

AIR TRAFFIC INITIAL ENVIRONMENTAL REVIEW

Facility: Phoenix TRACON

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This initial environmental review should provide some basic information about the proposed project to better assist in preparing for the environmental analysis phase. Although it requests information in several categories, not all the data may be available initially. However, it does represent information, in accordance with FAA Order 1050.1E, "Environmental Impacts: Policies and Procedures," which ultimately will be needed for preparation of the environmental document.

Project Description

A. Attach copy of the most recent Project Status Report. **The FAA is proposing the implementation of nine RNAV Standard Instrument Departures (SIDs) and five RNAV Standard Terminal Arrival Routes (STARs) at Phoenix Sky Harbor International Airport (PHX). Additionally, the DSERT STAR and all of the RNAV SIDs would service seven satellite airports in the greater Phoenix area. The seven satellite airports are: Phoenix Goodyear Airport (GYR), Glendale Municipal Airport (GEU), Phoenix Deer Valley Municipal Airport (DVT), Scottsdale Municipal Airport (SDL), Falcon Field (FFZ), Phoenix Mesa Gateway Airport (IWA) and Chandler Municipal Airport (CHD).**

These procedures were requested to improve the predictability of flight routes in the airspace above the Phoenix metropolitan area, decreasing communication requirements between controllers and pilots, and provide more direct routings that are not dependent on ground base navigational aids. The proposed action would improve efficiency and enhance safety of the National Airspace System.

B. Has airspace modeling been conducted using SDAT, TAAM, TARGETS, or other airspace/air traffic design tool? Yes Model: **TARGETS** No

If yes, provide a summary of the output from the modeling. **See the Figures 19 - 32.**

C. Describe the present (no action alternative) procedure in full detail. Provide the necessary chart(s) depicting the current procedure. Describe the typical fleet mix, quantifying (if possible) the number of aircraft on the route and depict their altitude(s) along the route.

The current procedures at PHX are as follows:

- **BUCKEYE THREE DEPARTURE (See Figure 1): The BUCKEYE THREE departure heads west towards Parker (PKE), Palmdale (PMD) and Palm Springs (PSP). This route is mostly flown by large jets, made up of approximately 20%**

A319 and A320s, 30% B737 and B733s and 30% CRJs. The remaining air traffic is made up of General Aviation (GA) business jet aircraft.

- **CHILY THREE DEPARTURE** (See Figure 2): The CHILY THREE departure heads to the northwest, towards the ZEPER fix. The CHILY THREE departure then splits into four transitions. These transitions head towards the HOBES fix, Kingham (IGM), Beatty (BTY) and Needles (EED). The flight activity on this route is approximately made up of 55% A319, A320 and A321s, 30% B733 and B737s, and 5% CRJs. The remaining 10% of air traffic is a mix between GA business jet and prop aircraft.
- **MAXXO TWO DEPARTURE** (See Figure 3): The MAXXO TWO departure heads east and is only available for aircraft filing over Anton (ACH), Corona (CHX), Will Rogers (IRW), Liberal (LBL), Socorro (ONM), Panhandle (PNH), Tucumcari (TCC) and Texico (TXO). The activity on this route is made up of 40% A319, A320 and A321s, 40% B737, B752 and B738s and 10% MD82 and MD83s. The remaining air traffic is made up of GA business jet aircraft.
- **SILOW THREE DEPARTURE** (See Figure 4): The SILOW THREE departure heads towards Flagstaff (FLG), Grand Canyon (GCN), Bryce Canyon (BCE), Winslow (INW) and Dove Creek (DVC). The activity on this route is made up of 40% A319, A320 and A321s, 35% B733, B737, and B738s and 10% CRJs. The remaining air traffic is made up of GA prop aircraft.
- **ST. JOHNS SIX DEPARTURE** (See Figure 5): The ST. JOHNS SIX departure heads northeast, towards St. Johns (SJN) and Albuquerque (ABQ). The activity on this route is made up of 40% A319, A320 and A321s, 45% B733 and B737s, and 45% 738s and 6% B752s. The remaining air traffic is made up of GA prop aircraft.
- **STANFIELD THREE DEPARTURE** (See Figure 6): The STANFIELD THREE departure heads to the southeast with transitions to Tucson (TUS) and to the PUSCH and OLIIN fixes. The activity on this route is made up about 30% A319, A320 and A321s, 45% B733, B737 and B738s and 15% CRJs. The remaining air traffic is a mix between GA business jet and prop aircraft.

There are two RNP arrivals into each runway end at PHX, however no STARs to serve those RNP arrivals. The proposed STARs are designed to serve the current traffic that comes into PHX from each of the four corners as well as directly north of PHX. Figure 7 shows a snap shot of the arrival air traffic from 45 days randomly selected throughout 2012.

- **ARRIVALS FROM THE NORTHWEST:** This air traffic is made up of approximately 40% A319, A320 and A321s, 10% B733 and 20% B737, and 15% CRJs. The remaining air traffic is a mix between GA business jet and prop aircraft.
- **ARRIVALS FROM THE NORTH:** The air traffic is made up of approximately 60% GA prop aircraft and 40% CRJs.

- **ARRIVALS FROM THE NORTHEAST:** The air traffic is made up of approximately 40% A319, A320 and A321s, 30% B737s and 5% CRJs. The remaining air traffic is equally split between GA business jets and prop aircraft.
- **ARRIVALS FROM THE SOUTHWEST:** The air traffic is made up of approximately 25% A319, A320 and A321s, 25% B737s and 5% CRJs. The remaining 25% of air traffic is equally split between GA business jets and prop aircraft.
- **ARRIVALS FROM THE SOUTHEAST:** The air traffic is made up of approximately 30% A319, A320 and A321s, 20% B733 and B737s and 20% CRJs. The remaining 25% of air traffic is equally split between GA business jets and prop aircraft.

The current procedures at FFZ are as follows:

- **MESA ONE DEPARTURE (Figure 9):** The MESA ONE departure heads southeast towards Stanfield (TFD). This departure is solely utilized by GA prop aircraft.
- **SACAT ONE DEPARTURE (Figure 10):** This provides a gateway for aircraft heading to the southwest, west and northwest directions. This departure is solely utilized by GA prop aircraft.
- There are four sets of departures tracks for which there is no published departure procedure. These tracks head east, to the northeast towards ABQ, to the north-northeast towards JARPA, and northerly towards GCN. These tracks are solely from GA prop aircraft traffic.
- **The JCOBS TWO ARRIVAL (Figure 11):** The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to Phoenix VORTAC (PXR). Aircraft are vectored at any point after POURS to their final approach course. These tracks are solely from GA prop aircraft traffic.

The current procedures at SDL are as follows:

- **MARICOPA ONE DEPARTURE (Figure 12):** This is an obstacle departure which provides a route for aircraft from RWY 03 or RWY 21 to fly PXR. This departure is solely utilized by GA prop aircraft.
- **JONHH ONE DEPARTURE (Figure 13):** This departure starts from PXR with two separate headings: one to the northwest through CHILY and the other to the northeast through SILOW. The CHILY route has three transitions: one towards Beatty (BTY), one towards Kingham (IGM) and one towards HOBES. The SILOW route also has three transitions: one towards Bryce Canyon (BCE), Dove Creek

(DVC) and to Rattlesnake (RSK). General Aviation prop aircraft make the majority of the air traffic utilizing both the CHILY and SILOW routes. The remainder of the air traffic is made up of GA business jets.

- **SCOTTSDALE SEVEN DEPARTURE (Figure 14):** This departure starts from PXR with four separate headings: one to the northeast through FORPE to ABQ, one to the west through BUCKEYE, one to the southwest through MOBIE to Gila Bend (GBN) and one to the south to Stanfield (TFD). The route to TDF splits into two transitions: one to Tucson (TUS) and to OLIIN. General Aviation aircraft primarily utilize both the CHILY and SILOW routes. The remainder of the air traffic is made up of GA business jets.
- There are an additional four sets of departures tracks for which there is no published departure procedure. These tracks head west towards DECAS, to the southwest towards MOHAK, to the east-southeast and to the northeast towards ABQ. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.
- **The JCOBS TWO ARRIVAL (Figure 11):** The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.

The current procedures at GEU are as follows:

- **DRAKE ONE DEPARTURE (Figure 15):** This is an obstacle departure for RWY 1, direct to KUWSO and then north to Drake (DRK). The majority of the air traffic utilizing DRAKE ONE departure is GA prop aircraft, with the remaining air traffic being made up of GA business jets.
- There are an additional three sets of departures tracks for which there is no published departure procedure. These tracks head west towards DECAS, to the southwest towards MOHAK, to the east-southeast, and to the southeast towards BOXXR. This air traffic is primarily made up of GA prop traffic, with the remaining being GA business jets.
- **The JCOBS TWO ARRIVAL (Figure 11):** The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.

The current procedures at GYR are as follows:

- **POTER ONE DEPARTURE (Figure 16):** This is an obstacle departure for RWY 21, climbing to 8,000 feet, Mean Sea Level (MSL) direct to RUPOY and then 137 degree heading to POTER. General aviation prop aircraft make up 50% of the air traffic on the POTER ONE departure. The remaining air traffic is made up of 25% GA business jets and 25% large commercial planes, such as the A319.
- There are an additional three sets of departures tracks for which there is no published departure procedure. These tracks head west towards DECAS, to the southwest towards MOHAK, to the east-southeast and to the southeast towards BOXXR. This traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.
- **The JCOBS TWO ARRIVAL (Figure 11):** The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.

The current procedures at CHD are as follows:

- There are no published departures procedures for Chandler Municipal Airport. The existing departure tracks may be split into eight sets: tracks heading directly east and west, to the southwest towards MOHAK, to the southeast toward TUS, to the northeast towards ABQ, to the northwest towards CHILY, to the north-northeast towards INW and tracks that go north-northwest towards GCN. All of these tracks consist mostly of prop aircraft, with a small portion being GA business jets.
- **The JCOBS TWO ARRIVAL (Figure 11):** The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.

The current procedures at DVT are as follows:

- **DEER VALLEY ONE DEPARTURE (Figure 17):** This is an obstacle departure for RWYs 7L/R and 25R/L, with a climbing turn to the northwest until 4,000 feet MSL, and then fly via PXR. This accounts for approximately 20% of departures at DVT and is wholly made up of GA prop aircraft.

- There are an additional seven sets of departures tracks for which there is no published departure procedure. These tracks head southwest towards MOHAK, to the west towards BLH, to the northeast towards CHILY, to the north-northwest towards GCN, to the north-northeast towards JARPA, to the northeast towards SJN and to the east. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.
- The JCOBS TWO ARRIVAL (Figure 11): The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of GA prop aircraft, with a small proportion being GA business jets.

The current procedures at IWA are as follows:

- PHOENIX ONE DEPARTURE (Figure 18): This is an obstacle departure for RWYs 12L/C/R and 30L/C/R, consisting of a climbing turn to PXR. This departure accounts for approximately 1% of departures at IWA, and is primarily utilized by A319 and MD83s.
- There are an additional eight sets of departures tracks for which there is no published departure procedure. These tracks head southwest towards MOHAK, to the west towards BLH, to the northeast towards CHILY, to the north-northwest towards GCN, to the north-northeast towards JARPA, to the northeast towards SJN, to the east and to the southeast towards TUS. This air traffic is primarily made up of MD83 air traffic (approximately 80%). The remaining air traffic is made up of GA prop aircraft.
- The JCOBS TWO ARRIVAL (Figure 11): The JCOBS TWO arrival consists of three transitions arriving from the north. These transitions come in from PGS, FLG and INW. The three transitions join up at JCOBS from which there is a common route over POURS to PXR. Aircraft are vectored at any point after POURS to their final approach course. This air traffic is primarily made up of MD83s, with the remaining made up of GA prop aircraft.

D. Describe the proposed project, providing the necessary chart(s) depicting changes.

There are nine RNAV SIDs and five RNAV STARs proposed.

- The IZZO RNAV SID (see Figure 19) heads west, servicing the route currently covered by the BUCKEYE THREE departure. Departures from the satellite airports are vectored to KEENS, with a minimum altitude of approximately 8,500 feet Above Ground Level (AGL).

- **The ZEPER RNAV SID** (see Figure 20) heads west, servicing the route currently covered by the CHILY THREE departure. Departures from the satellite airports are vectored to ZEPER with a minimum altitude of approximately 9,000 feet AGL.
- **The FORPE RNAV SID** (see Figure 21) heads to the northeast, intersects SJN, at which point it splits into two transitions. One transition heads towards ABQ and the other transition towards MAXXO. The MAXXO transition is intended to service the existing MAXXO TWO departure. The ABQ transition is intended to service the existing ST. JOHNS SIX departure. Departures from the satellite airports are vectored to FORPE with a minimum altitude of approximately 10,000 feet AGL.
- **The FTHLS RNAV SID** (see Figure 22) heads northeast, intersects the fix JSSUA, at which point it splits into two transitions. One of these transitions heads towards ABQ and the other towards MAXXO. The MAXXO transition is intended to service the existing MAXXO TWO departure. The ABQ transition is intended to service the existing ST. JOHNS SIX departure. Departures from the satellite airports are vectored to KEENS with a minimum altitude of approximately 14,000 feet AGL.
- **The SNOBL RNAV SID** (see Figure 23) heads north, until it intersects the CHAVO fix, at which point it splits into three transitions. One transition heads towards GCN, another to YOOPR and the third transition heads towards JARPA. The GCN and JARPA transitions are intended to service the existing SILOW THREE departure. The YOOPR transition services the traffic heading towards the LJAYY fix. Departures from the satellite airports are vectored to SNOBL with a minimum altitude of approximately 10,000 feet AGL.
- **The YOTES RNAV SID** (see Figure 24) heads north until it intersects the MRBIL fix, at which point it splits into three transitions. One of these transitions heads towards GCN, another towards YOOPR and the third transition heads towards JARPA. The GCN and JARPA transition are intended to service the existing SILOW THREE departure. The YOOPR transition services the traffic heading towards the LJAYY fix. Departures from the satellite airports are vectored to YOTES with a minimum altitude of approximately 12,500 feet AGL.
- **The SHRIF RNAV SID** (see Figure 25) heads southeast heading towards the BOXXR waypoint. The SHRIF RNAV SID is intended to service the air traffic on the STRANFIELD THREE departure currently heading towards the PUSCH and OLIIN fixes. Departures from the satellite airports are vectored to SHRIF with a minimum altitude of approximately 12,000 feet AGL.
- **The BNYRD RNAV SID** (see Figure 26) heads southeast towards TUCSN. The BNYRD SID is intended to service the TUS transition on the STANFIELD THREE departure. Departures from the satellite airports are vectored to BNYRD with a minimum altitude of approximately 7,500 feet AGL.

- **The GBEND RNAV SID** (see Figure 27) heads southwest towards the MOHAK fix. Departures from the satellite airports are vectored to GBEND with a minimum altitude of approximately 8,500 feet AGL.
 - **The BRUSR RNAV STAR** (see Figure 28) arrives from the northwest; one transition coming from the TENTS waypoint and the other transition from the WOTRO fix. The transitions meet at the MAIER fix and then split again at BRUSR to allow for separate transitions to each end of the runway.
 - **The HYDRR RNAV STAR** (see Figure 29) consists of three transitions arriving from the southwest. These transitions come in from the SALOM fix, BLH and the HOGOZ fix. The three transitions join up at HYDRR, proceed toward GEELA and then split again to allow for separate transitions to each end of the runway.
 - **The DSERT RNAV STAR** (see Figure 30) consists of four transitions arriving from the north. These transitions come in from INW, LJAYY, FLG and KIDDR. The four transitions join up at DSERT from which there is a common route to BUSTD. At BUSTD there are two transitions, one towards PHX and the other heading southwest towards TYLIK. Aircraft arriving at PHX and the satellite airports located to the west of PHX will be vectored off the eastern transition to their respective runways, while aircraft arriving at the satellite airports located to the east of PHX will fly along the western transition until appropriately vectored to their respective runway. The DSERT STAR is intended to service the traffic on the existing JACOB TWO ARRIVAL, which is offset from the DSERT STAR by approximately 10 NM to the west.
 - **The EAGUL RNAV STAR** (see Figure 31) consists of three transitions arriving from the northeast. These transitions come in from INW, Gallup VORTAC (GUP) and Black Rock Airport (ZUN). The three transitions join up at EAGUL, proceed toward HOMRR and then split again to allow for separate transitions to each end of the runway.
 - **The PIING RNAV STAR** (see Figure 32) consists of two transitions arriving from the south-southeast. These transitions come in from the DRRVR and HOTTT waypoints. The two transitions join up at PINNG go to BRDEY and then split again to allow for separate transitions to each end of the runway.
1. Will there be actions affecting changes in aircraft flights between the hours of 10 p.m. – 7 a.m. local? Yes No. **The implementation of the proposed procedures will cause two changes from the current flight tracks:**
- The PHX jet air traffic that heads north from RWYs 25L, 25R and 26 is proposed to start their northerly turn at 3 nautical miles (NM) rather than at 9 NM.
 - Existing air traffic departing west from RWYs 25L, 25R and 26 initially make a 30 degree turn to the south. The proposed westerly procedure

(IZZZO RNAV SID) removes this 30 degree turn and allows air traffic to fly directly west.

Approximately 5% of the traffic on these northerly and westerly departures occur between the hours of 10pm and 7am.

2. Is a preferential runway use program presently in effect for the affected airport(s), formal or informal? Yes No N/A.

Phoenix Sky Harbor Airport: According to the Phoenix Sky Harbor International Airport website, there is one runway use program in effect. This informal runway use program aims to equalize the amount of aircraft departures between the east and west over an annualized period. In addition to this, there is a 4DME departure procedure in place, which direct jet propelled aircraft departing to the east to travel generally along the Salt River for approximately five miles before turning. Neither the runway use protocol nor procedure would be changed as a result of the implementation of the proposed procedures.

Phoenix Deer Valley Municipal Airport: No preferential runway program, formal or informal, is in effect.

Phoenix Goodyear Airport: No preferential runway program, formal or informal, is in effect.

Phoenix-Mesa Gateway Airport: According to the Phoenix-Mesa Gateway Airport website, Runway 30 is stated to be preferred during “calm wind” conditions. This preferred “calm wind” runway will not change with the implementation of the proposed procedures.

Glendale Municipal Airport: No preferential runway program, formal or informal, is in effect.

Falcon Field: According to the Falcon Field Airport website, Runway 4L/R is stated to be preferred during “calm wind” conditions. This preferred “calm wind” runway will not change with the implementation of the proposed procedures.

Chandler Municipal Airport: No preferential runway program, formal or informal, is in effect.

Scottsdale Municipal Airport: No preferential runway program, formal or informal, is in effect.

3. Will airport preferential runway configuration use change as a result of the proposed project? Yes No N/A

4. Is the proposed project primarily designed for Visual Flight Rules (VFR), Instrument Flight Rules (IFR) operations, or both? VFR IFR Both

If this specifically involves a charted visual approach (CVA) procedure, provide a detailed local map indicating the route of the CVA, along with a discussion of the rationale for how the route was chosen.

5. Will there be a change in takeoff power requirements? Yes No

If so, what types of aircraft are involved, i.e., general aviation propeller-driven versus large air carrier jets?

6. Will all changes occur above 3,000 feet above ground level (AGL)? Yes No

What is the lowest altitude change on newly proposed routes or on existing routes that will receive an increase in operations? **The lowest altitude where changes in flight tracks will occur is approximately 1,000 feet AGL.**

There are two changes that would occur as a result of the implementation of the proposed SIDs and STARs:

- **Jet air traffic heading north from RWYs 25L, 25R and 26 will begin their northerly turn at 3 NM rather than at 9 NM.**
- **Air traffic heading west on the IZZZO departure continues westward, rather than diverting thirty degrees to the south.**

7. Will there be actions involving civil jet aircraft (heavier than 75,000 pounds gross weight) arrival procedures between 3,000-7,000 feet AGL or departures between 3,000-10,000 feet AGL? Yes No If Yes, attach a copy of the completed Air Traffic Noise Screening (ATNS) Model report. **See response to number 8 below.**

8. If noise analysis was already performed using the FAA's Integrated Noise Model (INM) or Noise Integrated Routing System (NIRS), provide a summary of the results.

The NIRS Screening Tool (NST) modeling, which supersedes the ATNS, shows that there are two areas in the vicinity of the proposed westerly and northerly departures where there is an increase of DNL 5 dB or more within the DNL 45 – 60 dB noise exposure level. In addition, there are some areas of more than DNL 5 dB decreases within the DNL 45 – 60 dB noise exposure level. Figures A.1 and A.2 in Appendix A, show the two areas where there is an increase of DNL 5 dB or more within the DNL 45 – 60 dB noise exposure level.

Purpose and Need

A. Describe the purpose and need for the proposed project. If detailed background information is available, summarize here and provide a copy as an attachment to this review.

The FAA was requested to develop nine RNAV SIDs and five RNAV STARs into Phoenix Sky Harbor International Airport, and to provide access to these SIDS to seven satellite airports in the greater Phoenix area. These SIDs and STARs were proposed in order to improve the predictability of flight routes in the greater PHX airspace, decreasing communication requirements between controllers and pilots and provide more direct routings that are not dependent on ground base navigational aids. The proposed action would improve efficiency and enhance safety in the National Airspace System.

B. What operational/economic/environmental benefits will result if this project is implemented?

1. If a delay reduction is anticipated, can the reduction be quantified?

Yes No N/A

2. Can reduced fuel costs/natural energy consumption be quantified?

Yes No N/A **According to the NST results, there would be a 13% decrease in fuel burn as a result of the implementation of these proposed procedures.**

If not quantifiable, describe the approximate anticipated benefits in lay terms.

C. Is the proposed project the result of a user or community request or regulatory mandate?

User/Community Request Regulatory Mandate N/A

If not, what necessitates this action? **Request from Phoenix TRACON**

Describe the Affected Environment

A. Provide a description of the existing land use in the vicinity of the proposed project.

As shown in Figures 32 and 33, PHX is located in downtown Phoenix and is surrounded by industrial land use and transportation corridors. Further out from PHX, the land use changes to include residences, schools and places of worship, and then transitions to farm land use. The greater Phoenix metropolitan area is surrounded by mountainous areas on all sides. There is a narrow valley of farmland which extends out from Phoenix to the east. The Tonto National Forest is approximately 15 NM to the east, at its closest point.

The majority of the proposed procedures overlay existing air traffic routes or overfly existing ground transportation corridors. The departures from the satellite airports are vectored to the Initial Departure Fix (IDF) on each SID. The lowest altitude of an IDF is approximately 7,500 feet AGL at BNYRD. All of these IDFs are located over farm land or uninhabited mountainous terrain.

B. Will the proposed project introduce air traffic over noise sensitive areas not now affected?
 Yes No **The proposed RNAV procedures overlay existing tracks, except in two areas:**

- **Jet air traffic heading north from RWYs 25L, 25R and 26 initially depart to the west for 9 NM. Under the proposed procedures, this north turn will occur at 3NM. This change would not significantly affect noise sensitive areas as prop aircraft departures heading north from RWY 25L, 25R and 26 already turn at 3 NM.**
- **Air traffic heading west on the IZZZO departure initially makes a thirty degree turn to the south. Under the proposed procedures, air traffic will head directly west with no southerly diversion. This change would not result in any additional noise sensitive areas being affected as the direct westerly path overlays where aircraft have historically flown.**

Will they be affected to a greater or lesser extent? **As shown in Appendix A (NST results) there are two areas of an increase of DNL 5 dB or more within the DNL 45 – 60 dB noise exposure level, which occur as a result of the shifting the air traffic.**

Note: An area is noise sensitive if aircraft noise may interfere with the normal activities associated with the use of the land. See Order 1050.1E for full definition of noise sensitive areas.

