implementation of conservation methods
f. Opportunities for international investment
g. Improved standard of living

3.2.7 Public / Community Involvement and Review

Civil society, which includes citizens, community-based and non-governmental organizations (NGO's) within the sphere of influence of the project (project setting) should be given the opportunity to share information for the EIA study. This will facilitate obtaining views and perceptions of the proposed development, as well as the inclusion of local knowledge and expertise. Local anecdotal knowledge can sometimes help to facilitate differentiation between those impacts which are of major importance in the local context and those which are not.
Civil society should include but not necessarily be limited to:

- Environment and Development NGO's
- Chambers of Commerce
- Service Clubs
- Citizens Associations

Information obtained from NGO's and community groups can be of invaluable assistance in providing approaches to problem solving and resolving conflicts. This information obtained as part of the public consultations should be documented in the EIA report.

Annex II shows various public consultation methods that may be employed depending on the nature of the project, the method of data collection, knowledge/expertise required, and the problem solving value.

Apart from being directly involved in the actual EIA study the public may be involved in the review of the EIA. Depending on the nature of the project, the EIA may be the subject of a public hearing or presentation, and/or posted on the website. The public is generally given thirty (30) days to send in written comments to NEPA, following public access to the document.

3.2.8 Mitigation Measures

It is recognised that it is seldom possible to eliminate an adverse environmental impact altogether, but it is often feasible to reduce its intensity. This reduction is referred to as

mitigation. For each potential adverse impact the plan for its mitigation at each stage of the project should be documented and its cost assessed. This is an important consideration in the selection of the preferred alternative. In the case of beneficial impacts it should be demonstrated how these can be optimized.

3.2.9 Consideration of Alternatives

All the alternatives taken into account in developing the project should be documented. Documentation of the project alternatives illustrates that the developer may have considered other approaches to the project. These may include the consideration of other project sites; technology; densities, and / or means of minimizing environmental damage.

For example, if the project were to be sited elsewhere, the impacts associated should be reviewed and the associated mitigation action defined. Each alternative should be evaluated in respect of its potential environmental impact and capital and operating costs. The environmental losses and gains must be combined with the economic costs and benefits to give the full picture for each alternative.

Identification and Analysis of Alternatives or the Consideration of Alternatives often occurs early in the project planning stage, and should include the following as may be appropriate:

- No action alternative
- Alternative locations
- Alternative scales of the project
- Alternative processes or equipment
- Alternative site layouts
- Alternative operating conditions
- Alternative ways of dealing with potential impacts

3.2.10 Environmental Management of the Project

An outline for environmental management of the project should be stipulated and this will be finalized to include permit conditions following approval of the project by NEPA. The management plan should include the Environmental Quality Objectives related to the project and its environmental setting, the mitigation measures recommended in the EIA, the awareness and training for project staff, including construction and operations personnel, and an outline monitoring plan which will be used during the construction phase of the project.

3.2.10.1 Environmental Quality Objectives (EQO)

Environmental Quality Objectives are determined by the physical, biological and social characteristics of the project site and setting as identified in the Baseline studies, by the nature of the project and potential impacts, and by the mitigation measures recommended. Quality Objectives should be applied to both the construction and operational phases of the development and they generally relate, though not exclusively, to:

- ✓ Protection and Enhancement of environmental assets (habitat, coastal resources, vegetation cover, *inter alia.)*
- ✓ Slope Stability, Coastal Protection, Drainage optimization
- ✓ Environmental Health – Water Quality, Air Quality , Sanitation /Hygiene
- ✓ Disaster Risk Reduction
- ✓ Human settlements
- ✓ Conservation of resources (water, energy)

3.2.10.2 Training

Sensitisation training for staff is essential to meeting the environmental quality objectives. This process need not be exhaustive, but should be sufficient to ensure that all managers and line staff understand the obligations of the development under conditions of the environmental permit and the EQOs.

3.2.10.3 Outline Monitoring Plan

The need for a Monitoring Plan should be stated in the EIA Report if it is the considered opinion of the Consultants that it is required for a particular project. The requirement for the Monitoring Plan will be listed as a condition of the environmental permit issued by NEPA, if NEPA so requires.

