

CHAPTER 2 ALTERNATIVES

2.1 ALTERNATIVES INTRODUCTION

An Environmental Impact Statement (EIS) describes and discusses the significant environmental impacts that would be caused by the Proposed Action, its reasonable alternatives, and the no action alternative. When considering alternatives, the Federal Aviation Administration (FAA) must:

- Develop and describe the range of reasonable alternatives capable of achieving the Purpose and Need (see 40 Code of Federal Regulations (C.F.R.) § 1502.14; FAA Order 1050.1F, paragraph 7-1.1(e)) including the Proposed Action, any reasonable alternatives not within the jurisdiction of the lead agency, and the No Action Alternative; and
- Rigorously explore and objectively evaluate all reasonable alternatives, and provide reasons why any alternatives were eliminated from further study (40 C.F.R. § 1502.14(a)).

This chapter of the EIS describes the alternatives screening process and the results of the process. Chapter 1, *Purpose and Need* included various statements that encompassed several different and specific needs for the FAA, United States Air Force (USAF), National Guard Bureau (NGB), and Tucson Airport Authority (TAA). Not all of those needs applied to the entire project. Therefore, FAA divided the evaluation of alternatives into two groups: Those alternatives that were designed to meet FAA, USAF, and TAA's Purpose and Need statements; and those alternatives designed to meet NGB and TAA's Purpose and Need statements. The first section presented below addresses the alternatives designed to meet the FAA, USAF, and TAA Purpose and Need statements.

2.2 AIRFIELD SAFETY ENHANCEMENT ALTERNATIVES SCREENING PROCESS

FAA established a multi-step screening process to identify and evaluate a range of reasonable Airfield Safety Enhancement Project (ASEP) alternatives that are capable of achieving the Purpose and Need statements described in Chapter 1, *Purpose and Need*. Alternatives Screening for the NGB's proposed Munitions Storage Area (MSA) is described in Section 2.7 of this EIS.

The ASEP screening criteria encompass several different Purpose and Need statements from the FAA, USAF, and TAA. The first step in the screening process eliminates alternatives that do not meet the statements of the FAA, USAF, and TAA. The second step in the screening process eliminates alternatives that are not practical or feasible to implement from a technical and economic standpoint. The third step in the process eliminates alternatives that would not result in safe and efficient use of navigable airspace and minimize airfield operational impacts during construction. The alternatives that were not eliminated through this screening process were

retained for a more detailed environmental evaluation in the EIS process. The screening process for the ASEP alternatives is portrayed conceptually in **Exhibit 2-1**.

2.3 INITIAL RANGE OF ALTERNATIVES

This section provides a brief description of the ASEP alternatives that are subject to the multi-step screening process. The initial range of alternatives evaluated include the No Action Alternative, on-site airfield alternatives, and off-site alternatives.

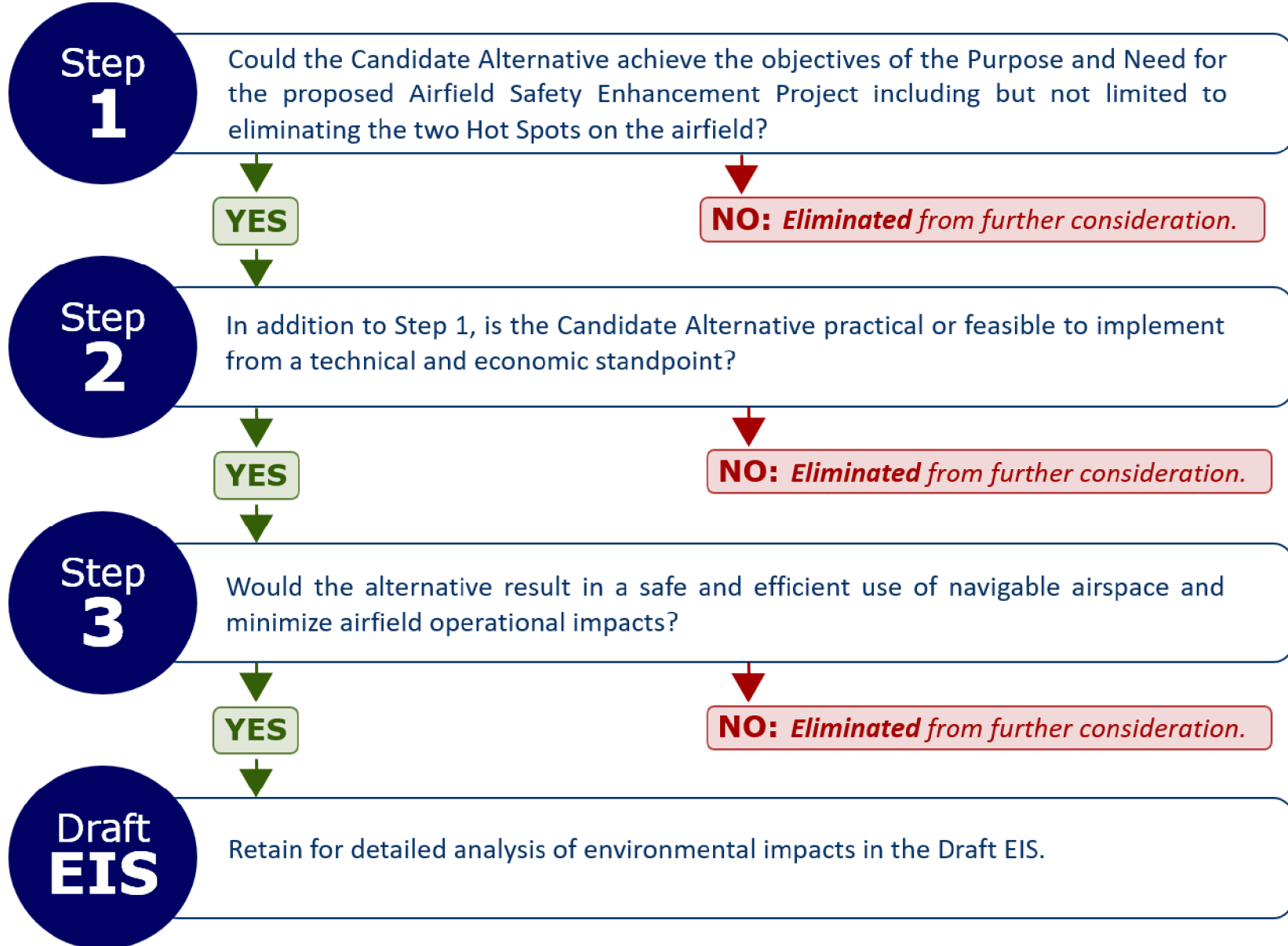
The use of technology such as telecommunications or video conferencing was not considered in the range of alternatives because while evidence indicates that the use of telecommunications and video-conferencing may be increasing to satisfy travel, these technologies would not enhance the safety of the Tucson International Airport (TUS) airfield.

In addition, other modes of transportation such as intercity bus, passenger rail, and automobile transportation usage were not considered in the range of reasonable alternatives because safety of the airfield would not be enhanced. The primary purpose of the Proposed Action Alternative is to enhance the safety of aircraft operations at TUS. Use of alternative modes of transportation to replace some or all of the air transportation activity at TUS does not meet this purpose because the two Hot Spots on the airfield would not be eliminated under this alternative. In addition, the airport is used by the Tucson Air National Guard Base for F-16 fighter aircraft training operations. Passenger rail service to Tucson is provided by AMTRAK on the Sunset Limited train that departs three days per week from the train station at 400 North Toole Avenue, about eight miles north of TUS. Daily passenger service to and from Tucson by intercity bus is provided by Greyhound. FAA and the TAA do not have the authority to compel TUS airport users to use alternate modes of transportation such as automobiles, intercity bus, or passenger rail service. The alternative of Use of Other Modes of Transportation for this proposed project has been eliminated from further consideration in this EIS.

2.3.1 NO ACTION ALTERNATIVE

Exhibit 2-2 presents the No Action Alternative, where no changes would be made from the existing conditions and the airfield would remain as it is today. Parallel Runways 11L/29R and 11R/29L measure 10,996 feet by 150 feet and 8,408 feet by 75 feet, respectively, and are separated by 706 feet. The crosswind Runway 3/21 measures 7,000 feet by 150 feet. While the No Action Alternative does not meet the Purpose and Need, the No Action Alternative must be carried forward in the assessment of environmental impacts as required by 40 C.F.R. § 1502.14(d). The No Action Alternative serves as a basis of comparison for the assessment of future conditions and impacts of the other alternatives.

Initial Range of Alternatives



FINAL

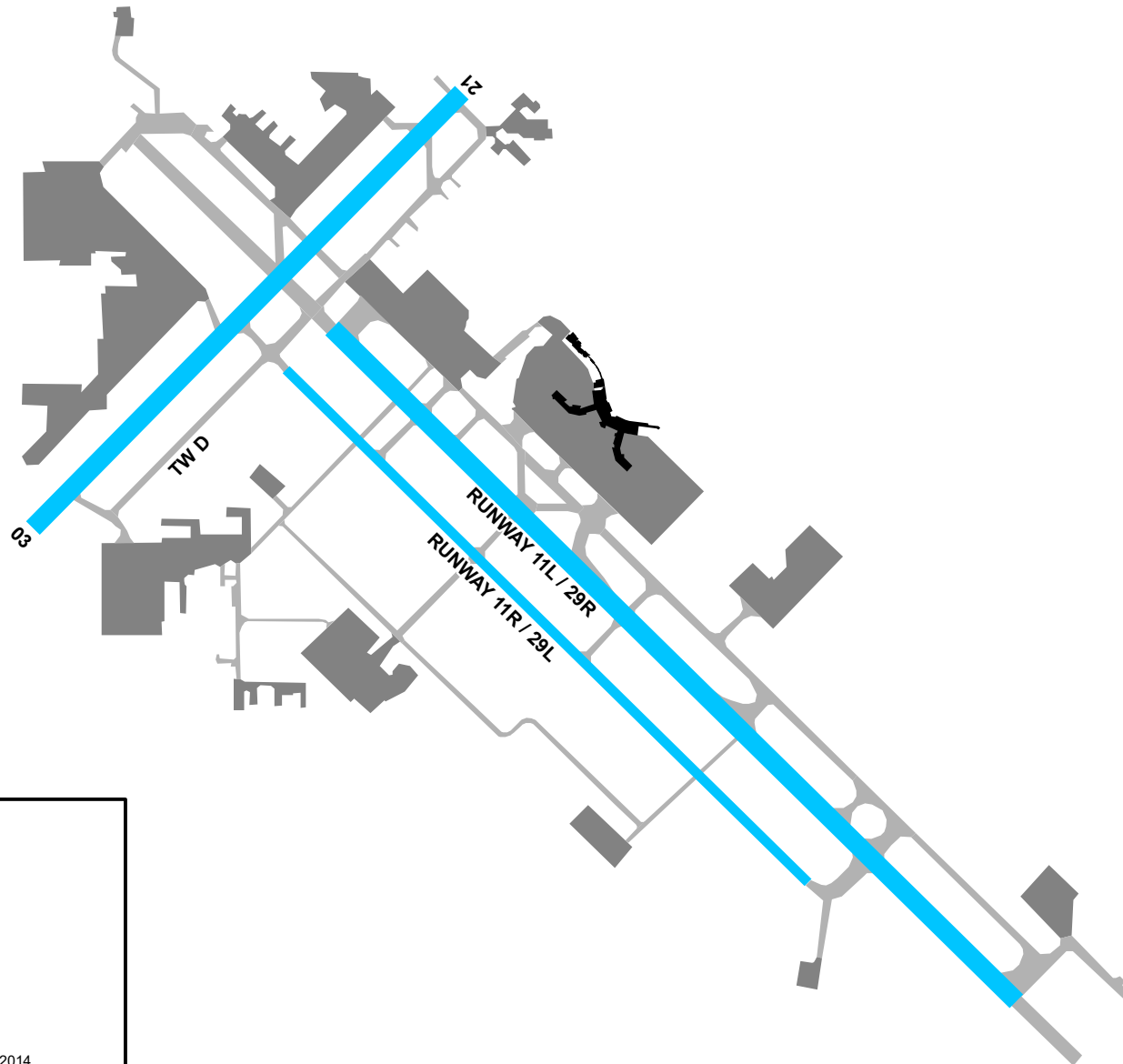


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Initial Range of Alternatives

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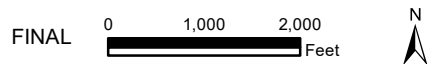
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Legend

- Existing Runway
- Existing Apron
- Existing Taxiway

Source: TAA, Airport Layout Plan, 2014.



