

CHAPTER 6: PREFERRED DEVELOPMENT PLAN

6.1 INTRODUCTION

Chapter 6 organizes the preferred alternative actions into a preferred comprehensive development plan.

6.2 PREFERRED COMPREHENSIVE DEVELOPMENT PLAN

TIA's preferred comprehensive development plan, presented in **Figure 6-1**, meets the airport's facility needs through PAL 4. The major development project within this Master Plan Update's horizon is the implementation of the near-parallel runway relocation and centerfield taxiway to enhance TIA's safety and operational efficiency. The terminal development recommended in this plan also improves the efficiency and level of service for passengers.

6.2.1 Airfield Projects

The preferred airfield development consists of a new parallel air-carrier Group IV runway, centerfield taxiway, outboard taxiway, shifting of the Runway 11L arrival threshold, enhanced south run-up area access, and a bypass taxiway around Runways 11L and 11R RPZs allowing unrestricted taxiing of aircraft accessing Runway 11R. This new parallel air-carrier capable runway with center and outboard taxiways meet TIA's safety and operational efficiency requirements of being able to appropriately segregate and sequence TIA's diverse fleet mix of air-carrier, cargo, military, and general aviation aircraft. The proposed airfield improvements described below provide enhancements to safety and operational efficiency. Details of the recommended airfield plan are shown on **Figure 6-2**.

- **Construct Full Length Group IV Parallel Runway:** As presented in airfield Alternative 3B, the preferred plan proposes to relocate and reconstruct Runway 11R-29L as an 11,000 foot D-IV capable runway with an 800 foot runway centerline to runway centerline separation from Runway 11L-29R. The 800 foot separation allows for the construction of a center parallel taxiway between the two runways to allow aircraft to queue prior to crossing the second parallel runway. This project includes extension of Taxiways A4, A16 and A17 between the two runways. The Runway 11L arrival threshold will be displaced by 920 feet to allow for category B-II aircraft to taxi along Taxiway D independent of runway arrival operations.
- **Construct New Center Parallel Taxiway:** Construct a parallel taxiway between Runway 11L-29R and Runway 11R-29L. This taxiway will minimize the potential for pilots to cross an active runway by forcing them to first turn onto the taxiway and wait for Tower clearance to cross the other runway. The center parallel taxiway does not extend the full length of the parallel runways to visually distinguish it as a center taxiway as opposed to a runway. The center parallel taxiway provides safety/operational benefits by allowing aircraft to clear the runway quickly after landing.
- **Construct New Outboard Parallel Taxiway:** Construct a parallel taxiway 400 feet southwest of Runway 11R-29L. This parallel taxiway provides additional access to Runway 11R-29L. The outboard taxiway will provide convenient airfield access to future aeronautical development along the west side of the airport (south of Bombardier). The length of the taxiway is limited by the TIA property boundary. The outboard taxiway provides safety and operational benefits by allowing aircraft to clear the runway quickly after landing.

