Instrument Procedure Development Process

Federal Aviation Administration

Presented to: WSCAA

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???...Yikes, say what?
Blah…blah…blah…..
Aeronautical Surveys
Objects
Obstruction Lighting
Obstructions
Obstacles
Its Obstruction but not a Hazard
Visibility Minimums
Threshold Siting Surface (TSS)
Hazard to Air Navigation
Obstruction Clearance Surface (OCS)
40:1 Departure OCS
Displaced Runway End
TERPS
Part 77
Obstruction Mitigation Plan
Vertically Guided Surfaces
FAA
Airport Sponsor

Part I
Instrument Flight Procedure (IFP) Process

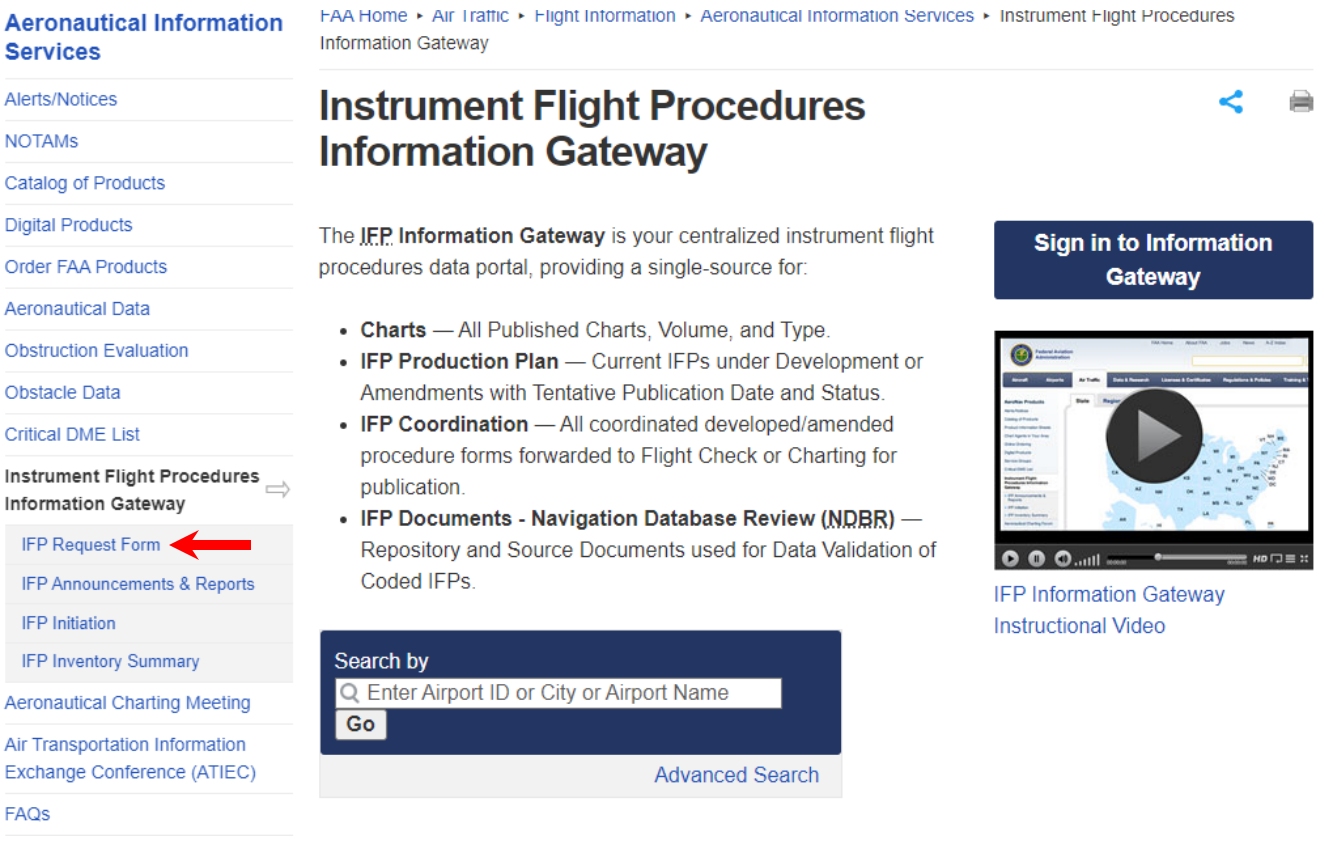
Federal Aviation Administration

IFP Process

All requests for Instrument Flight Procedure (IFP) Actions must be made via the IFP Gateway

