



# Federal Aviation Administration

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## Policy Guidance

Date: September 19, 2022

To: Regional Airports Division Managers  
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Airports District Office Managers

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**Subject: Approach and Departure Surface Protection**

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This policy guidance memorandum summarizes the responsibilities of FAA Office of Airports staff regarding establishing, maintaining, and prioritizing clear approach and departure surfaces at airports, as part of normal deliberations with airport sponsors about upcoming plans and projects. This memo synthesizes best practices and expectations relating to the protection of approach and departure surfaces. This document consolidates and rescinds the August 18, 2015, and March 4, 2017, memorandums<sup>1</sup> on the same subject.

## **Introduction**

The final approach and departure surfaces protect aircraft flight paths during critical phases of flight. The presence of obstacles may hamper an aircraft's flight path on landing or takeoff.

The use of the terms “objects”, “obstructions”, and “obstacles” are often used interchangeably; however, the terms have specific meanings for airspace protection and in airport design.

- Objects include, but are not limited to, person built (above ground) structures, Navigational Aids, equipment, vehicles, natural growth, terrain, and parked or taxiing aircraft.
- Obstructions are objects that infringe upon the obstruction standard surfaces in [Title 14 CFR Part 77, Safe, Efficient Use, and Preservation of the Navigable Airspace \(Part 77\)](#). Often obstructions that do not affect flight operations are not determined hazards to navigable airspace; however, they are included in the Obstacle Authoritative Source database and typically require marking and/or lighting to increase conspicuity to pilots.
- Obstacles are obstructions that infringe upon a surface contained in [FAA Order 8260.3, United States Standard for Terminal Instrument Procedures \(TERPS\)](#) or the approach and departure surfaces in [Advisory Circular 150/5300-13, Airport Design \(Airport Design AC\)](#). Obstacles require mitigation such as displacing the threshold, or an amendment to instrument procedures such as increasing minima.

The foundation for the protection of navigable airspace begins with Part 77. This federal regulation establishes requirements to notify the FAA of certain construction or alterations and obstruction standards for proposed construction or alteration of existing structures. Any object that exceeds Part 77 Obstruction Standards is considered an obstruction and presumed to be a hazard to air navigation unless further aeronautical study concludes the obstruction would not affect the safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities. Part 77 applies to both existing and proposed objects as well as existing and planned runways. While this federal regulation mandates notice requirements and establishes obstruction standards, the FAA has no legal authority to prohibit construction of structures regardless of proximity to public use airports. State governments and/or local municipalities with zoning, permitting, and land (property) use authority can deny construction applications that would encroach on public use airports. Alternatively, the state/local offices may permit construction at a restricted height thereby preserving airspace used for flight operations. [AC 150/5190-4, titled “A Model Zoning Ordinance to Limit Height of Objects Around Airports”](#), provides a model zoning ordinance to be used as a guide to control the height of objects around airports. Please note this AC is planned to be replaced by the Airport Land Use Compatibility AC.

In accordance with Part 77 and [Order JO 7400.2, titled “Procedures for Handling Airspace Matters”](#), the Office of Airports (ARP) and the [Obstruction Evaluation Group \(AJV-A5\)](#) has the responsibility to process all [FAA Forms 7460-1, Notice of Proposed Construction or Alteration](#) submitted to FAA. ARP is responsible for on-airport NRA aeronautical studies and AJV-A5 is responsible for off-airport OE aeronautical studies. ATO's Aeronautical Information Services,

Flight Procedure Team (FPT) completes an evaluation of the effect the proposed construction or alteration will have on instrument flight rules (IFR) procedures, including the visual portion of a final approach segment, based on criteria contained in TERPS, and other associated orders. The FPT also conducts periodic review of all instrument procedures to ensure compliance with current criteria and verification of controlling obstacle clearance. Regular review of available FAA obstacle data and the collection of new obstacle data by airport sponsors helps prevent undesirable impacts to the instrument procedures serving the airport. [AC 150/5300-18, titled “General Guidance and Specifications for Submission of Aeronautical Surveys to NGS”](#), provides the specifications for the collection of geospatial airport data and procedures to submit the data to the FAA.

