

Airport Engineering

Overview of the FAA Review of Construction Plans and Specifications

Presented to: **FAA Consultants Workshop**

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Date: **June 29, 2017**



Federal Aviation
Administration



Federal Aviation
Administration

Review of Construction Plans and Specifications



- **Memo was issued on August 2, 2016**
 - Prior to review of the P&S, all projects (except equipment projects), will need to have sponsors submit:
 - Consultant Scope of Work;
 - Engineering Design Report; and
 - Construction Safety and Phasing Plan.





Airport Engineering

- **Consultant Selection**
- **Scoping Meeting**
- **Preliminary Engineering Report (PER)**
- **Modification of Standards (MOS)**
- **Construction Safety Phasing Plan (CSPP)**
- **Safety Management System (SMS)**
- **Plans and Specifications (P&S) Review**





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Consultant Selection



- **Prior to scope, the consultant must be selected.**
 - AC 150/5100-14E Architectural, Engineering, and Planning Consultant Services for Airport Grant Projects



AC 150/5100-14E



- **Prior to scope, the consultant must be selected.**
 - AC 150/5100-14E
 - 2.3 Competition
 - 2.3.2.1 Entities that develop request, must be excluded from competing.
 - 2.4 Qualifications based selection
 - Based on a specific scope of services (Limit to current CIP)
 - 2.8 Selection Criteria
 - Based on proposed scope of services (Limit to current CIP)



AC 150/5100-14E



➤ **Prior to scope, the consultant must be selected.**

– AC 150/5100-14E

- 2.12 Scope of Services
 - Complete and mutual understanding of the Scope
- 2.13 Independent Fee Estimate
 - A Sponsor must perform a price or cost analysis for every A/E contract.
 - At a minimum, the independent estimate must address direct labor work hours, labor rates, general and administrative overhead, non-salary expenses and a reasonable profit.
 - Greater than \$100,000 a detailed fee/cost analysis is required.





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Design Scoping Meeting

- **Intent:** To harmonize the intent of the project, the expectations of all parties (Sponsor, State, FAA), and the method of accomplishing an acceptable solution.
- **Applicability:** ADO in conjunction with the sponsor determines which projects would require scoping meetings, PER's, or both elements.
 - Generally speaking, projects are:
 - Of considerable size or complexity or both;
 - Utilize “Other Than Entitlement” funds; or
 - Are unique in nature where problem or solution has not previously been addressed.





Design Scoping Meeting

➤ **Discussion Topics:**

- Problem statement;
- Solution intent;
- Range of acceptable solutions;
- Range of available funding and sources

➤ **Other Topics:**

- Safety considerations and SRM implications;
- Phasing ideas;
- Environmental concerns; and
- Engineering Design Report expectations



Scoping Meeting Logistics



➤ **Timing:**

- After consultant selection; but
- Prior to establishing project task Order/Engineering Services Agreement;

➤ **\$\$\$:** Cost of attendance is reimbursable

➤ **IFE:** IFE consultant should also be on hand and will be reimbursed for attendance

➤ **ADO** should be in attendance (arrangements should be made for virtual conferencing)





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Preliminary Engineer Report



- **Report Intent:** to provide stakeholders a detailed yet concise report to assist with further development of ultimate project scope and funding ***As Early In The Project Life Cycle As Possible***. A precursor to ultimate Design Report.
- **Caveats:** It is anticipated that certain projects may require stakeholders to “re-group” based on findings, such as:
 - Solution more costly than anticipated;
 - Additional scope may be beneficial;
 - Newly codified federal or state regulations or design parameters that affect original intent of project.



Preliminary Engineer Report



➤ **Sample of Items to be Included:**

- Description of airport and users of affected project;
- Areas of concern and problem statement
- Field investigation results: surveys, core samples, etc.
- Design parameters: aircraft, fleet mix, etc.
- Pavement design analysis (i.e. FAARFIELD or otherwise);
- Problematic or change to geometric design requirements;
- Potential adverse affects to FAA facilities or tenants;
- List of proposed solutions, costs, benefits, and dis-benefits.