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No Action Alternative

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2.3.2 ON-SITE AIRFIELD ALTERNATIVES

The range of on-site airfield alternatives are based on those alternatives identified in the TAA's Master Plan, dated June 1, 2014; TAA's ASEP Implementation Study dated May 2015; and the TAA's ALP drawings.¹ These alternatives were evaluated through an independent screening process to determine whether they meet the Purpose and Need.

2.3.2.1 Existing 706-Foot Separation Alternatives

The common feature of these alternatives is that they each maintain an existing 706-foot separation between parallel runway centerlines.

Existing 706-Foot Separation Plan A

This Alternative, as shown in **Exhibit 2-3**, retains the existing length, threshold locations, and centerline geometry of both Runways 11L/29R and 11R/29L. This Alternative removes various taxiway crossings currently used by General Aviation (GA) aircraft accessing Runway 11R/29L. Various other taxiway improvements are proposed to promote pilot awareness on the airfield, most importantly the removal of the taxiways leading to the north ends of Runway 11L/29R and 11R/29L. The addition of several taxiway segments would replace removed taxiways and would comply with FAA design standards. Similar to the existing condition, parallel Runways 11L/29R and 11R/29L would measure 10,996 feet by 150 feet and 8,408 feet by 75 feet, respectively, and would still be separated by 706 feet.

Existing 706-Foot Separation Plan B

This Alternative, as shown on **Exhibit 2-4**, creates an Airplane Design Group-IV (ADG-IV) capable runway by widening and extending Runway 11R/29L south so that the ends of the two runways line up and are no longer staggered. Both runways would also be extended north to intersect with Taxiway D. Currently, both runways end south of Taxiway D. Various other taxiway improvements are proposed to promote pilot awareness on the airfield. These improvements include the removal of the taxiways leading to the north ends of Runway 11L/29R and 11R/29L. The addition of several taxiway segments would replace removed taxiways and would comply with FAA design standards. Parallel Runways 11R/29L and 11L/29R would both measure 11,330 feet by 150 feet. This alternative retains the current separation between the parallel runways of 706 feet.

¹ ALP drawing was approved by the TAA Chief Executive Officer on June 2, 2014 and conditionally approved by FAA on June 24, 2014.

706-Foot Separation Plan C

This Alternative, as shown on **Exhibit 2-5**, utilizes many of the elements of the 706-Foot Separation Plan B Alternative. However, this Alternative displaces the Runway 11L/29R and 11R/29L arrival thresholds south of their current positions to allow Taxiway D to function as an end-around taxiway. Various other taxiway improvements are proposed to promote pilot awareness on the airfield. These improvements include the removal of the taxiways leading to the north ends of Runway 11L/29R and 11R/29L. The addition of several taxiway segments would replace removed taxiways and would comply with FAA design standards. Parallel Runways 11R/29L and 11L/29R would both measure 10,807 feet for departures and 9,618 feet of distance for landings. This Alternative retains the current separation between the parallel runways of 706 feet.

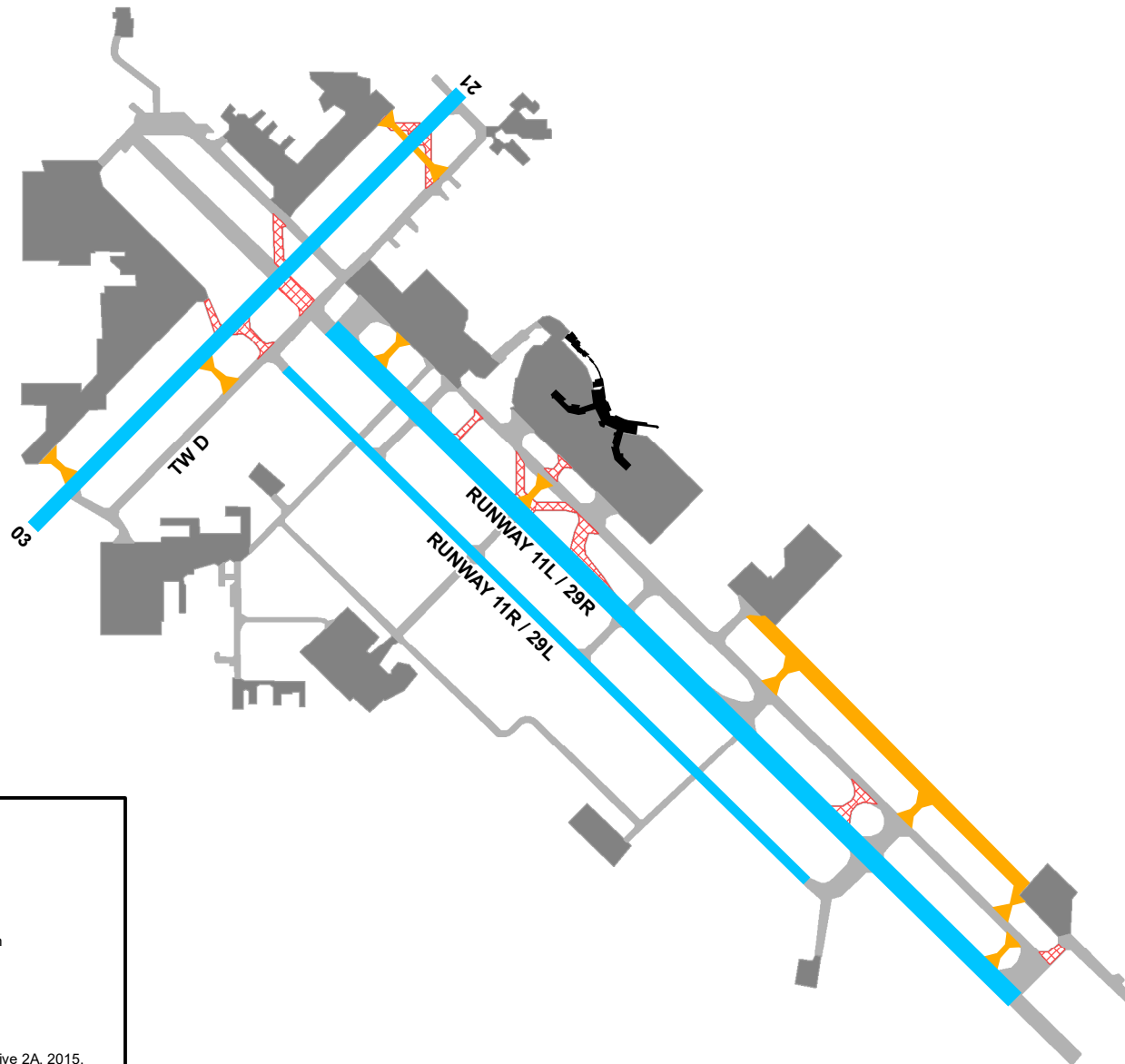
2.3.2.2 800-Foot Separation Alternatives

The common feature of the two alternatives below is that they both include an 800-foot separation between parallel runways, which allows for a parallel taxiway to be constructed between the runways. These alternatives would require the replacement of Runway 11R/29L.

800-Foot Separation Plan A

This Alternative, as shown on **Exhibit 2-6**, includes the replacement of Runway 11R/29L with a full-length parallel runway. The distance between the parallel runways would be expanded to 800 feet. A center parallel taxiway would be constructed to allow aircraft to queue prior to crossing the other parallel runway. The center parallel taxiway would minimize the potential for pilots to inadvertently cross an active runway by forcing them to first turn onto the taxiway. Pilots would then contact the Airport Traffic Control Tower (ATCT) to receive clearance to cross the runway. An additional parallel taxiway west of the relocated Runway 11R/29L would limit direct access from aircraft approaching the runway from the west. Various other taxiway improvements are proposed to promote pilot awareness on the airfield, most importantly the removal of the taxiways leading to the north ends of Runway 11L/29R and 11R/29L.

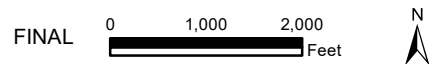
The addition of several taxiway segments would replace removed taxiways and would comply with FAA design standards. Parallel Runways 11R/29L and 11L/29R would both measure 10,996 feet by 150 feet. Under this Alternative, TAA would acquire approximately 58 acres of land along the shared property boundary between the Airport and AFP 44 in order to demolish 12 Earth Covered Magazines (ECMs) to protect airport safety areas.



Legend

- Existing Runway
- Pavement Removed
- Future Taxiway/Apron
- Existing Apron
- Existing Taxiway

Source: TAA, Master Plan Airfield Alternative 2A, 2015.

