CHAPTER 7: LAND USE DEVELOPMENT

7.1 INTRODUCTION

This chapter presents the airport land use program, which is designed to efficiently and productively utilize land assets for enhanced revenue generation and community economic development, while also securing its aviation programming needs and supporting aeronautical activity for the long term. Promoting economic sustainability and financial diversification for TAA is an over-arching consideration that has informed development of the alternatives.

As airport property is developed, the airport layout plan (ALP) must be amended. This amendment procedure requires FAA review and, in certain cases, this review may require some form of site assessment under NEPA. This review includes assuring the airport is receiving fair market value for its development leases and that the lease term is sufficient to ensure the public's continued enjoyment of the airport.

The following are addressed in this section:

- **Planning Considerations** – provides a summary discussion of the development issues and opportunities on TAA Reserve Lands and surrounding undeveloped properties.
- **Land Use Planning Context** – describes the planning areas that comprise the context impacting land use planning, including the prevailing pattern in the surrounding area.
- **Alternative Land Use Scenarios** – describes the land use and intensity assumptions included in both a near term and long term development scenario.
- **Preliminary Phasing Considerations** – describes general assumptions for staging development.
- **Evaluation of Development Potential** – describes development "readiness", and how development should be prioritized.
- **Development Opportunity Sites** – describes specific site marketability and proposed development types.
- **Future Development Plan Map** – provides a consolidated map of planned future aeronautical and collateral land uses (TIA Land Use Program).
- **Implementation Considerations** – provides an overview of the considerations to be addressed during implementation.

7.2 PLANNING CONSIDERATIONS

Land use and development planning considerations touch upon the physical, market-related, regulatory, and policy drivers of future development while also ensuring aeronautical needs and compatibility are prioritized.

7.2.1 Floodplain

Extensive 100-year floodplains, as delineated by Federal Emergency Management Agency (FEMA), impact the airport east of the current airfield. These floodplains represent significant riparian resources that may be impacted by development. It will be possible to implement planning mitigation strategies over the long term that will minimize impacts to the floodplain, or that provide coordinated engineered

solutions in conjunction with site development, which can be accomplished in combination with expansion of riparian corridors further south (consistent with the Lee Moore Wash Basin Management Study). Floodplain solutions should be considered proactively and regionally due to potential permitting-related delays, to facilitate effective marketing of development-ready sites.

7.2.2 Riparian Habitat

In addition to the North and South Airport Washes east of the current airfield, the Hughes and Franco Washes traverse the undeveloped area further south. Site development standards and/or expanded resource conservation corridors at the south end of the Reserve Land Area will be employed to ensure that viable habitat corridors are maintained as development occurs. As with floodplain solutions, habitat mitigation should be considered proactively and regionally due to potential permitting-related delays, to facilitate effective marketing of development-ready sites.

7.2.3 Storm Water Management

While storm water management solutions to the north may require a structural approach, storm water management solutions further south should emphasize natural solutions at a larger, and potentially regional, scale. Clay-based soils are prevalent to the north, whereas soil conditions to the south are more amenable to employing storm water best management practices at a variety of scales. In all cases, sustainable best practices should be emphasized.

7.2.4 Wastewater Treatment

A future water treatment plant to serve the Franco Wash area is in the planning stages. The ultimate siting and timing of this plant has not been finalized. To facilitate development in the Old Vail Connection corridor, it is assumed that development sites located in the Franco Wash can likely be serviced with interceptors as required to treat wastewater generated in this area at existing facilities that serve the Hughes Wash watershed to the north if necessary.

7.2.5 Resource Extraction Sites

Significant acreage in the planning area has been impacted by past and current excavation activity. Taken together, excavation sites within the planning area comprise a total of approximately 1,301 acres of active extraction and 554 acres of inactive extraction; areas subject to long term mining leaseholds comprise a more significant total of approximately 2,022 acres. Portions of some of the areas could be readily adapted for typical access and site development, depending upon the extent of past activities and proximity to the roadway network.

In areas with access challenges, low-intensity uses such as solar arrays, storage, testing and construction staging may prove to be the most feasible. Extraction sites just east of Nogales Highway and north of Old Vail Connection are fairly shallow in depth and significant portions of the sites would appear to accommodate most types of development. Conversely, the sites located on the east and west corners of Old Vail Connection and Swan Road include deep cuts and steep side slope walls that will serve as a barrier to access and utility service.

7.2.6 Regional Market Trends Impacting the Planning Area

The evaluation of alternative land use scenarios focuses largely on general comparisons between the merits of the alternatives and anticipated parcel development costs, rather than the potential development return of the alternatives. More specific market studies will be needed to facilitate future implementation of the development recommendations and to estimate potential development revenue by project based on prevailing market forces at the time.

7.2.7 Existing Long Term Leases

The expiration dates of existing leases in the Reserve Land Area vary. The pattern of current long term lease obligations, as it relates to parcels or groups of parcels that may have promising near term development potential, may have implications for how effectively plan implementation can proceed. For purposes of the Master Plan Update process, it is assumed that mining leaseholds (and associated extension options) will prevent development efforts on impacted properties during the five- to ten-year implementation horizon of the Master Plan Update. These properties will therefore be considered long term opportunities.

7.2.8 Transportation and Facility Needs

Realizing the full development potential of many vacant or underutilized properties will require significant public improvements. This provides a unique opportunity for coordinated infrastructure investment policies and decisions among TAA, the City of Tucson and Pima County that will result in a cohesive and mutually beneficial environment for development.

Several programmed or proposed transportation improvements will have a bearing on the alternatives, including (but not limited to): restricted future use of Hughes Access Road, the extension of Alvernon Way to Old Vail Connection, upgrade and realignment of Old Vail Connection between Nogales Highway and Alvernon Way, the extension of Old Vail Connection east to Wilmot and eventually further east to Interstate I-10, the extension of Country Club Road to Alvernon Way, potential improvements to regional "gateway" access to the terminal area via Country Club Road, and potential proposed future passenger rail service connections. Passenger rail service could include HSR in the UP freight rail corridor, an associated "people mover" type connection between the HSR station and the terminal, and a potential light rail connection between the airport and the downtown. These projects will impact the visibility and accessibility of some TAA properties that are currently isolated and/or expand the range of potential development types.

Figure 7-1 highlights major natural and infrastructure-related conditions that will influence the location and development capacity of the land use program.

7.3 LAND USE PLANNING CONTEXT

As depicted in **Figure 7-2** and summarized in **Table 7-1**, the planning area consists of several distinct elements. Alternatives for the TIA airfield and aeronautical support areas have been addressed in detail separately.