https://www.faa.gov/air_traffic/flight_info/aeronav/procedures/

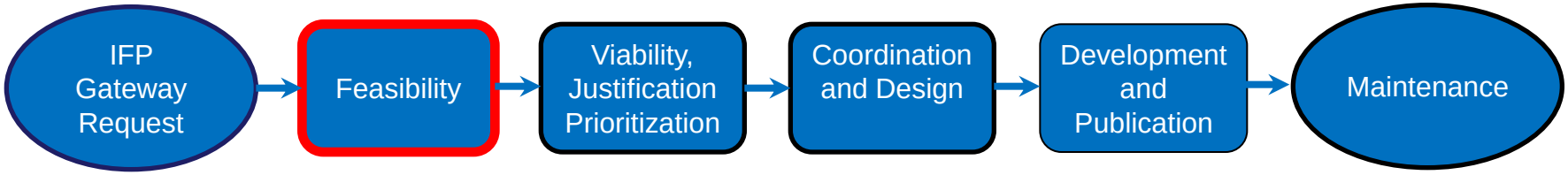
Select IFP Request Form to request an IFP action



IFP Process

The IFP request form will ask for different information depending on the type of request

IFP Process

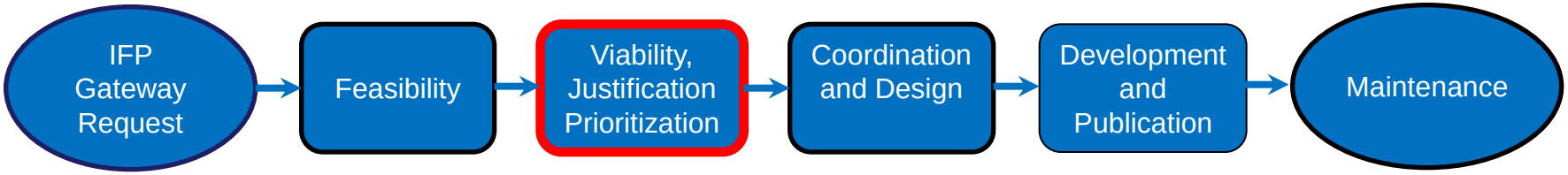


Feasibility: The Flight Procedures Team will perform an initial feasibility analysis to determine the feasibility of the request. Feasibility asks the question “can it be developed.”

Some items considered at this time are:

- Is it duplicate request
- Does it comply with current criteria
- Is the infrastructure in place to support the request
- Determine the full scope of work
- Should it be combined with another existing project

IFP Process

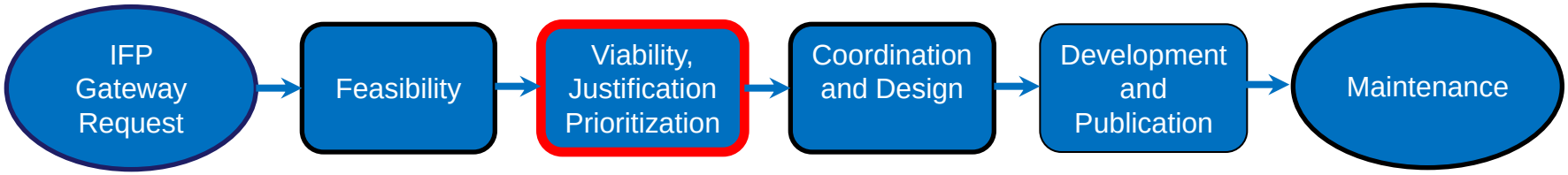


Viability, Justification, and Prioritization: The request will then be vetted for viability and justification and prioritized. Viability asks the question “should it be developed.”

