



ENVIRONMENTAL IMPACT ASSESSMENT

For Expansion Of Dehradun Airport In Respect Of Construction Of New Integrated Terminal Building And Allied Facilities At Dehradun, Uttarakhand

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7. ADDITIONAL STUDIES

7.1 INTRODUCTION

Based on the TOR specified by the Ministry of Environment & Forest and Climate Change (MoEF&CC) issued vide letter no. F.No.10-60/2017-IA-III, dated 5thDecember 2017 for preparation of EIA/EMP Report for airport expansion project, several studies were conducted and planned to be conducted to provide a clear picture of the project area. The studies and activities suggested in EIA Notification includes:-

- Public Hearing and Consultation
- Risk Assessment Study covering Disaster Management Plan

7.2 PUBLIC HEARING & CONSULTATION

7.2.1 Public Hearing

The Public Hearing was Conducted as per environmental notification 2006 (with amendments 2009) on 2nd June 2018, at the Jolly Grant Airport Premises. (MOM in **Annexure 7.1**)

The Meeting was attended by the following members and local public:

- V.S.BUDYAL, Additional District Magistrate
- SHRI S.S. RANA, Regional Officer, UEPPCB, Dehradun
- SHRI SUBHASH CHANDER PAWAR, Assistant Environmental Engineer, UEPPCB, Dehradun

The Public hearing started on 11:30 am by the chairperson of the meeting, Mr. V.S.BUDYAL. Then Mr S.S. RANA representative of UEPPCB, informed the assembled locals regarding the proposed expansion of Jollygrant Airport. As per government of India notification September 2006 public hearing is mandatory for obtaining EC. The advertisement for the public hearing was given 30 days prior to the allotted date the public hearing in the national newspaper like Danik Jagran, "Amaryjala" & "Times Of India" date 29/04/2018. The locals inhabitants were informed and their objections & suggestion will be presented to the MOEF&CC. The locals were also requested to present their views/objectives on the stage which was video graphed. The raised important queries regarding the proposed expansion would play a decisive role in the project approval.

After wards, the Chairman of the Public Hearing Program, and the Additional District Magistrate, said that whatever objections and suggestions people have regarding the project, should express them either verbally or in writing, which will be included in the Minutes of the Meeting by Ministry of Environment and Climate Change, and transmitted to the Government of India.

In this sequence, Honorary Environmental Advisor of the Airports Authority of India, Mr. Rahul Singh, gave details about the project. He conveyed to the public that due to the rising demand for air travel, the project expansion has become a necessity. Proposed expansion plans will increase the potential of air transport from 250 passengers per hour to 1300 passengers per hour. The expansion work will be carried out within the established premises. There is no need for acquisition of additional land for



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expansion. The built-up area of the Terminal Building under expansion is proposed to be 37,700 m². As a result of expansion, for the purification of public-based domestic flows, a sewage treatment plant (STP) of capacity 175 KLD is proposed. Project proponent has proposed water, air and solid particles management plan, conforming to the standards. A detailed report of the study of environmental impact of the project proposed by the project's environmental consultant was presented.

In the end, people agreed in favour of the project by standing as a gesture. Afterwards, the proclamation of the public hearing was concluded by the permission of the Chairman of the Public Hearing meeting.

Table 7-1: Issues Raised During Public Hearing

Sl. No.	Name and address	Issues raised by the villagers during public hearing	Reply by Proponents/Concerned Persons and Suggestions	Action plan
1	Shri Dabbal Singh Bhandari (Vice President District Panchayat, Dehradun)	1. Public Hearing presentation was not promoted effectively, due to which most of the residents of the nearby villages were not present - he suggested a re-arrangement of the Public Hearing.	1. The advertisement for the public hearing was given 30 days prior to the allotted date of the public hearing in the national newspaper like Danik Jagran, "Amaryjala" & "Times Of India" date 29/04/2018.	
		2. The expansion of the terminal will result in an increase in Air Pollution, on account of which intensive afforestation in the nearby areas by long term projects, should be carried out.	2. As per the MOEF&CC circular dated 01.05.2018, a Corporate Environment Responsibility (CER) amount would be spent on the upgradation of the surrounding environment (around the project area), which amounts to 0.75% of the additional capital investment, ~₹ 2.59 crores.	For green area development and landscaping, AAI has allocated about ₹2.59 crores as capital expenditure for environmental improvement including social forestry in nearby villages.
		3. After the expansion, the local people should be given preference in new creation jobs in Airports Authority of India	3. Approximately 400 daily labours will be employed during the construction period and during the operation phase it is estimated that 100 staff would be employed in the airport. Efforts would be made to employ eligible local people.	Eligible Local people will be employed during operation and construction phases of the project.

