



ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREENING  
AND ASSESSMENT FRAMEWORK

**HURRICANE TOMAS EMERGENCY RECOVERY  
PROJECT**

**Saint Lucia**

**Hurricane Tomas Emergency Recovery Project**

**ENVIRONMENTAL AND SOCIAL SAFEGUARDS SCREENING  
AND ASSESSMENT FRAMEWORK  
(ESSAF)**

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## I. INTRODUCTION AND OBJECTIVES

1. The World Bank is providing a credit to the Government of Saint Lucia (GoSL) in the amount of US\$15 million towards the implementation of the Hurricane Tomas Emergency Recovery project. The project, will support the Government's recovery and reconstruction efforts following the passage of Hurricane Tomas on October 30, 2010, and finance post-hurricane rehabilitation activities in the health, education and infrastructure sectors throughout the island and strengthen disaster risk management capacity to lay the foundation for the longer-term sustainable strategy to improve the resilience, preparedness, and response capacity of Saint Lucia to natural hazards.

2. Consistent with the World Bank Procedural Guidelines for OP/BP 8.00 emergency operations, this Environmental and Social Screening and Assessment Framework (ESSAF) has been prepared to ensure compliance with the World Bank's safeguard policies. It establishes the objectives, procedures, institutional framework, and implementation arrangements for identifying and managing potential environmental and social impacts from project activities. It also addresses mechanisms for consultation and redress of possible grievances, and includes the specific screening tool that is recommended for use on all sub-projects. The Framework will also assist all project implementing entities in screening all the subprojects for potential social and environmental impacts, identifying documentation and preparation requirements, and prioritizing the investments.

3. The objective of this ESSAF is to ensure that all efforts are made to avoid and minimize negative environmental and social impacts for all activities financed by the project. Where the potential social and environmental impacts cannot be avoided or where these impacts are identified, the necessary mitigation measures should be developed and implemented in keeping with the relevant legislation of Saint Lucia and policies of the World Bank. The ESSAF will form part of the project's Operations Manual and is referenced in the project's Legal Agreements.

## II. DESCRIPTION OF THE PROJECT

4. **Project Objective.** The project aims to support the recovery and reconstruction efforts of the GOSL in the aftermath of Hurricane Tomas. The development objectives are to: i) rapidly resume economic activities and critical services shortly after Hurricane Tomas; ii) strengthen the Government's ability to analyze, assess, and integrate natural hazard and climate change risk reduction into national development policies and decision-making processes; and iii) rehabilitate damaged and vulnerable transport, health, and education infrastructure affected by the passage of Hurricane Tomas. Financing under this project is provided on an emergency basis to avoid the usual time lag between the end of the relief period and reconstruction.

5. **Project Components.** Four components are proposed for the emergency recovery project, as follows:

**Component 1: Support for Early Recovery.** This component would focus on supporting the early recovery of the Government's key economic sectors from the impact of Hurricane Tomas, through the provision of goods, technical advisory services and emergency operating costs. Emergency Operating Costs would include the incremental

expenses incurred by the GOSL for early recovery efforts arising as a result of the impact of Hurricane Tomas, including, *inter alia*, additional transportation costs (i.e. gasoline and use of other transportation), increased electricity bills for the public sector, staff overtime and rental of light and heavy machinery (i.e. generators and equipment for removal of debris). Goods and services under this component would be financed retroactively and the eligibility of the expenditures will be determined based on review of satisfactory supporting documentation presented by the Government, including adherence to appropriate procurement practices where applicable.

**Component 2: Institutional Strengthening and Hazard and Risk Analysis.** This component would include strengthening the institutional capacity at the national level, including the Ministry of Finance, Ministry of Housing, Urban Renewal and Local Government, the Ministry of Physical Development and Environment and the National Emergency Management Organization to: i) evaluate and integrate natural hazard and climate change risk reduction into national development policy and decision-making processes using geo-referenced information; ii) carry out various risk assessments and impact evaluation studies in highly affected areas and specific sectors; and iii) review the National Disaster Management Plan and improve disaster management capacity.

