



Chapter Five

# Recommended Master Plan Concept

The process for the preparation of the Airport Master Plan has included technical efforts in the previous chapters intended to establish the role of McKinney National Airport (TKI or Airport), forecast potential aviation demand, establish airside and landside facility needs, and evaluate options for improving the airport to meet those facility needs. The planning process has included the development of draft working papers that have been presented to a Planning Advisory Committee (PAC) and a Technical Advisory Committee (TAC), which are two groups comprised of stakeholders/constituents with an investment or interest in the Airport and surrounding area. These diverse groups have provided extremely valuable input into the Master Plan. Additionally, a series of Public Information Workshops have been conducted as part of this planning process, providing the public an opportunity to be involved and educated about the study.

The alternatives that outlined future growth and development scenarios in the previous chapter have been refined into a recommended development concept for the Master Plan, which is included for presentation in this chapter. Environmental conditions that need to be considered during development are also examined later in the chapter.





One of the objectives of the Master Plan is to allow decision-makers the ability to either accelerate or slow development goals based on actual demand. If demand slows, development of the Airport beyond routine safety and maintenance projects could be minimized. If aviation demand accelerates, development could be expedited. Any plan can account for limited development, but the lack of a plan for accelerated growth can sometimes be challenging. Therefore, to ensure flexibility in planning and development to respond to unforeseen needs, the Master Plan Concept considers the full and balanced development potential for TKI.

## **MASTER PLAN CONCEPT**

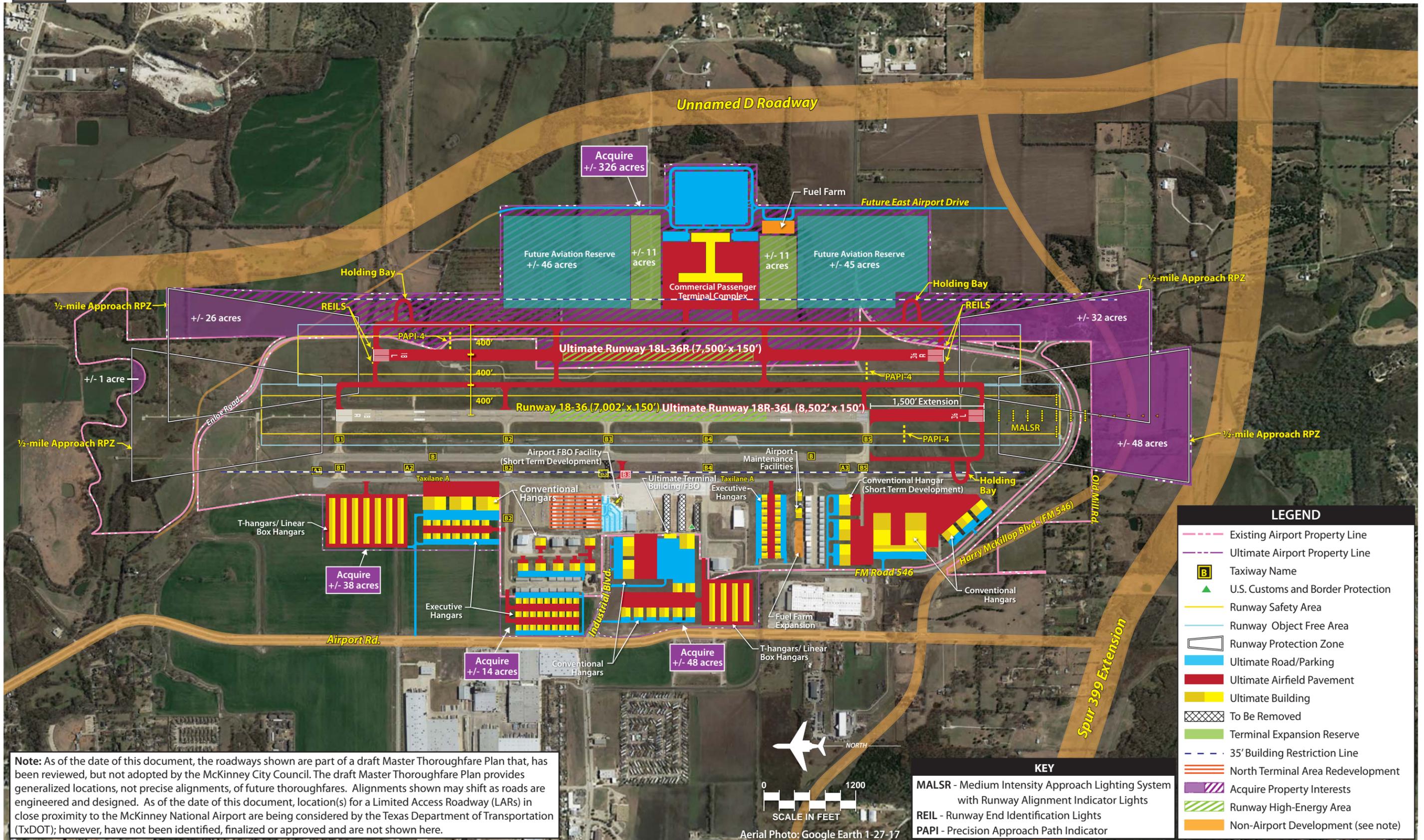
TKI is a vital aviation asset within the National Airspace System (NAS), as evidenced by the role that the Federal Aviation Administration (FAA) assigns it. The Airport is classified by the Federal Aviation Administration (FAA) as a Reliever Airport and is included in the FAA's *National Plan of Integrated Airport Systems* (NPIAS). NPIAS airports are considered important to the national aviation system and are eligible for development grant funding from the FAA. Furthermore, the Airport is categorized as a "National" Airport by the FAA. As such, it serves as an important air transportation facility that supports the interstate and intrastate systems by providing communities with access to national and international markets. National airports have high levels of activity, ranging from small single engine aircraft to multi-engine jet aircraft operations. These airports average 200 based aircraft, including 30 jets. As previously detailed, TKI experiences a broad range of aviation operations and services, and is currently home to nearly 290 based aircraft, including 27 privately owned jets. At the state level, the Texas Department of Transportation – Aviation Division (TxDOT) also classifies TKI as a reliever airport.

The Master Plan Concept, as shown on **Exhibit 5A**, presents the recommended configuration for the Airport, which preserves its role while meeting FAA design and safety standards to the extent practicable. It is important to note that the concept provides for anticipated facility needs over the next 20 years, as well as establishing a vision and direction for facility needs beyond the 20-year planning period of this study. A phased capital program to achieve the recommended Master Plan Concept is presented in Chapter Six.

While the Master Plan Concept makes recommendations for the future of the Airport, it is important to continue to obtain local perspective and input on important development goals and objectives as the study process moves toward completion. The following sections describe the Master Plan Concept. When assessing future development potential, the development plan has separated the Airport into airside and landside functional areas.

## **AIRSIDE DEVELOPMENT CONCEPT**

The airside plan generally considers those improvements related to the runway and taxiway system, and often requires the greatest commitment of land area to meet the necessary physical features and associated safety areas required to support flight operations. Operational activity at TKI is anticipated to



**Note:** As of the date of this document, the roadways shown are part of a draft Master Thoroughfare Plan that, has been reviewed, but not adopted by the McKinney City Council. The draft Master Thoroughfare Plan provides generalized locations, not precise alignments, of future thoroughfares. Alignments shown may shift as roads are engineered and designed. As of the date of this document, location(s) for a Limited Access Roadway (LARs) in close proximity to the McKinney National Airport are being considered by the Texas Department of Transportation (TxDOT); however, have not been identified, finalized or approved and are not shown here.



**KEY**  
 MALSR - Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights  
 REIL - Runway End Identification Lights  
 PAPI - Precision Approach Path Indicator

LEGEND	
	Existing Airport Property Line
	Ultimate Airport Property Line
	Taxiway Name
	U.S. Customs and Border Protection
	Runway Safety Area
	Runway Object Free Area
	Runway Protection Zone
	Ultimate Road/Parking
	Ultimate Airfield Pavement
	Ultimate Building
	To Be Removed
	Terminal Expansion Reserve
	35' Building Restriction Line
	North Terminal Area Redevelopment
	Acquire Property Interests
	Runway High-Energy Area
	Non-Airport Development (see note)

This page intentionally left blank



grow through the 20-year planning horizon of this Master Plan, and the Airport is projected to continue to serve the full range of general aviation aircraft operations. As detailed previously in this study, consideration is also being given to the potential for commercial service activities at the Airport. As such, the Master Plan Concept is dedicated to meeting general aviation, as well as potential for passenger and/or cargo commercial service activities should demand for such materialize in the future.

The major airside issues addressed in the Master Plan Concept include the following:

- Adhere to Runway Design Code (RDC) D-III standards on the airfield system for existing Runway 18-36 and a proposed parallel runway.
- Extend Runway 18-36 1,500 feet to the south to better accommodate aircraft utilizing the Airport.
- Enhance airfield geometry by relocating a portion of Taxiway B3.
- Per FAA standards, locate hold line markings on all taxiways at 256 feet from the runway centerline.
- Improve airfield capacity via constructing a parallel runway (Runway 18L-36R) and its associated infrastructure (i.e., taxiway system, approach aids, etc.).
- Provide enhanced instrument approach capabilities on all proposed runway ends.
- Consider acquiring land beyond the existing Airport property line that could be needed to accommodate a runway extension, proposed parallel runway, and approach protection.
- Upgrade airfield lighting with light emitting diode (LED) technology.

## RUNWAY DIMENSIONAL STANDARDS

The FAA has established design criteria to define the physical dimensions of the runway and taxiways, as well as the imaginary surfaces surrounding them which protect the safe operation of aircraft at airports. These design standards also define the criteria for the placement of landside facilities.

As discussed previously, the design criteria primarily center on an airport's critical design aircraft. The critical design aircraft is the most demanding aircraft, or family of aircraft, which currently, or are projected to, conduct 500 or more operations (takeoffs or landings) per year at an airport. Factors included in airport design are an aircraft's wingspan, approach speed, tail height, and, in some cases, the instrument approach visibility minimums for each runway. The FAA has established the RDC to relate these design aircraft factors to airfield design standards. The most restrictive RDC is also considered the overall Airport Reference Code (ARC) for an airport with more than one runway.

Analyses at the end of Chapter Two concluded that the current RDC for existing Runway 18-36 is D-III. Future planning also considers an ultimate RDC of D-III for Runway 18-36. The RDC is planned to be D-III for the following reasons:

- The existing runway geometry has historically been planned to D-III standards;
- The runway should be planned for the most demanding general aviation aircraft which currently utilize TKI and should also consider the potential for commercial service operations in the future;



- The runway meets the majority of D-III design standards except for those outlined in the following sections which are addressed in the Master Plan Concept; and
- The current Airport Layout Plan (ALP) indicates an existing and ultimate ARC D-III planning standard for existing Runway 18-36.

The Master Plan Concept also depicts a proposed parallel runway (Runway 18L-36R). Similar to the existing runway, the parallel runway should be planned to accommodate the most demanding general aviation aircraft and also consider the potential for commercial service aircraft operations. As such, the parallel runway is ultimately being planned to RDC D-III standards. The current ALP for TKI also includes a proposed parallel runway to be planned to D-III standards.

**Table 5A** provides a summary of the RDC for each runway based upon the Master Plan Concept. In addition to the physical and operational components of an aircraft, the RDC also considers the instrument approach capabilities for each runway expressed in runway visual range (RVR) values. For existing Runway 18-36 (proposed Runway 18R-36L), the RVR value of 2,400 feet indicates approach visibility minimums down to ½-mile. Currently, the precision instrument landing system (ILS) and area navigation (RNAV) global positioning system (GPS) approaches to Runway 18 provide for ½-mile visibility minimums. Prudent planning considers enhanced approach visibility minimums to the existing Runway 36 end as well as the proposed parallel runway. Additional discussion related to instrument approach capabilities is undertaken later in this chapter.

**TABLE 5A**

**Runway Design Codes**

**McKinney National Airport**

Runway	Planned Runway Design Code*
Existing 18-36 (Ultimate 18R-36L)	D-III-2400
Ultimate 18L-36R	D-III-2400

\* The ultimate ARC for the Airport is D-III based upon the most demanding RDC associated with the runway system.

**RUNWAY 18-36 LENGTH**

The Master Plan Concept includes extending existing Runway 18-36 1,500 feet to the south in order to better support the needs of larger aircraft that currently utilize the Airport. Ultimately then, the runway will offer 8,502 feet of physical runway length, which is previously planned and included on the Airport’s current ALP.

As with any major capital expenditure on an airport, specific justification will be needed for the FAA to commit to funding such a project. This will require specific justification outlined by the aircraft serving the Airport. As a result, it is important that Airport personnel continue to monitor and detail the potential need for additional runway length and coordinate with the FAA and TxDOT accordingly.



As previously outlined, a southerly 1,500-foot extension would allow for the full pavement plus runway safety area (RSA) and runway object free area (ROFA) beyond the proposed runway end, while still remaining unobstructed on Airport property. The existing layout of FM Road 546 adjacent to the south side of the Airport would not obstruct this proposed extension, as the road was designed specifically for this reason, so that the runway could be extended to 8,500 feet with the full RSA and ROFA beyond the pavement end without having to ultimately relocate the roadway again. Furthermore, the localizer antenna associated with the precision ILS approach on Runway 18 would not need to be relocated as its current placement was also factored into a potential 1,500-foot southerly extension to Runway 18-36. The existing medium intensity approach lighting system (MALS) serving Runway 36 would need to be relocated (to be detailed in a later section).

The FAA has also indicated that any change to the runway environment must also conform to a runway protection zone (RPZ) being free of incompatible land uses, including residences and public roadways. As detailed on **Exhibit 5A**, the proposed RPZ associated with the runway extension stretches farther south and would encompass FM Road 546 as well as residential property. Prior to 2012, if roadways existed in current RPZs, the FAA often considered them grandfathered and allowed them to remain. If changes to the runway end or changes to roadways in the RPZ were to occur, then the FAA could require changes to a road and/or a runway to clear the RPZ. The FAA has also indicated that accepted plans, such as TKI's existing ALP (calling for proposed changes to the runway end or new roads in the RPZ), could also be grandfathered. As mentioned in the previous chapter, the FAA holds full discretion in approving roadways within the RPZ, a decision that is made only by FAA headquarters (APP-400 division).

It is important to note that the Master Plan Concept depicts new or changed roadway features which are based on a draft *Master Thoroughfare Plan* currently being analyzed by the City of McKinney. The previous chapter highlighted these potential roadways being studied. Since this time, the City has made adjustments to certain roadways, including FM Road 546. ***Please note that as of the date of this document, the roadways shown are part of a draft Master Thoroughfare Plan that has been reviewed but not adopted by the McKinney City Council. The draft Master Thoroughfare Plan provides generalized locations, not precise alignments, of future thoroughfares. Alignments shown may shift as roads are engineered and designed. As of the date of this document, location(s) for a Limited Access Roadway (LARs) in close proximity to the McKinney National Airport are being considered by the Texas Department of Transportation (TxDOT); however, they have not been identified, finalized, or approved, and are not shown here.***

The potential roadways and their respective alignments are included on the Master Plan Concept; however, without an approved *Master Thoroughfare Plan* in place, the ultimate disposition of these roadways and their impacts to development at TKI are unknown at this time. As such, it is important that Airport staff and the City of McKinney continue to coordinate with TxDOT and other entities on future road alignments in order to result in the least amount of impacts to the future development of TKI.

An extension on Runway 18-36 would necessitate the need for parallel Taxiway B to extend south to serve the runway's ultimate configuration as shown on **Exhibit 5A**. A holding bay is also depicted that would serve the parallel taxiway extension. The FAA has provided updated guidance on the



configuration of hold aprons (bays). This guidance recommends that holding bays be designed to allow aircraft to bypass one another to taxi to the runway. Under this concept, each parking area on the holding bay is independent, with the ability for aircraft to bypass others both on entrance and exit. This design warrants a deeper holding apron. The holding bay depicted on the Master Plan Concept would meet the updated FAA guidance for holding bay design. Additional bays could be implemented into the layout of the proposed holding bay, if needed, to increase airfield operational effectiveness. From a navigational aid perspective, Runway 36 is currently served by a four-box precision approach path indicator (PAPI-4). The proposed runway extension would require the ultimate relocation of the PAPI-4 system as presented on the Master Plan Concept.