7.3 DISASTER MANAGEMENT PLAN

7.3.1 Disaster

A disaster can be defined as an "occurrence of such magnitude so as to create a situation in which normal pattern of life within a facility is suddenly disrupted, adversely affecting not only the personnel and property within the facility but also in its vicinity."

A Disaster Management Plan (DMP) is an integral part of an Airport operation for effective and safe management of technical and non-technical emergencies. This is important for effective management of an emergency situation to minimize losses to people, property and both at and around the Airport.

The objectives of the emergency planning are to describe the Airport's emergency response organization, the resources available and applicable response actions. Thus, the objectives of emergency response plan can be summarized as follows:

- Rapid control and containment of the hazardous situation;
- Minimizing the risk and impact of an event/accident; and
- Effective rehabilitation of the affected persons, and prevention of damage to property.

Disasters are always unwanted part of situation & difficult to control. Aviation disasters create huge losses of property and people. Disaster control plans are successfully established operated & thus involvement of local people is paying in time.

To be prepared in advance for any sort of disaster which may occur as a consequence of natural calamities is utmost important. Disaster control plan gives ideas to plan in advance to avoid & minimize the damage in all aspects. It is a team effort & remarkably pays if due attention is paid in time to plan & execute the action plan for disaster control. As the name suggests the team members in this plan are many & all must know their duties to perform their respective roles in least time, at positions asked & as per needs of the situation arises.

7.3.1.1 On-site Incidents

Such an occurrence may result in on-site implications like:

- Fire and/ or explosion;
- Leakage of flammable material;
- Release of toxic material (sabotage);
- Crash landing;
- Bomb threat; and
- Natural calamities like earthquake etc.

7.3.1.2 Off-site Incidents

Incidents having off-site origins can be:

- Air raids; and
- Crashing of aircraft i.e. while landing or Take-off.

7.3.1.3 Other Incidents

Other incidents, which can also result in a disaster, are:

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- Agitation/ forced entry by external group of People;
- Sabotage; and
- Hijacking

An important aspect of the disaster is its unforeseen nature. Thus, by definition itself, a disaster is impossible to control completely. However, occurrence of events, which lead to a disaster, may be minimized through proper technology and engineering practices. The DMP plan should be prepared in accordance with the Civil Aviation requirement laid down by the Director General of Civil Aviation (DGCA), the National Disaster Management Act, 2005, the National Building Code as well as various code provisions of the International Civil Aviation Organization (ICAO) including other International conventions and acts.

7.3.2 Emergency Resources and Equipments

- High mast lighting on generator trailers is essential for protracted night operations. A source for fuel for the generators should be identified.
- A trailer equipped with sufficient backboards and stretchers to accommodate 250+ casualties.
- Sufficient body bags and causality identification tags.
- A trailer mounted medical disaster kit containing long shelf life items such as bandages, compresses, splints, trauma kits etc.
- Tents and tarpaulins for use during inclement weather.
- A trailer / container with stakes, heavy hammer, colored tape and poles to mark are at an accident site and to identify triage sites and evacuation routes. These stakes can also be used to mark locations where bodies, voice and flight recorders, and aircraft parts are found.
- Heavy cranes to lift debris during rescue activities
- Buses and other vehicles to transport ambulatory passengers.
- Vehicles to transport dead to temporary morgue.
- Tow bars and wing / fuselage jacks for all aircraft types using airport.
- Pneumatic lifting bags and compressors.
- Heavy cranes and forklifts.
- Aircraft loading equipment and tow tractors.

