



Hummel Field Airport
AIRPORT LAYOUT PLAN UPDATE
WORK AUTHORIZATION #3

SCOPE OF WORK

P&P Proj. No. 1328

- TASK 1.0 PROJECT FORMULATION, MANAGEMENT & BRIEFINGS**
- TASK 2.0 EXISTING CONDITIONS**
- TASK 3.0 AVIATION ACTIVITY FORECASTS**
- TASK 4.0 DEMAND/CAPACITY ANALYSIS & FACILITY REQUIREMENTS**
- TASK 5.0 ALTERNATIVES DEVELOPMENT**
- TASK 6.0 ENVIRONMENTAL REVIEW**
- TASK 7.0 CAPITAL IMPROVEMENT PLAN**
- TASK 8.0 AIRPORT LAYOUT PLAN DRAWING SET**
- TASK 9.0 DOCUMENTATION**



This scope of services identifies the various tasks necessary to update the existing Airport Layout Plan (ALP) Drawing Set and Narrative Report on file for the Hummel Field Airport (W75). By completing this scope of services, the documents required for Virginia Department of Aviation (DOAV) review and conditional approval of future airport development plans will be created.

This update will generally follow guidelines contained in FAA Advisory Circular (AC) 150/5070-6B, *Airport Master Plans, Chapter 10 "Airport Layout Plan" and Appendix F "ALP Drawing Set"*, as well as standards outlined in AC 150/5300-13A, *Airport Design*. Further, this update will identify improvements necessary to accommodate aviation activity 20 years into the future and propose facility improvements necessary to accommodate that demand. An ALP Drawing Set and supporting Narrative Report will be the final products of this scope of services.

The previously completed Airport Development Feasibility Study will be utilized in the preparation of the Narrative Report, which will explain the reasoning behind and the important features of the ALP Drawing Set and document the planning standards used. The report will consist of the following sections:

- Existing Conditions,
- Aviation Activity Forecasts,
- Demand/Capacity & Facility Requirements,
- Alternatives Development,
- Environmental Overview,
- Capital Improvement Plan, and
- Airport Layout Plans.

The work efforts associated with this ALP Update are outlined below as tasks to this scope of services and are described in more detail in AC 150/5070-6B.

TASK 1.0 PROJECT FORMULATION, MANAGEMENT & BRIEFINGS

Detailed descriptions of each item of work required for completion of the ALP drawing set and Narrative Report will be prepared for review by the AIRPORT SPONSOR. Guidelines provided by the AIRPORT SPONSOR and DOAV will be integrated into the final work product. A detailed task-by-task itemization of the project budget and schedule will be provided to the AIRPORT SPONSOR. Final draft copies of the work program, including scope, budget and schedule of major milestones, will be prepared and delivered to the AIRPORT SPONSOR. The final product of this task will be a scope of services, budget and project schedule which will be attached and made a part of the project contract documents.

This scope does not include the CONSULTANT conducting a project briefing.



The CONSULTANT will designate a Project Manager to coordinate and manage day-to-day activities of the project and to ensure that the project is completed in a professional manner to the satisfaction of the AIRPORT SPONSOR and DOAV. The Project Manager will coordinate directly with the designated AIRPORT SPONSOR representative on scope execution, work product quality, schedule milestones, and the need for supporting information and data essential to the Project's completion. The CONSULTANT will evaluate if meetings are necessary and if deemed appropriate will assure that meetings achieve the objectives of the AIRPORT SPONSOR and DOAV and that prepared agendas, supporting materials, and minutes are provided in a timely manner. Regular monthly project status reports are not included with this scope of work. If deemed necessary, an additional amendment will be coordinated to cover meetings and or monthly project updates.

Over the course of the ALP Update execution, the CONSULTANT will coordinate reviews with the AIRPORT SPONSOR to provide status and findings/recommendations of the ALP Update and its various components. Oral and written comments shall be noted and incorporated within the ALP Update Narrative Report as appropriate.

TASK 2.0 EXISTING CONDITIONS

Pertinent data from the FAA, DOAV, the AIRPORT SPONSOR and other available sources will be collected and compiled. This will include data relative to the Hummel Field Airport and the surrounding communities. Data may include land use patterns, approved zoning, regulations, rights-of-way, etc. Previously captured and prepared aerial imagery will be utilized throughout the Project, if available. Otherwise imagery available through AutoCAD will be utilized. Updated planimetrics and topographic data, compliant with AC 150/5300-18B standards, will NOT be collected as a part of this project.

