

6 Airport Development Plan Narrative Report

6.1 SECTION OVERVIEW

The Airport Layout Plan is a drawing set that depicts the current airport facilities and proposed developments based upon the previously determined aviation demand forecast, facility requirements, and selected alternatives. This chapter describes each drawing included in the set.

6.2 GENERAL

An approved Airport Layout Plan is necessary for an airport to receive financial assistance under the terms of the Airport and Airway Improvement Act of 1982. An airport must keep its Airport Layout Plan current and follow the plan as part of the Airport Improvement Program grant assurance requirements and previous airport improvement programs. The Airport Layout Plan creates a blueprint for airport development by depicting proposed facility improvements and a guideline to ensure that development meets airport design standards and safety requirements.

The Airport Layout Plan is a set of planning drawings intended to provide locations of the major components of an airport: runways, taxiways, aprons, and hangar areas. The various parts of an airport are all interconnected and need to be looked at as a whole. For this reason, this full Airport Layout Plan set has been vetted through multiple divisions of the FAA. Each division analyzed Felts Field and its planned improvements for overall compatibility with the national system of airports (such as airspace and planned approaches) and for on-airport compliance. After the Airport Layout Plan is approved, minor changes by the Spokane Airport Board (the Sponsor) will be allowed (e.g., slight relocation of a hangar or taxiway), but FAA design standards and overall use of the land and space as planned must be followed, otherwise the airport drawings must be re-submitted to the FAA for approval.

This chapter describes, in detail, the drawings of the Felts Field Airport Layout Plan and describes the proposed improvements for the airport. The airport and the areas the airport affects are represented within the drawing set. All layout drawings appropriate to the project were produced with FAA standards as defined in AC 150/5070-6B, Change 2, "Airport Master Plans" and AC 150/5300-13A, Change 1, "Airport Design." Appendix E, "Airport Layout Plans," contains the following drawings, which were produced on 24" x 36" sheets and included in **Appendix E** as 11" x 17" sheets:

- Sheet 1: Cover Sheet
- Sheet 2: Simplified Airport Layout Plan (ALP) Drawing
- Sheet 3: Existing ALP
- Sheet 4: Airport Layout Plan Drawing

- Sheet 5: Airport Data Sheet
- Sheets 6–9: Terminal Area Drawings
- Sheets 10–12: Airport Airspace Drawings
- Sheet 13: Airspace Data Table
- Sheets 14–22: Inner Portion of the Approach Surface and Departure Surface Drawings
- Sheets 23 and 24: Land Use Drawings
- Sheets 25–26: Airport Property Map
- Sheet 27: Utility Plan Map

6.3 COVER SHEET (SHEET 1)

The Cover Sheet lists the drawings within the set, with approval signature blocks for the Sponsor and the FAA. This sheet also includes the location and vicinity map, showing Felts Field, Spokane, and Spokane County in relation to Washington State.

6.4 SIMPLIFIED AIRPORT LAYOUT PLAN AND EXISTING ALP (SHEETS 2 AND 3)

The Facilities Layout Plan Drawing (simplified Airport Layout Plan) depicts existing and future facilities, and only critical, nonoverlapping clearance criteria to provide a simplified version of the proposed facilities. The Existing ALP depicts the airport as of January 2020 based on existing critical aircraft and B-II FAA design standards.

6.5 AIRPORT LAYOUT PLAN DRAWING (SHEET 4)

The Airport Layout Plan describes the set of drawings, but the main sheet of the set is also called the Airport Layout Plan. This sheet is the core of the set and is the overall representation of the existing and 20-year planned airport. The existing facility is depicted to show the reader the actual improvements. The surfaces presented, such as Runway Safety and Object Free Areas, include dimensions to indicate they meet FAA design standards. If a surface falls short of standards, a note in the appropriate table and/or on the drawing point out the deficiency.

An important function of the Airport Layout Plan sheet is to show the planned development areas, which could be runways, extensions, taxiways, apron areas, or other aviation use on the airside of the facility. The development shown meets appropriate FAA design and safety standards. This is particularly important for aircraft movement areas and separation dimensions. The Felts Field Airport Layout Plan sheet shows the airport meeting ARC B-II then transitioning to C-II design standards, as detailed in previous chapters.

The need to meet design standards drove all of the development items shown in the Felts Field Airport Layout Plan. As mentioned in the Chapter 3, “Facility Requirements,” the forecasted aircraft operations fall well within the airport’s existing airfield capacity.