A draft of the proposed Monitoring Plan will include the mitigation measures recommended and will present procedures and reporting relationships. The programme should clearly state:

- Institutional arrangements for carrying out the work parameters to be monitored
- Methods to be employed
- Standards or guidelines to be used
- Evaluation of the results
- Schedule and duration of monitoring
    - Initiation of action necessary to limit adverse impacts evident from monitoring
- Format and frequency of reporting.

Parameters to be included in the Monitoring Plan will be dependent on the parameters analysed in the baseline data collection and the site specific conditions. Examples of parameters to be monitored include the following:

a. Riverine water quality (suspended solids, oil and grease, total and faecal coliforms, etc.)
b. Coastal water quality (suspended solids, oil and grease, total and faecal coliforms, etc.)
c. Vegetation (side-tipping of spoil, protected species, identified trees, etc.)
d. Wildlife (turtle nesting beaches, sensitization of workers, etc.)
e. Air quality (respirable particulates, dust, opacity, noxious fumes, etc.)
f. Noise (perimeter noise, etc.)
g. Stack emissions (nitrous oxides, sulphur oxides, particulates, etc.)
h. Solid Waste Management (number, type and placement of receptacles, etc.)

i. Public Health (sanitary facilities, portable toilets, food waste, etc.)
j. Worker Health and Safety (safety gear, dust masks, hard hats, work boots, ear plugs, etc.)

The plan may need to be adjusted and finalized to take account of conditions stipulated in the environmental permit. The final Monitoring Plan must be approved by NEPA.

3.3 The EIA Team

The team assembled to conduct the EIA should consist of qualified and experienced professionals from the range of disciplines required for the EIA, based on the critical aspects identified for the project.

The following is a list of professionals that may be required depending on the environmental setting and the nature of the project:

a. Project Manager/Team Leader
b. Geographer
c. Geologist
d. Hydrologist/Hydrogeologist
e. Hazard Management Specialist
f. Chemist
g. Marine Biologist
h. Botanist/Floristic Surveyor
i. Ornithologist
j. Herpetologist
k. Lepidopterist
l. Parks and Protected Areas Specialist
m. Urban/Regional Planner
n. Socio-economist
o. Demographer
p. Impact Assessment Specialist

3.4 The EIA Report

The EIA should be documented by a written report, supported by references, photographs, maps, plans and data tables as appropriate.

The report should contain an introduction explaining the need for, and context of the project. This document should have the following basic aspects included in the Table of Contents, unless specified otherwise in the Terms of Reference.

Executive Summary

- Policy, Legal and Administrative Framework
- Description of the Existing Environment
- Description of the Proposed Project in detail
- Identification and Assessment of Potential Environmental Impacts
    - Physical
    - Natural Hazard Risk
    - Biological
    - Human/Social
- Cumulative Impacts
- Positive Impacts
- Public Involvement
- Recommended Mitigation Measures
- Identification and Analysis of Alternatives
- Environmental Management of the Project
    - Environmental Quality Objectives
    - Training
    - Draft Outline Monitoring Programme
- List of References
- Appendices including:
    - Reference documents
    - Photographs/ maps
    - Data Tables
    - Terms of Reference
    - Composition of the consulting team
    - Notes of Public Consultation sessions

SECTION 4: EIA REVIEW

4.0 EIA Review

The Final EIA report is submitted to NEPA for review. The process of review of EIA reports is primarily the responsibility of the National Environment and Planning Agency (NEPA). However stakeholder participation is essential in the sustainable development process, and relevant agencies of government and other institutions with the requisite knowledge, expertise and responsibility form part of the EIA and Permit Review process through the Technical Review Committee.

An Internal Review Committee (IRC) comprising the relevant technical staff from within NEPA reviews the report and solicits responses from the applicant where there may be queries. The IRC then prepares the project for presentation to the Technical Review Committee, which comprises stakeholder agencies external to NEPA.