**Component 3: Reconstruction and Rehabilitation of Damaged Critical Public Infrastructure.** This component would finance selected reconstruction and rehabilitation activities of damaged infrastructure in the Government's transport, health and education sector. Activities would include civil works, technical advisory services and goods required for the rehabilitation of the damaged infrastructure. Civil works would be executed to ensure that target structures are resilient to future adverse natural events, thereby reducing their vulnerability to disasters.

**Component 4: Project Management and Monitoring Support.** While the project will be implemented by the same PCU currently implementing the Bank-financed Second Disaster Management Project, OECS Skills for Inclusive Growth Project and Enhancing Public Service Performance Project, additional resources will be needed to face the current emergency and increased workload in project management. This component would strengthen and develop the institutional capacity of the Project Coordination Unit for project execution, including procurement, financial management, and accounting, engineering oversight and supervision of Project activities, through the acquisition of goods, provision of technical advisory services, training and operating costs.

6. **Retroactive Financing.** Retroactive financing could be used for eligible expenditures (up to 40% of total loan amount) incurred since the occurrence of the Hurricane on October 30, 2010, provided that the expenditures comply with appropriate practices in accordance with World Bank procurement policies.

7. **Project Implementation.** Implementation and supervision of the proposed emergency project will be the responsibility of the Project Coordination Unit (PCU) under the purview of the Ministry of Ministry of Finance, Economic Affairs and National Development.

### **III. ESSAF - GENERAL PRINCIPLES**

8. The ESSAF will be used as a guide to ensure environment and social safeguards planning are accordance with World Bank Policy OP/BP 8.00 during implementation of sub-projects. As sub-projects are identified and proposed for financing both prior to and during the project implementation period, screening for potential environmental and social impacts will be conducted and mitigation and management measure will be developed in accordance with the agreed ESSAF.

9. Rehabilitation investment proposals should demonstrate that they are technically and financially viable, economically efficient, environmentally and socially sound and manageable within the project life time, with sufficient institutional capacity in place to implement and operate/maintain. The proposals will undergo rapid technical, financial, social, and environmental analysis prior to inclusion into the project. In general, the investment proposals should demonstrate the following:

- Proposed rehabilitation activities should be directly related to Hurricane Tomas impacts;
- Proposed activity should be a priority, and focus on critical infrastructure for the country's rapid recovery from the hurricane;
- Investments should be (realistically) completed within the 3-year project life; so implementation readiness should be demonstrated, such that status of investment preparation should be at least at feasibility stage and costs are estimated with reasonable accuracy;
- To the extent possible, proposed activities should have minimal environmental and social safeguards issues: including avoidance of land acquisition, resettlement, etc. to ensure the project will be executed within the project life.

Consultation and disclosure requirements will be simplified to meet the requirements of this Emergency Operation. This ESSAF will be disclosed in the sector ministries and other public places in St. Lucia and in the World Bank InfoShop.

### **IV. RELEVANT WORLD BANK POLICIES AND NATIONAL LAWS**

#### **Relevant National Laws**

10. In Saint Lucia the legislation on environmental requirements are contained within the Physical Planning and Development Act, No. 29, of 2001. This act empowers the head of the land planning division with the authority to develop and enforce regulations relating to land planning, zoning, and environmental management as well as other responsibilities related to land use. The act provides for the requirement of environmental assessments if the consequences of a particular project are considered significant. Specifically, Part 22 of the Act provides the requirements for compliance with environmental assessment and monitoring activities associated with a given project.

#### **Relevant World Bank Policies**

11. All works financed by this project are expected to be small scale, generating only minor and localized environmental impacts that can be easily identified, mitigated and managed. Works

will focus on rehabilitation and improvement of existing buildings, bridges and feeder roads that were damaged during the hurricane. No large scale, significant and/or irreversible impacts are expected. Given this, the project is considered Category “B”, and OP 4.01 is triggered.