The Airport Layout Plan depicts the existing and future airport facilities and includes facility identifications, description labels, imaginary surfaces, safety areas, and data tables. The Airport Layout Plan includes the following items:

- North Arrow showing True and Magnetic North and the year of the magnetic declination
- Airport Reference Point (existing and future)
- Elevations (existing and future) for runway ends, touchdown zones, intersections, runway high and low points, structures on the airport, and roadways where they intersect the Runway Protect Zone (RPZ)
- Runway details (existing and future), including dimensions, orientation, markings, threshold lighting, runway safety areas, and end coordinates
- Taxiway details (existing and future), including widths and separations from the runway centerlines, parallel taxiway, aircraft parking, and objects
- RPZ details (existing and future), including dimensions
- Runway approach slope ratios
- Sponsor and FAA signature blocks

6.6 AIRPORT DATA SHEET (SHEET 5)

The Airport Data Sheet includes the following information:

- Wind rose(s) including data source, time period covered, and coverage percentages for the runway
- Airport Data Table (existing and future), including airport elevation, Airport Reference Point data, mean maximum temperature, ARC, and design aircraft
- Runway Dat163a Table (existing and future), including percentage effective gradient, percentage wind coverage, maximum elevation above mean sea level, runway length and width, runway surface type, runway strength, 14 CFR Part 77 approach category, approach type, approach slope, runway lighting, runway marking, navigational and visual aids, and runway safety area dimensions
- FAA Approved Airport Modification to Standards Table, including approved date
- Declared Distances Table (existing and future), including Take-off Run Available, Take-off Distance Available, Accelerated Stop Distance Available, and Landing Distance Available

6.7 TERMINAL AREA DRAWING (SHEETS 6–9)

The Terminal Area Drawing is a detailed view of the main hangar and apron area that allows sufficient scale to present dimensions and show imaginary surfaces. When the Sponsor is approached for new hangar development, this drawing should be referenced for available space, location, and appropriate restrictions to meet the design standards, thus ensuring a safe environment.

The Terminal Area Drawing presents large-scale depictions of highlighted areas with existing and future building development opportunities and facilities. The FAA, during the airspace review, ensures that existing and planned building development will not affect IAPs or hamper improvements to the approaches. Depicted on the drawing is the Building Restriction Line, which typically represents where a 35-foot building can be located without penetrating 14 CFR Part 77 surfaces. The Terminal Area Drawing presents the following information:

- Large-scale plan views of the area or areas where aprons, buildings, hangars, and parking lots are located
- A building and data table that lists structures and shows pertinent information including a numbering system to identify structures, top elevations of structures, and existing and planned obstruction markings
- Existing and future airport facility and building list
- Title and revision block

6.8 AIRPORT AIRSPACE DRAWINGS (SHEETS 10–13)

The Airport Airspace Drawing identifies all penetrations to surfaces, for the full extent of all airport development, as defined by 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. A primary function of the Part 77 drawing is to provide local planners and governments with a means to check for potential obstructions from other planned development. A prime example of this would be an application to build a cellular tower near the airport. By using the Part 77 drawing, planners can check obstruction impacts to airport safety surfaces prior to any construction that would degrade the airspace or approach procedures. This drawing is one of two that addresses land use protections near the airport, the other, discussed later, is the Land Use plan. Items in the Part 77 drawing include the following:

- Plan view of all 14 CFR Part 77 surfaces, based on the future runway lengths
- Small-scale profile views of future approaches
- Obstruction data tables, including terrain and significant items, obstruction identification number and description, the amount of the approach surface penetration, and the proposed disposition of the obstructions
- Contoured base map, runway end numbers, 50-foot elevation contours on all slopes, most demanding surfaces more darkly shaded, and top elevations of objects that penetrate any surface
- Runway ends (existing and future) with latitude, longitude, and elevation coordinates
- North Arrow showing True and Magnetic North and the year of magnetic declination
- Obstruction notes listing applicable airspace protection regulations and obstruction survey completion date are included on **Sheet 13**
- Vertical buffer notes

6.9 INNER PORTION OF APPROACH SURFACE AND RUNWAY DEPARTURE SURFACE DRAWINGS (SHEETS 14–22)

The Inner Portion of Approach Surface Sheet contains 1) a top-down view of the inner approach for both runway ends with an aerial image with contoured background, 2) profile drawing that displays the center line ground profile detail and critical ground profile for the inner approach of both runway ends, and 3) obstructions to Part 77 surfaces.

The Runway Departure Surface Drawings contain 1) a top-down view of the entire approach and departure surface for both runway ends with a topographical background with contours, 2) an oblique view of the same area with contours shaded, and 3) a profile that displays the center line ground profile and critical ground profile beyond the runway ends for approximately 10,000 feet, as well as all surfaces, to determine obstructions.

