1.0 Inventory of Existing Conditions

1.1 Airport Setting

Phoenix Deer Valley Airport is located within the northern limits of the City of Phoenix (the City), approximately 20 miles north of downtown (**Figure 1-1**) near the intersection of Interstate 17 and Loop 101, and adjacent to the cities of Glendale, Peoria and Scottsdale. DVT spans 914 acres and is located in Maricopa County which consists of 23 other incorporated cities and towns in addition to the City of Phoenix.

Maricopa County is located in the Sonoran Desert with elevations ranging from 500 to 2,500 feet above mean sea level (MSL). DVT's elevation is 1,478 feet MSL with surrounding environment encompassing both urban/sub-urban development and desert. South side access to DVT is provided from Deer Valley Road and north side access is provided via Airport Boulevard which connects to 7th Street on the east. The west end of DVT is bounded by 19th Avenue.

1.2 Airport History

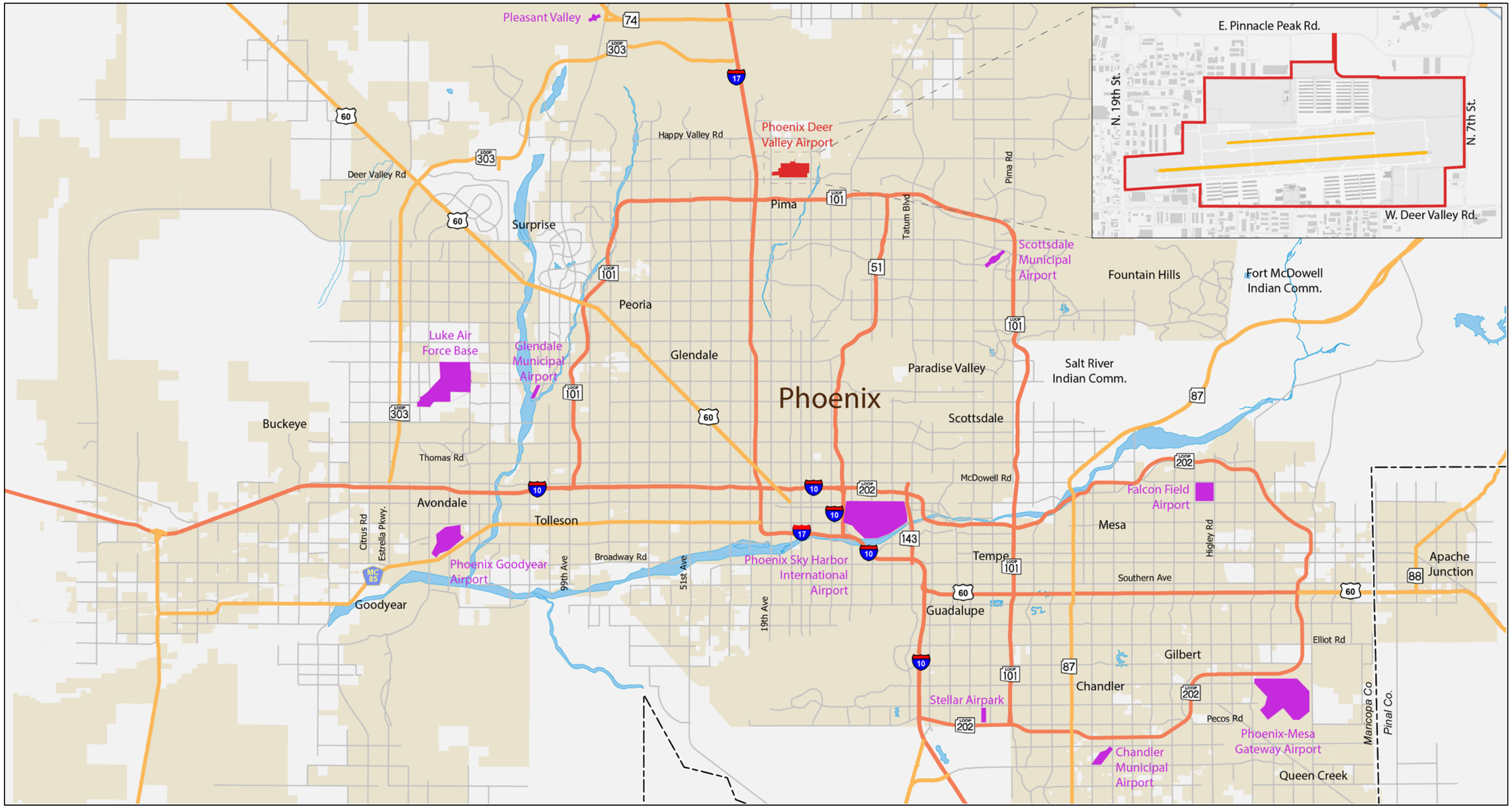
Phoenix Deer Valley Airport was founded in 1960 as a private airfield with a single runway on 482 acres of land. There was no control tower and limited support facilities and amenities were available.