Some of the stakeholders frequently involved in the process include:

- ✓ Water Resources Authority (WRA)
- ✓ Environmental Health Unit (EHU)
- ✓ Ministry of Health
- ✓ Mines and Geology Division
- ✓ Jamaica Bauxite Institute (JBI)
- ✓ National Solid Waste Management Authority (NSWMA)
- ✓ Institute of Jamaica
- ✓ Office of Disaster Preparedness and Emergency Management (ODPEM)
- ✓ Jamaica Natural Heritage Trust (JNHT)
- ✓ National Water Commission (NWC)
- ✓ National Irrigation Commission (NIC)
- ✓ Fisheries Division
- ✓ National Works Agency (NWA)
- ✓ National Land Agency (NLA)
- ✓ University of the West Indies (UWI)
- ✓ Parish Councils
- ✓ Select Non- Governmental Organizations

NEPA is obliged to undertake a thorough review of EIA reports and the stakeholder agencies will focus at a minimum on the areas for which they have legal responsibility or specific expertise. Agencies selected to review specific EIAs will be dependent on the nature of the project. During the Review process all reviewers are required to direct queries to the Applications Secretariat Branch, NEPA.

In an effort to adhere to the ninety-day (90) timeline for processing applications NEPA requests that the reviewing agencies submit their responses within thirty-days (30) of receiving the EIA report.

The Findings of the Technical Committee and the Internal Review Committee are then compiled and the project presented to the NRCA Board for consideration and approval.

SECTION 5: POST PERMIT REQUIREMENTS

5.0 Post Permit Requirements

Depending on the nature and scope of the project, NEPA may request particular actions on the part of the developer, after the permit is issued. These actions are usually stipulated in the permit and if not followed through, the developer could be found in beach of the permit conditions. Examples of types of actions that may be required are the preparation of any of the following:

5.1 Environmental Management and Training

This section should document how the environment will be managed during the implementation of the project both construction and operational phases. The training programme for employees of the facility should be outlined. This section should identify any institutional needs for implementing the recommendations of the EIA.

5.2 Monitoring Programme

A detailed environmental monitoring programme/plan should be described. The reasons for and the costs associated with the monitoring activities should be covered. It should be noted that some details presented may change depending on the final designs after the EIA preparation and review. These changes must be submitted to and approved by the NRCA.

The monitoring programme should clearly state the:

- institutional arrangements for carrying out the work

- parameters to be monitored
- methods to be employed
- standards or guidelines to be used
- evaluation of the results
- schedule and duration of monitoring
- initiation of action necessary to limit adverse impacts
- disclosed by monitoring
- format and frequency of reporting

5.3 Emergency Response Plan

An Emergency Response Plan is a procedures manual to deal with both internal and external emergencies such as:

- ✓ fires
- ✓ accidents
- ✓ earthquakes
- ✓ hurricanes
- ✓ floods
- ✓ civil unrest
- ✓ handling of hazardous materials
- ✓ spills contingency
- ✓ malfunctioning equipment

Other types of post permit requirements could include:

- ✓ Wildlife Management Plan
- ✓ Nursery Manual and Protocol

SECTION 6: A WORD ABOUT STRATEGIC ENVIRONMENTAL ASSESSMENTS

A Strategic Environmental Assessment (SEA) is defined as “the formalized, systematic and comprehensive process of evaluating the environmental impacts of a policy, plan or programme and its alternatives, including the preparation of a written report on the findings of that evaluation, and using the findings in publicly accountable decision-making” (Therivel *et al*, 1992).

A policy may be defined as an inspiration and guidance for action, a plan as set of coordinated and timed objectives for the implementation of a policy, and a programme as a set of projects in a particular area (Wood, 1991).

An SEA may be described as an EIA of policies, plans and programmes, where impacts are predicted at a strategic level. Cumulative Impacts which are applicable to EIAs are certainly of increased importance in the SEA. In fact individual project EIAs will not adequately consider the cumulative impacts caused by several projects being proposed by developers, independent or otherwise.

An SEA should be carried out early in the decision-making process and should encompass all of the projects of a certain type or within a certain area. The SEA may ensure that alternatives are adequately assessed, that cumulative impacts are considered, that the public is fully consulted and that decisions concerning individual projects are made in a proactive way rather than in a reactive way (Glasson *et al*, 1994).