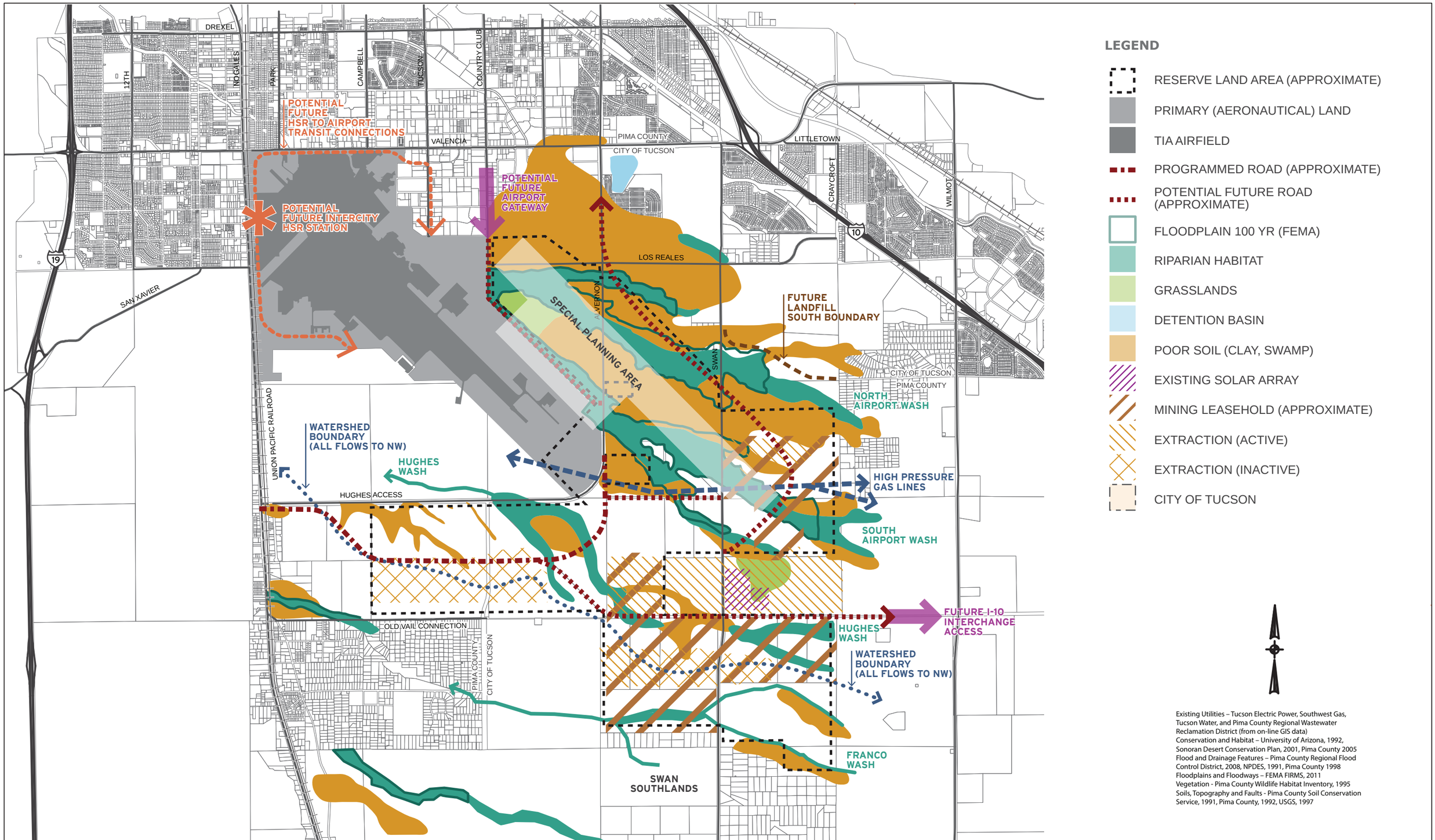
Table 7-1: Planning Context Area

Area	Estimated Gross Acreage	% of Total
Reserve Land Area	5,699	22%
Primary (Aeronautical) Land	2,453	9%
Non-TAA Infill / Enhancement Area	14,826	57%
Non-TAA Development Area	3,036	12%
Total Urban Land Context	**26,014**	**100%**

Source: Tucson Airport Authority

TAA owns several smaller individual properties located generally north and west of the airport with frontage and access to either Nogales Highway or Valencia. Future compatible development opportunities for these infill properties are also considered important to the land use program.

In addition to the Reserve Land Area and TAA infill properties, the planning area also includes areas referred to for purposes of this planning process as the non-TAA Infill/Enhancement Area and the Non-TAA Development Area. While detailed planning recommendations for these areas are neither the purview of TAA nor the focus of the Master Plan Update effort, understanding their unique characteristics is important for purposes of developing an effective long term development strategy



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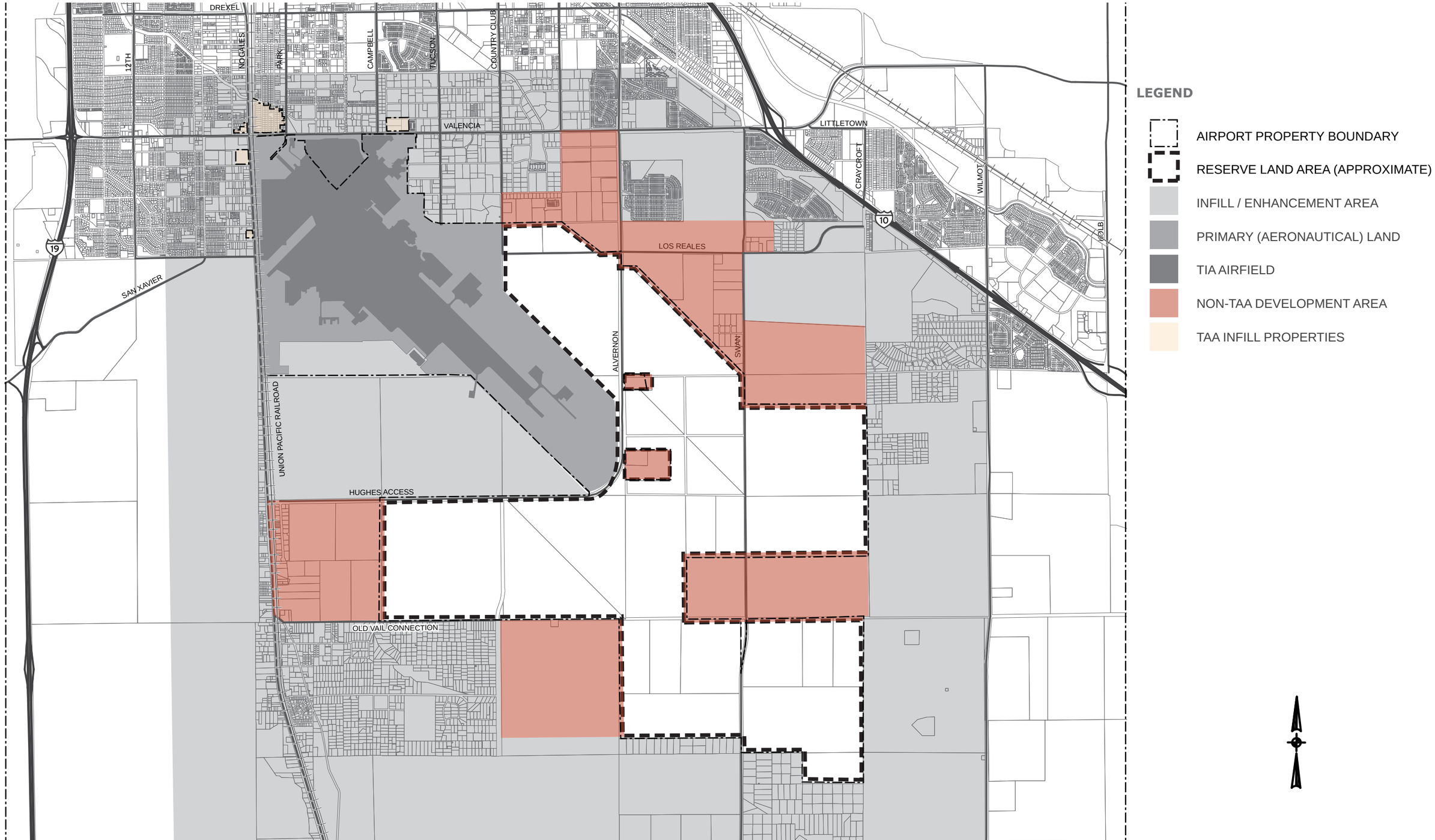
PLANNING CONSIDERATIONS

FIGURE 7-1



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PLANNING CONTEXT

FIGURE 7-2

7.3.1 Infill / Enhancement Area (Non-TAA Land)

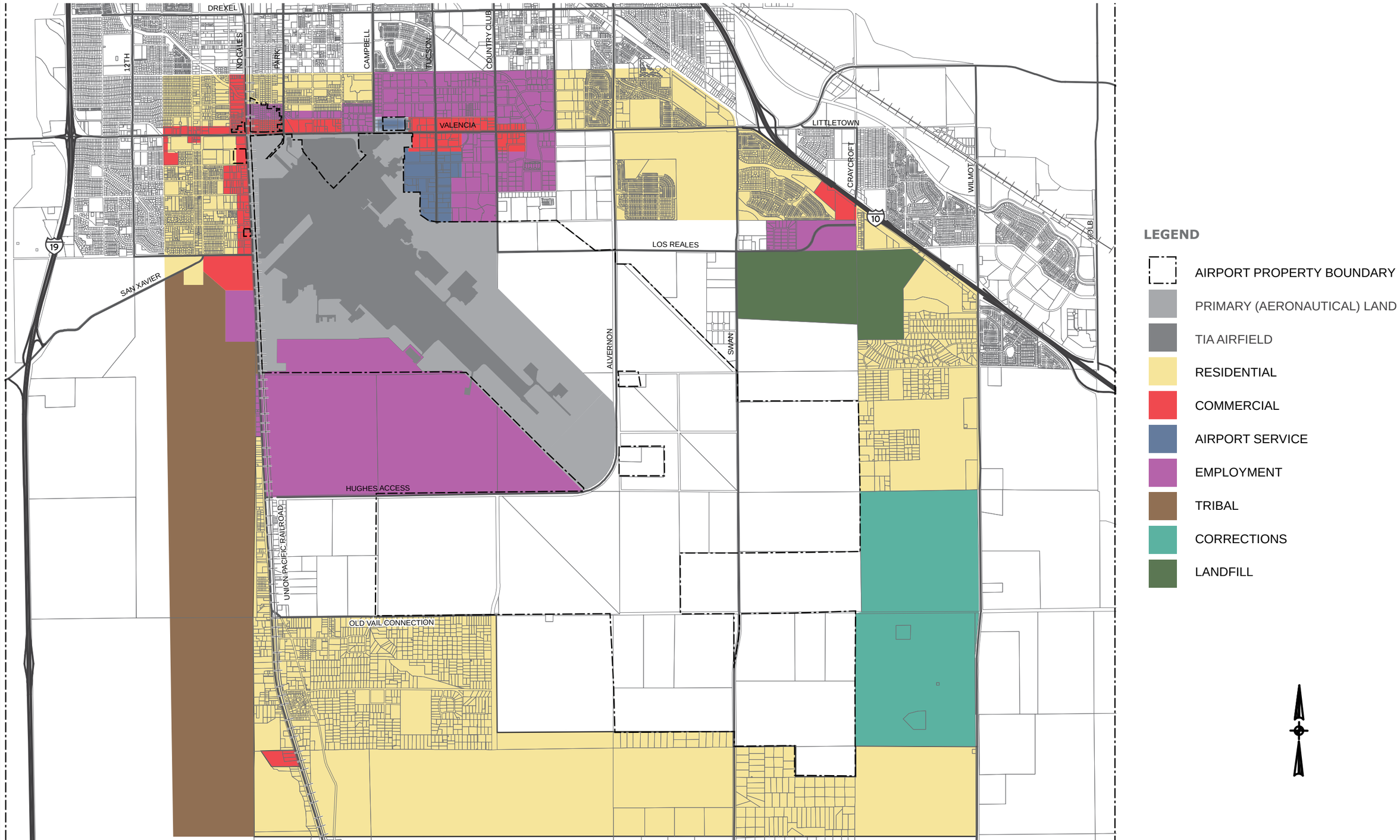
The Infill/Enhancement Area (IEA) includes portions of the planning area which are already developed or committed to future development. This includes the majority of lands that surround the airport. The extent of the IEA is illustrated in **Figure 7-2**. In order to fully understand the competitive market context within which properties will be developed, an estimate of remaining development capacity within the IEA has been compiled.

