

SCOPE OF WORK
AIRPORT LAYOUT PLAN SET and ALP NARRATIVE REPORT STUDY

METHOW VALLEY STATE AIRPORT
FAA AIP Grant Number: 3-53-0000-xxx

The airport listed above will be completing an Airport Layout Plan (ALP) Update with Narrative Report. This update and report project will provide the airport with revised ALP drawings and a Capital Improvement Program (CIP) that will provide the airport with a method and proposed schedule for correcting identified airport design deficiencies. It is the intent of this study to update existing drawings and provide a review of existing and long range needs of the airport. The ALP project will utilize the 2003 Washington System Plan Inventory Update data to augment data needs for the project. In general, the project will address and/or update the basic tasks and work elements as outlined in *FAA Advisory Circulars 150/5070-6A, Airport Master Plans and 150/5300-13 changes 1 through 10, Airport Design, Appendix 7, Airport Layout Components and Preparation*. The project will also be completed in general conformance with the FAA-ANM Airport Layout Plan Checklists dated April 1997 and the Airport Layout Plan Narrative. These include:

- An inventory of existing facilities at the airport;
- Forecasts of future aviation demand levels utilizing projections from *Washington State Department of Transportation (WSDOT) Aviation's Washington State Aviation System Plan (WSASP), FAA General Aviation Forecasts, and one other published growth rate such as population growth rate for Washington State;*
- A determination of new facilities required, and/or expansion of existing facilities that will be required to accommodate the projected activity;
- Any existing or recommended facilities that do not meet FAA design criteria will be identified. Justification for a Modification to Standard, if there is no other alternative, will be provided;
- A Capital Improvement Program that prioritizes and stages the proposed development over 6, 10, and 20-year planning horizons will be provided; and
- Preparation of an ALP drawing set utilizing AutoCAD, Version 2005.
- All elevations will be on Datum NAVD 88/91, with the exception of the underlying USGS basemap shown in NGVD 29.

Completion of the work elements should result in:

1. A schedule of airport improvements correlated with an identified specific volume of activity, which would mandate action to accomplish the needed improvement.
2. A realistic and workable Capital Improvement Program that identifies items necessary to maintain/expand airport facilities.
3. Current ALP drawings that graphically depict existing conditions at the airport as well as proposed capital improvements.

ELEMENT 1 - STUDY INITIATION

Work Element 1.1 - Refine Scope of Work, Budget and Schedule

Consultant will develop a detailed scope of work, budget, and schedule to be made a part of the project contract fee negotiations. A detailed task-by-task itemization of the project budget and schedule will be provided.

Product: The final scope of work which will be used to obtain an independent cost estimate for the project for use in contract negotiations. A breakdown of project costs for each work element will be provided.

Work Element 1.2 - Coordination and Control

Consultant will assist the airport sponsor (WSDOT) in identifying agencies and individuals that need to be contacted and informed of the study process and will provide background and technical information. WSDOT Aviation, through its consultant will establish an advisory committee that will provide continual input and review to the study process. Involved parties may include a member of the Airport Advisory Board, the FAA, WSDOT Aviation, City/County representatives, airport users, and residents of the community. The Sponsor will coordinate meetings of the Advisory Board and will provide facilities for such meetings. The consultant will assure that meetings meet the guidelines of the FAA and WSDOT Aviation. Graphic displays and pertinent handout material necessary to describe the evaluations and findings of the interim submittals will be prepared. Attendance at public hearings or presentations to the general public will not be required.

WSDOT Aviation, as Sponsor for this Airport Planning Study, will manage, through its consultant the administrative grant and fiscal aspects of the project. Additional responsibilities include consultant/airport coordination, facilitation of meetings, timely product review and supply of existing plans, report and electronic files relating to the airport layout, land use, property ownership, approaches, pavement and facility conditions, and previous planning studies and current development desires.

The Consultant will attend up to three (3) project meetings with the Sponsor, and on the Sponsor's behalf, with the airport advisory board and associated community as identified in Work Element 8.2. WSDOT will advertise the date and time of the meeting to allow public attendance as desired.