7.3.3 Emergency Procedures

7.3.3.1 Rough Weather Emergency

In case of storm approaching the area, prior warning will be received. Therefore, the radio room must receive daily weather forecast, which must be signed by the Air Traffic Controller or his designated officer. It is strongly suggested that specific weather report be prepared or obtained, as it would be more accurate than general report and three stages of operation control shall be followed:

- **Green Status:** This status applies when weather is good. Operations can go on smoothly as planned.
- **Yellow Status:** This is an alert stage when rough weather is expected or may be expected, hence alert must be maintained with all precautions with emergency status but operations can continue.

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- **Red Status:** Emergency situation- operations suspended. All activities are to be controlled by the designated officer of the Airport.

7.3.3.2 Aircraft Crash within Airport Fire Service Turn-out Area

The Airport Fire Service turnout area shall include the entire airport area as well as the areas in the vicinity of the airport up to an arc of a circle centered at the runway threshold of 5 km radius, and 3 km from the perimeter of the airport.

Crash action is declared for aircraft accidents on the aerodrome as well as off the aerodrome. The Air Traffic Controller shall activate the crash alarm immediately if one of the following events occurs:

- When the aircraft accident/ crash is sighted by the Air Traffic Controller or the sighting is reported to the Air Traffic Control by any of the reliable sources.
- When the aircraft has been cleared to land and fails to land within 5 minutes of the estimated time of landing and the communication with the pilot is not able to be re-established.
- During poor visibility- when the Air Traffic Controller is unable to sight the runway, and the aircraft, which has been cleared for take-off or land, fails to respond to the Air Traffic Control's repeated calls.

7.3.3.3 Aircraft Crash outside Airport Fire Service Turn-out Area

If an aircraft accident occurs outside the Turnout Area, the procedures for Crash Action outside the Airport Fire Service Turnout Area shall be as followed.

- The decision to declare the Crash Action rests with the Air Traffic Control.
- Local Fire Service will be fully in charge and resume command of the aircraft fire-fighting and rescue operations at the crash site.
- State Authorities/ District Administration will be overall in charge of all ground operations at the scene. All the other agencies and services involved will activate their respective emergency operations plans to support the State Authorities/ District Administration in the mitigation of the aircraft accident.

7.3.3.4 Fire on the Ground (Aircraft Movement Area)

An aircraft can catch fire when it is taxiing in the movement area or parked at an aerobridge or remote bay. Such a scenario can arise from a defect or malicious act, and may develop into a major disaster. The resources required to mitigate are thus identical to that of an aircraft crash within the Airport Fire Service Turnout Area.

When the aircraft on the ground catches fire and is sighted by the Air Traffic Controller or reported to the Air Traffic Control by any reliable sources, the Air Traffic Controller shall activate the Airport Fire Service through the crash alarm communication system and provide details of the aircraft fire, for example:

- Location of aircraft;
- Nature of fire (e.g. undercarriage fire, engine fire);
- Number of Passenger On Board (POB); and
- Presence of dangerous goods, if known.

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The Air Traffic Controller shall give clearance to the responding fire vehicles to enter the runway/ taxiway as soon as possible.

7.3.3.5 Fire on the Ground (Airport Buildings & Installations)

Fire may occur at any of the airport installations and buildings. If out of control, such a fire may cripple the key airport facilities and disrupt the normal airport operations. During a fire occurrence, however small it may appear to be, person who discovers it shall:

- Raise the fire alarm via the nearest manual call point. If no manual call point is readily available, raise the alarm by other available means;
- Inform the Airport Fire Service immediately of the exact location of the fire; and
- Operate a suitable fire extinguisher where readily available, or any water hose reel within range.

7.3.3.6 Bomb Emergency Management

Bomb threats by their very nature indicate the very real potential for serious damage to aircraft, buildings and property, as well as the potential for serious injuries or loss of life. A bomb threat could be written, recorded, or communicated orally. Every threat must be taken seriously and dealt with in such a way as to not create panic. The call recipient must remember to do many things, all of which will aid in the search for the device and provide authorities with as much information as possible for their later investigation. The following immediate actions are suggested:

- Any aircraft that is suspected of carrying a bomb should be parked in Isolated Bay Area.
- All passengers should be evacuated immediately by the fastest means whilst the local or airport police arrange for bomb disposal experts to attend and search the aircraft. All baggage should be left on board until it has been searched and cleared. Airport rescue and fire services should be standby at point no less than 300m from air craft and predetermined procedure for bomb alerts should take into account the calling of local authority services of fire, police, ambulance and hospitals.
- Air traffic control must maintain continuous communication with the rescue and firefighting services to ensure that they are kept updated in relation to any change in distressed aircraft condition.
- To attend to bomb threat calls received to aircraft, terminal building, vital installations and arising from unclaimed observed insides/outside the airport and safe neutralization of explosives devices found.
- As soon as an emergency is envisaged/ occurs, the Emergency chief or his alternate shall promptly communicate the information by a telephone or any other quickest mode of communication to the Inspector of Police, highest administrative officer and Fire brigade. The information should include the location in question and the degree of emergency (anticipated, eminent or actual).
- To conduct regular training of airport security police and staff, airline agencies working at the airport. This training is based for identification of explosives.

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7.3.3.7 Forced Landing of Hijacked Aircraft

Every airport is faced with a threat of hijacked aircraft forced to land at the aerodrome all airports have standard operating procedures to deal with such eventualities. An outline of the procedure to be followed to manage this contingency is given below.

- A separate isolated parking place away from the parking aprons and far away from the terminal complex is earmarked for parking such aircraft after it has landed.
- All messages from the hijackers are to be relayed by air traffic control to the concerned agencies.
- Information must be promptly given to local police department, State Government Authorities and concern Airline Company.
- Information will also be passed to neighboring airports for alert through airport officials and IAF authorities.
- Fire tender and ambulance be kept ready for emergency situations.
- Local hospital, fire services and ambulance services made alert for possible aid.

7.3.4 Onsite and Offsite Emergency Plan

On-Site Emergency: If accident/ incident takes places in an Airport, its effects are confined to the Airport premises, involving only the persons working in the Airport and the property inside the Airport it is called as On-site Emergency.

Off-Site Emergency: If the accident is such that it affects inside the Aircraft are uncontrollable and it may spread outside the Airport and affect the premises, it is called as Off-site Emergency.

The main objectives of an emergency plan are to control and contain the incident/ accident and if possible, eliminate it and to minimize the effects of the incident on person, property and environment. Each Airport should prepare an emergency plan incorporating details of action to be taken in case of any major accident/ disaster occurring inside the Airport. The plan should cover all types of major accident/ occurrences and identify the risk involved in the airport. Mock drills on the plan should be carried out periodically to make the plan foolproof and persons are made fully prepared to fight against any incident in the airport.

The Emergency Control Centre (ECC) shall ensure a mock drill of the onsite emergency plan is conducted at least one in every six months. A detailed report of the mock drill conducted under rule shall be made immediately available to the Inspector and Chief Inspector. Main elements of On-site Emergency plans:-

- Leadership and Administration,
- Role and Responsibilities of Key Personnel,
- Emergency action,
- Light and Power,
- Source of energy control,
- Protective and rescue equipment,
- Communication,
- Medical care,

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- Mutual Aid,
- Public relation,
- Protection of vital records and
- Training and
- Periodical revision of plan.

7.3.4.1 Onsite Emergency Plan

The emergency action plan includes

Emergency Control Centre: The operations to handle the emergency are directed and coordinated by emergency control center. The facilities will be made available in the emergency control are:

- a) Internal and external communication.
- b) Computer and other essential records.
- c) Daily attendance of workmen employed in Airport.
- d) Pollution records.
- e) Walky-talky.

Assembly Points: A safe place far away from the Airport has been pre-determined as assembly point where in case of emergency personnel evacuated from the affected areas are to be assembled. The Airport workers, contract workers and visitors will assemble in assembly point in case of emergency and the time office clerk should take their attendance so as to assess the missing person during emergency.

The Key Personnel for Onsite Emergency: The General Manager of the airport will act as main controller. His duties are to

- a) Assess the magnitude of the situation and decide whether the evacuation of staff from the Airport is needed.
- b) Exercise and direct operational control over areas other than those affected.
- c) Direct and control rehabilitation of affected area after emergency.
- d) Intimate Off-site Emergency controller if the emergency spreads beyond the Airport premises and likely to affect the surrounding area etc.