### TAXIWAY GEOMETRY ENHANCEMENT

A safety project involving taxiway geometry at TKI is planned to ensure that direct access from an aircraft parking apron to runway is not provided. Configurations that allow for direct access from an apron to runway have been targeted as they tend to increase risks for runway incursions. As depicted on **Exhibit 5A**, the development plan ultimately calls for the relocation of the westernmost portion of Taxiway B3 approximately 200 feet south. In doing so, direct access from Runway 18-36 to the aircraft parking apron, adjacent to the existing terminal area and airport traffic control tower (ATCT), would be eliminated. The proposed relocation of Taxiway B3 is configured in such a way to avoid having to relocate the segmented circle and lighted windcone to the south.

### HOLD LINE MARKINGS

The hold line markings on taxiways serving Runway 18-36 are currently located 250 feet from the runway centerline, which meets the standard for RDC C/D-II. In order to meet RDC D-III design standards, hold lines should be relocated to 256 feet from the runway centerline. This distance would adhere to the standard that calls for runway centerline to hold line separation at 250 feet, plus one additional foot for each 100 feet above mean sea level (MSL) for D-III design. TKI is situated at 589 feet MSL and, as a result, the hold lines associated with the runway system would need to be relocated to 256 feet.

### PARALLEL RUNWAY 18L-36R

A detailed capacity analysis was conducted in Chapter Three, which determined that airfield operations could exceed 80 percent of the Airport's annual service volume (ASV) through the long term planning period of this Master Plan. As the mix of aircraft operating at TKI is projected to continue to include a larger percentage of business jets, while the Airport continues to experience a significant amount of flight training activity, the capacity of the single runway at TKI is expected to be reached. Furthermore, when factoring the potential for commercial service aircraft utilizing the runway and taxiway system, as well as an airport's airspace traffic pattern, an airfield's capacity can become further constrained. As capacity is reached, delay to aircraft departures and arrivals increases. Increasing levels of annual delay



create undesirable conditions, such as increased air emissions, increased operating costs, and extended aircraft traffic patterns.

The Master Plan Concept calls for the construction of a 7,500-foot by 150-foot parallel runway 800 feet east of existing Runway 18-36. The concept of a parallel runway at TKI is not new, as previous planning and the current ALP call for a 7,002-foot parallel runway on the east side of the Airport. The proposed parallel runway is to be planned to RDC D-III standards and could accommodate the full range of general aviation aircraft, as well as potential commercial service aircraft operations. Roadway networks (existing and proposed) to the south of the Airport and terrain/environmental impacts to the north of the Airport, including the floodplain and severe elevation change, were factors in determining the placement of this proposed parallel runway.

Analysis in the previous chapter outlined separation criteria and designated use of proposed Runway 18L-36R. Alternatives were provided that detailed a minimum separation distance of 700 feet up to a maximum separation distance of 4,300 feet between the parallel runway system. As detailed on **Exhibit 5A**, the Master Plan proposes a distance of 800 feet between the two runways. This would allow for dual runway uses during visual flight rules (VFR) conditions only, which occur at the Airport approximately 88 percent of the time. Furthermore, FAA design standards call for a minimum of 400 feet between a runway and parallel taxiway (centerline to centerline). As such, the 800 feet of proposed separation would provide adequate separation from the runways and the opportunity to construct a midfield parallel taxiway, as called for in the development plan.

It should be noted that the majority of land needed to accommodate the proposed parallel runway is currently not owned by the Airport. As such, a significant amount of land acquisition would be needed to accommodate the runway and associated safety areas (to be detailed in the following sections). Similar to a runway extension, grant funding for the construction of a parallel runway would require specific justification. A scenario could unfold in which the FAA and TxDOT would initially move to develop a shorter parallel runway that would serve primarily flight training activities and small- to medium-sized general aviation aircraft. Ultimately, the runway could then be upgraded to serve the full array of general aviation activities, as well as potential commercial service aircraft operations as demand would dictate. Given the size of the Airport and its ability to accommodate an array of aviation activities, it is in the best interest of TKI and the City of McKinney to, at a minimum, reserve space on the east side of the Airport for a potential parallel runway if demand warrants such and protect the safety areas that would be associated with its operations.

In the event that the parallel runway would be implemented, further improvements would be needed to that runway that include high intensity runway lighting (HIRL), PAPI-4s, and runway end identification lights (REILs). In addition, a full-length parallel taxiway is called for on the east side of the runway that could provide access to landside development farther east. A series of entrance/ exit taxiways and holding bays would accommodate the taxiway network, ultimately linking the east and west sides of the Airport.



## INSTRUMENT APPROACHES

As detailed earlier, straight-in instrument approach procedures are offered on existing Runway 18-36. Currently, the ILS and RNAV GPS approaches serving Runway 18 provide for approach visibility minimums down to ½-mile. Runway 36 is currently provided with not lower than ¾-mile visibility minimums associated with the RNAV GPS approach. The Master Plan Concept considers implementing visibility minimums down to ½-mile on Runway 36. As a result, the approach RPZ associated with Runway 36 would increase in size as depicted on **Exhibit 5A**.

It is important to note that Runway 36 currently has a MALS to accommodate an approach with ¾-mile visibility minimums. In order to provide for enhanced visibility minimums down to ½-mile, the FAA typically requires a medium intensity approach lighting system with runway alignment indicator lights (MALSR), similar to what is currently in place on Runway 18. The development plan also calls for instrument approach procedures associated with the proposed parallel Runway 18L-36R that would equate to ½-mile visibility minimums given the size of the RPZs.

In the event that visibility minimums tied to these runway ends are not improved or implemented as planned, it is still recommended that the ALP ultimately call for ½-mile approach minimums on all proposed runway ends. In doing so, the Airport is taking proactive steps to protect the RPZs and approach surfaces beyond each end of the runway.

## LAND ACQUISITION FOR AIRSIDE DEVELOPMENT AND APPROACH PROTECTION

The Master Plan Concept calls for the Airport to acquire over 500 acres of property through the planning period of this study in order to meet the demands of airside and landside development potential. This includes land for the construction of proposed parallel Runway 18L-36R and its associated safety areas, as well as the protection of the RPZs associated with each runway end.

The FAA recommends that the airport sponsor own in fee simple the RPZ property. When fee simple ownership is not feasible, positive land use measures should be implemented to protect an airport from encroachment by incompatible land uses or obstructions.

As previously discussed, the RPZ associated with the 1,500-foot extension on existing Runway 18-36 would extend beyond Airport property and include approximately 48 acres. As previously discussed, if an extension is pursued on the south end of the runway, the Airport would need to further coordinate with the FAA regarding the future disposition of the relocated RPZ, in relationship to existing/planned public roadways and residential land uses south of the Airport.

In addition, the Master Plan Concept calls out approximately one acre of land on the north side of the existing RPZ associated with Runway 18 that is currently not under ownership of the Airport. This land is within a designated floodplain. Since it cannot be developed, it is unlikely that incompatible development would occur within the RPZ in the future; however, it is prudent for the Airport to consider



purchasing at least an aviation easement for this area so that this land remains compatible with Airport operations and so that hazards, such as natural growth, do not impact the safety of operations to the precision approach that currently exists on Runway 18. Similar to the existing and proposed roadways on the south side of the Airport, the future location of Enloe Road will need to be coordinated with the FAA once a preferred alignment is determined.

For proposed Runway 18L-36R, approximately 58 acres of land beyond the existing Airport property line should be acquired in order to protect the RPZs associated with ½-mile visibility approach minimums. Another important justification for acquiring land beyond the north, south, and east sides of Runway 18L-36R involves the Airport being able to gain positive control of the safety areas associated with the runway system. Much of the land within the proposed RSA and ROFA, as depicted on **Exhibit 5A**, are outside the current Airport property line. The proposed land acquisition, as outlined on the Master Plan Concept, would allow the Airport to have full ownership of these safety areas, which the FAA and TxDOT strongly recommend.

Consideration should also be given to maintaining a clear 40:1 instrument departure surface beyond each end of the parallel runway system (when applicable). In the event that there are penetrations to the departure surface that cannot be mitigated, the takeoff distance available on either runway could be limited in order to mitigate penetrations to this surface.

In any event, Airport officials and the City of McKinney should continue to monitor activity within the existing and proposed RPZs serving all runway ends at the Airport and maintain them free of incompatible land uses to the extent practicable. Continued coordination with the FAA and TxDOT will be important when implementing projects that could require changes to the existing and proposed RPZs at the Airport.

## AIRFIELD LIGHTING UPGRADES

As previously detailed, future planning will consider replacing the existing incandescent airfield lighting and signage system with LED technology. This will help to lower energy consumption and provide a more efficient airfield electrical system. In addition, MITL should be considered on all existing and proposed taxiways serving the airfield system.

## LANDSIDE DEVELOPMENT CONCEPT

Landside components include terminal buildings, hangars, aircraft parking aprons, and aviation support services, as well as the utilization of remaining airport property to provide revenue support and to benefit the economic well-being of the regional area. The primary goal of landside facility planning is to provide adequate terminal facilities and aircraft storage space to meet forecast needs, while also maximizing operational efficiencies and land uses. Also important is identifying the overall land use



classification of airport property in order to preserve the aviation purpose of the facility well into the future. **Exhibit 5A** presents the view of the planned landside development for TKI.

There are numerous facility layout concepts that could be considered. Detailed layouts of potential landside facilities were presented in Chapter Four that included terminal building layouts, hangar development, and the placement of aviation support services. The Master Plan Concept provides the layout of proposed landside facilities, which attempts to maximize potential aviation development space on the airfield.

The major landside issues addressed in the Master Plan Concept include the following:

- Acquire land and extend utility infrastructure on the east and west sides of the Airport to accommodate future development potential.
- Expand the general aviation terminal area on the west side of the Airport and plan for potential redevelopment of the existing terminal area.
- Designate areas that can accommodate aviation development/redevelopment potential on the west side of the Airport to include aircraft storage hangars.
- Designate land on the east side of the Airport for an array of aviation activities associated with general aviation and potential commercial service.
- Expand parking apron space/circulation for various aircraft activities.
- Construct/enhance Airport support services to include dedicated airport maintenance facilities, U.S. Customs and Border Protection (CBP), and fuel farm expansion.

## LAND ACQUISITION FOR LANDSIDE DEVELOPMENT

As previously outlined in Chapter Two, TKI is well-positioned to experience growth in aviation demand given its location in proximity to the Dallas/Fort Worth Metroplex. The aviation demand forecasts project the Airport to realize increases in based aircraft and annual aircraft operations, and continue to support the full array of general aviation activities. As detailed, the Master Plan also recommends that future planning consider the potential for commercial service activities. In order to allow the Airport to realize these future demands, the City of McKinney should acquire land to increase the footprint of TKI and provide space for landside development.

**Exhibit 5B** depicts landside development potential on existing Airport property. As can be seen, there are limited areas for future development on the Airport's west side. They consist of three areas: an area immediately north of Industrial Boulevard, an area to the south adjacent to the Airport's fuel farm, and an area on the southwest side of the Airport adjacent to FM Road 546. All total, approximately 45 acres of land remain within these locations to accommodate future landside development. Given their layouts and proximity to existing aviation activity levels, these areas fall short of being able to accommodate the forecasts of aviation activity prepared in Chapter Two.

**LEGEND**

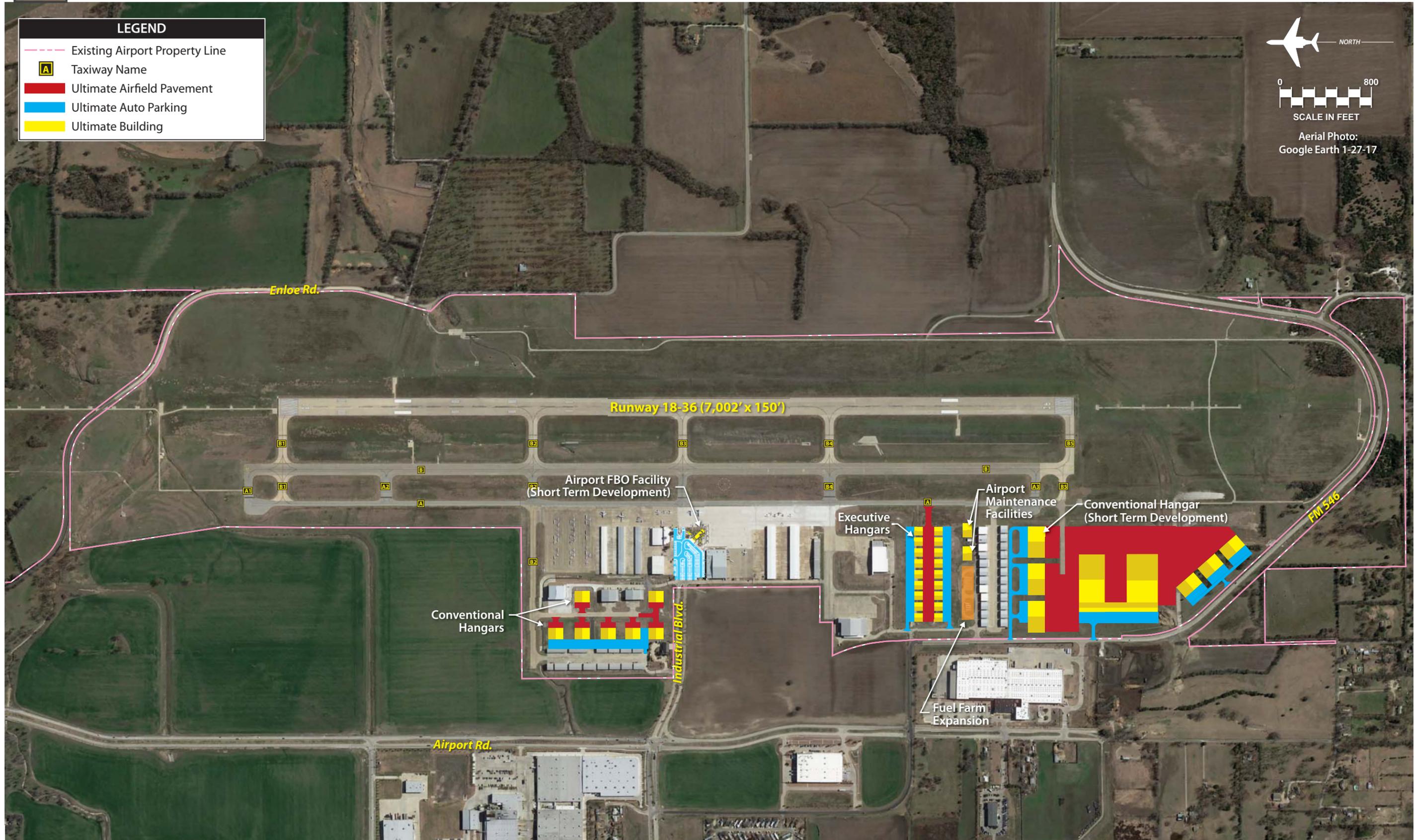
- Existing Airport Property Line
- A Taxiway Name
- Ultimate Airfield Pavement
- Ultimate Auto Parking
- Ultimate Building

NORTH

0 800

SCALE IN FEET

Aerial Photo:  
Google Earth 1-27-17



This page intentionally left blank



As a result, **Exhibit 5A** identifies four separate areas adjacent to the Airport for acquisition to accommodate potential landside development. Adjacent to the west side of TKI, approximately 100 acres of land, consisting of three separate parcels, are planned for acquisition. On the east side of the Airport, approximately 326 acres of land are highlighted to aid in providing opportunities to accommodate future landside development. As detailed earlier in this chapter, some of the proposed land acquisition on the east side would help satisfy the parallel runway and associated safety areas; however, over half of this land is dedicated to accommodating landside development opportunities as demand would dictate.

On the west side of the Airport, the proposed 48-acre parcel south of Industrial Boulevard and 14-acre parcel north of Industrial Boulevard could be provided access by extending roadways south of Industrial Boulevard or east of Airport Road. The 38-acre parcel farther north would most likely need to be provided access by extending a roadway east of Airport Road. This would require a right-of-way easement over private property. A network of proposed roadways currently being studied by the City of McKinney (as previously outlined) could help to serve the east side of the Airport.