Product: A channel of communication with agencies and individuals that should be involved during the Airport Layout Plan Set and ALP Narrative Report Study.

ELEMENT 2 - INVENTORY EXISTING CONDITIONS

Work Element 2.1 - Evaluate Existing Documents

Consultant will evaluate all existing documents from previous planning studies and airport records, as provided by airport management, including data pertaining to based aircraft, historic aviation activity, construction programs, FAA Grants and financial information.

Existing data is available through the 2003 Inventory Update of the Washington State Aviation System Plan.

Consultant will request wind data from the National Climatic Data Center for the location nearest to the airport. If the information is determined to be reflective of the airport conditions, a wind rose will be developed using the Airport Design program.
INCLUDE LIST OF ITEMS REQUIRED TO DEVELOP A WIND ROSE.

Product: A summary of existing documents and previous planning efforts for input to future work elements of this study. Summaries of based aircraft by type, Airport Reference Code (ARC) and weight, and of historical aviation activity for the last 5-years.

Work Element 2.2 - Obtain Aerial Photography

Consultant will obtain a 2004 or more current plan view aerial photo of the airport and surrounding area for the purpose of planning evaluations. Consultant will not be required to provide scaled aerial photographs.

Product: Aerial photo for the airport.

Work Element 2.3 - Inventory Airport Facilities

Consultant will utilize the inventory data from the 2003 Inventory Update and other pertinent State System Plans for the Methow Valley State Airport, including an examination of plans, FAA Form 5010, construction drawings, lease documents, utility information and other relevant documents, as provided by airport management. An on-site inspection of major components of the airport will also be performed. The examination will include a determination of the facility's use, type, size, condition, and adequacy, and extent it meets or exceeds FAA standards. The facilities that will be inventoried and the data that will be provided include but are not limited to the following:

1. Airfield Pavements - pavement thickness, pavement markings and signage, strength and construction history of runway, taxiway and apron pavements. The Washington State Aviation System Plan Pavement Program for the airport will be utilized.
2. Airfield Lighting and Navigational Aids.
3. Fixed Base Operator (FBO) Services - hangar utilization, tie-downs, T-hangars and services provided.

4. Fuel Facilities - storage and issue locations, capacities and condition.
5. Airport Access Roads and Auto Parking - adequacy of existing auto parking and access to the airport will be examined.
6. Utility Systems - key components of utility systems including water, sewer, electric and telephone will be identified.
7. Perimeter Fencing - the adequacy of airport perimeter fencing and access to the airport operations area will be examined.
8. Airport Maintenance Equipment - airport maintenance and snow removal equipment will be identified.
9. Airport revenue information from the past three (3) years, as available.
10. Documents related to airport property ownership and airport access will be assembled and summarized in the inventory to provide a clear understanding of issues that may affect current planning or ongoing airport development and operations. WSDOT will provide the consultant copies of documents for review and incorporation into the ALP report, based on historic property acquisition, access agreements, and other related items.

Product: Tabulated airport facilities inventory for input to later work elements.

Work Element 2.4 - Socioeconomic Data

Consultant will utilize data from the 2002 Forecast and Economic Impact Analysis factoring population, employment, and other socioeconomic data that are available for the airport. Other socio-economic data includes historic, present and forecast data; and income levels. This data may include economic development programs, tourism activity and trends, and area military activity as appropriate. This information and FAA NPIAS Order criteria will be used to document the existing airport service area.

Product: Socioeconomic information for subsequent analysis and work elements including rationale and identification of airport service area.

Work Element 2.5 - Land Use Controls

Consultant will obtain land use documents, maps and regulations from the County Planning and Zoning Departments to include existing zoning ordinances, subdivision regulations, building codes, easements, rights-of-way and other documents pertaining to land use management in the vicinity of the airport and on airport property. The Land Use Plan drawing will be updated and prepared to illustrate revisions to the existing and ultimate airport features, airfield configuration, existing aviation easements, airport influence area delineated by the airport traffic pattern including both RPZ's, and potential impacts to land uses in the airport environs.