Escape Route: The escape route from Airport should be clearly marked. The escape route is the shortest route to reach out of the affected area to open area, which leads to assembly point. This route should be indicated on the layout plan attached to the On-site Emergency Plan.

Evacuation Plan: All non-essential staff should be evacuated from the emergency site. As soon as the emergency siren rings the staffs have to move to the assembly point. The closing procedure in case of emergency should be prepared and kept ready and responsible person should be nominated for the purpose.

Emergency Facilities: The following facilities will be provided at Airport to tackle any emergency at any time.

- Fire protection and firefighting facilities.
- Emergency lighting and standby power.

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- Emergency equipment and rescue equipment
 - a. Breathing apparatus with compressed air cylinder.
 - b. Fire proximity suit.
 - c. Resuscitator.
 - d. Water gel Blanket.
 - e. Low temperature suit.
 - f. First aid kit.
 - g. Stretchers.
 - h. Torches.
 - i. Ladders.

7.3.4.2 Offsite Emergency Plan

Central Control Committee:

- Incident and Environment Control Committee.
- Fire Control Committee.
- Traffic control, Law and order, Evacuation and Rehabilitation Committee.
- Medical help, Ambulance and Hospital Committee.
- Welfare, Restoration and Resumption Committee.
- Utility and Engineering Services Committee.
- Press, Publicity and Public Relations Committee.

7.4 ACTIONS PROPOSED TO ADDRESS CLIMATE CHANGE

Proponent's Commitment for Climate Change and our response:

1. India has also launched an ambitious plan to replace all incandescent lamps with Light-emitting diode (LED) bulbs in the next few years leading to energy savings of up to 100 billion kilowatt hours (kWh) annually. The programme has contributed to an increase of 25% to 30% in the energy efficiency of an average refrigerator or air-conditioner in 2014 compared to those sold in 2007.

Yes. The proponent has kept provision of using LED Lamps.

2. The **Energy Conservation Building Code (ECBC)** sets minimum energy standards for new commercial buildings.

Yes. The proponent is designing the terminal building keeping in consideration the ECBC Code.

3. **GRIHA (Green Rating for Integrated Habitat Assessment)**, based on 34 criteria like site planning, conservation and efficient utilization of resources etc.

Yes. The proponent has applied for green rating of the terminal building.

4. Government has invested significantly in **Solid Waste Management (SWM)** projects over the years and has provided INR 25 billion (USD 397 million) as grant in aid to states and Urban Local Bodies specifically for SWM through public-private partnerships.

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Yes. The proponent has will assist the ULBs by segregating solid waste and installing Organic Waste Converter.

5. Similarly, initiatives on waste water management would cover an additional population of 41 million and enhance recycling and reuse of treated water.

Yes. The proponent is putting an STP and shall reuse treated sewage for irrigation and other purposes at site.

6. **Faster Adoption and Manufacturing of Hybrid & Electric Vehicles** in India (FAME India) is a scheme formulated as part of the **National Electric Mobility Mission Plan 2020 (NEMMP)** to promote faster adoption and manufacturing of hybrid and electric vehicles in the country by providing incentives.

Yes. The proponent will start by using Electric Vehicles at terminal and switch over to hybrid vehicles whenever available.

7. **Zero Liquid Discharge (ZLD)** and use of treated effluent for irrigation.

Yes. The proponent will use treated sewage for irrigation and other usage.

8. Amendment of **Municipal Solid Waste Management (Management and Handling) Rules** is underway which will emphasize on proper segregation of waste at source; enhance waste processing and implementation of scientific landfills. Similarly, **Bio-Medical Waste (Management & Handling) Rules**, **Plastic Waste Management Rules**, **e-waste (Management) Rules** and **Hazardous and Other Wastes (Management and Transboundary Movement) Rules** are being amended for a more scientific, technology driven, regulated and participative environment management.

Yes. The proponent will follow the rules for our waste disposal and reuse.

9. Companies Act 2013 directs companies having a certain level of profits, to spend 2% of their annual profit on **Corporate Social Responsibility (CSR)** activities.

Yes. The proponent will spend 2% of average net AAI profit during three immediately preceding financial year for relevant CSR activities after analyzing the needs of the community.