While official land use planning for non-TAA owned lands clearly falls within the jurisdiction of the City of Tucson and Pima County, the preliminary "build out" assumptions depicted in **Figure 7-3** below provide a basic framework for cohesive future land uses in the vicinity of the airport. These land use assumptions follow the current predominant land use patterns for the area.

Based on existing land use patterns and future planned improvements within the airport area, the following land uses types are anticipated:

- **Residential:** includes all densities and types of residential uses within the airport planning area.
- **Commercial:** includes a full range of retail and commercial services that would be appropriate to serve nearby residential neighborhoods and the travelling public.
- **Airport Service:** includes those commercial or employment uses which tend to rely on airport activity such as hotel accommodations, restaurants, airport parking, automobile rental and related offices, facilities and services.
- **Employment:** includes light industrial, business park, large-scale service commercial, and warehouse/distribution activities.
- **Tribal:** includes property of the Tohono O'odham Nation, located west of Nogales Highway.
- **Corrections**: includes state and federal corrections facilities along Wilmot Road.

Based on the generalized build out pattern depicted in **Figure 7-3**, an estimate of the potential available development capacity of vacant properties in the IEA has been developed, as summarized in **Table 7-2** below.



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INFILL/ENHANCEMENT AREA BUILDOUT ASSUMPTIONS

FIGURE 7-3

Table 7-2: Pending Development Capacity in the IEA

Land Use	Estimated Existing Acreage	Estimated Future Acreage	Estimated Net Change
Residential[1]	3,905	7,566	3,661
Commercial	418	464	47
Airport Service[2]	0	217	217
Employment	2,560	2,580	20
Reservation	2,051	2,051	0
Corrections	1,368	1,368	0
Landfill	580	580	0
Vacant	3,944	0	-3,944
Total IEA	**14,286**	**14,286**	**0**

Source: HNTB analysis
Notes:
1. Residential category includes neighborhood schools and parks.
2. Airport Service reflects proximity to the airport, with the potential to include both commercial and employment uses.

These land use and development capacity assumptions provide useful context to the discussion of future development potential in the Reserve Land Area. The significant quantity of remaining development capacity in the IEA will impact upon the time frame for market absorption of TAA properties, and is therefore a critical consideration. It must be noted that these assumptions are intended only to generally reflect anticipated development patterns, considering the intent of currently adopted plans of the City of Tucson and Pima County. Carefully managed and coordinated investment decisions for all segments of the planning area will result in continued strong economic development opportunities and tax base growth for the mutual benefit of TAA, the City of Tucson and Pima County.

7.3.2 Non-TAA Development Area

Conditions within the remainder of the planning area are distinctly different from the Infill/Enhancement Area, in that the area is largely undeveloped, which creates the potential for master planned development at a significant scale. As depicted in **Figure 7-2**, of a total of approximately 8,735 undeveloped acres, TAA's Reserve Land Area comprises approximately 5,699 acres (or 65%) and the Non-TAA Development Area comprises approximately 3,036 acres (or 65%).

While the alternative land use scenarios to follow are intended to provide direction to TAA on planning for future development of the Reserve Land Area, is it important to consider that a cohesive overall planning environment is a vital consideration. For this reason, the alternative scenarios suggest how the future land use pattern in non-TAA areas may evolve, as it relates to adjacent TAA holdings. To the extent the City of Tucson and Pima County find these recommendations for the non-TAA Development Area desirable, appropriate plan amendments could potentially be undertaken to ensure consistency in planning implementation for the broader area in the future. The transportation and utility services network in the area will require significant additional investment to support development, and a coordinated planning and investment strategy will facilitate effective implementation.

7.4 ALTERNATIVE LAND USE SCENARIOS

Both the planning considerations and the physical context informed the preparation of land use scenarios. Further, they are reflective of TAA's master plan Goals and Objectives. The alternatives consider and support both the near term and long term needs of the airport, and reflect the importance of employment growth as a key strategy to moderate fluctuations in aviation demand in the future.

The alternative scenarios are distinguished by a driving improvement factor – the potential future development of the far parallel runway and a relocated TIA terminal facility. Because the time frame for the runway and terminal facility is over 20 years away, there is significant potential to allow "interim" or temporary uses of land within the potential future "footprint" of the runway and terminal facility. The alternative scenarios consider this potential along with a variety of other development accessibility and service opportunities. Areas impacted by the future far parallel airfield development are referred to as a special planning area

It is also important to note that several key characteristics are common to the scenarios. They reflect maintaining natural and environmental corridors to the extent feasible. The Franco Wash corridor at the south end of the planning area, in particular, will form an ideal natural buffer between potentially sensitive aerospace/defense uses to the north and existing and projected residential development to the south.

7.4.1 Scenario Elements

The scenarios generally reflect a development pattern that takes advantage of large available parcels and the ability to proactively plan for coordinated development at a regional scale. The "palette" of land uses applied to the Reserve Land Area in the scenarios includes:

Example of a typical commercial node

- **Commercial Node:** These locations highlight opportunities at readily accessible and visible intersections in employment areas to establish regionally-oriented commercial and/or locally-oriented retail/service uses to serve both employees and area residents. These areas should be planned and developed in conjunction with adjacent non-commercial uses to facilitate multi-modal access and coordinated traffic patterns, but will generally be somewhat auto-oriented in nature. Based on existing Tucson zoning standards, it is anticipated that the floor area ratio (FAR) developed in these areas will range from approximately 0.5 to 0.75, with a maximum building height of 40 feet (but in most cases reflecting single story commercial uses).

Example of a typical TOD node

- **Mixed Use / Transit-Oriented Development (TOD) Node:** This category includes mixed use development near potential HSR, CRT or LRT stations that will potentially be implemented in the planning area over the long term. Uses would likely include commercial, entertainment and/or higher density specialty uses. The intent of these areas is to achieve a more pedestrian-friendly walkable "Airport Village" environment that is accessible on foot and via transit. It is anticipated that the FAR in this area could reach 3.0, with a maximum building height of up to six stories and a maximum lot coverage of 80%. This area should be master planned to manage multi-modal access, rather than developed as a series of individual parcels.

Example of typical small scale employment use

- **Employment (Office/Industrial):** This category includes uses similar to those already existing north of Valencia and east of Country Club Road. These areas are typically multi-tenant, managed facilities with coordinated development standards to ensure consistent branding and design features. This category might include both airport and non-airport related business types. Based on existing Tucson zoning standards, it is anticipated that the FAR developed in these areas will range from approximately 0.25 to 0.75, with a maximum building height of 40 feet. A minimum development size should be established, with limited access points and coordinated internal circulation.

Example of a typical general aviation use

- **Airport Service:** This category includes airport industry and related service uses. This category includes businesses that do not require airfield access (such as remote passenger or employee parking facilities). It is anticipated that the FAR developed in these areas will range from approximately 0.25 to 0.75, with a maximum building height of 40 feet. Buildings and sites will typically be somewhat utilitarian, with minimal site enhancements.

Example of a typical industrial/logistics use

- **Industrial/Logistics:** This category includes large industrial and warehouse structures with greater storage volumes. These areas may be single or multi-tenant. It is anticipated that the FAR developed in these areas will range from approximately 0.75 to 2.0, with a maximum building height of 50 feet.