### GENERAL AVIATION TERMINAL SERVICES

As outlined in Chapter Four, the City of McKinney is in the process of designing a new fixed base operator (FBO) facility at the Airport. As depicted on **Exhibit 5A**, this approximate 17,000 square-foot facility is to be constructed approximately 300 feet south of the existing terminal building, just south of the ATCT. It is anticipated that this facility will accommodate an array of FBO functions and house Airport administration.

While this location can help to serve general aviation demand for the foreseeable future, its location could limit its long term effectiveness due to limited space for aircraft parking and hangar storage. The alternatives analysis in the previous chapter outlined a location for a long term general aviation terminal building that could enhance demands associated with FBO, Airport administration, and other general aviation activities. As a result, the Master Plan Concept considers this ultimate terminal/FBO building approximately 400 feet south of the specialized aviation service operator (SASO) hangar currently associated with Monarch Air. In order to allow ideal aircraft parking apron access and circulation to this area, the Master Plan Concept considers the redevelopment of the apron area immediately east as detailed in the next section.

### WEST SIDE AVIATION DEVELOPMENT/REDEVELOPMENT

The landside development plan on **Exhibit 5A** also proposes the location of certain hangar types by primarily following the philosophy of separation of activity levels. The plan depicts hangar development/redevelopment items on the west side of the Airport that include the following:



- Removal of the 300-series and 400-series T-hangars and linear box hangars on the south aircraft parking apron in order to better accommodate a future general aviation terminal area as detailed in the previous section;
- Construct four T-hangar/linear box hangar complexes in the 48-acre parcel that is proposed for acquisition that could accommodate the displaced aircraft storage space currently offered in the 300-series and 400-series hangars to be removed;
- Continued development of the 48-acre parcel to include 11 conventional hangars and the ultimate general aviation terminal building/FBO complex;
- Construct 18 executive hangars to the south adjacent to the existing fuel farm;
- Construct eight large conventional hangars on the southwest side of the Airport that could accommodate large-scale aviation activities, such as maintenance, repair, and overhaul (MRO) operations;
- Construct seven conventional hangars immediately north of the existing terminal area;
- With the proposed 14-acre parcel to be acquired north of Industrial Boulevard, construct a series of executive hangars (27 total);
- Construct an assortment of conventional hangars (three), executive hangars (14), and T-hangars/linear box hangars (seven) on the 38-acre parcel planned for acquisition on the northwest side of the Airport;
- Redevelopment of approximately seven acres that is currently comprised of the existing terminal building/FBO, two SASO conventional hangars, and three 200-series T-hangars. Due to the ongoing and proposed expansion of terminal facilities to the south, this area could be redeveloped to include hangar facilities and aircraft parking apron space to accommodate future demand. It is recommended that a separate study be conducted for this area in the future as existing and proposed general aviation terminal facilities shift southward as planned.

**Table 5B** presents the total new hangar space proposed on the west side of the Airport in the landside development plan. As can be seen from the table, the layout provides nearly 1.47 million square feet of additional hangar space. This exceeds the amount of hangar space needed through the long term planning period based upon the aviation demand forecasts. The hangar layout presented can represent a vision for the Airport that extends beyond the scope of this study. The reason for this is to provide decision-makers with dedicated areas on the Airport that should be reserved for certain hangar types. Furthermore, approximately seven acres of land are highlighted for potential redevelopment on the west side of the airfield that could continue to accommodate aircraft storage and other specialty aviation support services.

**TABLE 5B**  
**Aircraft Hangar Storage Space Planned**  
**McKinney National Airport**

Hangar Type	Proposed in Master Plan Concept
Conventional Hangar Area	784,200 s.f.
Executive Hangar Area	314,000 s.f.
T-Hangar/Linear Box Hangar Area	372,000 s.f.
<b>Total Hangar Storage Area</b>	<b>1,470,200 s.f.</b>



It should be noted that the Master Plan Concept includes the depiction of a 35-foot building restriction line (BRL) on the east and west sides of the airfield. Chapter Four provided a detailed description of the BRL, which is a product of Title 14 Code of Federal Regulations (CFR) Part 77 transitional surface requirements. There is no current or planned development within the 35-foot BRL associated with proposed parallel runway system. Future consideration will need to be given when constructing hangars and other facilities at the Airport; however, the areas considered for development and redevelopment should be able to accommodate an array of hangar types without penetrating the BRL.

### EAST SIDE DEVELOPMENT POTENTIAL

Although there is space for aviation-related development on the west side of the Airport, this study recommends that Airport staff and the City of McKinney focus future efforts on the east side of the Airport for aviation development potential. In the event that commercial service activities were to be realized at TKI in the future, a preferred approach to landside development would be to segregate general aviation activity from these commercial service functions. The Master Plan Concept allows for this segregation by dedicating property on the east side of the Airport to accommodate potential commercial service activities, while still allowing space for other types of aviation development.

As detailed on **Exhibit 5A**, the center of the east side development area is dedicated to commercial service activities in the form of a terminal building, aircraft parking apron space, and vehicle parking. Additional areas (22 acres) immediately north and south are also set aside for potential growth in commercial service activities as demand would dictate. Farther removed from the midfield area, approximately 90 acres of land are proposed for future aviation reserve that could accommodate an array of aviation activities. As detailed earlier, the City of McKinney would need to acquire over 300 acres of land in order to realize this landside development potential on the east side of the Airport, while also considering the proposed parallel runway.

### AIRCRAFT PARKING APRON EXPANSION/CIRCULATION

Analysis in Chapter Three indicated that additional aircraft parking apron space is needed to accommodate aviation activities through the planning period of this study. **Exhibit 5A** proposes additional apron space in various locations on the airfield.

As previously discussed, the development plan considers removing the 300-series and 400-series T-hangars and linear box hangars in order to provide adequate aircraft access and circulation for the ultimate general aviation terminal area. In doing so, additional aircraft parking apron space would be provided immediately adjacent to this proposed high-activity area on the west side of the airfield.

Aircraft parking apron space is planned in areas adjacent to the proposed hangar development, especially the larger conventional hangars that can accommodate an array of aviation activities associated with aircraft maintenance, flight departments, MROs, or aircraft charter services. On the east side of



the Airport, a significant amount of aircraft parking apron area is depicted on the development plan. This area could help serve potential commercial service aircraft operations in association with a dedicated passenger terminal building. Additional parking apron space could be considered in the future aviation reserve areas on the east side.

## AIRPORT SUPPORT FACILITIES

The development plan calls for the construction of two dedicated maintenance facilities immediately east of the existing fuel farm on the west side of the Airport. As previously discussed, these facilities could accommodate the storage of equipment and supplies that are currently stored in the 400-series linear box hangar complex.

The Master Plan Concept also considers the expansion potential of the existing fuel farm. The fuel farm has the ability to expand and accommodate an additional six storage tanks. An area on the east side of the Airport is also set aside for fuel farm capabilities in the event that aviation-related landside development occurs. It is preferred that fuel storage ultimately be provided on both sides of TKI so fuel trucks would not have to traverse the airfield system in order to supply fuel.

Finally, the alternatives analysis provided a potential location for CBP service in the future. As discussed, this service would allow visitors from all over the world to fly in and out of TKI, provided they have the proper visas. The development plan considers a new site location associated with the ultimate general aviation terminal area adjacent to the south parking apron.

## ENVIRONMENTAL OVERVIEW

Analysis of the potential environmental impacts of recommended airport development projects, as discussed in this chapter and depicted on **Exhibit 5A**, is a key component of the Airport Master Plan process. The primary purpose of this Environmental Overview is to identify significance thresholds for the various resource categories contained in the FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, Exhibit 4-1 and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementation Instructions for Airport Actions*, Table 7.1. The Environmental Overview then evaluates the Master Plan Concept to determine whether proposed actions could individually or collectively significantly affect the quality of the environment.

Construction of any improvements depicted on the recommended development concept plan would require compliance with NEPA to receive federal financial assistance or to obtain a federal approval (i.e., a federal action). For projects not “categorically excluded” under FAA Order 1050.1F, compliance with NEPA is generally satisfied through the preparation of an Environmental Assessment (EA). An EA is prepared when the initial review of the proposed action indicates that it is not categorically excluded, involves at least one extraordinary circumstance, or the action is not one known normally to require an Environmental Impact Statement (EIS). If none of the potential impacts are likely to be significant, then



the responsible FAA official prepares a Finding of No Significant Impact (FONSI), which briefly presents, in writing, the reasons why an action, not otherwise categorically excluded, would not have a significant impact on the human environment and the approving official may approve it. Issuance of a FONSI signifies that FAA would not prepare an EIS and has completed the NEPA process for the proposed action.

In instances where significant environmental impacts are expected, an EIS may be required. An EIS is a clear, concise, and appropriately detailed document that provides agency decision-makers and the public with a full and fair discussion of significant environmental impacts of the proposed action and reasonable alternatives, and implements the requirement in NEPA §102(2)(C) for a detailed written statement.

### POTENTIAL ENVIRONMENTAL CONCERNS

**Table 5C** summarizes potential environmental concerns associated with implementation of the recommended Master Plan development concept. Analysis under NEPA includes direct, indirect, and cumulative impacts. Direct impacts are those caused by the action and occur at the same time and place (see 40 CFR § 1508.8(a)). Examples of direct impacts include:

- Construction of a facility or runway in a wetland which results in the loss of a portion of the wetland; or
- Noise generated by the proposed action or alternative(s) which adversely affects noise-sensitive land uses.

Indirect impacts are those impacts caused by the action but are later in time or farther removed in distance, but are still reasonably foreseeable (see 40 CFR § 1508.8(b)). Indirect impacts may include growth-inducing impacts and other effects related to induced changes in the pattern of land use, population density or growth rate, and related impacts on air and water and other natural systems, including ecosystems (see 40 CFR § 1508.8(b)). Cumulative impacts are those that take into consideration the environmental impact of past, present, and future actions.

**TABLE 5C**  
**Summary of Potential Environmental Concerns**  
**McKinney National Airport**

Environmental Impact Category	Significance Threshold/ Factors to Consider	Potential Concern
Air Quality	<b>Threshold: The action would cause pollutant concentrations to exceed one or more of the National Ambient Air Quality Standards (NAAQS), as established by the United States (U.S.) Environmental Protection Agency (EPA) under the <i>Clean Air Act</i>, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.</b>	<b>Direct.</b> As seen on Exhibit 2H in Chapter 2, operations are anticipated to increase over the 20-year (through 2036) planning horizon of this Airport Master Plan. Additionally, there are capacity increases proposed in the Master Plan Concept that could have impacts on local air quality, including the 1,500-foot runway extension on Runway 18-36 (ultimate Runway 18R-36L), the proposed future parallel runway, a future commercial passenger terminal complex, and additional hangars.



		<p>Collin County is currently in moderate nonattainment for 8-hour ozone (2008 standard).<sup>1, 2</sup> The County has until July 20, 2018, to reach conformity of the federal air quality standards for 8-hour ozone (2008 standard). Collin County will meet the EPA’s 8-hour standard when the three-year average of the annual fourth highest daily maximum 8-hour ozone concentration measure at each monitoring site is less than 71 parts per billion (ppb), as seen on <b>Exhibit 5C</b>.<sup>3</sup></p> <p>There are airport actions that the FAA considers “presumed to conform” based on EPA regulations that have defined broad categories of exempt actions under 40 CFR 93.153(c)(2). These actions would result in no emissions increase or increases in emissions that are clearly <i>de minimis</i><sup>4</sup>. Presumed to conform actions relevant to the Master Plan Concept include:</p> <ul style="list-style-type: none"> <li>• Routine maintenance and repair activities;</li> <li>• Transfers of ownership, interests, and titles in land, facilities, and real and personal properties, regardless of the form or method of the transfer; and,</li> <li>• Alterations and additions of structures as specifically required by new or existing applicable environment legislation or environmental regulations houses for aircraft engines.</li> </ul> <p>Some proposed projects would be considered presumed to conform, including the acquisition of property for non-development purposes (i.e., RPZ protection) and general airfield pavement maintenance projects. However, most capacity-increasing projects, as discussed above, would not be considered presumed to conform. These</p>
--	--	--

<sup>1</sup> In the Environmental Inventory, Chapter One, Collin County is cited as being in nonattainment for lead (2008) standard, as well. However, as of September 27, 2017, the portion of Collin County that was in nonattainment has been re-designated to maintenance status for lead (2008 standard). In addition, the nonattainment for lead (2008 standard) was only effective around Exide Technologies, a battery recycling plant (TCEQ, <https://www.tceq.texas.gov/airquality/sip/dfw/dfw-status>).

<sup>2</sup> EPA Green Book, Texas Nonattainment/Maintenance Status for Each County by Year for All Criteria Pollutants (data is current as of September 30, 2017; accessed October 13, 2017).

<sup>3</sup> There are 20 air quality monitoring sites in the Dallas-Fort Worth area; however, the readings from the Denton Airport monitor location may ultimately be used to determine the area’s compliance with the ozone standard. This air quality monitor is approximately 35 miles west of the McKinney National Airport, in Denton, Texas (EPA Site Number: 481210034). As of November 16, 2017, the fourth highest three-year average was 73 ppb at this site (TCEQ, <https://www.tceq.texas.gov/airquality/sip/dfw/dfw-status> (accessed November 16, 2017)).<sup>3</sup> Although this site may be the ultimate monitor indicator for the Dallas-Fort Worth area, the Frisco monitor is the closest site to the airport, approximately 12 miles southwest. The fourth highest three-year average at this site, as of November 16, 2017, was 72 ppb. Given the distance this site is from the airport, it is most representative of the air quality at McKinney National Airport.

<sup>4</sup> *De minimis* levels refer to the minimum threshold for which a conformity determination must be performed, for various criteria pollutants in various areas (EPA).



POLLUTANT		PRIMARY/ SECONDARY	AVERAGING TIME	LEVEL	FORM
Carbon Monoxide (CO)		primary	8 hours	9 ppm	Not to be exceeded more than once per year
			1 hour	35 ppm	
Lead (Pb)		primary and secondary	Rolling 3 month average	0.15 µg/m <sup>3</sup> <sup>(1)</sup>	Not to be exceeded
Nitrogen Dioxide (NO <sub>2</sub> )		primary	1 hour	100 ppb	98th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		primary and secondary	1 year	53 ppb <sup>(2)</sup>	Annual Mean
Ozone (O <sub>3</sub> )		primary and secondary	8 hours	0.070 ppm <sup>(3)</sup>	Annual fourth-highest daily maximum 8-hour concentration, averaged over 3 years
Particle Pollution (PM)	PM <sub>2.5</sub>	primary	1 year	12.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		secondary	1 year	15.0 µg/m <sup>3</sup>	annual mean, averaged over 3 years
		primary and secondary	24 hours	35 µg/m <sup>3</sup>	98th percentile, averaged over 3 years
	PM <sub>10</sub>	primary and secondary	24 hours	150 µg/m <sup>3</sup>	Not to be exceeded more than once per year on average over 3 years
Sulfur Dioxide (SO <sub>2</sub> )		primary	1 hour	75 ppb <sup>(4)</sup>	99th percentile of 1-hour daily maximum concentrations, averaged over 3 years
		secondary	3 hours	0.5 ppm	Not to be exceeded more than once per year

**UNITS OF MEASURE:** ppm - parts per million by volume    ppb - parts per billion by volume    µg/m<sup>3</sup> - micrograms per cubic meter of air

- 1) In areas designated nonattainment for the Pb standards prior to the promulgation of the current (2008) standards, and for which implementation plans to attain or maintain the current (2008) standards have not been submitted and approved, the previous standards (1.5 µg/m<sup>3</sup> as a calendar quarter average) also remain in effect.
- 2) The level of the annual NO<sub>2</sub> standard is 0.053 ppm. It is shown here in terms of ppb for the purposes of clearer comparison to the 1-hour standard level.
- 3) Final rule signed October 1, 2015, and effective December 28, 2015. The previous (2008) O<sub>3</sub> standards additionally remain in effect in some areas. Revocation of the previous (2008) O<sub>3</sub> standards and transitioning to the current (2015) standards will be addressed in the implementation rule for the current standards.
- 4) The previous SO<sub>2</sub> standards (0.14 ppm 24-hour and 0.03 ppm annual) will additionally remain in effect in certain areas: (1) any area for which it is not yet 1 year since the effective date of designation under the current (2010) standards, and (2) any area for which an implementation plan providing for attainment of the current (2010) standard has not been submitted and approved and which is designated nonattainment under the previous SO<sub>2</sub> standards or is not meeting the requirements of a SIP call under the previous SO<sub>2</sub> standards (40 CFR 50.4(3)). A SIP call is an Environmental Protection Agency (EPA) action requiring a state to resubmit all or part of its State Implementation Plan to demonstrate attainment of the required National Ambient Air Quality Standards (NAAQS).