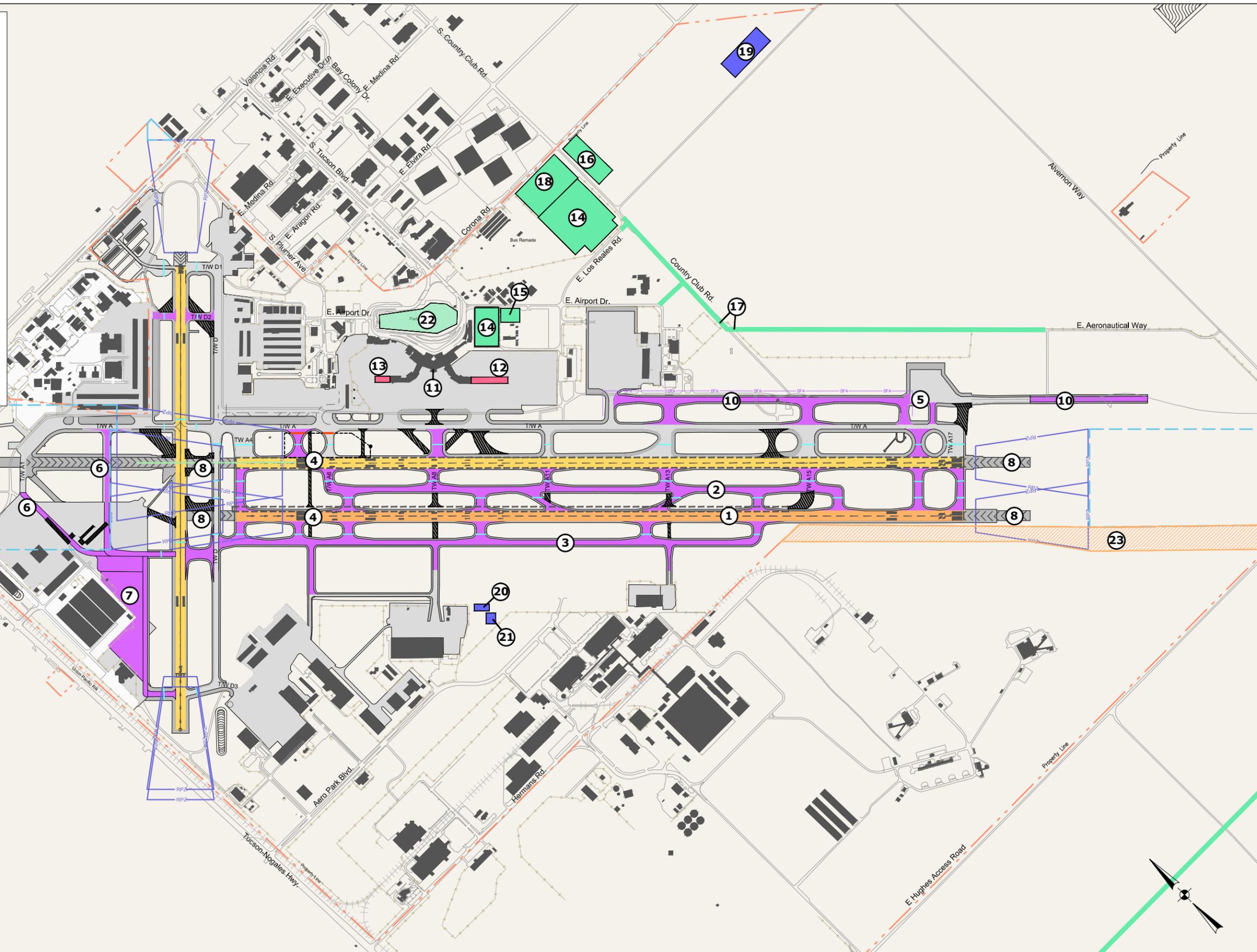
- **Displace Runways 11L Arrivals Threshold:** Shift the arrival threshold on Runway 11L 920 feet to match Runway 11R. The overall length of both runways would remain 10,996 feet. This project includes reconfiguring the Runway 11L MALSR by shifting stations and installing in-pavement approach lights in the displaced threshold. The existing PAPI and glideslope would also be relocated to accommodate the Runway 11L arrival threshold shift. The glideslope antenna could potentially be replaced with a sideband reference or capture effect (currently a null reference antenna) in order to shrink the footprint of the required glideslope critical area.
- **Improve South Run-Up Area Access:** Round out pavement at the intersection of Taxiway A and A17, removing the connection into the south run-up area, to distinguish Taxiway A from a runway. Construct new entrance and exit taxiways to run-up area to replace the Taxiway A17 connection and provide redundant access points.
- **Construct Bypass Taxiway:** Construct a new bypass taxiway northwest of the RPZs for Runway 11L and 11R. The displaced arrivals thresholds would allow unrestricted taxiing of aircraft (regardless of size) accessing Runway 11R. The project would include removal of the existing concrete apron from the surrounding area and demolition of existing buildings within the area.
- **Close Taxiway A2:** Close and paint out the Taxiway A2 segment between Taxiway A and Runway 3-21 and the Taxiway A2 segments between Runway 3-21 and Taxiway D. This action implements airfield safety best practices and improves operational efficiency.
- **Remove Taxiway T and Taxiway A14:** Remove pavement and close Taxiways T and A14. This action implements airfield safety best practices and improves operational efficiency.
- **Remove Taxiway B between Runway 3-21 and Runway 11R Threshold and construct new taxiway from West Ramp to Taxiway C:** Remove pavement on the Taxiway B segment northwest of Runway 3-21. Close and paint out the Taxiway segment between Runway 3-21 and Taxiway D. Construct new taxiway extending from West Ramp to Taxiway A5. Widen Taxiway A5 from outboard Taxiway to Taxiway C. This action implements airfield safety best practices and improves operational efficiency.
- **Remove Lead-in Lines on Taxiway A4 and Taxiway A17:** Remove two lead-in lines on Taxiways A4 and A17, construct new bypass taxiway for Taxiways A4 and A17. This action implements airfield safety best practices and improves operational efficiency.
- **Straighten Taxiway D2 and Taxiway ANG B:** Straighten Taxiway D2 and Taxiway ANG B to be oriented perpendicular to Runway 3-21. This action implements airfield safety best practices and improves operational efficiency.
- **Remove Taxiways A7 and A9; Extend Taxiway A8:** Remove pavement on Taxiways A7 and A9, extend Taxiway A8 across Runway 11L-29R to intersect Taxiway A and create high speed taxiway for Runway 29R arrivals. This action implements airfield safety best practices and improves operational efficiency.
- **Construct/Maintain ANG Extended Blast Pad:** Construct/maintain the ANG blast pads for Runways 11L-29R and 11R-29L and paint/mark as non-runway/taxiway pavement.