Safeguard Policies Triggered	Yes	No
Environmental Assessment (OP/BP 4.01)	X	
Natural Habitats (OP/BP 4.04)	X	
Forests (OP/BP 4.36)		X
Pest Management (OP 4.09)		X
Physical Cultural Resources (OP/BP 4.11)	X	
Indigenous Peoples (OP/BP 4.10)		X
Involuntary Resettlement (OP/BP 4.12)	X	
Safety of Dams (OP/BP 4.37)		X
Projects on International Waterways (OP/BP 7.50)		X
Projects in Disputed Areas (OP/BP 7.60)		X

12. An *Environmental Management Framework* (EMF) already developed by the PCU under the Second Disaster Management Project (2006) in Saint Lucia will apply to all investments under this project. Such procedures include –site screening, public consultations and information dissemination, inclusion of Environmental Management Plans (EMP) in bidding documents, and supervision of environmental aspects during construction. These procedures will be applied to all investments under the ERL. This ESSAF, including the EMF referenced above, will form part of the Operations Manual (OM).

13. Given the project’s focus on rehabilitating existing infrastructure, no impacts on natural habitats are expected. However, the *Natural Habitats Policy* (OP 4.04) is triggered as a precaution, and to permit flexibility in the activities financed. An environmental screening checklist has been developed which includes questions to verify at the subproject level that no natural habitat impacts will occur, and to ensure subprojects are redesigned to avoid any such impacts, if identified.

14. While it is not anticipated that the policy on the *Physical Cultural Resources* (OP 4.11) will be triggered under the project, the EMF includes provisions to identify any impacts to physical cultural resources as part of the environmental screening process for subprojects, and “chance find” procedures will be included in all works contracts.

15. Social impacts are expected to be limited to disruptions caused during the rehabilitation and improvement of existing public infrastructure including health, education and transport infrastructure. Impacts should be limited to the construction phase and are to be managed in coordination with the relevant line Ministries to assure a) affected communities are informed of the interventions, b) disruption is minimized and c) community safety is assured.

16. For example, construction during the school term will require coordination with the Ministry of Education to assure students are protected from hazards associated with construction sites and that students are maintained in an environment conducive to learning. Procedures will be included in the Operations Manual to define the coordination activities required between the PCU, the Ministry of Education and other stakeholders needed to minimize these potential

impacts to staff and students. Among the activities will be the inclusion of specific contractor requirements to be implemented based on the nature and timing of construction activities. During the review process for school construction contracts for example, the Ministry of Education will work with the PCU to ensure that timing and security issues are adequately addressed in the contracts to protect the student environment. The same applies for construction affecting other sectors.

17. A *Resettlement Policy Framework* has been drafted for the project, which will assist the PCU in i) screening all subprojects for land acquisition and physical and/or livelihood displacement resulting from such land acquisition; ii) identifying documentation and preparation requirements for compliance with World Bank Safeguards Policy. In the unlikely event that the project leads to land acquisition and/or resettlement, Abbreviated Resettlement Plans (ARPs) and/or Resettlement Action Plans (RAPs), as may be applicable, will be prepared for specific sub-projects in accordance with the project's RPF.

## **V. SAFEGUARD SCREENING, MITIGATION AND CLEARANCE FOR SMALL WORKS**

18. Environmental and social impact screening, mitigation and management measures development and implementation will follow these steps:

- Step 1 – Identification of sub-projects according to the selection criteria
- Step 2 – Screening for potential environmental and social safeguard impacts and determination of safeguards documents required according to the Saint Lucia legislation and the World Bank policies.
- Step 3 – Review of Safeguards screening by the World Bank.
- Step 4 – Preparation of safeguard documents, consultation and disclosure;
- Step 5 – Review and clearance of the safeguard documents within the Government and the World Bank.
- Step 6 – Implementation of agreed actions; and supervision, monitoring and evaluation

19. All project supported activities will be approved and authorized by the Project Coordination Unit (PCU). The PCU will ensure that all project activities adhere to the requirements of the ESSAF, and that designated environmental and social specialists are appointed for overseeing the implementation and monitoring of the framework. A focal person will be appointed to provide oversight on required environmental and social clearances and studies. The World Bank task team will include environmental and social specialists to facilitate the implementation of the ESSAF and provide approval of environmental and social assessment/studies requiring Bank clearance.