Example of a typical large scale industrial use

- **Large-Scale Industrial:** This category includes continuing development of Tucson's aerospace and defense manufacturing, research and development, technology and biosciences employment cluster. This land use typically reflects master planned, facilities designed to accommodate a variety of unique user needs. This category may also incorporate minor commercial uses co-developed with larger scale employment uses, primarily to serve the local market. It is anticipated that the FAR developed in these areas will range up to 0.5 but often be significantly lower, with a maximum building height of 40 feet. Sites will typically include significant landscape buffers and access control, with the potential for riparian easements for mitigation purposes.
- **Natural Reserve/Mitigation:** This category includes riparian habitat areas that will be important to maintain as corridors where feasible during site planning. This category also provides a buffer for off-airport land uses.

7.4.2 Near Term Development Scenario

Land Use and Development Pattern

This scenario reflects potential development patterns prior to the construction of the far parallel runway (**Figure 7-4**), in which airport-related uses could be developed adjacent to the existing airfield and industrial uses could be developed with access from Alvernon Way and Swan Road. The land use pattern is set primarily by the existing roadway network. Because there presently is no roadway network serving the southeast portion of the area, more intensive land development is emphasized in other portions of the planning area. Three commercial nodes are indicated, ideally to be developed in conjunction with adjacent uses. It is important to note that this development pattern is intended to be compatible with the Long Term Development Scenario described later. Land area is summarized in **Table 7-3**.

Table 7-3: Near Term Development Scenario Summary

Land Use	Estimated Reserve Land Area Acreage	% of Total
Airport-Related Uses	419	7%
Employment	132	2%
Industrial/Logistics	787	14%
Large Scale Industrial	1,095	19%
Natural Reserve	1,454	26%
Undeveloped	1,811	32%
Total Gross Acreage	**5,698**	**100%**

Source: HNTB analysis

LEGEND

- PRIMARY ROAD NETWORK
- COMMERCIAL NODE
- RESERVE LAND AREA (APPROXIMATE)
- EXTENDED CLEAR ZONE POLICY AREA
- INFILL / ENHANCEMENT AREA
- PRIMARY (AERONAUTICAL) LAND
- TIA AIRFIELD
- AIRPORT-RELATED SERVICE
- EMPLOYMENT (OFFICE / INDUSTRIAL)
- INDUSTRIAL / LOGISTICS
- LARGE SCALE INDUSTRIAL
- NATURAL CORRIDOR / MITIGATION

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NEAR TERM RESERVE LAND DEVELOPMENT SCENARIO

FIGURE 7-4

Transportation Network

The Near Term Scenario relies on the current roadway network to support the development program. The potential long term introduction of HSR and LRT to serve the airport and community should also be considered, along with the long term potential to provide enhanced freight rail access to properties along the Old Vail Connection corridor, to ensure that near term development decisions do not preclude future multi-modal improvement opportunities.

HSR is currently proposed for eventual service on the UP freight rail corridor along the west side of the TIA boundary adjacent to Nogales Highway. Both alternatives consider the potential for a HSR station stop along Nogales Highway in the current "triple hangar" general aviation area. This location is suggested given its proximity to Valencia to enable a convenient "people mover" type connection to the TIA terminal. It would also be desirable to support a LRT connection between the downtown and the TIA terminal with a terminal station at the HSR station and/or near the TIA terminal. Several parallel north-south routes could provide a LRT/BRT connection between the downtown and the TIA terminal.

Natural Features and Resource Protection

The North and South Airport Washes drain on a southeast to northwest axis. The wash is channelized and directed through the airport to the corner of Valencia and Nogales Highway. Further south, the Hughes Wash and Franco Wash drain in a similar southeast to northwest pattern.

The planning area may contain protected natural resources and wildlife, including the Pima Pineapple Cactus and the Cactus Ferruginous Pygmy-Owl. In general, development patterns should seek to protect connectivity along the wash corridors and provide for any needed storm water and wildlife habitat mitigation in natural areas elsewhere within the planning area, with minimal disruption of natural drainage patterns. As development occurs, natural drainage solutions will be emphasized over engineered (channelized) solutions except in limited locations where constraints are significant.

7.4.3 Long Term Development Scenario

Land Use and Development Pattern

This scenario reflects a "full build-out" concept of the Reserve area (**Figure 7-5**). Office park uses compatible with existing areas to the north could expand to Los Reales and along Swan Road further south. Once Old Vail Connection is extended east to I-10 (outside the planning area), properties further east along Old Vail Connection could be developed with additional industrial uses. Following completion of upgrades to Old Vail Connection east to Alvernon Way, properties along Old Vail Connection can be permanently developed as an "aerospace/defense corridor" or similar regionally significant industrial uses.

Figure 7-5 reflects a development pattern that maximizes development potential in the Reserve area. Long term street patterns reflect access and service needs. Land area is summarized in **Table 7-4**.

Table 7-4: Long Term Development Scenario Summary

Land Use	Estimated Reserve Land Area Acreage	% of Total
Airport-Related Uses	954	17%
Employment	311	5%
Industrial/Logistics	623	11%
Large Scale Industrial	2,126	37%
Natural Reserve	668	13%
Runway/Terminal	954	17%
Undeveloped	0	0%
Total Gross Acreage	**5,698**	**100%**

Source: HNTB analysis.

Transportation Network

The Long Term Development Scenario reflects a roadway network which completely opens the planning area to development, allowing the full development potential of the Reserve Land Area. This includes the extension of Old Vail Connection between Alvernon Way and Interstate I-10 east of the planning area.

Natural Features and Resource Protection

As development extends further south over the long term, the Franco Wash will provide a highly desirable natural buffer between employment land uses in the planning area and residential uses anticipated to be developed south of the planning area. Given the ability to master plan development in this area, it is vital that appropriate natural drainage and mitigation solutions be incorporated into larger development, to serve the planning area effectively at a regional scale.

LEGEND

- PRIMARY ROAD NETWORK
- COMMERCIAL NODE
- RESERVE LAND AREA (APPROXIMATE)
- EXTENDED CLEAR ZONE POLICY AREA
- INFILL / ENHANCEMENT AREA
- PRIMARY (AERONAUTICAL) LAND
- TIA AIRFIELD
- AIRPORT-RELATED GA / CARGO / SERVICE
- EMPLOYMENT (OFFICE / INDUSTRIAL)
- INDUSTRIAL / LOGISTICS
- LARGE SCALE INDUSTRIAL
- NATURAL CORRIDOR / MITIGATION
- HIGH SPEED RAIL STATION
- AUTOMATED PEOPLE MOVER

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LONG TERM RESERVE LAND DEVELOPMENT SCENARIO

FIGURE 7-5

7.5 PHASING CONSIDERATIONS

Preliminary development phasing assumptions, as depicted in **Figure 7-6**, build upon the location and timing of known infrastructure improvements planned for the area. The accessibility provided by the roadway network will be the primary factor in the marketability of vacant land, followed by the availability of utilities and other services. A new wastewater treatment plant is planned to serve the Franco Wash watershed in the southern portion of the planning area. Temporary service would likely require the installation of lift stations.

As has been discussed previously, development phasing should reflect the need to maintain an area of "interim" uses which roughly encompasses the potential future footprint of the far parallel runway and new terminal facility. The interim use area encompasses approximately 2,056 acres.

7.5.1 Development Phases

A "tiered" approach to development and improvement phasing is reflected in **Figure 7-6**. The preferred development plan should provide flexibility in the future land mix, developing over time in a relatively contiguous and logical manner following roadway and utility extensions. These phases will be subject to future refinement as warranted to respond to external development influences.