		<p>projects, coupled with Collin County being in an EPA-designated nonattainment area, may require a General Conformity Rule determination (see 40 CFR part 93) to comply with <i>Clean Air Act</i> regulations. The General Conformity Rule establishes the procedures and criteria for determining whether certain federal actions conform to state or federal (EPA) air quality implementation plans (SIPs or FIPs), and are considered when a federal action is proposed in an EPA-designated nonattainment or maintenance area.</p> <p>The first phase of the general conformity process, applicability, evaluates whether the conformity regulations would apply to a proposed federal action. Before the FAA can fund, support, or approve an activity in any way, it must address the conformity of the action with the applicable SIP, FIP, or Tribal Implementation Plan using the criteria and procedures prescribed in the General Conformity Rule.<sup>5</sup> In the case of McKinney National Airport, the SIP would be used as the State of Texas has adopted a SIP to clean the air and meet federal air quality standards.</p> <p>The applicability analysis involves preparation of an emissions inventory and comparing those results to the <i>de minimis</i> thresholds. If emissions exceed the thresholds, then approaches to demonstrating general conformity would be required.<sup>6</sup> If the results are below the thresholds, then no additional analysis is required.</p> <p>To satisfy NEPA (in addition to <i>Clean Air Act</i> requirements), an emissions inventory, including construction emissions, may also be necessary for any proposed action that would result in a foreseeable increase in emissions due to its implementation.<sup>7, 8</sup> Note that the same analysis can be used to satisfy both the <i>Clean Air Act</i> and NEPA guidelines.</p>
--	--	---

<sup>5</sup> Details on conformity applicability can be found in Section 8.1.1 General Conformity – Applicability Analysis of the FAA’s Aviation Emissions and Air Quality Handbook Version 3.

<sup>6</sup> See FAA Desk Reference 1050.1F, Air Quality, Section 1.1.1.1.1 (July 2015).

<sup>7</sup> FAA *Aviation Emissions and Air Quality Handbook* (January 2015).

<sup>8</sup> FAA *Aviation Emissions and Air Quality Handbook*, Figure 4-2 (Determine Need for the Assessment) and Figure 4-3 (Air Quality Assessment Decision Flow Diagram) (January 2015).



<p><b>Biological Resources (including fish, wildlife, and plants)</b></p>	<p><b>Threshold: The U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS) determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat.</b></p> <p>FAA has not established a significance threshold for non-listed species. However, factors to consider are if an action would have the potential for:</p> <ul style="list-style-type: none"> <li>• Long term or permanent loss of unlisted plant or wildlife species;</li> <li>• Adverse impacts to special status species or their habitats;</li> <li>• Substantial loss, reduction, degradation, disturbance, or fragmentation of native species' habitats or their populations; or</li> <li>• Adverse impacts on a species' reproductive rates, non-natural mortality, or ability to sustain the minimum population levels required for population maintenance.</li> </ul>	<p><i>For federally-listed species: Direct.</i> There are four species protected by the <i>Endangered Species Act</i> (ESA), with the potential to be affected by airport projects, including:</p> <ul style="list-style-type: none"> <li>• Least tern (bird, endangered);</li> <li>• Piping plover (bird, threatened);</li> <li>• Red knot (bird, threatened); and</li> <li>• Whopping crane (bird, endangered).<sup>9</sup></li> </ul> <p>However, during an EA completed in June 2007, a field report showed that the project area, which included the Airport property and immediately adjacent lands, did not contain sensitive biotic communities, federally threatened, endangered plant or animal species, or habitat for federally protected species.</p> <p>The EA classified the Airport's habitat as grassland with forested areas primarily confined to rivers, streams, and drainages. Dominant plant species included little blue stem, indiagrass, Bermuda grass, and bahagrass. The woody vegetation included post oak, blackjack oak, water oak, winged elm, hackberry and yaupon. The Texas Ecosystem Analytical Mapper (TEAM) shows that Blackland Prairie and row crops also surround the airport.</p> <p>Given the amount of time since this EA, it is possible that these federally protected species are present. Presence of any of the above-mentioned species, with potential to occur on or near Airport property, should be evaluated prior to any development to ensure no harm to these protected species occur. Section 7 consultation with the USFWS under the ESA may be required.</p> <p><i>For designated critical habitat: None.</i> There is no designated critical habitat located on existing or ultimate Airport property.</p> <p><i>For non-listed species: Direct.</i> Non-listed species of concern include those protected by the <i>Migratory Bird Treaty Act</i> and the <i>Golden and Bald Eagle Protection Act</i>. Considering the current and ultimate property boundaries, there are presently eight non-listed species of concern that could be impacted by activities at the airport, including the: American golden-plover, buff-breasted sandpiper, Harris's sparrow, lesser yellowlegs,</p>
---	---	--

<sup>9</sup> U.S. Fish and Wildlife Service Information for Planning and Conservation report (accessed November 20, 2017).



		<p>marbled godwit, red-headed woodpecker, semi-palmated sandpiper, and willet.<sup>10</sup></p> <p>There are pockets of trees around the existing, and ultimate Airport property that could provide roosting and/or foraging habitat for migratory birds protected under the <i>Migratory Bird Treaty Act</i>. Conducting bird surveys prior to development may be required to identify mitigation for potential harm to nests and/or ground-dwelling birds.</p>
<b>Climate</b>	<p>FAA has not established a significance threshold for Climate; refer to FAA Order 1050.1F’s Desk Reference and/or the most recent FAA <i>Aviation Emissions and Air Quality Handbook</i> for the most up-to-date methodology for examining impacts associated with climate change.</p>	<p><b>Direct.</b> An increase in greenhouse gas (GHG) emissions would occur over the 20-year planning horizon of the Airport Master Plan. As discussed in the <b>Air Quality</b> section, there are capacity-increasing projects proposed, including the 1,500-foot runway extension and future parallel runway, that would increase operations and associated emissions. Further, increased capacity at the airport from additional hangars and buildings would result in added airport users who would require vehicles to get to and from the airport.</p>
<b>Coastal Resources</b>	<p>FAA has not established a significance threshold for Coastal Resources.</p>	<p><b>None.</b> The airport is not located within a designated coastal zone.</p>
<b>Department of Transportation (DOT) Act: Section 4(f)</b>	<p><b>Threshold: The action involves more than a minimal physical use of a Section 4(f) resource or constitutes a “constructive use” based on an FAA determination that the aviation project would substantially impair the Section 4(f) resource. Resources that are protected by Section 4(f) are publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance; and publicly or privately-owned land from an historic site of national, state, or local significance. Substantial impairment occurs when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished.</b></p>	<p><b>None.</b> There are no wilderness areas, wildlife refuges, recreation areas, or properties included in the National Register of Historic Places (NRHP) that would be impacted by proposed development.</p>
<b>Farmlands</b>	<p><b>Threshold: The total combined score on Form AD-1006, <i>Farmland Conversion Impact Rating</i>,” ranges between 200 and 260.</b> Form AD-1006 is used by the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) to assess impacts under the <i>Farmland Protection Policy Act</i> (FPPA).</p>	<p><b>Direct.</b> Based on the USDA NRCS Web Soil Survey, 444 acres (60.6 percent) of Airport property is considered prime farmland.<sup>11</sup> The remaining 288 acres of Airport property is not considered prime farmland. Airport property contains no soils considered unique farmland or land of statewide or local importance (see Exhibit 1Q from Chapter 1).</p>

<sup>10</sup> Note that since the time of the Environmental Inventory (Chapter One), the number of non-listed species of concern with potential to occur on Airport property has decreased (see Table 1K).

<sup>11</sup> **Prime farmland** is land having the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimal use of fuel, fertilizer, pesticides, or products (FAA Desk Reference 1050.1F, July 2015).



		<p>The development concept (<b>Exhibit 5A</b>) proposes the acquisition of approximately 533 acres of land. As seen on <b>Exhibit 5D</b>, many areas of acquisition contain soils considered prime farmland, with one section considered farmland of statewide importance.<sup>12</sup> Development proposed within the existing property limits of the airport would likely not be subject to regulation under the FPPA as this is an active airport and is previously developed and urbanized. However, areas of acquisition that are presently undeveloped and considered prime farmland or farmland of statewide importance may be subject to regulation under the FPPA.</p> <p>Prior to project construction in areas of acquisition that are prime farmland and/or farmland of statewide importance, coordination with NRCS will be necessary and a completion of Form AD-1006, which is a land evaluation and site assessment system used by NRCS to determine a rating score and establish impacts to farmlands, may also be required.</p>
<p><b>Hazardous Materials, Solid Waste, and Pollution Prevention</b></p>	<p>FAA has not established a significance threshold for Hazardous Materials, Solid Waste, and Pollution Prevention. However, factors to be considered are if an action would have the potential to:</p> <ul style="list-style-type: none"> <li>• Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;</li> <li>• Involve a contaminated site;</li> <li>• Produce an appreciably different quantity or type of hazardous waste;</li> <li>• Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or</li> <li>• Adversely affect human health and the</li> </ul>	<p><b>None.</b> There are no documented Superfund<sup>13</sup> sites, brownfields,<sup>14, 15</sup> or hazardous waste<sup>16</sup> facilities on or near Airport property.</p> <p>The recommended development concept does not anticipate land uses that would produce an appreciably different quantity or type of hazardous waste. However, should this type of land use be proposed, further NEPA review and/or permitting would be required. The development concept does propose additional fuel storage tanks, either as an add-on to the existing fuel farm and/or on the east side of the airport to support future aviation development on that side of the airport. The construction of additional fuel facilities would require further environmental analysis.</p>

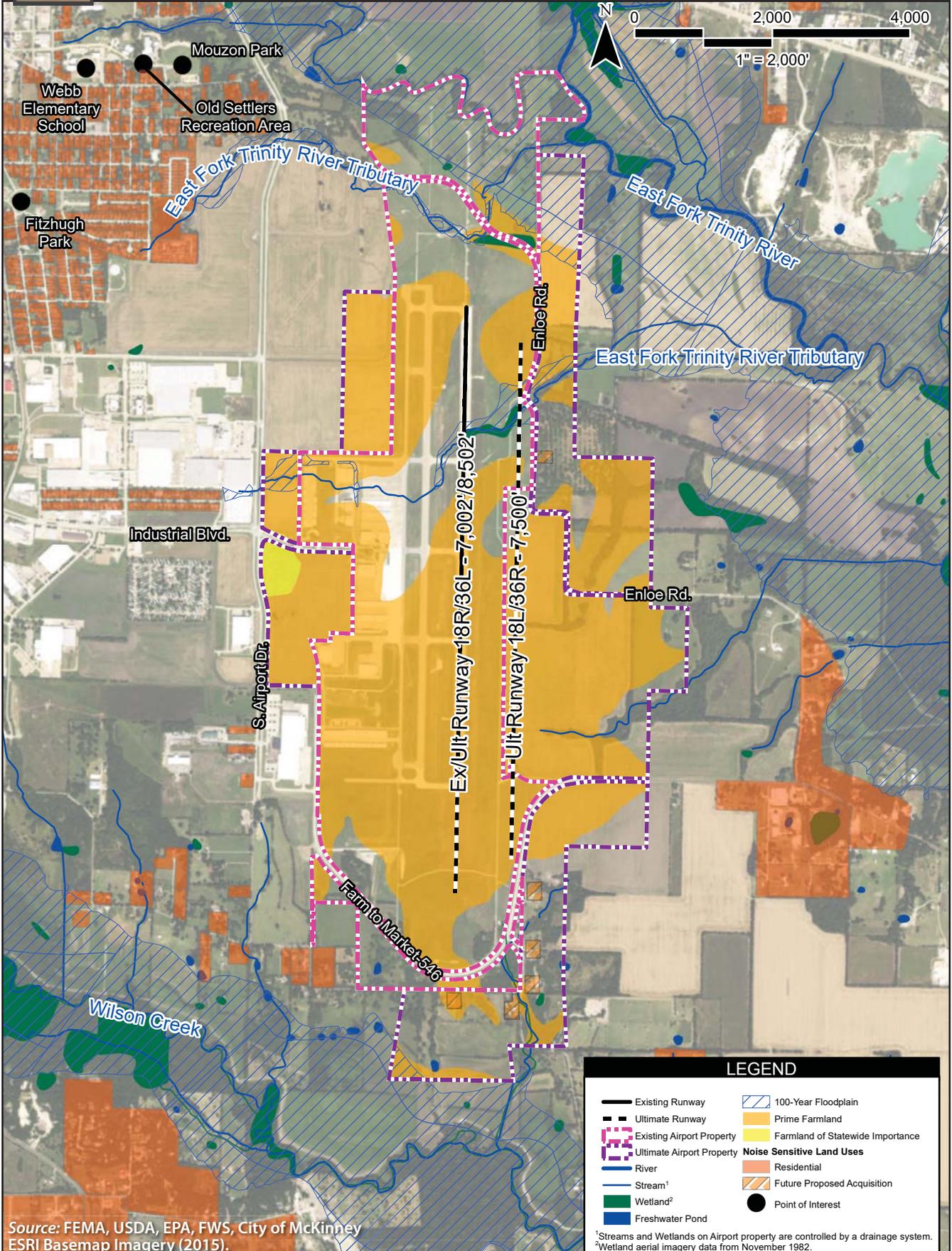
<sup>12</sup> **Farmland of statewide importance** is land that has been designated as “important” by either a state government (state Secretary of Agriculture or higher office), by county commissioners or by an equivalent elected body (FAA Desk Reference 1050.1F, July 2015).

<sup>13</sup> A **Superfund** site is any land in the U.S. that has been contaminated by hazardous waste and identified by the EPA as a candidate for cleanup as it poses a human health risk and/or the environment (U.S. Department of Health and Human Services TOXMAP FAQ).

<sup>14</sup> A **brownfield** is a property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutants, or contaminant (EPA Overview of Brownfields Program).

<sup>15</sup> Note that the EPA’s EJSCREEN and Mapping Tool locates a brownfield on Airport property, approximately 1,500 feet south of the Runway 18 end. However, this area was previously cleared and graded 1,000 feet south and 500 feet wide of the Runway 18 end for the runway safety area (RSA), and no brownfield was detected nor was airport management made aware of the existence of contamination. Further, the address associated with the brownfield does not place the site anywhere near Airport property. Therefore, it has been determined that the placement of a brownfield on Airport property is incorrect and should not be considered an environmental concern.

<sup>16</sup> **Hazardous waste** is a type of solid waste that has at least one of four characteristics: ignitability, corrosivity, reactivity, or toxicity (FAA, 40 CFR § 261.3).



Source: FEMA, USDA, EPA, FWS, City of McKinney ESRI Basemap Imagery (2015).

**LEGEND**

Existing Runway	100-Year Floodplain
Ultimate Runway	Prime Farmland
Existing Airport Property	Farmland of Statewide Importance
Ultimate Airport Property	<b>Noise Sensitive Land Uses</b>
River	Residential
Stream <sup>1</sup>	Future Proposed Acquisition
Wetland <sup>2</sup>	Point of Interest
Freshwater Pond	

<sup>1</sup>Streams and Wetlands on Airport property are controlled by a drainage system.  
<sup>2</sup>Wetland aerial imagery data from November 1982.