The Consultant will evaluate and summarize the existing protections provided to Methow Valley State Airport through existing County Comprehensive Plan and zoning ordinances. The Consultant will also review the consistency between current zoning and comprehensive plan land use designations to identify any areas in the vicinity of the airport that could

experience future changes in zoning, consistent with comprehensive planning. The Consultant will use available resources, including WSDOT Aviation Division and County staff, to evaluate the status of land use planning activities within the County that are of specific interest to the Methow Valley State Airport.

Product: Tabulated land use inventory for input to appropriate work elements. File of land use information will be obtained from the City and/or County. Assessment of existing land use protections for consistency with applicable RCW, with recommendations for any additional measures.

Product: File of land use information will be obtained from the County and maintained for use in later work elements.

Work Element 2.6 – Existing Critical Aircraft

Consultant will determine the existing and future critical aircraft by ARC Code and aircraft type based on gathered inventory information and verify with FAA approval.

Product: Identify existing critical aircraft.

ELEMENT 3 - AVIATION FORECASTS

Work Element 3.1 - Update Existing Forecasts and Prepare New Forecast.

Consultant will incorporate the *WSDOT Aviation Division's Washington State Aviation System Plan, the FAA's General Aviation forecasts and one other published growth rate forecast such as population growth as a baseline for a 20-year aviation activity forecast.* Proposed development may affect the number of airport operations, and the type of aircraft will be evaluated, and forecasts based on this development will be formulated. The consultant shall complete an FAA forecast summary spreadsheet for the airport. The forecast spreadsheets may be found at the following web site: <http://apo.faa.gov/Contracts/AF1.DOC>, then click on "excel format." Forecasts will be submitted to the FAA for approval prior to proceeding with subsequent forecast-dependent work elements. The Spreadsheets, "Comparison to TAF" and "Forecast Summary" must be included in the forecast chapter.

Forecasts of aviation activity projected for the airport will be prepared in 5-year intervals for a 20-year planning period as follows:

1. Number of based aircraft, (in terms of ARC; and single engine, multi-engine piston, multi-engine turbine, business jets, and helicopters).
2. Number of annual general aviation operations, (in terms of military operations, and annual instrument approaches; itinerant and local operations; and VFR and IFR operations).

3. Mix of local vs. itinerant general aviation operations, (in terms of approach category and design group and aircraft weight).
4. Identification of the fleet mix of general aviation aircraft expected to be based at or use the airport during the planning period.
5. Identification of future critical aircraft, in terms of aircraft and ARC.
6. Use base year of most current data available in TAF.

Product: Preparation of general aviation fleet mix and operations forecasts in 5-year intervals for the 20 year planning period. The critical aircraft will be submitted for FAA approval prior to proceeding with subsequent related work elements.

ELEMENT 4 - FACILITY REQUIREMENTS

Work Element 4.1 - Identify New Airport Facility Requirements

Based on information from other work elements, the consultant will prepare a preliminary list of new facility requirements. The determination of additional facilities will be based on maintenance of the existing airport, compliance with governmental regulations including environmental issues and facilities necessary to accommodate projected demand. Recommendations will result from an analysis of FAA design criteria, knowledge of conditions at the airport and the desires of the airport sponsor. New facilities may include the following:

1. Landing area requirements.
2. Approach area requirements.
3. General aviation needs.
4. Hangar and tie-down needs.
5. Lighting and navigational aids (includes runway, taxiway, PAPIs, REILS, Rotating Beacon, ILS and VOR).
6. Airport access roads.
7. Perimeter fencing/equipment. Recommendations for additional security measures will be provided.
8. Airport land.
9. An evaluation statement on the capacity of the existing runway will be made under the assumptions that a single runway meets capacity requirements.
10. The feasibility of an instrument approach to the airport will be discussed.