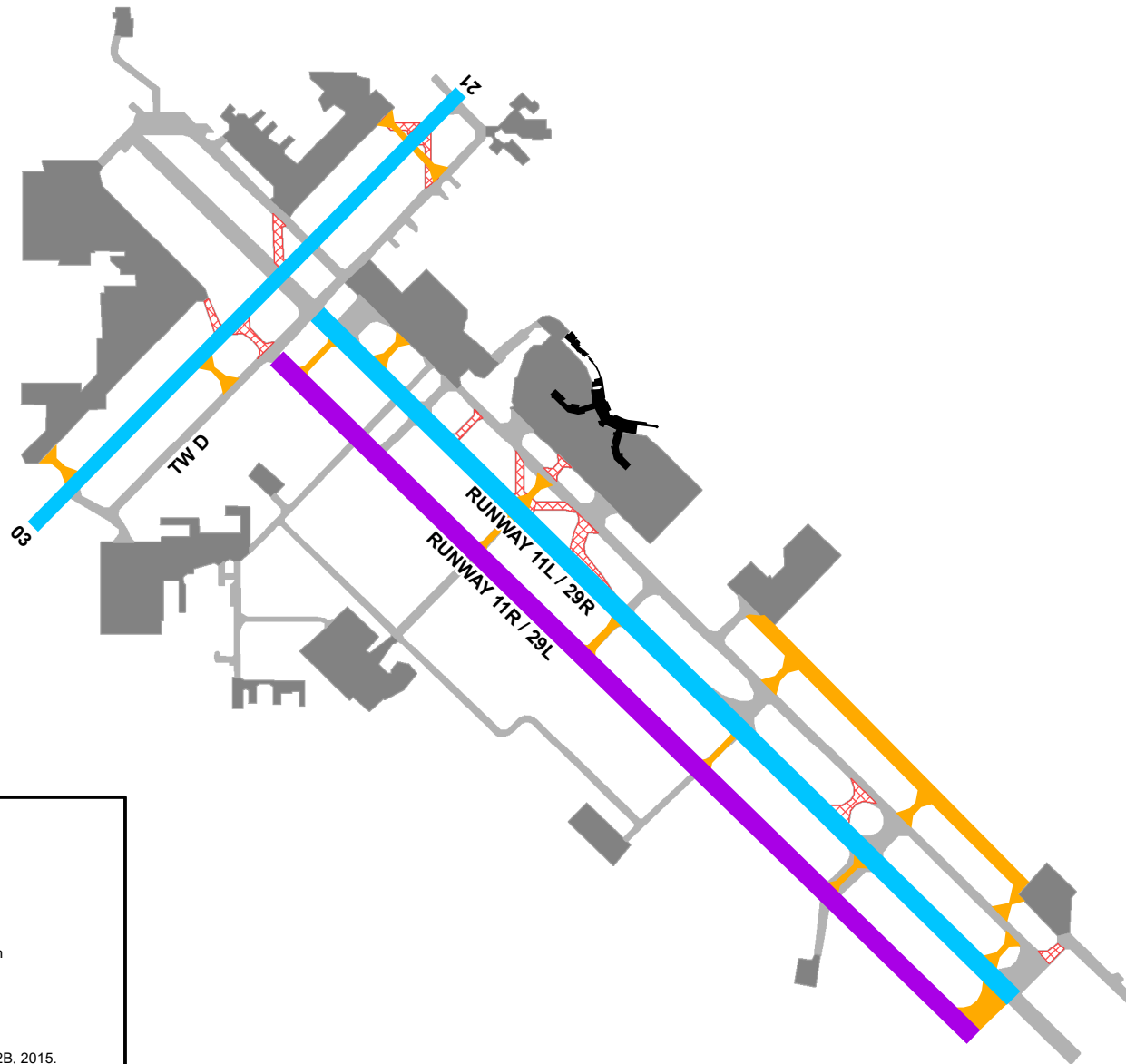


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706-Foot Separation Plan A

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Legend

- Existing Runway
- Future Runway
- Pavement Removed
- Future Taxiway/Apron
- Existing Apron
- Existing Taxiway

Source: TAA, Master Plan Airfield Alternative 2B, 2015.

FINAL 0 1,000 2,000 Feet

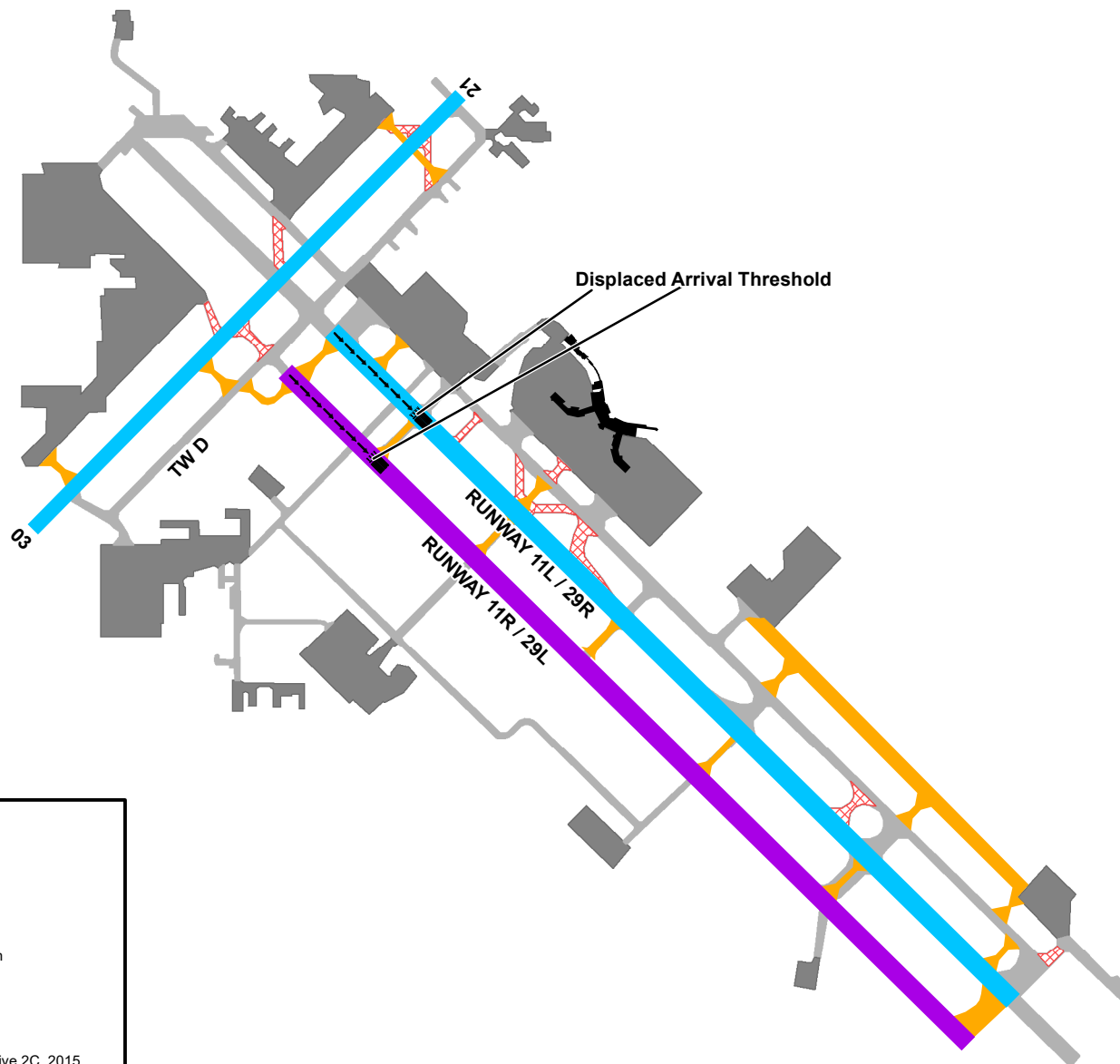


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706-Foot Separation Plan B

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Legend

- Existing Runway
- Future Runway
- ▨ Pavement Removed
- Future Taxiway/Apron
- Existing Apron
- Existing Taxiway

Source: TAA, Master Plan Airfield Alternative 2C, 2015.

FINAL 0 1,000 2,000 Feet



Per Advisory Circular 150/5300-13A a displaced threshold is a threshold that is located at a point on the runway beyond the beginning of the runway.

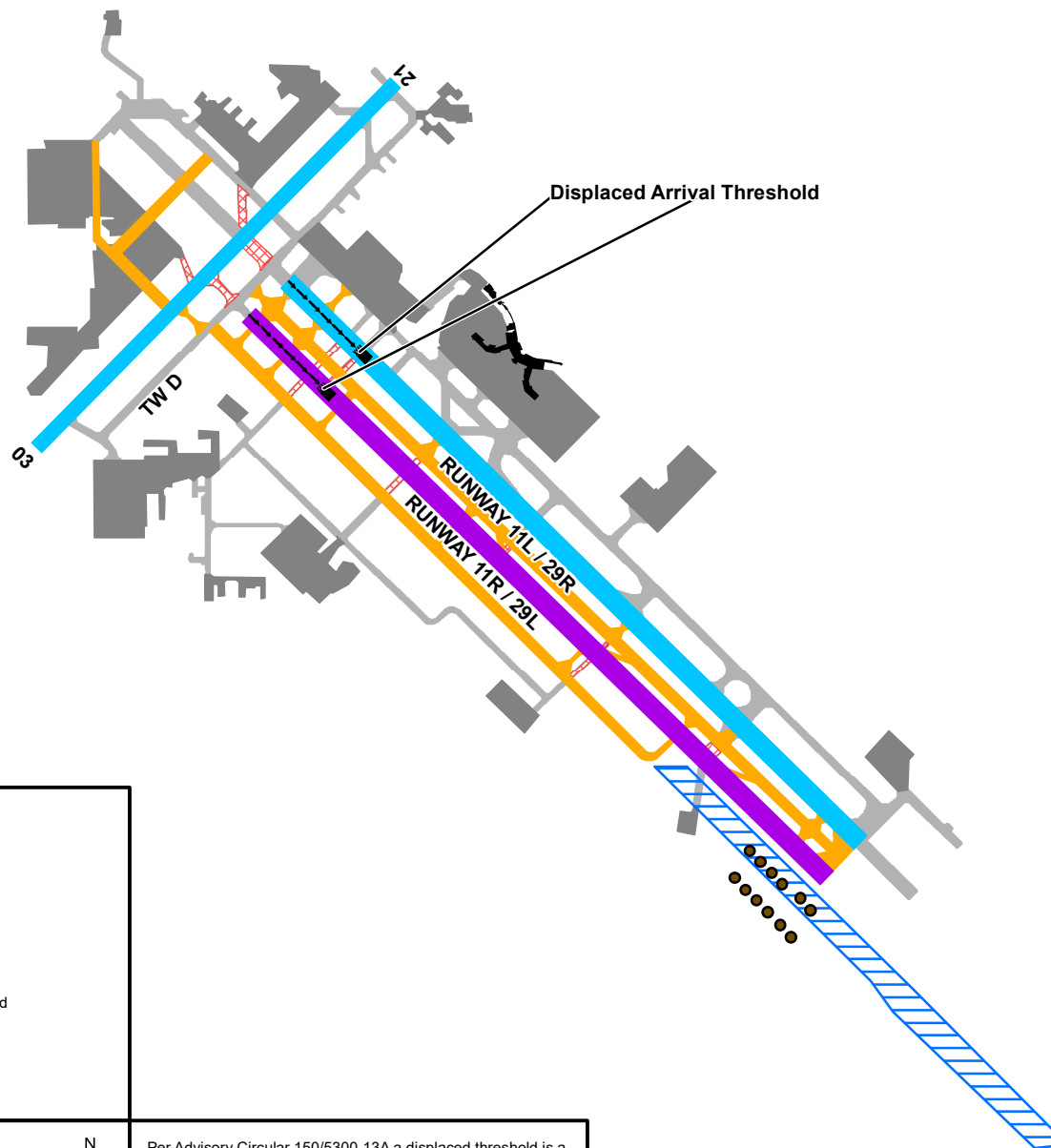


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706-Foot Separation Plan C

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Legend

- Existing ECM's
- Existing Runway
- Future Runway
- Pavement Removed
- Future Taxiway/Apron
- 58 Acres to be Acquired
- Existing Apron
- Existing Taxiway

Source: TAA, 2016.

FINAL

0 1,250 2,500
Feet



Per Advisory Circular 150/5300-13A a displaced threshold is a threshold that is located at a point on the runway beyond the beginning of the runway.



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800-Foot Separation Plan A

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800-Foot Separation Plan B

This Alternative, as shown on **Exhibit 2-7**, includes the same basic elements of the 800-Foot Separation Plan A Alternative, but shifts the parallel runways approximately 2,700 feet to the southeast along the centerline. The relocation of the runways and addition of other taxiways on the west side of the airfield would allow Taxiway D to be used as an unrestricted end-around taxiway. Parallel Runways 11R/29L and 11L/29R would both measure 10,996 feet by 150 feet. This Alternative would expand the separation between the parallel runways to 800 feet. Under this Alternative, TAA would also acquire approximately 58 acres of land along the shared property boundary between the Airport and AFP 44 in order to demolish 12 ECMs in order to protect airport safety areas.

2.3.2.3 East Runway

This Alternative, as shown on **Exhibit 2-8**, includes construction of a runway 4,900 feet to the east of the terminal area. This Alternative is conceptually depicted on TAA's 2014 ALP. Under this alternative, existing Runway 11R/29L would be converted into a western parallel taxiway to service the west airfield. Under this alternative the existing runway and the new East Runway would measure 10,996 feet by 150 feet. This Alternative expands the separation between the parallel runways to be approximately 4,900 feet. Currently, pilot confusion about which pavement is a runway versus a taxiway is, at least partially attributed to, having two closely spaced runways and taxiways for them to visually identify. The combination of the additional separation between the runways and the remarking of the taxiway would help alleviate confusion for pilots because they would know there is only one runway west of the terminal.