	<p>environment.</p>	<p>Construction and demolition waste would be generated because of development proposed in the Master Plan. Construction and demolition waste, along with all other types of non-hazardous solid waste, would be hauled to the McKinney Landfill (Permit No. 2294), approximately eight miles northeast of the Airport.<sup>17</sup></p> <p>The Airport has spill response procedures that meet Texas Administrative Code (TAC) 327.5(a) requirements and apply to all spills, leaks or discharges of oil, petroleum products, and other hazardous substances. Should a spill occur during construction, the McKinney Fire Department, Airport Administration, and McKinney Air Center must all be alerted.<sup>18</sup></p>
<p><b>Historical, Architectural, Archaeological, and Cultural Resources</b></p>	<p>FAA has not established a significance threshold for Historical, Architectural, Archaeological, and Cultural Resources. Factors to consider are if an action would result in a finding of “adverse effect” through the Section 106 process. However, an adverse effect finding does not automatically trigger preparation of an EIS (i.e., a significant impact).</p>	<p><b>Potential.</b> There are three properties listed on the NRHP within two miles of the Airport; however, proposed construction would not impact these historical resources, the closest of which is three-quarters of a mile to the northwest.</p> <p>There are areas of proposed development at the airport that are previously undisturbed; specifically, the areas in the future eastern area of Airport property, as well as in the northwest and southwest corners of Airport property. If these undisturbed areas of the airport should be subject to ground disturbance, a cultural resources survey may be necessary to determine the potential presence of historic artifacts.</p> <p>The City of McKinney has two historic districts approximately one-mile northwest of the airport: The Historic Preservation Overlay District and the Commercial Historic Overlay District, as established by the City’s Code of Ordinances (Subpart B, Chapter 146, Article III, Sections 146-96-97).<sup>19</sup> Given the distance from the airport to these historic districts, impacts from the proposed development concept are not anticipated.</p> <p>There are no tribal lands that would be impacted by construction as the closest such area is over 250 miles away from the airport.</p>

<sup>17</sup> TCEQ, Active Municipal Solid Waste Landfills in Texas, <https://www.tceq.texas.gov/assets/public/permitting/waste/msw/msw-landfills-active.pdf> (accessed October 13, 2017).

<sup>18</sup> McKinney National Airport Website, <http://www.flytki.com/109/Spill-Management> (accessed October 13, 2017).

<sup>19</sup> Additional information regarding Historic Preservation in the City of McKinney is accessible: <https://www.mckinneytexas.org/160/Historic-Preservation> (accessed November 21, 2017).

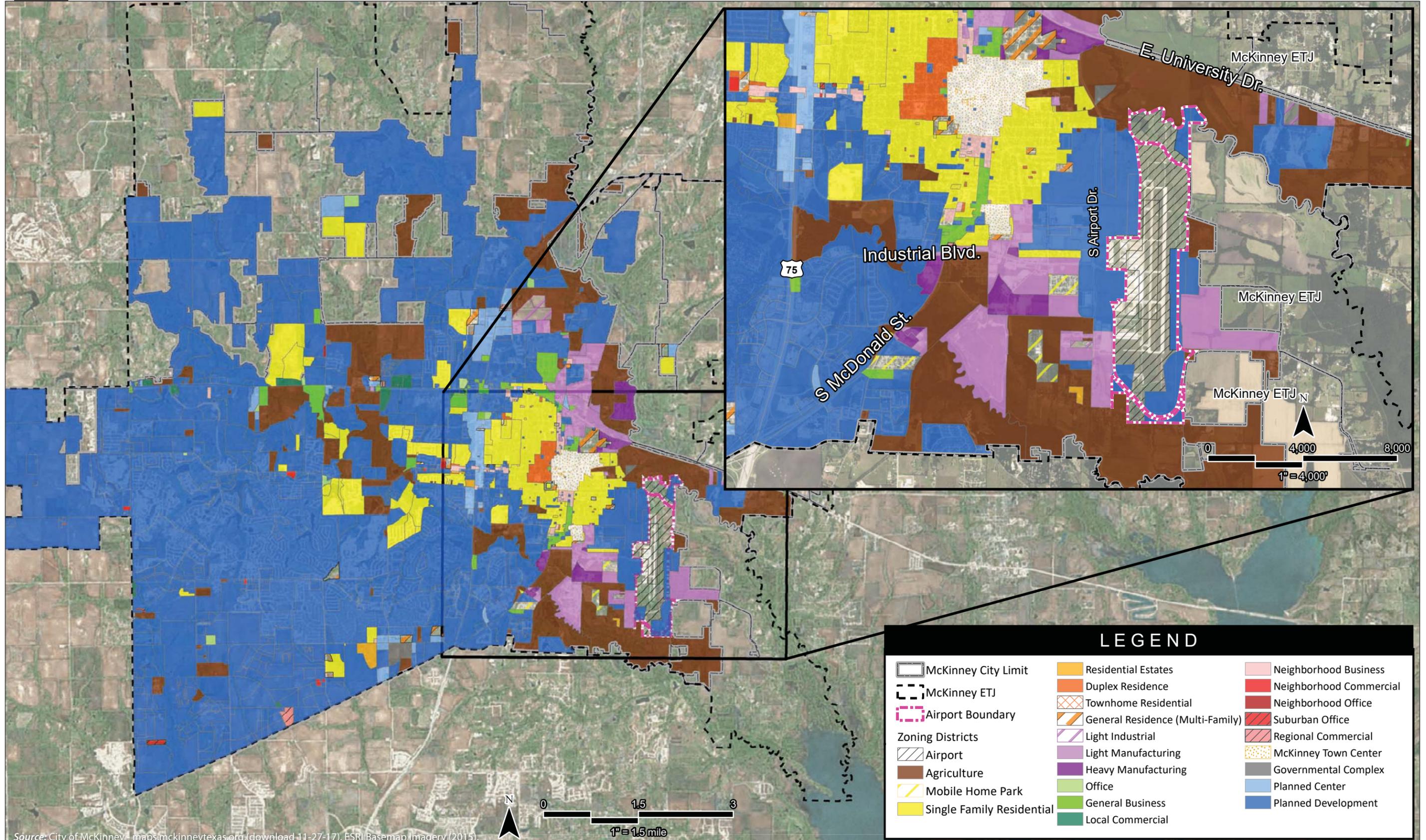


<p><b>Land Use</b></p>	<p>FAA has not established a significance threshold for Land Use. There are also no specific independent factors to consider. The determination that significant impacts exist is normally dependent on the significance of other impacts.</p>	<p><b>Direct.</b> The City of McKinney categorizes Airport property as an airport land use, surrounded primarily by open space, much of which is for agricultural purposes. Several industrial land uses are found west of the airport, with single- and multi-family residential developments scattered around, with the heaviest concentrations to the northwest (see Exhibit 1B in Chapter 1). The airport is zoned as an airport district (AP). The airport is primarily surrounded by planned development (PD) zones, with areas to the north, east, and south zoned for agricultural use (AG). Land to the southeast and southwest is zoned for light manufacturing (ML).<sup>20</sup> <b>Exhibit 5E</b> shows zoning within the City of McKinney. Additional land use information is provided in Chapter 1, as well as the Land Use Compatibility Analysis in this chapter.</p> <p>The City of McKinney is in the process of updating its comprehensive plan, which currently dates to 2004. A focus of the comprehensive plan update is looking at the City in smaller planning areas, referred to as Districts, that concentrate on each area’s unique qualities. The Business and Aviation District is one of the proposed areas of the draft <i>ONE McKinney 2040 Comprehensive Plan</i>. This District focuses primarily on the development of the areas to the east and west of the existing airport exclusively for aviation. Encroachment by incompatible uses in this District, such as suburban-style residential, is strongly discouraged and is not planned. Rather, the Business and Aviation District plans for manufacturing and warehousing businesses, professional campuses, and commercial developments, all of which are compatible uses near an airport.<sup>21</sup></p> <p>In addition to the comprehensive plan update, the city is undergoing an update to its <i>Master Thoroughfare Plan</i>.<sup>22</sup> The draft alignments are shown on <b>Exhibit 5A</b>; however, note that at the date of this document, these roadways have not been reviewed or adopted by the McKinney City Council. The future alignments, removal, and/or widening of the roadways surrounding the airport, including the FM Road 546, Airport Drive, Unnamed D</p>
------------------------	--	--

<sup>20</sup> City of McKinney Code of Ordinances, Subpart B, Chapter 146, Article I (accessed November 21, 2017).

<sup>21</sup> *ONE McKinney 2040 Comprehensive Plan Draft*, [http://maps.mckinneytexas.org/mckinney/rest/services/MapServices/PreferredScenario\\_Planning/MapServer/1/9/attachments/3](http://maps.mckinneytexas.org/mckinney/rest/services/MapServices/PreferredScenario_Planning/MapServer/1/9/attachments/3) (accessed November 21, 2017).

<sup>22</sup> *Master Thoroughfare Plan*, <https://www.mckinneytexas.org/1703/Master-Thoroughfare-Plan> (accessed November 21, 2017).



Source: City of McKinney - maps.mckinneytexas.org (download 11-27-17), ESRI Basemap Imagery (2015).

LEGEND					
	McKinney City Limit		Residential Estates		Neighborhood Business
	McKinney ETJ		Duplex Residence		Neighborhood Commercial
	Airport Boundary		Townhome Residential		Neighborhood Office
Zoning Districts					Suburban Office
	Airport		General Residence (Multi-Family)		Regional Commercial
	Agriculture		Light Industrial		McKinney Town Center
	Mobile Home Park		Light Manufacturing		Governmental Complex
	Single Family Residential		Heavy Manufacturing		Planned Center
			Office		Planned Development
			General Business		
			Local Commercial		

This page intentionally left blank



		<p>Roadway, Spur 399 Extension, and Enloe Road, should be considered as future airport projects are proposed.</p> <p>The proposed development concept shows development occurring on existing Airport property, as well as within areas proposed for acquisition. Specifically, there are approximately 533 acres proposed for acquisition, including:</p> <ul style="list-style-type: none"> <li>• One acre in the Runway 18 RPZ;</li> <li>• 26 acres in the future Runway 18L RPZ;</li> <li>• 326 acres to the east of existing Airport property;</li> <li>• 32 acres in the ultimate Runway 36R RPZ;</li> <li>• 48 acres in the ultimate Runway 36L RPZ;</li> <li>• A total of 100 acres on the west side of the airport in three sections: 38 acres north of the existing McKinney Hangar Owner Association (MHOA) hangars; 14 acres west of the MHOA hangars; and, 48 acres west of the current Monarch Air building.</li> </ul> <p>Of the 533 acres proposed for acquisition, 107 acres are planned for no development, but rather to protect underlying land uses from development to ensure the existing and future runways' RPZs are free and clear of obstructions. There are approximately six homes in the ultimate Runways 36R and 36L RPZ's that would require property acquisitions. In addition to the six homes in the RPZs, there is one residence in the 326-acre acquisition area east of Enloe Road that would require acquisition. Besides these select homes, most areas proposed for acquisition are undeveloped farmlands and open space. Potential impacts to landowners is discussed in the <b>Socioeconomic Impacts</b> section below.</p>
<p><b>Natural Resources and Energy Supply</b></p>	<p>FAA has not established a significance threshold for Natural Resources and Energy Supply. However, factors to consider are if an action would have the potential to cause demand to exceed available or future supplies of these resources.</p>	<p><b>Potential.</b> Planned development projects at the airport could increase demands on energy utilities, water supplies and treatment, and other natural resources during construction and potentially long term.</p> <p>The Master Plan Concept demonstrates future revenue-generating opportunities on Airport property that would increase the amount of water and energy used on-site. The Master Plan Concept proposes to extend utility infrastructure to the eastern and western areas of the airport to support future development, like aviation reserve areas, as well as the extension of the existing</p>

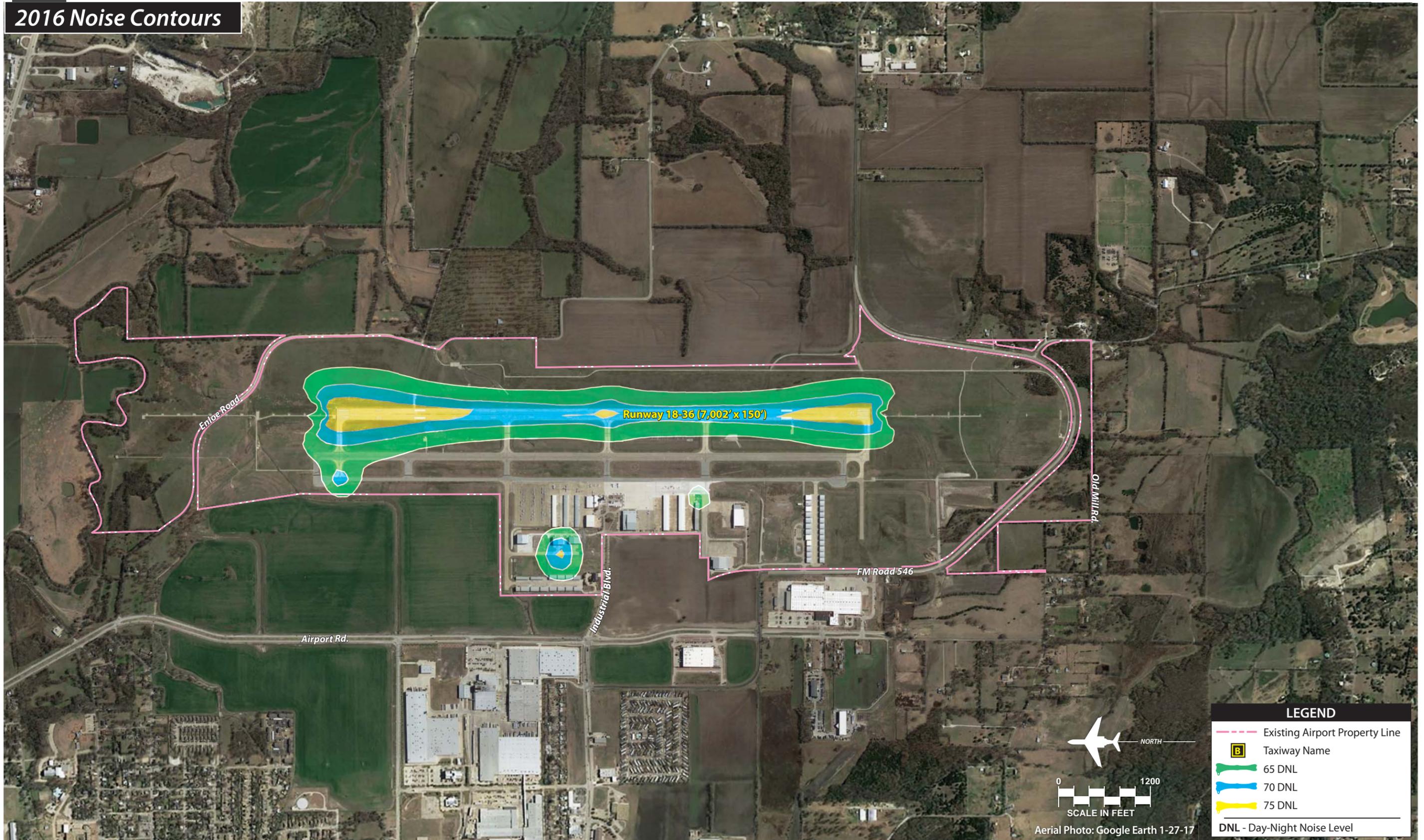


		<p>runway and the construction of an ultimate parallel runway, and additional hangar space.</p> <p>The City of McKinney’s primary water source is Lavon Lake. Additional raw water sources are supplied by Jim Chapman Lake, Lake Texoma, Lake Tawakoni, and the East Fork Raw Water Supply Project. The City of McKinney purchases this surface water from the North Texas Municipal Water District, which is delivered to the City’s ground storage tanks.<sup>23</sup></p> <p>However, as part of the <i>ONE McKinney 2040 Comprehensive Plan</i> update, the airport is placed in a Business and Aviation District, where the focus is on further developing commercial, industrial, and aviation uses, indicating that the City of McKinney is prepared to accommodate future growth. Should long-term impacts be a concern, coordination with the City of McKinney and service providers is recommended. Chapter One describes existing service providers for the airport.</p>
<p><b>Noise and Noise-Compatible Land Use</b></p>	<p><b>Threshold:</b> The action would increase noise by Day-Night Average Sound Level (DNL) 1.5 decibel (dB) or more for a noise-sensitive area that is exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase, when compared to the no action alternative for the same timeframe.</p> <p>Another factor to consider is that special consideration needs to be given to the evaluation of the significance of noise impacts on noise-sensitive areas within Section 4(f) properties where the land use compatibility guidelines in Title 14 Code of Federal Regulations (CFR) Part 150 are not relevant to the value, significance, and enjoyment of the area in question.</p>	<p><b>Potential.</b> The Airport’s existing (2016) and ultimate (2036) DNL noise exposure contours are shown on <b>Exhibit 5F</b> and <b>Exhibit 5G</b>, respectively. The contours include the 65, 70, and 75 DNL.<sup>24</sup> The FAA’s threshold for compatibility with noise-sensitive land uses is the 65 DNL contour.</p> <p>The primary noise-sensitive uses around the airport are low density residential to the east, southeast, and west, with the heaviest concentrations to the northwest. There are two recreation areas and an elementary school approximately one mile to the northwest, as well. Other than these uses, the airport is surrounded mostly by light manufacturing and industrial uses to the west, and open farmlands to the north and east.</p> <p>The existing condition at the airport shows the 65, 70, and 75 DNL noise contours staying within Airport property, thus causing no impacts to nearby sensitive noise receptors, including Section 4(f) protected properties.</p>

<sup>23</sup> City of McKinney Water Quality Report 2017 (<https://www.mckinneytexas.org/DocumentCenter/Home/View/127>) accessed November 22, 2017).