Reference should be made to proposed airport reference code (ARC) and critical aircraft, which should be identified (if necessary, by approach category, by wingspan, and/or by weight, for different airport components). The critical aircraft must conduct at least 500

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annual itinerant operations. A table listing all deviations from current FAA design standards pertaining to the recommended ARC will be provided in the report as well as on the ALP drawing, including proposed disposition of the deviations. Disposition would entail recommended development and/or recommended FAA approval of modifications to standards. Print-outs from the current version of the FAA *Airport Design* computer program for runway length requirements and dimensional design standards will be submitted to the FAA and included as an appendix to the draft and final reports as appropriate. Declared Distances module from the *Airport Design* program will be provided at the time of the ALP preparation (Element 5).

Airport development alternatives will be graphically depicted.

New facility requirements will be prioritized based on the forecasts prepared at the time of the study. Improvements will be correlated with a specific volume of activity or change in the level of service that will require construction of the recommended improvement. Up to three (3) separate development alternatives, excluding a “no action” alternative, will be developed and presented. The alternatives will include sufficient detail and dimensioning to illustrate critical FAA dimensional standards, development setbacks and improvements required to meet FAA standards.

The FAA ADO will review the facility requirements with the appropriate FAA divisions (Airway Facilities, Air Traffic, Flight Procedures, etc.) and provide the consultant with comments prior to the consultant’s meeting with the Sponsor for the facility requirements presentation.

Product: Detailed description of all new facilities required to meet aviation demand through the year 2025.

Work Element 4.2 - Select Recommended Facility Requirements

Using the "new" Facility Requirements identified by Work Element 4.1 alternatives will be evaluated on the basis of their efficiency in meeting the recommended requirement, estimated cost and ease of implementation, engineering difficulty, ability to comply with FAA airport design criteria, and environmental impacts. An alternative will be recommended with a description of the basis for the preference of the alternative over the others.

Product: Evaluation of Recommended Facility Requirements and identification of feasible projects and a priority of implementation.

ELEMENT 5 - AIRPORT LAYOUT PLAN DRAWINGS

The Airport Layout Plan (ALP) drawings will be created or revised to reflect existing and future land and facilities necessary for operation and development of the airport. All of the major development proposed in the Capital Improvement Program (CIP) will be shown on the ALP in schematic form. The attached FAA NW Mountain Region ALP Checklist (1997)

defines those items to be included in this scope of work. A completed checklist will be submitted to the FAA, along with the ALP drawings, when they are submitted for coordination.

Work Element 5.1 - Airport Layout Plan

The ALP will be prepared to reflect updated physical features, wind data including VFR and IFR Wind Rose (if available), location of airfield facilities (runway, taxiways, NAVAIDs) and existing terminal area development. Development of alternatives and ultimate airfield facilities will be based on short, intermediate, and long-range requirements which incorporate both airside and landside requirements. Appropriate VFR and IFR wind rose data based on historical conditions will be annotated on the ALP (if available).

Product: An ALP Drawing (CADD based) for the airport.

Work Element 5.2 - Building Area Plan

A terminal area plan and general aviation plan will be developed that reflects recommended development of future general aviation needs on the airport. This drawing may be combined with the Airport Layout Plan Drawing.

Product: Building area plan projecting development of building areas at the airport, surface access, perimeter fencing, future T-hangar locations, and future buildings. This information will be consolidated on the ALP drawing.

Work Element 5.3 - Airport Airspace Drawing FAR Part 77

Utilizing the 2003 Inventory Update, the consultant will prepare an obstruction/approach zones, FAR Part 77 drawing and inner approach drawing. This drawing shows a plan view of all FAR Part 77 imaginary surfaces. If any obstructions exist, they will be listed, the amount of penetration determined and their proposed disposition will be identified. Fifty-foot contour intervals will be shown for all FAR Part 77 imaginary surfaces for full length of all approach surfaces. Field surveys to accurately identify specific elevations or heights of obstructions are not a part of this study. USGS quadrangle maps will be utilized.