Numerous FAA Orders and national initiatives are used in this process including:

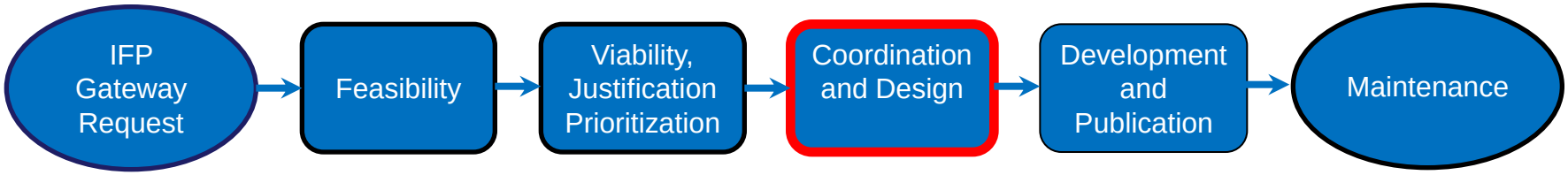
- 8260.43
- 7100.41 (Sunsetting end CY24)
- VOR minimum Operations Network (MON)
- National Procedure Assessment (NPA)

IFP Process



If the project is approved to move forward, it will then be prioritized with other work in the NAS as appropriate. Prioritization and scheduling of procedures are no longer region specific.

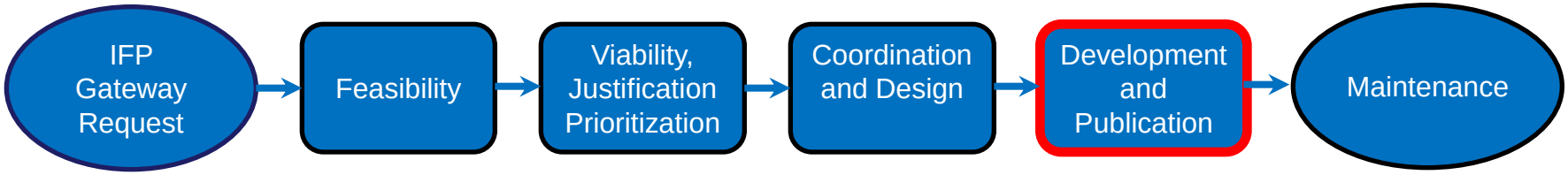
IFP Process



Coordination and Design: Once the project has an assigned publication date, coordination will be accomplished with all affected parties. Coordination requirements vary and may include:

- Air Traffic Control
- Other FAA Lines of Business
- Industry
- Airport Manager
- User Groups
- Community
- Others as required

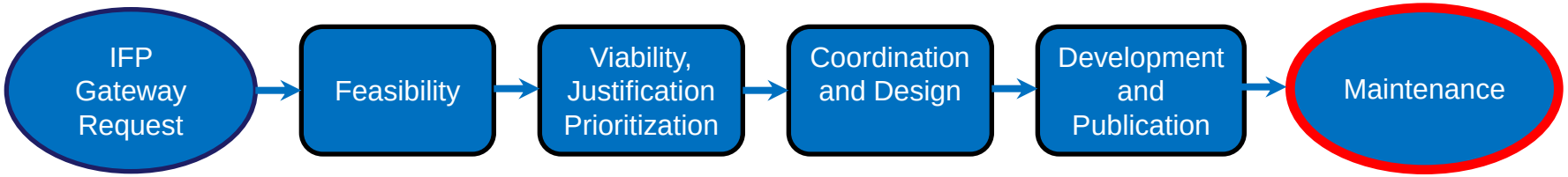
IFP Process



Development and Publication: The project is then forwarded to Aeronautical Information Services (AIS) for development and publication. This process includes:

- Developing the proposed procedures designs
- Quality Control (QC) review
- Coding
- Flight inspection
- Charting and publication.

IFP Process



Maintenance: Active procedures are maintained by AIS and are reviewed biennially to ensure the designs meet current criteria and remain clear of obstructions. If any discrepancies are found, the procedure will be scheduled for amendment and a NOTAM may be issued if there is a safety concern (e.g. 20:1 visual surface penetration).

Part II
Feasibility Analysis

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Feasibility

Airport Design Requirements

AC 150/5300-13B Appendix K identifies airport design requirements for IFP development.