The City purchased DVT eleven years later in 1971 and began operations with a temporary air traffic control tower (ATCT) sitting atop a four foot mound of dirt. In 1975 a new terminal and ATCT were constructed at which time the FAA assumed air traffic control (ATC) functions. At the same time the runway was widened and a parallel runway was built north of the existing runway. The first Master Plan for DVT was adopted by the Phoenix City Council in 1986. Projects coming out of the plan included lengthening of the south runway, construction of general aviation hangars and tie downs, and extension of the north runway/taxiway system.

Currently DVT is one of the United States' busiest general aviation airports and in 2012 DVT, with 355,000 operations, ranked ahead of Van Nuys Airport, with 268,000 operations, as the busiest general aviation airport in the country.

1.2.1 Recent Capital Improvements

The FAA has provided funding assistance to support projects at DVT through the Airport Improvement Program (AIP). In addition, the Arizona Department of Transportation (ADOT) has provided grant funding for projects at DVT. Over the past 10 years, the projects in **Table 1-1** have been financed and implemented through AIP grants, ADOT grants, and local funds.



DVT Vicinity Map

Figure 1-1

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HNTB

Table 1-1: DVT AIP and ADOT Funded Projects FY 2004 to 2014

Federal Fiscal Year	Project Description	AIP Grant Number	FAA Grant Funds	ADOT Grant Number	ADOT Grant Funds
2004	Taxiway Development and Utilities	AIP 3-04-0028-19	$1,821,200		
2004	Land Acquisition 177.5 acres (Pro-rated 8.04 acres)			ADOT E4S37	$550,000
2005	Acquire Land for Development (Reimbursement of 7.5 acres)	AIP 3-04-0028-20	$442,500		
2005	Land Acquisition 177.5 acres (Pro-rated 7.85 acres)			ADOT E5S25	$585,000
2006	Acquire Land for Development (Reimbursement of 19 acres)	AIP 3-01-0028-21	$3,000,000		
2006	Land Acquisition 177.5 acres (Pro-rated amount)			ADOT E6S43	$1,305,000
2007	Acquire Land for Development (Final Reimbursement)	AIP 3-04-0028-22	$900,000		
2007	Land Acquisition 177.5 acres (Pro-rated 20.11 acres)			ADOT E7S17	$1,500,000
2007	Reconstruct South Apron (Phase I)	AIP 3-04-0028-23	$3,500,799	ADOT E7S87	$900,000
2008 FAA/ 2009 ADOT	Improve Runway Safety Area – 07R/25L Hill Removal	AIP 3-04-0028-24	$1,093,316	ADOT E9F19	$28,773
2008	Install airfield signage entry points into movement area adjacent to non-movement area boundary markings			ADOT E8S02	$180,000
2008	Install apron security lighting at several locations			ADOT E8S07	$810,000
2009	Reconstruct South Apron – South and Northwest Areas (Phase II)	AIP 3-04-0028-25	$5,094,521	ADOT E9F63	$134,067