Preliminary Engineer Report



- **Upon Submittal:** Expectation is that all stakeholders will review the report in detail and then communicate feedback to all stakeholders.
- **No Design Approval:** Stakeholders will not approve nor disapprove contents. Intent of review is primarily with scope, eligibility, or discussing issues identified.
- **Do Not Proceed:** Consultants should not assume that lack of feedback constitutes a green light to continue the design effort.
- Please keep in mind that preferred solution **may not always be feasible** (i.e. funding, timing, enviro, etc.)



FAARFIELD v1.41 (3/8/17)

- Heard of quirks, please advise ADO if found.
- **Timing:** Should be submitted with PER.
- **Applicability:**
 - All pavement reconstruction projects;
 - For any rehabs where fleet mix has changed (500 Annual Ops), i.e. To ensure rehab is structurally adequate (+/-).
- As with all ACs and/or FAA Orders, consultants “should consider” impact of latest versions **up to time of bidding** the project.





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Modification of Standards

- **“Modification to Standards” means any change to FAA standards, other than dimensional standards for runway safety areas or equipment standards for ARFF vehicles, applicable to an airport design, construction (new, reconstruction, expansion or upgrade), or equipment procurement project.**
- **Order 5300.1F provides guidance.**

NOTE: Modifications to geometric standards, excluding dimensional standards for runway safety areas, must be noted in a table on the ALD/ALP with FAA MOS approval letter date and airspace review case number.





MOS Not Required

- Editing vs. MOS
- Paragraph 4
- Can delete entire paragraphs
- Additional sentences can be added
- Can be modified to meet local procurement
- No other changes unless
- Show ~~changes~~ **edits** with strikethrough and/or **colored font**





MOS Validity

- Must not change the intent
- Results in lower costs (i.e. bid pool)
- Results in greater efficiency
- Necessary to accommodate local conditions
- Only airport sponsors can request an MOS
(consultants cannot sign!)





MOS Submittal

How to Submit:

- Currently:
 - Sponsor submits MOS form
- FY18:
 - Sponsor will submit through A-GIS



MOS Approval



RESUBMIT



**Following FAA ACs is ALWAYS* AIP
ELIGIBLE!**

*Provided procurement in accordance with Federal Requirements





MOS Approval

➤ Approval Levels

– HQ

- Runway to parallel taxiway separation
- Siting navigational or lighting aids
- Marking, lighting and signs
- QC or acceptance criteria of materials

– Regional

- Equipment standards (except lighting)
- Construction and material standards with previous approval
- General Provisions under AC 150/5370-10

➤ Case by case





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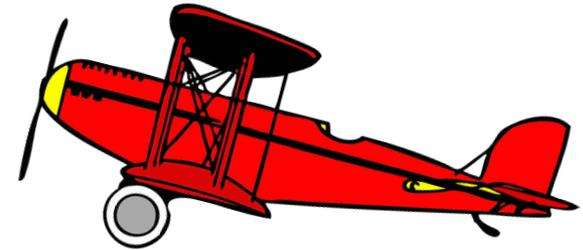


CSPP



➤ SOP 1.00 <http://www.faa.gov/airports/resources/sops/>

- When is a CSPP review required?
- How do I initiate a CSPP review?
- When should we submit the CSPP for review?
- We received a Conditional Approval letter, now what?
- What level of changes requires a re-review of an approved CSPP?



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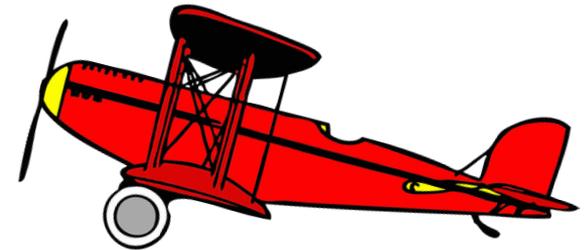