Circling only procedures may be authorized with no survey and basic (visual) markings. However, the minimums will be higher than could be achieved with a survey and/or with a straight-in procedure.

Straight-in procedures require at least:

- 3200’ x 60’ Rwy dimensions
  - Can be shorter with minimums adjustment
- NPI markings
- NPI FAR 77 Approach Type
- NVG Survey
- LIRL/MIRL/HIRL (as appropriate)
- Holding Position Signs/Markings
- Appendix G identifies the narrowest runway width permitted is 60’. Per FAA Airports Division, this is a non-waiverable condition.

Table K-1. Criteria to Support Instrument Flight Procedure Development

Standards [1]	Visibility Minimums [1]			
	< 3/4 statute mile (1.2 km)	3/4 (1.2 km) to < 1 statute mile (1.6 km)	≥ 1 statute mile (1.6 km) straight-in	Circling [2] ≥ 1 statute mile (1.6 km)
HAT [3]	≤ 250 ft	≥ 250 ft	≥ 250 ft	≥ 350 ft
POFZ (PA and APV only)	Required	Not Required	Not Required	Not Required
IT-OFZ	Required	Not Required	Not Required	Not Required
ALP [4]	Required	Required	Required	Required
Minimum Runway Length	4,200 ft	3,200 ft [5]	3,200 ft [5]	3,200 ft [5]
Paved Surface	Required	Recommended [6]	Recommended [6]	Recommended [6]
Runway Markings (See AC 150/5340-1)	Precision	Non-precision	Non-precision	Visual
Holding Position Signs and Markings (See AC 150/5340-1, AC 150/5340-18)	Required	Required	Required	Required [6]
Runway Edge Lights [7]	HIRL or MIRL	HIRL or MIRL	MIRL or LIRL	MIRL or LIRL (Required only for night minimums)
Parallel Taxiway [8]	Required	Required	Recommended	Recommended
Approach Lights [9]	Required	Recommended [10]	Recommended [10]	Not Required
VGSI [11]	Recommended	Recommended	Recommended	Recommended
Applicable Runway Design Standards, (Reference online Runway Design Standards Matrix Tool or Appendix G)	Lower than 3/4 mile (1.2 km) visibility minimums	Not lower than 3/4 mile (1.2 km) visibility minimums	Not lower than 1 mile (1.6 km) visibility minimums	Not lower than 1 mile (1.6 km) visibility minimums
Approach or Departure Surface to be Met (Reference paragraph 3.6.1)	See Table 3-3 or Table 3-4	See Table 3-3 or Table 3-4	See Table 3-3 or Table 3-4	Table 3-3
Optimum Survey Type [12]	VGS	VGS	NVGS	NVGS [13]

Feasibility

An IFP is not always feasible

Example:
FAR 77 Surfaces at this airfield are contained in a fairly level river basin.