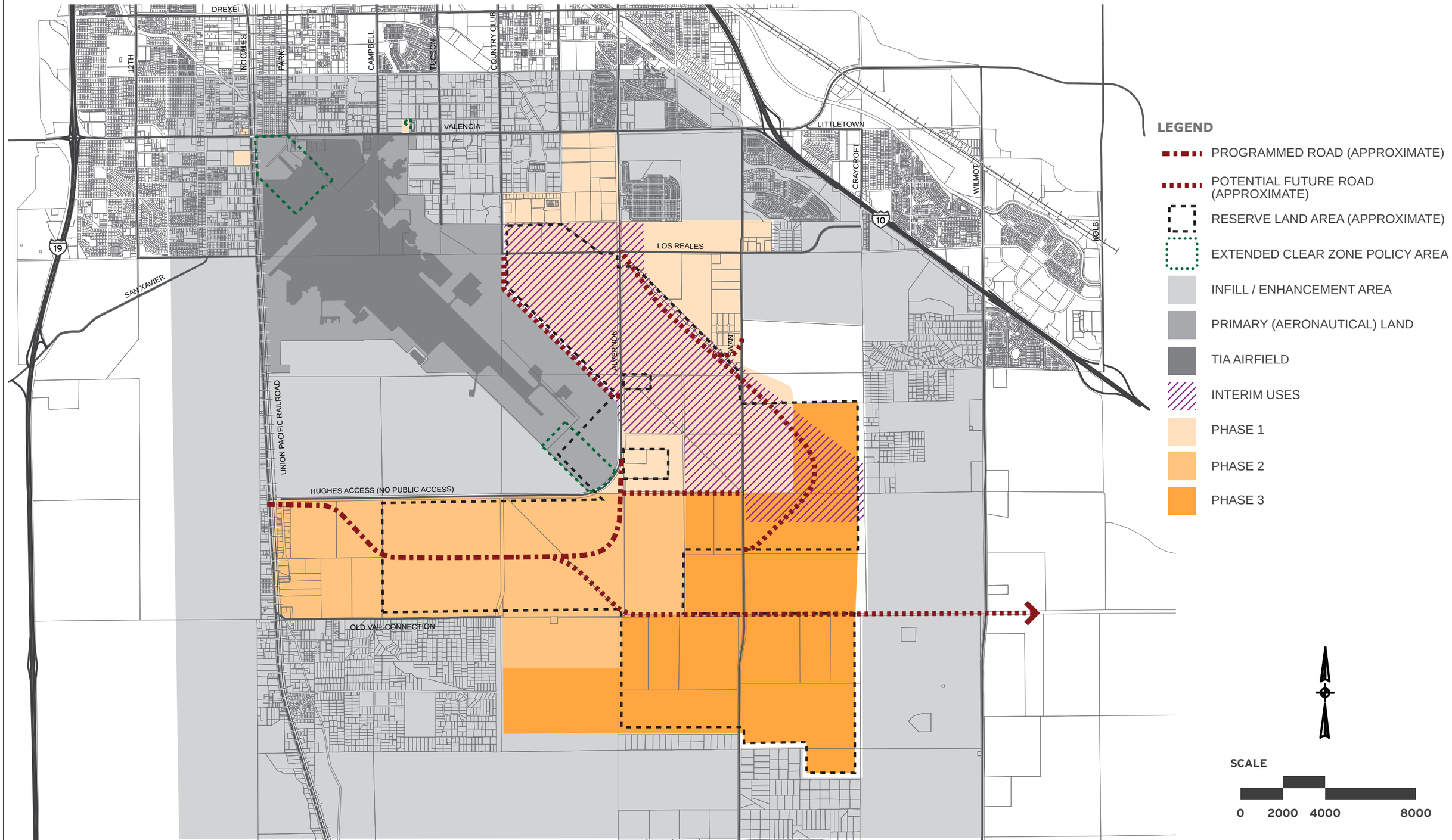
- **Phase 1:** This phase consists largely of properties impacted by the interim use consideration discussed above. These areas are currently reasonably well served by the existing roadway network and utilities. Some sites are readily available for development that might be pursued in the very near term, but these typically consist of smaller parcel sizes in a less contiguous pattern, requiring more site-level or off-site mitigation and drainage solutions. The Phase 1 area encompasses approximately 1,890 acres of Reserve Land Area, and approximately 1,033 acres of Non-TAA Development Area, for a total of approximately 2,923 acres.
- **Phase 2:** Currently, the Old Vail Connection is a substantially unimproved right-of-way. Large scale master planned development will be appropriate in this area, incorporating multi-site mitigation and drainage solutions. The Phase 2 area encompasses approximately 1,645 acres of Reserve Land Area, and approximately 802 acres of Non-TAA Development Area, for a total of approximately 2,447 acres.
- **Phase 3:** This phase consists of areas that require significant development of secondary public roadways, as they are currently located far from the primary roadway network and the extension of this network anticipated in Phase 2. Many of these properties are likely to become marketable for development only after the Old Vail Connection extension east to Wilmot Road and Interstate I-10 has been completed. In addition, significant portions of Phase 3 are subject to existing long term mining leaseholds. The Phase 3 area encompasses approximately 1,827 acres of Reserve Land Area, and approximately 697 acres of Non-TAA Development Area, for a total of approximately 2,524 acres.

7.6 EVALUATION OF DEVELOPMENT POTENTIAL

No one variable is anticipated to be "ultimately controlling" as to the suitability of a parcel for non-aeronautical development. For example, the fact that a site may currently lack utilities and have protected natural features will present additional costs and challenges to development. Other sites may be encumbered by existing leases and/or disposition restrictions. Returning previously excavated or mined properties to development-ready condition is likely to prove the most potentially challenging. But if a parcel is positioned well from a market standpoint, any or all constraints can potentially be overcome. The evaluation process addresses how individual sites or parcels may be considered in a coordinated manner to support cohesive development, subject to planned improvements in the future.

This evaluation includes a parcel-level assessment of development readiness to determine a subset of development sites that will be the focus of near term implementation efforts. Tiers of development potential have been established for each property based on several physical, regulatory and financial factors. Parcels are depicted in **Figure 7-7**.

Table 7-5 summarizes the most relevant attributes that comprise the Reserve Land Area for purposes of subsequent evaluation and identification of development opportunity sites.



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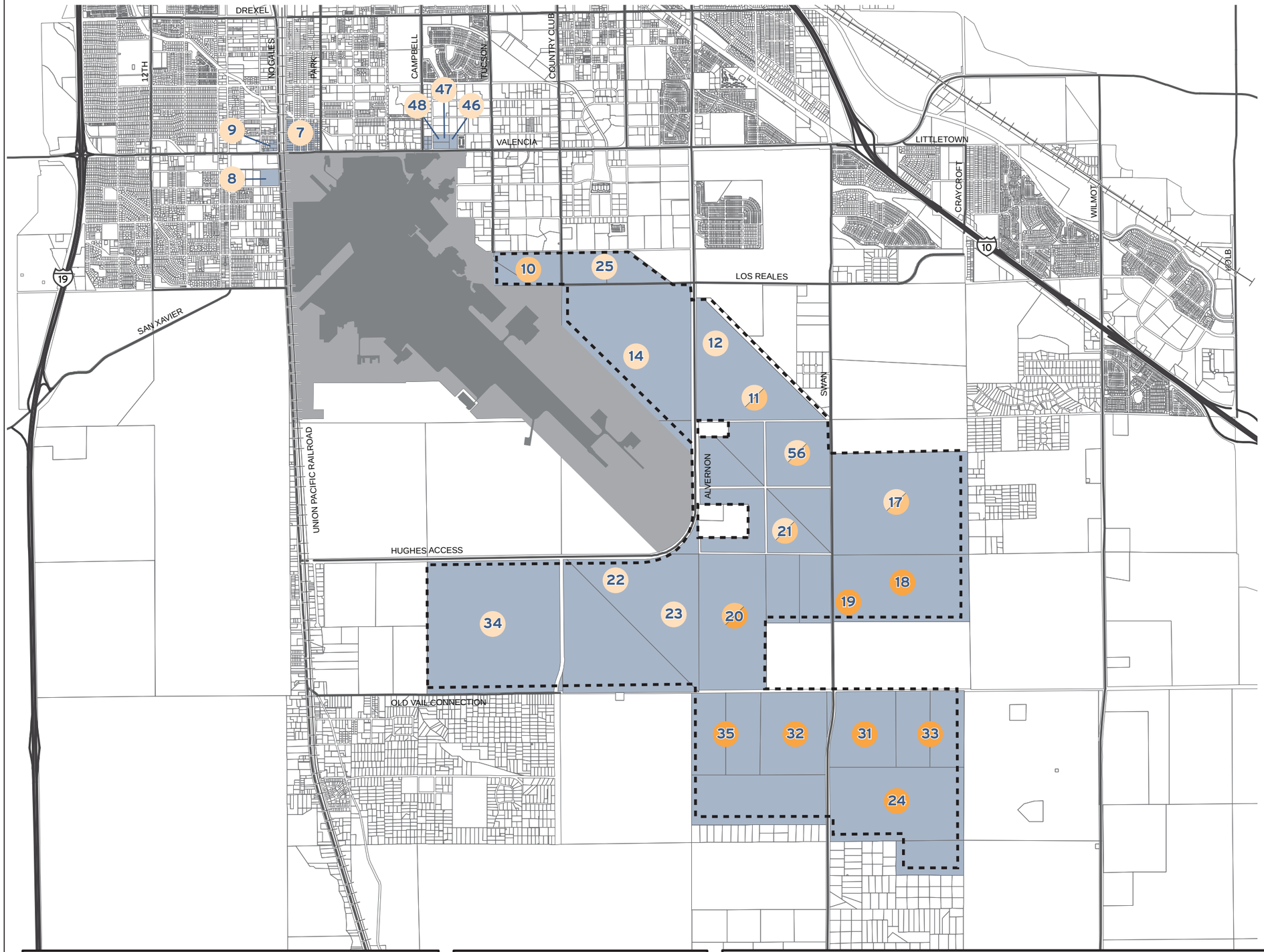
PRELIMINARY DEVELOPMENT PHASING