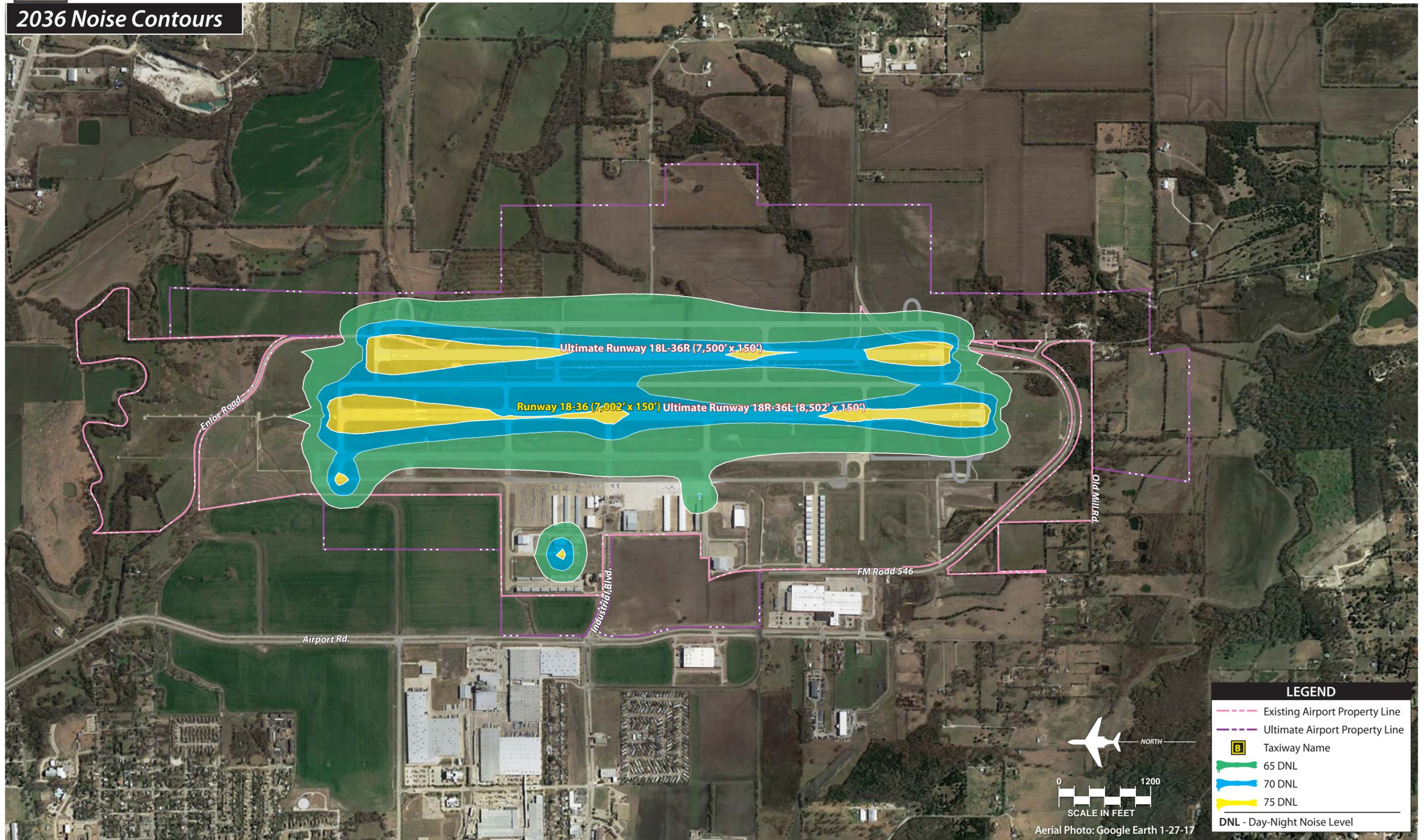
<sup>24</sup> **Day-Night Average Sound Level (DNL):** The 24-hour average sound level, in decibels, for the period from midnight to midnight, obtained after the addition of ten decibels to sound levels for the periods between midnight and 7 a.m., and between 10 p.m. and midnight, local time. The symbol for DNL is Ldn (See 14 CFR § 150.7).

2016 Noise Contours



This page intentionally left blank

2036 Noise Contours



This page intentionally left blank



		<p>If the development concept, as depicted on <b>Exhibit 5A</b>, is realized, there would be no noise-sensitive land uses impacted in the ultimate noise condition at the airport. As discussed in the <b>Land Use</b> section above, there is proposed property acquisition to the east of the airport that, if purchased, would locate the ultimate noise contours entirely on Airport property. Similar to the existing noise contours, there are no Section 4(f) properties implicated in the future noise condition.</p>
--	--	---

**Socioeconomic Impacts, Environmental Justice, and Children’s Environmental Health and Safety Risks**

<p>Socioeconomic Impacts</p>	<p>FAA has not established a significance threshold for socioeconomics. However, factors to consider are if an action would have the potential to:</p> <ul style="list-style-type: none"> <li>• Induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);</li> <li>• Disrupt or divide the physical arrangement of an established community;</li> <li>• Cause extensive relocation when sufficient replacement housing is unavailable;</li> <li>• Cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;</li> <li>• Disrupt local traffic patterns and substantially reduce the levels of service of roads serving the airport and its surrounding communities; or</li> <li>• Produce a substantial change in the community tax base.</li> </ul>	<p><b>Direct and Indirect.</b> Proposed development projects would occur both on existing Airport property, as well as in areas planned for acquisition. These proposed projects focus primarily on increasing the capacity of the airport by constructing additional hangars, a parallel runway and associated taxiways and taxilanes, a commercial passenger terminal complex, and several on- and off-airport vehicle access roads.</p> <p>The proposed projects would result in temporary disruption of local traffic patterns during the construction phase. Specifically, the construction of Future East Airport Drive would cause impacts to those using Enloe Road, as well as some residential driveways along Enloe Road. Further, some on-airport projects could cause disruption of local traffic patterns as construction vehicles would be entering and exiting certain areas of the airport frequently during the construction phase. However, congestion caused by construction would be temporary in nature and not have long-term impacts. The construction of Future East Airport Drive would ultimately increase mobility around the airport, as it connects to FM Road 546 to provide better access to the future eastern components of the airport.<sup>25</sup></p> <p>Additionally, there are approximately 533 acres of land proposed for acquisition, some of which contain residences. There is a total of seven homes, six in the ultimate Runways 36L and 36R RPZs and one east of Enloe Road, that would require acquisition. Per the EPA’s Environmental Justice Screening (EJSCREEN) and Mapping Tool, none of the homes proposed for acquisition are considered public or subsidized housing establishments. If there proves to be insufficient supply of</p>
------------------------------	---	---

<sup>25</sup> Note that roadway alignments, as discussed in the Socioeconomics section, are based on the Draft Thoroughfare Plan that has not been adopted by City Council, and therefore are subject to change.



		<p>relocation housing available, then Section 206(a) of the <i>Uniform Relocation Assistance and Real Property Acquisition Policies Act</i> would be followed. This provision requires that housing be provided to those subject to relocation if there is insufficient relocation housing available. Note that special relocation services would be provided, if necessary, for the elderly, handicapped, or illiterate regarding interpretation of benefits or other assistance available.</p> <p>There is potential for increased economic activity given the capacity-increasing components of the development concept, specifically the additional hangar space, existing runway extension, future parallel runway, and ultimate commercial passenger terminal complex and associated future aviation reserve. These proposed improvements, coupled with the City of McKinney’s proposed plans for this area to become an aviation and business hub, have the potential to create a substantial change in the community’s tax base. These potential indirect impacts to the community tax base should be evaluated further as proposed projects progress.</p>
Environmental Justice	<p>FAA has not established a significance threshold for Environmental Justice. However, factors to consider are if an action would have the potential to lead to a disproportionately high and adverse impact to an environmental justice population (i.e., a low-income or minority population) due to:</p> <ul style="list-style-type: none"> <li>• Significant impacts in other environmental impact categories; or</li> <li>• Impacts on the physical or natural environment that affect an environmental justice population in a way that FAA determines is unique to the environmental justice population and significant to that population.</li> </ul>	<p><b>None.</b> The Airport is in block group<sup>26</sup> 3, census tract<sup>27</sup> 309. Within this block group, there are 3,520 people, of which 275 persons (7.8%) are living below the poverty level.<sup>28, 29</sup> In this block group, most individuals are White (86.4%). Less than one percent (0.55%) of the block group are Black or African American, and 11 percent of individuals are some other race.<sup>30</sup></p> <p>The closest residences abut Airport property to the south; however, per the EPA’s EJSCREEN and Mapping Tool, the closest assisted multi-family housing development<sup>31</sup> is one-half mile northwest of the Airport, at 103 Bumpas Street. Given the</p>

<sup>26</sup> **Block Groups** are statistical divisions of census tracts that generally contain between 600 and 3,000 people and are used to present data and control block numbering (U.S. Census Bureau).

<sup>27</sup> **Census Tracts** are small, relatively permanent statistical subdivisions of a county that contain between 1,200 and 8,000 persons, averaging around 4,000 inhabitants (U.S. Census Bureau).

<sup>28</sup> American Community Survey 2011 – 2015 estimates (Table B17021: Poverty Status of Individuals in the Past 12 Months by Living Arrangement).

<sup>29</sup> Total population represents individuals for whom poverty status is determined, which may differ from the total population residing in the block group.

<sup>30</sup> American Community Survey 2011 – 2015 estimates (Table B02001: Total Population).

<sup>31</sup> The multi-family assisted properties layer in the EPA’s EJSCREEN consist primarily of rental housing properties with five or more dwelling units, but also include nursing homes, hospitals, elderly housing, mobile home parks, and retirement service centers. The U.S. Department of Housing and Urban Development (HUD) provides subsidies and grants to property owners and developers to promote the development and preservation of affordable rental units for low-income populations and those with special needs, such as the elderly and disabled.



		distance this development is from Airport property, it is not expected that construction would result in disproportionately high and/or adverse impacts to this environmental justice population.
Children’s Environmental Health and Safety Risks	FAA has not established a significance threshold for Children’s Environmental Health and Safety Risks. However, factors to consider are if an action would have the potential to lead to a disproportionate health or safety risk to children.	<b>None.</b> The nearest education facility is Webb Elementary School, which is approximately one mile to the northwest of the existing Runway 18 end. Two parks, Mouzon Park and Fitzhugh park, are also located approximately one mile to the northwest. At this distance, disproportionate health or safety risks to children are not anticipated.

**Visual Effects**

Light Emissions	<p>FAA has not established a significance threshold for Light Emissions. However, a factor to consider is the degree to which an action would have the potential to:</p> <ul style="list-style-type: none"> <li>• Create annoyance or interfere with normal activities from light emissions; and</li> <li>• Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.</li> </ul>	<p><b>Indirect.</b> The City of McKinney regulates lighting in its Code of Ordinances (Subpart A, Chapter 58), stating that the “standards for controlling lighting and glare are set forth to reduce the annoyance and inconvenience to property owners and traffic hazards to motorists.” However, in Section 58-3 of Chapter 58-Lighting, navigation and airport lighting required by the FAA for the operation of airplanes are listed as exempt from the lighting ordinances.</p> <p>The primary recommendations related to lighting include:</p> <ul style="list-style-type: none"> <li>• Implementing a MALS to serve Runway 36;</li> <li>• Enhancing airfield lighting (runway and taxiways) with LED technology; and,</li> <li>• Implementing navigational approach aids on the ultimate parallel runway system (PAPI-4s and REILs).</li> </ul> <p>Further, the addition of lighting to proposed buildings, including additional hangars, parking areas, and future aviation reserve area, would increase the amount of light emissions on the airport. Implementation of the Master Plan Concept would result in a change in lighting and coordination with residents may be required. However, note that a recommendation in the draft <i>ONE McKinney Comprehensive Plan</i>, there is a focus on creating appropriate buffers between aviation, commercial, and industrial uses in the vicinity of the airport to lessen impacts on nearby sensitive receptors.</p> <p>Light-sensitive species that hunt, migrate, or mate at night near the airport are likely already acclimated to airport lights. The change in lighting due to recommended Master Plan projects is not anticipated to cause undue stress.</p>
-----------------	--	---



<p>Visual Resources/Visual Character</p>	<p>FAA has not established a significance threshold for Visual Resources/Visual Character. However, a factor to consider is the extent an action would have the potential to:</p> <ul style="list-style-type: none"> <li>• Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;</li> <li>• Contrast with the visual resources and/or visual character in the study area; and</li> <li>• Block or obstruct the views of the visual resources, including whether these resources would still be viewable from other locations.</li> </ul>	<p><b>None.</b> Full buildout of the proposed development concept would change the visual character of the airport. However, as previously mentioned, the airport is in the future Business and Aviation district (per the draft <i>ONE McKinney Comprehensive Plan</i>) that focuses on industrial, commercial, manufacturing, and aviation uses that complement one another and would not interfere with surrounding areas visually. Since existing neighborhoods are located west of this proposed District and the airport, development is planned to provide an appropriate buffer and travel patterns that do not reduce the livability of these existing neighborhoods.<sup>32</sup></p> <p>Preservation and enhancement of McKinney’s scenic viewsheds, which are broadly considered as natural areas around the City, is cited numerous times in the <i>City of McKinney’s Comprehensive Plan</i> (as amended June 2015); however, scenic viewsheds are only mentioned in the context of open space, as well as future residential and commercial development. Further, the City’s Code of Ordinances only addresses the protection of scenic viewsheds in relation to placement of signs. Development at the Airport would not interfere with the goals of the City to preserve and enhance its existing scenic viewsheds as it is primarily surrounded by agricultural lands and light manufacturing/industrial uses.</p>
--	---	--

**Water Resources (including Wetlands, Floodplains, Surface Waters, Groundwater, and Wild and Scenic Rivers)**

<p>Wetlands</p>	<p><b>Threshold: The action would:</b></p> <ol style="list-style-type: none"> <li>1. <b>Adversely affect a wetland’s function to protect the quality or quantity of municipal water supplies, including surface waters and sole source and other aquifers;</b></li> <li>2. <b>Substantially alter the hydrology needed to sustain the affected wetland system’s values and functions or those of a wetland to which it is connected;</b></li> <li>3. <b>Substantially reduce the affected wetland’s ability to retain floodwaters or storm runoff, thereby threatening public health, safety or welfare (the term welfare includes cultural, recreational, and</b></li> </ol>	<p><b>Direct.</b> Per the USFWS National Wetlands Inventory and an EA performed at the airport in 2007, there are wetlands on Airport property. However, note that USFWS National Wetlands Inventory aerial image data is from November 1982 and the EA is ten years old. An updated wetland survey would be necessary to determine the presence or absence of wetlands. Additionally, based on the 2007 EA, all of the wetlands on Airport property appear to be hydrologically connected to the East Fork of the Trinity River, which is a “water of the U.S.”<sup>33</sup> Because the East Fork of the Trinity River was previously determined to be a “water of the U.S.,” a jurisdictional determination would be needed from the USACE-Fort Worth District.</p>
-----------------	---	--

<sup>32</sup> *ONE McKinney 2040 Comprehensive Plan*, [http://maps.mckinneytexas.org/mckinney/rest/services/MapServices/PreferredScenario\\_Planning/MapServer/1/9/attachments/3](http://maps.mckinneytexas.org/mckinney/rest/services/MapServices/PreferredScenario_Planning/MapServer/1/9/attachments/3) (accessed November 21, 2017).