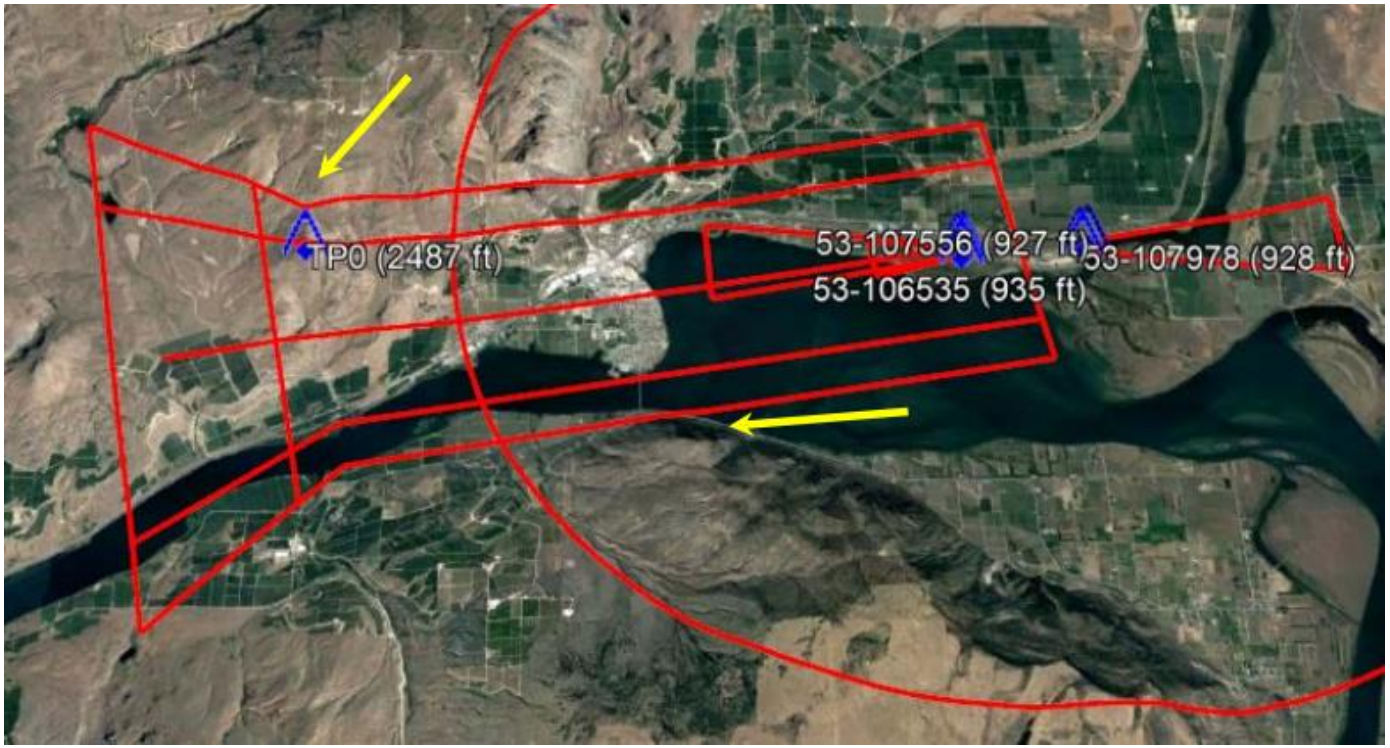
Airport elevation is 919 MSL

Feasibility

Final Evaluation:
The feasibility analysis identified high terrain about 4 nm west of the airport that requires an almost 5° descent angle to clear.

Feasibility

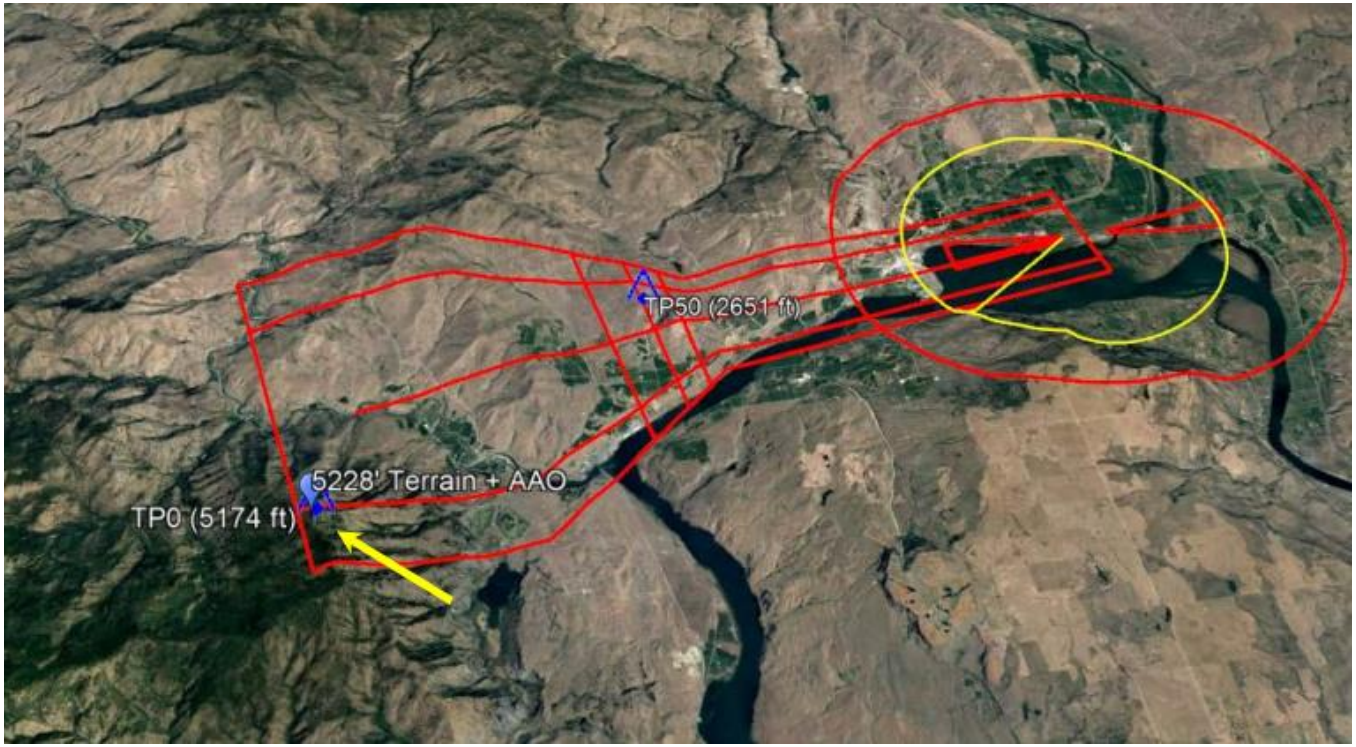
Final Evaluation:
Offsetting the final angle more to the north encounters higher terrain 4.2 nm west of the airport and offsetting more to the south encounters higher terrain 2.3 nm southwest of the runway.