Table 1 – Project Scenarios and Review Requirements

| | AIP Funded Projects (Includes partial AIP participation) ¹ | | PFC Funded Projects (100%) | Non-Federally Funded Projects | |
|--|--|--------------|----------------------------------|--|--------------|
| | Part 139 | Non-Part 139 | Part 139 | Part 139 | Non-Part 139 |
| Part 77 Notice (Construction Objects) ² | | | | | |
| Within AOA | Required | Required | Required | Required | Required |
| Outside of AOA ... | Required | Required | Required | Required | Required |
| Sponsor Preparation and Submittal of a CSPP ³ | | | | | |
| Within AOA | Required | Required | Required | Certificate holder must comply with §139 requirements ⁴ | Not Required |
| Outside of AOA ... | Not Required | Not Required | Not Required | Not Required | Not Required |
| PM Review of CSPP for Conformance to AC 150/5370-2 Standards ⁵ | | | | | |
| Within AOA | Required | Required | Not Required ⁶ | Not required | Not Required |
| Outside of AOA ... | Not Required | Not Required | Not Required | Not Required | Not Required |
| ACSI Review of CSPP for Compliance with Part 139 ⁷ | | | | | |
| Within AOA | ACSI Discretion | Not Required | ACSI Discretion | ACSI Discretion | Not Required |
| Outside of AOA ... | Not Required | Not Required | Not Required | Not Required | Not Required |



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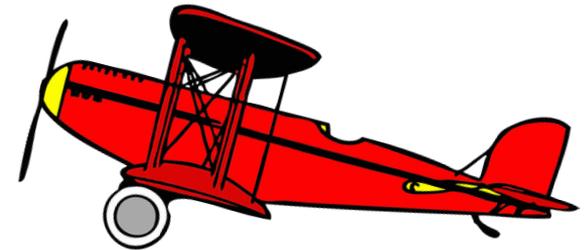
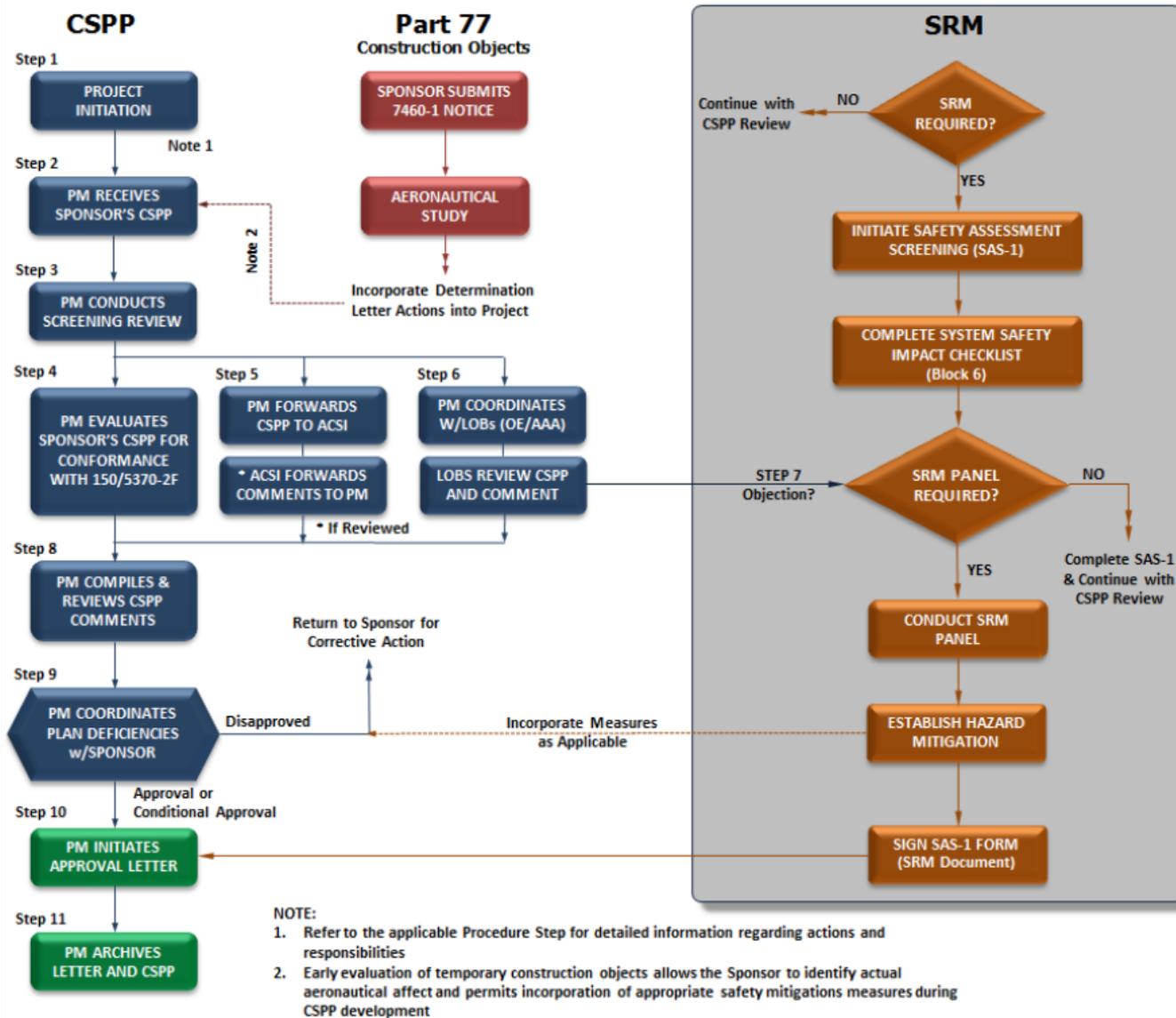