2.3.3 OFF-SITE ALTERNATIVES (USE OF OTHER EXISTING AIRPORTS)

This use of other airports in the region was examined to determine if the relocation of aircraft operations to another airport would satisfy the purpose and need. There are no commercial service airports in the Tucson Metropolitan Area other than TUS. Therefore, off-site alternatives would transfer activity from TUS to GA airports or USAF facilities and would eliminate the hot spots at TUS since TUS would no longer be in use.

2.3.3.1 Ryan Airfield (RYN)

RYN is classified as a GA reliever airport. RYN is owned by the City of Tucson. TAA has a long-term lease with the City of Tucson to operate RYN. RYN is located approximately 10 miles southwest of the city of Tucson at the intersection of West Valencia Road and Ajo Way (State Route 86). RYN occupies over 1,804 acres. RYN has three runways, including parallel Runways 6R/24L and 6L/24R, and crosswind Runway 15/33. Runways 6R/24L and 6L/24R are both asphalt and oriented in a northeast to southwest manner, with 6R/24L measuring 5,500 feet in length and 75 feet wide, and 6L/24R measuring 4,900 feet in length and 75 feet wide. Runway 15/33 measures 4,000 feet long and 75 feet wide. RYN has a 2,500 square foot administration building that includes administrative offices, a pilot's lounge and briefing room, a conference room, supply closets, and restrooms. An adjacent parking lot provides a total of 13 parking spaces.² There are currently 251 individual aircraft storage units at RYN, primarily consisting of T-hangars and conventional hangar spaces.

2.3.3.2 Marana Regional Airport (AVQ)

AVQ is classified as a GA reliever airport, owned and operated by the Town of Marana. It is located approximately 15 miles northwest of Tucson and is five miles west of Interstate 10 on Avra Valley Road. AVQ occupies approximately 570 acres. The airport's main runway, Runway 12/30 is 6,901 feet long and Runway 3/21, the crosswind runway, is 3,892 feet long. AVQ has an existing 9,500 square foot terminal building that includes a lobby, restrooms, pilot's lounge, and multiple offices. An adjacent parking lot provides a total of 40 parking spaces. There are currently 260 individual aircraft storage units at AVQ, primarily consisting of T-hangars and shade structures.³

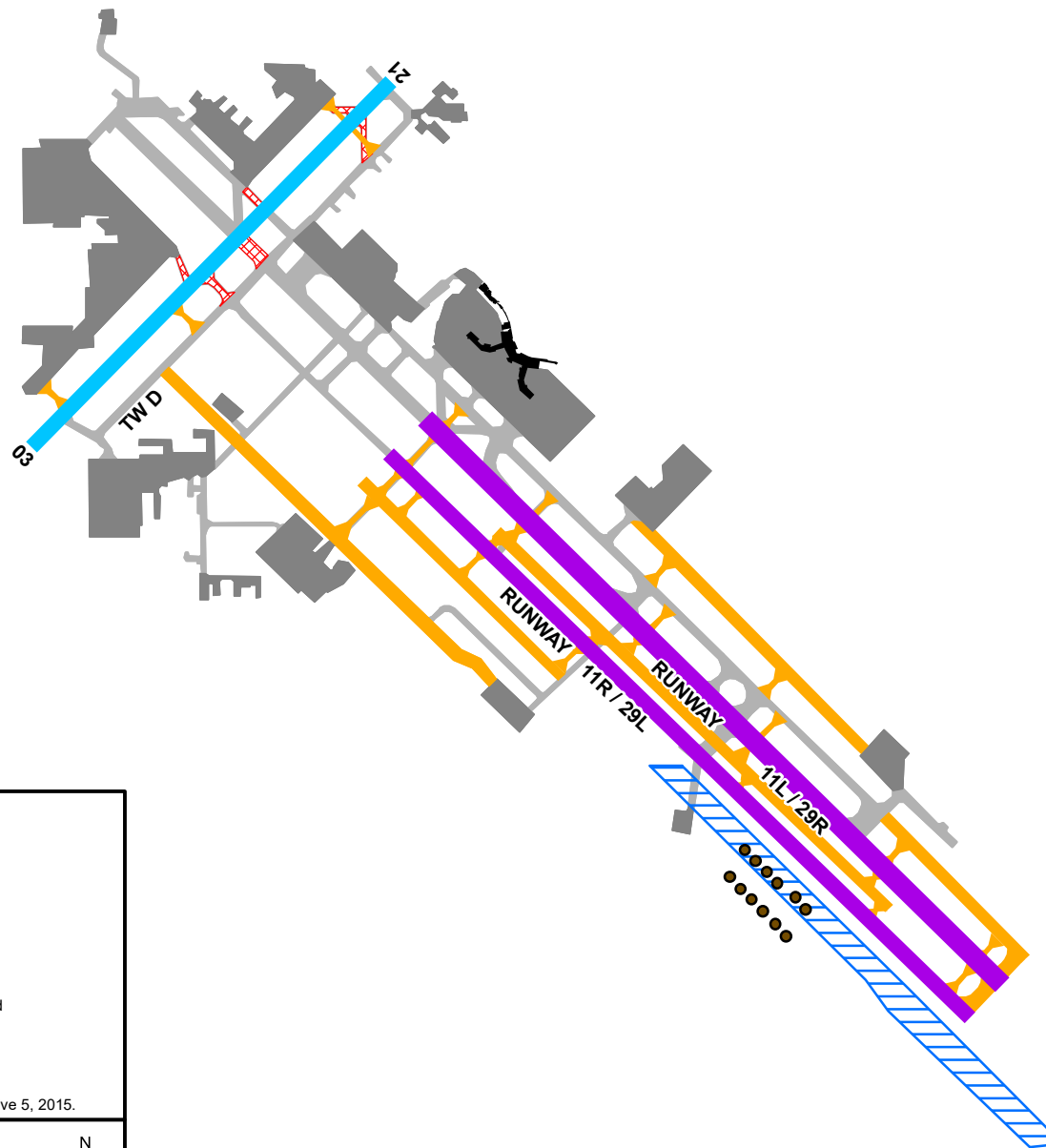
2.3.3.3 Davis-Monthan Air Force Base (DMA)

DMA⁴, a part of the USAF's Air Combat Command, is located approximately four miles northeast of TUS. The base is home to the 355th Fighter Wing, responsible for training and deploying A-10 pilots, in addition to over 30 tenant units, including 12th Air Force, the 309th Aerospace Maintenance and Regeneration Group (AMARG), the 55th Electronic Combat Group, the 563rd Rescue Group, the 943rd Rescue Group, and a number of other organizations. DMA's aircraft inventory includes A-10Cs, EC-130s, HC-130Js, HH-60Gs, a contingent of F-16s, and over 3,700 assorted aircraft in the AMARG Boneyard. DMA has one runway, Runway 12/30, which is 13,643 feet in length.

² Tucson Airport Authority, June 2010, Ryan Airfield Master Plan Update.

³ Town of Marana, Arizona, February 2017, Marana Regional Airport, Airport Master Plan.

⁴ "DMA" is the FAA three-letter identifier for Davis-Monthan Air Force Base.



Legend

- Existing ECM's
- Existing Runway
- Future Runway
- Pavement Removed
- Future Taxiway/Apron
- 58 Acres to be Acquired
- Existing Apron
- Existing Taxiway

Source: TAA, Master Plan Airfield Alternative 5, 2015.

FINAL 0 1,250 2,500 Feet

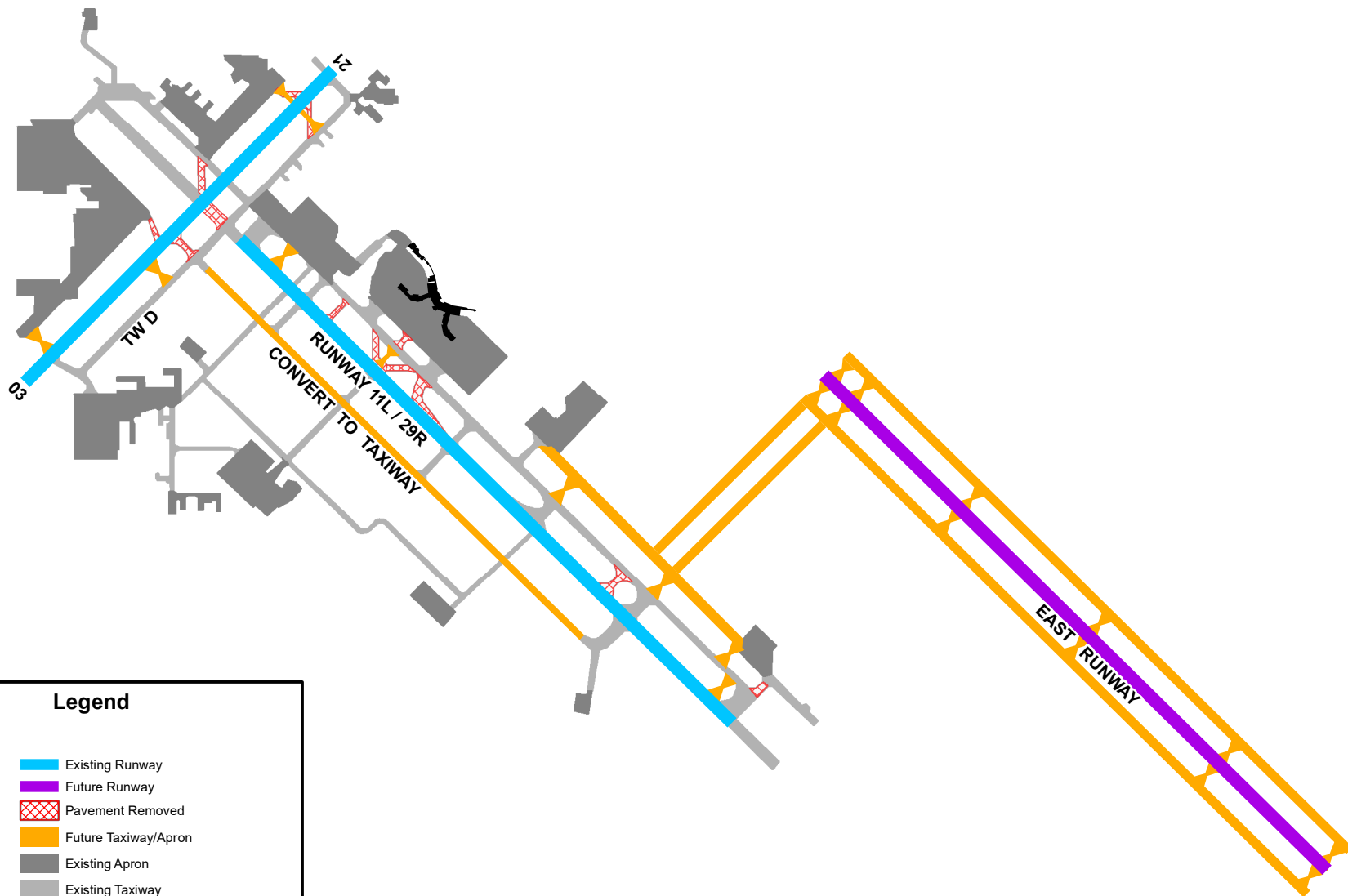


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800-Foot Separation Plan B

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Legend

- Existing Runway
- Future Runway
- Pavement Removed
- Future Taxiway/Apron
- Existing Apron
- Existing Taxiway

Source: TAA, Airport Layout Plan, 2014.