Drawings will show the existing and future full approach plan and profile for the approaches to each runway. Any obstructions within the approaches will be identified and a recommended disposition will be provided. An aerial photo may be used in the development of these drawings. This drawing may be combined with other drawings. USGS maps will be utilized.

Product: An obstruction/approach zone, FAR Part 77 drawing for the airport. An Approach Plan and Profile drawing that shows the Part 77 approaches for each runway at the airport. The ultimate Part 77 approach plan and profile will be prepared for the most critical airfield configuration (existing or ultimate). If a displaced threshold is required to clear obstructions, then

provide a separate drawing (plan and profile) of threshold siting surfaces for each runway at the airport.

Work Element 5.4 - Runway Protection Zone Approach Plan (RPZ) and Profile for Runway

Drawings will be prepared that show the plan and profile of the Runway Protection Zones (RPZ) for each Runway. Any obstructions within the RPZ will be identified and a recommended disposition will be provided. Aerial photography may be used to develop these drawings. This drawing may be combined with other drawings. Runway profiles will be taken from existing maps.

Product: A Runway Protection Zone/Approach Plan and Profile drawing that shows the RPZ's for each runway at the airport.

[approach plan and profile integrated into part 77, merged 5.3 and 5.5]

Work Element 5.5 - Land Use Drawing

A drawing will be prepared depicting existing and recommended land uses within the ultimate airport property boundary as well as land that is impacted by aircraft flight patterns.

Product: A drawing that provides the Sponsor a plan for the airport. A land use plan drawing depicting existing and recommended use of all land within the ultimate airport property line (on airport) and in the vicinity of the airport by zoning classifications, use types, and general use categories (e.g. agricultural, recreational, industrial, commercial, aeronautical, etc.) as well as guidance for establishing appropriate zoning in the vicinity of the airport. This information will be utilized to provide the airport sponsor with recommendations regarding the update of existing zoning ordinances currently in-place on land around the airport.

Work Element 5.6 – Exhibit A

An Exhibit “A” drawing will be prepared depicting property ownership and future land acquisition. All existing property information including parcel ownership, property line location, parcel line location, and all other background data to produce the Exhibit “A” drawing will be provided to the Consultant by the State and the Sponsor. The Exhibit “A” will be prepared in accordance with the attached ALP Checklist.

Product: Exhibit A Property Map

ELEMENT 6 - FINANCIAL EVALUATION

The purpose of this study element is to establish a financial implementation program to provide the airport development requirements necessary to meet the projected aviation activity demands.

Work Element 6.1 - Capital Improvement Program

The Consultant will prepare an airport Capital Improvement Program (CIP), which will include a detailed 6-year ACIP with recommended phases of development, estimates of cost for each improvement, possible funding sources, and a separate evaluation of the airport's predicted available grant funding in tabular form. A 20-year CIP will also be prepared evaluating proposed future projects, their estimated costs and potential sources of funding. Approximate airport revenue will be reviewed and sponsor ability to fund projects will be discussed. This information will be used to develop a feasible CIP.

Product: A 6-year and 20-year CIP (in spreadsheet form) and a funding source evaluation spreadsheet, with associated text.

ELEMENT 7 - REPORTS AND DOCUMENTATION

Work Element 7.1a - Draft ALP Set

In order to address any concerns from the State or the FAA prior to the consultant's meeting with the Sponsor for the ALP presentation, a draft ALP set will be prepared for FAA and State review and comment.

Product: Two (2) copies of the "Preliminary" Airport Layout Plan Set will be provided to the FAA for preliminary review by the ADO and One (1) copy will be submitted to the State.

Work Element 7.1b - Draft Report

To insure proper coordination of the planning effort and assure agreement between the consultant and the Sponsor, a Draft Report containing the results of the inventory, forecast, facility requirements, ALP drawings and the financial evaluation will be prepared. This report will be presented in the third meeting with the Sponsor. This report will be revised once review comments have been received from the FAA and the State and will form the basis for the Final Draft ALP submittal to the FAA for review and coordination with the appropriate FAA divisions (Air Traffic, etc.). Forecasts will be submitted to FAA prior to formulation of the Draft Report.