Figure 1. Flowchart of CSPP and SRM Processes

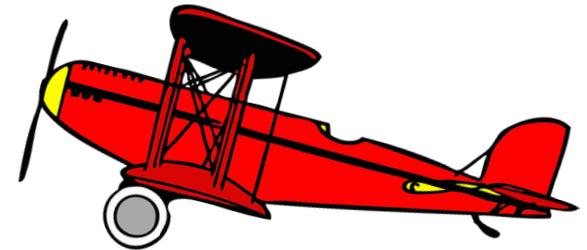


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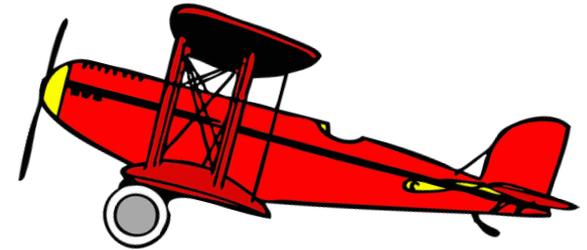


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From Appendix E.2. Correspondence #2 FAA Approval letters

Conditions of Acceptance

Our approval of your CSPP is contingent upon proper resolution of the actions listed.

Please prepare and submit a written annotated response that indicates how you resolved each applicable condition.

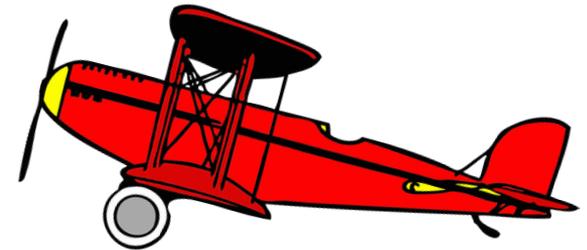


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ARP's Approach to SMS

➤ Dual Approach

- External SMS – Part 139 SMS requirement
 - Implementing through rulemaking
- Internal SMS – Integrating SMS components into ARP's organization, processes and programs that impact safety
 - Implemented through internal FAA Orders and guidance





“External” SMS

- **SNPRM published in July 2016;**
- **DOT and FAA reviewing freeze executive orders and their effects (on rulemaking);**
- **Meanwhile, airports encouraged to voluntarily implement**
- **AC 150/5200-37A Draft (Safety Management Systems for Airports) remains the most up-to-date guidance available**



“External” SMS



➤ Additional Resources – ACRP Projects

- ACRP Report 1: Safety Management Systems For Airports, Volume 1: Overview
- ACRP Report 1: Safety Management Systems For Airports, Volume 2: Guidebook
- ACRP Synthesis 37: Lessons Learned From The Airport SMS Pilot Studies
- Legal Issues Related To Developing SMS & SRM
- Safety Reporting Systems At U.S. Airports
- ACRP Report 131 A Guidebook For Safety Risk





“Internal” SMS

- **Generally Apply to Federal Actions Taken by the Agency;**
- **Or, Put Another Way, the Action Taken by the Airport is Dependent on the FAA**