FINAL 0 1,250 2,500 Feet



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East Runway

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2.4 STEP ONE: ACHIEVES PURPOSE AND NEED

The following sections describe the Step One evaluation of each initial ASEP alternative, which evaluates each alternative's ability to satisfy the FAA, USAF, and TAA Purpose and Need statements.

Table 2-1 summarizes the Step One evaluation findings.

2.4.1 NO ACTION ALTERNATIVE

To comply with 40 C.F.R. 1502.14(d), FAA Orders 1050.1F and 5050.4B, and other special purpose environmental laws, the No Action Alternative is carried forward in the analysis of environmental consequences.

The No Action Alternative depicts future conditions that are expected to exist without implementation of the Proposed Action. Although the No Action Alternative would not address the Purpose and Need to enhance the safety and operational condition of the existing airfield, it provides a basis of comparison for the assessment of future conditions and impacts. Therefore, the No Action Alternative is carried forward through the Alternatives Screening and evaluated in the Environmental Consequences Chapter of the EIS.

2.4.2 ON-SITE AIRFIELD ALTERNATIVES

The FAA has identified two existing hot spots at the Airport, labeled as HS-1 and HS-2 as described in Chapter 1.

HS-1 is located at the end of Runway 29L. HS-1 has been a historical point of confusion between Runways 29L and 29R and Runway 29R and Taxiway A. On several occasions pilots on approach from the south have mistaken Runway 29R for Runway 29L and Taxiway A for Runway 29R, landing on the wrong runway or on Taxiway A.

HS-2 is located along Taxiway D between Runway 11L/29R and Runway 11R/29L. At this location, pilots taxiing along Taxiway D have crossed the approach path for Runway 11L/29R or Runway 11R/29L without proper clearance.

**Table 2-1
STEP ONE SCREENING MATRIX**

Alternative	Description	Alternatives Ability to Meet the Established Purposes and Needs				Move to Step Two
		<i>Enhances Safety and Eliminates Existing Hot Spots (FAA and TAA Purpose & Need)</i>	<i>Prevents aircraft from crossing directly between two parallel runways (FAA and TAA Purpose & Need)</i>	<i>Maintains Operational Capabilities when there is a temporary closure of 11L/29R (FAA and TAA Purpose & Need)</i>	<i>Maintains AFP 44 capabilities (USAF Purpose & Need)</i>	
No Action	- Airport remains as it is today	No	No	No	Yes	Yes
706-Foot Separation Plan A	- Minimal action to taxiway connectors to increase pilot awareness and limit runway crossings	No	No	No	Yes	No
706-Foot Separation Plan B	- Dual full length parallel runway system - Retain both Runway 11's end thresholds	No	No	Yes	Yes	No
706-Foot Separation Plan C	- Dual full length parallel runway system - Displace both Runway 11's thresholds	No	No	Yes	Yes	No
800-Foot Separation Plan A	- Dual full length parallel runway system - Displace both Runway 11's thresholds, end-around Taxiway D for B-II aircraft	Yes	Yes	Yes	Yes	Yes
800-Foot Separation Plan B	- Dual full length parallel runway system - Shift runways southeast, unobstructed end-around Taxiway D	Yes	Yes	Yes	Yes	Yes
East Runway	- Dual full length parallel runway system - New Runway 12/30, east of terminal core - Dual independent approaches - Additional taxiways near west pad	No	Yes	Yes	Yes	No
Ryan Airfield	- Insufficient runway length & airport facilities	Yes	Yes	Yes	Yes	Yes
Marana Regional	- Insufficient runway length & airport facilities	Yes	Yes	Yes	Yes	Yes
Davis -Monthan Air Force Base	- Cannot accept commercial/public traffic	Yes	Yes	Yes	Yes	Yes

Note: Yes- Satisfies purpose and need
No- Does not satisfy purpose and need

2.4.2.1 706-Foot Separation Plan A

This Alternative does not meet the need to eliminate HS-1 on the south of the Airport because under this Alternative, the Runway 11R/29L length, width, and basic airfield geometry would remain as they are today. Thus, the staggered runway ends would continue to exist, which would continue to cause confusion among pilots and result in potential runway incursions.

This Alternative would maintain AFP 44 capabilities. However, this Alternative does not prevent aircraft from crossing directly between two parallel runways because it does not include a center parallel taxiway. This Alternative would not meet the need to maintain operational capability when there is a temporary closure of 11L/29R because the runways would remain as they are today potentially resulting in runway incursions. This Alternative was not carried forward for Step Two evaluation because it does not meet all of the stated needs.

2.4.2.2 Existing 706-Foot Separation Plan B

This Alternative would maintain operational capability when there is a temporary closure of 11L/29R due to the expansion of Runway 11R/29L. This Alternative would maintain AFP 44 capabilities. However, this alternative does not meet the need to eliminate the existing HS-2 or direct crossing runways. This is because this Alternative does not prevent aircraft from crossing directly between two parallel runways because it does not include a center parallel taxiway potentially resulting in runway incursions. In addition, it does not prevent crossing the approach to the two parallel runways while taxiing on Taxiway D also potentially resulting in runway incursions. This Alternative was not carried forward for Step Two evaluation because it does not meet all of the stated needs.

2.4.2.3 Existing 706-Foot Separation Plan C

This Alternative would maintain operational capability when there is a temporary closure of 11L/29R. This Alternative would maintain AFP 44 capabilities. However, this alternative does not meet the need to eliminate direct crossing between runways. This is because this Alternative does not prevent aircraft from crossing directly between two parallel runways because it does not include a center parallel taxiway potentially resulting in runway incursions. This Alternative was not carried forward for Step Two evaluation because it does not meet all of the stated needs.

2.4.2.4 800-Foot Separation Plan A

This Alternative would eliminate both existing hot spots. This Alternative would prevent aircraft from crossing directly between two parallel runways because it includes a center parallel taxiway. This alternative would maintain operational capability when there is a temporary closure of 11L/29R. This Alternative would maintain AFP 44 capabilities. This Alternative was carried forward for Step Two evaluation because it meets all of the stated needs.

2.4.2.5 800-Foot Separation Plan B

This Alternative would eliminate both existing hot spots. This Alternative would prevent aircraft from crossing directly between two parallel runways because it includes a center parallel taxiway. This Alternative would maintain operational capability when there is a temporary closure of 11L/29R. This Alternative would maintain AFP 44 capabilities. This Alternative was carried forward for Step Two evaluation because it meets all of the stated needs.

2.4.2.6 East Runway

This Alternative would eliminate HS-1 but not HS-2. This Alternative would prevent aircraft from crossing directly between two parallel runways because it includes a center taxiway. This Alternative would maintain operational capability when there is a temporary closure of 11L/29R. This Alternative would maintain AFP 44 capabilities.

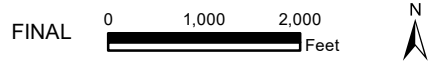
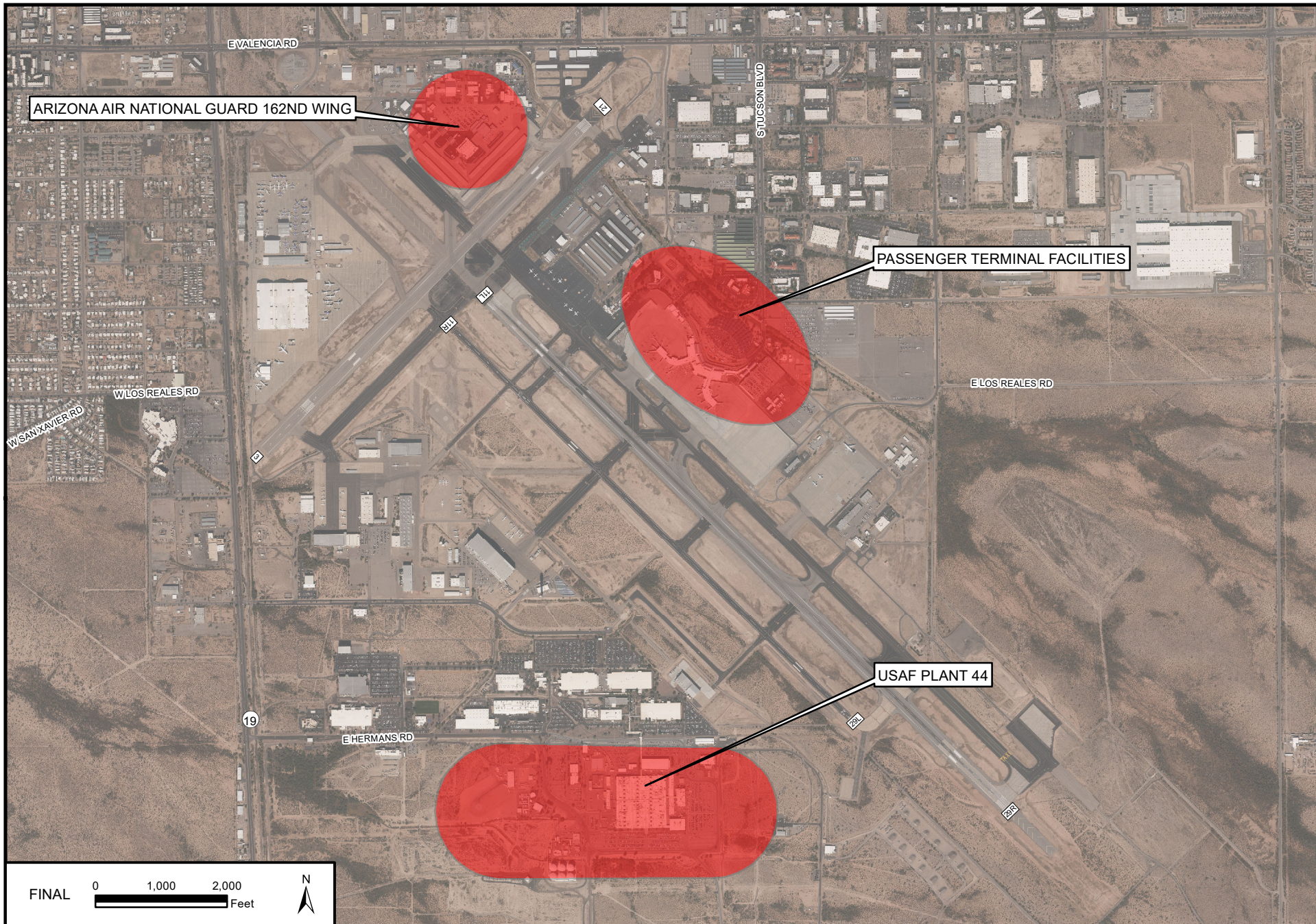
This Alternative is shown on TAA's ALP as "conceptual" because it is a future capacity enhancement that is needed beyond the 20-year planning horizon of the Master Plan Update. At this time, implementation of this Alternative would not be warranted because TUS does not need additional airfield capacity and additional airfield capacity is not part of the Purpose and Need. This Alternative was not carried forward for Step Two evaluation because it does not meet all of the stated needs, specifically it does not eliminate HS-2, because it would not stop pilots taxiing along Taxiway D from crossing the approach path for Runway 11L/29R without proper clearance..

2.5 STEP TWO: PRACTICAL OR FEASIBLE TO IMPLEMENT

Based on the findings from the initial screening, two airfield alternatives and three off-site alternatives were identified as satisfying the Purpose and Need, in addition to the No Action alternative. The second step of the evaluation analyzed the alternatives a step further to evaluate if the alternative is practical or feasible to implement from a technical and economic standpoint.

