Introduction

ABOUT DENTON ENTERPRISE AIRPORT

Denton Enterprise Airport (DTO) is owned and operated by the City of Denton, Texas. DTO is considered a national airport, according to the National Plan of Integrated Airport Systems (NPIAS). As such, DTO serves a vital role in accommodating all forms of general aviation traffic, including corporate aviation, flight training, emergency medical flight services, charter flights, and recreational flying, among many others. DTO is situated on over 928 acres of property located approximately three miles west from downtown Denton. In terms of economic impact, a study sponsored by the Texas Department of Transportation (TxDOT) in 2018 found that the airport supports 1,435 jobs, $45.8 million in annual payroll, and $156.3 million in total economic impact to the local economy. DTO is a vital infrastructure component that supports economic development and quality of life for residents in and around the City of Denton.

WHAT IS A MASTER PLAN?

The Federal Aviation Administration (FAA) recommends that airports update their long-term planning documents every seven to 10 years, or as necessary, to address local changes at the airport. The last master plan update for DTO was completed in 2015. The City of Denton, the sponsor of the airport, has received a grant from the TxDOT Aviation Division to update the airport master plan.

The sponsor is responsible for funding capital improvements at DTO, as well as obtaining FAA and TxDOT development grants. The master plan is intended to provide **a true vision for how DTO is developed**, **guidance for future development**, and **justification for projects** for which the airport may receive funding through an updated capital improvement program, which will demonstrate the future investments required by the City of Denton, TxDOT, and the FAA.

The airport master plan follows a systematic approach outlined by the FAA to identify airport needs in advance of the actual need for improvements. This is done to ensure the city can coordinate environmental reviews, project approvals, design, financing, and construction to minimize the negative effects of maintaining and operating inadequate or insufficient facilities. An important outcome of the master plan process is a recommended development plan, which reserves sufficient areas for future facility needs. Such planning will protect development areas and ensure they will be readily available when required to meet future needs. The intended outcome of this study is a detailed on-airport land use concept that outlines specific uses for all areas of airport property, including strategies for revenue enhancement.

Some common questions regarding what a master plan is / is not are answered in the graphic below.

AN AIRPORT MASTER PLAN IS…

- A comprehensive, long-range study of the airport and all air and landside components that describes plans to meet FAA safety standards and future aviation demand.
- Required by the FAA to be conducted every 7-10 years to ensure plans are up to date and reflect current conditions and FAA regulations. The last master plan for DTO was completed in 2015.
- Funded 90% by the FAA's Airport Improvement Program (AIP). The remaining 10% is funded by the City of Denton.
- A local document that will ultimately be presented for approval from the City of Denton. The FAA/TxDOT approves only two elements of the master plan: the aviation demand forecasts and the airport layout plan (ALP) drawing set.
- An opportunity for airport stakeholders and the public to engage with airport staff on issues related to the airport, its current and future operations, and environmental and socioeconomic impacts. Four public information workshops will be conducted during the master plan process to facilitate this public outreach effort.

AN AIRPORT MASTER PLAN IS *NOT*…

- A guarantee that the airport will proceed with any planned projects. Master plans are guides that help airport staff plan for future development; however, the need/demand for certain projects might never materialize.
- A guarantee that the City of Denton, TxDOT, or the FAA will fund any planned projects. Project funding is considered on a case-by-case basis and requires appropriate need and demand. Certain projects may require the completion of a benefit-cost analysis.
- A binding or static plan. Elements of the master plan may be updated to reflect changes in aviation activity at the airport, economic conditions of the region, or the goals of the City of Denton.
- Environmental clearance for specific projects. The master plan includes an environmental overview, which identifies potential environmental sensitivities per the *National Environmental Policy Act of 1969* (NEPA) guidelines. Most planned projects will require a separate environmental study prior to construction.

The preparation of this master plan is evidence that the city recognizes the importance of the airport and the associated challenges inherent in providing for its unique operating and improvement needs. The cost of maintaining an airport is an investment that yields impressive benefits to the local community. With a sound and realistic master plan, the airport can maintain its role as an important link to the regional, state, national, and global air transportation systems. Moreover, the plan will aid in supporting decisions for directing limited and valuable city resources for future airport development. Continued investment in the airport will ultimately allow the sponsor to reap the economic benefits.