**Airport Design Approach Surfaces**

For federally obligated airports, ARP reviews proposed construction and alterations in accordance with the Airport Design AC. Similar to obstructions penetrating TERPS, any penetrations to the approach surface in the Airport Design AC<sup>ii</sup> are obstacles. A penetration is an object exceeding the height of an imaginary surface.

Airport Design consist of multiple types of approach surfaces that can be categorized into two groups: visual runways and instrument runways. Refer to the Airport Design AC for additional information.

**Visual Runways:** A visual runway is defined as a runway without an instrument approach procedure. Pilots are expected to navigate to and from the runway using only visual flight maneuvers. The applicable surfaces for a visual runway are shown in the table below. Penetrations to the visual approach surface are expected to be lowered or removed. FAA uses an aeronautical study to determine whether the obstacle is a hazard to air navigation. The aeronautical study may assist in determining alternative mitigations, such as displacing the runway threshold. Displacing the runway threshold will reduce the usable landing length of a visual runway, which can adversely affect the full utility of federal investments made to obligated airports. For the purposes of airport design, IFR circling procedures and minima are compatible with a visual runway, since the pilot is completing a visual maneuver to land. However, for airspace protection of visual runways with IFR circling procedures, utilize Surface 4 of Table 3-3 of the Airport Design AC.

Visual Approach Surfaces	
<b>1</b>	Approach end of runways expected to serve small airplanes with approach speeds less than 50 knots.
<b>2</b>	Approach end of runways expected to serve small airplanes with approach speeds of 50 knots or more.
<b>3</b>	Approach end of runway expected to serve large airplanes.

**Instrument Runways:** The second category is instrument runways, which are runways served by published instrument approach procedures. Instrument approach procedures are a series of predetermined horizontal and/or vertical maneuvers for landing aircraft operating under instrument flight rules. The instrument approach surfaces in the Airport Design AC are derived

from TERPS criteria with the intent to provide a simplified version of the surfaces used in instrument approach procedure design.

Penetrations to the instrument approach surface are expected to be lowered or removed. Penetrations may not require displacing the runway threshold, however penetrations may require undesirable changes to instrument procedures ultimately affecting airport accessibility in low-visibility and nighttime conditions (e.g. mitigation may include increasing visibility minimums, loss of vertical instrument procedure(s), or loss of nighttime use). Aeronautical studies aide in identifying the proper mitigation for obstacles penetrating an instrument approach surface.

### **Airport Design Departure Surface**

TERPS criteria and the Airport Design AC's departure surface protect the paths of aircraft departing under IFR. Pilots can only takeoff under IFR on runways that are specifically authorized as having IFR takeoff minima. A clear departure surface allows for standard takeoff minima and climb gradient from rotation through climb out. Obstacles penetrating the departure surface may require publication of non-standard takeoff minima, higher than standard climb gradients, departure end of runway (DER) crossing restrictions, or publishing low, close-in notes.

To avoid these obstacles, aircraft may be required to alter flight paths or climb at an increased rate, which often necessitates payload adjustments. Non-standard takeoff minima resolves safety concerns, however, the departing aircraft may have a less efficient flight trajectory. When practical, existing obstacles (including ones that are found as no hazard) should be removed or lowered to restore standard takeoff minima and/or to remove low close-in obstacle departure notes.

Obstacles that are located within one nautical mile of the departure end of runway and penetrate the 40:1 departure surface are referred to as "low, close-in obstacles" and are included in the U.S. Terminal Procedures Publication's (TPP) Obstacle Departure Procedure as a low, close-in note. Publication of low, close-in obstacles necessitates a climb gradient greater than the standard 200 feet per nautical mile until the aircraft is 200 feet above the DER elevation. To eliminate publishing an excessive climb gradient for a very short distance, the obstacle's location relative to the DER and height is noted in the Obstacle Departure Procedure.