The FAA reviewed the current layout of the Airport and its surroundings to identify constraints to potential implementation of alternatives. The facilities depicted on **Exhibit 2-9** are located on or immediately adjacent to the Airport and identified as development limitation constraints. Developing an alternative that would conflict with one of these existing facilities would result in substantial redevelopment costs or would inhibit development or maintenance of existing infrastructure and would therefore be impractical from a technical or economic standpoint. As such, no alternatives that directly affect these existing facilities were considered feasible to implement. The areas that are development limitation constraints for the alternatives include:

- **AFP 44 Facilities:** An alternative that would result in a major relocation of AFP 44 facilities would cause significant disruption to AFP 44 operations and would require substantial additional investment. Therefore, no alternatives that would cause substantial relocation of AFP 44 facilities would proceed to Step Three.



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Alternative Constraints

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- **Passenger Terminal Facilities:** An alternative that would result in a major encroachment to the existing terminal core passenger processing facilities area would cause significant disruption of airline and passenger service. Therefore, no alternatives that require substantial relocation of facilities and additional investment would proceed to Step Three.
- **Arizona Air National Guard 162nd Wing (AANG) Facilities:** An alternative that would result in a major relocation of AANG facilities would cause significant disruption to their mission and would require substantial additional investment to complete. Therefore, no alternatives that would cause substantial relocation of AANG facilities are included in this analysis.

Table 2-2 summarizes the Step Two evaluation findings.

**Table 2-2
STEP TWO SCREENING MATRIX**

Alternative	Description	Step Two Screening Criteria	
		<i>Is the Alternative practical or feasible to implement from a technical and economic standpoint?</i>	Move to Step Three
No Action	- Airport remains as it is today	Yes	Yes
800-Foot Separation Plan A	- Dual full length parallel runway system - Displace both Runway 11's thresholds, end-around Taxiway D for B-II aircraft	Yes	Yes
800-Foot Separation Plan B	- Dual full length parallel runway system - Shift runways southeast, unobstructed end-around Taxiway D	Yes	Yes
Ryan Airfield	- Insufficient runway length & airport facilities	No	No
Marana Regional	- Insufficient runway length & airport facilities	No	No
Davis –Monthan Air Force Base	- Cannot accept commercial/public traffic	No	No

Note: Yes- Satisfies Step Two screening criteria
No- Does not satisfy Step Two screening criteria

2.5.1 NO ACTION ALTERNATIVE

To comply with 40 C.F.R. § 1502.14(d), FAA Orders 1050.1F and 5050.4B, and other special purpose environmental laws, the No Action Alternative is carried forward in the analysis of environmental consequences.

2.5.2 ON-SITE AIRFIELD ALTERNATIVES

Both of the airfield development alternatives were identified as being feasible to implement and avoiding existing facilities and were carried forward for Step Three evaluation.

2.5.3 OFF-SITE ALTERNATIVES

The ability to use another airport as a feasible and practical alternative is largely based on the potential for that airport to accommodate most, if not all of the aircraft operations that are currently using TUS.

2.5.3.1 Ryan Airfield (RYN)

The current runways at RYN do not provide the length and width necessary to accommodate military training operations, regional jet, or large passenger jet operations. Further, there is a lack of proper passenger terminal facilities (terminal buildings, baggage services, fueling facilities, utility infrastructure, and parking) to support passenger service. TAA does not hold a Part 139 Certificate for RYN. The lack of terminal and runway facilities at RYN would restrict it from being considered a practical or feasible alternative due to the significant investment that would be needed to improve it making it infeasible. While TAA does have the responsibility for decisions to further develop RYN, FAA and TAA do not have the authority to divert air transportation activity from TUS to RYN rendering it not a reasonable alternative. Therefore, the use of RYN as an alternative was not carried forward for the Step Three evaluation.

2.5.3.2 Marana Regional Airport (AVQ)

The current runway at AVQ is not long enough to accommodate military training operations, regional jet, or large jet passenger operations. Further, there is a lack of proper terminal facilities (secure terminal, baggage services, and parking) to support passenger service. The lack of terminal and runway facilities at AVQ render it an impracticable alternative due to the significant investments that would have to occur. Unlike TUS and RYN, TAA does not have the responsibility for decisions to further develop AVQ. FAA and TAA do not have the authority to divert air transportation activity from TUS to AVQ further making it an infeasible alternative. Therefore, the use of AVQ as an alternative was not carried forward for Step Three evaluation.

2.5.3.3 Davis-Monthan Air Force Base (DMA)

DMA is a military installation closed to the public. Pilots must obtain special permissions prior to landing at DMA. Because DMA is not a public-use airport, relocating commercial aviation activity from TUS to DMA is not possible and therefore is not a reasonable alternative. The use of DMA was not carried forward for Step Three evaluation.

2.6 STEP THREE: MINIMIZE AIRFIELD OPERATIONAL IMPACTS

Based on the analysis from Step One and Step Two of the initial screening, two airfield alternatives were carried forward for Step Three screening in addition to the No Action alternative. The third step of the evaluation analyzes the ASEP alternatives' ability to result in a safe and efficient use of navigable airspace and minimize airfield operational impacts during construction.

Each of the ASEP alternatives carried forward to this point appears feasible in terms that the alternative is physically capable of being built and could be operated safely. This Step Three screening considered the alternatives' impacts on airfield operations and issues of practicality and prudence.

Here, the most evident impact from the ASEP alternatives considered was the potential increase in taxi times of aircraft going from the runways to the terminal, the AANG facility, and the GA ramp and on potential supporting infrastructure that would need to be built to support the alternatives. Increased taxi times result in more fuel burn, additional air pollutant emissions, and adds delay in commercial airline schedules.

Table 2-3 summarizes the Step Three evaluation findings.

**Table 2-3
STEP THREE SCREENING MATRIX**

Alternative	Description	Step Three Screening Criteria		
		<i>Would the Alternative result in a safe and efficient use of navigable airspace?</i>	<i>Does the Alternative minimize airfield operational impacts?</i>	Retain for detailed EIS impact evaluation
No Action	- Airport remains as it is today	Yes	No	Yes
800-Foot Separation Plan A	- Dual full length parallel runway system - Displace both Runway 11's thresholds, end-around Taxiway D for B-II aircraft	Yes	Yes	Yes
800-Foot Separation Plan B	- Dual full length parallel runway system - Shift runways southeast, unobstructed end-around Taxiway D	Yes	No	No

Note: Yes- Satisfies Step Three screening criteria
No- Does not satisfy Step Three screening criteria

2.6.1 NO ACTION ALTERNATIVE

The No Action Alternative required pursuant to 40 C.F.R. § 1502.14(d) provides a basis of comparison for the assessment of future conditions and impacts. Therefore, the No Action Alternative was carried forward for detailed evaluation in the EIS.

2.6.2 800-FOOT SEPARATION PLAN A

From an operational standpoint, this Alternative would provide an efficient use of the airfield and would maintain taxi times most similar to existing conditions.

2.6.3 800-FOOT SEPARATION PLAN B

From an operational standpoint, this Alternative would require additional runway pavement and taxiways to route aircraft to the passenger terminal area, the AANG facility, and the GA ramp and additional infrastructure development such as extension of utilities.

In addition, this alternative would cause up to a doubling of taxi times for aircraft as compared to the existing conditions. Increased taxi times result in more fuel burn, additional air pollutant emissions, and increase delay in commercial airline schedules. It would not be practical or prudent to construct this Alternative because of the additional construction resources and costs needed for implementation, as well as an increase in airfield operational impacts, specifically taxi time. Therefore, this Alternative was not carried forward for detailed evaluation in the EIS.

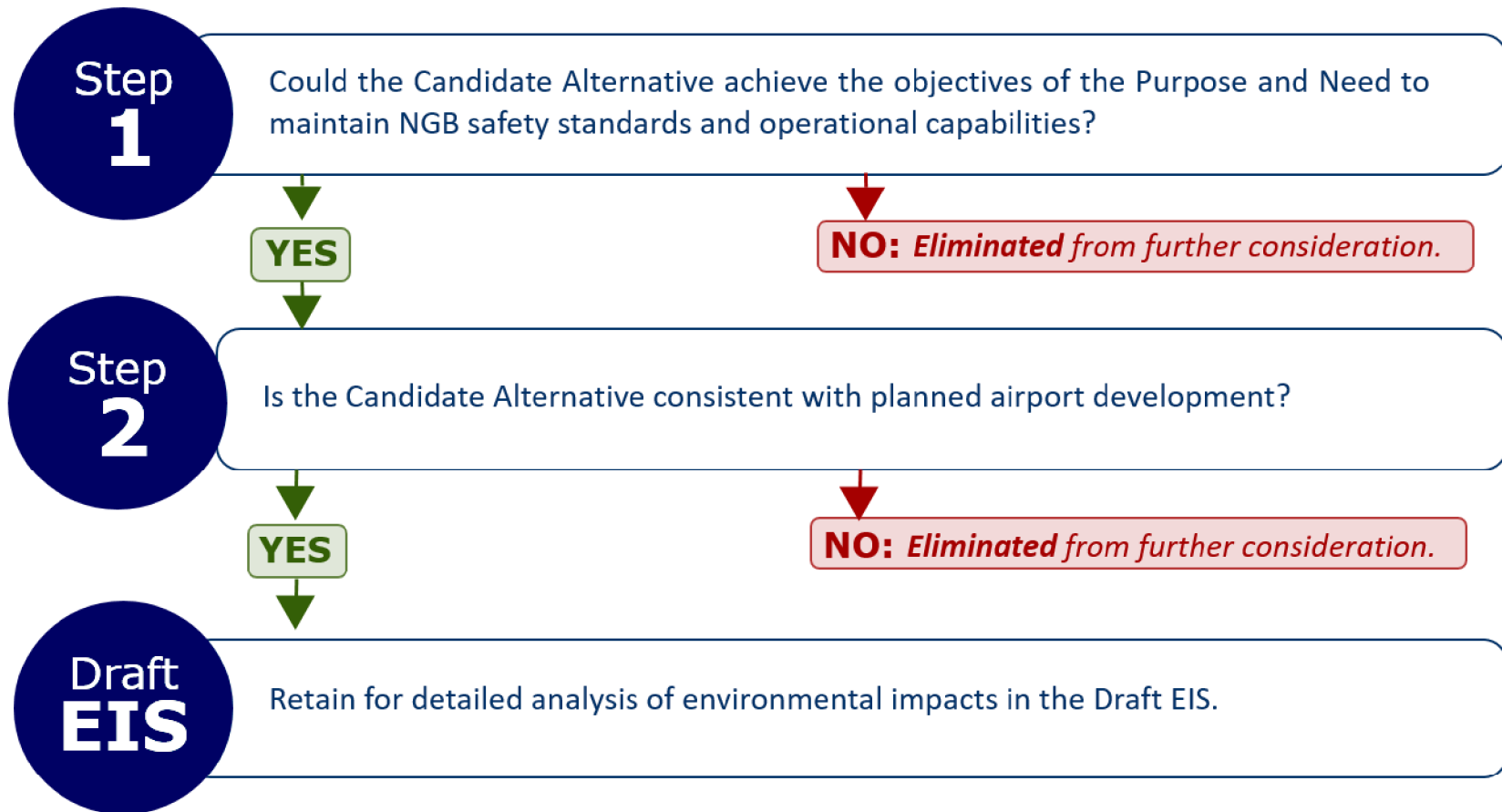
2.7 MSA ALTERNATIVES SCREENING PROCESS

This section provides a second screening process in order to identify alternatives for the location of a proposed MSA for the AANG. The proposed MSA is a separate project from the ASEP, but is considered a similar action under 40 C.F.R. § 1508.25(a)(3). It is appropriate to evaluate the environmental consequences of the proposed MSA with the ASEP, because they have common timing and geography. Inclusion of the MSA in the EIS also avoids unnecessary duplication and delay in preparing federal environmental documents.