### **Environmental Assessment Process for Small Works**

20. The assessment process, presented here, is a three-part exercise. It consists of a screening procedure, a checklist evaluation, and a set of contract clauses designed to impose environmental and social management requirements. It is designed to first determine whether it is appropriate to use this checklist procedure for the application of environmental and social requirements. Should



a project be subject to significant environmental or social impacts, an environmental or social assessment is required and this procedure would not be applicable.

21. The second part of the process is the application of the checklist to determine the nature of the environmentally and socially important activities that are likely to arise during construction of the Project. Once these activities are identified, a series of standard contract clauses are then applied based on the checklist, to define contractor environmental performance requirements.

The basic procedure is as follows:

1. *Initial impact screening* - The sponsoring agency makes a determination concerning whether the project in question is likely to produce significant controversy or significant major environmental and social impacts. If significant impacts are anticipated, these guidelines do not apply and a full environmental assessment or social assessment should be completed.
2. *Guidelines Application* - If the environmental impacts anticipated are not major in nature, the sponsoring agency may use these guidelines to identify typical areas of impacts usually associated with the actual construction and implementation of small works projects.
3. *Clause selection* - once the areas of impact are identified, the associated contract clause is selected for inclusion in the construction contract. Once the environmental and social requirements are selected and included in the works contract, the responsible agency, through the supervising contract officer, will periodically review the contractor's performance to assure compliance with these requirements.

22. **Initial impact screening.** Despite the cost of a project, small works can result in major and significant irreversible environmental and/or social impacts. The first stage in the screening process is to ensure that the works contemplated do not result in a significant change from the current situation resulting in major environmental or social impacts. Projects of this type might include new bridge construction, on new sites (lands) providing opportunities for new developments.. Another example would be the diversion of runoff water to a new site or watershed redistributing sediments and water. The operative part of this concept is where there may be significant changes in the functioning of the facilities from their current state or their originally intended use. For this reason, prior to the development of any contracts, the agency responsible must first provide an initial screening of the project to assure that the project does not result in major significant environmental and/or social impacts.

23. If a project is likely to have significant environmental and/or social impacts, an environmental or social assessment is required. To assist in this determination, a checklist identifies common situations where impacts would be considered major. **See Annex 1.** If none of these statements apply, the project is of limited environmental impact and environmental controls can then be implemented within the context of the construction contract using the guidelines presented in the following sections.

24. **Environmental Screening of small works and small works checklist.** During the execution of a small works project, there are several sources for potential environmental and social impact that can be controlled to improve the overall quality of the project. These include impacts resulting from activities listed in **Annex 2**. In the case of small works, most of these activities will be associated with the construction phase of a given project. These impacts are typically of limited duration and reversible. However, does not imply that these impacts have little or no importance. Indeed, if the project is free from major significant environmental consequences as identified in the initial screening, then typical impacts can be generally identified using the Environmental Management Checklist. Two clauses will be incorporated into all small works contracts. These are 1. **Site Security** and 2. **Discovery of Antiquities**.

25. **Using the checklist.** The application of the environmental checklist is relatively simple. For each question contained in the checklist, there is a corresponding contract clause to be incorporated as a requirement in the works contract to be met by the Contractor. By reviewing the list and selecting the appropriate clause, most of the typical environmental management controls can be affected. Ultimately, the monitoring and enforcement of these provisions is the responsibility of the supervising agency. The checklist provides a list of concerns which triggers a particular environmental clause to be included into the works Contract. Next to the particular concern, is the title of the clause, in bold, to be incorporated into the contract. **See Annex 3**.