RECOMMENDED IMPROVEMENTS

- 1 Construct full length parallel Runway 11R-29L (Group IV)
- 2 Construct new center parallel T/W
- 3 Construct new outboard parallel T/W
- 4 Shift arrivals threshold to allow B-II aircraft to taxi on T/W D upon an aircraft's approach to R/W 11L & 11R
- 5 Improve south run-up area access
- 6 Construct bypass Taxiway
- 7 Reconstruct itinerant aircraft apron
- 8 Construct /Maintain extended blast pad
- 9 Airfield geometry safety recommendations to reconfigure taxiways and remove excess pavement (multiple locations)
- 10 Extend Taxiway G
- 11 Terminal Renovation
- 12 Expand Concourse to the East
- 13 Expand Concourse to the West
- 14 Install Solar Canopies
- 15 Expand Rental Car fueling and wash rack
- 16 Construct Rental Car storage area
- 17 Expand Country Club Road
- 18 Expand Economy Parking Lot
- 19 Construct Fuel Farm
- 20 Construct ARFF Station
- 21 Future Air Traffic Control Tower
- 22 Solar Canopies under development
- 23 Extended Clear Zone acquisition area

LEGEND

- Airport Property Boundary
- Existing Airfield Ramp, & shoulders
- Existing Runway Pavement
- Runway Protection Zone
- Buildings
- Extended Clear Zone
- Proposed Removal
- Proposed Airfield Project
- Proposed Runway Pavement
- Proposed Terminal Project
- Proposed Landside Project
- Proposed Support Project
- Proposed Property Acquisition