The accumulation of low close-in obstacles can be particularly impactful to aircraft that need most of the takeoff runway available, or to heavy, lower performing aircraft only capable of climbing at the minimum rate. This is because the accumulation of low, close-in obstacles may affect the aircraft operator's One Engine Inoperative (OEI) obstacle clearance. While the FAA does not consider OEI in the aeronautical study process per authority under 14 CFR Part 77, operating regulations require turbojet airport operators to calculate OEI performance. Significant payload adjustments may be needed so that aircraft can safely depart clear of low, close-in obstacles.

While existing obstacles may penetrate the departure surface, it is not acceptable to allow the proliferation of new permanent, person built obstacles in this critical phase of flight. The cumulative effect of continuously adding new obstacles adds complexities to both operations and to human factor elements. Accordingly, ARP will not support penetrations to the standard 40:1 departure surface or a low close-in note as a permanent mitigation for new obstacles.

Instrument departure procedures, takeoff minima, and low close-in notes are published in the TPP. During the development of instrument approach procedures the FPT will assess, develop, and publish takeoff minima for all runways at the airport unless requested otherwise. The airport operator, in coordination with the FAA, can identify runway ends that are for visual departures only (i.e. IFR takeoff is published as not authorized (NA) in the TPP). In this case, the instrument departure surface will not be protected on the runway end, and IFR departures are not permitted. Airport sponsors can submit a request to remove existing instrument takeoff minima from a runway end via the IFP Gateway<sup>ii</sup>. Prior to submitting a request, airport sponsors are requested to coordinate with their respective Airports District Office (ADO) or Regional Office (RO).

Where practicable, visual runways at airports with instrument approach procedures should afford IFR departures by protecting the instrument departure surface. The availability of multiple runways having IFR takeoff minima provides operational flexibility for aircraft departing under IFR. However, there are valid reasons for an airport operator to decide not to protect select visual runway(s) with an instrument departure surface. For example, worthwhile aeronautical development (such as hangars) may preclude IFR departures from the A-I visual crosswind runway, but IFR departures are protected on the C-II primary runway.

Typically, penetrations to the departure surface occurs off-airport property in an area not owned by the airport. AJV-A5 is responsible for aeronautical studies regarding proposed construction located off-airport property. Depending on the proposal, ARP may be requested for review and comment. ARP cannot evaluate a non-standard departure surface. Instead, ARP will simply assess the standard 40:1 departure surface. Regardless of any existing modified departure surface (e.g. increased climb gradient), ARP is to object if any obstacles penetrate the standard departure surface as described in AC 150/5300-13, Airport Design. If AJV-A5 mitigates our objection based on a different climb gradient that is at their discretion. AJV-A5, in accordance with 14 CFR § 77.17, considers an object that penetrates the departure surface to be an obstruction to air navigation. In accordance with Order JO 7400.2, AJV-A5 will conduct further study to determine if adverse effect exists. Any proposed obstacle that penetrates the departure surface, originating at the departure end of runway (DER) by up to 35 feet will be circularized by AJV-A5. Circularization is the process of providing public notice of proposed construction to solicit information that may assist in determining what effect, if any, the proposed structure would have to the navigable airspace. If the obstacle penetrates the departure surface by more than 35-feet, it is presumed to be a hazard, and AJV-A5 will issue a Notice of Presumed Hazard.

### **Grant Assurances**

While the FAA cannot regulate the height of structures, FAA grant assurances and property conveyance obligations, if applicable, serve to hold airport sponsors accountable in protecting airspace on and around the airport. Airport sponsors that accept funds from FAA-administered airport financial assistance programs must agree to certain assurances/obligations. The following grant assurances relate to safety and the protection of the approach and departure surfaces (property conveyance typically have similar obligations):

- 1) Grant Assurance 19, *Operation and Maintenance*
- 2) Grant Assurance 20, *Hazard Removal and Mitigation*

- 3) Grant Assurance 21, *Compatible Land Use*
- 4) Grant Assurance 22 (h and i), *Economic Nondiscrimination*
- 5) Grant Assurance 29, *Airport Layout Plan*