26. **Environmentally related contract clauses.** The final part of the screening process results in the inclusion of environmentally related contract clauses. The following clauses are to be applied to all small works contracts. The following is the recommended text of the contract clause referenced in the environmental checklist. **See Annex 4**.

27. **Environmental Performance Requirements for Small Works.** This emergency project will use the same checklist process that had been developed under the Saint Lucia Disaster Management Project II for the environmental screening and management of small public works to be completed under this Project. The checklist, contained in the section above entitled "Environmental Assessment Process for Small Works", presents the evaluation procedures to be followed during the design of these small works.

## VI. **IMPLEMENTATION RESPONSIBILITY**

28. The PCU shall serve as the coordinating agency for the approval of all projects to be completed under this Project. Prior to the submission of small works activities for consideration for funding, the issuing agency (agency requesting the work to be done) shall perform the review presented in the assessment procedures section and shall provide the PCU with the results of that review and the contract clauses to be used in the works contract. The PCU shall forward these findings (results of the assessment and recommended clauses) to the Ministry of Physical Development (Head of the Physical Planning and Development Division) for review and concurrence. This is the office empowered with environmental review authority under the Physical Planning and Development Act, No. 29, of 2001.

29. Once this review is completed, the PCU shall then incorporate recommended clauses and requirements into the final document to be submitted for review and approval by appropriate program managers. The results of this process shall form part of the works approval package and

the environmental contract clauses form shall be incorporated in any tender document to be issued by the Project.

30. Supervision for compliance with the terms of the contract is the responsibility of the issuing agency.

## **VII. INFORMATION DISCLOSURE AND CONSULTATION**

31. This ESSAF will be communicated/ disclosed to concerned communities, nongovernmental organizations and development partners. It will be disclosed in-country by the Project Coordination Unit and will also be made available at the World Bank's InfoShop. Relevant subproject-specific safeguard documents/mitigation plans prepared subsequently will also be disclosed.

32. Any feasibility and detailed design studies financed by this operation will also adhere to World Bank safeguard policies relating to consultation and disclosure.

## **V11. MONITORING AND REPORTING**

33. The PCU will have the main responsibility for monitoring the application and use of this ESSAF. For this purpose, the PCU will prepare quarterly and annual reports on the key steps, outputs and results of the environmental management actions taken for all projects throughout the project cycle. Problems and issues arising during the use of the ESSAF will be flagged and brought to the attention of Management and for their action. Copies of the quarterly and annual environmental management monitoring reports will also be sent to the World Bank. The Bank will also review these reports during the periodic supervision missions.

34. An officer has not been designated as environmental officer within the PCU. However, staff within the PCU, as a result of several years experience with Bank projects (including several on disaster management), has demonstrated capacity and competence with the implementation of Bank safeguard requirements. As part of the capacity-building to be provided under this project, further training for PCU staff will aim at building internal capacity to oversee compliance with environmental and social safeguards. Other relevant staff of concerned/ Ministries will also receive training in the application of the ESSAF. During supervision of these operations the World Bank will assess the implementation of the ESSAF, and recommend additional training/capacity building where required.

**ANNEX 1: CHECKLIST TO DETERMINE SITUATIONS IN WHICH IMPACTS COULD BE CONSIDERED MAJOR**

1. Will the project result in significant and major environmental consequences during any part of the project implementation process?
2. Will the project significantly affect the area population?
3. Will the project require displacement or relocation of persons in the affected area?
4. Will the project significantly affect wetlands, grasslands, high quality agricultural lands or protected areas?
5. Will the project impact endangered species or critical habitats?
6. Is the project likely to provoke significant controversy among affected persons?
7. Will the project significantly modify any coastal zone features, reef or marine features?
8. Will the project affect any mangrove, marsh or other wetland area?
9. Will the project induce settlement?
10. Could the project adversely affect critical resources, such as drinking water, or present a potential increased risk of disease or environmental change due to pollution?
11. Will the project result in the violation of St. Lucian law, international treaty, or Bank policy?