Existing documents from previous planning studies and airport records, as provided by AIRPORT SPONSOR, including data pertaining to tenants and their activities, based aircraft, historic aviation activity, construction programs, DOAV Grants and financial information will be utilized and incorporated into the narrative report. Additionally, where available, records and documentation from DOAV will be reviewed for relevancy.

An independent data collection process in support of an environmental overview or other items is not included with this scope; however, a detailed environmental impact review (EIR) determining potential impacts as a result of potential changes at the Airport, is expected to be included under separate cover through a separate work authorization.



The CONSULTANT will utilize inventory data and other pertinent DOAV information, including an examination of plans, FAA Form 5010, construction drawings, lease documents, utility information and other relevant documents, as provided by the AIRPORT SPONSOR. An on-site visual inspection of major components of the Airport will NOT be performed. If deemed necessary, to be coordinated under separate amendment, an examination could include a determination of the facility's use, type, approximate size and condition, adequacy, and extent to which it meets or exceeds FAA standards. The facilities that are typically evaluated and included on an ALP, which could be inventoried, and the data provided include the following:

- Terminal building facilities;
- Fixed Base Operator (FBO) services;
- Aircraft storage facilities;
- Fuel facilities;
- Airport access roads and auto parking;
- Perimeter security fencing and access gates;
- Airport maintenance facilities and equipment; and
- Documents related to airport property ownership.

The above described elements as well as the following information will be collected from airport records as well as the April 30, 2019 Airport Development Feasibility Study:

- Airfield pavements (runways and taxiways)
- Airfield geometry
- Airfield signage and markings
- Airfield Lighting, Navigational Aids, and other pilot aids

Airport Boundary Survey – The CONSULTANT will collect available historical property boundary information from AIRPORT SPONSOR records and utilize prior ALP Property Map data, as appropriate. Following the records search, the CONSULTANT will conduct a records search of absent parcel information for any Airport land holdings, through the County Tax Assessors office, via online search. The data collection will include any knowledge or documentation which supports the description of existing rights-of-way, easements and other agreements of record which may have an impact on airport property or important to airport operations. Data attempted to be collected shall include: legal property description, total acreage, date of purchase or transfer, seller's name, applicable grant funding utilized, and any noted incumbrancers. Following electronic data collection, an actual field survey of those items will NOT be performed. If needed, and coordinated under a separate contract, the CONSULTANT will recover property monuments, locate boundary comers, re-set corners, as required, and produce a boundary map of airport property that will be signed and sealed and will be recordable in the Commonwealth of Virginia. The map would also reference adjoining information listed in table form on the face of the plat. All data collected and surveys conducted will be utilized in compiling an updated Airport Property Map and shall reflect known rights-of-way, easements, and identified special conditions or restrictions, as per available data.



TASK 3.0 AVIATION ACTIVITY FORECASTS

Typical tasks associated with aviation activity and forecasts include socioeconomic projections, past trends, and existing DOAV forecasts. The CONSULTANT will incorporate pertinent DOAV State Aviation System Plan projections, and other published forecasts such as population growth as a baseline for a 20-year aviation activity forecast.

Forecasts of aviation activity projected for the Airport are NOT included with this scope, though are typically prepared in 5-year intervals for a 20-year planning period. The analysis would result in either the re-validation of a past forecast or the establishment of updated forecasts including:

- Based aircraft by type and quantity;
- Local/itinerant and total operations by type and quantity;
- Identification of existing and future critical aircraft; and
- Pilot/passenger activity on an annualized and peak period basis.

Existing information on operations and critical aircraft will be extracted from the April 30, 2019 Airport Development Feasibility Study and other available DOAV data.

A working paper summarizing Tasks 2.0 and 3.0 is NOT included with this scope.

TASK 4.0 DEMAND/CAPACITY ANALYSIS & FACILITY REQUIREMENTS

The appropriate airport design standards as defined in the FAA AC 150/5300-13A, *Airport Design*; Federal Aviation Regulation (FAR) Part 77; and other FAA ACs and Orders as appropriate, will be extracted from the Airport Development Feasibility Study and other available sources. This task will incorporate available project data considering the following requirements:

- Pavement needs and strength required;
- Runway and taxiway separation standards, including safety margins and Runway Protection Zone;
- FAR Part 77 Imaginary Surfaces; and,
- Instrument approach, navigational aids, and lighting needs.
- Runway length and width;
- Taxiway widths and overall geometry;

This scope includes evaluation of the potential impacts of proposed runway realignment development. The narrative report will include a summary description of potential impacts associated with a realignment to the existing runway. Additional facilities analysis and evaluation is NOT included with this scope.