Master Plan Update



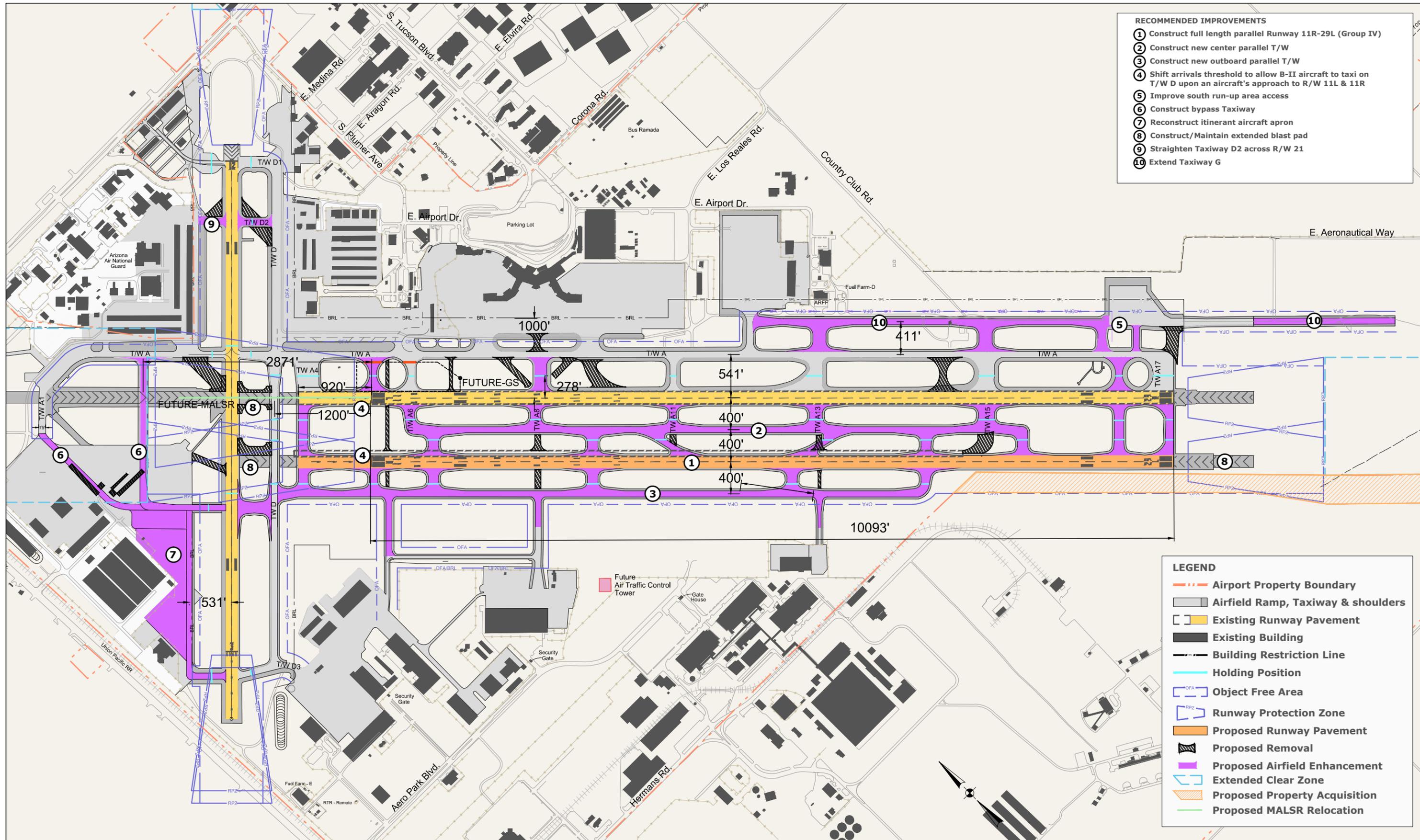
TUCSON INTERNATIONAL AIRPORT

DRAWING SCALE: 1" = 1250'

DATE: May, 2013

Preferred Comprehensive Development Plan

FIGURE 6-1



- RECOMMENDED IMPROVEMENTS**
- ① Construct full length parallel Runway 11R-29L (Group IV)
 - ② Construct new center parallel T/W
 - ③ Construct new outboard parallel T/W
 - ④ Shift arrivals threshold to allow B-II aircraft to taxi on T/W D upon an aircraft's approach to R/W 11L & 11R
 - ⑤ Improve south run-up area access
 - ⑥ Construct bypass Taxiway
 - ⑦ Reconstruct itinerant aircraft apron
 - ⑧ Construct/Maintain extended blast pad
 - ⑨ Straighten Taxiway D2 across R/W 21
 - ⑩ Extend Taxiway G

- LEGEND**
- Airport Property Boundary
 - ▭ Airfield Ramp, Taxiway & shoulders
 - ▭ Existing Runway Pavement
 - ▭ Existing Building
 - Building Restriction Line
 - Holding Position
 - Object Free Area
 - Runway Protection Zone
 - ▭ Proposed Runway Pavement
 - ▭ Proposed Removal
 - ▭ Proposed Airfield Enhancement
 - Extended Clear Zone
 - ▭ Proposed Property Acquisition
 - Proposed MALSRL Relocation