It is critical for federally obligated airport sponsors to meet these assurances/obligations to ensure safe and efficient airport operations at all times, protection of the airport's terminal airspace, and related compatible land use. Failure to do this may lead to violations, request for costly corrective action, and affect eligibility and jeopardize future federal funding. Depending on the situation and circumstances of the case, the FAA may pursue judicial enforcement as well. In addition, it is noted that the terms and conditions of a FAA's land release approval are legal encumbrances on the property and are required to be recorded. These encumbrances on the land typically limit land use and airspace penetrations after the FAA releases the property. For more information pertaining to these grant assurances, refer to Order 5190.6, FAA Airport Compliance Manual.

### **Responsibilities**

While the airport sponsor has ultimate responsibility in the protection of the approach and departure surfaces, it is a collaborative effort with ARP. The following are responsibilities among the various stakeholders:

#### **Office of Airports (Headquarters)**

- Ongoing coordination with the FPT and the Flight Standards Service (AFS-400) nationally in regards to airspace related matters.
- The Airport Data and Airspace Branch (AAS-120) within ARP supports development of a Runway Airspace Management Tool in the Airport Data and Information Portal ([ADIP](#)) to assist airport sponsors in managing obstacles and in protecting airspace surrounding their airport. This tool will also provide a means for airport sponsors to create an Obstacle Action Plan (OAP).
- AAS-120 and the Airport Planning and Environmental Division (APP-400) support ADO and RO personnel pertaining to this matter, inclusive of both design and planning considerations. The Airports Financial Assistance Division (APP-500) provides the field offices support relating to Airport Improvement Program (AIP) grant funding of obstruction and obstacle removal.
- Responsible for the review of petitions submitted under §77.37. Proponents have the option to petition for additional FAA review of an unfavorable determination made on an on-airport obstacle or obstruction. AAS-120 may coordinate petition reviews with AJV, APP and/or ACO, as applicable. The petition process is handled outside the OE/AAA program.

#### **Office of Airports (ADO or RO)**

*Note: For block grant states, refer to the approved Memorandum of Agreement.*

- Ensure airport sponsors incorporate the identification and planned mitigation of obstacles penetrating the approach and/or departure surfaces into Master Plans, Airport Layout Plan (ALP) Updates, obstruction studies, and other relevant documents.
- Confirm the sponsor develops a plan for removing or mitigating obstacles and hazards to air navigation. An airport sponsor with unmitigated obstacles will develop an OAP detailing how and when, to the extent reasonable, each of the surfaces will be cleared and maintained. At minimum, the OAP is to include all Airport Design approach and departure surfaces relevant to a given runway end. The priorities for removing obstacles are as follows:

<b>Priority 1</b>	Obstacle(s) determined a hazard to air navigation by an FAA aeronautical study.
<b>Priority 2</b>	All other obstacle(s) penetrating approach surfaces.
<b>Priority 3</b>	All other obstacle(s) penetrating the departure surface.

- Collaborate with the sponsor to get annual updates to their OAP. On the ALP, document each obstacle or obstacle group and its corresponding aeronautical study.
- Consider obstacle mitigation projects as a priority when discussing Capital Improvement Plan (CIP) project funding requests. Please note the AIP Handbook addresses obstruction removal, not obstacle removal. In the context of the AIP Handbook, these terms are used interchangeably.
- Object to, or provide a no objection with provision(s) that practicably mitigate, any new permanent, person built Non-Rulemaking Airport (NRA)/Obstruction Evaluation (OE) aeronautical study that infringes upon an approach or departure surface as contained in the Airport Design AC. Providing an objection or no objection with provision for an OE study may not result in an objection from AJV-A5; however, it is the official record of ARP's response.
- Negotiate with the sponsor to preclude any on-airport permanent structure from causing an IFR effect, as determined by Flight Procedures. If negotiations fail, issue an objectionable determination.
- Collaborate on NRA petitions (reference §77.37) when requested by AAS-120.
- Review and discuss with the sponsor the obstacle disposition data table in the ALP set. In addition, when reviewing the Project Evaluation Report and Development Analysis (PERADA), or other like review format, items prior to awarding any new grant, confirm the sponsor is monitoring the OAP. The OAP is a fluid document updated continuously by the sponsor, and is only reviewed (i.e. not approved) by the FAA.