WHO IS PREPARING THE MASTER PLAN?

The City of Denton has contracted Coffman Associates, Inc. to undertake the airport master plan. Coffman Associates is an airport planning and consulting firm that specializes in master planning and environmental studies. Coffman Associates will lead the planning team, with support from the following firms:

- Garver – Cost estimating and engineering support
- HubPoint Strategic Advisors – Air cargo market study and forecasts
- Jordan Aviation Strategies – Financial analysis
- Martinez Geospatial – Aerial photography, ground survey, and geographic information system (GIS) products to meet FAA 5300-18B requirements for Airports GIS data submittal

The airport master plan will be prepared in accordance with FAA requirements, including Advisory Circular (AC) 150/5300-13B, *Airport Design* (as amended), and AC 150/5070-6B, *Airport Master Plans* (as amended). The plan will be closely coordinated with other planning studies relevant to the area and with aviation plans developed by the FAA and TxDOT. The plan will also be coordinated with the City of Denton, as well as other local and regional agencies, as appropriate.

STUDY GOALS, OBJECTIVES, AND ASSUMPTIONS

The primary goal of this master plan is to provide the framework needed to guide future airport development that will satisfy aviation demand in a cost-effective way while considering potential environmental and socioeconomic impacts. Accomplishing this goal requires an evaluation of the existing airport to decide what actions should be taken to maintain a safe, adequate, and reliable facility. A long-range planning study also requires several baseline assumptions that will be used throughout the analysis. Specific objectives and assumptions for this study are as follows.

STUDY OBJECTIVES

Aviation Demand Forecasts

- To research factors likely to affect all air transportation demand segments at DTO over the next 20 years, including the development of forecasts of potential commercial service, air cargo, and general aviation operational and basing demand
- To determine the airport's current and future critical design aircraft per FAA AC 150/5300-17, *Critical Aircraft and Regular Use Determination*

Facility Requirements

- To analyze the existing airfield system to determine the existing and ultimate runway length required to satisfy the airport's critical aircraft now and into the future
- To assess the need for expanded airfield pavements, hangars, and apron area to support existing and anticipated based aircraft and itinerant operations
- To recommend improvements that will enhance the landside area's ability to satisfy future aviation needs, taking into consideration the potential for commercial passenger service, air cargo, advanced air mobility (AAM), and general aviation needs

Development Alternatives

- To evaluate the highest and best uses of airport property
- To recommend landside improvements that satisfy the anticipated operational growth, including fixed base operator (FBO) and specialty aviation operator (SASO) operations, as well as the potential for commercial airline and/or cargo operations

Development Plan and Capital Improvement Program (CIP)

- To develop a 20-year demand-based CIP, including a recommended phasing plan
- To consider sustainability efforts, specifically waste and recycling improvements, as part of the FAA's updated standards

Airport Layout Plan (ALP) Update

- To produce accurate base maps of existing and proposed facilities, as well as updated ALP drawings consistent with FAA Standard Operating Procedures (SOPs) No. 2.00 and 3.00
- To review future use and zoning of airport property, instrument approach areas, and nearby developments to ensure flight safety and land use compatibility; this will involve the development of new noise exposure contours utilizing the FAA's Aviation Environmental Design Tool (AEDT), application of current land use compatibility guidelines, review of local land use controls and plans, and analysis of land use management techniques
- To analyze all opportunities and develop strategies for incompatible land use encroachments

BASELINE ASSUMPTIONS

A long-range planning study requires several baseline assumptions that are used throughout this analysis. The baseline assumptions for this study are as follows.

- DTO will continue to accommodate general aviation tenants – as well as itinerant and local aircraft operations by air taxi, general aviation, and military operators – through the 20-year planning period.

- The aviation industry will develop through the planning period as projected by the FAA. Specifics of projected changes in national aviation industries are described in Chapter Two – Forecasts.
- The socioeconomic characteristics of the region will generally change as forecast (Chapter Two).
- A federal and state airport improvement program will be in place through the planning period to assist in funding future capital development needs.

MASTER PLAN ELEMENTS AND PROCESS

The master plan has nine elements that are intended to assist in the evaluation of future facility needs and provide the supporting rationale for their implementation. **Figure iA** provides a graphical depiction of the process involved in the study.