“Internal” SMS

- **FAA Order 5200.11, FAA Airports Safety Management System, August 2010**
 - Change 1 - Limited Implementation To Projects At Large Hub Airports Only
 - Change 2 - Harmonized With FAA Risk Matrix
 - Change 3 - Expanded Implementation To Applicable Projects At Medium And Small Hub Airports Over The Next Two Calendar Years (i.e. Last Summer)



“Internal” SMS



➤ Implementation Guidance

- ARP SMS Desk Reference, 2012
- SOP for FAA Employees, 2014



Affecting Airports - SRM



- **Applicability:** Large, Medium, and Small Hub Airports or Anytime a “AIP/PFC” Project Adversely Affects the NAS;
- **ADO:** Ultimate Decision Maker for SRM Involving AIP
- Please remember that one of the prime tenants of SMS is developing a **robust safety culture**.





SRM Affecting Airports

➤ SRM Triggering Actions:

- Approval Of New Or Updated Airport Layout Plans
- FAA Airspace Determinations For CSPP
- FAA Airspace Determinations Of Airport Sponsor Requests For Non-construction Changes
- Approval Of Part 150 Noise Compatibility Program Measures That Could Affect Aviation Safety
- Approval Of Requests For Project-specific MOS (i.e. 5300-13 Design Standards)
- Catch All, i.e. Complex Airfield Projects, etc.





Typical Conduct of SRM

- **SRM Triggering Action Occurs;**
- **ADO Initiates SAS Form;**
- **Airspace Study Submitted (CSPP/PPS)**
- **Non-Mitigated Hazards Identified;**
- **Informal Mitigation Attempted:**
 - If Successful, Annotate and Move Forward
 - If Not Successful, Conduct Panel
- **Mitigations Disseminated to Sponsor for Inclusion and SAS Form Completed**



Consultant Involvement



- **Alerting ADOs of Potential Project Triggers**
- **Supporting ADOs**
 - Providing **Project Proposal Summaries** (i.e. Modified CSPP) for Complex Projects; and
 - Facilitating and Conducting SRM Panels When Needed





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P&S Review Overview

- **Memorandum (updated August 2, 2016)**
- **Standardize Review**
- **Provide Consistency**
- **Ensures Compliance**
- **Regions Relying on Sponsor Certification**
 - Not Following FAA Standards
 - Modifications to FAA Construction Specifications





P&S Review Objective

Incorporation and conformance with:

- Airport safety provisions (CSPP)

Conformance to:

- Approved SOW
- AIP eligibility
- FAA design and construction standards

Incorporation of:

- Required federal provisions





P&S Review Levels

➤ 3 Levels of Review

- Sponsor Cert
 - No Review
- General
 - Cursory Review
- Full
 - Comprehensive Review

➤ 90% Design (at a minimum)



P&S Review Is NOT

- **Quality Control**
- **Technical Direction**
- **MOS Approval**





P&S Review Submittal

- **Scope of Work**
- **Engineering Design Report**
- **Construction Safety Phasing Plan**
- **Provide Checklist to the ADO**