- Highlight any unresolved issue jeopardizing safety or utility and thus jeopardizing past or future federal investments. FAA considers protracted delays in obstruction mitigation to be a negative factor when considering other grant requests.
- Work closely with the RO Instrument Validation Team lead, the FPT, and the airport sponsor to ensure timely and accurate information regarding obstacles. The OAP may be useful if mitigation dates are known and can be used by Flight Procedures during IFP development.
- Upon receiving an OE aeronautical study that has a possible effect to the approach or departure surface, notify the airport operator. AAS-120 maintains a template for alerting sponsors. This action complements but does not relieve the airport sponsor in monitoring off-airport construction that impedes airport operations.
- Emphasize to airport sponsors that obstacle or obstruction removal needs to be viewed as a priority for the use of AIP entitlement funds. FAA Order 5100.38, *AIP Handbook*, sets forth policy on obstruction and obstacle removal being eligible for AIP grant funding. Obstruction removal does have limitations that are to be conveyed to the airport sponsor prior to undertaking an AIP funded project. The current Desk Guide provides work codes relating to obstruction removal. Both the FAA and airport sponsor are expected to consider obstacle mitigation projects as a priority matter when discussing other CIP project funding requests. Whenever the ADO meets with the airport sponsor to discuss CIP updates or potential funding requests, the ADO should discuss with the sponsor the need to establish an obstacle disposition data table in the ALP showing actions for each obstacle.
- When reviewing the PERADA, or other like review format, items prior to awarding any new grant, ensure the sponsor is following the OAP (or is in the process of developing the OAP), and is including obstacle mitigation projects to the maximum extent possible. The ADO/RO may review (but not approve) the OAP as it is the sponsor's responsibility to develop and implement the OAP. It is important to emphasize that the PERADA question (as to whether the approach and departure procedures are clear) does not refer solely to on-airport obstructions. Rather, the airport sponsor needs to evaluate any off-airport obstructions as well (and the FAA needs to review the sponsor's evaluation). The potential removal or other mitigation of such obstacles will continue to be a high priority, regardless of whether they are on- or off-airport.

### **Airport Sponsor**

This section provides information to ARP staff in the interest of providing full context on both FAA and airport responsibilities; this memo does not establish guidance but rather summarizes applicable processes and references in existing guidance.

The ultimate goal for each airport is to have proximate airspace free of obstacles. The challenge is that existing man-made and/or natural objects may impede the practical ability for an airport sponsor to achieve this goal. In addition, objects may be constructed outside



the airport's control. Regardless, airport sponsors must mitigate existing airport hazards and prevent new hazards to the extent reasonable. Not adhering to the following expectations may lead to a violation of grant assurances or the property conveyance obligations:

- Develop working relationships with local municipalities to facilitate communication and coordination on land use planning, zoning, off-airport development proposals, proposal reviews, etc. It is also good practice to include local government (e.g. typically land use planners and engineers) in the review and development of the airport's master planning process and any relevant airport development. Through outreach, the airport can also advise surrounding local governments on the merits and best practices for land use compatibility zoning.
- Identify objects that are obstructions to air navigation in accordance with Subpart C of Part 77. Ensure each obstruction (or grouping thereof) has an associated aeronautical study. Obstructions that encompass a larger area (e.g. group of trees) can be submitted to the FAA by identifying multiple points that make up the footprint of the area, using the highest representative obstructions above ground level. Take any action identified in the FAA determination, and immediately mitigate any obstruction found to be a hazard. Recall, §77.15 states objects that are considered obstructions under Subpart C are presumed hazards to air navigation unless further aeronautical study concludes that the object is not a hazard. Meeting this will ensure airport compliance with Part 139 certification (see Title 14 §139.331).
- On property over which the sponsor has zoning authority, prevent obstructions from being constructed near the airport that are found to be a hazard under Part 77 or that result in penetration or any other impact to the airport's approaches/departures or use. This includes penetration to any surface contained in the Airport Design AC or any surface in TERPS, resulting in an IFR effect. Consideration must be given to existing and future runway improvements. For temporary construction, refer to [AC 150/5370-2, \*Operational Safety on Airports During Construction\*](#). This document provides guidance on protecting the approach and departure surfaces during construction.
- With respect to property over which the sponsor does not have zoning authority, inform neighboring municipalities and other entities that own or control land proximate to the airport regarding FAA notice requirements of Part 77. Explain the risks associated with aboveground structures in the approach and departure areas of a runway, and effects it may have to the airport. Proper zoning or land use control are effective means to protect approach and departure areas of a runway. Consideration must be given to existing and future runway improvements.
- Upon identification or notice of an obstacle conflicting with visual or instrument flight procedures, take immediate mitigation actions. The FAA expects the airport sponsor, to the extent possible, to mitigate existing obstacles. Mitigation is broken into two categories: temporary and permanent.

**Temporary Mitigation** – A temporary action taken to immediately alleviate a hazard to air navigation. This action is an interim action ensuring flight safety until the airport is able to implement a permanent mitigation. (E.g. instrument night operations are not available or N/A as the airport works towards removing or lowering a 20:1 obstacle penetration.)

**Permanent Mitigation** – A permanent action taken to alleviate a hazard to air navigation. If having control over the property, it is expected the airport sponsor will remove, lower, or relocate the obstacle. If not having zoning authority, verify that the obstacle was filed with the FAA under Part 77. If no filing was done, ensure the sponsor submits the obstacle review to FAA before taking any mitigation action. Permanent mitigations are coordinated and documented through an aeronautical study. In the event the airport sponsor, in coordination with the ADO/RO, determines it is not practicable to remove, relocate, or lower the obstacle, consider the following mitigations:

- Displacing the threshold
- Adjusting instrument minimums (takeoff or approach)
- Marking and lighting

If the airport sponsor determines no practicable alternatives exist, document the following, at minimum, in the OAP regarding the specific obstacle:

- Associated Aeronautical Study Number from OE/AAA
  - FAA’s determination (e.g. no objection)
  - Airport Sponsors consideration of viable alternatives (e.g. threshold displacement)
- Seek opportunities for land acquisition, land exchanges, right-of-first-refusal to purchase, agreements with property owners regarding land uses, or other means of establishing land-use controls. While zoning is one means for protecting against obstructions, it may not be the best means since zoning can change and property owners may receive variances. Avigation and clearing easements may be a more effective means of protection.
  - Assess off-airport circularized aeronautical studies. Note, the ADO/RO is only a division responder to off-airport construction and may not be notified of all proposals by AJV-A5. FAA uses circularized studies to solicit input from the public on notice of proposed construction off airport property. Review and coordinate the proposal with airport users and identify if the proposal will affect aeronautical operations. Provide the operational impact to AJV-A5. Absent of this information, a “no hazard” determination may be issued resulting in local authorities allowing the construction of the obstacle. A determination of hazard can result in the obstacle not being built, it being lowered, or additional mitigations to prevent impacts to airport operations. Airport sponsors are encouraged to create an OE/AAA account and monitor proposed construction around their airport. Refer to <https://oeaaa.faa.gov/oeaaa/external/portal.jsp>.