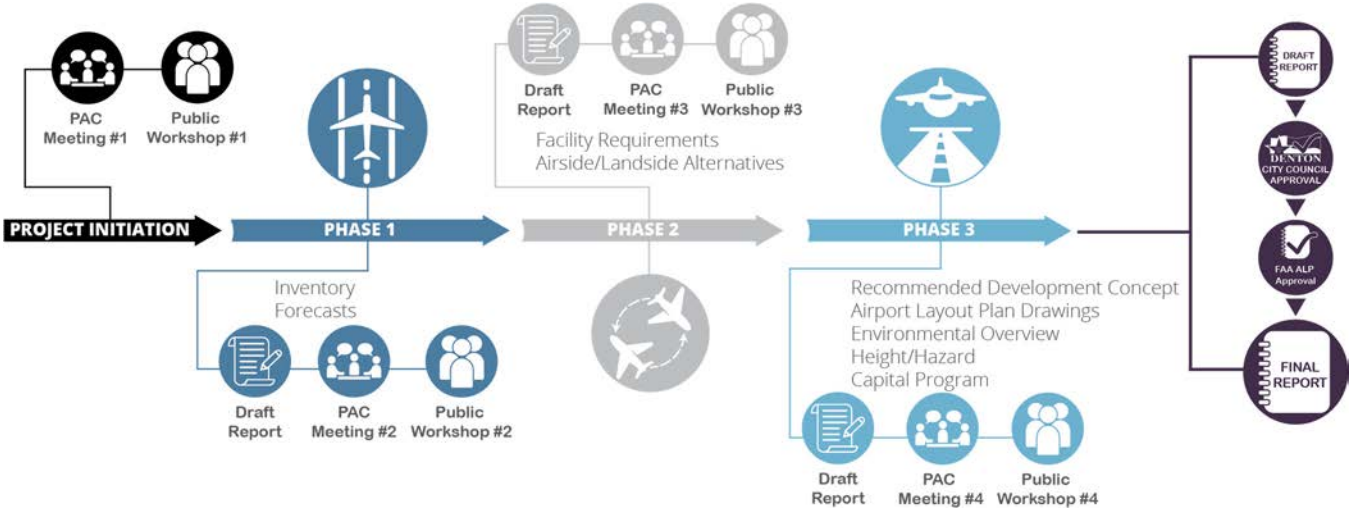


Figure iA – Project Workflow

Element 1 – Study Initiation and Organization includes the development of the scope of services, schedule, and study website. Study materials will be assembled in a workbook format. General background information will be established that includes outlining the goals and objectives to be accomplished during the master plan.

Element 2 – Inventory of Existing Conditions focuses on collecting and assembling relevant data pertaining to the airport and the area it serves. Information regarding existing facilities and operations is collected. Local economic and demographic data are collected to define the local growth trends, and environmental information is gathered to identify potential environmental sensitivities that might affect future improvements. Planning studies that may be relevant to the master plan are also collected.

Element 3 – Aviation Demand Forecasts examines the potential aviation demand at DTO. The analysis utilizes local socioeconomic information and national air transportation trends to quantify the levels of aviation activity that can reasonably be expected to occur at DTO over a 20-year period. An existing and ultimate critical design aircraft – based on AC 150/5000-17, *Critical Aircraft and Regular*

Use Determination – is also established to determine future planning design standards. The results of this effort are used to determine the types and sizes of facilities that will be required to meet the projected aviation demand at the airport through the planning period. Forecasts result in estimates of demand for annual aircraft operations, based aircraft, and potential commercial airline passenger enplanements, as well as air cargo operations and tonnage. This element is one of two elements that are submitted to TxDOT for approval.

Element 4 – Facility Requirements determines the available capacities of various facilities at the airport, whether they conform with FAA standards, and what facility updates or new facilities will be needed to comply with FAA requirements and/or projected 20-year demand.

Element 5 – Airport Development Alternatives considers a variety of solutions to accommodate projected airside and landside facility needs through the long-term planning period. An analysis is completed to identify the strengths and weaknesses of each proposed development alternative, with the intention of determining a single direction for development.