FIGURE 7-6



LEGEND

- RESERVE LAND AREA (APPROXIMATE)
- PRIMARY (AERONAUTICAL) LAND
- TIA AIRFIELD
- # TIA PARCEL NUMBER
- NEAR TERM POTENTIAL
- MID TERM POTENTIAL
- LONG TERM POTENTIAL

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DEVELOPMENT POTENTIAL

FIGURE 7-7

Table 7-5: Parcel Attribute Summary

Parcel Code	Parcel		Visibility	Access	Current Plan Designation	Zoning Aligned with MPU	Incorporated	Excavation	Mining Leasehold	Utilities	Natural Features
	Acres	*Shape/Size*								*Current Type(s)*	*General Extent*
7	19.50	Efficient	Y	Y	Comm / Light Ind	Y	Y	n/a	n/a	W, S	Medium
8	11.00	Efficient	Y	Y	Light Industrial	N	Y	n/a	n/a	W, S	High
9	4.00	Marginal	Y	Y	Commercial	Y	Y	n/a	n/a	W, S	Low
10	53.00	Efficient	Y	Y	Light Industrial	N	Y	n/a	n/a	W, S	Low
11	120.00	Marginal	Y	Y	Heavy Industrial	Y	N	n/a	n/a	-	Medium
12	138.00	Marginal	Y	Y	Heavy Industrial	Y	N	n/a	n/a	-	Medium
14	944.00	Efficient	Y	Y	Heavy Industrial	Y	N	n/a	n/a	W, S	Medium
17	480.00	Efficient	Y	Y	Heavy Industrial	Y	N	Active	Y	W	Medium
18	239.00	Marginal	N	N	Heavy Industrial	Y	N	n/a	Y	-	Medium
19	80.00	Marginal	N	N	Heavy Industrial	Y	N	n/a	Y	-	Low
20	480.00	Efficient	N	N	Heavy Industrial	Y	N	Active	Y	-	Low
21	255.00	Marginal	Y	Y	Heavy Industrial	Y	N	n/a	n/a	-	High
22	160.00	Marginal	N	N	Heavy Industrial	Y	N	n/a	n/a	-	High
23	160.00	Marginal	Y	Y	Heavy Industrial	Y	N	n/a	n/a	-	Medium
24	635.00	Efficient	N	N	Low Intensity Rural	Y	N	n/a	Y	-	Medium
25	98.20	Efficient	Y	Y	Heavy Industrial	Y	N	n/a	n/a	W, S	Medium
31	181.00	Efficient	N	N	Urban Industrial	Y	N	Active	Y	-	Low
32	192.87	Efficient	N	N	Urban Industrial	Y	N	Active	Y	-	Low
33	195.62	Efficient	N	N	Urban Industrial	Y	N	Active	Y	-	Low
34	918.80	Efficient	Y	Y	Heavy Industrial	Y	Y	Inactive	n/a	W	Medium
35	196.40	Efficient	N	N	Urban Industrial	Y	N	Active	Y	-	Low
46	4.32	Marginal	Y	Y	Industrial	N	Y	n/a	n/a	W, S	Low
47	3.87	Efficient	Y	Y	Industrial	N	Y	n/a	n/a	W, S	Low
48	4.65	Marginal	N	N	Industrial	N	Y	n/a	n/a	W, S	Low
56	308.40	Efficient	Y	Y	Heavy Industrial	Y	N	n/a	n/a	W	Medium

NOTES:

Parcel Configuration	Efficient = Parcel is configured/sized to optimize development capacity;
	Marginal = Parcel shape and/or size make development challenging
Visibility	Parcel is or is not visible from a major street corridor.
Access	Parcel is or is not accessible from a major street corridor.
Current Plan Designation	Current land use plan designation as specified by the City of Tucson or Pima County.
Zoning Aligned with MPU	Y = Current zoning designation supports proposed MPU land use;
	N = Rezoning required for MPU implementation
Utilities	Site is adjacent to or is currently being served by sewer or water: W = Water; S = Sewer.
Natural Features	The extent of the site covered by major washes, floodplain, habitat or wildlife corridors.

Source: HNTB and Dowl HKM analysis

7.6.1 Evaluation Criteria

Building on the understanding of the physical and regulatory features of the parcels, an evaluation of each parcel was undertaken based upon certain evaluation criteria listed below. Each parcel has been evaluated based upon the intended future use reflected in the Long Term Development Scenario.

Criteria related to operational, regulatory, environmental and financial considerations are included consistent with plan goals.

Operational

- Supports TIA's role as an integral component of broader economic development planning efforts
- Accommodates highest and best airport uses
- Serves the retail and service needs of surrounding areas
- Enhances TIA's regional access and visibility
- Integrates TIA more effectively into an intermodal transportation network

Regulatory

- Is complementary to applicable local, regional and state plans
- Is politically feasible; needed partnerships and coordination for implementation can be achieved as appropriate

Environmental

- Minimizes environmental disturbance and/or effectively accommodates regional mitigation strategies, in support of broader environmental planning efforts
- Utilizes former extraction areas with minimal need for mitigation
- Supports sustainability objectives, such as regional drainage solutions and a contiguous development pattern for efficient extension of access and utilities

Financial

- Allows for revenue generation opportunities while maintaining future airport expansion capability
- Allows for future flexibility to respond to emerging market trends and opportunities
- Effectively leverages infrastructure investments by other agencies

Each parcel has been assigned a development potential ranking as shown in **Table 7-6**. The development potential ranking is also graphically depicted in **Figure 7-7**. This evaluation represents a preliminary categorization based primarily on locational, environmental and regulatory considerations.

Table 7-6: Development Potential Evaluation and Ranking

Parcel Code	Supports Employment Cluster	Supports Airport-Oriented Uses	Serves Retail/Service Needs	Enhances Access/Visibility	Supports Intermodal Network	Complementary to Plans	Partnerships / Coordination Feasible	Minimizes Disturbance or Accommodates Broader Efforts	Minimizes Need For Mitigation of Extraction Sites	Supports Sustainability Objectives	Maintains Future Expansion Capability	Allows Future Market Flexibility	Leverages Infrastructure Investments	Composite Ranking (total of all rankings)	Priority Assignment
	Operational Criteria					*Regulatory Criteria*		*Environmental Criteria*			*Financial Criteria*				
7	2	1	2	1	1	1	2	1	0	2	1	0	2	16	**Near**
8	2	1	2	1	1	0	2	0	0	2	1	0	2	14	**Near**
9	2	1	2	1	1	2	2	2	0	2	1	0	2	18	**Near**
10	2	2	2	2	2	0	2	1	0	2	1	0	2	18	**Near**
11	1	1	0	1	1	2	1	1	0	2	-1	1	1	11	**Near** / Mid
12	1	1	0	1	1	2	1	1	0	2	1	1	1	13	**Near**
14	2	2	1	1	1	2	0	1	0	2	-1	1	2	14	**Near**
17	1	0	0	-1	-1	2	1	-1	-1	0	1	1	2	4	**Near** / Long
18	0	-1	-2	-2	-2	2	1	1	0	-1	1	1	-2	-4	Long
19	0	-1	-2	-1	-1	2	1	2	0	0	-1	1	-1	-1	Long
20	1	1	1	2	1	2	1	-2	-2	2	-1	1	1	8	Mid / Long
21	1	1	0	1	1	2	1	0	0	2	-1	1	2	11	**Near** / Mid
22	2	2	-1	0	1	2	1	0	0	2	0	1	2	12	**Near**
23	2	2	1	2	1	2	1	1	0	2	-1	1	2	16	**Near**
24	-2	-2	-2	-2	-2	2	1	1	0	-2	0	1	-2	-9	Long
25	2	2	1	1	1	2	0	1	0	2	1	1	2	16	**Near**
31	0	-1	-2	-1	-2	2	1	2	-2	-1	0	1	-2	-5	Long
32	0	-1	-2	-1	-2	2	1	2	-2	-1	0	1	-2	-5	Long
33	0	-2	-2	-1	-2	2	1	2	0	-1	0	1	-2	-4	Long
34	2	1	1	2	1	2	2	1	-2	2	0	1	2	15	**Near**
35	1	0	-1	-1	-1	2	1	-2	-2	1	0	1	1	0	Long
46	2	2	2	1	1	0	2	2	0	2	1	0	2	17	**Near**
47	2	2	2	1	1	0	2	2	0	2	1	0	2	17	**Near**
48	2	2	2	1	1	0	2	2	0	2	1	0	2	17	**Near**
56	1	1	0	0	0	2	1	1	0	1	-1	1	2	9	**Near** / Mid

NOTES:

1. General priority assignment ranges: 11 or above = Near Term; 5 to 10 = Mid Term; 4 or below = Long Term.
2. Due to wide variation in conditions, some larger parcels are considered to be more than one potential development site.
3. Presence of active extraction or existing mining leasehold typically results in a Long Term Priority assignment.

