



ICAO

*International Civil Aviation Organization*The Seventh Meeting of the Asia/Pacific
Aerodrome Assistance Working Group (AP-AA/WG/7)*Bangkok, Thailand, 27 to 30 May 2025***Agenda Item 3: Aerodrome Certification and Safety Management System**

- **Aerodrome safety vis-as-vis land use planning**

LAND USE VIS-À-VIS AVIATION SAFETY AT ISLAMABAD INTERNATIONAL AIRPORT

(Presented by Pakistan)

SUMMARY

This paper presents challenges arising from land use activities around Greenfield Airport in Islamabad during its construction and measures adopted by Pakistan CAA to safeguard its operations.

1. INTRODUCTION

1.1 Airports are integral part of aviation industry pivotal in facilitating travel, promoting economic activity and creating jobs. Construction and Operations of the airport opens door to pecuniary benefits for the community it serves. The safe operations at the airport are therefore expedient not only for continued public trust in aviation industry but also for the larger socio-economic interests of the states.

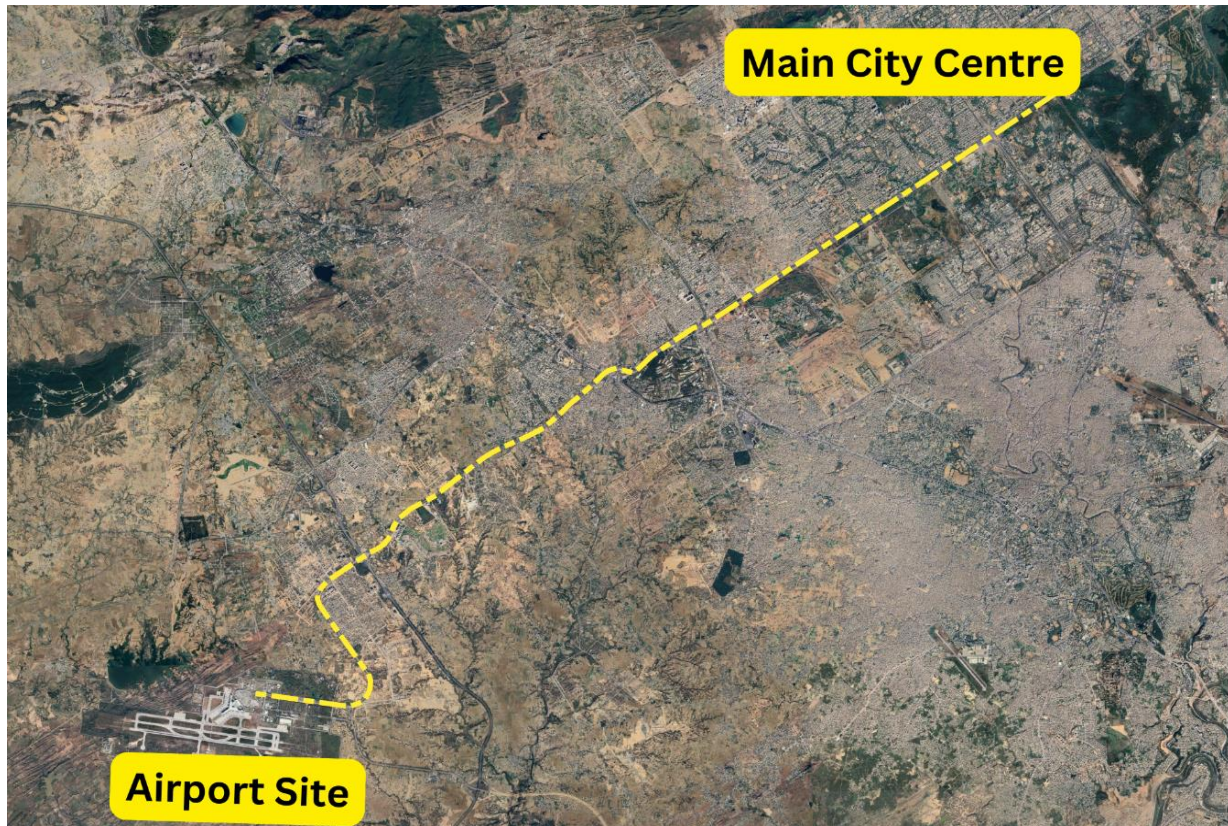
1.2 Airport Operations are significantly influenced by surrounding land use activities, which may pose serious challenges such as safety hazards, environmental concerns, operational inefficiencies and security threats. Safety hazards directly related with land use activities include wildlife strike hazard, difficulty in obstacle control, interference in radio frequency, laser illumination events, etc. Therefore, land use planning and aviation authorities should work closely together to ensure that aviation safety is not adversely affected by surrounding land use activities.