<sup>33</sup> A water of the U.S. is a water that is currently used, was used in the past, or is susceptible for use in interstate or foreign commerce, including waters subject to ebb and flow of the tide (USACE-Fort Worth District).



	<p>scientific resources or property important to the public);</p> <p>4. Adversely affect the maintenance of natural systems supporting wildlife and fish habitat or economically important timber, food, or fiber resources of the affected or surrounding wetlands.</p> <p>5. Promote development of secondary activities or services that would cause the circumstances listed above to occur; or</p> <p>6. Be inconsistent with applicable state wetland strategies.</p>	<p>The Master Plan Concept shows the proposed parallel runway and taxiway would be constructed in a wetland that lies within a tributary of the East Fork of the Trinity River.</p> <p>If the East Fork of the Trinity River is deemed jurisdictional by the U.S. Army Corps of Engineers (USACE)-Fort Worth District, a Section 404 Permit and 401 Certification may be required. Section 404 of the <i>Clean Water Act</i> authorizes the USACE to issue permits, after the notice and opportunity for public hearing, for the discharge of dredged or fill material into the waters of the U.S. Practicable alternatives that avoid or minimize wetland impacts would need to be explored further. For projects that would have minimal impacts, the USACE can grant general permits, which are issued to projects that have previously undergone the NEPA process (i.e., culvert replacement). A common and widely used general permit is the Nationwide Permit, which is a permit that has already been issued nationwide for certain specific activities. For projects with potentially significant adverse wetland impacts, or those projects exceeding the criteria for a general permit, an individual permit is usually required.</p> <p>In addition to FAA regulations, wetlands are protected by law, and thus there are additional agency thresholds that would need to be met. These agencies include: USFWS, National Marine and Fisheries service (NMFS), the U.S. Coast Guard, the USDA Wildlife Services, and the EPA, as appropriate.</p>
<p>Floodplains</p>	<p><b>Threshold: The action would cause notable adverse impacts on natural and beneficial floodplain values. Natural and beneficial floodplain values are defined in Paragraph 4.k of DOT Order 5650.2, <i>Floodplain Management and Protection</i>.</b></p>	<p><b>Direct.</b> There is a 100-year floodplain along the East Fork of the Trinity River north of the Runway 36 (ultimate Runway 36L) and one of its tributaries which bisects the existing and ultimate runway and associated taxiways, as well as future development on the west side of the airport. No development is proposed in or near the part of the floodplain that is north of Runway 36 (ultimate Runway 36L) as this is within the existing runway and ultimate parallel runway RPZs.</p> <p>The part of this floodplain that is along a tributary of the East Fork of the Trinity River lies within the existing drainage system on Airport property. Proposed development on the west side of the airport, as well as the future construction of the parallel runway and parallel taxiway, may require floodplain mitigation as these projects would</p>



		<p>occur within the floodplains on Airport property. Per DOT Order 5650.2, development within this floodplain must be designed to minimize adverse impacts to its natural and beneficial values. Per City of McKinney Code of Ordinances (Subpart B, Chapter 130, Article IV, Division 5, Sections 130-381 through 130-384), where maintaining natural floodplains is deemed impractical, structural improvements and drainage systems should be designed and constructed to minimize adverse impacts on the floodplain.</p> <p>For both development projects within this floodplain, the airport would need to submit a floodplain application and obtain a development permit prior to any construction in floodplain areas, including constructing new buildings and infrastructure, filling land, altering waterways, substantially improving existing structures located in flood hazard areas or channelizing, impound, realigning, deepening or other altering of a natural drainageway. The Director of Engineering reviews all applications prior to submitting a construction permit. Construction or renovation projects cannot begin until the City issues the development permit, and building permits cannot be issued before obtaining a development permit (Code of Ordinances, Subpart B, Chapter 130, Article IV, Sec. 130-266).</p> <p>There is another 100-year floodplain along Wilson Creek that is not on existing Airport property, but is approximately one-quarter mile southwest of the existing Runway 36 end. If Runway 18-36 (ultimate Runway 18R-36L) is extended 1,500 feet to the south, a small portion of the floodplain would be inside the ultimate Airport property limits. However, this area would be part of the ultimate Runway 18R-36L RPZ, and thus would not be developed or impacted by future development.</p>
<p>Surface Waters</p>	<p><b>Threshold: The action would:</b></p> <ol style="list-style-type: none"> <li>1. <b>Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or</b></li> <li>2. <b>Contaminate public drinking water supply such that public health may be adversely affected.</b></li> </ol> <p>Factors to consider are when a project would have the potential to:</p> <ul style="list-style-type: none"> <li>• Adversely affect natural and beneficial water resource values to a degree that</li> </ul>	<p><b>Direct and Indirect.</b> Airport projects, such as additional hangars, buildings, taxiways, runway, and other impervious surfaces, would increase the amount of runoff from the airport and potentially impact on-airport waterways.</p> <p>Two tributaries of the East Fork of the Trinity River flow onto Airport property. One of the tributaries flows along the northern part of the airport, and the other tributary bisects Runway 18-36, flowing into the western portion of the airport. Wilson Creek is south of the Runway 36 end off Airport</p>



	<p>substantially diminishes or destroys such values;</p> <ul style="list-style-type: none"> <li>• Adversely affect surface water such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or</li> <li>• Present difficulties based on water quality impacts when obtaining a permit or authorization.</li> </ul>	<p>property; however, one of its tributaries flows into the southern edge of existing and ultimate Airport property. There is also an unnamed stream that flows to the east of the existing property line, but would become a part of Airport property in the 326-acre acquisition area.</p> <p>Development is not proposed in the northern area of Airport property as this area contains the existing and ultimate parallel runways' RPZs. There are projects proposed where a tributary of the East Fork of the Trinity River flows across Runway 18-36; however, this tributary is controlled by the existing drainage system at the airport. As projects are proposed in this area, the drainage system would require modifications to accommodate new development; specifically, the future parallel taxiways and runway, as well as the construction associated with the hangar access taxiway in the existing and ultimate western areas of the airport. The unnamed stream would be impacted by proposed projects as it is in the area reserved for future aviation development on the eastern side of the airport.</p> <p>The East Fork of the Trinity River, which flows just north of Airport property, is an impaired water, per Section 303(d) of the <i>Clean Water Act</i>. The impairment is caused by bacteria. The total maximum daily load (TMDL), which described the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards, has not yet been established. Although construction and development are not proposed within the East Fork of the Trinity River, one of the tributaries of the East Fork of the Trinity River would be impacted by the Master Plan Concept. However, because the contamination is related to bacteria, and construction activities and future operation of the constructed facilities would not contribute bacteria to this tributary, the Master Plan Concept is not anticipated to add to the impairment of the East Fork of the Trinity River.<sup>34</sup></p> <p>As mentioned, there is a man-made drainage system at the airport to control surface waters on and around the airport. In addition, the airport implements a Stormwater Pollution Prevention Plan (SWPPP) to minimize pollution into nearby</p>
--	--	--

<sup>34</sup> EPA My WATERS Mapper, <https://watersgeo.epa.gov/mwm/> (accessed November 29, 2017).



		<p>surface waters, which includes the East Fork of the Trinity River, Wilson Creek, and Lake Lavon. Lake Lavon is a critical reservoir for the community's irrigation and drinking water needs.<sup>35</sup> As construction is proposed around these surface waters, FAA's Advisory Circular 150/5370-10G, <i>Standards for Specifying Construction of Airports, Item P-156, Temporary Air and Water Pollution, Soil Erosion and Siltation Control</i> would be implemented. Further, changes to the drainage system on the airport would require an update to the airport's existing SWPPP and would need to incorporate the requirements of the City of McKinney's Stormwater Management Ordinance.</p> <p>Discharges of stormwater associated with construction activities are not eligible for authorization by the airport's existing Texas Pollutant Discharge Elimination System (TPDES) general permit. Further, discharges of stormwater associated with industrial activity that combine with stormwater from construction activities are not eligible for coverage by this general permit unless the construction related discharge is:</p> <ul style="list-style-type: none"> <li>• Authorized under a separate TPDES permit;</li> <li>• Authorized under a separate NPDES permit; or,</li> <li>• Does not require permit coverage.</li> </ul> <p>If discharges associated with construction activity would occur in the future, a review of the SWPPP would be made and appropriate permits received.<sup>36</sup></p>
Groundwater	<p><b>Threshold: The action would:</b></p> <ol style="list-style-type: none"> <li>1. Exceed groundwater quality standards established by federal, state, local, and tribal regulatory agencies: or</li> <li>2. Contaminate an aquifer used for public water supply such that public health may be adversely affected.</li> </ol> <p>Factors to consider are when a project would have the potential to:</p> <ul style="list-style-type: none"> <li>• Adversely affect natural and beneficial groundwater values to a degree that substantially diminishes or destroys such</li> </ul>	<p><b>Indirect.</b> According to the Texas Water Development Board, the airport sits atop one of nine major aquifers in Texas – the northern portion of the Trinity Aquifer system. This aquifer extends across central and northeastern Texas, and is composed of several smaller aquifers.<sup>37</sup> As previously discussed, the City of McKinney does not rely on groundwater sources as their primary water sources. Regardless, Collin County is in a designated Priority Groundwater Management Area (PGMA), which is an area designated and delineated by TCEQ that is experiencing, or is expected to experience within 50 years, critical groundwater problems including shortages of surface water</p>

<sup>35</sup> McKinney National Airport, Stormwater, <http://www.flytki.com/111/Stormwater> (accessed October 16, 2017).

<sup>36</sup> McKinney National Airport Stormwater Pollution Prevention Plan, 2015

<sup>37</sup> City of McKinney, <https://www.mckinneytexas.org/faq.aspx?qid=614> (accessed October 16, 2017).



	<p>values;</p> <ul style="list-style-type: none"> <li>• Adversely affect groundwater quantities such that the beneficial uses and values of such groundwater are appreciably diminished or can no longer be maintained and such impairment cannot be avoided or satisfactorily mitigated; or</li> <li>• Present difficulties based on water quality impacts when obtaining a permit or authorization.</li> </ul>	<p>or groundwater, land subsidence resulting from groundwater withdrawal, or contamination of groundwater supplies<sup>38</sup>. This potential future water shortage, coupled with the amount of impervious surfaces proposed in the development concept, should be reviewed in the future as projects are proposed that could compromise the quantity of groundwater available.</p>
Wild and Scenic Rivers	<p>FAA has not established a significance threshold for Wild and Scenic Rivers.</p>	<p><b>None.</b> There are no Wild and Scenic Rivers near the Airport.</p>

## LAND USE CONTROLS

This section describes existing zoning ordinances, subdivision regulations, building codes, and land use and transportation plans within the area around the airport.

## ZONING

The main regulatory tool for directing land use is the zoning ordinance, which limits the types, size, and density of land uses in various locations. Examples of land use types include residential, commercial, industrial, and agricultural. While general land use plans are intended to establish policies to guide development and land use, cities and counties control land use through zoning ordinances.

The Airport property is primarily zoned as AP and is surrounded primarily by areas zoned for PD. There are several areas within Airport property limits that are zoned for PD, as seen on **Exhibit 5E**. Areas zoned for AG are to the north, east, and south. Land to the southeast and southwest is zoned for ML.<sup>39</sup> Much of the area to the east of the airport is part of the City of McKinney’s extraterritorial jurisdiction (ETJ), which is an area of unincorporated County land immediately adjacent to an incorporated city (ETJ limits shown on **Exhibit 5E**). Note that in Texas, the City may exercise certain development powers in ETJs, including subdivision regulations, but not zoning. The following zones surrounding the airport are defined below:<sup>40</sup>

- AG: “The Agricultural zone is designed to preserve lands best suited for agricultural use from encroachment of incompatible uses, and to preserve agricultural use land suited to eventual development in other uses, pending proper timing for practical and economical provision of utilities, major streets, schools and other facilities so that reasonably compact development will occur and the fiscal integrity of the city preserved.”

<sup>38</sup> TCEQ, <https://www.tceq.texas.gov/groundwater/pgma.html> (accessed November 28, 2017).

<sup>39</sup> City of McKinney Code of Ordinances, Subpart B, Chapter 146, Article I (accessed November 21, 2017).

<sup>40</sup> City of McKinney Code of Ordinances, Subpart B, Chapter 146, Article III (accessed November 27, 2017).



- AP: “The Airport zone is designed to provide for airports, heliports, and landing areas for other types of aircraft.”
- ML: “The Light Manufacturing zone is designed to provide for a wide range of commercial and industrial uses, all of which shall be comparatively nuisance-free. The zone specifically excludes residences on the theory that the mixture of residential use, and public services and facilities for residences with those for industry is contrary to the purposes of these regulations irrespective of whether the industry is encroaching on a living area or a living area is encroaching on an industrial area. Zoning or rezoning to this classification will not generally be permitted after July 1, 2014.”
- PD: “The Planned Development zoning district is designed to provide for the unified and coordinated development of parcels or tracts of land. Certain freedom of choice as to intended land use and development standards may be permitted; provided that the special ordinance provisions of the district are complied with and the intended uses and standards are not in conflict with the general purpose and intent of either this chapter or the city comprehensive plan.”

In addition, the Code of Ordinances has adopted an “Airport Height and Hazard and Land Use Regulations” Zoning Ordinance, referred to as the McKinney National Airport Zoning Ordinance.<sup>41</sup> This Ordinance creates zones that are based on the airport’s Part 77 Imaginary Surfaces, which includes all of the land lying beneath the approach surfaces, transition surfaces, horizontal surface, and conical surface. These zones were adopted based on drawings dated January 16, 1978. This Ordinance also establishes height limitations and use restrictions within these zones. Further, permits are required for any future use of this land, as approved by the Airport Zoning Board, which this Ordinance establishes to be the City’s Planning and Zoning Commission.

## SUBDIVISION REGULATIONS

Subdivision regulations apply in cases where a parcel of land is proposed to be divided into lots or tracts. They are established to ensure the proper arrangements of streets, adequate and convenient public spaces, efficient movement of traffic, adequate and properly located facilities, and orderly and efficient layout and use of land. Subdivision regulations can be used to specify requirements for airport-compatible land development by requiring developers to plat and develop land to minimize noise impacts or reduce the noise exposure to new development. The regulations can also be used to protect the airport proprietor from litigation for noise impacts.

The most common requirement is the dedication of a noise or aviation easement to the airport sponsor by the land developer as a condition of the development approval. Easements typically authorize overflights of property, with noise levels attendant to such operations. They can also require developers to incorporate noise insulation during construction. The *Airport Compatibility Guidelines* (January 2003) for

<sup>41</sup> City of McKinney Code of Ordinances, Subpart B, Chapter 118 (accessed November 27, 2017).



Texas<sup>42</sup> provides examples of subdivision regulations as tools to regulate aviation activity. One example is designating a public easement as the overflight of an aircraft along with its associated noise. A subdivision regulation could also restrict residential housing or require special acoustical construction within certain DNL contours. For example, the cities of Irving and Grapevine both have subdivision regulations that require the dedication of aviation easements as both municipalities have neighborhoods within the Dallas-Fort Worth International Airport's 65 DNL noise contour. The aviation easement protects both cities from lawsuits by homeowners who move into the noise-impacted areas.

Subdivision regulations are defined and discussed in Subpart B, Chapter 142 of the City of McKinney's Code of Ordinances. The subdivision regulations govern tracts of land within the incorporated limits of the City of McKinney that may be divided into two or more parts for any type of development, including suburban or building lots, streets, alleys, or parks, or other public uses, as well as areas of right-of-way. Permits are required to be obtained for any subdivision prior to the commencement of construction.

## BUILDING CODES

Building codes regulate the construction of buildings and ensure that they are constructed in a safe manner. Building codes may be used to require sound insulation in new residential, office, and institutional buildings when warranted by existing or potential high aircraft noise levels. According to the City of McKinney Code of Ordinances, the City has adopted the 2012 edition of the International Building Code (IBC) and the 2012 edition of the International Residential Code (IRC), excluding all references to the 2012 International Property Maintenance Code. The 2012 editions of the IBC and IRC do not include specific provisions for aircraft noise attenuation.