Source: HNTB and Dowl HKM analysis

LEGEND:

2	**Very Positive**
1	**Positive**
0	**Neutral (or n/a)**
-1	**Negative**
-2	**Very Negative**

7.7 FUTURE DEVELOPMENT PLAN MAP

The purpose of the Future Development Plan Map (FDPM), as shown in **Figure 7-8**, is to identify opportunities for the development of both aviation and non-aviation related uses at TIA. The map identifies and focuses on existing development areas and infrastructure, opportunity sites and planned surface transportation facilities, to ensure that a comprehensive yet concise and functional single reference can be utilized for marketing and implementing future development opportunities.

The FDPM categorizes existing development and future opportunity sites by land use. These land use designations were developed to:

- Provide guidance on the highest and best use of airport lands
- Ensure business development diversity and revenue enhancement
- Identify the interrelationship of existing and future land uses
- Recognize the need for development flexibility over time
- Facilitate coordination with other regional planning efforts

7.7.1 FDPM Land Use Designations

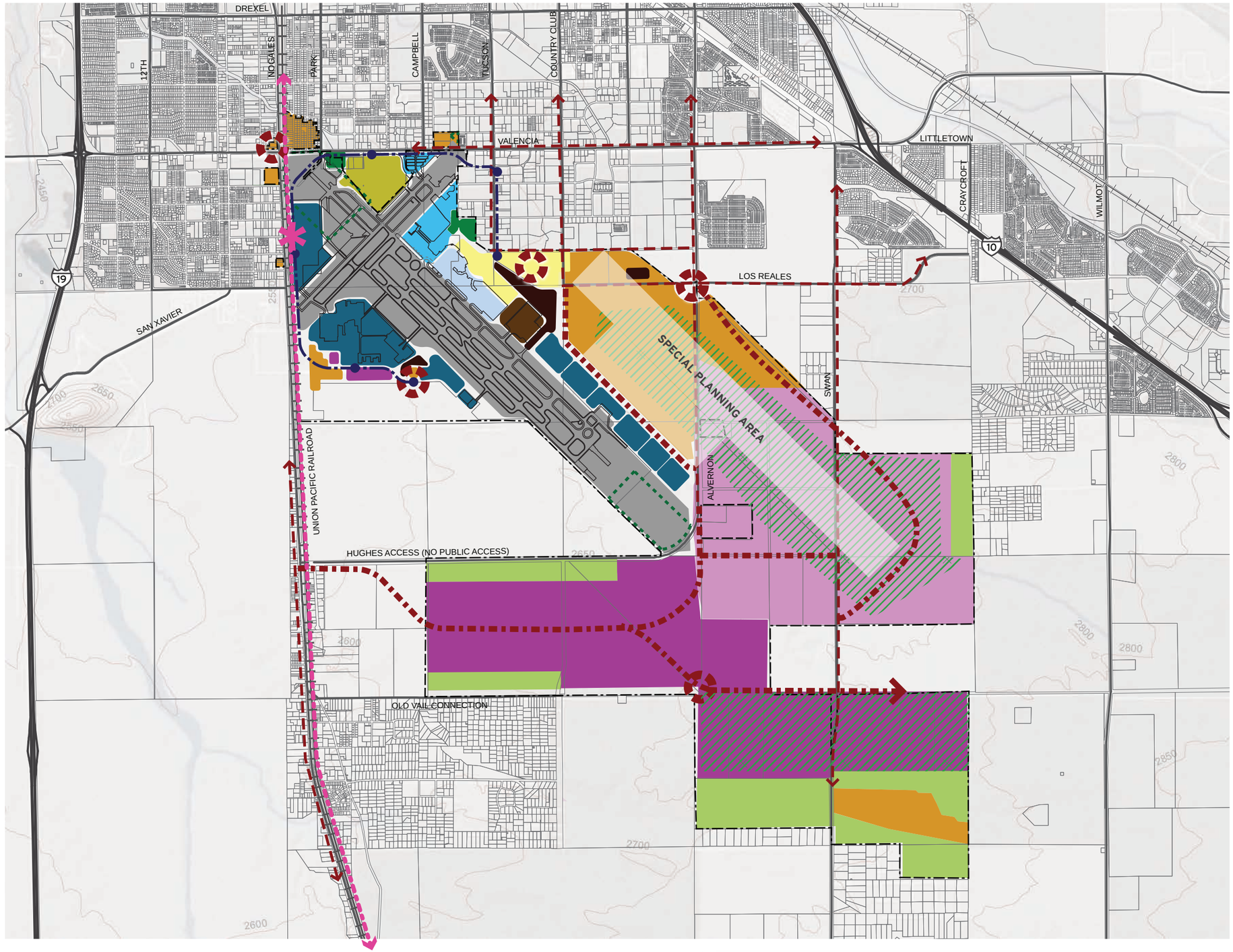
Land use designations include aviation related uses and collateral land uses, as briefly described below. These categories build upon the categories referenced in the preliminary aviation related alternatives and land use scenarios.

Aviation Related Uses:

- **General Aviation (GA)** – Areas that provide for a range of commercial and specialty aviation-related development. Specific uses typical to GA include small, large and corporate hangars; fixed base and specialty operators; minor aircraft repair; self-serve facilities; pilot support facilities; and flight schools.
- **Industrial Aviation (IA)** – Sites capable of supporting a range of moderate to intense industrial and major commercial aviation-related development. Specific uses typical to IA 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 IA development.
- **Mixed Use Aviation (MUA)** – Areas that may support a balance of GA and IA 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, including necessary commercial uses.
- **Future Air Traffic Control Tower (ATCT)** – This area is set aside to accommodate the planned future air traffic control tower and related facilities.
- **Extended Clear Zone** – Areas beyond the runway protection zone that are kept clear of development, per TAA policy.

Collateral Land Uses:

- **Commercial Node** – Areas surrounding key intersections that are anticipated to support demand for retail activity, auto-oriented commercial services or professional services. Where feasible, commercial nodes also support mixed use development.
- **Employment** – Sites that have potential infrastructure access or could support major long term dense commercial and compatible industrial development.
- **Industrial / Logistics** – Sites that provide for compatible light industrial and transportation-related development activities, including logistics and freight intermediary operations.
- **Large Scale Industrial** – Large sites that can accommodate aerospace and defense manufacturing, research and development, technology, biosciences uses, and other similar intense industrial activities. This area will typically reflect master planned, large scale single tenant facilities.
- **Natural Corridor / Mitigation** – Corridors that can safely support riparian habitat enhancement to offset site development impacts to locally delineated riparian habitat. This designation is intended to support a development strategy that cost-effectively and sustainably addresses ecological impacts and off-airport compatibility functions.
- **Airport Village** – The Airport Village concept is intended to guide future development of a mixed use lifestyle center to support customers and employees of TIA as well as the surrounding community. The Airport Village is anticipated to support a multi-modal transit center and intense, transit-oriented development themes.
- **Large Scale Solar** – This overlay designation is intended to show areas that could support utility-scale solar energy development, either in the near-term or long-term.
- **Special Planning Area** – This overlay designation is intended to show areas that could support interim collateral land development through the planning horizon but carries special planning considerations because the land may be needed for airfield expansion beyond the planning horizon.



LEGEND

- EXISTING ROAD NETWORK
- PROGRAMMED ROAD (APPROXIMATE)
- EXISTING UNION PACIFIC RAILROAD
- FUTURE LOCAL TRANSIT CIRCULATOR (APPROXIMATE)
- FUTURE HIGH SPEED RAIL (HSR)
- LOCAL TRANSIT STATION
- HIGH SPEED RAIL STATION
- COMMERCIAL NODE
- AIRPORT PROPERTY BOUNDARY
- EXTENDED CLEAR ZONE POLICY AREA
- AIRFIELD
- EMPLOYMENT (OFFICE / INDUSTRIAL)
- INDUSTRIAL / LOGISTICS
- LARGE SCALE INDUSTRIAL
- NATURAL CORRIDOR / MITIGATION
- GENERAL AVIATION
- MIXED USE AVIATION
- AIRPORT LANDSIDE
- CARGO
- TERMINAL
- AIR NATIONAL GUARD
- AIRPORT SUPPORT
- AVIATION INDUSTRIAL
- LARGE SCALE SOLAR

Master Plan Update

HNTB

TUCSON INTERNATIONAL AIRPORT

DRAWING SCALE: 1" = 4,000'

DATE: February, 2013

FUTURE DEVELOPMENT PLAN

FIGURE 7-8

7.7.2 Special Planning Area

The planning area contains several opportunity sites for interim and compatible collateral land development; these sites have been identified based on their site readiness and access to infrastructure and are generally located along Alvernon Way, as well as Swan Road, north of Old Vail Connection Road. In general, these sites have good access to existing electric, telecommunication and water utilities. Because of the long-term needs of this planning area related to the future far parallel runway, lease terms for interim development carry special considerations with respect to duration, value of improvements and site condition restoration at lease sunset. Low intensity uses with minimal physical impacts, potentially to include solar arrays, will be suitable in these areas.