C. Are wildlife refuge/management areas within the affected area of the proposed project?

Yes No

If so, has there been any communication with the appropriate wildlife management regulatory (federal or state) agencies to determine if endangered or protected species inhabit the area?
Yes No N/A

1. At what altitude would aircraft overfly these habitats?
2. During what times of the day would operations be more/less frequent?

D. Are there cultural or scenic resources, of national, state, or local significance, such as national parks, outdoor amphitheaters, or stadiums in the affected area? Yes No **There are 25 places listed on the National Register of Historical Places (NRHP) within the areas determined to have an increase of DNL 5 dB or more within the DNL 45 dB – 60 dB noise exposure level. These places are listed in Table 1 below and shown in Figure 25. Additionally, the Tonto National Forest is approximately 15 NM to the east of PHX.**

Table 1: List of places listed on the NRHP within the area shown to have an increase of DNL 5 dB or more within the DNL 45 dB – 60 dB noise exposure level:

	Name of NRHP listing	Reference #
1	Beet Sugar Factory	78000548
2	Glendale Tract Historic District	5001506
3	Manistee Ranch	98000322
4	Glendale Woman's Club Clubhouse	89001003
5	First National Bank of Glendale Building	83002991
6	C.H Tinker House	5001504
7	First Methodist Episcopal Church of Glendale Sanctuary	5001502
8	McNair, Jonas, House	6000768
9	Glendale Townsite--Catlin Court Historic District	92000680
10	Glendale Grammar School One-room Class Building	5001503
11	Floralcroft Historic District	5001505
12	Glendale High School Auditorium	6000326
13	59th Avenue Residential Historic District	6000767
14	Del Norte Place Historic District	94001482
15	Encanto--Palmercroft Historic District	84000696
16	Encanto--Palmercroft Historic District (Boundary Increase)	92000670
17	Fairview Place Historic District	94001483
18	Encanto--Palmercroft Historic District (Boundary Increase II)	94000461
19	Franklin School	93000814
20	Story, F. Q., Neighborhood Historic District (Boundary Increase)	92001834
21	Story, F. Q., Neighborhood Historic District	88000212
22	Tweed, Judge Charles Austin, House	87000775
23	Elder--Moffitt House	94001605
24	Osborn, William Lewis, House	91000544
25	Rehbein Grocery	85002895

E. Has there been communication with air quality regulatory agencies to determine if the affected area is a non-attainment area (an area which exceeds the National Ambient Air Quality Standards for ozone, carbon monoxide, lead, particulate matter, sulfur dioxide, or nitrogen dioxide) or maintenance area (an area which was in non-attainment but subsequently upgraded to an attainment area) concerning air quality? Yes No

This project is not expected to affect air quality and is presumed to conform as Category 14 "Air Traffic Activities and Adopting Approach, Departure and En Route Procedures for Air Operations", as identified in Federal Register July 30, 2007.

If yes, please explain:

F. Are there reservoirs or other public water supply systems in the affected area?

Yes No

Community Involvement

Formal community involvement or public meetings/hearings may be required for the proposed project. Make a determination if the proposed project has the potential to become highly controversial. The effects of an action are considered highly controversial when reasonable disagreement exists over the project's risks of causing environmental harm. Opposition on environmental grounds by a Federal, State or local government agency or by a Tribe, or by a substantial number of the person affected by the action should be considered in determining whether reasonable disagreement regarding the effects of a proposed action exists (see 1050.1E, paragraph 304i).

A. Have persons/officials who might have some need to know about the proposed project due to their location or by their function in the community been notified, consulted, or otherwise informed of this project? Yes No

1. Are local citizens and community leaders aware of the proposed project?

Yes No

2. Are any opposed to or supporting it? If so, identify the parties and indicate the level of opposition and/or support. **The City of Phoenix Aviation Department was involved in the design meetings for the procedures and their concerns have been considered and resolved.**

a. If they are opposed, what is the basis of their opposition?

b. Has the FAA received one or more comments objecting to the proposed project on environmental grounds from local citizens or elected officials? Yes No

If so, state the nature of the comment and how the FAA was notified (e.g. resolution, Congressional, Public meeting/workshop, etc.).

3. Are the airport proprietor and users providing general support for the proposed project?

Yes No N/A

4. Is the proposed project consistent with local plans and development efforts? Yes No

N/A

5. Has there been any previous aircraft-related environmental or noise analysis, including
 - a. FAR Part 150 Studies, conducted at this location? Yes No N/A **The last Part 150 at PHX was undertaken in 1999. There is currently an effort underway to update the Noise Exposure Maps (NEMs) for the PHX Part 150. These updated maps are expected to be finalized at the end of this calendar year. None of the satellite airports have a Part 150 study.**
 - b. If so, was the study reviewed as a part of this initial review? Yes No N/A **N/A. The results of the noise screening indicate that there is no change within the DNL 65 dB noise exposure level.**

Extraordinary Circumstances

The determination of whether a proposed action may have a significant environmental effect is made by considering any requirements applicable to the specific resource (see 1050.1E, Appendix A).

A. Will implementation of the proposed project result in any of the following? As stated in 1050.1E, paragraph 304, extraordinary circumstances exist when a proposed action involves any of the following circumstances AND may have a significant effect (40 CFR 1508.4).

1. An adverse effect on cultural resources protected under the National Historic Preservation Act of 1966, as amended (see 1050.1E, paragraph 304a). Yes No Possibly

Comment: There are twenty-five places listed on the NRHP within the areas determined to have an increase of DNL 5 dB or more within the DNL 45 – 50 dB noise exposure level (see Figure 36). These places are listed in Table 1. Any cultural resources located in these areas would not be associated with quiet as a recognized attribute due to the surrounding land use. Furthermore, aircraft have historically flown over these areas. Based on this analysis, a Finding of No Adverse Effect was determined for any cultural resources protected under the National Historic Preservation Act of 1966 within these areas of demonstrated noise increase.

2. An impact on properties protected under section 4(f) of the Department of Transportation Act (see paragraph 304b). Yes No Possibly

Comment: There are numerous public parks in the study area. As shown in Table 2 below, there are nineteen public parks in the area where the noise analysis indicates an increase of DNL 5 dB or more within the DNL 45 – 60 dB noise exposure level. Given the location of these parks where these parks already experience overflights and that none of these parks have quiet as an expected attribute, the FAA has determined that there would be no significant adverse effect on any section 4(f) properties as a result of the implementation of the proposed procedures.

Table 2: List of public parks within the area of DNL 5dB or more increase in the DNL 45- 60 dB noise exposure level:

	Park Name
1	Little Canyon Park
2	Encato Park
3	Arizona Lottery Backyard
4	Cielito Park
5	RoseLane Park
6	Clavelito Park
7	Delicias Park
8	La Pradera Park
9	West Plaza Park
10	Murphy Park
11	Mrytle Park
12	Sands Park
13	Manistee Ranch Park
14	Horizon Park
15	New World Park
16	Butler Park
17	Lions Park
18	Mondo Park
19	Tolleson Veterans Park

3. An impact on natural, ecological (e.g. invasive species) or scenic resources of Federal, Tribal, State, or local significance (for example, Federally listed or proposed endangered, threatened, or candidate species or proposed or designated critical habitat under the Endangered Species Act); resources protected by the Fish and Wildlife Coordination Act; wetlands; floodplains; prime, unique, State, or locally important farmlands; energy supply and natural resources; wild and scenic rivers, including study or eligible river segments; and solid waste management. (See paragraph 304c.)

Yes No Possibly

Comment: **The Tonto National Forest is located approximately 15 NM to the east of PHX. There would be no impact on the Tonto National Forest as a result of the implementation of the proposed procedures, given that there is no change in noise over the Tonto National Forest.**

4. A division or disruption of an established community; a disruption of orderly, planned development; or an inconsistency with plans or goals that have been adopted by the community in which the project is located (see paragraph 304d).

Yes No Possibly

Comment: N/A

5. An increase in congestion from surface transportation, by causing a decrease in the Level of Service below the acceptable level determined by the appropriate transportation agency (i.e., a highway agency). (See paragraph 304e.) Yes No Possibly
Comment: **The proposal is an air traffic action and surface transportation is not expected to be impacted.**
6. An impact on noise levels of noise-sensitive areas (see paragraph 304f).
 Yes No Possibly
Comment: **The noise analysis indicates that there are no noise-sensitive land uses which would experience a significant noise impact (DNL 1.5 dB) increase within the DNL 65 dB noise exposure level) as a result of the implementation of the proposed procedures.**
7. An impact on air quality or a violation of local, State, Tribal, or Federal air quality standards under the Clean Air Act amendments of 1990 (see paragraph 304g).
 Yes No Possibly
Comment: **This proposal is not expected to impact air quality.**
8. An impact on water quality, sole source aquifers, a public water supply system, or State or Tribal water quality standards established under the Clean Water Act and the Safe Drinking Water Act (see paragraph 304h). Yes No Possibly
Comment: **The proposal is an air traffic action with no adverse impacts expected on water quality or water supplies.**
9. Effects on the quality of the human environment that are likely to be highly controversial on environmental grounds (see paragraph 304i). Yes No Possibly
Comment: **As shown in Figures A.1 and A.2, the noise analysis indicates that there are two areas which would experience an increase of DNL 5 dB or more within the DNL 45 – 60 dB noise exposure level as a result of the implementation of the proposed procedures. One area is located on either side of Route 60, and the other area is located south of Interstate Route 10, both main transportation corridors through central Phoenix. The proposed procedures are not likely to be highly controversial on environmental grounds, given the location and degree of noise increase.**
10. Likelihood of an inconsistency with any Federal, State, Tribal, or local law relating to the environmental aspects of the proposed action (see paragraph 304j).
 Yes No Possibly
Comment:
11. Likelihood of directly, indirectly, or cumulatively, creating a significant impact on the human environment (see paragraph 304k). Yes No Possibly
Comment:

Alternatives

A. Are there alternatives to the proposed project? Yes No **The no action alternative is the only alternative to the proposed project.**

If yes, describe any alternatives to the proposed action.

B. Please provide a summary description of alternatives eliminated and why.

Mitigation

Are there measures, which can be implemented that might mitigate any of the potential impacts, i.e., GPS/FMS plans, NAVAIDS, etc.? Yes No N/A

Cumulative Impacts

What other projects (FAA, non-FAA, or non-aviation) are known to be planned, have been previously implemented, or are ongoing in the affected area that would contribute to the proposed project's environmental impact?

According to the websites of each of the airports, there are multiple projects undertaken in the recent past, currently ongoing and that are reasonably foreseeable. These projects are listed in Appendix B, Tables B.1, B.2 and B.3. All of these projects are either upgrades intended to increase the capacity of the passenger processing facilities in order to align them with the capacity of the airfield or general airport maintenance. In particular, a Final Environmental Impact Statement (EIS) for PHX was completed February 10, 2006 in which the environmental impacts of the following proposed improvements were detailed:

- Demolition of Terminal 2 and ancillary facilities
- West Terminal Development (33-gate terminal), garage and terminal roadways
- Modifications to Terminal 4, Concourse N4 International Gates
- Construction of Crossfield Taxiways Uniform "U" and Victor "V"
- Sky Harbor Boulevard modifications
- Construction of Automated People Mover

The EIS Record of Decision (ROD) signed April 7, 2006, approved all federal actions and approvals associated with the proposed improvements.

None of these projects result in an increase in air traffic operations at PHX or any of the satellite airports, or cause a change in where aircraft fly. Therefore, none of these projects would cumulatively add to the impacts resulting from the proposed procedures.

The FAA also looked at projects which may impact noise in the areas identified as having an increase of DNL 5 or more within the DNL 45- 60 dB noise exposure level. According to the Arizona Department of Transportation website, a new highway infrastructure has been

proposed to be built within the Phoenix metropolitan area. The closest segment to the areas of where there is an increase of DNL 5 dB or more is a segment of the new Loop 202 South Mountain Freeway project¹. There are three alternatives: one is located within the area of noise exposure increase, one is 0.5 miles to the east and one is 1.5 miles to the east (preferred alternative). This project is unlikely to have cumulative significant impacts, given that the final determinations and project implementation schedule is not yet known and that the preferred alternative is located 1.5 miles outside of the area of increase in noise exposure

According to the Regional Public Transportation Authority in Maricopa County, a light rail project has been approved to be extended through the larger area experiencing an increase in noise exposure. There would be no significant cumulative noise impacts as a result of the light rail extension, given that the proposed light rail extension is located in a non-noise sensitive area.

There are no other known projects and therefore no potential for cumulative significant impacts.

References/Correspondence

Attached written correspondence, summarized phone contacts using Memorandums for the File, etc.

Additional Preparers

The person(s) listed below, in addition to the preparer indicated on page 1, are responsible for all or part of the information and representations contained herein:

- A. Name: **Caroline Poyurs**
- B. Title: Environmental Specialist
- C. Facility: **Western Service Center, Operations Support Group**
- D. Telephone Number: **(425) 203-4539**
- E. Specific area of Responsibility:

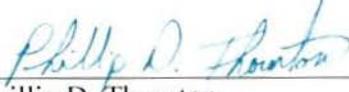
¹ <http://www.azdot.gov/projects/phoenix-metro-area/loop-202-south-mountain-freeway/draft-eis>

Facility/Service Area Conclusions

This initial review and analysis indicates that no extraordinary circumstances or other reasons exist that would cause the responsible federal official to believe that the proposed project might have the potential for causing significant environmental impacts.

The undersigned have determined that the proposed project may qualify as a categorically excluded action in accordance with Order 1050.1E, and on this basis, recommend that further environmental review need not be conducted before the proposed project is implemented.

Facility Manager Review/Concurrence

Signature:  Date: 09/09/2013
Name: Phillip D. Thornton
Title: Air Traffic Manager
Address: FAA Phoenix TRACON
3500 East Sky Harbor International Airport
Phoenix, AZ 85034
Phone: 602-306-2500 Fax: 602-220-1716

Service Area Environmental Specialist Review/Concurrence

Signature:  Date: 9/11/13
Name: Caroline Poyurs
Title: Environmental Protection Specialist
Address: 1601 Lind Ave SW
Renton, WA 98057
Phone: 425-203-4539 Fax: 425-203-4505

Service Area Director Review/Concurrence, if necessary

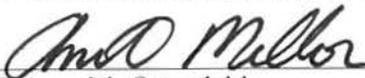
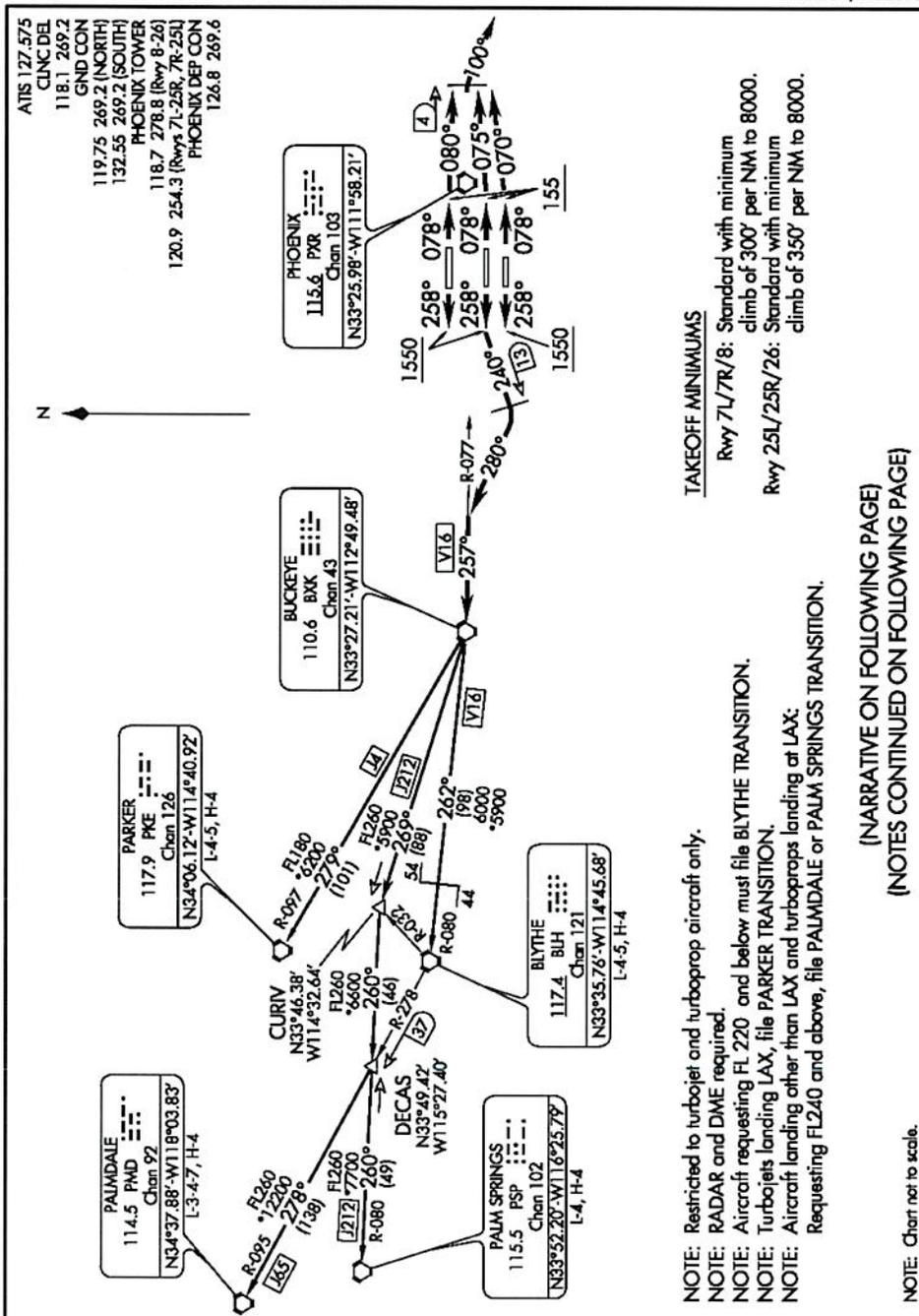
Signature:  Date: 9-12-13
Name: ~~for~~ Steven M. Osterdahl
Title: Director, En Route and Oceanic Operations, Western Service Area
Address: 1601 Lind Ave SW
Renton, WA 98057
Phone: 425-203-4021 Fax: 425-203-4025

Figure 1: BUCKEYE THREE Departure

(BXX3.BXX) 13010 SL-322 (FAA) PHOENIX SKY HARBOR INTL (PHX)
 BUCKEYE THREE DEPARTURE PHOENIX, ARIZONA

SW-4, 25 JUL 2013 to 22 AUG 2013



BUCKEYE THREE DEPARTURE PHOENIX, ARIZONA
 (BXX3.BXX) 13010 PHOENIX SKY HARBOR INTL (PHX)

SW-4, 25 JUL 2013 to 22 AUG 2013

Figure 2: CHILY THREE Departure

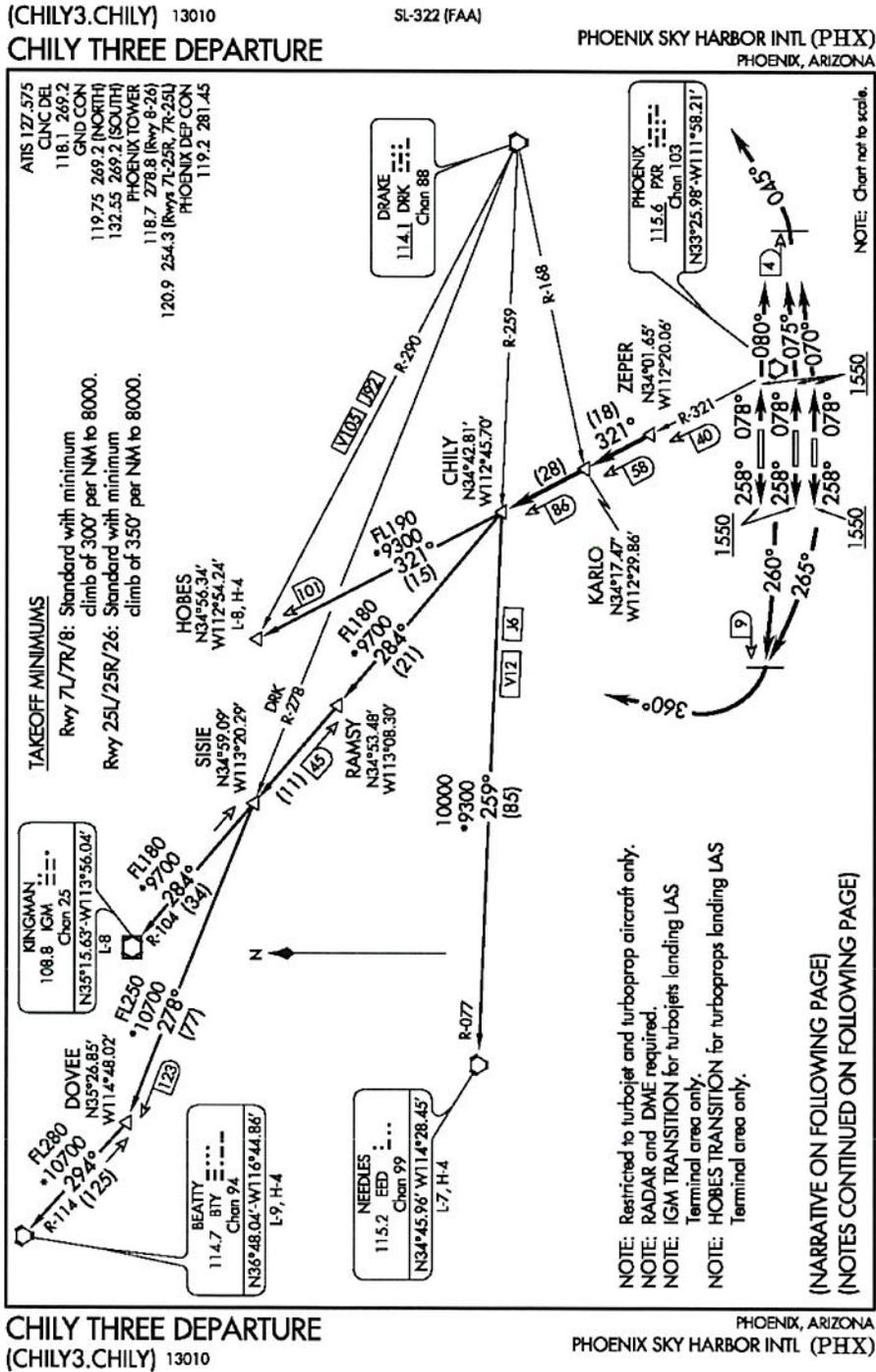


Figure 3: MAXXO TWO Departure

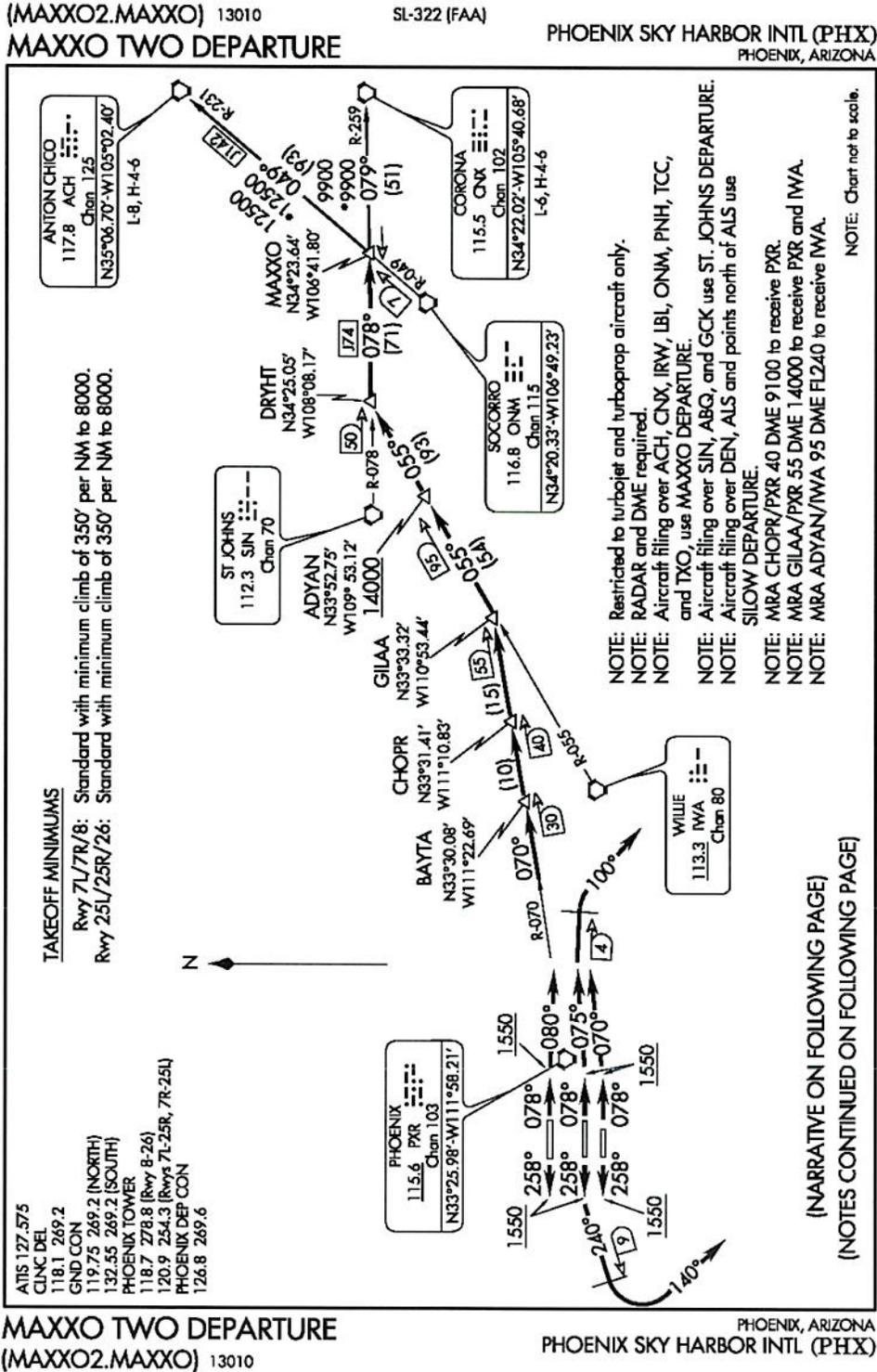


Figure 4: SILOW THREE Departure

(SILOW3.SILOW) 13178

SL-322 (FAA)

