ADOT Multimodal Planning

ADOT Form: 42-8071 (Rev. 9/16)

Recommended Outline for Engineer's Design Report

(Adapted from FAA Central Region)

This Recommended Outline is to help engineering consultants who perform design engineering services for airports in the State of Arizona produce a Design Engineer's Report that will satisfy the needs of the Arizona Department of Transportation's (ADOT) Multimodal Planning Division Aeronautics Group.

All projects at airports within the State of Arizona that accept Airport Development Grants from the State through ADOT *must* submit to a 30% design review. Airports that do not submit 30% plans for review shall be denied an Airport Development Grant. This goes for all projects—whether the State grants 90% of the project costs, or if the State matches 4.47% of FAA AIP grants.

1. General Scope of Project

- Scope of work
- Itemization of ADOT eligible and ineligible work items.
- Identify and briefly explain the project's context.
- Concise history of existing conditions (Original construction, rehabilitation, etc.)

2. Photographs

- Include photographs that depict the existing site conditions.
    - There is no minimum or maximum number of photos. Please use good judgment.
- Include photographs of any existing safety area deficiencies

3. Listing of Applicable AIP Standards

- List FAA Advisory Circulars applicable for current project
- Identify, in table format, specific values for critical design standards:
    - Critical Aircraft as identified on approved ALP
    - Standard dimensional values for safety areas, object free areas, etc.
    - Standard geometric values for runways and taxiways.
    - Standards for surface gradients (longitudinal and transverse)
    - Define longitudinal grade requirements for proposed pavement areas.

4. Considerations for Airport Operational Safety

- Summarize Construction Safety and Phasing Plan (CSPP) related issues such as:
    - Proposed phasing and sequencing
    - Work area limits including pavement closures
    - Define work procedures within RSA and TSAs
    - Haul routes and staging area location
    - Impacts to approach procedures
    - Impacts to FAA-owned Navaids

NOTE: This summary does not replace the CSPP. Please have a thorough CSPP as a separate document.

5. Pavement Design

- Geotechnical Report
    - Soil investigation (subsurface cores, water table, etc.)
    - Soil characteristics & properties (classification, plasticity index, CBR, k value, etc.)
- Aircraft fleet mix
    - including number of departure operations

- Pavement design alternatives
    - Life-cycle analysis & justification for selection
- Material availability and capacity to deliver
- Existing pavement alternatives (if applicable)
- Subgrade stabilization
- Pavement design and recommendation
    - FAARFIELD program results.

6. Drainage Design

- Description of drainage area
- Existing drainage area characteristics and structures
- Storm water runoff calculations
- Inlet and storm sewer system design calculations
- Flood Elevation limits (if applicable)

7. Airfield Lighting and Signage

- Description of existing system (age, condition, type)
- Proposed lighting types and location
- Electrical circuit load calculations and summary table

8. Navaids

- Provide listing of all Navaids and ownership
- Identify impact to FAA-owned navigation aids
- Provide design calculations for sponsor-installed Navaids
- Include obstacle clearance surfaces verification (if applicable)

9. Pavement Marking

- Ensure markings conform to AC 150/5340-1
- Address application of temporary marking (if required)

10. Environmental Considerations

- Storm water management measures
- Permits
- Note status of CATEX, EIS or EA, if applicable

11. Utility Lines in Work Area

- Identify all known existing underground utility lines in and adjacent to work area
- Identify, if possible, impacts at the design phase rather than delegating discovery of impacts to the contractor

12. Miscellaneous Work Items

- Address other project related work items such as seeding, fencing, airport drainage, site access, etc.

13. Application of Life Cycle Cost Analysis

- Applicable whenever Sponsor desires a higher initial cost alternative over a lower costs alternative

14. Sponsor Requested Modifications to AIP Construction Standards

- Provide listing, description, and justification for all sponsor-requested modifications to FAA construction standards.

15. Identify ADOT ineligible work

- Separately identify all work items that are not eligible for ADOT reimbursement.
- Provide justification for why non-eligible work should be allowed as part of an ADOT funded project
- Establish how ineligible work will be separated from eligible work (schedules, line items, etc.)

16. DBE Participation

- State the status of the Sponsor's DBE program
- Identify the current year of the 3 year overall goal. (i.e. Year 2 of overall 3-year goal)
- Establish project-specific goal only if overall goal cannot be met by race/gender neutral means.

17. Project Schedule

- Include critical milestone dates as applicable
    - Design & Engineering Phase (actual/Proposed Dates)
        - Sponsor Issue Notice to Proceed/Start Design
        - Conduct 30% Design Review/Approval
        - Conduct 100% Design Review/Approval
    - Bidding Phase (Proposed Dates)
        - Issue Invitation for Bids
        - Submit Bid Tab for State Review/Approval
        - Award Construction Contract
    - Construction Phase (Proposed Dates)
        - Issue NTP—Begin Construction
        - Final Inspection
        - Submit As-Built Drawings & Final Documents

18. Engineers Estimate of Probable Cost

- Provide an itemized summary of the Engineer's Estimate of Probable Construction Costs.
- Separately identify ADOT eligible costs and non-eligible costs

19. Preliminary Project Budget

- Provide a project budget summary that identifies all anticipated project costs (Administrative, preliminary, design, construction, testing, etc.)

20. Pre-design meeting minutes

- Provide a copy of the minutes from the pre-design meeting.