Element 6 – Airport Plans/Land Use Compatibility/Environmental Overview involves coordination with airport staff and the planning advisory committee to result in the selection of a recommended development concept. The airport's noise exposure and land use compatibility will also be evaluated. An environmental overview will identify any potential environmental concerns that must be addressed prior to the implementation of the recommended development program.

Element 7 – Financial Management and Development Program analyzes the benefits and costs associated with the recommended plan. Specific project costs are established for the development of a CIP that ensures logical staging of improvements.

Element 8 – Geographical Information System (GIS) and Data Collection Services includes collection of high-resolution aerial photography and high-precision surveys of safety critical airport data to provide the sponsor with a digital dataset of the airport and its surrounding environment, in conformance with current FAA standards set forth in ACs 150/5300-13A, -16B, -17C, and -18B. The collected data allow for a detailed airspace analysis for the appropriate airport approach and departure surfaces.

Element 9 – Airport Layout Plans will be developed to depict the recommended development concept. The drawings will meet the requirements of FAA SOP No. 2.00, *Standard Procedure for FAA Review and Approval of Airport Layout Plans (ALPs)* (effective October 1, 2013). The updated ALP set will be included as an appendix to this study.

Element 10 – Final Reports produces the draft final report and ALP drawings in print and digital form. These materials will be presented to the City of Denton, TxDOT, and the FAA for review and approval. Once approved, a final report will be prepared and made available in print and digital formats.

Element 11 – Optional Commercial Passenger Terminal Tasks includes the evaluation of potential commercial passenger terminal facility requirements and siting alternatives. This element will proceed only if authorized by the City of Denton after review of the passenger enplanement forecasts.

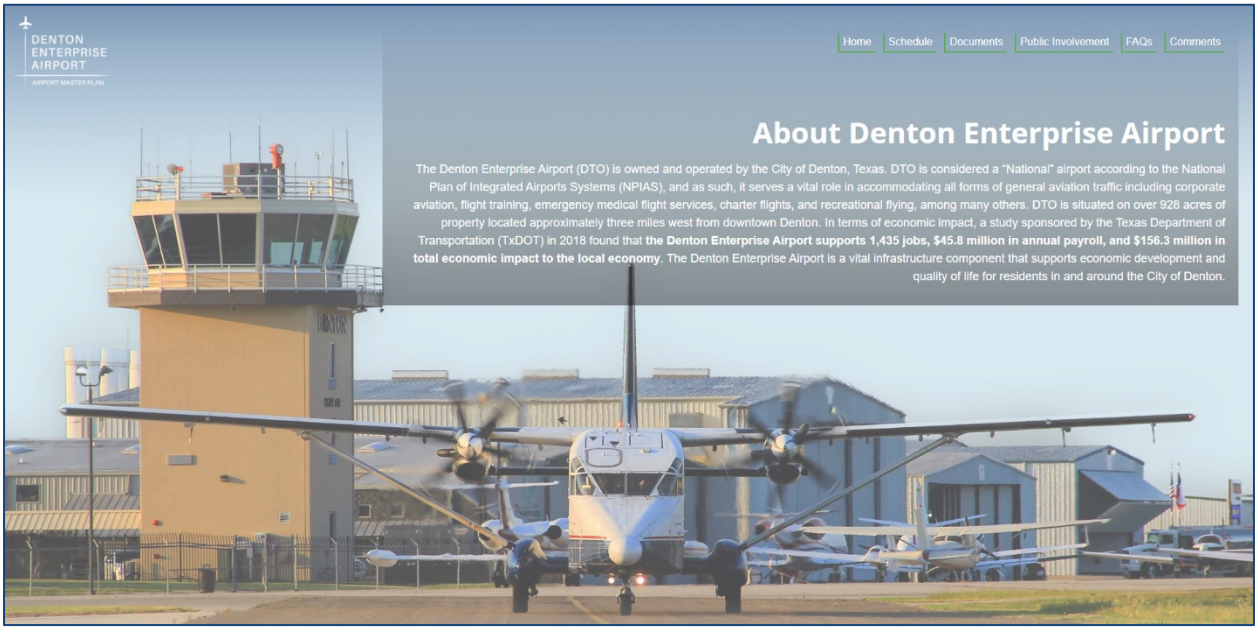
COORDINATION AND OUTREACH

This study is of interest to many within the local community and region, including local citizens, local businesses, community organizations, city officials, airport users/tenants, and aviation organizations. As a component of the regional, state, and national aviation systems, DTO is of importance to both state and federal agencies responsible for overseeing the air transportation system.