On the technical side, the many future developments planned over a large area can result in analytical complexity. This is because the information about proposed developments and projected future environmental conditions, may be limited and difficult to assess.

Three SEAs have been conducted in Jamaica in recent years, and serve to show the

following:

a. the emerging importance of the SEA
b. the contribution of the SEA to informed decision-making
c. the benefits of the SEA to the developer
d. the early dissemination of information to the public on proposed developments

These three SEAs have been for three distinctly different types of projects, in three different geographical areas, and each with a unique set of issues. These SEAs are:

a. Port Royal Heritage Tourism Project (The proposed development of a town in a renowned heritage area, with themed sections, and associated development for the cruise ship and tourism market).
b. Highway 2000 (The proposed development of a cross nation, toll road covering over 240 km and traversing different types of terrain)
c. Rose Hall Developments Ltd. (The proposed development, based on government mandate, of prime north coast real estate, for the tourism market, and to include hotels, golf courses, condominiums and conference center.)

Recognizing the emerging importance and application of the SEA, The Cabinet Office (supported by the ENACT Programme and NEPA) has produced a Draft Manual on conducting Strategic Environmental Assessments. An SEA policy was also accepted by Cabinet in 2005.

LIST OF REFERENCES

1. Y. J. Ahmad and G. K. Sammy: ***Guidelines to Environmental Impact Assessment in Developing Countries*** UNEP Regional Seas Reports and Studies No. 85, UNEP, 1987.

2. Conrad Douglas and Associates: Natural Resources Conservation Authority ***Guidelines for the Preparation of an Environmental Impact Assessment*** - Draft, September 29, 1993.

3. Davis-Mattis, Laleta. Natural Environmental and Planning Agency ***Jamaica's Commitment to the Conservation and Management of Natural Resources …Ten Years in Retrospect*** March 2002

4. World Bank Technical Paper Number 139: ***Environmental Assessment Sourcebook, Vols. I - III,*** Environment Department, World Bank, Washington D.C., December 1991.

5. Municipal Engineers Association of Ontario: ***Class Environmental Assessment for Municipal Road Projects,*** Chapter 5 - Public Consultation June 1993.

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9. Caribbean Development Bank ***NHIA-EIA Sourcebook*** (in progress)

LIST OF ANNEXES

Annex I **NEPA Generic Terms of Reference for Prescribed Categories of Developments**

Annex II **Guidelines for Conducting Public Presentations**

Annex I

NEPA Generic Terms of Reference for Prescribed Categories of Developments

Annex II

Guidelines for Conducting Public Presentations

NATIONAL ENVIRONMENT AND PLANNING AGENCY

NATURAL RESOURCES CONSERVATION AUTHORITY

GUIDELINES FOR CONDUCTING PUBLIC PRESENTATIONS

2007-10-25

SECTION 1: GENERAL GUIDELINES

1.1 Introduction

There are usually two forms of public involvement in the Environmental Impact Assessment (EIA) process. The first is direct involvement of the affected public or community in public consultations during the EIA study. These consultations allow the developer to provide information to the public about the project and to determine what issues the public wishes to see addressed. The extent and results of these consultations are included in the documented EIA report.

The second level of involvement takes place after the EIA report and addendum, if any, have been prepared after the applicant has provided the information needed for adequate review by NEPA and the public.

Public involvement in the review process is in keeping with Principle 7 of the United Nations Environment Programme (UNEP) decision published as Goals and Principles of Environmental Impact Assessment [Decision 14/25 of the Governing Council of UNEP, of 17, June, 1987]

1.2 Purpose

These guidelines are prepared for the use of the developer/project proponent; the consultants involve in conducting the EIA study and prepared the EIA report and the public.

SECTION 2: SPECIFIC GUIDELINES FOR PUBLIC PRESENTATIONS

2.1 Requirements

Arrangements for the public presentation must be made in consultation with NEPA in respect of date, time, venue, chairperson and participants.

A permanent record of the meeting is required hence, the project proponent/consultant will submit to NEPA a copy of the verbatim report of the public presentation within seven (7) days of the date of the meeting.