1.3 During construction of Greenfield airport in Islamabad, Pakistan CAA collaborated with land use authorities to stop uncontrolled growth of housing and commercial facilities around the airport. The efforts and initiatives of Pakistan CAA safeguarded the airport while enabling authorities to optimize land resource utilization.

2. DISCUSSION**Challenge of rapid construction activities around the under construction airport**

2.1 Construction of new Greenfield airport in Islamabad commenced around 2008. Selected site was approximately 30Kms away from main city center in a sparsely populated area. Land in the area was significantly less expensive compared to main city. As soon as the airport construction began, the real estate industry seized the opportunity and started expanding its business. Land prices

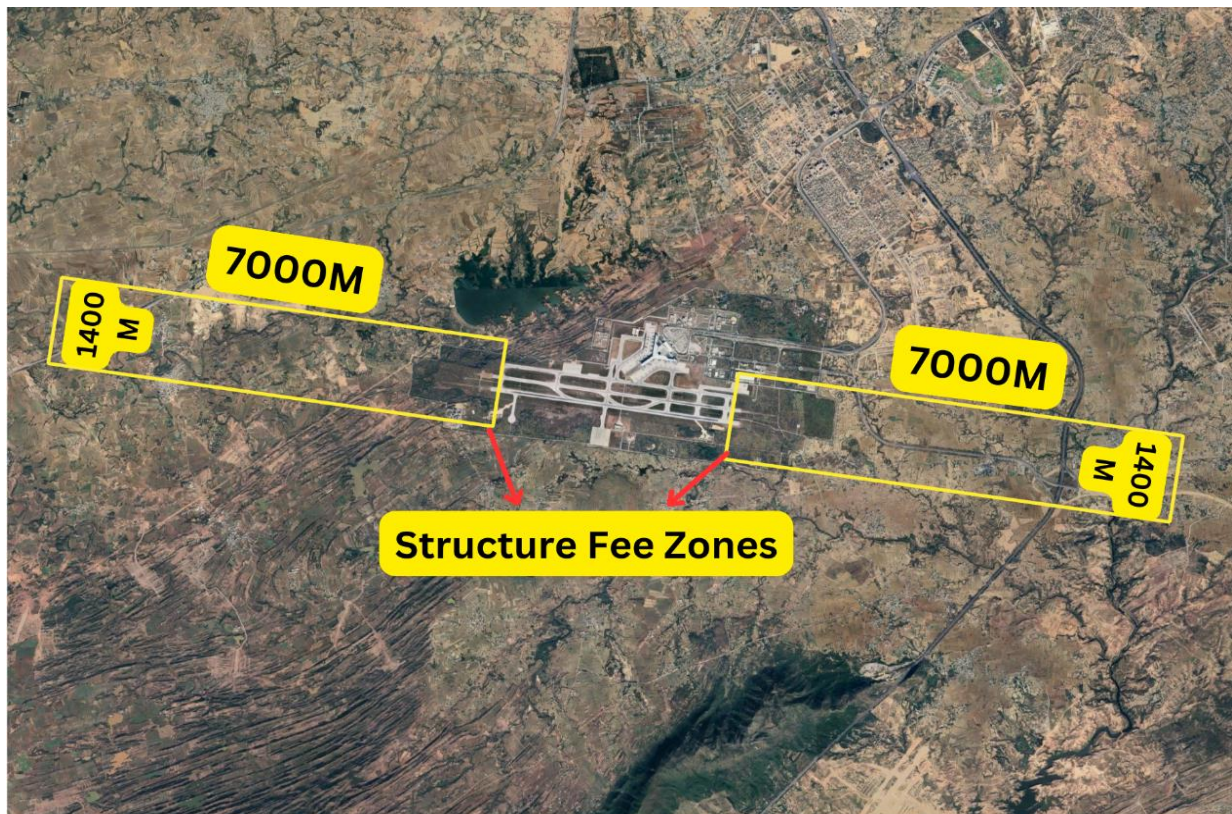
surged, and numerous housing and commercial developments were planned around the airport. Without both immediate and long-term actions, airport operations could have been adversely affected.