TASK 5.0 ALTERNATIVES DEVELOPMENT

Alternative development layouts will NOT be produced by the CONSULTANT as a part of this scope. If deemed necessary, and coordinated under separate contract, an alternatives analysis can be completed depending on the findings of the facility requirements and based on known needs by the AIRPORT SPONSOR. The alternatives developed would comply with the applicable FAA and/or DOAV design standards. The preferred runway/taxiway alternative from the runway realignment study (Airport Development Feasibility Study) shall be utilized as the selected airfield alternative and will be incorporated into the narrative report.

TASK 6.0 ENVIRONMENTAL REVIEW

The purpose of this analysis is to identify environmental issues that may subsequently become factors in the feasibility of proposed development at W75 and evaluate them to a level of detail sufficient to establish that they will not constrain the plans. The level of analysis is intended to be broad-based and qualitative.

Early coordination and review of key environmental issues typically begins under Task 2.0. The analysis would cover the following points: (1) a description of the proposed airport development program and reasons for the program and (2) a description of potential environmental effects of the program. In accordance with the guidelines established in FAA Orders 1050.1 (current version) and 5050.4B, probable impact categories on or near the Airport shall be reviewed by the CONSULTANT. As a part of this review and evaluation, the CONSULTANT will review pertinent Commonwealth of Virginia and local government environmental regulations and requirements for potential recommended development projects as well as information on environmental issues that warrant more detailed NEPA analysis, although such analysis is outside this scope of services.

This scope includes utilization and incorporation of the noise data from the Airport Development Feasibility Study for the preparation of a noise contour map as well as a written description to be included in the narrative report to outline the findings and assumptions utilized during the noise evaluation. A detailed assessment of aircraft noise and the preparation of an updated noise contour map, based on full aerial survey, utilizing the Day-Night Average Sound level (DNL) is NOT included with this scope, but can be provided under separate contract by utilizing INM Software for the base year (2019) and 20-year planning horizon (2039).

TASK 7.0 CAPITAL IMPROVEMENT PLAN

This task will refine the Airport's Capital Improvement Plan (CIP) to include project phasing associated with the runway realignment. Preparation of a detailed five-year program or the 20-year CIP will NOT be included in the Narrative Report. An assessment of funding eligibility, strategies, or scenarios is not included with this scope.

The costs associated with the runway realignment and taxiway system will be extracted from the April 30, 2019 Airport Development Feasibility Study.



TASK 8.0 AIRPORT LAYOUT PLAN DRAWING SET

The ALP set will be prepared in both a digital AutoCAD and hardcopy formats (1/2-size as well as full-size drawings). The drawings delivered will meet FAA guidelines specified in AC 150/5070-6B, *Airport Master Plans*, Chapter 10 "Airport Layout Plan" and Appendix F "ALP Drawing Set", as well as standards outlined in AC 150/5300-13A, *Airport Design*. The submitted sheets will adhere to Standard Operating Procedures (SOPs) 2.00 *Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs)*, and their respective checklists. The drawings will be prepared utilizing provided aerial mapping and obstruction identification. No new obstruction mapping will be conducted as a part of this project. Shading and other techniques will be utilized to indicate the phasing of airport improvement projects during the planning horizon. Other available data may be included where available. The twelve (12) drawings typically included in an ALP drawing set are as follows:

- Title Sheet
- Airport Data Sheet
- Airport Layout Plan Drawing (2 – one existing, and one future/ultimate)
- Airport Airspace Drawings (2 – assumes extensive depiction of obstructions)
- Inner Approach Surface Drawings (2 – one per runway end)
- Runway Departure Surface Drawing
- Terminal Area Drawing
- Land Use Drawing
- Airport Property Map

The following briefly describes each sheet and its contents:

- *Title Sheet* – This sheet serves as the plan set cover sheet and provides information to include the airport name, owner/operator, location, and plan set preparer. An index of drawings, graphic representations of the airport location (Scale 1"=500,000"), and airport vicinity (Scale 1"=24,000") will also be presented on the title sheet.
- *Airport Data Sheet Drawing* – This sheet will contain basic airport, runway, and taxiway data tables, as well as wind data including the All-Weather, IFR, and VFR Wind Roses. Data tables will present existing, future, and ultimate conditions, where appropriate.
- *Airport Layout Plan Drawings* - The ALP will be prepared to reflect updated physical features, location of airfield facilities (runway, taxiways, NAVAIDs), existing terminal area and general aviation facilities. The second sheet will present development of alternatives and future facilities, which will be based on short, intermediate, and long-range requirements which incorporate both airside and landside requirements.