The AANG currently maintains MSAs as part of their operational capability. Munitions storage areas may include ECMs but also include other facilities to support munitions-related operations such as inspection areas, secured roadways, loading docks, and maintenance areas. Not all the munitions used by the AANG can be stored at the existing facilities. Some munitions must be stored at DMA. The AANG needs additional areas to maintain the safe storage of munitions and provide safety areas to ensure the public is not in close proximity to any munitions in the event of a mishap. In addition, TAA has identified the need for future development to be compatible with long-term plans for the Airport.

FAA and NGB established a screening process to identify a range of reasonable munitions storage area alternatives. The screening process determined if the initial range of alternatives were able to meet the NGB's Purpose and Need for maintaining safety and operational capabilities and if the alternative was consistent with TAA planned airport development as depicted on the most recently approved ALP. If the MSA alternative advanced through the screening process, it was retained for a more detailed environmental evaluation in the EIS. The screening process is portrayed conceptually in **Exhibit 2-10**.

Initial Range of Alternatives



FINAL



Environmental Impact Statement
Tucson
International Airport

Initial Range of Alternatives

EXHIBIT:
2-10

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Table 2-4 summarizes the MSA Alternatives evaluation findings.

**Table 2-4
STEP ONE MSA ALTERNATIVES SCREENING MATRIX**

Alternative	Description	Step One Screening Criteria		
		Does the Alternative maintain NGB safety standards and operational capabilities? (NGB Purpose & Need)	Is the Alternative consistent with airport planned development? (TAA Purpose & Need)	Retain for detailed EIS impact evaluation
East Los Reales Site	<ul style="list-style-type: none"> - Located east of Air Freight ramp - Closest to AANG - Security Concerns - Conflict with Airport's ultimate development 	Yes	No	No
South Alvernon Way Site	<ul style="list-style-type: none"> - Security and safety concerns due to use of public road and proximity to non-Airport property 	Yes	No	No
Parcel H Site	<ul style="list-style-type: none"> - Located south of AFP 44 - Could provide secure roadway that would not have to leave Airport property 	Yes	Yes	Yes

Note: Yes- Satisfies Step One screening criteria
No- Does not satisfy Step One screening criteria

2.7.1 INITIAL RANGE OF MSA ALTERNATIVES

The NGB's purpose and need is to maintain NGB safety standards and operational capabilities at the Tucson Air National Guard Base. In order to meet NGB safety standards, NGB needs to meet required separation distances for its MSA. The existing MSA does not meet the separation distances required for all the munitions utilized by the AANG. Some munitions must be stored at DMA. Recognizing the need to enhance safety and efficiency, the AANG has expressed interest in removing munitions storage from its current site at the existing AANG facilities located west of the Runway 21 end to a new MSA that would hold all necessary munitions for safe and efficient operations.

From a safety perspective, potential munitions storage area alternative sites must have the necessary clear zone arcs that are required in accordance with United States Air Force Manual 91-201, *Explosives Safety Standards*. The clear zone arcs keep the munitions and explosive operations a safe distance from the public. From an operational perspective, the MSA needs to be in close proximity to existing AANG facilities while minimizing runway crossings, as well as appropriate landside and airside access for staff.

In addition to meeting the NGB's purpose and need, it is also important to identify potential MSA locations that do not conflict with TAA's future planned developments at the Airport. Developing an alternative that would conflict with current or future airport facilities may result in substantial future redevelopment costs or would inhibit development. As such, no alternatives that would conflict with the ultimate development depicted on TAA's ALP were considered feasible or practical from a technical or economic standpoint to implement.

The NGB has identified that the area needed for the potential munitions storage area alternatives will need to be at least 55 acres in order to provide all the necessary facilities. Potential storage areas north and west of the airport core were not considered due to the lack of available land and impact to non-aviation related land. The following sections provide a brief description of the munitions storage area sites that are subject to the screening process.

2.7.1.1 East Los Reales Road Site

The East Los Reales Road Site is located east of the Air Freight ramp, southeast of intersection between East Los Reales Road and Country Club Road. This potential site, which is located on Airport property, is the closest to the AANG's current operations. Access to the AANG from the East Los Reales Road Site would utilize the existing East Los Reales Road to gain direct airside access and travel along the terminal apron airport service road.

2.7.1.2 South Alvernon Way Site

The South Alvernon Way Site is located east of the Runway 29 ends, along South Alvernon Way. This potential site is located on Airport property. However, this location is between two parcels that TAA does not own or control – parcels owned and operated by Crown Products Incorporated and Sierra Mining and Crushing.

2.7.1.3 Parcel H Site

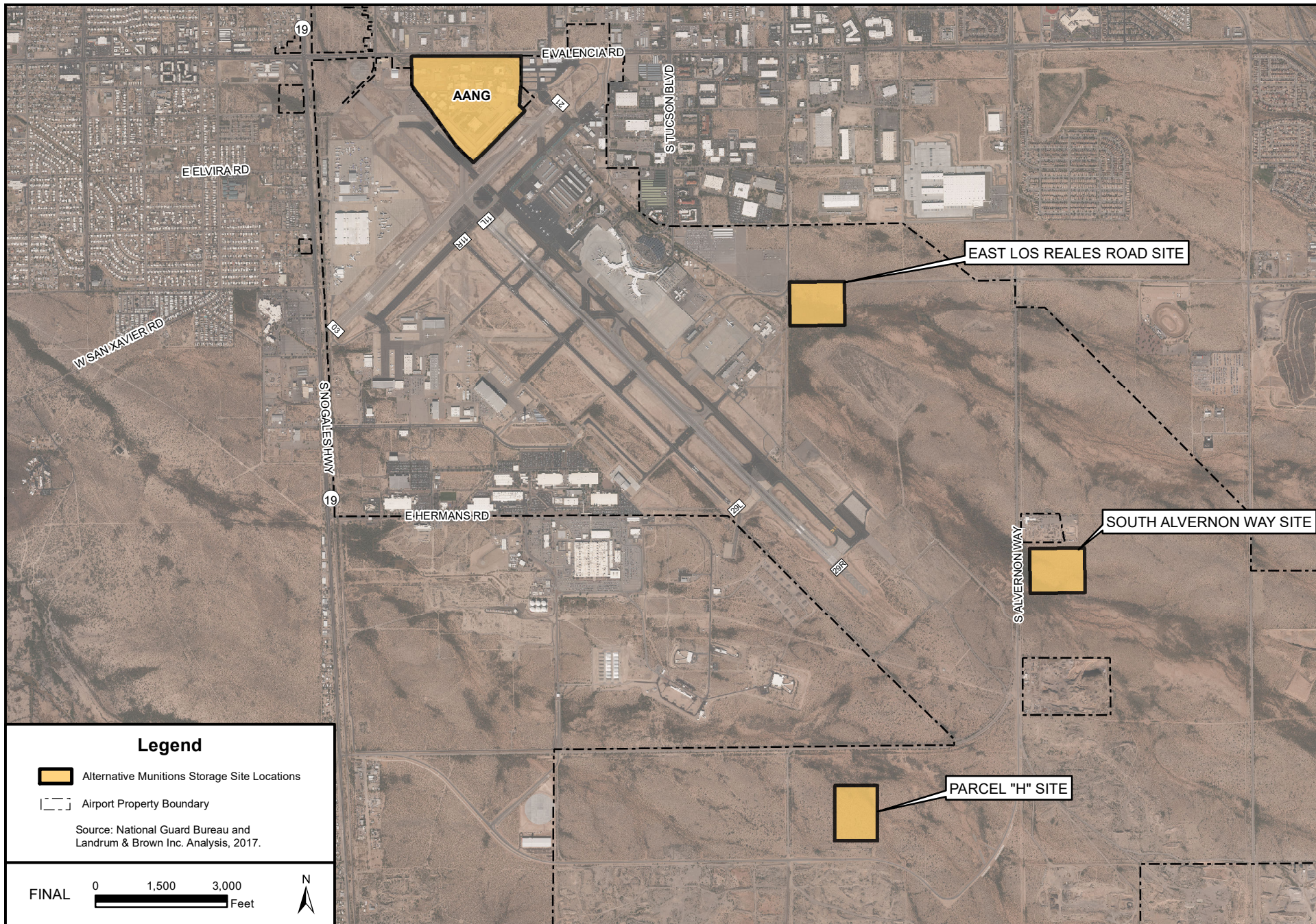
The Parcel H Site is located south of AFP 44, southeast of intersection between former Hughes Access Road and South Country Club Road.

The existing AANG facilities and the three potential on-site AANG alternatives are shown in **Exhibit 2-11**.


2.7.2 STEP ONE: ACHIEVES NGB AND TAA PURPOSE AND NEED STATEMENTS

2.7.2.1 East Los Reales Road Site

This site would achieve the NGB's purpose and need and provide the necessary 55 acres of land. However, additional security considerations would be required as half of the site sits along public roadways. This site would conflict with the Airport's ultimate development and land use approach that recommends future development in this area. Because this site may expose the public to munitions while being transported and would conflict with the Airport's ultimate development plan, the East Los Reales Road Site was not carried forward for detailed evaluation.

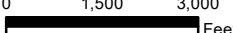


Legend

 Alternative Munitions Storage Site Locations

 Airport Property Boundary

Source: National Guard Bureau and
Landrum & Brown Inc. Analysis, 2017.

FINAL  Feet



Environmental Impact Statement
Tucson
International Airport

On-Site AANG Alternative Sites

EXHIBIT:
2-11

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2.7.2.2 South Alvernon Way Site

This site would achieve the NGB's purpose and need and provide the necessary 55 acres of land. However, additional security considerations would be required as transportation of munitions to the existing AANG would cross public roadways. From a land use perspective, combining the munitions storage area and publicly owned parcels of land in proximity to one another may present operational and security concerns in the future. This site would conflict with the Airport's ultimate development and land use approach that recommends future development in this area. Because this site may expose the public to munitions while being transported and would conflict with the Airport's ultimate development plan, the South Alvernon Way Site was not carried forward for detailed evaluation.

2.7.2.3 Parcel H Site

The Parcel H site provides the necessary 55 acres and achieves NGB's purpose and need. The Parcel H Site would require less security preparation because access to the AANG from the Parcel H Site could utilize a new secure roadway that does not leave Airport property or cross public roadways. From a land use perspective, the location would not conflict with the Airport's ultimate development and future land use efforts. For these reasons, the Parcel H site was selected to be carried forward for detailed evaluation.

2.8 ALTERNATIVES RECOMMENDED FOR DETAILED EVALUATION IN THE ENVIRONMENTAL IMPACT STATEMENT

Based on the screening analysis presented, one ASEP alternative (800-foot Separation Plan A) and one munitions storage area alternative (Parcel H Site) are recommended to be carried forward for further detailed environmental evaluation in the EIS. **Table 2-5** provides the screening summary for the ASEP alternatives. **Table 2-6** provides the screening summary for the munitions storage area alternatives. These alternatives will be assessed for potential impacts for the projected future conditions in 2023 and 2028. The physical development of the alternatives will not change between the analysis years. The FAA uses 2023 as a basis for analysis because 2023 is the projected implementation year of the Proposed Action. In addition, 2028 is used as a basis for analysis, most notably for air quality and noise and noise-compatible land use, because it represents a condition five years beyond the opening year where the only potential changes are due to aircraft operations.