To assist in the development of the master plan, a planning advisory committee (PAC) has been established to act in an advisory role. PAC members will meet up to three times at designated points during the study to review study materials and provide comments to help ensure a realistic, viable plan is developed.

Draft phase reports will be prepared at various milestones in the planning process. The phase report process allows for timely input and review during each step within the master plan to ensure all issues are fully addressed as the recommended program develops.

Four open-house public information workshops are also planned as part of the study coordination and outreach efforts. Workshops are designed to allow all interested persons to become informed and provide input concerning the master plan process. Notices of meeting times and locations will be advertised through local media outlets. All draft phase reports, meeting notices, and materials will be made available to the public on a study-specific website: DTO.airportstudy.net.



The DTO.airportstudy.net website

SWOT ANALYSIS

A SWOT analysis is a strategic business planning technique used to identify **S**trengths, **W**eaknesses, **O**pportunities, and **T**hreats associated with an action or plan. The SWOT analysis involves identifying an action, objective, or element, and then identifying the internal and external forces that positively and negatively impact that action, objective, or element in a given environment. A SWOT analysis was conducted at the first PAC meeting and the findings are summarized in **Table iA**.

TABLE iA | DTO SWOT Analysis

Strengths	• Parallel runways provide redundancy for periods during which one must be closed for maintenance • DTO is a towered airport providing greater operational efficiency/safety • DTO's location at the confluence of 35E/35W is in a high-growth area • DTO has the ability to quickly and efficiently process aircraft cargo and equipment • Size of the airport and availability of developable property • Adjacent property is owned by the City of Denton	• On-site fire station services • Compatible land uses (industrial/commercial) surround the airport • DTO attracts business development to the community • DTO is close to downtown Denton and has a good access/egress roadway network with limited congestion issues • Growing flight school activities • Business diversity in and around the airport • DTO has a 7,000-foot-long runway capable of accommodating most large business jets
Weaknesses	• Fuel accessibility is limited • DTO lacks available hangar capacity • DTO's proximity to Dallas Fort Worth International Airport (DFW) and Fort Worth Alliance Airport (AFW) hinders its potential for commercial passenger/air cargo services • Automobile parking capacity is limited • Surrounding industrial complexes do not utilize the airport	• West side of airfield is landlocked • Runway weight restrictions do not support regular use by large/heavy business jets, such as the Boeing Business Jet (BBJ) • City of Denton development code standards and lighting/landscaping requirements are strict • Semi-truck traffic for neighboring industrial areas can occasionally cause traffic congestion
Opportunities	• Emerging technologies, such as advanced air mobility (AAM) • Highway improvements (Loop 288) could improve accessibility to the west side and create a new "front door" to the airport • Air cargo and commercial passenger service • Extensive logistics space in the Dallas-Fort Worth metroplex • Proximity to the BNSF and Union Pacific rail lines; BNSF has adopted the use of unmanned aerial vehicles (UAVs) • Installation of electric vehicle charging stations • West side of airport is a blank slate for new development • Land north and west of the airport provides opportunities for expansion/development	• DTO could consider vertiport (AAM) development • DTO could become a center for aviation education • Cole and Hunter Ranch developments could bring Class A office space opportunities to the city and new aviation users to DTO • Part 139 certification opens opportunities to commercial operations • Having on-site customs would open the airport to international traffic • DTO is located within the Dallas-Fort Worth foreign trade zone (FTZ) • Denton is preparing a wastewater master plan that examines wastewater reuse opportunities and future-proofing water facilities (resiliency); this study could present opportunities for the airport to incorporate resiliency measures
Threats	• New residential developments south of the airport present compatibility issues • Available/open land uses going to incompatible land uses • High flight training activity at DTO can detract from commercial and business aviation users • Increased DTO operations can lead to greater congestion/delay issues • Cost and requirements to become a Part 139 airport	• Competition with other regional airports over users/activity • Rising construction and utility costs • Diminished production of natural gas wells on the airport resulting in declining revenue • DTO airport traffic control tower capacity and staffing are limited • Lack of on-site customs and the cost to establish those facilities and staffing could outweigh the benefits of access to international traffic