Resources

Airports Engineering

<https://www.faa.gov/airports/engineering/>

Advisory Circulars

https://www.faa.gov/regulations_policies/advisory_circulars/

Advisory Circulars Required for AIP/PFC Projects

<https://www.faa.gov/airports/aip/media/aip-pfc-checklist.pdf>

SOP's

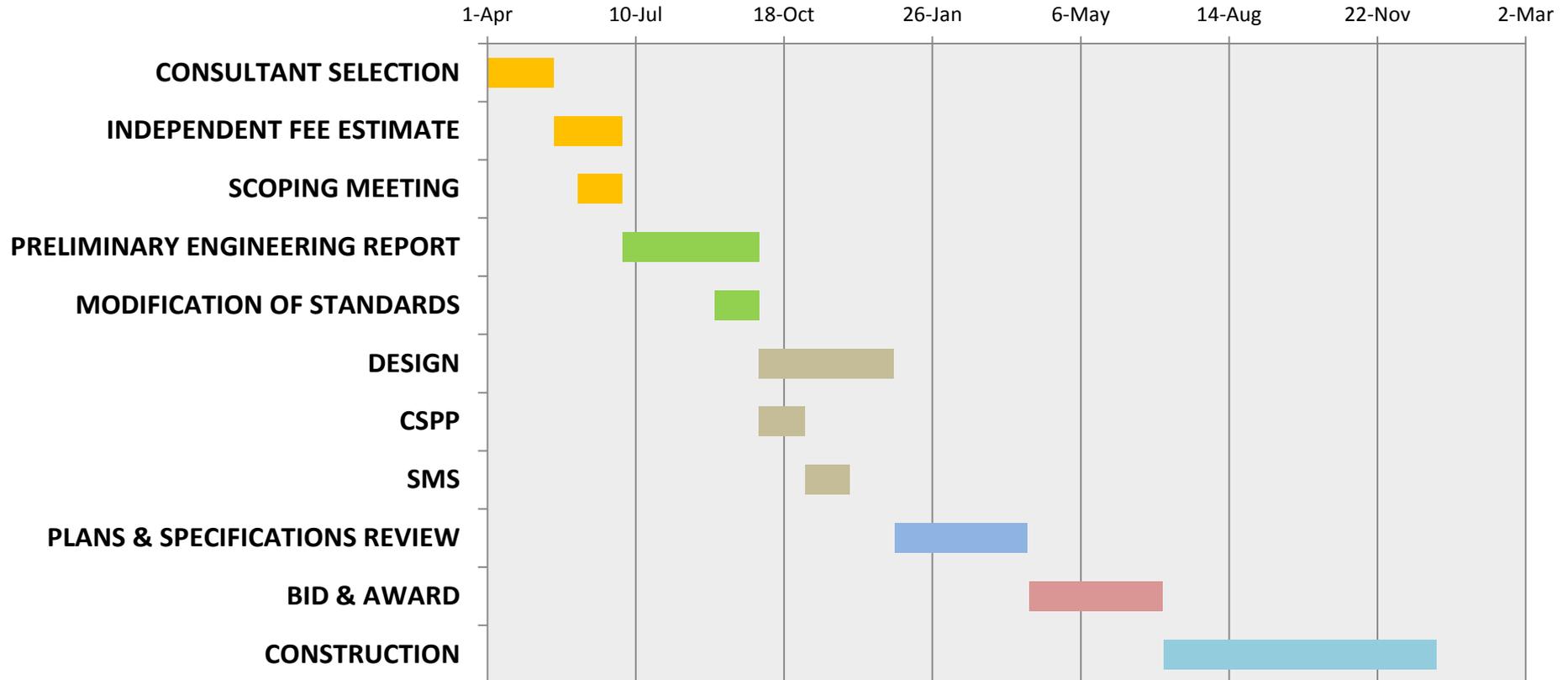
<https://www.faa.gov/airports/resources/sops/>

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| | TASK | START DATE | DURATION (days) | END DATE |
|---------------------|--------------------------------|------------|-----------------|----------|
| PRIOR TO GRANT YEAR | CONSULTANT SELECTION | 1-Apr | 45 | 15-May |
| | INDEPENDENT FEE ESTIMATE | 16-May | 46 | 30-Jun |
| | SCOPING MEETING | 1-Jun | 30 | 30-Jun |
| | PRELIMINARY ENGINEERING REPORT | 1-Jul | 92 | 30-Sep |
| | MODIFICATION OF STANDARDS | 1-Sep | 30 | 30-Sep |
| | DESIGN | 1-Oct | 91 | 31-Dec |
| | CSPP | 1-Oct | 31 | 31-Oct |
| | SMS | 1-Nov | 30 | 30-Nov |
| GRANT YEAR | PLANS & SPECIFICATIONS REVIEW | 1-Jan | 89 | 31-Mar |
| | BID & AWARD | 1-Apr | 90 | 30-Jun |
| | CONSTRUCTION | 1-Jul | 184 | 31-Dec |



Airport Engineering Cycle

(Calendar Year)

1st Quarter

- Plans and Specifications Review

2nd Quarter

- Consultant Selection
- Independent Fee Estimate
- Scoping Meeting

- Bid and Award

4th Quarter

- Design
- CSPP
- SMS

3rd Quarter

- Preliminary Engineering Report
- Modification of Standards (MOS)

- Construct!

■ Prior Year
■ Grant Year

QUESTIONS?