Pakistan CAA's Initiatives

2.2 Pakistan CAA took cognizance of rapid construction activities around under construction airport and promptly addressed the issue. The matter was escalated to the Prime Minister and the Federal Cabinet for necessary action. With support from the Federal Government, Pakistan CAA implemented following key initiatives to mitigate potential risks and ensure the airport's operational safety.

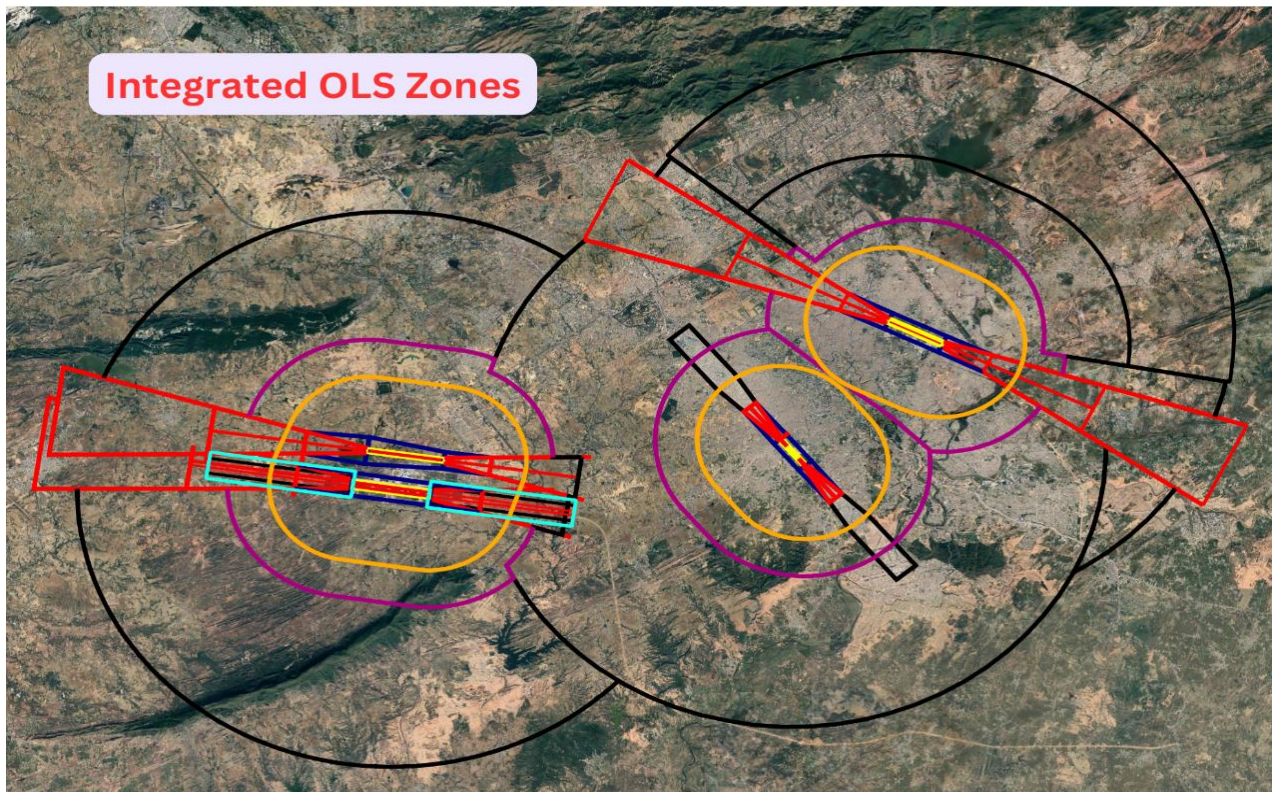
2.2.1 **Establishment of Structure Free Zone (SFZ):** On the directions of the Prime Minister, Pakistan CAA conducted a comprehensive risk analysis and deemed it necessary to establish a structure-free zone (SFZ) around the airport as an immediate short-term measure to curb the burgeoning construction activities. The Federal Government accepted CAA's recommendations and established a **Structure Free Zone (SFZ)** through a Statutory Regulatory Order (S.R.O). The SFZ extended 7 kilometers from each runway threshold, with a total width of 1,400 meters. Within the lateral limits of the SFZ, new construction and extensions to existing structures were completely prohibited. Outside these limits, the Obstacle Limitation Surfaces (OLS) criteria continued to apply. The SFZ is depicted in the picture below:



2.2.2 **Revision of height zoning regulations:** Building Control Authorities were notified of SFZ and their Height zoning regulations were revised to incorporate structure free zone. Furthermore, compliance with OLS Criteria in areas outside SFZ was also ensured.

2.2.3 **Training for building control authorities:** Awareness sessions followed by comprehensive training on “Aerodrome Safeguarding and OLS Criteria Course” were organized for officers of building control authorities. Those responsible for approving building plans and overseeing constructions were trained on ICAO OLS Criteria, activities potentially attractive for wildlife, laser control and radio frequency interference. This equipped them to control and regulate land use activities in “aviation friendly” manner. The trained human resource in building control authorities is a key element for safeguarding of aerodromes.

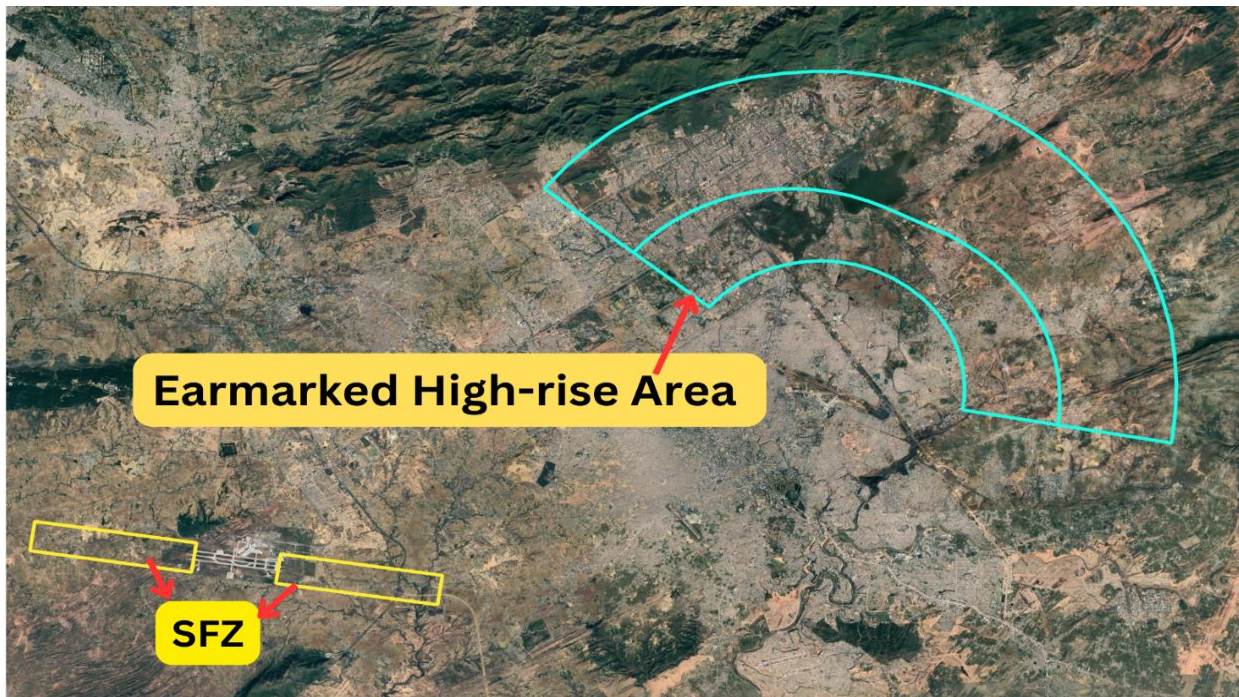
2.2.4 **Integrated Height Zoning Maps:** OLSs of Islamabad airport overlapped with airfields in the vicinity of airport. Pakistan CAA developed integrated soft maps of OLSs and shared them with building control authorities. The integrated maps served as a tool for calculation of height clearance around airport.