Product: A maximum ten (10) copies of the "Preliminary" Airport Layout Plan Set and "Preliminary" ALP Narrative Report Study will be provided to the airport. The State will receive three (3) copies of each.

Work Element 7.2 - Final Report and ALP Drawing Set

The Final Report and drawings for the Airport Layout Plan Set and ALP Narrative Report Study will be prepared based on comments received from the FAA final coordination/review process and any subsequent comments received from the State. This will be the final publication of the report.

Product: Twelve (12) copies of the “Final” Airport Layout Plan Set and “Final” ALP Narrative Report Study will be provided to WSDOT. The State will receive one (1) electronic copy of the report and ALP Plan Set.

Work Element 7.3 – Summary of Products to FAA

<u>TASK</u>	<u>Number of Sets</u>
<i>Product: Working Paper/Draft Chapters</i>	<i>2- (color copies are not needed)</i>
<i>Final Draft Chapters with Track Changes</i>	<i>1- Electronic</i>
<i>Draft Final Report</i>	<i>2 - (color copies are not needed)</i>
<i>Draft ALP Print Sets & FAA Checklist</i>	<i>2 - (color copy not needed / checklist confirms work)</i>
<i>Final Draft ALP Prints & FAA Checklist</i>	<i>6 - (FAA Airspace coordination)</i>
<i>Final ALP Prints</i>	<i>3 - (Sponsor/FAA approval set; color copies needed)</i>
<i>Final ALP Prints (vellum) 1</i>	
<i>CADD File and PDF (final ALP set)</i>	<i>1</i>
<i>Final Report</i>	<i>1</i>
<i>Electronic Copy of Final Report</i>	<i>1 (Word format)</i>

ELEMENT 8 - MISCELLANEOUS

Work Element 8.1 - Surveying, Elevations and Profiles

Existing topographic maps will be used for development of all plans. Objects inside the RPZ and the Runway Object Free Area (OFA) will be identified from existing maps and survey data. Obstruction and/or field surveying will not be included. Profiles along runway centerlines and extended centerlines will be taken from existing construction documents or other available information.

Field surveying will not be required.

Work Element 8.2 - Travel to Airport

It is anticipated that trips to the airport will be required to complete the studies. Three (3) trips will be made to the airport by the senior airport planner and/or project manager. One separate trip will be made to the airport for the inventory. Trips will be scheduled as follows:

1. To meet with the sponsor and become familiar with the airport and its environment and set up preliminary meeting with Advisory Committee.
2. Inventory airport facilities.
3. Presentation of the interim report to include inventory, forecasts and facility requirements. An inventory and forecasts report will be submitted to the FAA prior to development of the facility requirements.
4. A presentation of the Preliminary Airport Layout Plan Set and ALP Narrative Report Study (including draft ACIP) and Drawings.

Work Element 8.3 - Environmental

No formal environmental review will be performed. A brief description of known environmental issues and future environmental needs will be discussed, but no research will be included.

Work Element 8.4 - Checklist

The FAA Airport Layout Plan Checklist dated April 1997 and the Airport Layout Plan Narrative Report Checklist dated April 1997 shall be completed as they are applicable to the airport.

Scope Assumptions/Clarifications:

1. The Consultant will coordinate and schedule all meetings between the State, FAA, and the Advisory Committee established for this planning effort.
2. The scope of work requires the Consultant to develop up to three (3) alternatives, excluding a “no action” alternative, for the facility requirements. The airport sponsor (WSDOT) shall select one of the alternatives to be included on the ALP. No additional alternative development or review is included in this scope of work.
3. WSDOT Aviation and the FAA will provide the Consultant with a maximum of one round of comments for each project element. The Consultant shall receive review comments from all three groups within three (3) weeks of the submittal or presentation. The consultant shall then address and resolve their comments prior to proceeding with the next scope of work element.
4. The Consultant will provide the estimated total project costs for the ACIP and the CIP. No back-up documentation is to be provided to WSDOT Aviation, or the FAA.”