PHOENIX SKY HARBOR INTL (PHX)
PHOENIX, ARIZONA

SILOW THREE DEPARTURE



DEPARTURE ROUTE DESCRIPTION

TAKEOFF RUNWAY 8: Climb heading 078° to 1550, then climbing right turn heading 080°, at 4 DME east of PXR VORTAC, climbing left turn heading 045°. Thence

TAKEOFF RUNWAY 7L: Climb heading 078° to 1550, then climbing left turn heading 075°, at 4 DME east of PXR VORTAC, climbing left turn heading 045°. Thence

TAKEOFF RUNWAY 7R: Climb heading 078° to 1550, then climbing left turn heading 070°, at 4 DME east of PXR VORTAC, climbing left turn heading 045°. Thence

TAKEOFF RUNWAY 25L: Climb heading 258° to 1550, then climbing right turn heading 265°, at 9 DME west of PXR VORTAC, climbing right turn heading 360°. Thence

TAKEOFF RUNWAY 25R: Climb heading 258° to 1550, then climbing right turn heading 260°, at 9 DME west of PXR VORTAC, climbing right turn heading 360°. Thence

TAKEOFF RUNWAY 26: Climb heading 258° to 1550, then climbing right turn heading 260°, at 9 DME west of PXR VORTAC, climbing right turn heading 360°. Thence

. . . . maintain 8000. Expect RADAR vectors to PXR R-006 to SILOW/PXR 70 DME. Thence via (transition). Expect filed altitude 3 minutes after departure.

LOST COMMUNICATIONS: Expect filed altitude 3 minutes after departure.

BRYCE CANYON TRANSITION (SILOW3.BCE): From over SILOW INT via FLG R-155 to FLG VOR/DME, then via FLG R-321 and GCN R-139 to GCN VOR/DME, then via GCN R-341 and BCE R-161 to BCE VORTAC.

DOVE CREEK TRANSITION (SILOW3.DVC): From over SILOW INT via INW R-216 to INW VORTAC, then via INW R-014 and DVC R-195 to DVC VORTAC.

FLAGSTAFF TRANSITION (SILOW3.FLG): From over SILOW INT via FLG R-155 to FLG VOR/DME.

RATTLESNAKE TRANSITION (SILOW3.RSK): From over SILOW INT via INW R-216 to INW VORTAC, then via INW R-038 and RSK R-219 to RSK VORTAC.

TAKEOFF OBSTACLE NOTES

Rwy 7R: Multiple transmission towers, 3202' from DER, 1122' left of centerline, up to 125' AGL/1260' MSL.

Rwy 8: Multiple LT poles, beginning 2540' from DER, 900' left of centerline, up to 100' AGL/1234' MSL. LT pole, 1640' from DER, 794' right of centerline, 42' AGL/1177' MSL.

Rwy 25L: Multiple LT poles, beginning 682' from DER, 521' left of centerline, up to 90' AGL/1201' MSL. Sign, 902' from DER, 711' left of centerline, 59' AGL/1170' MSL.

Rwy 25R: Tree, 1036' from DER, 666' right of centerline, 30' AGL/1140' MSL.

Rwy 26: Multiple electrical systems, beginning 43' from DER, 450' left and right of centerline, up to 33' AGL/1142' MSL. Multiple trees, beginning 118' from DER, 214' right of centerline, up to 24' AGL/1133' MSL. Obstacle LT on blast fence, 176' from DER, 547' left of centerline, 9' AGL/1120' MSL. Sign, 520' from DER, 567' right of centerline, 14' AGL/1125' MSL. Pole, 82' from DER, 64' right of centerline, 18' AGL/1127' MSL. Multiple LT poles, beginning 315' from DER, beginning 318' left of centerline, up to 60' AGL/1170' MSL. Multiple LT poles, beginning 2302' from DER, beginning 193' right of centerline, up to 60' AGL/1171' MSL.

SW-4, 25 JUL 2013 to 22 AUG 2013

SW-4, 25 JUL 2013 to 22 AUG 2013

SILOW THREE DEPARTURE
(SILOW3.SILOW) 13178

PHOENIX, ARIZONA
PHOENIX SKY HARBOR INTL (PHX)

Figure 5: ST. JOHNS SIX Departure

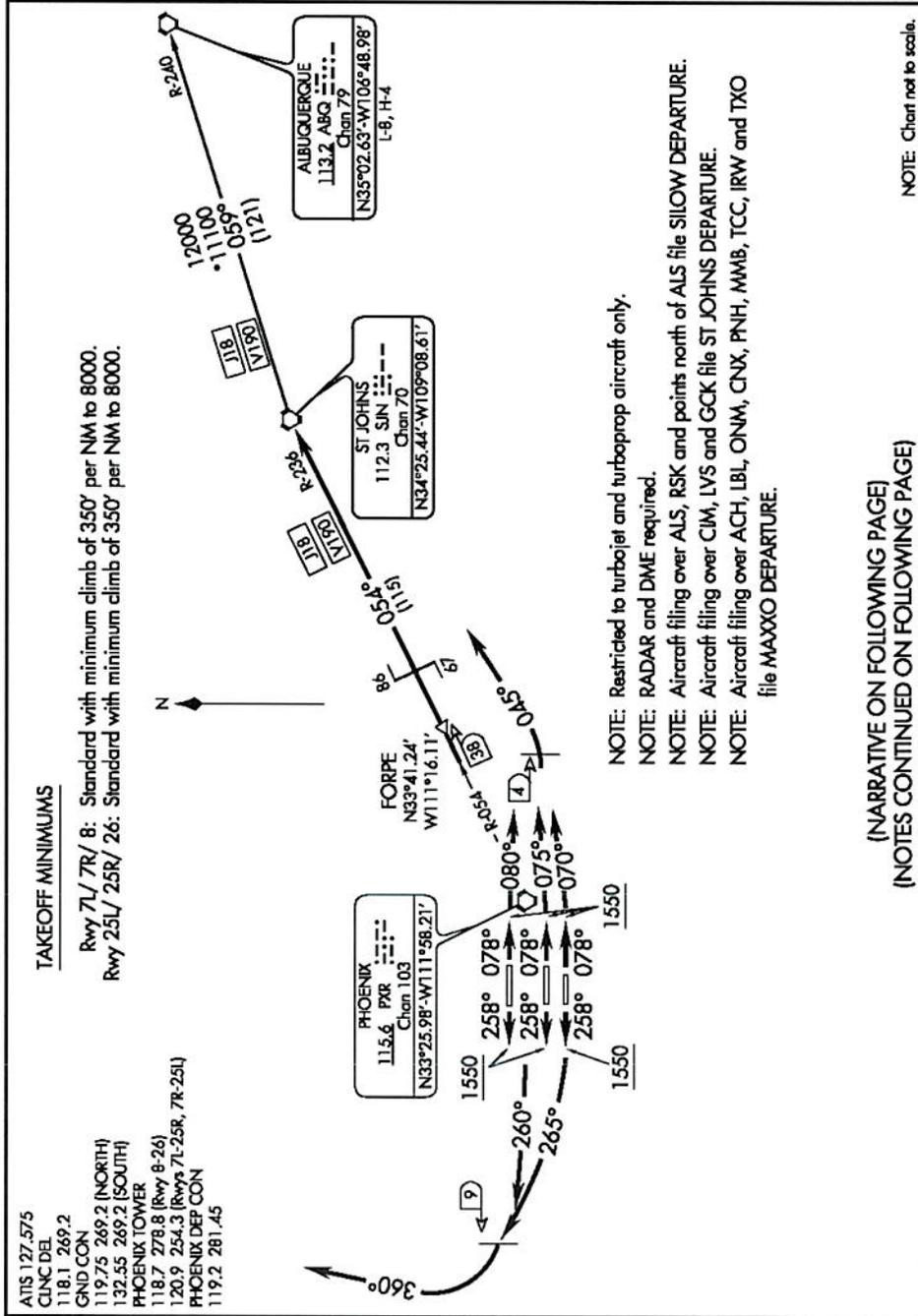
(SJN6.SJN) 13010

SL-322 (FAA)

PHOENIX SKY HARBOR INTL (PHX)
PHOENIX, ARIZONA

ST. JOHNS SIX DEPARTURE

SW-4, 02 MAY 2013 to 30 MAY 2013



ST. JOHNS SIX DEPARTURE

(SJN6.SJN) 13010

PHOENIX, ARIZONA
PHOENIX SKY HARBOR INTL (PHX)

(NARRATIVE ON FOLLOWING PAGE)
(NOTES CONTINUED ON FOLLOWING PAGE)

SW-4, 02 MAY 2013 to 30 MAY 2013

Figure 6: STANFIELD THREE Departure

(TFD3.TFD) 12208

SL-322 (FAA)

PHOENIX SKY HARBOR INTL (PHX)
PHOENIX, ARIZONA

STANFIELD THREE DEPARTURE

TAKEOFF OBSTACLE NOTES

- Rwy 7R: Multiple transmission towers 3202' from DER, 1122' left of centerline, up to 125' AGL/
1260' MSL
Terrain 469' from DER, left and right of centerline up to 1138' MSL
- Rwy 7L: Terrain beginning 4' from DER, left and right of centerline, up to 1135' MSL
- Rwy 8: Multiple poles beginning 2540' from DER, 900' left of centerline, up to 100' AGL/1234' MSL
Light pole, 1640' from DER, 794' right of centerline, 42' AGL/1177' MSL
- Rwy 25L: Multiple poles beginning 682' from DER, 521' left of centerline, up to 90' AGL/1201' MSL
Sign 902' from DER, 711' left of centerline, 59' AGL/1170' MSL
- Rwy 25R: Tree, 1036' from DER, 666' right of centerline, 30' AGL/1140' MSL
- Rwy 26: Multiple buildings 2.03 NM from DER, 2539' right of centerline, up to 520' AGL/1602' MSL
Multiple electrical systems beginning 43' from DER, left and right of centerline,
up to 31' AGL/1142' MSL
Multiple trees beginning 43' from DER, left and right of centerline, up to 24' AGL/1133' MSL
Fence, 176' from DER, 547' left of centerline, 9' AGL/1120' MSL
Sign, 520' from DER, 567' right of centerline, 14' AGL/1125' MSL
Multiple poles beginning 82' from DER, left and right of centerline, up to 60' AGL/1171' MSL

SW-4, 25 JUL 2013 to 22 AUG 2013

SW-4, 25 JUL 2013 to 22 AUG 2013

STANFIELD THREE DEPARTURE
(TFD3.TFD) 12208

PHOENIX, ARIZONA
PHOENIX SKY HARBOR INTL (PHX)

Figure 7: Snap Shot of arrival traffic from 45 random days in 2012



Figure 8: Snap Shot of departure traffic from 45 random days in 2012

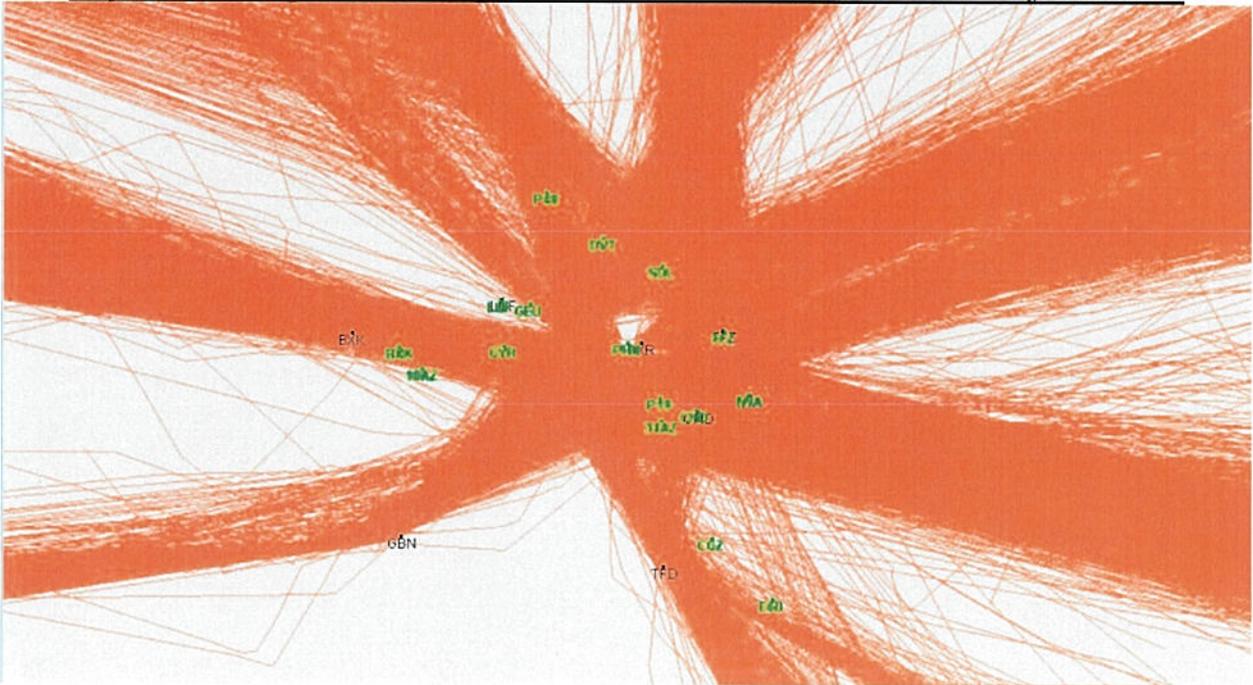
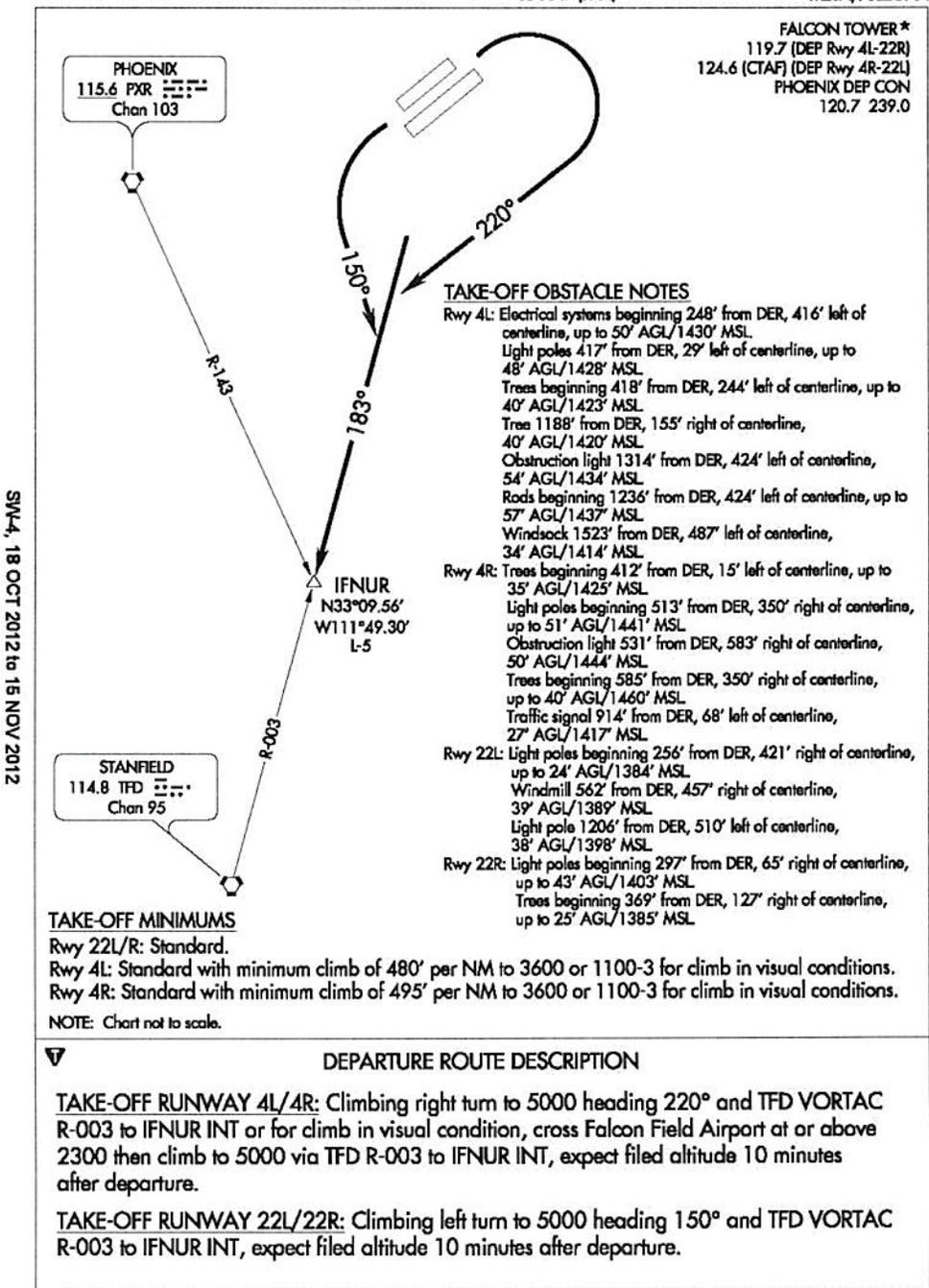


Figure 9: Falcon Field - Mesa One Departure

(MESA1.MESA) 10210
MESA ONE DEPARTURE (OBSTACLE) SL-6647 (FAA)
 MESA/ FALCON FIELD (F'F'Z) MESA, ARIZONA



SW-4, 18 OCT 2012 to 15 NOV 2012

SW-4, 18 OCT 2012 to 15 NOV 2012

MESA ONE DEPARTURE (OBSTACLE) MESA, ARIZONA
 (MESA1.MESA) 10210 MESA/ FALCON FIELD (F'F'Z)

Figure 10: Falcon Field - Sacat One Departure

(SACAT1.SACAT) 10210

SACAT ONE DEPARTURE (RNAV)

SL-6647 (FAA)

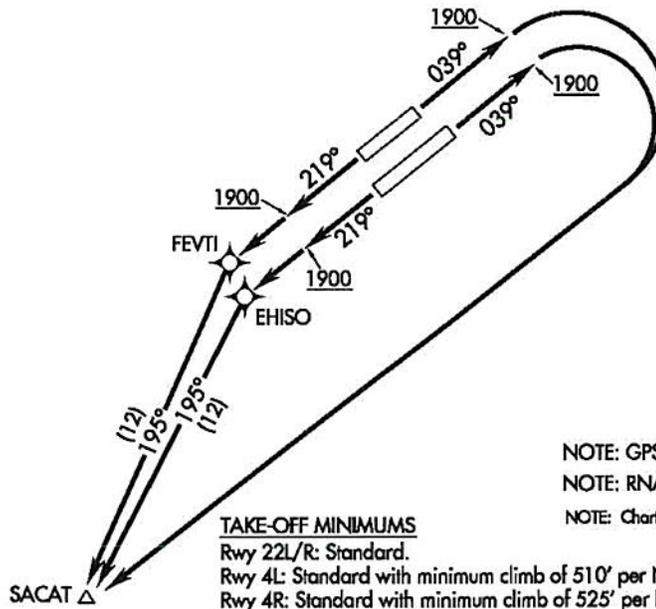
MESA/ FALCON FIELD (F'F'Z)

MESA, ARIZONA

TAKE-OFF OBSTACLE NOTES

<p>Rwy 4L: Electrical systems beginning 248' from DER, 416' left of centerline, up to 50' AGL/1430' MSL Light poles 417' from DER, 29' left of centerline, up to 48' AGL/1428' MSL Trees beginning 418' from DER, 244' left of centerline, up to 40' AGL/1423' MSL Tree 1188' from DER, 155' right of centerline, 40' AGL/1420' MSL Obstruction light 1314' from DER, 424' left of centerline, 54' AGL/1434' MSL Rods beginning 1236' from DER, 424' left of centerline, up to 57' AGL/1437' MSL Windsock 1523' from DER, 487' left of centerline, 34' AGL/1414' MSL</p> <p>Rwy 4R: Trees beginning 412' from DER, 15' left of centerline, up to 35' AGL/1425' MSL Light poles beginning 513' from DER, 350' right of centerline, up to 51' AGL/1441' MSL Obstruction light 531' from DER, 583' right of centerline, 50' AGL/1444' MSL Trees beginning 585' from DER, 350' right of centerline, up to 40' AGL/1460' MSL Traffic signal 914' from DER, 68' left of centerline, 27' AGL/1417' MSL</p> <p>Rwy 22L: Light poles beginning 256' from DER, 421' right of centerline, up to 24' AGL/1384' MSL Windmill 562' from DER, 457' right of centerline, 39' AGL/1389' MSL Light pole 1206' from DER, 510' left of centerline, 38' AGL/1398' MSL</p> <p>Rwy 22R: Light poles beginning 297' from DER, 65' right of centerline, up to 43' AGL/1403' MSL Trees beginning 369' from DER, 127' right of centerline, up to 25' AGL/1385' MSL</p>	<p>FALCON TOWER * 119.7 (DEP Rwy 4L-22R) 124.6 (CTAF) (DEP Rwy 4R-22L) PHOENIX DEP CON 120.7 239.0</p>
--	--

SW-4, 22 AUG 2013 to 19 SEP 2013



SW-4, 22 AUG 2013 to 19 SEP 2013



DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 4L: Climb heading 039° to 1900 then climbing right turn direct SACAT, thence. . .