**ANNEX 2. ENVIRONMENTAL SCREENING OF SMALL WORKS AND SMALL WORKS CHECKLIST:**

1. Erosion/runoff control
2. Disruption of Public Services
3. Vector/disease control
4. Hazardous materials, fuel management
5. Blasting - noise, seismic transmission
6. Smoke and odor control
7. Site sanitation
8. Trash and construction debris management (waste concrete)
9. Fire control
10. Introduced species
11. Pesticide use
12. Dust management
13. Noise control
14. Site security and vandalism
15. Discovery of artifacts
16. Site protection from extreme forces.

### **ANNEX 3. ENVIRONMENTAL MANAGEMENT CHECKLIST FOR SMALL WORKS**

1. Will the project significantly affect soil stability. - **Site stabilization and erosion control?**
2. Will the project significantly change existing noise patterns resulting in significantly increased noise disturbance to local residence?
3. Will the project result in any significant change in the type of traffic from current patterns. (such as increased truck traffic where historically traffic has been mainly passenger vehicles). - **Traffic Management?**
4. Will the project result in a significant change in the level and or daily noise patterns from the present situation. - **Noise Control?**
5. Will the project result in the concentration of refuse or debris or otherwise create the potential for the propagation of insects or other pest species. -**Management of trash and debris?**
6. Will the project result in the permanent or temporary storage of hazardous materials or petroleum products. - **Use and management of hazardous materials, fuels, solvents and petroleum products?**
7. Will the project create bodies of standing water which would exist for more that a few days. - **Management of standing water?**
8. Will workers be restricted to the work site during the workday – **Worker Sanitation?**
9. Will the project require the use of explosives or explosive devices - **Use of Explosives?**
10. Will the project require the use of pesticides or pest control measures - **Use and management of pesticides?**

## **ANNEX 4. ENVIRONMENTALLY RELATED CONTRACT CLAUSES**

*\* Clauses to be included in all Contracts:*

### **1. Site Security**

The contractor shall be responsible for maintaining security over the construction site including the protection of stored materials and equipment. In the event of severe weather, the contractor shall secure the construction site and associated equipment in such a manner as to protect the site and adjacent areas from consequential damages. This includes the management of onsite wastes, construction and sanitary, additional strengthening of erosion control and soil stabilization systems and other conditions resulting from contractor activities which may increase the potential for damages.

### **2. Discovery of antiquities**

If, during the execution of the activities contained in this contract, any material is discovered onsite which may be considered of historical or cultural interest, such as evidence of prior settlements, native or historical activities, evidence of any existence on a site which may be of cultural significance, all work shall stop and the supervising contracting officer shall be notified immediately. The area in which the material was discovered shall be marked and the evidence preserved for examination. Work may resume, without penalty of prejudice to the contractor upon permission from the contracting officer with any restrictions offered to protect the site.

*\* Clauses to be included based on checklist findings*

Based on the findings of the environmental checklist, the following clauses shall be incorporated in the works contract as needed.

### **3. Worker Sanitation**

Sanitation facilities shall be provided to site workers. All sanitary wastes generated as a result of project activities shall be managed in a manner approved by the contracting officer. The contractor shall provide the contracting officer with a site sanitation plan for approval and implementation prior to the commencement of site activities.

### **4. Noise Control**

The contractor shall control noise emissions generated as a result of contracting activities to the extent possible. In the case of site locations where noise disturbance will be a concern, the contractor shall ensure that the equipment is in good working order with manufacturer supplied noise suppression (mufflers etc.) systems functioning and in good repair. Where noise management is a concern, the contractor shall make reasonable efforts to schedule activities during normal working hours (between 8 am and 5 pm). Where noise is likely to pose a risk to the surrounding community, the contractor shall inform the contracting officer and shall develop a public notification and noise management plan for approval by the contracting officer.