6.2.2 Terminal Projects

- **Terminal Renovation Improvements Project-Phase 1:** The first phase terminal renovation project relocates the existing Concourse A SSCP to the outer Terminal A quadrant (Terminal Alternative Option 2). The first phase of the Concourse A SSCP would be four lanes to meet current requirements. The lanes would be sized to meet current TSA requirements for whole body imagers. To make room for the Concourse A SSCP, existing vacant ticketing and ATO area, Frontier ticketing and ATO, and TSA office space would be demolished. One existing baggage takeaway would be eliminated as part of the SSCP relocation. The first phase would also result in a relocated IDF room, relocated mechanical room, and relocated TSA office space.
- **Terminal Renovation Improvements Project-Phase 2 (Administrative Space):** Remodel and renovate the mezzanine level to accommodate TAA administrative space. This requires the demolition of existing functions on the mezzanine level which include: restaurant, kitchen, food storage area, retail concessions, office space, restrooms, and MEP equipment. To support TAA administrative functions on the mezzanine level, the vertical circulation will need to be modified to remove the existing escalators leading to the mezzanine level.
- **Terminal Renovation Improvements Project-Phase 3:** The third phase of terminal renovation improvements further expands the Concourse A SSCP to 6 lanes, and relocates the existing Concourse B SSCP to the outer quadrant of Terminal B. The lanes would be sized to meet current TSA guidelines and would feature a 28 foot dual-lane width. This phase also recommends implementing two-step ticketing where new kiosk pods would be constructed to allow passengers to check-in and receive a boarding pass. The existing linear ticketing would be converted into island ticketing bag drop positions to take advantage of the depth of the terminal.
- **Expand Concourse to the East:** Concourse A will be the first concourse to be expanded as additional gates are required to accommodate future flight schedules. Concourse A can be expanded incrementally to the east in phases. A detailed programming effort should be conducted approximately five years prior to when gates will be needed.
- **Expand Concourse to the West:** Concourse B will be expanded following the expansion of Concourse A. Site constraints limit the magnitude of expansion and necessitate the removal and relocation of a fuel farm. A detailed programming effort should be conducted approximately five years prior to when gates will be needed.

6.2.3 Landside Projects

- **Install RAC Garage Solar Canopies:** Install solar canopies on the Top Level of the rental car garage. This will also provide covered spaces for vehicles parked on the top level of the garage.
- **Install Economy Parking Solar Canopies/Increase Economy Covered Parking:** Install solar canopies to cover 16 acres of the economy parking lot. This area will double as covered parking and will increase the economy covered parking supply by 2,000 spaces.
- **Expand Rental Car Fueling and Wash Rack:** Expand the rental car quick-turn-around area adjacent to the rental car garage, where vehicles are serviced between rentals, to provide additional rental car fueling and washing facilities.
- **Construct Rental Car Storage Area:** Construct a 6.2 acre vehicle storage area for rental car companies to use as overflow storage of vehicles between rentals. The proposed site is located at the corner of Corona and Country Club roads.

- **Extend Country Club Road – Phase 1:** Extend Country Club Road 2,400' south from East Los Reales Road to the ARFF access roadway and realign the intersection at Country Club Road and East Los Reales with a perpendicular configuration. The project would also include extending Airport Drive to Country Club Road connecting with a perpendicular intersection.
- **Extend Country Club Road – Phase 2:** Extend Country Club Road another 4,700' to the southeast to connect with Aeronautical Way. This extension will provide access to future industrial aviation and maintenance development supported by the Taxiway G extension plans as well as planned major industrial development along the southeast side of the airport. This improvement will effectively connect Country Club Road and Alvernon Way providing access to the sites from both directions.
- **Expand Economy Parking Lot:** Build out the north portion of economy parking lot at the corner of Country Club and Corona roads. This area will be required as employee and other parking demand is shifted to this lot, the demand for covered economy spaces increases, and portions of the lot are designated for other uses.

6.2.4 General Aviation Projects

- **Reconstruct Itinerant Aircraft Apron:** This project reconstructs portions of the West Ramp along Runway 11 to serve the existing hangars and future development in that area. Taxiway D3 would also be upgraded providing access to the south general aviation area.
- **Extend Taxiway G:** Extend Taxiway G, which currently connects to the south run-up area, to connect the air cargo ramp with all future industrial aviation and maintenance sites. Airfield access to these future sites would be provided from Taxiway G.
- **General Aviation Strategic Plan:** Update the General Aviation Strategic Plan in the near term.