TAKE-OFF RUNWAY 4R: Climb heading 039° to 1900 then climbing right turn direct SACAT, thence. . .

TAKE-OFF RUNWAY 22L: Climb heading 219° to 1900 then direct EHISO then on track 195° to SACAT, thence. . .

TAKE-OFF RUNWAY 22R: Climb heading 219° to 1900 then direct FEVTI then on track 195° to SACAT, thence. . .

. . . maintain 5000, expect clearance to filed altitude/flight level 10 minutes after departure.

SACAT ONE DEPARTURE (RNAV)

(SACAT1.SACAT) 10210

MESA, ARIZONA
 MESA/ FALCON FIELD (F'F'Z)

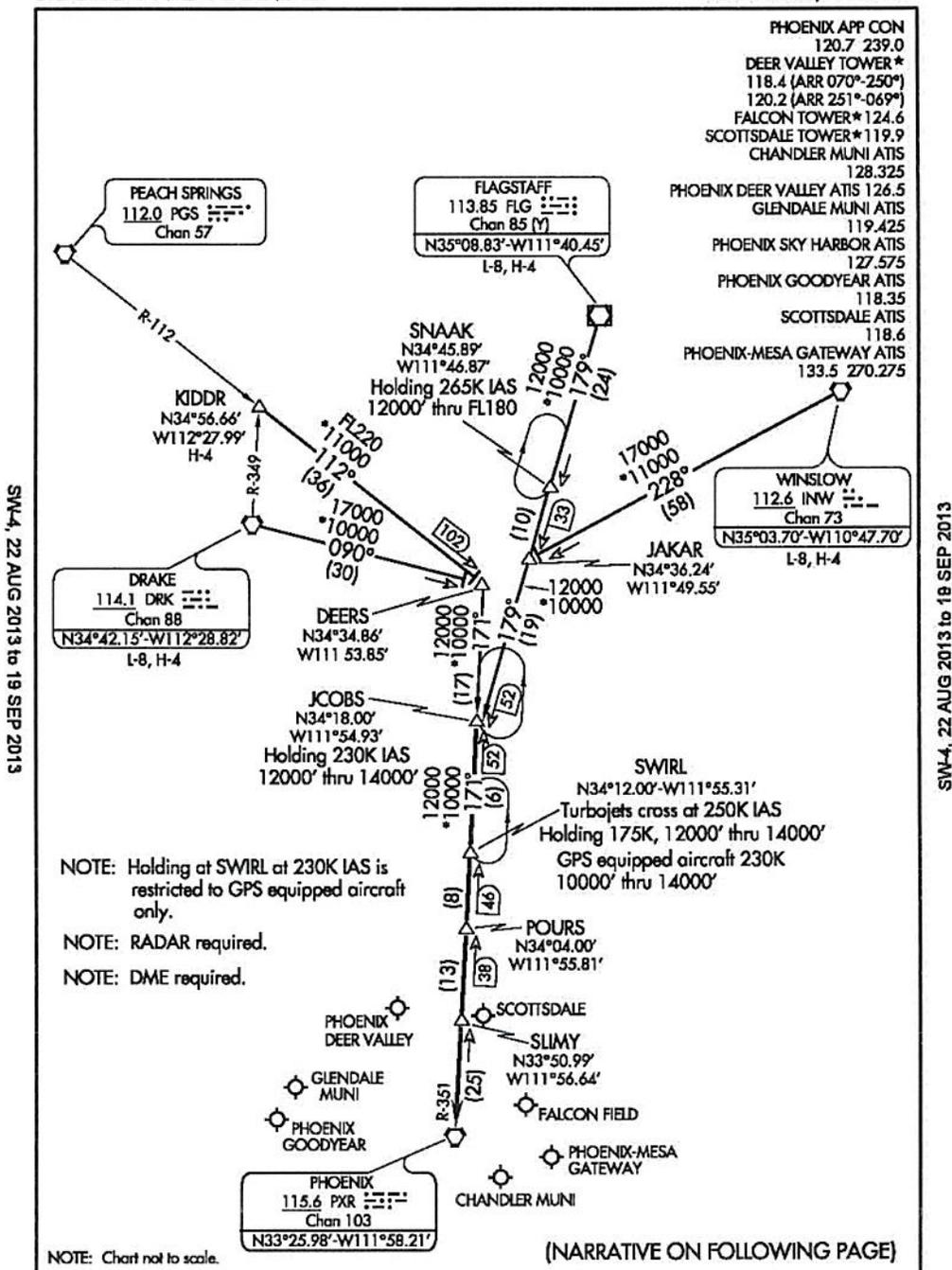
Figure 11: JCOBS TWO ARRIVAL

(JCOBS.JCOBS2) 12152

ST-5651 (FAA)

JCOBS TWO ARRIVAL

SCOTTSDALE, ARIZONA



SCOTTSDALE, ARIZONA

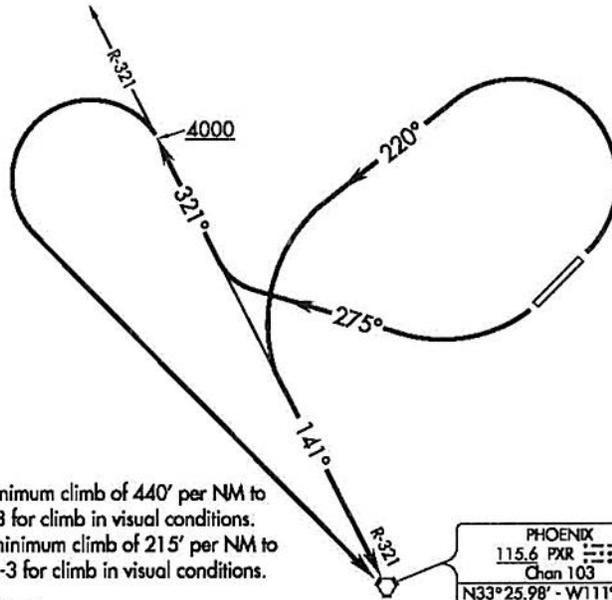
(JCOBS.JCOBS2) 12152

(NARRATIVE ON FOLLOWING PAGE)

Figure 12: Scottsdale Municipal Airport - Maricopa One Departure

(MRRIC1.PXR) 10042 SL-5651 (FAA) SCOTTSDALE (SDL)
 MARICOPA ONE DEPARTURE (OBSTACLE) SCOTTSDALE, ARIZONA

ATIS 118.6
 PRESCOTT RADIO
 122.6
 SCOTTSDALE TOWER*
 119.9 (CTAF)
 PHOENIX DEP CON
 120.7 239.0



TAKE-OFF MINIMUMS

Rwy 3: Standard with minimum climb of 440' per NM to 4000, or 3100-3 for climb in visual conditions.
 Rwy 21: Standard with minimum climb of 215' per NM to 4000, or 3100-3 for climb in visual conditions.

TAKE-OFF OBSTACLE NOTES

- Rwy 3: Multiple light standards beginning 63' from DER, 445' left of centerline, up to 44' AGL/1554' MSL.
 Hoist on dike 878' from DER, 735' left of centerline, 51' AGL/1561' MSL.
 Dike beginning 1066' from DER, 316' left of centerline, 38' AGL/1548' MSL.
 Day marker on dike, 1230' from DER, 5' left of centerline, 39' AGL/1549' MSL.
 Tree 765' from DER, 115' left of centerline, 22' AGL/1532' MSL.
 Road beginning 647' from DER, 296' left of centerline, 19' AGL/1529' MSL.
 Fence beginning 5' from DER, 338' right of centerline, 6' AGL/1511' MSL.
 Light standard 1013' from DER, 430' right of centerline, 44' AGL/1552' MSL.
- Rwy 21: Trees 1072' from DER, 426' right of centerline, 53' AGL/1497' MSL.
 Building 316' from DER, 537' right of centerline, 23' AGL/1467' MSL.
 Tree 2087' from DER, 418' left of centerline, 61' AGL/1505' MSL.
 Tree 1432' from DER, 438' right of centerline, 38' AGL/1482' MSL.
 Tree 2234' from DER, 559' left of centerline, 58' AGL/1502' MSL.

NOTE: Chart not to scale.



DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 3: Climbing left turn to 4000 via heading 220° and PXR R-321 southeast bound to PXR VORTAC. Thence... or, for climb in visual conditions: cross Scottsdale Airport at or above 4500 before proceeding on course.

TAKE-OFF RUNWAY 21: Climbing right turn to 4000 via heading 275° and PXR R-321 northwest bound, when established on PXR R-321 northwest bound and reaching 4000, left turn direct PXR VORTAC. Thence... or, for climb in visual conditions: cross Scottsdale Airport at or above 4500 before proceeding on course.

...Continue climb on course.

MARICOPA ONE DEPARTURE (OBSTACLE)
 (MRRIC1.PXR) 10042

SCOTTSDALE, ARIZONA
 SCOTTSDALE (SDL)

SW-4, 27 JUN 2013 to 25 JUL 2013

SW-4, 27 JUN 2013 to 25 JUL 2013

Figure 13: Scottsdale Municipal Airport - Jonhh One Departure

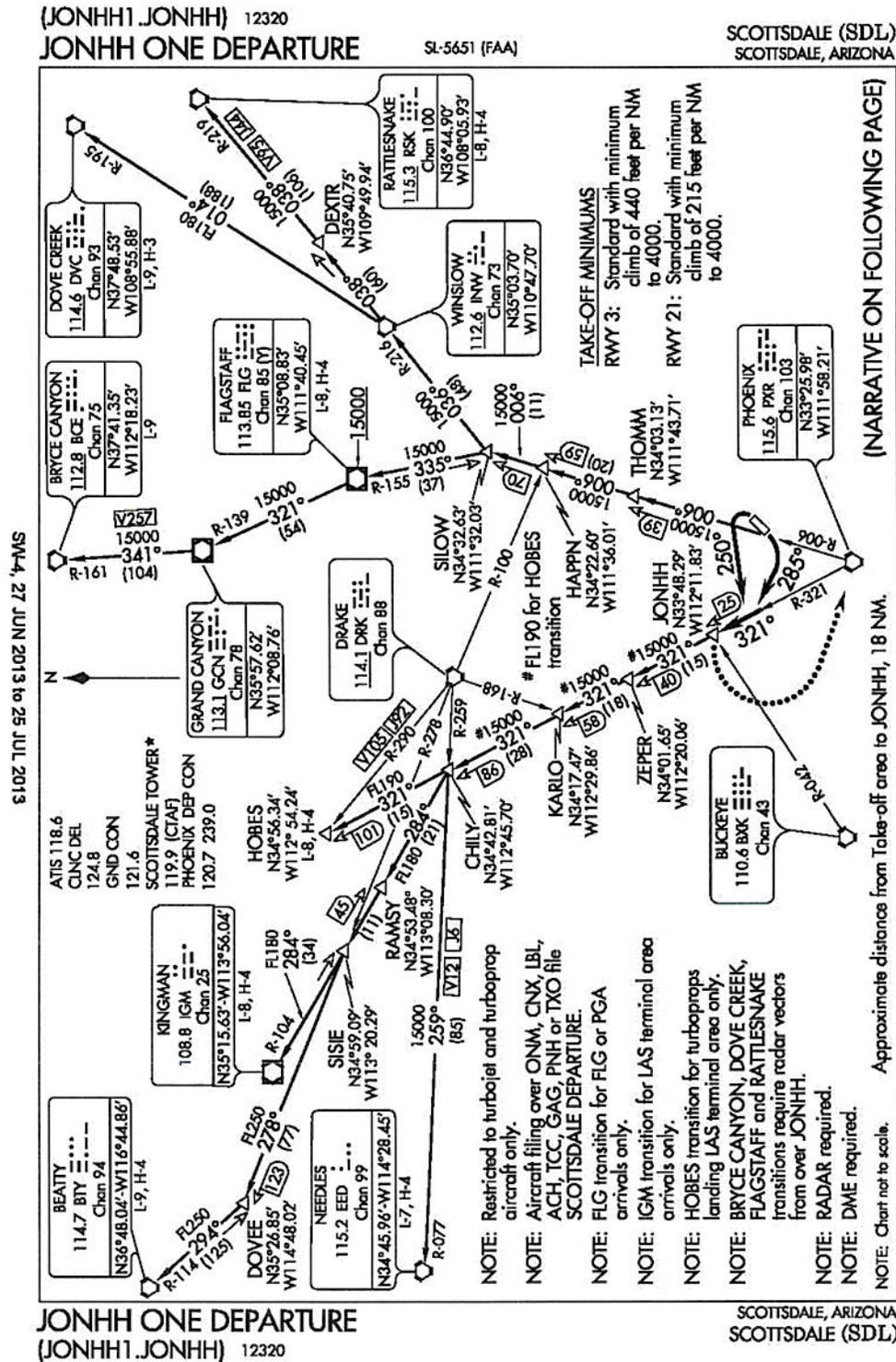
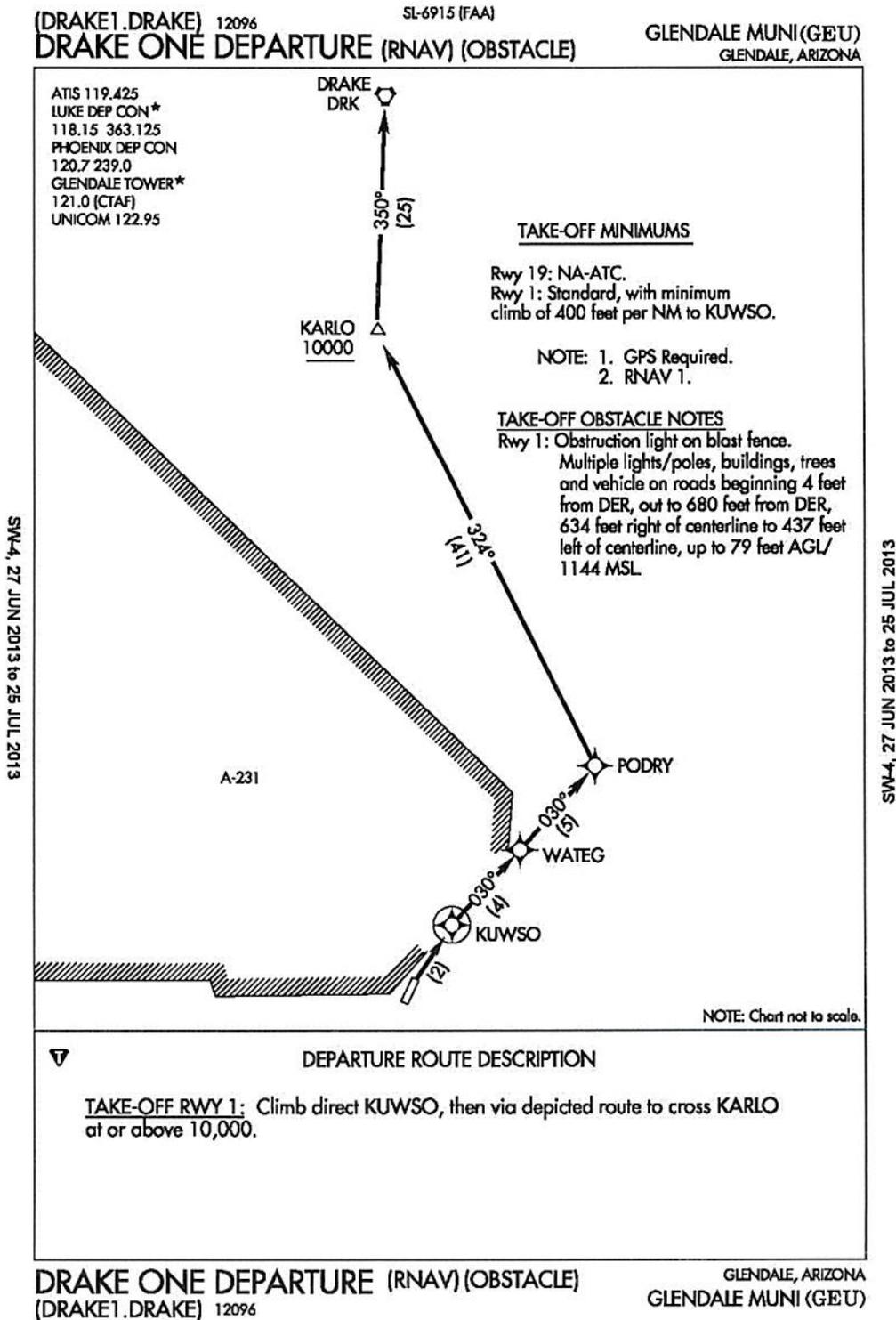


Figure 15: Glendale Municipal Airport - Drake One Departure



SW-4, 27 JUN 2013 to 25 JUL 2013

SW-4, 27 JUN 2013 to 25 JUL 2013

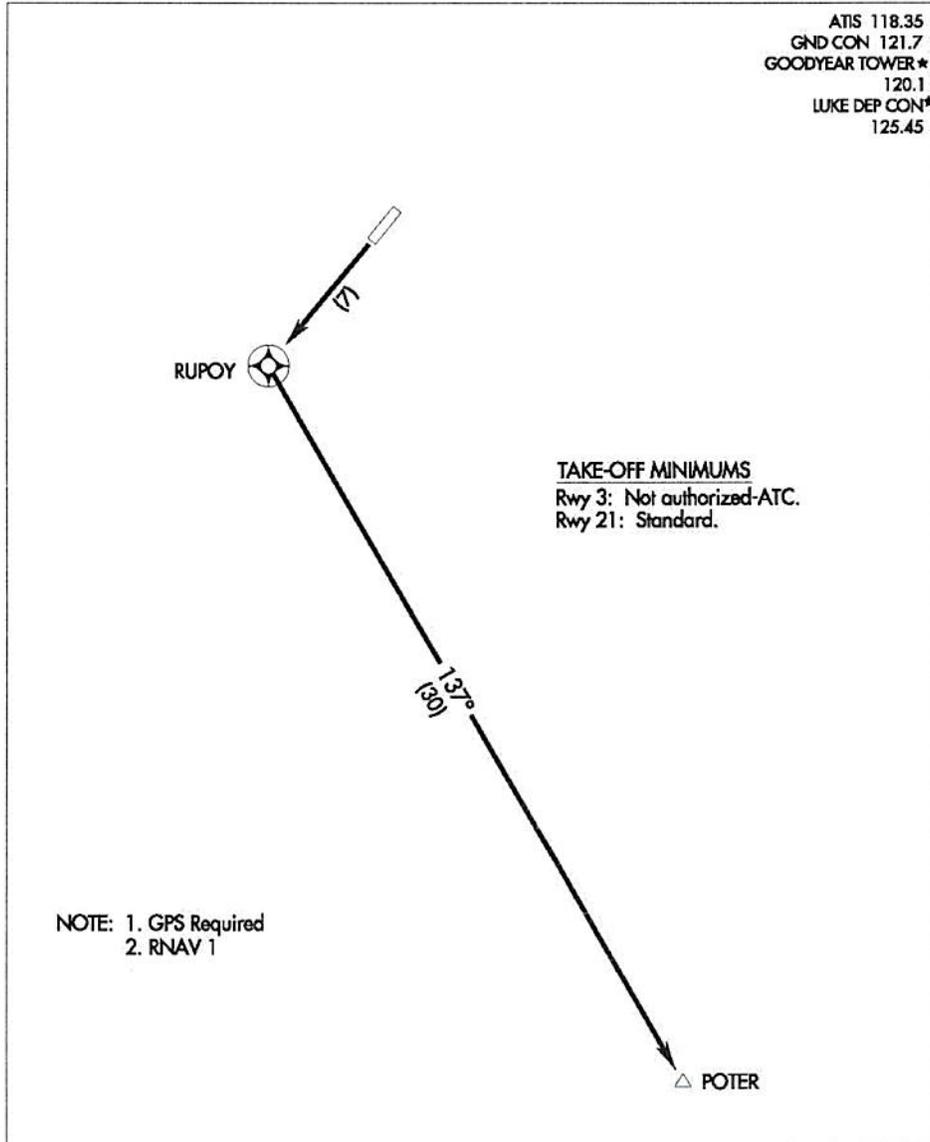
Figure 16: Phoenix Goodyear Airport - Poter One Departure

(POTER1.POTER) 08325 SL-6648 (FAA) GOODYEAR/PHOENIX GOODYEAR (GYR)
 POTER ONE DEPARTURE (RNAV) (OBSTACLE) GOODYEAR, ARIZONA

ATIS 118.35
 GND CON 121.7
 GOODYEAR TOWER*
 120.1
 LUKE DEP CON*
 125.45

SW-4, 22 AUG 2013 to 19 SEP 2013

SW-4, 22 AUG 2013 to 19 SEP 2013



NOTE: 1. GPS Required
 2. RNAV 1

TAKE-OFF MINIMUMS
 Rwy 3: Not authorized-ATC.
 Rwy 21: Standard.



DEPARTURE ROUTE DESCRIPTION

TAKE-OFF RUNWAY 21: Climb to 8000 direct RUPOY and via 137° track to POTER.