7.7.3 Extended Clear Zone Policy Area

TIA maintains a safety enhancement policy referred to as the Extended Clear Zone. The Extended Clear Zone Policy Area covers the area extending from the end of the Runway Protection Zone of TIA's existing and planned commercial service runways to the TIA property line and/or a public street. Only essential airfield access, safety, communications and navigation facilities are allowed to be permanently located in the Policy Area.

7.7.4 Future Roadway Facilities

In the near-term, it is expected that Pima County will proceed with relocating Hughes Access Road approximately one-half (1/2) mile south of its current alignment; this action will also include extending Alvernon Way to the south to connect with the relocated roadway. Over the long-term, it is anticipated that development activity in this area will support the need for improving an east-west collector between Alvernon and Swan. Additionally, in the long-term, Pima County anticipates developing Old Vail Connection Road as a parkway connection to I-10 on its east end. On its west end, the parkway would transition into the relocated Hughes Access Road corridor. The FDPM identifies new collector roadway improvements in support of future industrial aviation development. Long-term coordination with the City of Tucson to aesthetically enhance key gateway routes to the terminal area will be another important consideration.

7.7.5 Future Transit Facilities

There is critical need for improving existing regional transportation connectivity with TIA, as well as ensuring that future transit planning programs incorporate seamless access to the airport. Future transit facilities have been identified in the FDMP to ensure appropriate siting of transportation improvements, reflective of long-term development expectations. The FDMP provides for the connection of commuter and intercity passenger rail modes at a future transit station facility to be developed at the west ramp industrial aviation area. This location provides for a direct link to the anticipated passenger rail alignment along Nogales Highway. This location also provides for a convenient automated people mover or light circulator system that is capable of connecting the airport's major employment and activity nodes as well as the terminal area Airport Village. These transit facilities have been shown on the Future Development Plan Map.

7.7.6 Primary, Accessory and Secondary Uses

The FDPM identifies the highest and best dominant or primary land use for a given opportunity site. Development of other uses not identified as the primary use may be appropriate, compatible and even desirable. On a case by case basis, appropriate scale and intensity of secondary or accessory uses to the identified primary use for a specific opportunity site will be determined.

7.7.7 Compatible Land Development Stipulation

FAA regulations concerning the interim development of airport lands acquired for noise compatibility purposes require that the airport sponsor acknowledge that collateral development of these lands be limited to projects that are compatible with long-term aeronautical needs. The proposed FDPM, including its anticipated improvements and land uses have been reviewed for airport compatibility purposes. The proposed uses represent compatible development, consistent with noise land reuse requirements.

7.7.8 Relationship to the GA Business Plan Update

TAA is preparing, separately from the Master Plan Update, an update of the 1998 General Aviation Strategic Plan. This Plan Update will provide additional consideration of airfield related development opportunities, phasing, and expansion and redevelopment concepts. The intent of the airfield-related development land use designations in the Master Plan Update is to provide high-level guidance for the future GA Business Plan Update.

7.8 IMPLEMENTATION CONSIDERATIONS

7.8.1 Regional Market Factors

- There is significant available development capacity in the Infill / Enhancement Area surrounding the airport; this represents several years of market absorption capacity, which should be more specifically assessed with targeted market research. Achieving development activity in the Reserve Land Area in advance of these "development-ready" sites will require marketing efforts that can demonstrate the unique advantages of airport development sites.
- The market capacity for large scale master-planned employment uses along the Old Vail Connection corridor needs to be fully explored to establish realistic market absorption assumptions.
- In addition to the significant Reserve Land Area acreage available for development, non-TAA properties share similar access and development readiness attributes; the potential competition presented by these properties should also be assessed during subsequent market research efforts.

7.8.2 Regional Development Policies

- TAA should initiate, in close coordination with the City of Tucson and Pima County, an Airport Development Overlay Zone so that a cohesive land use mix and appropriate development standards are implemented over time, reflective of the future development plan map.
- TAA should also coordinate closely with the City of Tucson and Pima County to ensure that all existing development incentive programs are made available for development in the Reserve Land Area, and that additional incentives are developed as appropriate to support airport area development efforts. Relevant tools could potentially include:

  - Incentives targeted to transportation and logistics related development, including support of cross-border commerce.
  - Incentives related to solar or other renewable energy sources, whether stand-alone or undertaken in association with development projects.
  - Community Facility Districts or other mechanisms to support proactive installation of public infrastructure improvements or enhancements in key development areas.
  - TIF and/or Foreign Trade Zone designation for specific parcels, as appropriate.
- The appropriate level of quality of infrastructure improvements should be addressed proactively, based upon the targeted market for development in more visible locations. It will likely be appropriate to consider more significant enhancements to public rights-of-way in some areas, while others can remain more utilitarian in appearance and function.
- Accommodation of future multi-modal improvements will also be an important proactive consideration; for example, establishing appropriately sized rights-of-way to enable future connectivity for pedestrian, bicycle, bus/shuttle and light rail routes in the airport area.

7.8.3 Infrastructure Availability

- The timing of planned regional roadway improvements will determine when visibility and accessibility will be in place for key sites, and therefore when marketing of large scale development opportunities will become appropriate.
- Phasing of development of TAA properties in the Old Vail Connection corridor will need to be closely coordinated with Pima County's efforts to more broadly market the "Aerospace and Defense Corridor".
- Provisions for permanent wastewater treatment facilities to serve the Old Vail Connection corridor will need to be determined before development can be effectively accommodated, to ensure that a transition can be made efficiently in the future if temporary lift stations feeding into existing facilities to the north are initially needed.

7.8.4 Development Coordination

- The potential implications of "long term interim" uses in the future runway and terminal footprint area should be carefully considered. Additional zoning overlay restrictions may be appropriate in this area to ensure that any allowed uses (such as solar arrays, storage facilities or low-intensity light industrial) are developed with appropriate design standards, minimizing any permanent impacts on the land that might increase airport-related development costs in the future.
- Potential time delays and additional administrative cost factors associated with county, state, and/or federal permitting processes for mitigation and preparation of development sites will be an important consideration, to ensure a balance between incurring up-front development related costs and having sites available to serve market demand.
- In the near term, the focus should be on sites that are readily developable with minimal mitigation and drainage needs or the capability to address these issues on-site. Over the longer term, properties requiring a more coordinated and engineered approach to mitigation and drainage requirements should be considered, in conjunction with a strategy to provide a mitigation "bank" area to the south. This area can potentially serve as an effective buffer between traditional

employment uses and industrial activities. In any event, analysis of flood-prone lands should be undertaken in close coordination with the Pima County Regional Flood Control District.

- In some instances, high upfront development costs on one parcel may be out-weighed by proximity to a cluster of parcels that have development potential if marketed together; parcels with high development preparation costs should be considered on a case-by-case basis if these costs are mitigated due to broader revenue potential considerations. In all cases, TAA's goal should be to identify the "sweet spot" of upfront investment that will maximize future development-related revenue potential as a whole.
- A coordinated marketing and "branding" effort that ties development opportunities in the Reserve Land Area to the advantages of proximity to the airport will be important. Development marketing and subsequent approval processes will need to be straightforward, predictable and timely to ensure that properties can be marketed to their full potential.

7.8.5 Implementation Action Items

Near Term

- Pursue a joint City-County Airport Area Plan, reflective of ongoing multi-modal transportation planning efforts by other agencies, to develop a comprehensive and consensus-based strategy for infrastructure and transportation investments in the airport area. The plan should include a cooperative strategy to "brand" the airport area with cohesive landscaping and urban design enhancements along key terminal area "gateway" corridors.
- Pursue Airport Development Overlay Zone, in close coordination with the City of Tucson and Pima County, with particular consideration of appropriate development standards for interim use areas.
- Begin environmental reviews of high priority collateral development parcels, proactively addressing NEPA requirements in advance of development.
- Develop reclamation plans for extraction sites, addressing unique site conditions and carrying capacity for development, to facilitate site preparation of past and current sites and minimize potential development costs on future sites.
- In coordination with other agencies as appropriate, assess the potential for an airport-wide habitat mitigation plan.

Ongoing

- Actively participate in regional planning and economic development initiatives, including those related to aerospace/defense, logistics/freight, multi-modal transportation and infrastructure.
- Develop a market study program that allows for semi-regular analysis and update of market trends affecting anticipated rent levels, absorption rates and regional business trends.
- Utilize regularly updated market data to analyze and identify opportunities for asset development and marketing strategy updates.