6.2.5 Support Projects

- **ATCT Relocation:** The ATCT is being constructed by the FAA however the airfield lighting controls will require relocation to the new tower.
- **Land Acquisition:**
 - **Stewart Title:** Purchase 10 acres of land on the southeast side of the East Los Reales Road and Alvernon Way intersection to preserve for future development of the far parallel north runway.
 - **Griggs/Ameron:** Purchase 20 acres in Section 27 along Alvernon Way for land use compatibility with noise exposure.
 - **Hughes Sand and Gravel / AAA:** Purchase 60 acres in Section 27 along Alvernon Way for land use compatibility with noise exposure.

6.2.6 Projects Beyond Master Plan Horizon

While the projects described below are not required during the Master Plan Update horizon, they are included to preserve land for their future development and to ensure surrounding uses are compatible.

- **Construct New ARFF Station:** Construct new ARFF station near the new ATCT on the southwest side of the airfield.
- **Development of Fuel Farm:** Construct a new centralized 1.5 million gallon above ground fuel storage facility along East Los Reales Road. This facility includes remote fuel loading hydrants for flightline trucks and underground pipeline connecting fuel farm with fuel loading hydrants. The

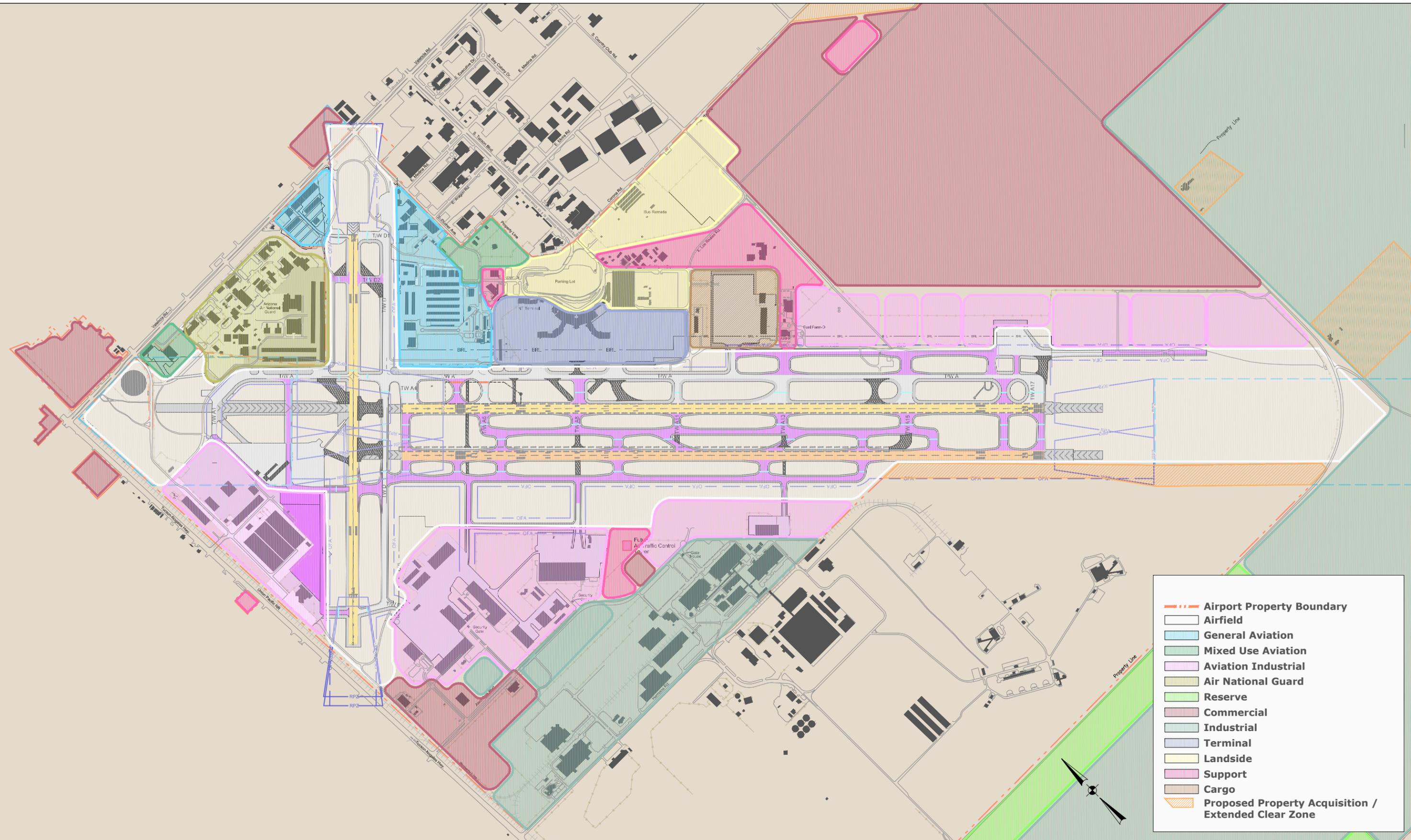
fuel farm will allow relocation of existing fuel farms in the terminal area providing space for future terminal and apron construction.