POTER ONE DEPARTURE (RNAV) (OBSTACLE) GOODYEAR, ARIZONA
 (POTER1.POTER) 08325 GOODYEAR/PHOENIX GOODYEAR (GYR)

Figure 17: Phoenix Deer Valley Municipal Airport - Deer Valley One Departure

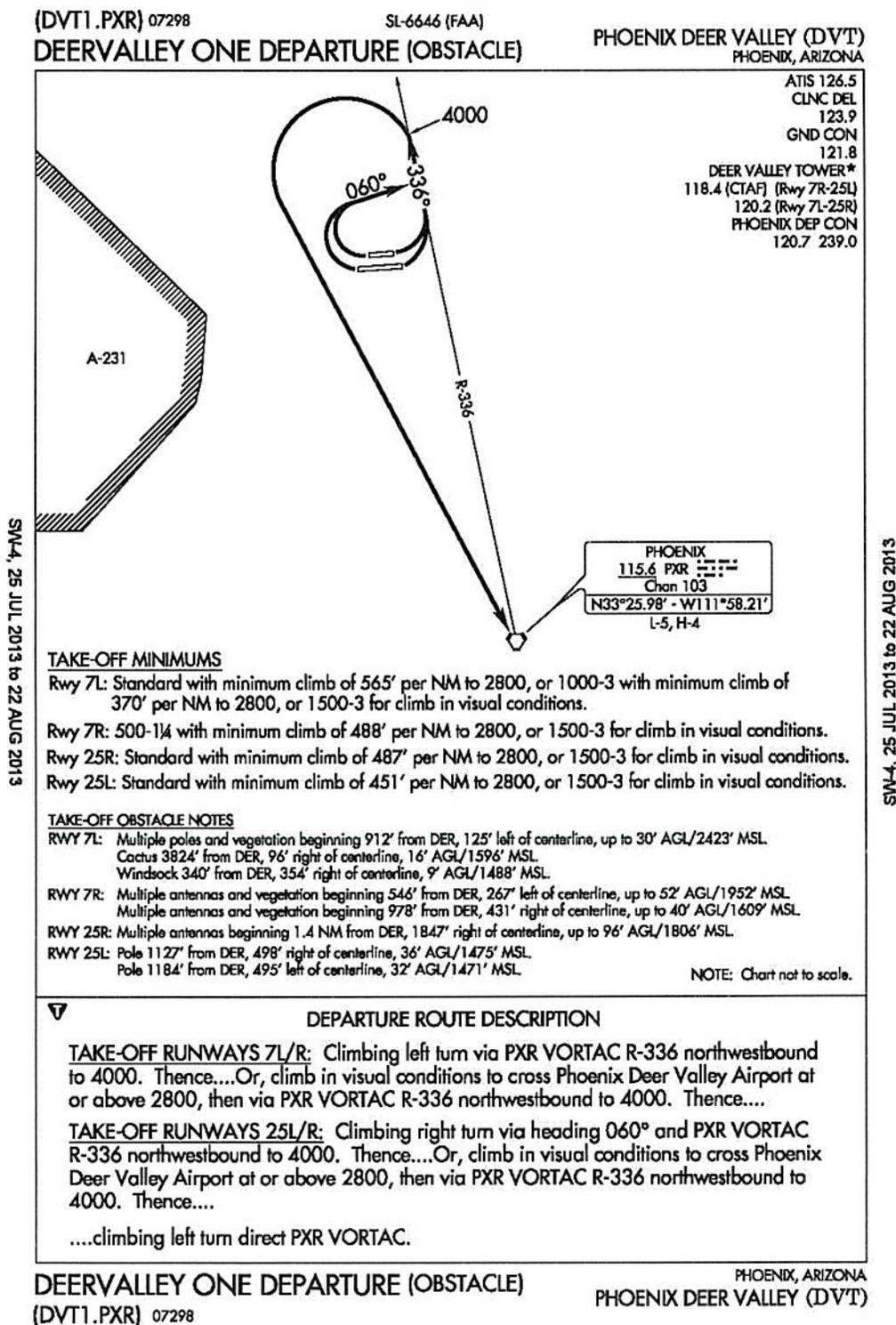


Figure 18: Phoenix Mesa Gateway Airport - Phoenix One Departure

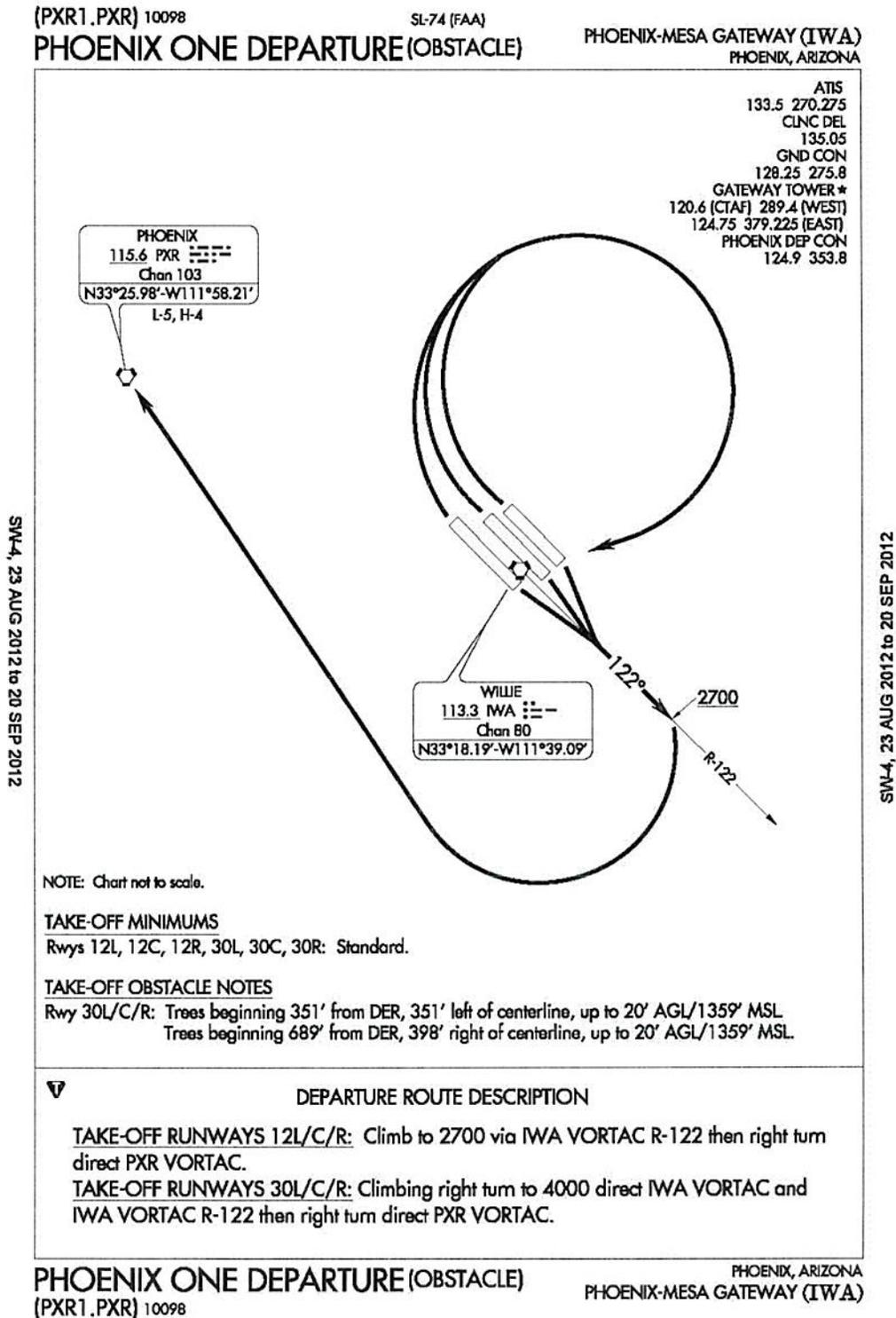


Figure 19: IZZO RNAV SID

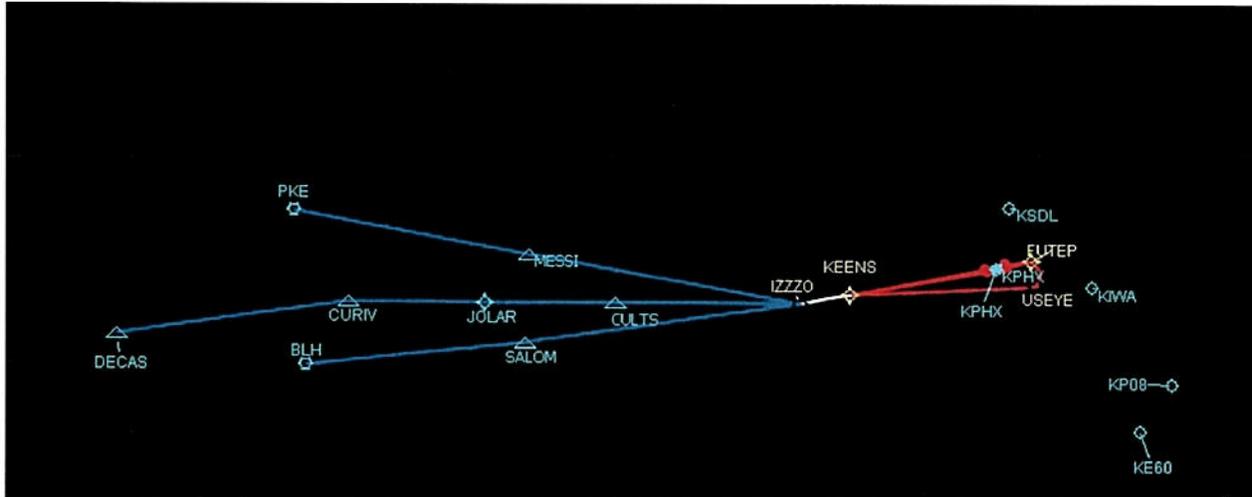


Figure 20: ZEPER RNAV SID

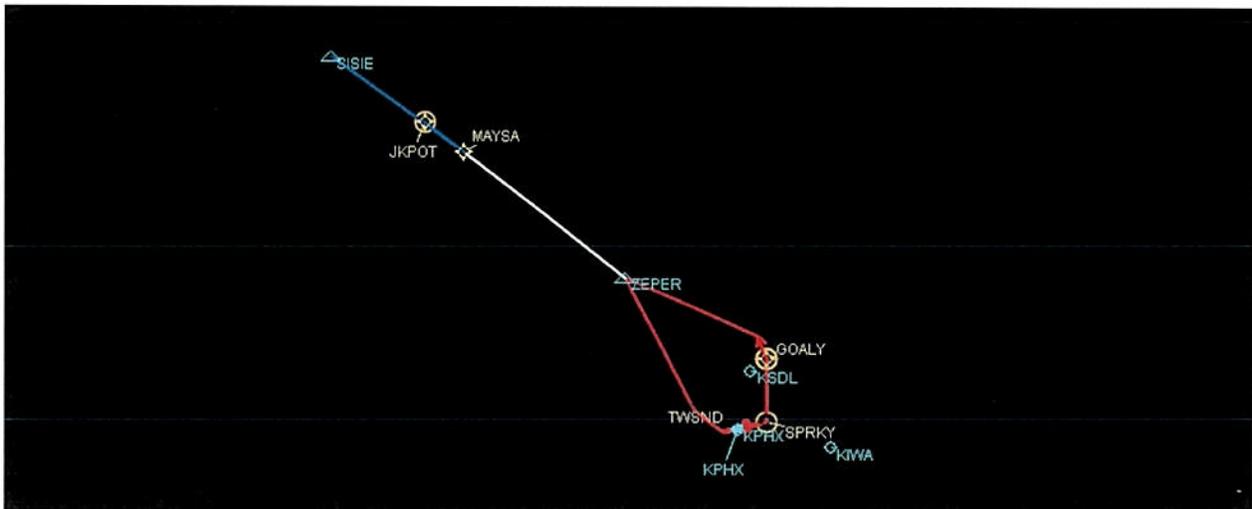


Figure 21: FORPE RNAV SID

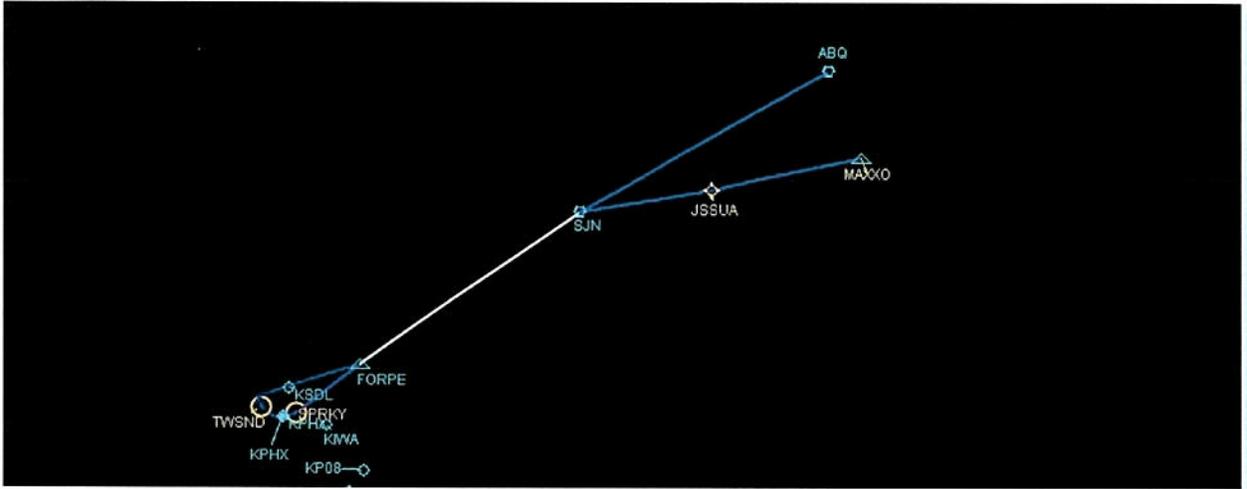


Figure 22: FTHLS RNAV SID

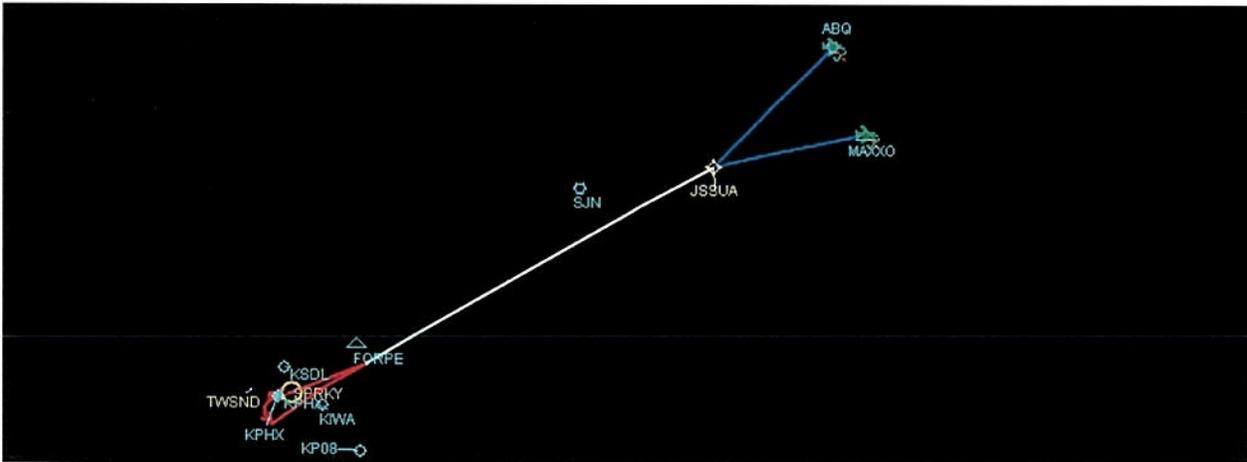


Figure 23: SNOBL RNAV SID

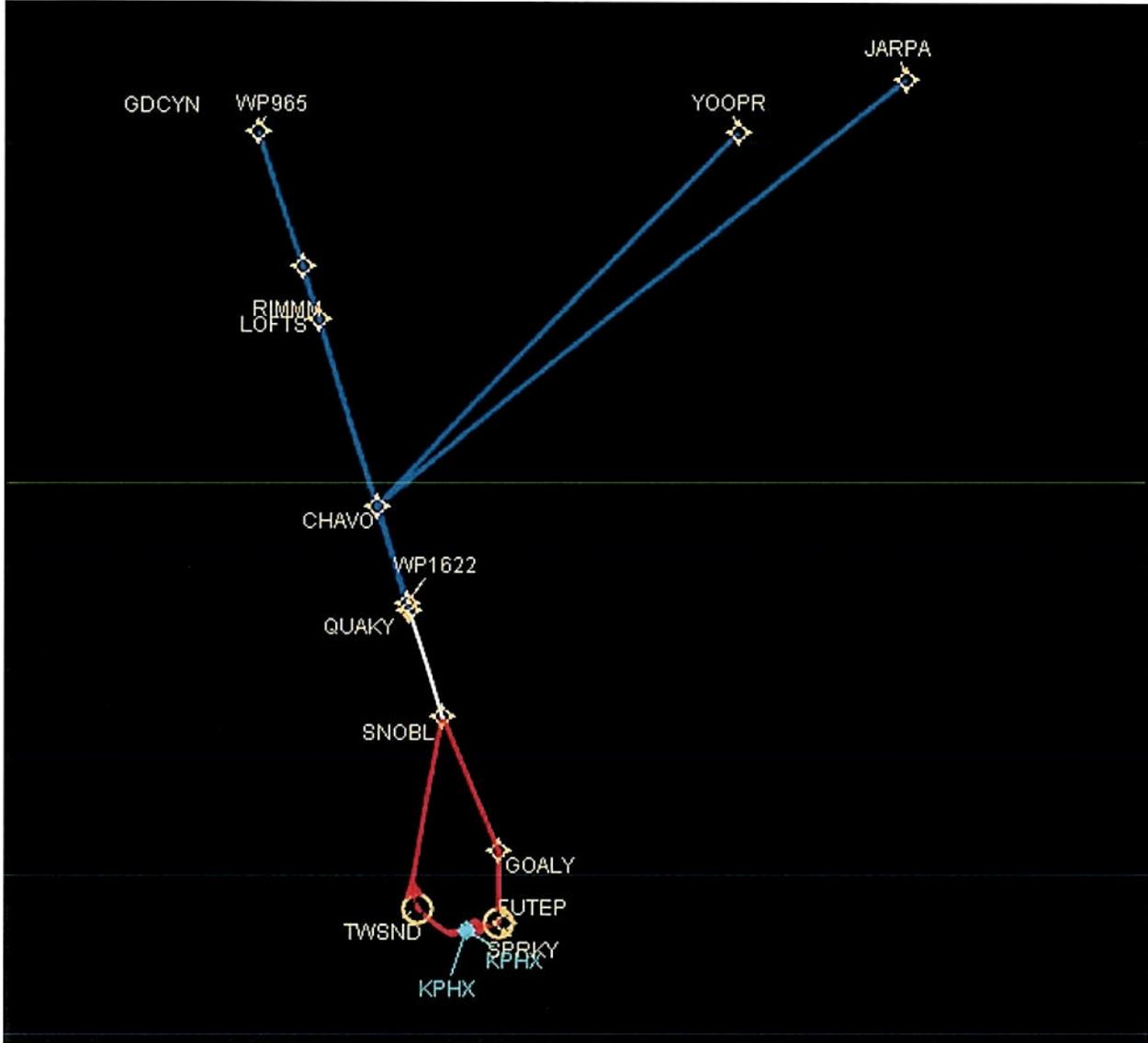


Figure 24: YOTES RNAV SID