- *Airport Airspace Drawings* – Utilizing current known obstructions, previous ALP documents, and visual inspections, the CONSULTANT will prepare a FAR Part 77 drawing. This drawing shows a plan view of all FAR Part 77 imaginary surfaces in the vicinity of the Airport. If known obstructions exist, they will be listed, the amount of penetration determined, and their proposed disposition will be identified. Field surveys to accurately identify specific elevations or heights of obstructions are not a part of this Project. USGS quadrangle maps, or equivalent, will be utilized as the basemap for this drawing. The drawing will show the existing and future full approach profile for Runway 01-19. Only obstruction data (collected under a separate contract) within the runway approach will be utilized – full airspace analysis was not performed under this contract. No additional obstruction survey will be conducted.
- *Inner Approach Surface Drawings* – The inner approach surface drawings, one per runway end, will be prepared to illustrate at a greater level of detail the existing and future approach slopes and controlling surfaces in close proximity to each runway end. The CONSULTANT will prepare the Drawing showing plan and profile views of the inner portions of approaches. If obstructions exist, the CONSULTANT shall include obstruction identification tables and shall include a plan for obstruction removal. Only obstruction data (collected under a separate contract) within the runway approach will be utilized – full airspace analysis was not performed under this contract. No additional obstruction survey will be conducted.
- *Runway Departure Surface Drawing* – This drawing depicts the applicable departure surfaces as defined in AC 150/5300-13A. The surfaces are shown for runway end(s) designated for instrument departures, whereby a 40:1 surface is utilized for instrument procedure runways to a distance 10,200' beyond the runway threshold. Only obstruction data (collected under a separate contract) within the runway approach will be utilized – full airspace analysis was not performed under this contract. No additional obstruction survey will be conducted.
- *Terminal Area Drawing* – A terminal area plan will be developed that reflects recommended development of future terminal area general aviation facility needs on the Airport. This drawing will include both airside and landside needs as appropriate, and may include surface access, perimeter fencing, auto parking, access, terminal buildings, future hangar locations, and future aircraft parking.
- *Land Use Drawing* – This drawing will show land use on the Airport and in areas in close proximity to the Airport that are normally associated with runway approaches and are affected by Airport noise or limitations defined by FAR Part 77. Within the airport boundaries, existing and future space utilization for facilities will be depicted. Off-Airport land use plans obtained during data collection will show existing and proposed future land uses and zoning, as appropriate, in areas affected by the Airport. The CONSULTANT shall include a newly generated 65 DNL noise contour, as appropriate.



- *Airport Property Map* – This drawing will be prepared depicting property ownership and future land acquisition, including any relevant avigation easements and easement type (i.e. 20:1; 40:1, etc.). Existing property information including parcel ownership (date of purchase/transfer, grant information, deed book data, method and type of acquisition, etc.), and other background data will be provided. Metes & bounds data along with geodetic control points will NOT be established as a part of this project through a boundary survey. It is assumed that, property acquisition history and descriptions will be furnished by the AIRPORT SPONSOR.

This scope of work does not include preparation of a full ALP drawing set, rather includes the preparation, submittal, and coordination of the following sheets:

- Title Sheet
- Airport Layout Plan Drawing
- Airport Property Map

Preparation and completion of the SOP 2.00 checklist is NOT included with this scope.

TASK 9.0 DOCUMENTATION

Project deliverables will consist of both the ALP drawings and the summary Narrative Report, which summarize the technical analyses contained in Tasks 2.0 through 8.0. The drawings and report will be produced in draft and final form, in B&W and color copies, as appropriate. The submittals by stage are outlined below:

- *Draft Submittal to the AIRPORT SPONSOR and DOAV for review and comment:*
 - Two (2) reproductions of the Draft Narrative Report will be sent to both the AIRPORT SPONSOR and the DOAV (Four (4) copies total will be reproduced)
 - Two (2) complete full-size copies of the Draft ALP Drawings will be sent to both the AIRPORT SPONSOR and the DOAV (Four (4) copies total will be reproduced).
 - One (1) electronic PDF copy of each will be sent to both the AIRPORT SPONSOR and the DOAV.
- *Final Submittal to AIRPORT SPONSOR and DOAV for review and approval:*
 - Two (2) reproductions of the Final Narrative Report will be sent to both the AIRPORT SPONSOR and the DOAV (Four (4) copies total will be reproduced)
 - Two (2) complete full-size copies of the Final ALP Drawings will be sent to both the AIRPORT SPONSOR and the DOAV (Four (4) copies total will be reproduced).
 - One (1) electronic PDF copy of each will be sent to both the AIRPORT SPONSOR and the DOAV.

- End of Scope of Work -

FEE: The above described services will be provided at a lump sum fee of \$44,988.