- Protect existing and future instrument departure procedures, in an effort to retain standard takeoff minimums with standard climb gradient to the extent possible. Existing obstacles penetrating the departure surface is not a valid reason to allow the proliferation of additional obstacles.
- Protect the PAPI obstacle clearance surface to ensure pilot maintains minimum clearance over obstacles during approach. Refer to [AC 150/5340-30, \*Design and Installation Details for Airport Visual Aids\*](#). The presence of an obstacle can result in the visual guidance slope indicator not to align with the instrument flight procedures to the same runway.
- Issue NOTAMs relating to obstructions. (e.g. obstruction light outage, temporary construction equipment, unmitigated hazards) or remark(s) to the airport record (e.g. Chart Supplement, Airport Master Record)
- Protect existing and future instrument approach procedures, in an effort to retain existing visibility minimums or achieving ultimate visibility minimums.
- Coordinate with the FPT to resolve any issues relating to instrument flight procedures.
- Install airfield signage and marking to ensure taxiing aircraft and vehicles do not impede runway approach and departure surfaces. Refer to [AC 150/5340-1, \*Standards for Airport Markings\*](#) and [150/5340-18, \*Standards for Airport Sign Systems\*](#).
- Review and verify approach/departure obstacle data. The Runway Airspace Management (RAM) module of ADIP provides the ability for airport operators to view obstacle data and take necessary mitigations (e.g. removing obstacles that have been previously removed).
- Incorporate the identification and planned mitigation of obstacles penetrating the approach and/or departure surfaces into Master Plans, ALP Updates, obstruction studies, and other relevant documents.
- Complete and update their OAP, as minimum, on an annual basis. If the clearance of obstacles is not feasible at a particular time, the sponsor is expected to provide documentation of its efforts and the FAA should track the item as an open issue to pursue when a future opportunity arises. AAS-120 is creating an online OAP tracker within the RAM module of ADIP.
- Develop a vegetation maintenance program to ensure vegetation (e.g. trees) growth does not penetrate the instrument or visual protection surfaces of the airport. Validate the height of vegetation at a minimum every three years to ensure the surfaces remain clear. For predicting tree growth rates, refer to the FAA’s “National Tree Growth Rate Database” report<sup>iii</sup>. When topping trees, the resultant elevation mean sea level (with

respect to North American Datum of 1988 (NAVD-88) should provide for at least five years of growth below the instrument or visual surface requiring protection.

- If planning for a future runway, identify a location providing clear approach and departure surfaces to the extent practicable. If this is not possible, consider:
  1. Penetrations to the approach surface may result in undesirable visibility minimums, and/or
  2. Penetrations to the departure surface may result in the reduction of usable runway length and/or payload for departing aircraft.
  3. The feasibility and timeframe needed to mitigate penetrations. Penetrations that cannot be mitigated can significantly reduce the utility of the planned runway.

Note: [AC 150/5325-4, Runway Length Requirements for Airport Design](#), provides guidelines for airport designers and planners to determine recommended runway lengths for new or extended runways; however, caution is warranted as this AC's methods assume there are no obstacles affecting arrival or departure requirements. If there are obstacles in the arrival or departure surface, the use of aircraft performance engineering data using criteria in AC 150/5325-4 is needed to correctly assess impacts to usable runway length. Protecting public investment in runway infrastructure includes identifying obstructions, which may affect the usable length of an existing or planned runway.

ARP technical staff in AAS-120, APP-400, and APP-500 are available to RO and ADO personnel as a resource for program implementation. For questions pertaining to grant assurances or property conveyance obligations, please contact the Airports Compliance Division (ACO-100).

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<sup>i</sup> August 18, 2015 memorandum titled “*Reminder of Responsibilities for FAA Personnel and Airport Sponsors for Protecting Approach and Departure Surfaces*”. March 4, 2017 memorandum titled “*INTERIM UPDATE on Responsibilities for FAA Personnel and Airport Sponsors for Protecting Approach and Departure Surfaces – AIP Funding and the NPR*”

<sup>ii</sup> IFP Information Gateway | [www.faa.gov/air\\_traffic/flight\\_info/aeronav/procedures](http://www.faa.gov/air_traffic/flight_info/aeronav/procedures)

<sup>iii</sup> <https://www.airporttech.tc.faa.gov/Products/Airport-Safety-Papers-Publications/Airport-Safety-Detail/national-tree-growth-rate-database>