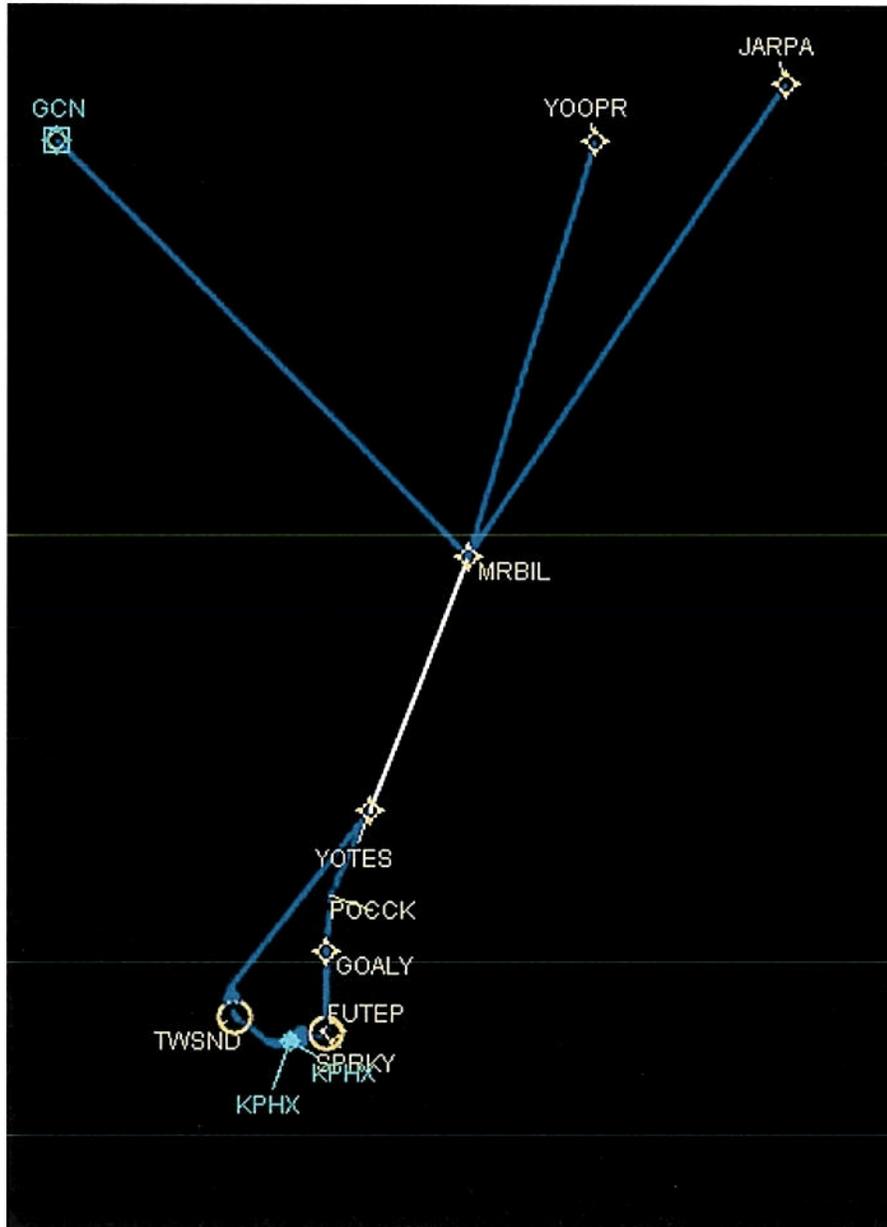


Figure 25: SHRIF RNAV SID

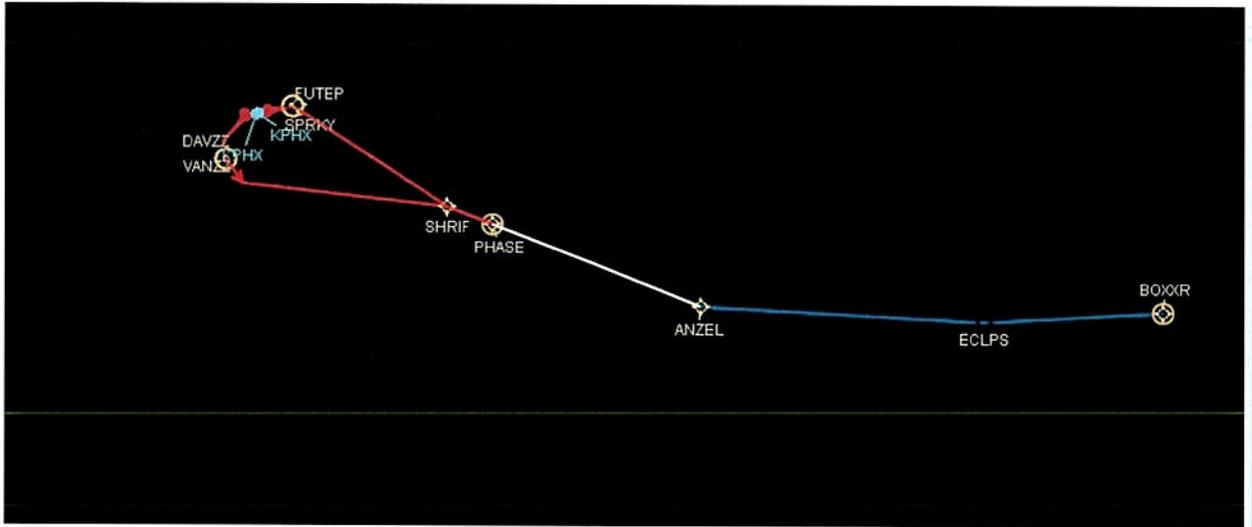


Figure 26: BNYRD RNAV SID

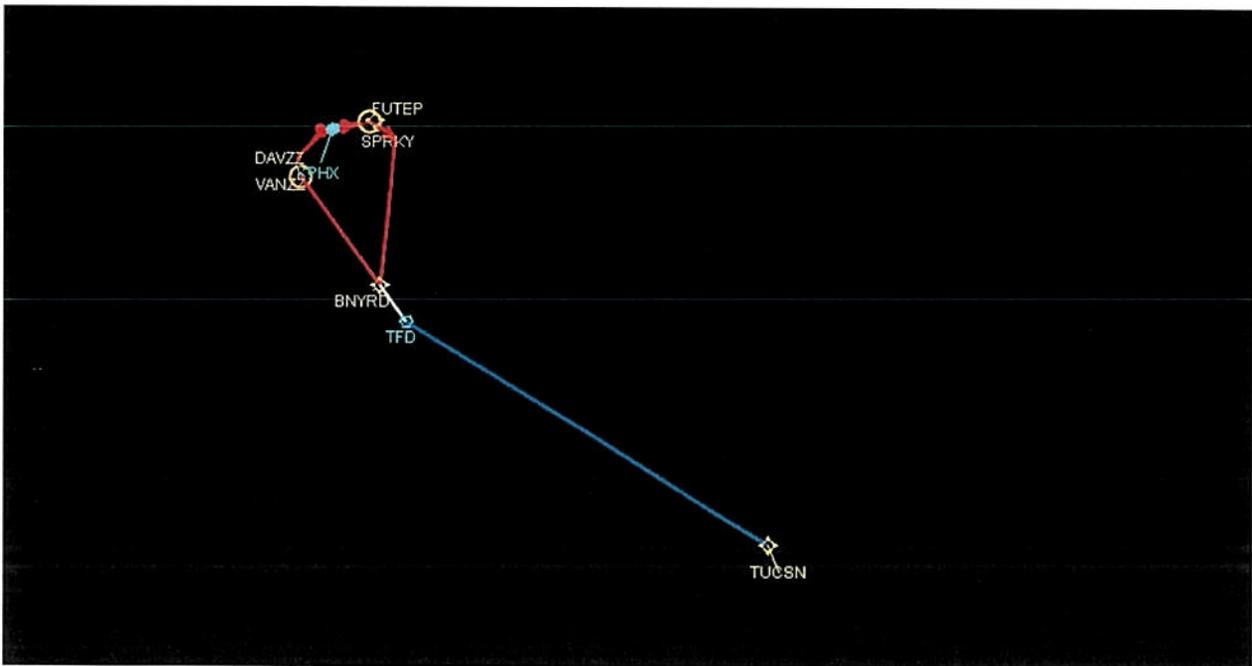


Figure 27: GBEND RNAV SID

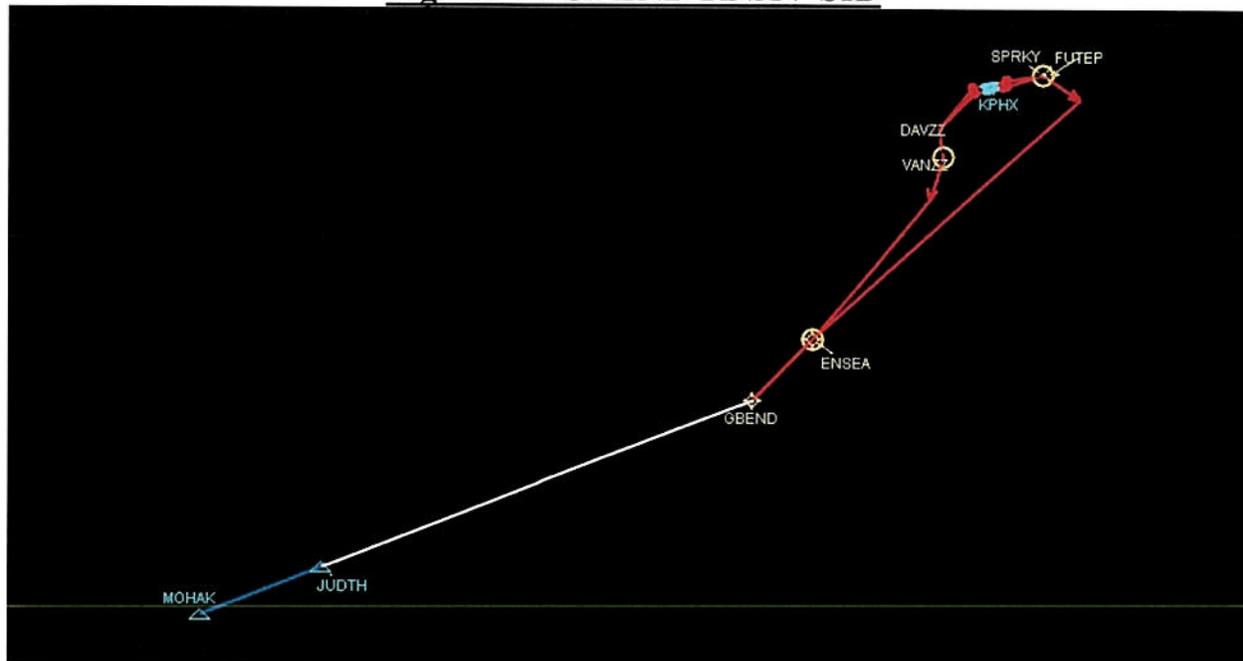


Figure 28: HYDRR ONE RNAV STAR

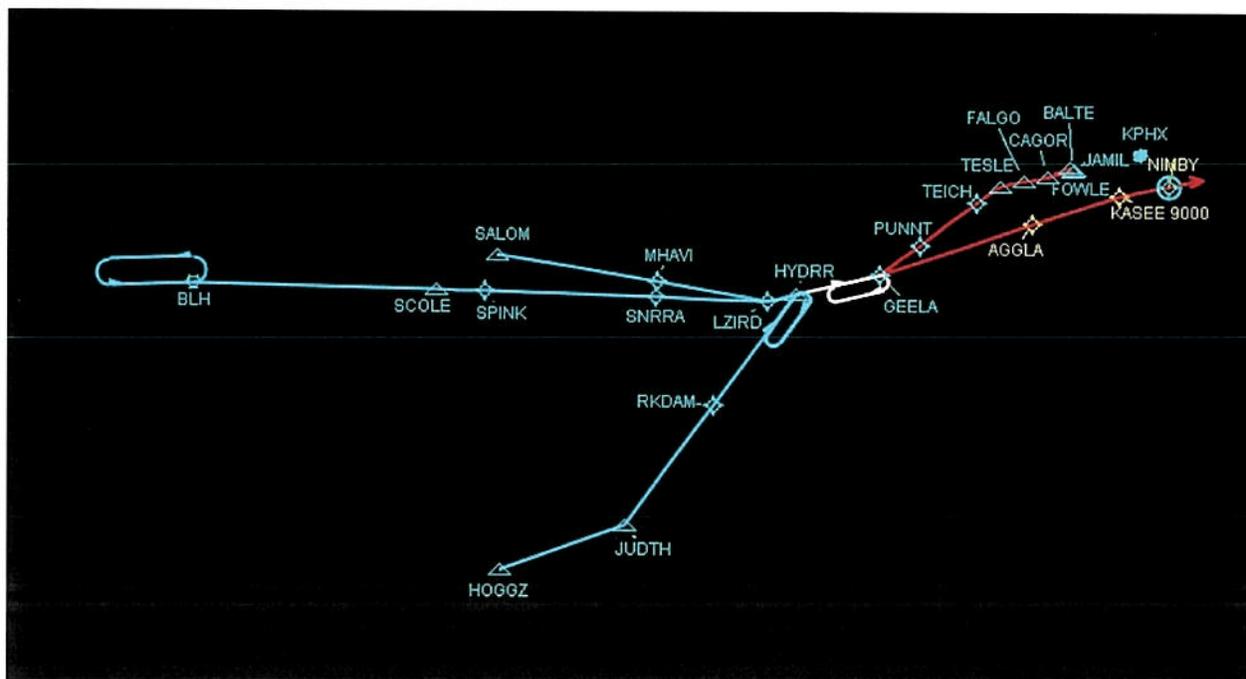


Figure 29: BRUSR ONE RNAV STAR

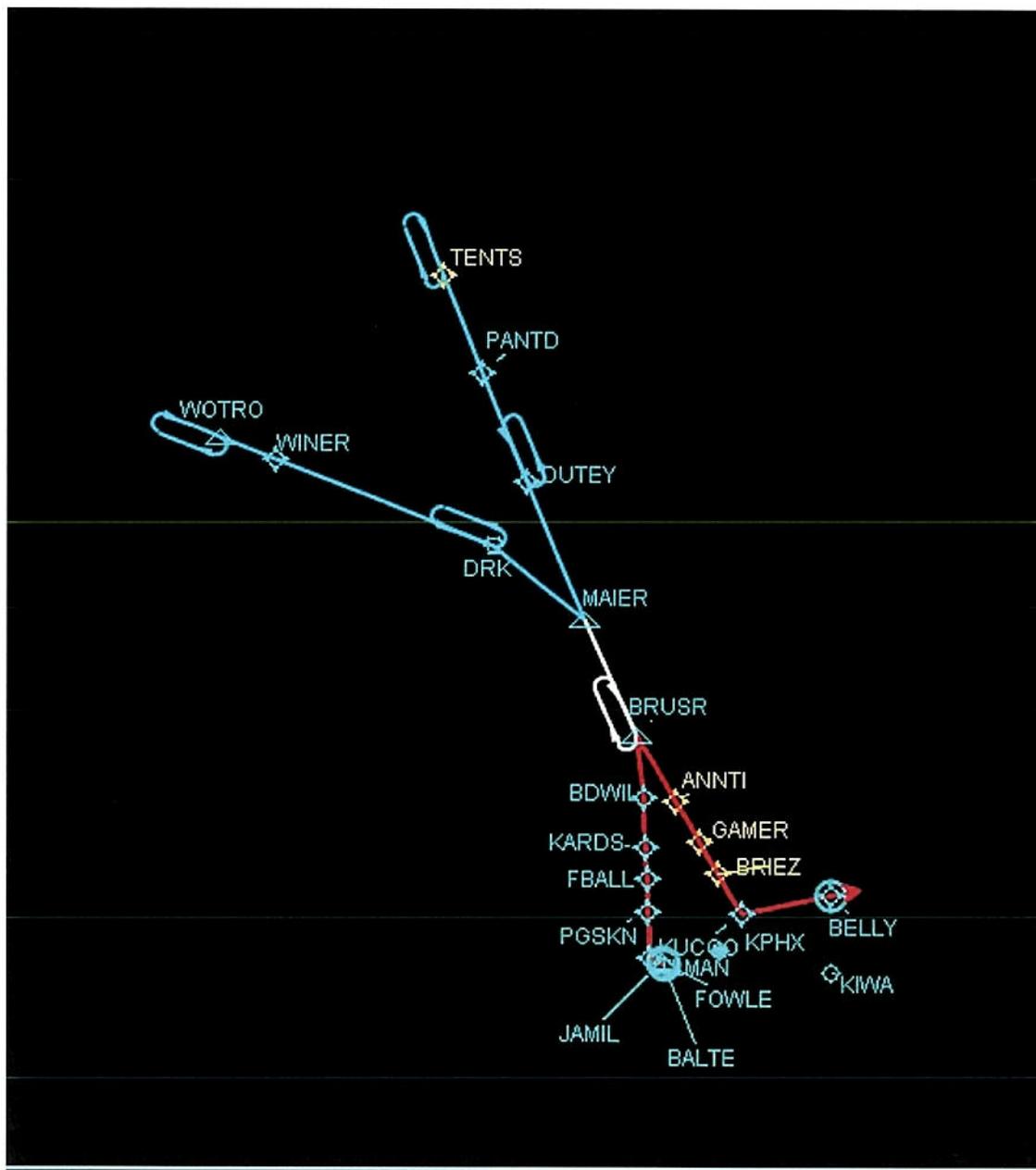


Figure 30: DSERT ONE RNAV STAR

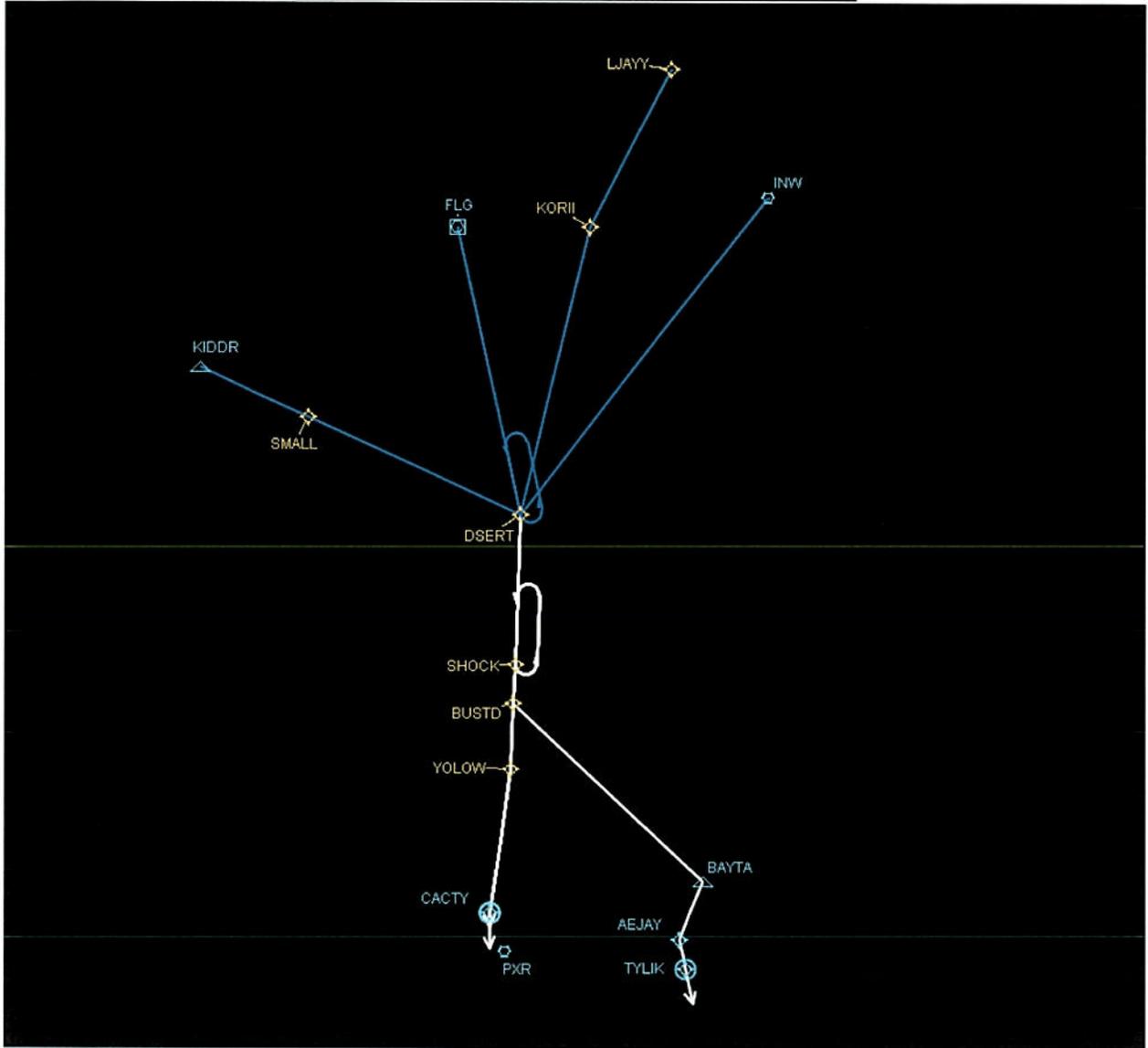


Figure 31: EAGUL ONE RNAV STAR

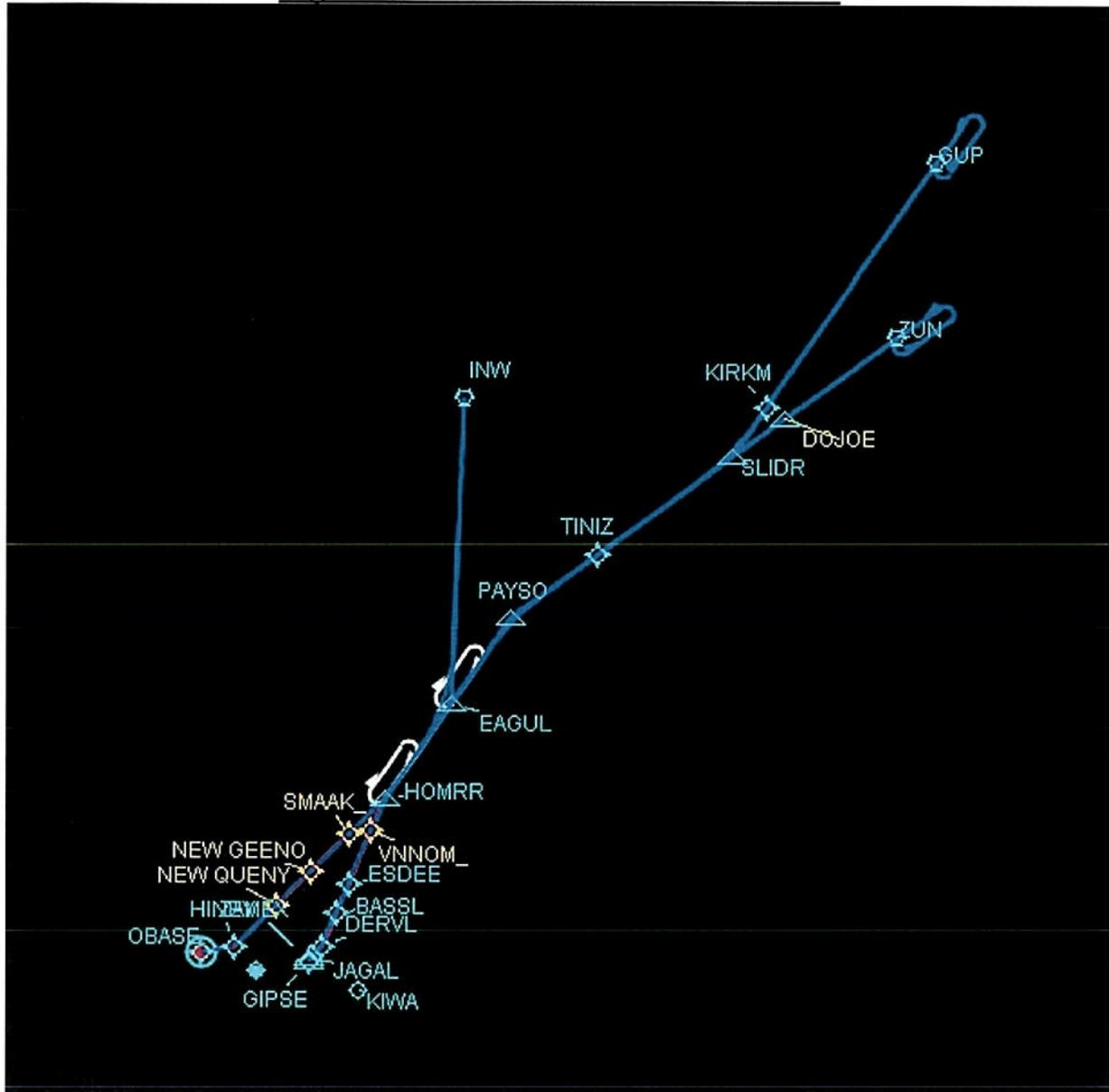


Figure 32: PIING ONE RNAV STAR

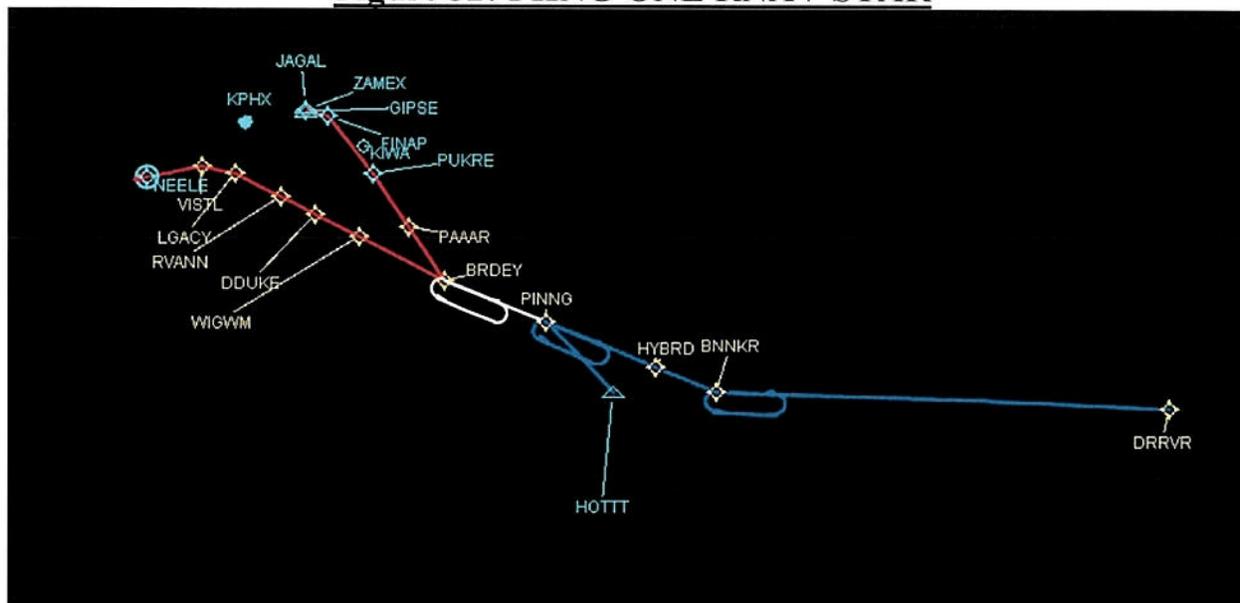


Figure 33: Land Use beneath proposed STARS

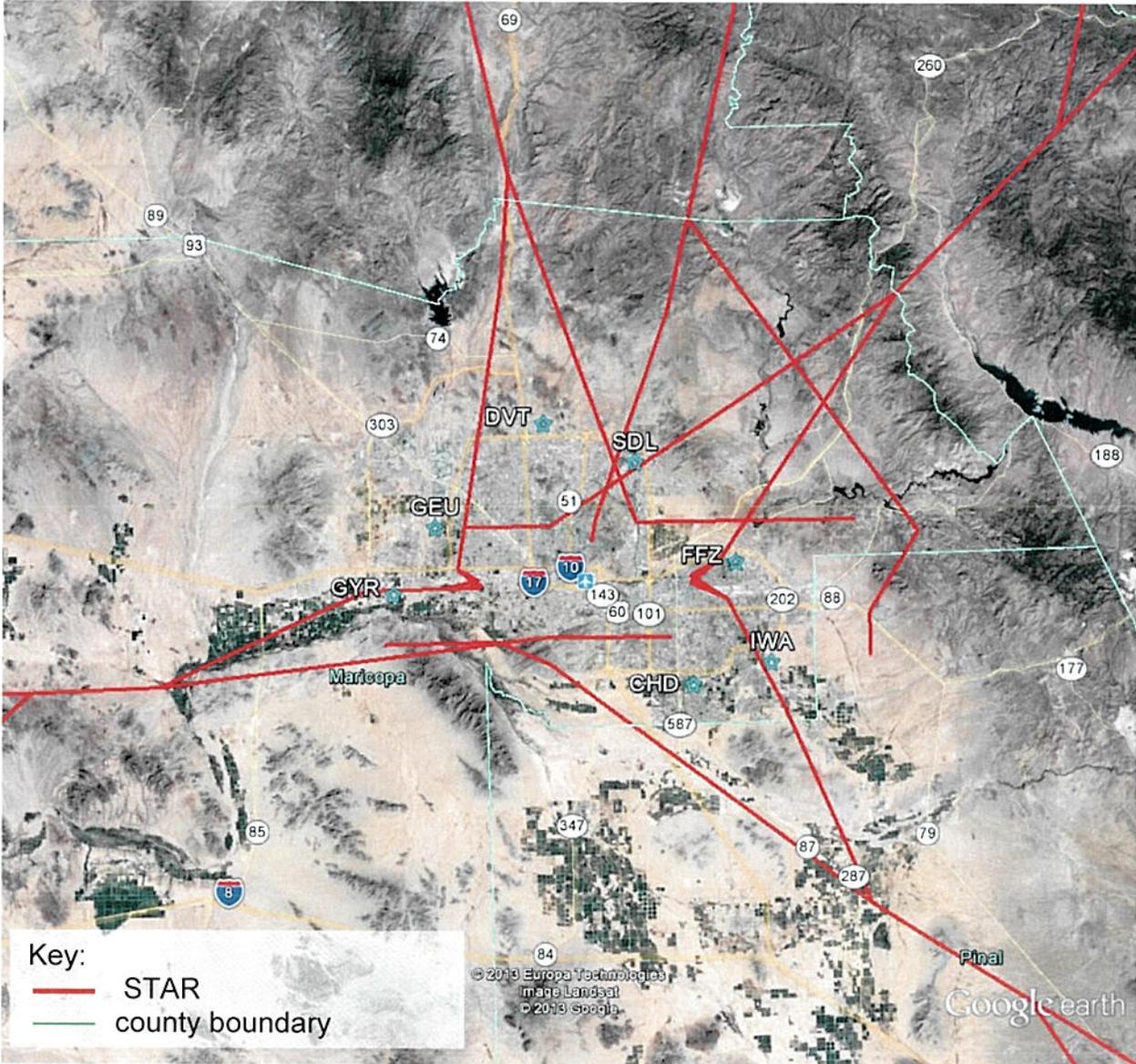


