



## International Finance Corporation

### Environmental, Health and Safety Guidelines for

# Airports

These guidelines are for the design, construction and use of airports and associated facilities. Other guidelines that are applicable to project features associated with airports, such as construction camps, terminals, office buildings, maintenance facilities, and equipment and materials storage areas, are provided in the General Health and Safety Guideline and the General Environmental Guideline which include requirements for liquid effluents, air emissions, waste disposal, hazardous materials, and employee health, safety and training.

The guidelines incorporate the general provisions of the World Bank policies for cultural properties, indigenous peoples, involuntary resettlement, biodiversity, water resources management and wildlands. Environmental issues that are identified by the project sponsor or other interested parties, but not addressed by World Bank policies or guidelines, must be brought to the immediate attention of IFC for consideration and guidance.

#### Project Siting

The principal elements of World Bank policy regarding the siting, land acquisition and development of airports and ancillary facilities are summarized below. Sites for airports should be chosen through a systematic, documented process that includes consideration of alternatives and their environmental and safety impacts. The sponsors must provide information regarding project siting, addressing the following guidelines:

a) The site must be selected taking environmental factors into consideration in a manner which will minimize, to the extent

possible, impacts to natural resources, sensitive ecosystems, cultural resources and populated areas.

a) Land acquisition must be carried out in accordance with World Bank resettlement policy which requires quantification of impacts on land-based livelihood, and fair compensation to landowners and people relying on the land for their residence and/or livelihood.

b) Indirect environmental and sociocultural impacts that may occur as a result of unplanned development induced by the airport should be considered and measures adopted to minimize the impacts in sensitive areas.

c) Selection of the site should be made after consultation with government agencies, affected communities and affected local nongovernmental organizations.

Project sponsors must provide IFC with a complete record of the process by which the site was selected, including the analysis of alternative sites, and the consultation with government agencies, affected communities and local nongovernmental organizations.

#### Erosion And Sediment

Project sponsors should develop an erosion and sediment control plan to minimize erosion in construction areas, reduce the risk of sediment discharge to nearby streams, and provide for long-term maintenance and operation practices that will control erosion and sedimentation. The control plan should include, but should not be limited to, the following measures:

- a) The airport site should be selected to avoid, where possible, areas susceptible to erosion.
- b) The area cleared of vegetation to accommodate construction and roadway development should be minimized and slopes should be stabilized to prevent erosion.
- c) Cleared areas should be promptly revegetated with native grasses, shrubs and trees.
- d) Overland drainage should be controlled to prevent channeling and sediment transport by diverting flows from areas where soils are exposed, and/or by providing filter barriers or settling basins to remove sediment before the runoff is discharged to surface waters.
- e) Revegetated areas and areas subject to erosion should be monitored and maintained during project operation.

### **Construction Materials**

- a) In siting raw material borrow pits, quarries, and asphalt and concrete plants, project sponsors should consider adjacent land uses, and the environmental and cultural resources potentially affected by their operation.
- b) Borrow pits, quarries, and asphalt and concrete plants should be developed and operated in accordance with the General Environmental Guideline and the General Health and Safety Guideline, so that potential impacts on air quality, water resources, ambient noise levels and sensitive natural environments are minimized.
- c) Project sponsors must ensure that borrow pits and quarry sites used to support the project are subject to a closure and reclamation plan that incorporates the following provisions.
  - i) The land should be restored, to the extent feasible and practicable, to conditions capable of supporting prior land use, or uses that are equivalent to the prior land use.
  - ii) Significant adverse effects on adjacent water resources must be prevented or, if unavoidable, mitigated.

- iii) Native vegetation should be planted to prevent erosion and encourage self-sustaining development of a productive ecosystem.
- iv) The final grading for the closure should ensure that stormwater runoff does not accumulate and become stagnant, potentially contaminating surface waters.

d) Closure plans for asphalt and concrete plants should be in compliance with government requirements and include provisions for: disposal and/or recycling of excess materials; disposal of hazardous wastes; control of erosion; and reclamation of the site.

### **General Environmental Requirements**

- a) Project sponsors must devise a program to train construction personnel in the identification of cultural resources, and mitigate adverse impacts to cultural resources that may occur during project construction.
- b) The potential impacts to vegetation and wildlife habitat as a result of the project should be assessed and a plan established to mitigate the impacts.
- c) Local authorities should be consulted to determine the necessary measures to control aircraft noise and potential impacts on populations living near the airport.
- d) Contamination of water resources as a result of stormwater runoff should be minimized by directing the runoff to settling basins and providing other appropriate treatment prior to discharge to surface waters.
- e) Storage and liquid impoundment areas for fuels, solvents, deicing materials and waste products should be designed with secondary containment, such as dikes, to prevent the contamination of soils, groundwater and surface waters due to accidental spills or releases.
- f) On-site storage of hazardous materials and wastes should be minimized, and wastes promptly disposed of in accordance with local requirements.

g) Wastes transported to the airport on international flights may be classified as hazardous and should be treated in accordance with government requirements, which may mandate destruction by incineration.

h) Pesticides, fertilizers and other maintenance chemicals must be applied strictly according to the directives of the manufacturer, and used in compliance with government regulations.

### **Airport Safety**

Project sponsors should coordinate with government agencies responsible for airport safety, including emergency response. Additional guidelines for airport safety are provided below.

- a) Develop a safety management plan to stay current with information on airport safety.
- b) Ensure unauthorized personnel are prevented from entering hazardous or restricted areas.
- c) Equip support vehicles with audible and visible indicators that automatically engage when the vehicle is operating in reverse.
- d) Provide personnel working on airfield ramps and runway areas with hearing protection and fluorescent outer-wear.
- e) Provide adequate maintenance of runways, access routes, hazardous material storage areas and emergency response equipment.
- f) Establish procedures for the transportation and handling of hazardous materials.
- g) Consult with local authorities concerning policies on land use in the accident potential zones of aircraft, and develop a plan to comply with the requirements of such policies.
- h) Implement an operations and public emergency response program for spills, fires and major accidents, including emergency equipment and trained personnel, and test critical components of the program on a regular basis.
- i) Provide security personnel and metal detection equipment at all terminals, and require

that all passengers submit to a security check prior to boarding an aircraft.

j) Air traffic control and aircraft maintenance must be provided by fully trained engineers, mechanics, or other technically competent personnel to ensure overall transportation safety.

### **Hazards Protection**

- a) Airport facilities should be located, to the extent possible, to minimize potential risks from earthquakes, tidal waves, floods and fires from surrounding areas.
- b) Areas of high intensity bird use and low-lying areas prone to fog should be avoided in locating airport facilities.
- c) Buildings and other support structures must be designed to criteria appropriate to the local seismic risk, wind and snow loading, and any other dynamically imposed loads associated with climatic and geological factors inherent at the location; certification of the design criteria used must be provided by the structural engineers or architect.

### **Training**

- a) Personnel involved in the construction and operation of the project must be trained on the hazards, safety procedures and emergency response plan associated with their tasks.
- b) Maintenance crews must be trained on the proper use and disposal of pesticides and other chemicals.
- c) Project sponsors must provide training for monitoring and mitigating the effects of the project on environmental and sociocultural resources .

### **Record Keeping And Reporting**

- a) The sponsor must maintain records of significant environmental matters, including monitoring data, spills, occupational accidents and illnesses, and fires and other emergencies.
- b) Records of public complaints and accidents involving the general public must be maintained.

c) The above information must be reviewed and evaluated to improve the effectiveness of the environmental, health and safety program, and an annual summary provided to IFC.