

INITIAL ENVIRONMENTAL EXAMINATION

**Project Location:** Haiti

**Project Title:** Solid Waste and Recycling Collection Project  
(Haitian Environmental Foundation)

**Project Number:** 521-0527

**Funding:** US \$300,000

**Life of Project:** 24 months

**IEE Prepared by:** Danielle Typinski, Acting MEO  
USAID/Haiti

**Recommended Threshold Decision:** Negative Determination with Conditions

**CONCURRENCE:**

\_\_\_\_\_  
Susan Riley, Chief  
Economic Growth and Education Office  
USAID/Haiti

\_\_\_\_\_  
Sally Patton, Chief  
Policy Coordination and Program Support Office  
USAID/Haiti

\_\_\_\_\_  
Erna Kerst, Mission Director  
USAID/Haiti

**CLEARANCE:**

\_\_\_\_\_  
Michael Donald, Regional Environmental Advisor  
Central America Region

**LAC BUREAU ENVIRONMENTAL OFFICER'S DECISION**

Approved: \_\_\_\_\_ Date: \_\_\_\_\_

## **Background**

Providing basic urban environmental services such as solid waste collection and disposal, to the population of peri-urban and urban areas has always been one of the important tasks for municipal governments. However, due to a lack of government resources, these services are severely limited throughout Haiti, resulting in the creation of appalling environmental health conditions and increased risk of disease.

Port-au-Prince currently produces 4,000 cubic meters (m<sup>3</sup>) of solid waste per day; 300 m<sup>3</sup> of which is collected by the Metropolitan Service of Waste Collection (*Service Metropolitain de Collecte des Résidus Solides* or SMCRS in French) and a small number of private waste collection companies. As a result, solid waste is accumulating in the streets and alleys of Port-au-Prince and its surrounding neighborhoods. The garbage eventually builds up in drainage canals and creates blockages. The subsequent overflow during periods of heavy rain accelerates the deterioration of the road network and exacerbates traffic congestion. The interim Government of Haiti (IGOH) has found itself with virtually no funds to normalize essential operations or provide basic services to the Haitian populace.

USAID/Haiti, through its Emergency Response and Reconstruction Program, has developed a course-of-action that focuses on short-term job creation, improvement of public health services and sanitary conditions, disaster and humanitarian assistance, and helping the IGOH to re-build its institutional capacity and restore essential services to the Haitian population. Under its revised Special Objective 521-006, “Streamlined Government” (SpO), the Mission has decided to provide funding assistance to the Haitian Environmental Foundation (HEF) for an integrated waste management and job creation activity. In August 2004, HEF submitted its unsolicited proposal to USAID/Haiti, which aims to alleviate, on a short-term basis, the severe health and environmental hazards caused by the urgent solid waste management crisis in the Port-au-Prince metropolitan area. After a thorough review by a technical review committee, the Mission decided to fund the proposal in the amount of \$300,000 for two years.

This Initial Environmental Examination (IEE) is being submitted in response to HEF’s proposal to address the waste management problem in the Port-au-Prince metropolitan area in accordance with the Agency’s environmental guidelines outlined in the Automated Directives System, as well as Federal environmental regulations set forth in 22 CFR 216.

## **Program Description**

The HEF activity will result in: (a) the alleviation of the severe health and environmental hazards in Port-au-Prince caused by a solid waste management crisis; (b) the injection of much-needed income into the hands of the poorest Haitians and (c) will clear several of the drainage canals in Cité Soleil. HEF proposes to create 70,000 person-days of employment, clear more than 10 kilometers of drainage canals, and collect recyclable

plastic and metal materials.

HEF will create work teams from targeted communities to clear drainage canals in Cite Soleil. The drainage canals that will be cleared are man-made and serve as part of the storm water management system in the capital city. Port-au-Prince's storm water management system consists of both underground and surface components. However, the flow capacity of the underground component is greatly reduced due to infrequent maintenance. Thus, the surface portion of the system, through canals, serves as the capital's major mechanism for storm water management. Generally, the canals are earthen trenches approximately two meters in width; some are encased in concrete. Storm water from the surrounding hillsides and city streets flows through these canals directly into the Bay of Port-au-Prince. The sections of the canals city closest to the bay often become clogged with silt, debris, and garbage, resulting in the flooding of peri-urban areas such as Cite Soleil.