Federal Fiscal Year	Project Description	AIP Grant Number	FAA Grant Funds	ADOT Grant Number	ADOT Grant Funds
2009 FAA/ 2011 ADOT	Install Airfield Guidance Signs and Relocate holdlines, Install Northwest Apron Lighting, Install Runways Incursion Caution Bars, Reconstruct South and Northwest Apron [Phase III], Rehabilitate Runway Lighting and Electrical Vault - 7R/25L	AIP 3-04-0028-26	$3,136,441	ADOT E1F33	$82,538
2010 FAA/ 2011 ADOT	Improve Runway Safety Area - 7L/25R, Improve Runway Safety Area - 7R/25L	AIP 3-04-0028-27	$11,590,000	ADOT E1F44	$305,000
2011 FAA/ 2012 ADOT	Improve Airport Drainage (Drainage and Erosion Control)	AIP 3-04-0028-28	$5,540,800	ADOT E2F2D	$145,800
2011 FAA/ 2012 ADOT	Collect Airport Data for Airports Geographic Information System	AIP 3-04-0028-29	$748,600	ADOT E2F2A	$19,700
2012	Crack Seal & Rubberized Asphalt Emulsion Seal Coat: (R07R Sect. 1-6); (TC05 Sect. 2); (TC13 Section 1); (TC12 Sect. 1); (TC06 Sect. 1); (TC03 Sect. 1)			ADOT E2S65	$245,811
2012 FAA/ 2013 ADOT	Rehabilitate Runway – 7L/25R	AIP 3-04-0028-30	$1,135,600	ADOT E3F2U	$50,000
2012 FAA/ 2013 ADOT	Rehabilitate Runway – 7L/25R	AIP 3-04-0028-31	$2,103,699	ADOT E3F2V	$103,000
2013 FAA/ 2014 ADOT	Reconstruct Taxiway A (Phase II)	AIP 3-04-0028-32	$1,931,051	ADOT E4F3W	$94,793
2013	Reconstruct aircraft run-up area adjacent to Taxiway A			ADOT E3S2T	$1,800,000
2013 FAA/ 2014 ADOT	Airport Master Plan Update Study	AIP 3-04-0028-33	$398,350	ADOT E4F3V	$19,555
2014	Thin Asphalt Overlay/PFC			ADOT E4S1I	$487,457

Source: City of Phoenix Aviation Department and FAA AIP Grant Funding

1.3 Ownership and Management

Phoenix Deer Valley Airport is owned by the City and operated by the City of Phoenix Aviation Department (Aviation Department). The City also owns and operates Phoenix Sky Harbor International Airport (PHX) and Phoenix Goodyear Airport (GYR). The executive management team consisting of the Aviation Director and two Assistant Directors manage day-to-day operations and development at the three airports. The DVT Airport Manager oversees daily operations at DVT.

The Phoenix City Council and Mayor are the governing entity over DVT and appoint members to the Phoenix Aviation Advisory Board (PAAB) to review and submit to the City Council recommendations on basic airport policies, major airport projects, and concession contracts and leases. The PAAB consists of nine regular members appointed to four year terms along with the Aviation Director and current Chairman of the Airline Station Managers Council serving as non-voting ex-officio members.

1.4 Airport System Role

The 2008 Arizona State Airports System Plan (AZSAS) identifies DVT as a Public Use, National Plan of Integrated Airport Systems (NPIAS) Reliever airport. DVT serves to relieve general aviation air traffic from PHX. While DVT's facilities are physically capable of accommodating all segments of civil aviation, the City chooses not to provide commercial passenger service operations at DVT with the exception of air taxi service provided by fixed base operators (FBO). The City has identified PHX as the sole commercial passenger service airport within the three airports in their system.

1.5 Airport Facilities

Airport facilities described in the following sections include airside facilities, airspace control, and landside facilities.

1.5.1 Airside Facilities

DVT's airside facilities include the major functions that directly support aviation operations such as the runways, taxiways, aprons, navigational aids (NAVAIDs), and hangars.

