

## **SECTION 9 – AIRPORT LAYOUT PLANS PACKAGE**

An airport layout plans (ALP) package is a series of plans that reflect existing conditions as well as the preferred future development for a given airport. Through graphics such as plans, views, profiles and scales, a better understanding of the written content found in an airport master plan or airport master plan update is achieved.

The ALP package of drawings for DTW was created in accordance with the criteria set forth in the FAA *Advisory Circular (AC) 150/5300-13 Airport Design* and *AC 150/5300-18 General Guidance and Specifications for Submission of Aeronautical Surveys to NGS: Field Data Collection and Geographic Information System (GIS) Standards*. The content of individual sheets was determined using the guidelines found in *AC 150/5070-6b Airport Master Plans Appendix F Airport Layout Plan Drawing Set* and those requirements contained in the FAA Northeast’s Region ALP checklist.

The Future Airport Layout Drawing (ALD) is ultimately reviewed and approved by the FAA from a regulatory and safety perspective. Once approved, the Future ALD serves as the initial step in securing access to federal funding through the FAA for existing and future airport studies and construction projects.

The ALP package for DTW consists of the drawings listed below. The following narrative describes each drawing in more detail:

- Cover Sheet & Data Sheet
- Existing Airport Layout Drawing
- Future Airport Layout Drawing
- Ultimate Airport Layout Drawing
- Runway 4L-22R Approach Plan & Profile
- Runway 4R-22L Approach Plan & Profile
- Runway 3L-21R Approach Plan & Profile
- Runway 3R-21L Approach Plan & Profile
- Runway 9L-27R Approach Plan & Profile
- Runway 9R-27L Approach Plan & Profile
- FAR Part 77 Overview
- Property Map
- Property Map South
- Property Map North
- Property Map Data Tables
- Land Use Plans

### **9.1 Cover & Data Sheet**

The cover sheet contains approval blocks, airport location maps and other pertinent information as required by local FAA Airport District Offices and State aviation agencies.

The data sheet contains basic airport and runway data tables. The data sheet includes the information listed below:

- Wind Rose Information – Wind roses and corresponding wind data are provided for all weather conditions, Visual Flight Rules (VFR) conditions, and Instrument Flight Rules (IFR) conditions for each runway as well as for each of the runways.

- Runway Protection Zone (RPZ) Data – The FAA defines this zone as an area off the runway end to enhance the protection of people and property on the ground. The data table outlines RPZ dimensions for existing and future runways.
- Airport Data Table – Geographic, operational, meteorological, and classification data is shown in this table for both existing and future layouts.
- Runway Data Table – Physical, geometric and operational data for each runway is listed in this table. Data includes runway dimensions, runway classifications, wind coverage for each runway, maximum runway elevation, pavement types and loading strengths, runway gradients, approach and obstruction clearance slopes, runway approach categories, runway safety area dimensions, runway lighting and marking data, navigational aids data, approach visibility minima and declared distances information.

## **9.2 Existing Airport Layout Drawing**

The existing airport layout drawing (ALD) serves to give the reader a general layout of the environment in and surrounding a given airport. It depicts existing airport facilities and nearby surroundings and is shown at a scale 1:600 ft. This drawing shows required facility identifications, labels, imaginary surfaces, RPZs, and Runway Safety Areas (RSA).

Elements of the existing ALD include airfield infrastructure such as existing runways and taxiways, aprons and holding areas. The existing ALD also includes any terminals, concourses and depicted access to these facilities. Existing General Aviation areas are also depicted on the ALD. Other aviation-related items such as navigational aids are shown.

The existing ALD also reveals any main cargo areas and cargo buildings, existing military sites and maintenance facilities. All other infrastructure such as buildings, roads, railroads, and fencing are shown. The existing airport property line is depicted on the ALD. The importance of the airport property line is to demarcate which aviation and non-aviation facilities are on or off airport property.