2.2.5 **Coordination with Frequency Allocation Board:** On the directions of Pakistan CAA, Frequency Allocation Board (FAB) - responsible for allocation of radio frequency spectrum for different commercial purposes and approval of antenna / BTS Tower heights-established a coordination procedure with PCAA and the Pakistan Airports Authority. These organizations collaborate to prevent allocation of any frequency that could interfere with those used for Civil Aviation. Moreover, officers from FAB received training on “Aerodrome safeguarding and OLS Criteria” enabling them to apply appropriate height restrictions prior to approval of antenna / BTS Towers height.

2.2.6 **Airport Environment Control Committees:** As per PCAA’s requirements, Environment Control Committees have been established at certified aerodromes including Islamabad International Airport. The committee serves as a coordination platform between airports and relevant authorities in their vicinity. Any land use activity that could pose a risk to aviation safety is discussed in ECC meetings, and appropriate mitigation measures are implemented to address potential hazards. PCAA monitors ECC operations through surveillance activities to ensure compliance and effectiveness.

2.2.7 **Aeronautical Study for high rise areas:** In order to promote construction activity while ensuring the provision of green spaces, Pakistan CAA conducted aeronautical study to earmark areas of high rise construction in major cities including Islamabad. Areas were earmarked outside of Conical Surface taking into account flight profiles, flight paths, impacts on visual/ CNS aids and non-normal operations. The designated areas were officially published through a Statutory Regulatory Order (S.R.O.)



2.2.8 **Development of Web-Portal:** The need for effective and expeditious coordination in this context cannot be over emphasized. To facilitate this, a web portal has been developed to streamline coordination with building control authorities. This platform enables the immediate exchange of information and ensures prompt coordination among stakeholders.

2.2.9 **Oversight by PCAA:** Plans approved by building control authorities / FAB are shared with PCAA for verification with prescribed criteria. PCAA verifies the clearances issued by respective authorities and where required takes corrective actions. PCAA has also been empowered to carry out audit of building control authorities / FAB.

2.2.10 **Effectiveness of the PCAA Measures:** Since the inauguration of Islamabad Airport in 2018, the measures adopted by PCAA have effectively safeguarded aerodrome operations. The number of wildlife strikes has remained lower compared to the old Islamabad Airport, laser illumination events are rare, and there have been no reports of confusing non-aeronautical lights or radio frequency interference. No violation of height clearance (OLS Criteria) has been reported.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper; and
- b) Discuss any relevant matters as appropriate.

—END—