Figure 34: Land Use beneath proposed SIDs

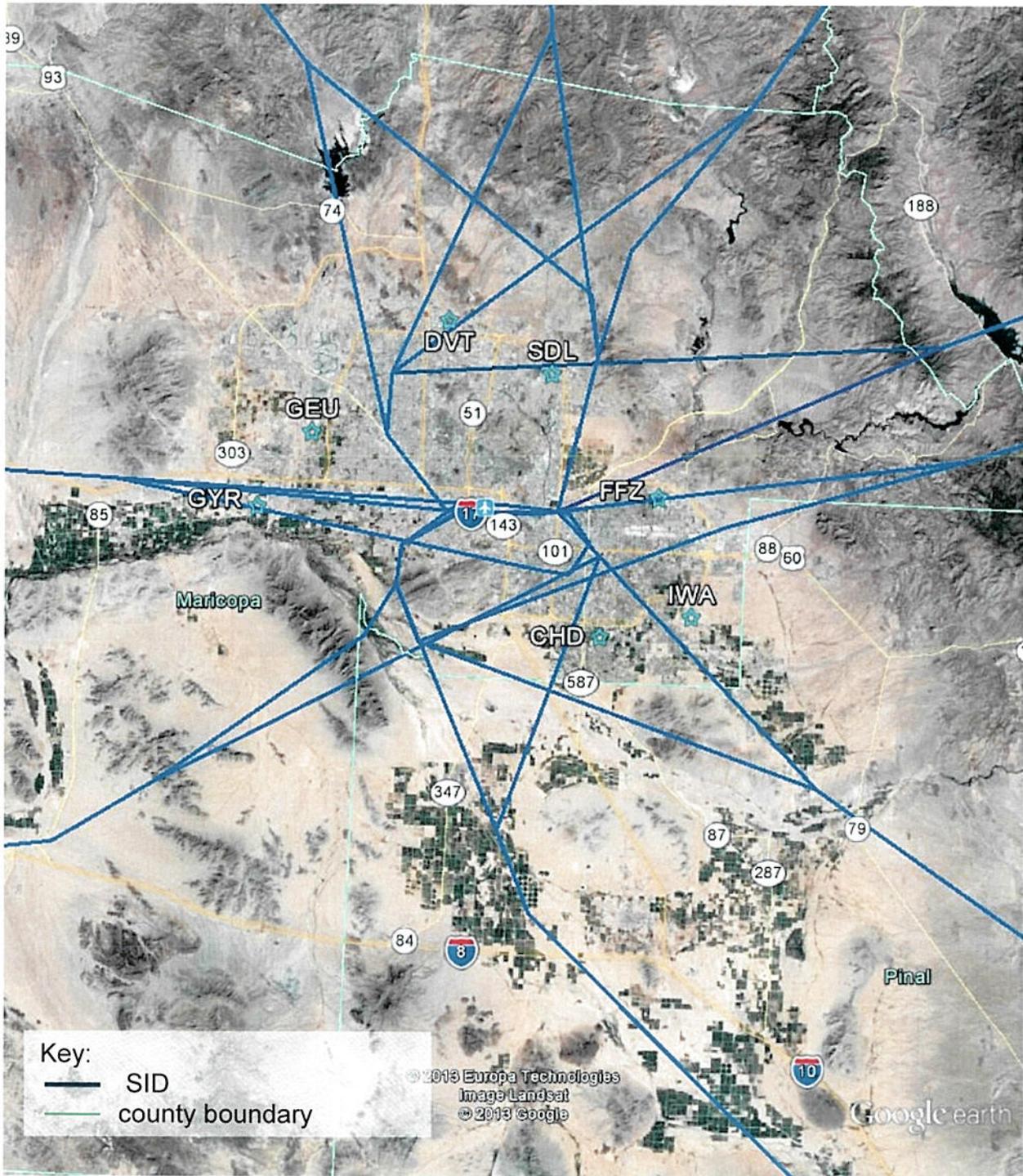


Figure 35: SIDs included the satellite airports and the IDF for each SID

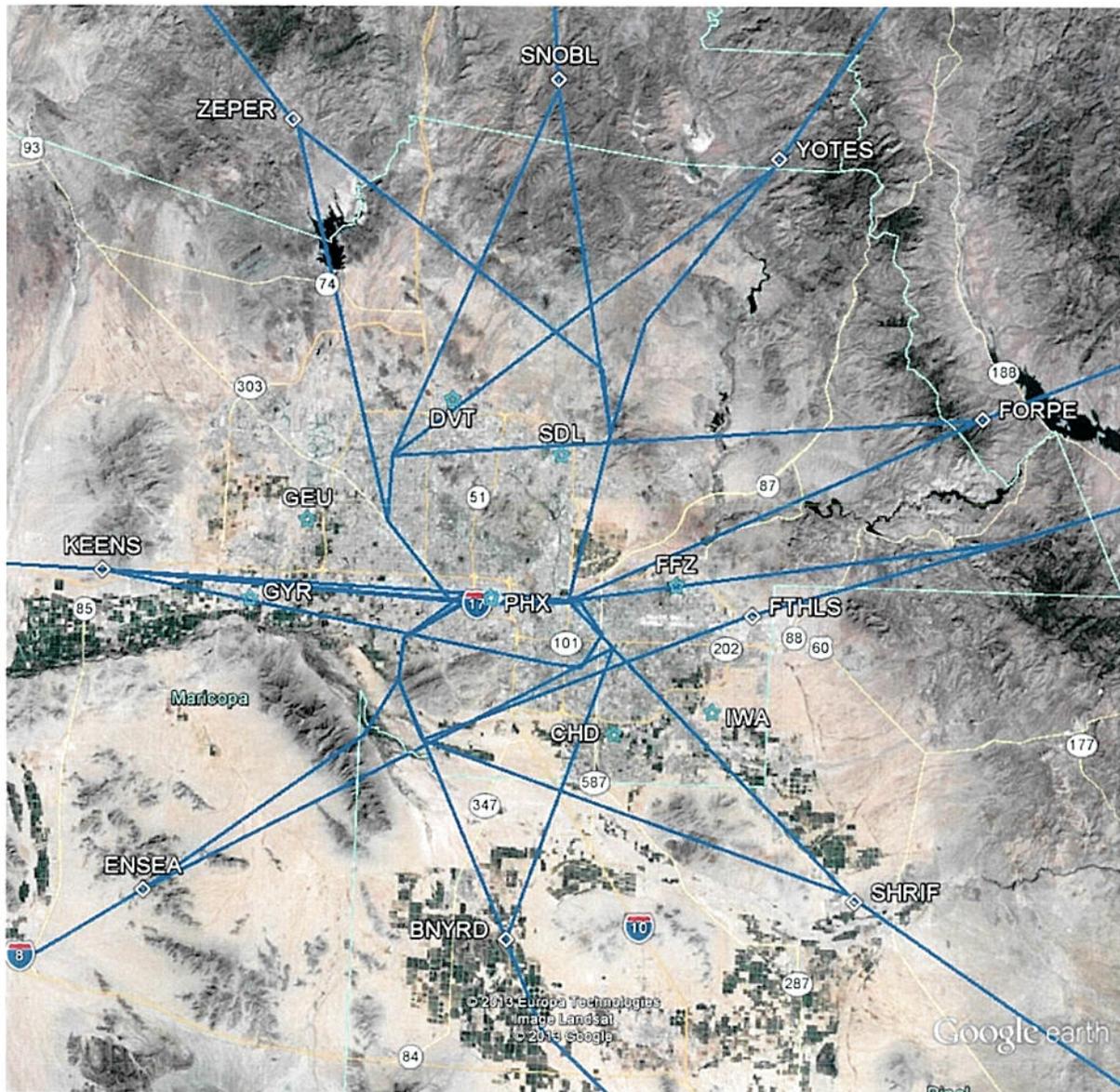


Figure 36: Areas of Potential Impact and places listed on the NHPR

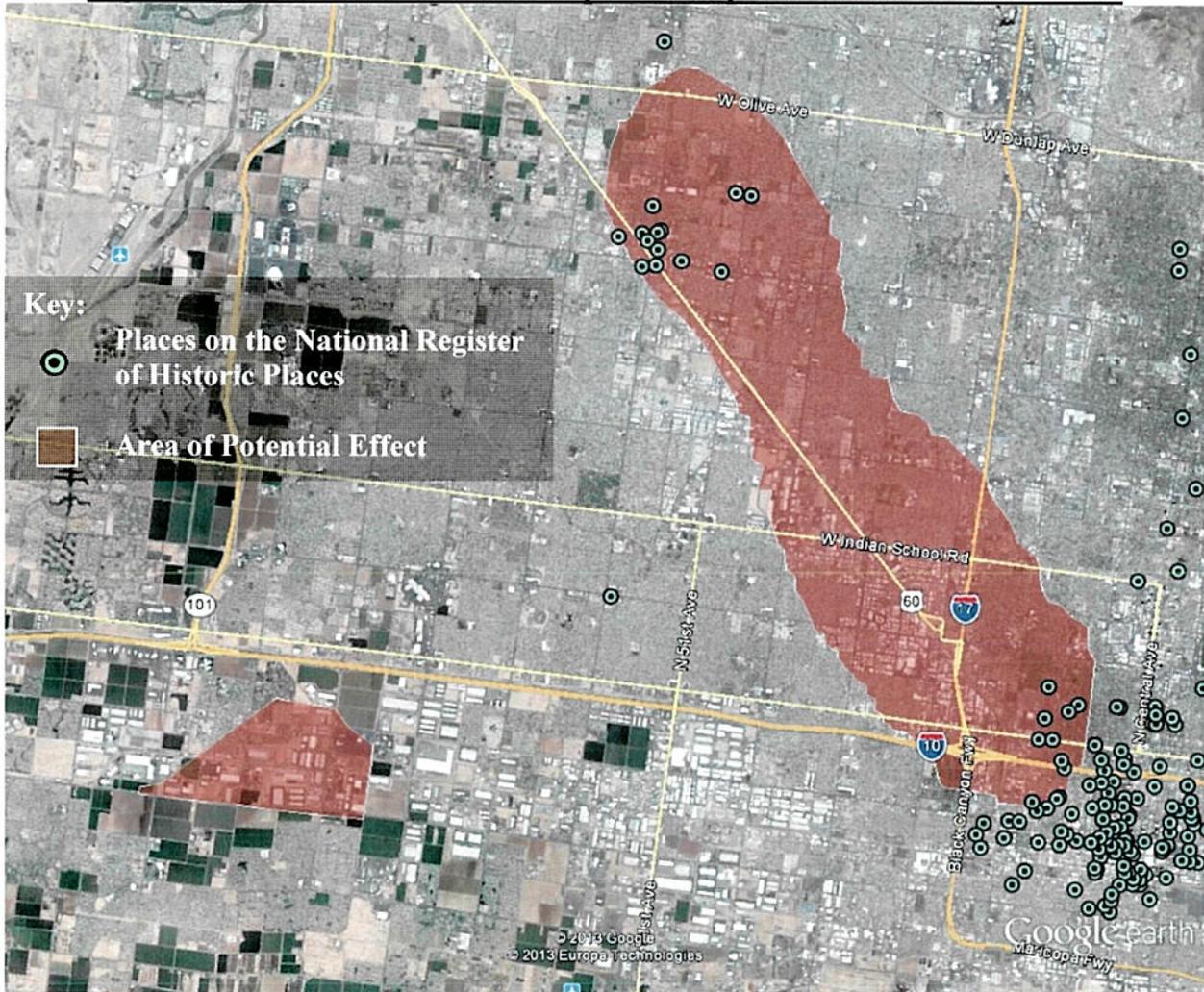


Figure 37: Close up of the Area of Potential Impact south of Interstate Route 10

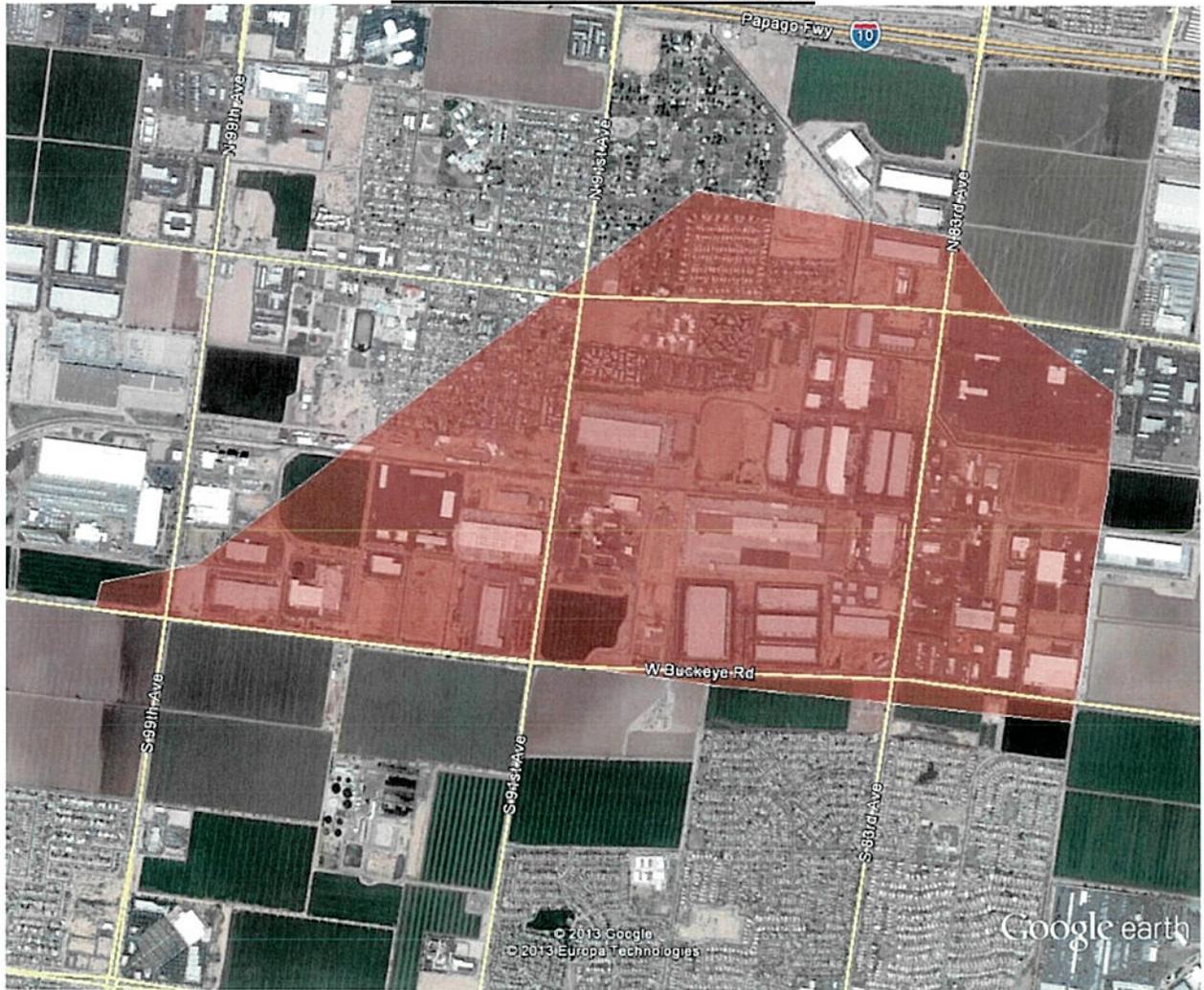


Figure 38: Close up of the Area of Potential Impact north of Interstate Route 10, including places listed on the NRHP

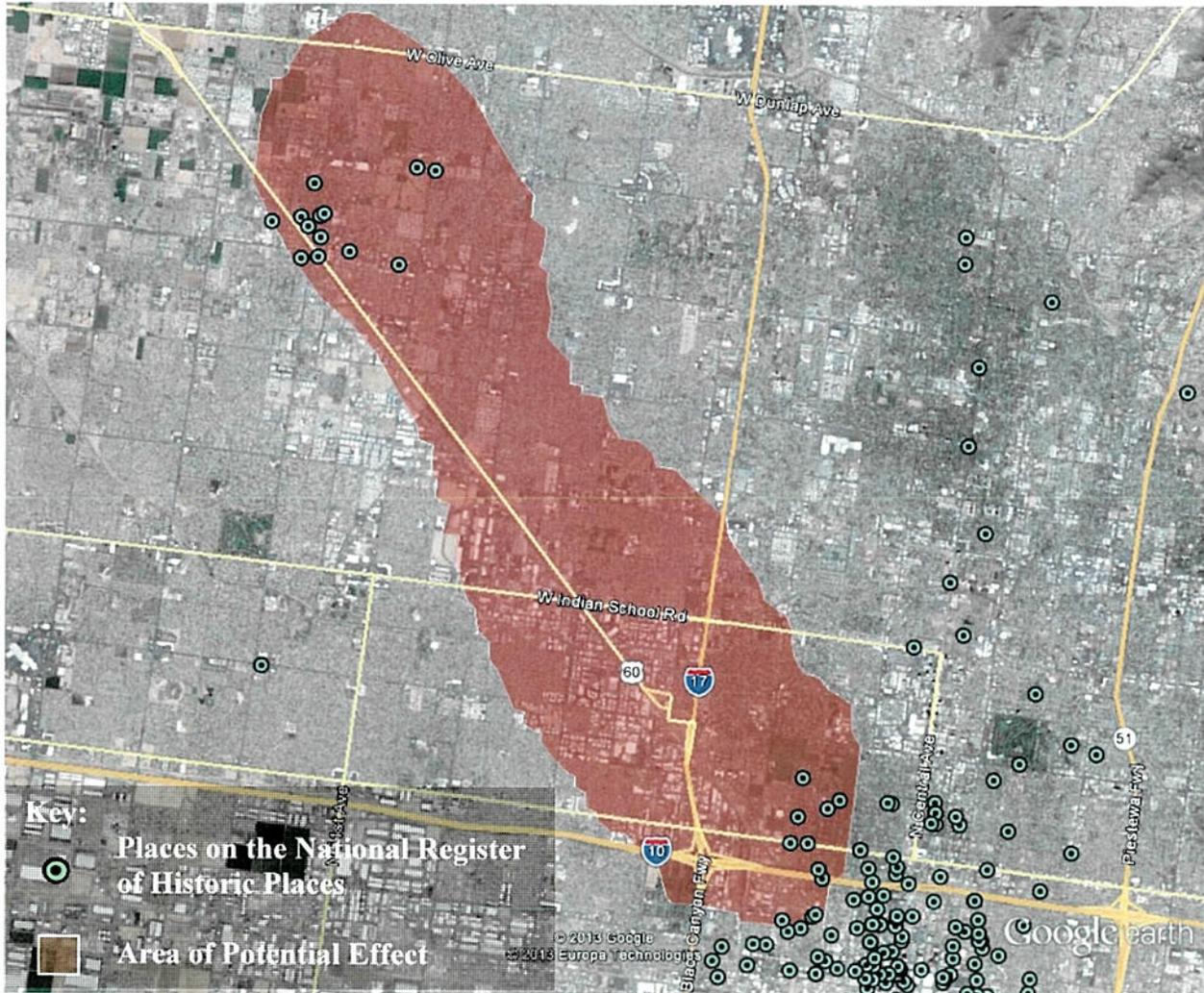


Figure 39: Close up of the north of the Area of Potential Impact north of Interstate Route 10, including places listed on the NRHP