In summary, these drawings include the following:

- Large-scale plan views of inner portions of approaches for each runway, usually limited to the RPZ areas
- Large-scale projected profile views of inner portions of approaches for each runway, usually limited to the RPZ areas
- Plan View Details, including aerial photos for base maps, numbering system to identify obstructions, property line, existing and future physical end of the runways with runway end numbers and elevation, and ground contours
- Profile View Details, including terrain and significant items and obstructions with numbers on the plan view
- Approach Profile Details, including a depiction of the ground profile along the extended runway centerline representing the composite profile, based on the highest terrain across the width and along the length of the approach surface
- The Approach Profile Details also include the identification of all significant objects within the approach surfaces, regardless of whether they are obstructions and the existing and future runway ends and 14 CFR Part 77 approach slopes.

6.10 LAND USE DRAWINGS (SHEETS 23 AND 24)

The next drawings are used for on-airport land use planning and the off-airport plan is used for local protection of the airport. These drawings focus on the uses of the land near the airport, whereas the Part 77 drawing deals with height obstructions. Non-compatible land use can degrade the value of the public investment in the airport and/or heighten the exposure of danger to greater numbers of the public. Studies have shown that generally, aircraft have a greater potential of crashing near the ends of the runway on both take-off and landing. This heightened potential for risk has caused the FAA to develop safety areas off

the runway ends and develop guidance and standards to preclude congregations or gatherings of people in the zones. Land uses such as hospitals, schools, high-density residential (apartment complexes), and other places that have a greater potential for loss of life if an accident were to occur are prohibited or strongly discouraged in these areas.

Additional concerns with particular land uses near the airport are wildlife attractants and pilot interference. Limiting the amount of attractive natural ground is important to reduce the potential of wildlife impacts. Obvious problem areas are animal attractants, such as golf courses and parks (goose attractant), certain farming activities (mammal and bird attractants), landfills (bird attractant), and other uses like high cover that offer sanctuary to wildlife. Natural occurring attractants should be minimized when possible and human-made attractants should be avoided. Land uses that could interfere with pilot or aircraft operations must be avoided, including power plants or industrial uses that create steam columns/clouds or other visual obstructions. Uses that could cause interference with compasses or radios need to be avoided as well.

The land use and zoning map display the airport and a large surrounding area. Defined airport safety zones are overlaid along with future noise contours. The 65DNL noise contour is the level of noise that FAA current recognizes, as annoyance and may be eligible for sound attenuation. However, the 65 DNL for SFF is all contained on airport property. These drawings include the following:

- Aerial base map
- Legend with symbols and land use descriptions
- Airport and nearby communities
- 2037 noise contours
- Airport Safety Zones

6.11 AIRPORT PROPERTY MAP (SHEETS 25–26)

The Airport Property Map, also called the Exhibit “A” if prepared in accordance with AC 150/5100-17, *Land Acquisition and Relocation Assistance for Airport Improvement Program Assisted Projects*, depicts the various tracks of land that were acquired to develop the airport and the method of acquisition. It displays easements beyond the airport boundary. The Airport Property Map includes the following information:

- Parcel Data Table with a numbering or lettering system to identify tracts of land, the date the property was acquired, the Federal Aid project number under which it was acquired, the type of ownership, and existing and future airport features that would indicate a future aeronautical need for airport property.
- Sheet 26 summarizes the proposed property acquisition by parcel.

To qualify as an Exhibit “A”, the drawing must (AC 150/5100-17, Figure 1.2):

- Identify the outside airport property boundary.
- Show and number all existing property parcels of the entire airport. Parcels that were once airport property must also be shown.

- Show and/or directly reference parcel information including: Grantee (selling owner), type of interest acquired, acreage, public land record references such as book and page and date of recording.
- For each property parcel show FAA project number if acquired under a grant; Surplus Property Transfer or AP-4 Agreement if applicable; and type of easement (clearing, aviation, utility, right-of-way, etc.); and if released, date of FAA approval.
- Show the purpose of acquisition (current aeronautical, noise compatibility, or future development) and current use if different or in interim use pending development.
- Show runway protection zones, runway configurations, and building restriction lines.
- Show magnetic and true north arrows per standard drafting practices.
- Exhibit “A” must be dated and amended whenever there is a change to any airport property.

6.12 UTILITY DRAWING (SHEET 27)

This drawing depicts the location and capacity of major utilities on the airport.