**Table 2-5
AIRFIELD SAFETY ENHANCEMENT ALTERNATIVES SCREENING SUMMARY**

Alternative	Description	Alternatives Ability to Meet the Established Purposes and Needs			Retain for detailed EIS impact evaluation
		<i>Step-1 Achieve the objectives of the Purpose and Need statements?</i>	<i>Step 2 – Practical or Feasible to Implement from an economic and technical standpoint?</i>	<i>Step 3 Results in Safe and Efficient use of Navigable airspace and Minimizes airfield operational impacts?</i>	
No Action	- Airport remains as it is today	No	Yes	Yes/No	Yes
706-Foot Separation Plan A	- Minimal action to taxiway connectors to increase pilot awareness and limit runway crossings	No	---	---	No
706-Foot Separation Plan B	- Dual full length parallel runway system - Retain both Runway 11's end thresholds	No	---	---	No
706-Foot Separation Plan C	- Dual full length parallel runway system - Displace both Runway 11's thresholds	No	---	---	No
800-Foot Separation Plan A	- Dual full length parallel runway system - Displace both Runway 11's thresholds, end-around Taxiway D for B-II aircraft	Yes	Yes	Yes	Yes
800-Foot Separation Plan B	- Dual full length parallel runway system - Shift runways southeast, unobstructed end-around Taxiway D	Yes	Yes	No	No
East Runway	- Dual full length parallel runway system - New Runway 12/30, east of terminal core - Dual independent approaches - Additional taxiways near west pad	No	---	---	No
Ryan Airfield	- Insufficient runway length & airport facilities	Yes	No	---	No
Marana Regional	- Insufficient runway length & airport facilities	Yes	No	---	No
Davis -Monthan Air Force Base	- Cannot accept commercial/public traffic	Yes	No	---	No

Note: Yes- Satisfies purpose and need
No- Does not satisfy purpose and need

**Table 2-6
MSA ALTERNATIVES SCREENING SUMMARY**

Alternative	Description	Alternatives Ability to Meet the Established Purposes and Needs		
		Step 1 Does the Alternative maintain NGB safety standards and operational capabilities?	Step 2 Is the Alternative consistent with airport planned development?	Retain for detailed EIS impact evaluation
East Los Reales Site	<ul style="list-style-type: none"> - Located east of Air Freight ramp - Closest to AANG - Security Concerns - Conflict with Airport's ultimate development 	Yes	No	No
South Alvernon Way Site	<ul style="list-style-type: none"> - Security and safety concerns due to use of public road and proximity to non-Airport property 	Yes	No	No
Parcel H Site	<ul style="list-style-type: none"> - Located south of AFP 44 - Isolated location - Could provide secure roadway that would not have to leave Airport property 	Yes	Yes	Yes

Note: Yes- Satisfies screening criteria
 No- Does not satisfy screening criteria

2.8.1 NO ACTION ALTERNATIVE

Under this alternative, the existing Airport would remain unchanged. The No Action Alternative required pursuant to 40 C.F.R. § 1502.14(d) provides a basis of comparison for the assessment of future conditions and impacts.

2.8.2 800-FOOT SEPARATION PLAN A (PROPOSED ACTION)

This Alternative includes the replacement of Runway 11R/29L with a full-length parallel runway. The distance between the parallel runways would be expanded to 800 feet. A center parallel taxiway would be constructed to allow aircraft to queue prior to crossing the other parallel runway. An additional parallel taxiway west of the relocated Runway 11R/29L would limit direct access from aircraft approaching the runway from the west. Various other taxiways improvements are proposed to promote pilot awareness on the airfield, most importantly the removal of the taxiways leading to the north ends of Runway 11L and 11R. The addition of several taxiway segments would replace removed taxiways and would comply with FAA design standards. This Alternative would eliminate both HS-1 and HS-2. Parallel Runways 11R/29L and 11L/29R would both measure 10,996 feet by 150 feet and have parallel thresholds at both ends to enhance visual acquisition of the runway end by pilots in the air. The 800-foot separation Plan A alternative will move forward as the Proposed Action.

2.8.3 PARCEL H SITE

The Parcel H Site located south of AFP 44 and southeast of intersection between former Hughes Access Road and South Country Club Road would provide the AANG the appropriate landside and airside access for a new munitions storage area. In addition, this approximate 55-acre site would maintain NGB safety standards and operational capabilities and not conflict with future developments on the airfield. This site would also not conflict with potential future TAA developments.

2.9 IDENTIFICATION OF THE PREFERRED ALTERNATIVE

The FAA has identified the Proposed Action as its preferred alternative pursuant to 40 C.F.R. 1502.14(e). As defined in Council on Environmental Quality's (CEQ's) *Forty Most Asked Questions Concerning NEPA Regulations*, the agency's "preferred alternative" is the "alternative which the agency believes would fulfill its statutory mission and responsibilities, giving consideration to economic, environmental, technical and other factors." In selecting a preferred alternative, the FAA considered the factors disclosed in this EIS in the context and scope of implementing Federal transportation policies within the framework of the agency's statutory authorities and responsibilities.

2.10 LISTING OF FEDERAL LAWS AND REGULATIONS CONSIDERED

The federal laws and statutes, executive orders, U.S. Department of Transportation (USDOT) and FAA orders, FAA Advisory Circulars, and other federal guidance considered during the preparation of this EIS are listed in **Table 2-7**.

**Table 2-7
LISTING OF FEDERAL LAWS AND REGULATIONS CONSIDERED**

FEDERAL LAWS AND STATUTES	
National Environmental Policy Act of 1969	42 U.S.C. 4321 et seq.
Clean Air Act of 1970, as amended	42 U.S.C. 7401 et seq.
Bald and Golden Eagle Protection Act	16 U.S.C. 668 et seq.
Endangered Species Act of 1973	16 U.S.C. 1531 et seq.
Fish and Wildlife Coordination Act of 1958	16 U.S.C. 661 et seq.
Magnuson-Stevens Fishery Conservation and Management Act of 1976, as amended	16 U.S.C. 1801 et seq.
Migratory Bird Treaty Act	16 U.S.C. 703 et seq.
Land and Water Conservation Fund Act of 1965	16 U.S.C. 4601 et seq.
Department of Transportation Act, Section 4(f)	49 U.S.C. 303(c)
Farmland Protection Policy Act	7 U.S.C. 4201 et seq.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Community Environmental Response Facilitation Act of 1992	42 U.S.C. 9601 et seq.
Federal Facilities Compliance Action	42 U.S.C. 6961
Hazardous Materials Transportation Act of 1975	49 U.S.C. 5101 et seq.
Oil Pollution Control Act of 1990	33 U.S.C. 2701 et seq.
Pollution Prevention Act	42 U.S.C. 13101 et seq.
Resource Conservation and Recovery Act of 1976, as amended by the Solid Waste Disposal Act of 1980	42 U.S.C. 6901 et seq.
Toxic Substances Control Act	15 U.S.C. 2601 et seq.
American Indian Religious Freedom Act	42 U.S.C. 1996
Antiquities Act of 1906	54 U.S.C. 320301 et seq.
Archaeological and Historic Preservation Act	54 U.S.C. 312501 et seq.
Archaeological Resources Protection Act	16 U.S.C. 470 et seq.
National Historic Preservation Act	54 U.S.C. 300101 et seq.
Native American Graves Protection and Repatriation Act	25 U.S.C. 3001 et seq.
Airport and Airway Improvement Act of 1982, as amended	49 U.S.C. 47101 et seq.
Energy Independence and Security Act	42 U.S.C. 17001 et seq.
Energy Policy Act	42 U.S.C. 15801 et seq.
Aviation Safety and Noise Abatement Act of 1979	49 U.S.C. 47501 et seq. (14 C.F.R. Part 150)
Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970	42 U.S.C. 61 et seq.

**Table 2-7, Continued
LISTING OF FEDERAL LAWS AND REGULATIONS CONSIDERED**

FEDERAL LAWS AND STATUTES	
Clean Water Act	33 U.S.C. 1251 et seq.
National Flood Insurance Act	42 U.S.C. 4001 et seq.
Rivers and Harbors Act	33 U.S.C. 401 et seq.
Safe Drinking Water Act of 1974	42 U.S.C. 300 et seq.
Wild and Scenic Rivers Act	16 U.S.C. 1271 et seq.
Federal Aviation Act of 1958, as amended	49 U.S.C. 40101 et seq.
Protection of Historic and Cultural Properties	36 C.F.R. Part 800
EXECUTIVE ORDERS	
Executive Order 13807, Establishing Discipline and Accountability in the Environmental Review and Permitting Process for Infrastructure	82 FR 40463 (August 24, 2017)
Executive Order 13308, Superfund Implementation as amended	68 FR 37691 (June 20, 2003)
Executive Order 13186, Responsibilities of Federal Agencies to Protect Migratory Birds	66 FR 3853 (January 17, 2001)
Executive Order 13175, Consultation and Coordination with Indian Tribal Governments	65 FR 67249 (November 9, 2000)
Executive Order 13112, Invasive Species	64 FR 6183 (February 8, 1999)
Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks	62 FR 19885 et seq. (April 23, 1997)
Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations	59 FR 7629 et. seq. (February 11, 1994)
Executive Order 12580, Superfund Implementation	52 FR 2923 (January 23, 1987)
Executive Order 12088, Federal Compliance with Pollution Control Standards	43 FR 47707 (October 13, 1978)
Executive Order 11988, Floodplain Management	42 FR 26951 et. seq. (May 25, 1977)
Executive Order 11990, Protection of Wetlands	42 FR 26961 et. seq. (May 24, 1977)
Executive Order 11593, Protection and Enhancement of the Cultural Environment	36 FR 8921 et. seq. (May 13, 1971)
UNITED STATES DEPARTMENT OF TRANSPORTATION AND FAA ORDERS	
U.S. DOT, FAA Order 1050.1F: Environmental Impacts: Policies and Procedures	
U.S. DOT, FAA Order 5050.4B: National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions	
U.S. DOT Order 5650.2: Floodplain Management and Protection	
U.S. DOT Order 5660.1A: Preservation of the Nation's Wetlands	
U.S. DOT Order 5610: Environmental Justice in Minority and Low-Income Populations	
U.S. DOT Order 5650.1: Protection and Enhancement of the Cultural Environment	

**Table 2-7, Continued
LISTING OF FEDERAL LAWS AND REGULATIONS CONSIDERED**

ADVISORY CIRCULARS
FAA Advisory Circular 150/5020-1: Noise Control and Compatibility Planning for Airports
FAA Advisory Circular 150/5200-33B: Hazardous Wildlife Attractants On or Near Airports
FAA Advisory Circular 150/5300-13, Airport Design
FAA Advisory Circular 150/5325-4B, Runway Length Requirements for Airport Design
FAA Advisory Circular 150/5370-10G, Standards for Specifying Construction of Airports
CODE OF FEDERAL REGULATIONS
Title 32 C.F.R. Part 989: Environmental Impact Analysis Process (EIAP)
Title 14 C.F.R. Part 71, Designation of Class A, Class B, Class C, Class D, and Class E Airspace Areas; Airways; Routes; and Reporting Points
Title 14 C.F.R. Part 77, Objects Affecting Navigable Airspace
Title 14 C.F.R. Part 150, Airport Noise Compatibility Planning
Title 40 C.F.R. Part 93, Determining Conformity of Federal Actions to State or Federal Implementation Plans, Subpart B
Title 40 C.F.R. Part 122, EPA Administered Permit Programs: The National Pollutant Discharge Elimination System
Title 40 C.F.R. Part 123, State Program Requirements
Title 40 C.F.R. Part 124, Procedures for Decision-making
Title 40 C.F.R. Part 172, Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Training Requirements
Title 40 C.F.R. Parts 1500–1508, President’s Council on Environmental Quality

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