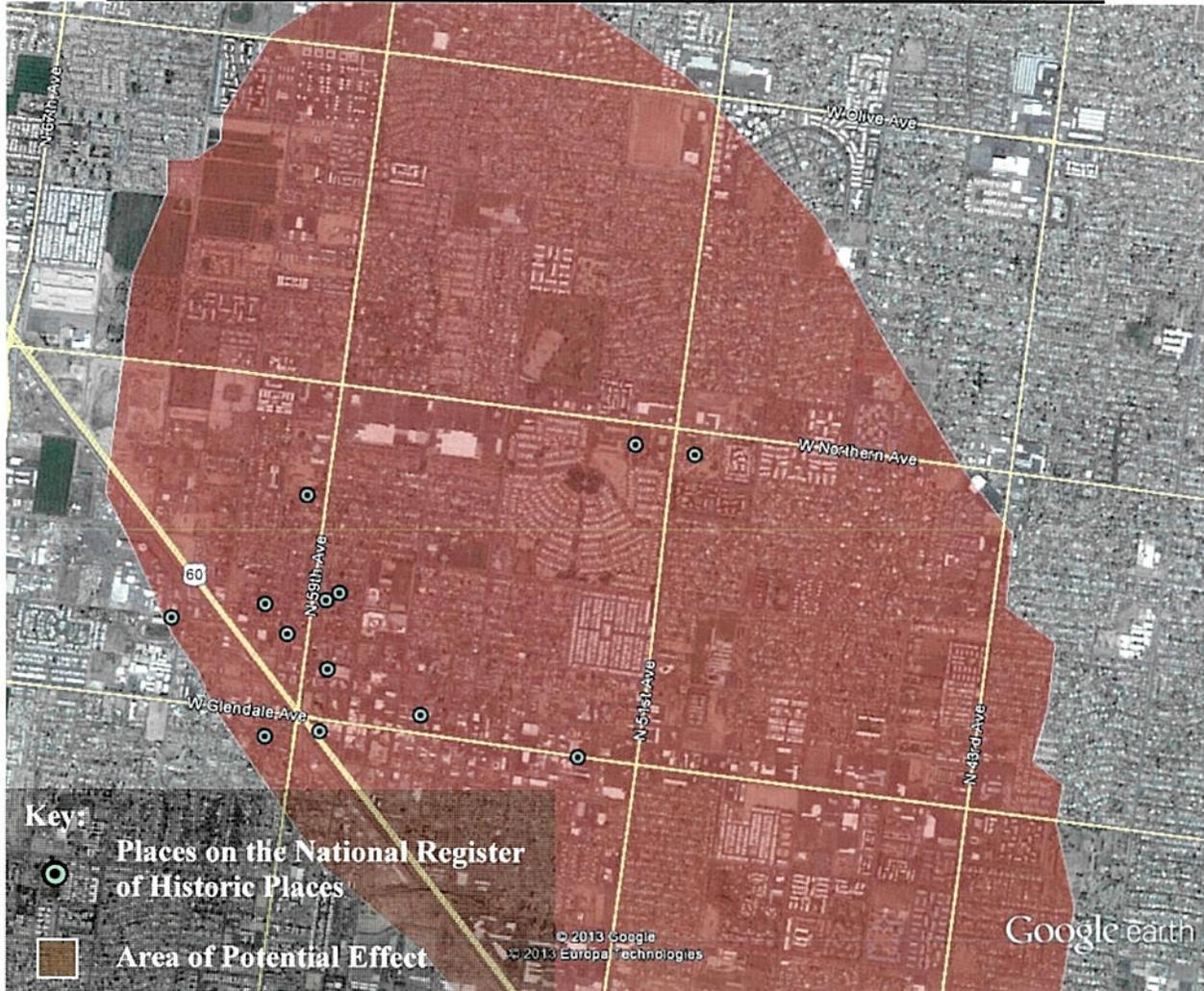
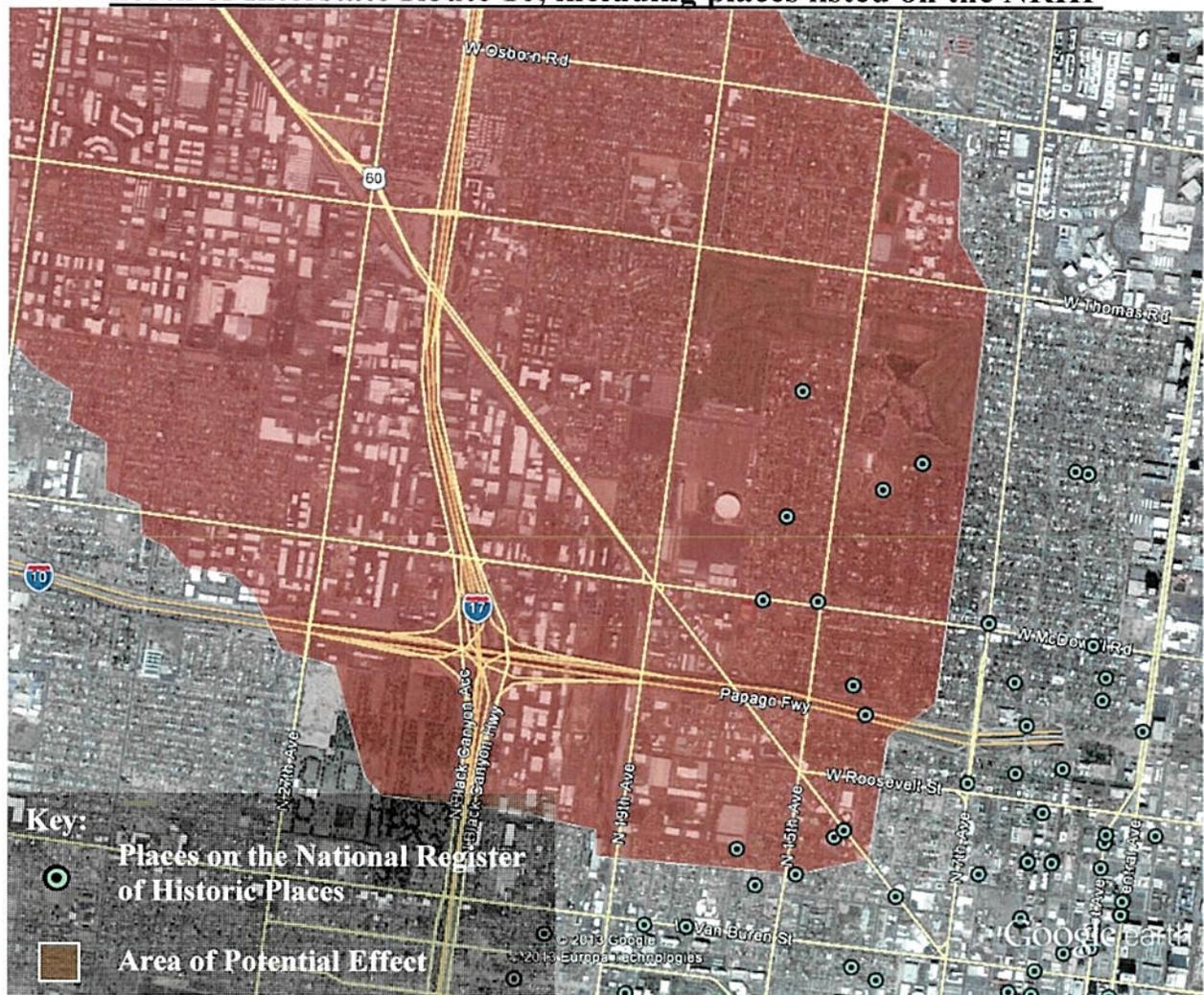


Figure 40: Close up of the south of the Area of Potential Impact north of Interstate Route 10, including places listed on the NRHP



APPENDIX A

NST RESULTS

Figure A.1: Results from the NST: far

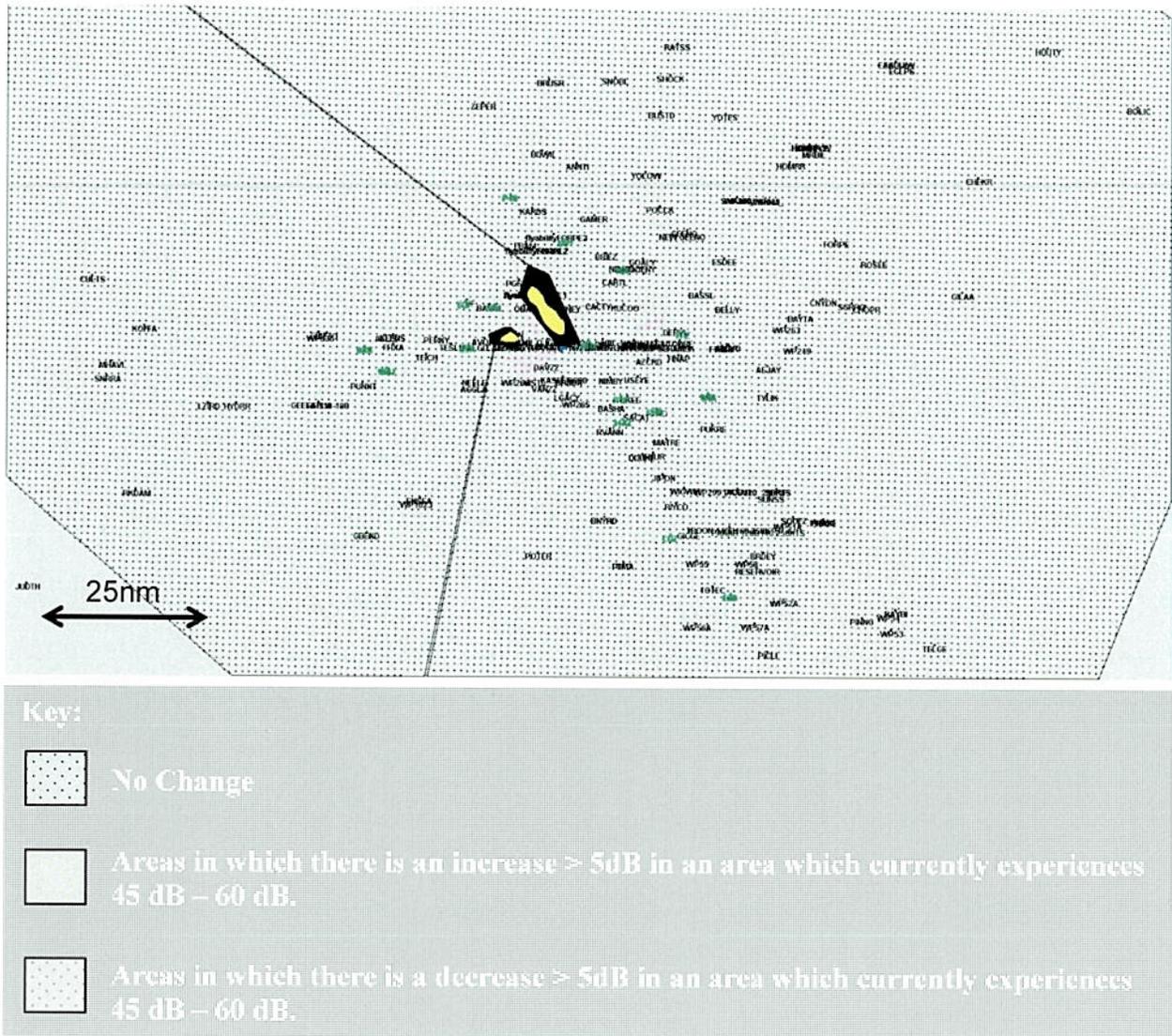
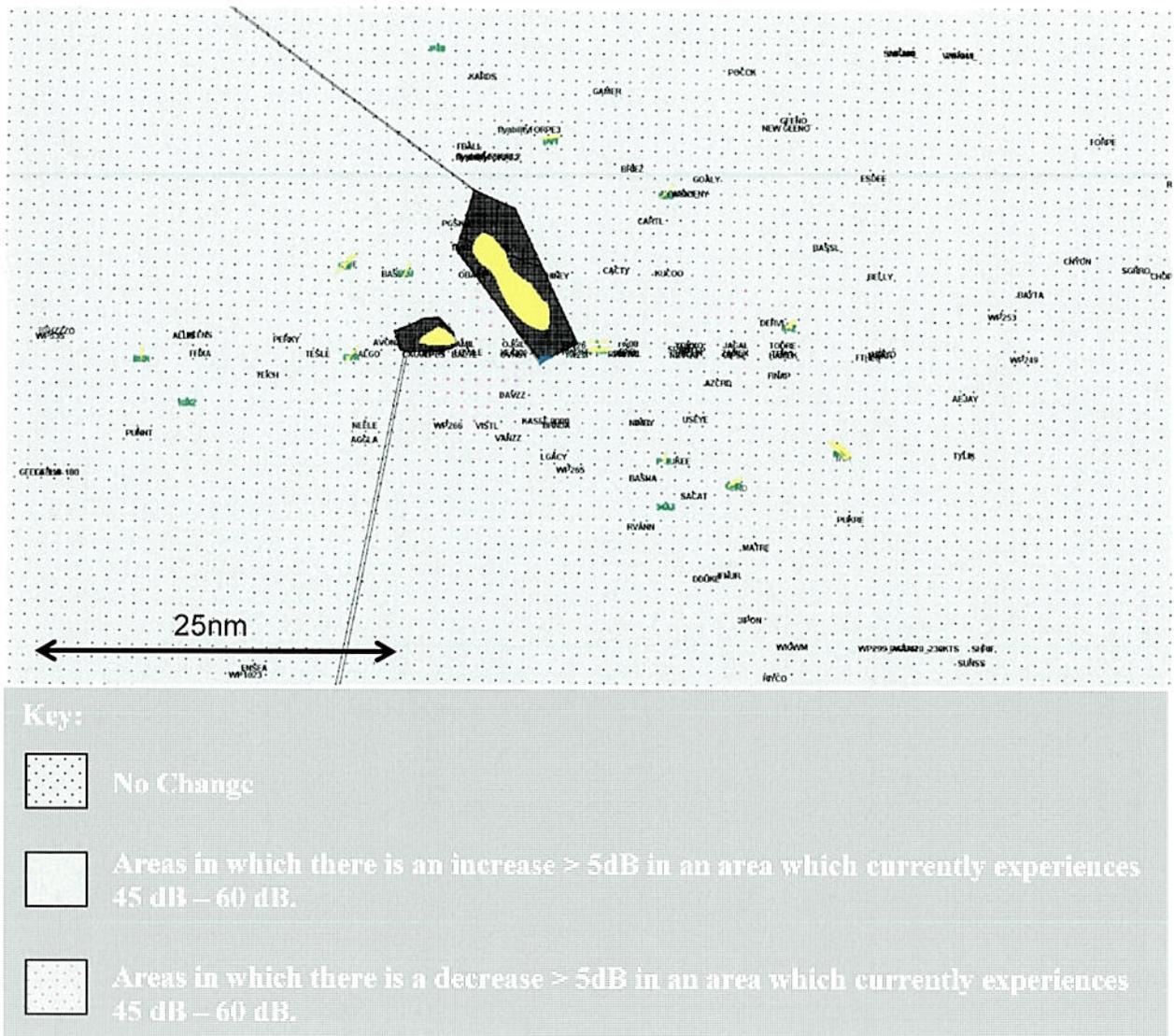


Figure A.2: Results from the NST: near



PHX RNAV TRYB 3

MoreRealEastWestDepArrivals_NorthDep3nm_bigStudyArea

This report was generated by the Federal Aviation Administration's Noise Screening Tool.

Overview of NST

The FAA's Noise Integrated Routing System (NIRS) Screening Tool (NST) estimates the noise impact over a specific area due to proposed changes to an existing airspace design. NST computes its estimates by comparing the noise and fuel impacts for different scenarios, and presents its results in graphical and tabular formats.

A typical NST study compares noise associated with a baseline route and an alternative route. The baseline route is the route aircraft currently fly into and out of an airport; an alternative route is a proposed change to that route. The alternative route may be higher or lower than the baseline route; it may operate a different times of day, or incorporate a different aircraft mix. The alternative route has a noise impact different from the baseline route.

NST takes into account many factors when evaluating noise impact. These factors include the time of day, land use, type of aircraft, route geometry, and operation. For example, the impact of a heavy jet flying over a quiet suburb in the late evening is different from a private aircraft flying over a dense metropolitan area during mid-day.

For more information about NST, see [Noise Integrated Routing System \(NIRS\) & NIRS Screening Tool \(NST\)](http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/nirs_nst/) at the FAA web site (http://www.faa.gov/about/office_org/headquarters_offices/apl/research/models/nirs_nst/).

Overview of Day Night Levels

This report estimates noise impact in terms of Day-Night Average Sound Level (DNL). DNL, expressed in decibels (dB), is a 24-hour average noise level used to define the level of noise exposure on a community. The DNL represents the average sound exposure during a 24-hour period and does not represent the sound level for a specific noise event. A 10 dB correction is applied to nighttime (10:00 p.m. and 7:00 a.m.) sound levels to account for increased annoyance due to noise during the night hours. There are many other metrics that can be used to describe aircraft noise levels; however DNL has been most widely accepted as the preferred metric for determining noise level exposure at airports.

Report Parameters

The following parameters describe this report:

- NST Version: 7.0b4-SP1 Release Build (2013.05.02-5)
- Date generated: Tue Aug 13 11:41:18 PDT 2013
- Project Location: PHX
- Name/Title of Reviewer: cp
- Project Description: N/A
- Facility Conducting Review: N/A

Results Summary

Noise Impact

The following table shows the change in noise exposure based on the allocation of traffic to the baseline and alternative routes.

		Impact													
Name	Type	Red		Orange		Yellow		No Change		Green		Blue		Purple	
		pct	pts	pct	pts	pct	pts	pct	pts	pct	pts	pct	pts	pct	pts
Grid 2	Quiet Suburb	0.0%	0	0.0%	0	27.3%	1498	72.0%	3948	0.0%	0	0.6%	33	0.0%	1
Grid 4	Quiet Suburb	0.0%	0	0.0%	0	24.5%	240	75.5%	740	0.0%	0	0.0%	0	0.0%	0
Grid 5	Quiet Suburb	0.0%	0	0.0%	0	0.0%	0	99.9%	29548	0.0%	3	0.0%	2	0.1%	33
Overall		0.0%	0	0.0%	0	4.8%	1738	95.0%	34236	0.0%	3	0.1%	35	0.1%	34

Fuel Burn

The amount of fuel burn between the alternative and baseline routes decreased by 13.33%

Scenario	Fuel Burn (lbs)
Baseline	138,851.047
Alternative	120,336.461

Flight Performance

This section describes the overall flight performance results for the study.

Baseline Scenario

- 206 out of 206 (100%) route(s) had all flights successfully modeled.
- 27,044 out of 27,044 (100%) event(s) were successfully modeled.
- 3,050.745 out of 3,050.745 (100%) weighted operations(s) were successfully modeled.
 - 329.196 out of 329.196 (100%) day operations(s) were successfully modeled.
 - 272.155 out of 272.155 (100%) night operations(s) were successfully modeled.

Alternative Scenario

- 153 out of 153 (100%) route(s) had all flights successfully modeled.
- 24,677 out of 24,677 (100%) event(s) were successfully modeled.
- 2,759.946 out of 2,759.946 (100%) weighted operations(s) were successfully modeled.
 - 302.927 out of 302.927 (100%) day operations(s) were successfully modeled.
 - 245.702 out of 245.702 (100%) night operations(s) were successfully modeled.

Results Detail

Grid Results

This section describes the noise exposure.

Based on the allocations of operations to the baseline route(s), the following table shows noise levels at points within the study's grid(s).

		Baseline Exposure											
Name	Type	65+ dB		65-60 dB		60-55 dB		55-50 dB		50-45 dB		45 dB	
		pct	pts	pct	pts	pct	pts	pct	pts	pct	pts	pct	pts
Grid 2	Quiet Suburb	1.0%	57	5.7%	313	4.5%	245	4.1%	226	13.7%	753	70.9%	3886
Grid 4	Quiet Suburb	0.0%	0	0.0%	0	0.0%	0	0.0%	0	2.8%	27	97.2%	953
Grid 5	Quiet Suburb	0.0%	9	0.0%	9	0.1%	19	0.1%	44	0.2%	67	99.5%	29438
Overall		0.2%	66	0.9%	322	0.7%	264	0.7%	270	2.3%	847	95.1%	34277

Based on the allocations of operations to the alternative route(s), the following table shows noise levels at points within the study's grid(s).

Alternative Exposure

Name	Type	65+ dB		65-60 dB		60-55 dB		55-50 dB		50-45 dB		45 dB	
		pct	pts	pct	pts	pct	pts	pct	pts	pct	pts	pct	pts
Grid 2	Quiet Suburb	1.0%	57	4.9%	268	7.4%	406	16.5%	902	27.3%	1496	42.9%	2351
Grid 4	Quiet Suburb	0.0%	0	0.0%	0	0.0%	0	1.7%	17	41.7%	409	56.5%	554
Grid 5	Quiet Suburb	0.0%	9	0.0%	7	0.0%	14	0.1%	36	0.2%	55	99.6%	29465
Overall		0.2%	66	0.8%	275	1.2%	420	2.6%	955	5.4%	1960	89.8%	32370

APPENDIX B

LIST OF OTHER AIRPORT PROJECTS

Table B.1: Recently completed projects

Date Completed	Project Title	Description
Feb-11	Runway Safety Area for 7R/L	Additional Embankment in the Salt River to achieve a full Runway Safety Area length and width.
Feb-11	Phase 2 Reconstruction of Taxiway Alpha	Complete pavement reconstruction of Taxiway Alpha
Feb-11	Taxiway Acute Angle Connectors	Construction of two new acute angle taxiway connector exists
	Taxiway C West Infill	In-fill Taxiway C from C3 to C4, approximately 2,200 linear feet with an 18 inch PCCP concrete taxiway pavement
	Terminal 2 Apron Rehabilitation	
Dec-10	Terminal 3 Baggage Carousel Replacement	Design, engineer, furnish and install equipment for the replacement of all eight inbound conveyor and loading belts, four baggage carousels, and systems including equipment, controls and security/fire doors.
	Terminal 3 Elevator Modernization	Modernizing elevator equipment and controls and updating equipment rooms to comply with current building safety, fire and elevator codes.
May-10	Terminal 4 Checkpoint C Expansion	The project will include the expansion of the checkpoint to better accommodate increased passenger demand and security screening requirements
Jul-11	Terminal 4 Fire Alarm Upgrade	Upgrade the existing system throughout Terminal 4
	West Air Cargo Ramp Reconstruction	Pavement replacement of the West Air Cargo Apron Area.
	West Hold Bay Reconstruction	Reconstruction of the West Hold Bay pavement to accommodate larger aircraft.

	Date Completed	Project Title	Description
PHX		Rental Car Center Remodels	Cosmetic improvements to the Enterprise, Alamo and National Rental Car Centers
		FAA Runway Status Lights	Installation of a new lighting system for a safer operational environment.
DVT		Improvements to the Runway safety area	Remove ruts, humps and depressions. Includes modifications to account for erosion and draining.
		South Ramp Reconstruction	Reconstruct apron to divert drainage away from T-hangers and improve pavement.
GYR		Access control	The addition of 19 pedestrian gates on the existing access control & alarm monitoring system.
		Taxiway Alpha lighting and signage modifications	Relocation of existing hold bars and signage, installation of runway guard lights and pavement striping and lighting adjustments along Taxiway alpha.
FFZ		Taxiway alpha pavement rehabilitation	Replacement of asphalt, lighting, signs and striping along Taxiway alpha.
		Improve south side ramp	Improvements to a ramp on the south side of the airport where a majority of aircraft use to taxi to and from the two runways.
SDL		Strengthening the Scottsdale Airport runway	The City of Scottsdale is conducting an Environmental Assessment to determine the long term viability of strengthening the Scottsdale Airport runway to consistently support heavier aircraft.

Table B.2: Current projects

	Project Title	Description	
PHX	West Runway Safety Area Improvements	Modifications to the west portion of Runway 7R/25L safety area in order to comply with FAA standards	
	PHX Sky Train	Connecting METRO Light Rail, East Economy Parking and Terminal 4 in 2013 and all Terminals by 2015	
	Terminal 3 Elevator Modernization	Modernization of service elevators #10 and #11	
	Terminal 3 Parking Garage Lighting and Facility Improvements	Designing and installation of a new LED lighting system for the Terminal 3 Parking Garage	
	Terminal 4 South Apron Reconstruction	Concrete panel replacement at all Terminal 4, South Concourse Aprons due to damage caused by Alkali-Silica Reaction	
	Southwest Airlines Operations & Ramp Renovations	Improvements to the Southwest Airlines operations and ramp areas at the S3 Concourse.	
	Swissport Terminal 4 Fuel Pit	Replacement of three fuel pits located at the S4, S3 and N3 Concourse Aprons.	
	US Airways PC Air Replacement	Demolition of existing units along with installation of new pipework and chillers within the north concourses.	
	DVT	north runway rehabilitation	Pavement milling and resurfacing, lighting and signage improvement and pavement striping on the north runway.
	FFZ	terminal building update Improvements to the landscaping, lighting and signage	Upgrades to the lobby waiting area, public viewing patio and restrooms as well as heating and air conditioning systems. Improve appearance and to facilitate finding airport businesses.

Table B.3: Future projects

	Project Title	Description
PHX	Terminal 4 Moving Walkways Replacement	Replacement of two 300-foot moving walkways located within the Terminal 4 transfer bridges with a more durable “Transit Grade” walkway system.
	Signage Master Plan Implementation	New Terminal 3 and Terminal 4 Curbside Signage.