2.2 Public Notification

The public must be notified at least three weeks before the date of the public presentation. The developer/consultants must seek to ensure that in addition to specific invitation letters, at least three (3) notices are placed in the most widely circulated newspapers advertising the event. The notice shall also be forwarded to NEPA for posting on the website. To ensure that the notice is distributed as widely as possible, other methods of notification such as community notice board, flyers, town criers etc. shall be utilized as appropriate. In addition, specific notice to relevant local NGOs and community groups should be made by the developer/consultants.

The notice should indicate that:-

- the EIA has been submitted to NEPA;
- the purpose of the meeting;
- how to access the EIA report for review
- the date, time and venue of the public presentation.

The public presentation should be conducted no less than 3 weeks after the EIA has been made available to the public and no less than 3 weeks after the first notice announcing public presentation has been published by the applicant.

(A typical notice is in Appendix 1).

2. 3 Responsibility of Developer/Consultant Team

The developer/consultant is responsible for distribution of copies of the EIA Report to make them available to the public at least three weeks before the public presentation.

Copies should be placed in the Local Parish Library and the Parish Council Office as well as at the nearest NEPA Regional Office and other community locations as agreed upon.

A summary of the project components and the findings of the EIA in non-technical language should also be prepared for distribution at the public presentation.

2.4 Conduct of the Meeting

With respect to the conduct of the meeting, the chairperson should be independently selected so as to ensure his/her neutrality. NEPA should be consulted regarding the selection of a chairperson. The role and responsibilities of the chairperson are outlined ***Appendix 3***.

The technical presentation by the project proponent/consultant should be simple, concise and comprehensive. The main findings of the EIA including adverse and beneficial impacts identified and analyzed should be presented.

Mitigation measures and costs associated with these measures should be presented. The presentation should inform the public on how they will get access to monitoring results during the construction and operational phases of the project, bearing in mind that the public and non-governmental groups are expected to be involved in post-approval monitoring. Graphic and pictorial documentation should support the technical presentation.

Presenters are advised to keep the technical presentation simple and within a time limit of 20-30 minutes depending on the complexity of the project and to allow a minimum of 30 minutes for questions.

The project proponent/consultant will submit to NEPA a copy of the verbatim report of the public presentation within seven (7) days of the date of the meeting.

Please note that the public will be given a period of thirty (30) days after the Public Presentation to send in written comments to NEPA.

(A typical agenda for a meeting is given in Appendix 2)

APPENDIX 1

NOTIFICATION OF PUBLIC MEETING

THERE WILL BE A PUBLIC PRESENTATION ON THE ENVIRONMENT IMPACT ASSESSMENT REPORT

OF:

VENUE:

DATE:

TIME:

THE PUBLIC IS INVITED TO PARTICIPATE IN THE PRESENTATION BY WAY OF ASKING QUESTIONS RELATING TO THE PROPOSED PROJECT.

A COPY OF THE ENVIRONMENTAL IMPACT ASSESSMENT REPORT MAY BE CONSULTED AT THE

_____ PARISH LIBRARY
_____ PARISH COUNCIL OFFICE
_____

For further information contact:

APPENDIX 2

AGENDA

1. WELCOME AND INTRODUCTION

2. PRESENTATION OF EIA FINDINGS AND MEASURES TO MINIMIZE IMPACTS

3. QUESTION AND ANSWER SESSION

4. CLOSING REMARKS

APPENDIX 3

ROLE AND RESPONSIBLITIES OF THE CHAIRPERSON

The chairperson has the main role of guiding the conduct of the meeting and seeing to it that the concerns of the public are adequately aired and addressed by the proponent/ consultants.

The responsibilities of the chairperson include explaining the NEPA approval process, that is, the steps involved and the role of the NEPA at these public presentations. In other words, the chairperson should explain the context within which the meeting is taking place.

The chairperson should ensure that adequate time is allowed for questions and answers, and must understand clearly and communicate the purpose of the meeting to the audience. The chairperson is responsible for introducing the presenters.

The chairperson should contribute to but not monopolize the meeting.