### **5. Use and management of hazardous materials, fuels, solvents and petroleum products**

Any use hazardous materials excluding pesticides, oils, fuels and petroleum products shall conform to the proper use recommendations of the product. Waste hazardous materials and their containers shall be disposed of in a manner approved by the contracting officer. A site management plan will be developed by the contractor if the operation involves the use of these materials to include estimated quantities to be consumed in the process, storage plans, spill

control plans, and waste disposal practices to be followed. This plan is subject to the approval of the contracting officer.

#### **6. Use and management of pesticides**

Any use of pesticides shall be approved by the contracting officer and shall conform to the manufacturers' recommendations for use and application. Any person using pesticides shall demonstrate that they have read and understood these requirements and are capable of complying with the usage recommendations to the satisfaction of the contracting officer.

#### **7. Use of preservatives and paint substances**

All paints and preservatives shall only be used with the approval of the contracting officer. Information shall be provided to the contracting officer which describes the essential components of the materials to be used so that an informed determination can be made as to the potential for environmental effects and suitability can be made. Storage, use, and disposal of excess paints and preservatives shall be managed in conformance with the manufacturers' recommendations and as approved by the contracting officer. The contractor shall provide the contracting officer with a list of materials and estimated quantities to be used, storage, spill control and waste disposal plans to be observed during the execution of the contract. This plan is subject to the approval of the contracting officer.

#### **8. Use of Explosives**

Use of explosives shall be at the direction of a qualified explosives technician. Blasting will be limited to between the hours of 0900 and 1600 unless specifically approved by the contracting officer. Any use of explosives shall be permitted only after an explosives management and blasting plan has been approved by the contracting officer.

This plan shall include:

- A. Description of the explosive agent, charge description, intended use.
  
- B. Site safety plan including:
  - 1. Storage of initiators, booster charges and principal blasting agents
  - 2. Handling precautions to be observed
  - 3. Transport to and from site
  - 4. Security of stored materials
  - 5. Disposal of excess or damaged explosive materials.
  
- C. Analysis of risk to surrounding area and mitigation measures to be employed including:
  - 1. Over-pressure event
  - 2. Noise
  - 3. Flying debris
  - 4. seismic transmission
  - 5. accidental detonation
  
- D. Name and qualifications for all persons responsible for handling explosive agents

#### **9. Site stabilization and erosion control**

Contractor shall implement measures at the site of operations to manage soil eroding through minimization of excavated area, preservation of existing ground cover to the extent possible, provision of approved ground cover. Where excavations are made, contractor shall implement



appropriate stabilizing techniques to prevent cave-in or landslide. Measures shall be approved by the contracting officer.

An erosion management plan will be required where the potential exists for significant sediment quantities to accumulate in wetlands, lakes, rivers and nearshore marine systems. This plan shall include a description of the potential threat, mitigation measures to be applied, and consideration for the effects of severe weather and an emergency response plan.

#### **10. Traffic Management**

In the event that contractor activities will result in the disruption of area transportation services, including temporary loss of roadway, blockage due to deliveries and site related activities, the contractor shall provide the contracting officer with a traffic management plan including a description of the anticipated service disruptions, community information plan, and traffic control strategy to be implemented so as to minimize the impact to the surrounding community. This plan shall consider time of day for planned disruptions, and shall include consideration for access to essential services such as medical, disaster evacuation, and other critical services. The plan shall be approved by the contracting officer.

#### **11. Management of standing water**

Under no circumstances shall the contractor permit the collection of standing water as a consequence of contractor activities without the approval of the contracting officer and consultation with the Ministry of Health's environmental health unit.

#### **12. Management of trash and debris**

The contractor shall provide the contracting officer with a trash and debris management plan that conforms to the solid waste management policies and regulations of St. Lucia. Under no circumstances shall the contractor allow construction wastes to accumulate so as to cause a nuisance or health risk due to the propagation of pests and disease vectors. The site waste management plan shall include a description of how wastes will be stored, collected and disposed of in accordance with current law. Additionally the contractor shall provide for the regular removal and disposal of all site wastes and provide the contracting officer with a schedule for such removal.