Feasibility

Intermediate Evaluation: Although it could be feasible to restrict aircraft categories to mitigate the terrain in final, mountains 11 nm west of the airport cause an intermediate descent well in excess of what criteria allows. This area cannot be avoided by offsetting the intermediate segment.

Due to these issues, the procedure is deemed not to be feasible.



Part III
Visual Glide Slope Indicator (VGSI)

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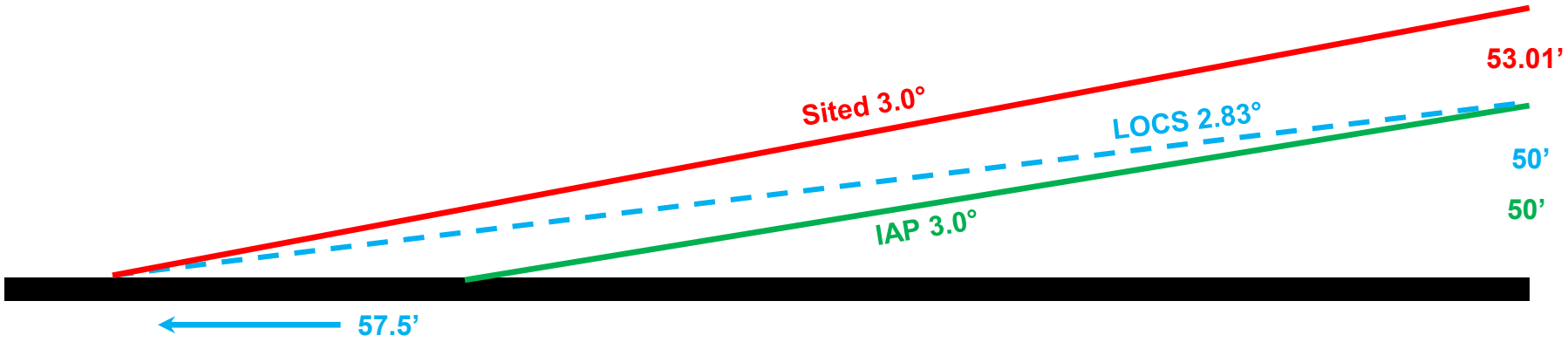
PAPI Siting

FAA Order 6850.2 Chapter 5 provides the guidance for siting a PAPI system.

For runways with Instrument Flight Procedures (IFP), or where IFPs are planned, the PAPI should be sited per paragraph 502 using the IFP angle and TCH values.

For runways without IFPs, the PAPI should be sited per paragraph 503 using the lowest on-course signal angle.

The FAA does not publish the lowest on-course signal angle. Submitted data should math the design angle and TCH.



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