## LAND USE AND TRANSPORTATION PLANS

According to the City of McKinney's online interactive Planning Map, there are several approved, and a few active, development projects around the airport.<sup>43</sup> These development projects have consisted of land annexation by the City of McKinney, as well as rezonings. Some of the rezonings have been to uses that are considered compatible near airports, including agriculture and industrial. However, other rezonings have converted compatible uses to non-compatible uses, like residential.

### *Comprehensive Plan Update*

The City of McKinney is in the process of updating its comprehensive plan, which currently dates to 2004; however, the updated plan is still in draft format and is subject to change. Through the *ONE McKinney 2040* process, public input and refinement led to the concept of 'Distinctive Districts,' which is a future development pattern that focuses on smaller areas of the city (Districts) each with their own unique

<sup>42</sup> [http://ftp.dot.state.tx.us/pub/txdot-info/d/avninfo/Airport\\_Compatibility\\_Guidelines.pdf](http://ftp.dot.state.tx.us/pub/txdot-info/d/avninfo/Airport_Compatibility_Guidelines.pdf), Page 22: Subdivision Regulations (accessed October 19, 2017)

<sup>43</sup> Map available: <https://www.mckinneytexas.org/286/Interactive-Planning-Map>



identity and brand. As part of this update process, the airport is proposed to be in a Business and Aviation District, which would have a focus on manufacturing and warehousing businesses, professional campuses, and commercial uses. This District would discourage residential development to ensure that there are not future use incompatibilities.<sup>44</sup>

### *Master Thoroughfare Plan Update*

In addition to the comprehensive plan update, the city is undergoing an update to its *Master Thoroughfare Plan*.<sup>45</sup> Although still in draft form, upon adoption, this plan would define the network of existing and future roads deemed appropriate to accommodate the various levels of vehicular traffic expected in McKinney. The draft alignments near the airport are shown on **Exhibit 5A**; however, note that at the date of this document, these roadways have not been reviewed or adopted by the McKinney City Council.

## RECOMMENDATIONS

Based on the above information, the following are recommended to protect the airport and surrounding land uses from incompatibility:

- **Zoning Ordinance:**
  - Update the zoning of the Airport to zone the entire property as AP to ensure that there is no confusion regarding what can and cannot be developed.
  - Update the McKinney National Airport Zoning Code to reflect the most recent Part 77 surfaces – which are being updated as part of this Airport Master Plan – to ensure the airport is protected from development that would interfere with safe operation of the airport.
- **Subdivision Regulations and Building Codes:** Although current and future noise contours remain within Airport property, should they extend beyond Airport property in the future, the City of McKinney could dedicate an airport easement synonymous with the Airport's most updated noise contours, which are updated as a part of this Airport Master Plan, to protect future noise-sensitive development from being erected within these zones and/or require sound attenuation to uses constructed within the contours.
- **Land Use and Transportation Plans:** Inclusion of the airport in the City's planning processes for both the comprehensive plan update, as well as the thoroughfare plan update, have been beneficial to all parties involved. Continuing this type of communication is encouraged to ensure that the City is planning with all of its interests in mind.

<sup>44</sup> Updates related to this comprehensive planning effort are available online: <http://www.onemckinney2040.com/pages/about/plan.html> (accessed November 28, 2017).

<sup>45</sup> Master Thoroughfare Plan, <https://www.mckinneytexas.org/1703/Master-Thoroughfare-Plan> (accessed November 21, 2017).



## RECYCLING PLAN

The *FAA Modernization and Reform Act of 2012* (FMRA), which amended Title 49, United States Code (USC), included several changes to the Airport Improvement Program (AIP). Two of these changes are related to recycling, reuse, and waste reduction at airports.

- Section 132 (b) of the FMRA expanded the definition of airport planning to include “developing a plan for recycling and minimizing the generation of airport solid waste, consistent with applicable State and local recycling laws, including the cost of a waste audit.”
- Section 133 of the FMRA added a provision requiring airports that have or plan to prepare a master plan, and that receive AIP funding for an eligible project, to ensure that the new or updated master plan addresses issues relating to solid waste recycling at the airport, including:
  - The feasibility of solid waste recycling at the airport;
  - Minimizing the generation of solid waste at the airport;
  - Operation and maintenance requirements;
  - A review of waste management contracts; and,
  - The potential for cost savings or the generation of revenue.

Understanding the Airport’s waste stream requires an understanding of the types of waste typically generated at airports. Generally, waste from airports can be divided into eight categories, with additional types of municipal solid waste (MSW).<sup>46</sup>

- **Municipal Solid Waste**, more commonly known as trash or garbage, consists of everyday items that are used and then discarded, like product packaging. The following subcategories are either combined with MSW or sorted separately depending on an airport’s solid waste practices.
  - **Construction and Demolition Waste** (C&D) is considered non-hazardous trash resulting from land clearing, excavation, demolition, renovation or repair of structures, roads and utilities, including concrete, wood, metals, drywall, carpet, plastic, pipe, cardboard, and salvaged building components.
  - **Green Waste** is yard waste consisting of tree, shrub and grass clippings, leaves, weeds, small branches, seeds, and pods.
  - **Food Waste** includes unconsumed food products or waste generated and discarded during food preparation.
  - **Deplaned Waste** is waste removed from passenger aircrafts. Deplaned waste includes bottles, cans, newspaper, mixed paper (newspaper, napkins, paper towels), plastic cups, service ware, food waste, and food soiled paper/packaging.

<sup>46</sup> Recycling, Reuse and Waste Reduction at Airports, FAA (April 24, 2013)



- **Lavatory Waste** is a special waste that is emptied through a hose and pumped into a lavatory service vehicle. The waste is then transported to a triturator<sup>47</sup> facility for pretreatment prior to discharge in the sanitary sewage system. Due to the chemical in lavatory waste, it can present environmental and human health risks if mishandled. Caution must be taken to ensure lavatory waste is not released to the public sanitary sewage system prior to pretreatment.
- **Spill Clean and Remediation Wastes** are also special wastes and are generated during cleanup of spills and/or the remediation of contamination from several types of sites on an airport.
- **Hazardous Wastes** are governed by the *Resource Conservation and Recovery Act* (RCRA), as well as the regulations in 40 Code of Federal Regulations (CFR) Subtitle C, Parts 260 to 270. The EPA developed less stringent regulations for certain hazardous waste, known as universal waste, described in 40 CFR Part 237 – The Universal Waste Rule. Common sources of aviation hazardous waste are included in the sidebar.

**Common sources of aviation hazardous waste:**

- Solvents
- Caustic parts washes
- Heavy metal paint waste & paint chips
- Wastewater sludges from metal etching & electroplating
- Unused epoxies & monomers
- Waste fuels & other ignitable products
- Unusable water conditioning chemicals
- Contaminated sludge
- Nickel cadmium batteries
- Waste pesticides

As seen on **Exhibit 5H**, there are seven potential areas of an airport contributing to the waste stream, including terminals, airfields, aircraft maintenance hangars, cargo hangars, flight kitchens, offices, and airport construction projects. To create a comprehensive waste reduction and recycling plan for the Airport, all potential inputs must be considered.

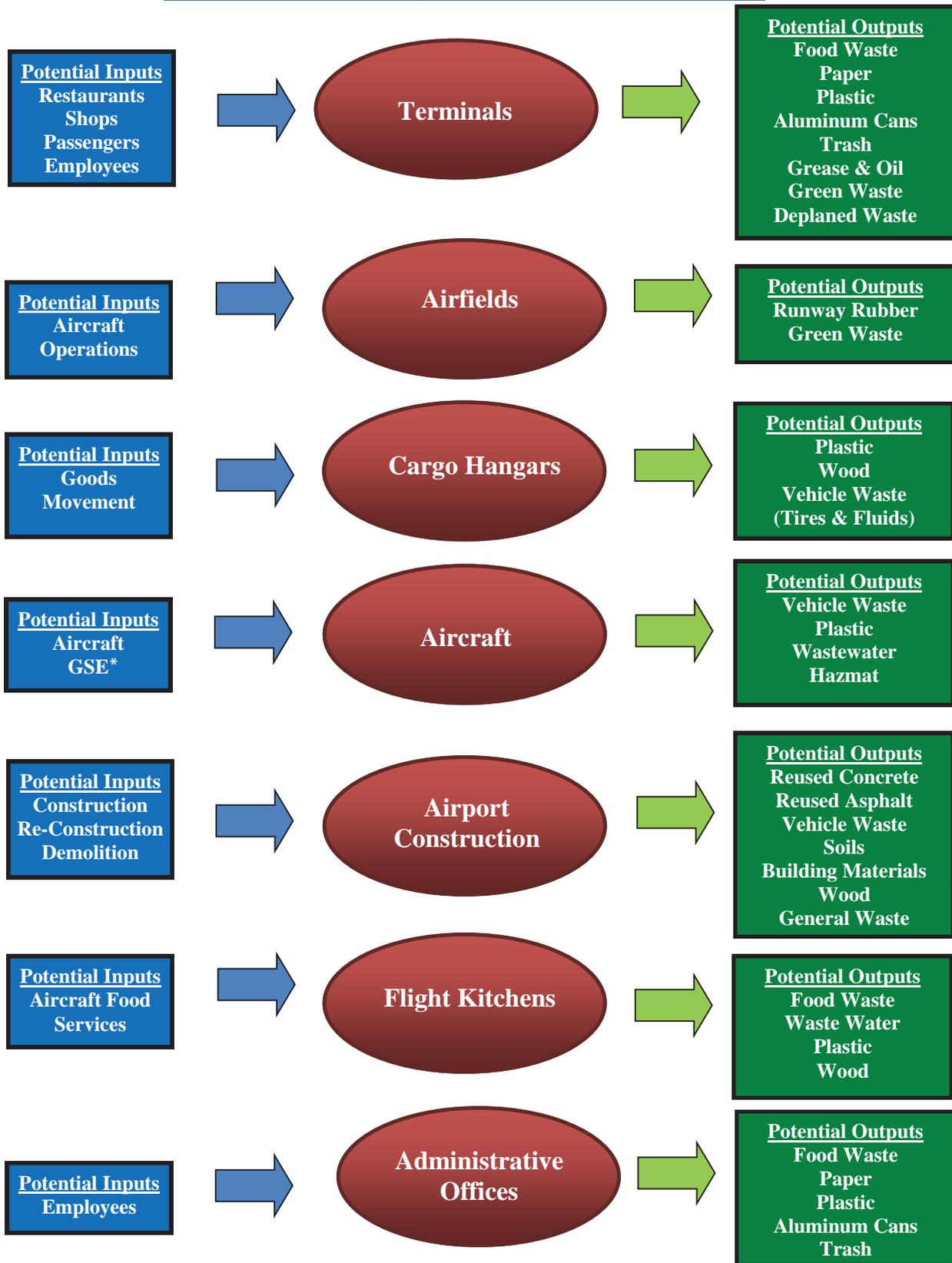
There are often few key staff members that are directly involved in the waste management system, making their support and participation critical. It is also crucial to gain the participation of tenants to ensure buy-in of the Airport’s recycling efforts. The Airport must establish consistent internal procedures to ensure there are no unacceptable items contaminating recycling containers, or recyclables thrown in the trash. Clearly marked signage of what is and is not accepted placed near the solid waste and recycling containers is another significant part of a consistent, effective recycling system. Currently at the Airport, there are no signs near the recycling can that say what can be recycled. Placing signs above recycling bins to indicate what can be recycled and what should be thrown away can help to reduce recycling contamination.

The implementation of an effective program requires accurate data of current waste and recycling rates. There are several ways an airport can gain insight into their waste stream. The waste audit is the most comprehensive and intensive way to assess waste stream composition, opportunities for waste reduction, and capture of recyclables. This Recycling Plan is based on information provided by the Airport using an examination of records.

<sup>47</sup> A triturator facility turns lavatory waste into fine particulates for further processing.



## Any Town Airport Waste Streams



\*GSE - Ground Support Equipment

Source: Recycling, Reuse, and Waste Reduction at Airports, FAA (April 24, 2013)



### Examination of Records

- Waste hauling and disposal records and contracts
- Supply and equipment invoices
- Other waste management costs (commodity rebates, container costs, etc.)

### Facility Walk-Through

- Qualitative waste information
- Understanding waste pickup and hauling practices

### Waste Audit

- Collection and analysis of the types of waste produced

## RECYCLING

Per the City of McKinney's license agreement with Waste Connections, Inc., the Airport's recycling provider, the Airport is not charged for the collection and processing of recyclable material. This is an agreement that the City of McKinney has with contractors that provide services at City owned or operated office buildings, facilities and sites. The Airport currently has approximately 11 recycling bins available in public areas, as well as for Airport staff. Recycling is picked up five days per week, Monday through Friday. There is one, four cubic-yard recycling dumpster at the airport.

Waste Connections, Inc., allows the following items in their recycling bins:

- Aluminum, steel, and tin cans
- Cardboard
- Food Boxes
- Glass bottles or jars
- Junk mail, catalogs, and phone books
- Newspaper and magazines
- Paper
- Plastics 1-5 and 7

## SOLID WASTE

The Airport's solid waste provider is also Waste Connections, Inc., and as explained above, the Airport does not pay for these services. Solid waste is picked up Monday through Friday, just like recyclables. The Airport has three solid waste dumpsters, two, six cubic-yard dumpsters, and one eight cubic yard commercial container.



**SOLID WASTE AND RECYCLING RECOMMENDATIONS AND GOALS**

The Airport should ensure that the waste and recycling containers and dumpsters are appropriately sized to the existing operation, as well as on a collection schedule that picks up only when the containers are full. Currently, there are solid waste and recycling trucks driving to and from the Airport five days per week. The number of trips could be reduced by increasing the size of the solid waste and recycling dumpsters, or reducing the number of pickups per week if the dumpsters are not reaching capacity daily. The Airport could also consider providing training, education, and support to Airport personnel, tenants, and others who conduct business at the Airport to ensure that all materials are being recycled or disposed of properly to reduce garbage contamination in recycling bins. In-person meetings with Airport tenants could be held to create mutual understanding of the Airport’s solid waste and recycling goals and how tenants play a vital role in the Airport’s overall success.

**Table 5D** outlines objectives that could help reduce waste generation and increase recycling efforts at the Airport. To increase the effectiveness of tracking progress, a baseline state of all suggested metrics should be established to provide a comparison over time.

**TABLE 5D**  
**Waste Management and Recycling Goals**  
**McKinney National Airport**

Goals	Objectives to Meet Goals	Metrics
Reduce amount of solid waste generated	Switch to online bill pay to eliminate monthly paper bills	No longer receiving monthly paper bills
	Conduct a waste audit to identify most common types of waste	Identification of most common solid waste
	Eliminate purchase of items that are not recyclable (i.e., Styrofoam, plastic bags)	Number of items purchased that are not recyclable
Increase amount of material recycled	Improve recycling tracking and data management	Monthly data reports
	Increase the number of recycling bins in public areas	Number of recycling bins available to the public
	Incorporate recycling requirements and/or recommendations into tenant lease agreements	Number of tenant contracts with recycling requirements and /or recommendations
	Expand recycling marketing & promotion efforts throughout public areas	Number of marketing & promotional materials
	Require contractors to implement strategies to reduce, reuse & recycle construction & demolition waste	Incorporation of waste reduction, reuse & recycling language into construction contracts

MSW: Municipal Solid Waste

**MASTER PLAN CONCEPT SUMMARY**

This chapter has been prepared to help the City of McKinney make decisions on the future growth and development of TKI by describing narratively and graphically the Master Plan Concept and detailing environmental and land use conditions that must be taken into consideration when implementing the



development plan. The plan represents an airfield facility that fulfills aviation needs for the Airport, while conforming to safety and design standards to the extent practicable. It also provides a landside complex that can be developed as demand dictates and is subject to further refinement pending comments from the PAC, TAC, City of McKinney, and general public.

Flexibility will be very important to future development at the Airport, as activity may not occur as predicted. The Master Plan Concept provides stakeholders with a general guide that, if followed, can maintain the Airport's long term viability and allow it to continue to provide air transportation service to the region. The next chapter of this Master Plan will provide a reasonable schedule for undertaking the projects based on safety and demand over the course of the next 20 years and consider strategies for funding the recommended improvements.