The solid waste collection component of the project is highly labor-intensive; no heavy equipment will be used to clear the canals. Workers wearing safety equipment—boots, gloves, and masks—will clear the canals by hand using small tools such as shovels, wheel barrows, etc. HEF will coordinate with the Cooperative Housing Foundation (CHF) regarding the disposal of the collected debris into the Trutier Landfill, located on the outskirts of Port-au-Prince. CHF is currently implementing a solid waste management jobs creation activity in the metropolitan area of the capital, and has contracted with experienced private collection companies that specialize in solid waste management. These companies will also be used to dispose of solid waste accumulated from the HEF job creation activity. The debris will be disposed of on the same day as collection. Workers will be monitored by HEF staff at all times to ensure the wearing of safety equipment.

The recycling component of the HEF activity will also be carried out by teams consisting of community members. HEF staff will engage local community-based organizations (CBOs) to help organize these teams. Team members will then assist the CBOs to educate communities on recycling and to promote alternative disposal methods. Each participating CBO will receive a recycling container produced by CHF to collect appropriate materials (plastics and metal). HEF will work with local recycling companies, such as Tropical Recycling, to facilitate collection at a central point in each community and to create associations between the companies and the CBOs. Teams will also collect some recycling materials. The wearing of safety equipment will be mandatory and HEF staff will monitor compliance with this precautionary measure. HEF will coordinate the disposal of non-recyclable materials with CHF sub-contractors.

### **Targeted Ecosystem**

The Trutier landfill is located in the *Cul de Sac* plain approximately eight kilometers north of downtown Port-au-Prince. According to the Ministry of Public Works, which oversees the SMCRS, the site occupies 205 hectares. Approximately 94 hectares are designated for dumping, 50 hectares are reserved for cover material and 16 hectares are

used to store tools and equipment. The landfill is divided by open canals and a 1.3 kilometer road provides access to trucks. This road is currently being rehabilitated by CHF under a separate IEE. The Truitier landfill is the sole official dumpsite in Port-au-Prince and, according to government officials, has an additional 10-15 years of service. There are no protected areas, such as national parks and wildlife preserves, nor natural forests or other undisturbed biotic communities near these areas. In addition, the Truitier landfill is above clay soils, has good capacity and is easily accessible for waste delivery.

### **Description of Environmental Impact**

Refuse disposal is chaotic in Haiti, particularly in Port-au-Prince. Unsanitary conditions exist because the population in residential and business areas discards its refuse in the streets, storm sewers, drainage ditches, waterways, and the ocean. In most areas, refuse is burned to reduce its volume. In addition to respiratory and other public health hazards, these practices result in the obstruction of drainage facilities and contamination of storm water.

The municipal solid waste stream in Haiti contains general wastes (organics and recyclables), special wastes (household hazardous, medical, and industrial waste), and construction and demolition debris. Most adverse environmental impacts of solid waste management in Haiti are the result of inadequate or incomplete collection, or in inappropriate siting, design operation, or maintenance of dumps. Therefore, the proposed drainage canal clearing and recycling activities may be detrimental to the physical environment, workers, and beneficiaries if Mitigation Measures are not implemented.

Improper waste management activities can lead to the following negative environmental and public health impacts:

1. Improper collection and disposal can result in increased disease transmission or otherwise threaten public health. Putrefying organic materials can become breeding grounds for disease vectors such as rats and flies. Waste-handlers and waste-pickers risk can contract diseases, especially if human or animal excreta or medical waste is in the waste stream. Surrounding populations are also at increased risk for poisoning, cancer, birth defects, and other ailments.
2. The improper collection of household hazardous, medical, and industrial waste can result in injury to workers. Toxic, cancer-causing, teratogenic, explosive and corrosive materials are hazardous; collectors and nearby residents are at risk of exposure. The improper handling and disposal of medical waste such as sharps and contaminated biological fluids can harm workers through puncture, abrasion and other modes of contact.
3. Municipal solid waste stream can leach toxic materials and pathogenic organisms. Depending on the drainage system and the composition of the underlying soils, runoff can contaminate ground or surface water when the landfill is unlined.

4. When organic wastes are disposed in landfills, they undergo anaerobic degradation and become significant sources of methane.
5. Garbage is often burned in Haiti's residential areas and in the landfill to reduce volume. Burning creates thick smoke that contains carbon monoxide, soot, and nitrogen oxide, all of which are hazardous to human health and degrade urban air quality. Combustion of polyvinyl chlorides generates highly carcinogenic dioxins.
6. Landfills in sensitive ecosystems may destroy or significantly damage valuable natural resources.
7. The accumulation of waste along streets can clog drains and cause localized flooding.
8. When solid waste is dumped into rivers or streams it can alter the aquatic habitat and harm plants and animals. High nutrient contents can deplete dissolved oxygen in the water body and solids can cause sedimentation and change the stream's flow.

