

Chapter Six

AIRPORT LAYOUT PLAN

Airport Master Plan Update

Mulino Airport

The Airport Layout Plan (ALP) drawings are a pictorial representation and summarization of the efforts made in this planning process. The previous chapters supply the basis for the Airport's future airport layout as shown in the drawing set. In order for improvement projects to be eligible for Federal Airport Improvement Program Grants, the projects must appear on a Federal Aviation Administration (FAA) approved ALP.

AIRPORT LAYOUT PLAN DRAWING SET

The paragraphs to follow describe the specific elements found on each sheet within the ALP drawing set.

Cover Sheet

The cover sheet shows a sheet index to the airport layout plan drawing set, and provides pertinent information such as the airport sponsor, airport name, grant number the project is funded through, and date the plan was completed.

Airport Layout Plan Drawing (Sheet C-1)

The airport layout plan depicts the current airport layout and proposed improvements to the Airport for the 20-year planning period and beyond. This drawing also includes location and vicinity maps, which show the Mulino Airport in relation to its surrounding geography. Descriptions of the improvements and costs over the next 20 years are included in Chapter

Seven, *Capital Improvement Plan*. The master plan concept, as selected by the Port of Portland (Port) in consultation with the Project Advisory Committee (PAC) and Oregon Department of Aviation (ODA), was the basis for determining the proposed improvements at the Airport. The ALP is a development guide that can be modified as dictated by demand.

Runway approach visibility minimums, runway protection zones, runway object free area, runway safety area and other standard airport dimensions are shown in the plan and in the runway data tables. Other tables include an airport data table, buildings/facilities table, modifications to standards, and a non-standard conditions and disposition table. The wind rose depicts wind coverage for the runway alignment.

Airspace Plan Drawing (Sheet C-2)

This drawing shows the Part 77 Imaginary Surfaces for the future layout of the Airport with a USGS topographic map as the background. Part 77 defines five distinct surfaces, each with a different size and shape. The dimensions of these surfaces are based on the type of runway and the type of approach ultimately planned for the Airport. Each imaginary surface and its dimension as it applies to the Mulino Airport are defined below.

Primary Surface. A rectangular surface with a width (centered on the runway centerline) that varies for each runway and a length that extends 200 feet beyond each end of the runway. The elevation of the primary surface corresponds to the elevation of the nearest point of the runway centerline. The width of the primary surface of Runway 14-32 is 500 feet.

Approach Surface. A surface centered on the extended runway centerline, starting at each end of the primary surface (200 feet beyond each end of the runway), at a width equal to that of the primary surface and an elevation equal to that of the end of the runway. The ultimately planned approach surfaces at the Airport reflect a visual approach to Runway 14 and a nonprecision approach to Runway 32. The Runway 14 approach surface extends for a horizontal distance of 5,000 feet at a slope of 20:1 to a width of 1,250 feet. The nonprecision instrument approach surface, with minimums not lower than 3/4 mile, to Runway 32 has an inner width of 500 feet extending outward 10,000 feet to an outer width of 4,000 feet at a slope of 34:1.

Transitional Surface. A sloping 7:1 surface that extends outward and upward at right angles to the runway centerline from the sides of the primary surface and the approach surfaces.

Horizontal Surface. An elliptical surface at an elevation 150 feet above the established airport elevation created by swinging arcs of a 10,000-foot radius from the center of each end of the primary surface.

Conical Surface. A surface extending outward and upward from the horizontal surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

The Part 77 surfaces are the basis for protecting airspace around an airport; therefore, it is ideal to keep these surfaces clear of obstructions whenever possible. The obstruction data tables on

Sheets C-2 and C-3 identify each obstruction and their location, along with the disposition to address the described obstruction.

Obstructions to the Part 77 surfaces were determined based on an obstruction survey performed by W&H Pacific in 2004. Since that time an obstruction removal project has been completed, which eliminated many prior obstructions. As the obstruction removal process is still ongoing, removal for the remaining obstructions has been incorporated into the capital improvement plan (CIP). The CIP prioritizes obstruction removal in the following manner: on-Airport obstructions, off-Airport obstructions within the approach surface, and off-Airport obstructions within the transitional surface. The negotiation and purchase of avigation easements will be necessary prior to the removal of any off-Airport obstructions.

Inner Portion of the Runway 14/32 Approach Surface Drawing (Sheet C-3)

This drawing provides a plan and profile view of the runway, the Runway Protection Zones and approach surfaces. Obstructions within the approach and transitional surfaces are indicated in the profile view.

Airport Land Use Plan and Noise Contour Drawing (Sheet C-4)

A land use plan has been developed for the Airport and the surrounding area. This plan includes the land uses on and around the Airport per the Clackamas County Zoning and Development Ordinance.

Land uses around airports should be compatible with airport operations. Aircraft noise is also a major concern. Land uses and their associated activities that are of greatest concern to airports include:

- Nearby Lighting
- Glare, Smoke and Dust Emissions
- Bird Attractions and Landfills
- Airspace Obstructions
- Electrical Interference
- Concentrations of People

Any of these activities can create safety concerns for airport users and people on the ground. They may also be impacted by airport operations. The airport sponsor should work with the local land use agency(s) to ensure that land uses around the airport are compatible with airport operations.

This sheet shows existing and future 55 – 75 Day-Night Equivalent Sound Level (DNL) contours for Mulino Airport. DNL is a 24-hour average sound level, in A-weighted decibels, obtained after the addition of ten decibels to sound levels occurring between 10 pm and 7 am as averaged over a span of one year. DNL is the FAA's standard metric for determining the cumulative exposure of individuals to noise. Contours for DNL above 65db do not extend beyond the Airport's current property line.

The local zoning designations and noise contours are overlaid on an aerial photograph. The location of the Mulino Elementary School is also depicted, since schools are noise sensitive land uses.