- **Development of Future Far Parallel Runway:** Construct an 11,000' air carrier runway northeast of the existing airfield to accommodate long term future capacity requirements.
- **Prepare Ground Cargo Infrastructure:** Conduct planning and preliminary engineering efforts to prepare the area for future ground cargo development including surveys, grading and drainage plans for the site associated with the future far parallel runway.

6.3 AERONAUTICAL LAND USE

The aeronautical land uses associated with the preferred comprehensive development plan are depicted on **Figure 6-3**. The identified aeronautical land uses accommodate airport growth through the Master Plan Update planning horizon. The aeronautical land use categories depicted on Figure 6-3 are:

- **Airfield:** Areas designated for aircraft movement including runways, taxiways, hold pads and remain overnight aircraft parking areas. Aircraft aprons are generally designated with the facility they serve (e.g. cargo, general aviation, etc.).
- **Terminal:** Areas that generally accommodate passenger processing and boarding of aircraft. These areas primarily include the terminal building accommodating passenger ticketing, baggage claim, security screening (passengers and baggage), concessions, and holdrooms. The terminal apron is also included.
- **Landside:** Areas on-Airport that directly and indirectly serve airport passengers and employees. These areas include access roadways, terminal curbsides, parking, rental car, and commercial vehicle staging areas.
- **Air Cargo:** Areas that serve aviation-related cargo uses including sorting or warehousing facilities. Cargo facilities at TIA serve both belly and freight cargo. Cargo aircraft aprons are included in the designated cargo land use areas.
- **Airport Support:** Areas that provide for various services that support airport operations such as the ARFF station, TAA Administration, and fuel farms.
- **General Aviation:** Areas that provide for a range of commercial and specialty aviation-related development. Specific uses typical to general aviation include small and large and corporate hangars; fixed base and specialty operators, minor aircraft repair, self-serve facilities, pilot support facilities, and flight schools.
- **Industrial Aviation:** Sites capable of supporting a range of moderate to intense industrial and major commercial aviation-related development. Specific uses typical to industrial aviation include major aircraft, airframe, avionics, and power plant repair; parting, storage, refurbishing and manufacturing of aircraft and aerospace components; air cargo and related operations, freight and logistics, distribution, warehousing and multi-modal facilities. Airfield-related uses that require special infrastructure, facilities or compatible design are also appropriate industrial aviation development.
- **Mixed Use Aviation:** Areas that may support a balance of commercial, general, and industrial aviation activity in close proximity, provide transition between use intensity, or contain other site factors that allow for a mix of uses to occur on a single parcel. This includes necessary commercial, office, and retail uses.
- **Future Air Traffic Control Tower:** This area is set aside to accommodate the planned future ATCT and related facilities.



- - - Airport Property Boundary
- Airfield
- General Aviation
- Mixed Use Aviation
- Aviation Industrial
- Air National Guard
- Reserve
- Commercial
- Industrial
- Terminal
- Landside
- Support
- Cargo
- Proposed Property Acquisition / Extended Clear Zone

Master Plan Update



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DRAWING SCALE: 1" = 1250'

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Proposed Aeronautical Land Use

FIGURE
6-3