The use of sound environmental management practices and mitigation measures can alleviate or eliminate these potential threats.

### **Mitigation Measures**

Below are the proposed conditions for the recommended determination:

1. HEF shall adequately monitor their activities to ensure safe and effective waste collection on the ground by workers and transport by CHF to the Truitier landfill. All open vehicles used to transport waste and recyclable materials must be covered while in transit in compliance with local laws and regulations.
2. All implementing partners must ensure that the appropriate safety tools, equipment, and training are made available to the waste collectors at the designated point to ensure safe collection. All workers must wear gloves, boots and eye protection at all times during collection. HEF is responsible for the monitoring of all tasks associated with this activity.
3. Workers will receive training in the types of waste that may exist in the wastestream (e.g. solid waste, organic waste, recyclables, hazardous waste, and medical waste) and the characteristics and hazards that are associated with each type of waste. Workers will be instructed not to handle special wastes that appear to be hazardous or medical in nature, or that have questionable characteristics. HEF staff is responsible for providing continual on-site technical advice to workers, for reserving such materials for collection entities that specialize in the disposal of these types of wastes, and for ensuring that no special wastes are disposed of in the landfill as a result of their collection activities. HEF must

provide a plan for the management of special wastes prior to beginning drainage canal clean-up and recycling activities.

4. HEF shall hire staff to monitor drainage canal clearing and waste collection/disposal activities. Monitors at the sites should track the quantity of materials removed from the canals. The materials will be collected in a central location by the workers, away from water ways and residences or other public locations, for subsequent disposal by CHF sub-contractors at the Truitier landfill. All HEF canal clearing and waste collection activities must be coordinated with CHF to enable the efficient disposal of material on the same day of the activity. HEF will monitor the site from the onset of collection to disposal.
5. Organics make up 50-60% of the waste stream in Haiti, and plastics are a substantial portion of the remaining waste. To the extent possible, HEF shall promote public awareness under the recycling component of its activity.
6. Manual labor shall be utilized whenever possible to clear the drainage canals and to collect and dispose of waste. Workers are permitted to use small tools and equipment such as shovels, wheelbarrows, donkey carts, hand carts, etc. No heavy motorized equipment will be used.
7. HEF shall ensure that relevant environmental mitigation and monitoring measures established in this IEE be routinely incorporated into agreements with local partners and institutions. For example, CHF and relevant CBOs will be made aware of all environmental requirements related to drainage canal clean-up and recycling materials collection. Each partner will receive a written list of all measures in French or Creole and HEF will revisit these measures at intermittently during the course of the activity.
8. HEF shall complement other solid waste activities that are being supported by USAID/Haiti and the IGOH. HEF will work with other USAID/Haiti partners on the coordination of activities to avoid duplication of efforts.
9. HEF shall include in quarterly report all unusual situations that occurred during the course of its activities and the solution that was adopted. In addition to summarizing environmental monitoring efforts, the report should also include the volume of waste collected and disposed of at the landfill.
10. All local partners involved with HEF's activities will be supplied with a copy of the mitigation measures outlined in this IEE in Creole and/or French.
11. HEF will maintain records regarding the effectiveness of the above mitigation measures. The Mission Environmental Officer, together with the activity's Cognizant Technical Officer, will conduct spot checks to ensure that HEF implements the measures set forth under this IEE. HEF will provide a report to the MEO annually for inclusion into the Mission's annual report.

The mitigation measures specified above should alleviate any significant environmental concerns associated with the proposed activity. It is therefore concluded that the HEF activity can be implemented in an environmentally-sound and sustainable manner in full accordance with all relevant USAID and U.S. Government environmental policies and regulations.

### **Recommendations**

USAID/Haiti recognizes that waste management into the metropolitan area of Port-au-Prince has an important role to play in safeguarding the health of Haitians. Based on the adherence to the above conditions relative to waste management, USAID/Haiti believes there will be minimal environmental impact. Therefore, pursuant to USAID environmental regulations expressed in 22 CFR, section 216.2 (c)(1)(i),(ii), the Mission requests your approval for a **negative determination with conditions** is proposed for activities that involve drainage canal clearings, waste collection and disposal.