## **9.3 Future and Ultimate Airport Layout Drawings**

During the planning process, several of the communities surrounding the Airport have expressed concerns regarding the Airport's future development plans, specifically the plan to acquire land and construct a future 5th parallel runway within the planning horizon. The communities believed that given the national economic climate, the recent spike in fuel prices, and the resulting decrease in airline activity may postpone or eliminate the need for the runway. The communities have expressed the opinion that the need for the future 5th parallel runway may be beyond the 20-year planning horizon and, as such, have requested that the future 5th parallel runway not be included on the FAA approved Future Airport Layout Drawing (ALD).

Because there was concern by the stakeholders that important planning decisions were premature, the Airport decided to split the ALD into a Future ALD and an Ultimate ALD. This provides WCAA and the other stakeholders with greater flexibility regarding the implementation of certain projects

anticipated in the later years of the planning horizon. In this case, WCAA is requesting FAA approval of the Future ALD. The Ultimate ALD is provided for reference for the FAA, airport management and the surrounding communities as a likely development scenario.

## **9.4 Airport Airspace Drawings**

The airport airspace drawings provide the reader with an understanding of the relationship between objects and navigable airspace for a given airport. In this case, they are broken down into two separate types; Approach Plan and Profiles and an FAR Part 77 Overview. Each focuses on a different part of navigable airspace with the intent of capturing and assessing all pertinent airspace surrounding an airport runway configuration to help evaluate and ultimately ensure safety from an airspace navigation standpoint.

Obstruction data was provided by WCAA through their surveying consultants. It was analyzed to determine any objects represented obstructions based on FAA's *14 CFR Part 77 Objects Affecting Navigable Airspace*. Any object which constituted a penetration to a navigable airspace surface is listed and described in one of the airspace drawings with a plan of action for the object.

### **9.4.1 Approach Plan & Profiles**

These drawings contain the plan and profile view of the inner portion of the approach surface to the runway along with a tabular listing of all penetrations. Typically, the Inner Approach is limited to the RPZ area. Depending on the approach slope (e.g. 20:1, 34:1, 50:1, etc.) this application leads to a plan and profile distance ranging typically from about 2,000 ft. to 5,000 ft. from the runway threshold. Objects outside of the approach slope that are within the adjacent 7:1 transitional slope stemming from the approach slope have also been identified.

For the profile views, a 1:300 ft. horizontal scale and a 1:30 ft. vertical scale is common. Commonly shown objects are buildings, roads, railroads, ditches and natural features such as mountains, trees, lakes, and rivers.

### **9.4.2 FAR Part 77 Overview**

This drawing depicts obstacle identification surfaces for the full extent of all airport development and shows airspace obstructions that are not shown in the Outer Approach Plans, Inner Approach Plans or Departure Surface Plans. The Airport Airspace Drawing is shown at a 1:3500 ft. scale in plan view and depicts, through line work, imaginary FAR Part 77 safety surfaces. The drawn surfaces include all future (new) runways and extensions to existing runways. In this case, the airfield expansion as depicted on the Future ALD (extension of Runway 3L-21R) was utilized. Because the 5th Parallel Runway is not reflected on the Future ALD, it is not included as part of the FAR Part 77 surface.

## **9.5 Terminal Area Plan**

This plan represents a large-scale depiction of areas with significant terminal facility development. The drawing is an enlarged area of the passenger terminal areas of the future ALD. The scale for this

drawing is 1:50 ft. A keyed legend identifies the prominent development in the terminal area and known building heights.

## **9.6 Airport Property Map**

This drawing depicts the Airport property boundary, and various tracts of land that were acquired along with specific data related to their acquisition. The drawing sheets for the Airport Property Map include graphic depictions of the property and tables reflecting the acquisition data.

## **9.7 Land Use Plans**

The Land Use Drawing depicts land uses within the Airport property boundary and land use zoning for the property surrounding the Airport. This drawing also depicts the Airport Noise Exposure Map contours for reference.