

OBSTRUCTION MITIGATION



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What is Obstruction Mitigation ?

A Mitigate Obstructions project may include one or a combination of the following:



Procedure NA at night.

RWY 8 CLSD TO LDG ACFT DAILY
2330-0900



Obstruction Mitigation Planning

FAA AC 150/5300-13A, para 105. Planning:

“To the extent practicable, land acquisition should include adequate areas surrounding the runway(s) to protect:

- Runway and Approach Departure Surfaces identified by Para 303
- Object Free Areas (OFAs)
- Runway Protection Zones (RPZs)”

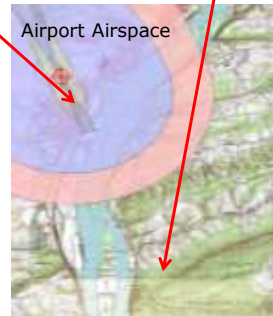
“Land acquisition to protect all possible airspace intrusions is generally not feasible, and is usually supplemented by local zoning, easements, and other means to mitigate potential incompatible land uses and potential obstacle conflicts.”



Obstruction Mitigation Planning – Beyond Airport Airspace

Little Mountain – Big TERPS Problem

OL on Residence:
Part 77 Mitigated



VFR Threshold Siting Surface Issues

- **Legacy Runway Threshold Siting Criteria (back to late 1960's)**
- **Different dimensions for small and large airplanes**
- **Penetrations to this surface are definitive "hazards"**
- **Mitigation is typically limited to lowering, removal or threshold displacement**
- **Obstruction lighting and/or VGSI may mitigate in rare instances through a MOS**
- **Continued penetrations may result in VFR night restrictions**



20:1 IFR Visual Surface Issues

- **Based on TERPS**
- **Surfaces identified in the Airport Design Advisory Circular (Table 3-2)**
- **Dimensions change based on approach category and visibility minimums**
- **Mitigation can be lowering, removal and obstruction lighting**
- **VGSI may now only mitigate in rare instances**
- **Continued penetrations will result in IFR night restrictions**



20:1 IFR Visual Surface Issues

PennDOT BOA Initiatives

- **2003:** Inspection letters began informing airports of 3 -year notice to Mitigate 20:1 penetrations (3/25/03 FAA's AVN-1 Memorandum).
- **2012:** Following change in FAA policy regarding 20:1 penetrations "at risk" airports were identified.
- **2013:** "Special" state funding for immediate mitigation of 20:1 penetrations was programmed for SFY 2013-14. Low interest due limited accessibility to the obstructions.
- **2013 to Present:** "Night IFR Restricted" airports are given opportunities to adjust their 4-year ACIP for 20:1 penetration mitigation at "normally scheduled" program updates (Fall\Winter).



Obstruction Mitigation

What can airports do to be proactive (or reactive)?

1. Review Inspection Reports
2. ALP Inner-Approach Surface Drawing
3. Obtain FAA Survey Data:
 - Your Airport's FAA AGIS Survey
 - UDDF Files (<https://nfdc.faa.gov/tpss/uddfList.jsp#>)
 - IFP Review Letter Attachments (*now being reactive*)
4. Map Obstructions, Identify Property Owners
5. Identify Available Access Options:
 - Airport Property/Easements
 - Hazard Zoning
 - Entry Agreements
6. Mitigate Obstructions:
 - Remove
 - Lower (then Manage per EB #91)
 - Other (Obstruction Light, use VGSI no greater than 3 degrees)



Obstruction Mitigation Program Sequence

Typical project with limited to no access to remove approach penetrations and no recent survey:

- 1. (Year 1) Phase I: Conduct Obstruction Survey & Develop Mitigation Plan that prioritizes surfaces: VFR, IFR one end, etc.**
- 2. (Years 2 & 3) Phase II: Acquire Land and/or Easements**
 - Focus on most critical
 - AIP Eligibility Prerequisites
- 3. (Year 4+) Phase III: (or more): Removal/Lighting**
 - Work results in "useful" surfaces
 - Hope airport did not go "batty"
 - Grant based on bids
 - As-built survey



Obstruction Mitigation

Recent Mitigation by PA Airports Include:

- Certify penetrations do not exist
- Trees removed or lowered
- Installed obstruction lights
- Decided to live with "Procedure NA Night" or Day-only use.
- "Attempt" VGSI as mitigation



Mitigating VFR Penetrations – KN13

Before



After

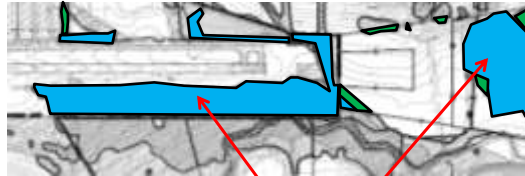


Mitigating 20:1 IFR Penetrations-KTHV



Mitigating Obstructions K22N

- 24 Acres of Removal
- 70% in Wetlands
- Clears obstructions on airport property & easements
- Clears all VFR approach penetrations, night IFR RW 26 not all clear
- Total Project Cost: \$600k
- Duration from Survey NTP to Contractor NTP (Yesterday) = 3 Years



Obstruction Removal In Wetlands



Challenges and Lessons Learned (so far):

- Obstruction mitigation historically not a "*desired*" Sponsor priority.
- Explaining the various surfaces to Sponsors, airport managers and the public needs to be simple.
- Mitigation requiring access to land is a lengthy process, hazard zoning in-place may help.
- Prolonged loss of night IFR procedure availability is a reality.
- Maintaining IFR (or even large airplane VFR) capability will be expensive.



OBSTRUCTION MITIGATION



Thank-You !