1.5.1.1 Runways

DVT has two parallel runways, which are designated as 7L-25R and 7R-25L. The north parallel runway, Runway 7L-25R, measures 4,500 feet long by 75 feet wide, and the south parallel runway, Runway 7R-25L, measures 8,196 feet long by 100 feet wide. Runway 7R-25L has a displaced arrival threshold on each end of the runway. The west end of the runway, Runway 7R, has an 898 foot displaced landing threshold and the east end of the runway, Runway 25L, has a 915 foot displaced threshold. The east side is displaced due to nearby terrain and the west side is displaced in order to keep the arrival Runway Protection Zone (RPZ) on airport property. The two parallel runways are separated by a centerline to centerline separation of 700 feet.

The FAA defines a Runway Design Code (RDC) for every runway that is in the National Airspace System (NAS). The RDC identifies the design standards that a runway is built to and is made up of three components: Airplane Design Group (ADG), Aircraft Approach Category (AAC), and approach visibility minimums for a specific runway's critical aircraft. The AAC, summarized in **Table 1-2,** identifies the range of final approach speeds that can be accommodated by the runway. The ADG, summarized in **Table 1-3** and graphically depicted in **Figure 1-2**, is a function of the wingspan and tail height dimensions of the critical aircraft. The approach visibility minimum is defined as the approved minimum horizontal and vertical visibility that the specific runway accommodates.

Table 1-2: Aircraft Approach Category

Category	Approach Speed	Example
A	Speed less than 91 knots	Cessna 172
B	Speed greater than or equal to 91 knots, but less than 121 knots	Beech King Air, Citation X
C	Speed greater than or equal to 121 knots, but less than 141 knots	Gulfstream II, Gulfstream III, Boeing Business Jet (BBJ) I
D	Speed greater than or equal to 141 knots, but less than 166 knots	BBJ II, Gulfstream IV, Gulfstream V, Global Express
E	Speed greater than or equal to 166 knots	Certain military aircraft

Source: FAA AC 150/5300-13A, Change 1

Table 1-3: Airport Design Group

Group	Tail Height	Wingspan
I	Less than 20 feet	Less than 49 feet
II	Greater than or equal to 20 feet, but less than 30 feet	Greater than or equal to 49 feet, but less than 79 feet
III	Greater than or equal to 30 feet, but less than 45 feet	Greater than or equal to 79 feet, but less than 118 feet
IV	Greater than or equal to 45 feet, but less than 60 feet	Greater than or equal to 118 feet, but less than 171 feet
V	Greater than or equal to 60 feet, but less than 66 feet	Greater than or equal to 171 feet, but less than 214 feet
VI	Greater than or equal to 66 feet, but less than 80 feet	Greater than or equal to 214 feet, but less than 262 feet

Source: FAA AC 150/5300-13A, Change 1

ADG – I
Small Propeller Aircraft
Flight Training
Recreational Flight
Regional Air-Taxi

Examples:
Cessna 172
Piper PA-30 Twin Comanche
Beechcraft King Air

ADG – II
Medium & Small Business Jet
Large Propeller Aircraft

Examples:
Cessna Citation X
Dassault Falcon 900EX

ADG – III
Narrowbody Commercial Jet
Large Business Jet

Examples:
Boeing 737
Gulfstream G-VI

ADG – IV
Widebody Commercial Jet
Medium Range Heavy Jet

Examples:
Boeing 767
Airbus A300/A310

ADG – V
Widebody Commercial Jet
Long Range Jumbo Jet

Examples:
Boeing 777
Boeing 747-400

ADG – VI
Widebody Commercial Jet
Long Range "Super" Aicraft

Examples:
Airbus A380
Boeing 747-8

Aircraft Types Segmented by FAA Aircraft Design Group

Figure 1-2

Table 1-4 includes a summary of the various approach visibility minimums. The RDC is written as a combination of the three elements: AAC/ADG/Approach Visibility Minimum. The existing RDCs for Runways 7L-25R and 7R-25L are B/I/VIS and C/II/5000, respectively.

Table 1-4: Approach Visibility Minimums

Runway Visual Range (RVR)	Instrument Flight Visibility Category (Statute Miles)
VIS	Greater than 3 miles[1]
5000	Not lower than 1 mile
4000	Lower than 1 mile, but not lower than ¾ mile
2400	Lower than ¾ mile, but not lower than ½ mile
1600	Lower than ½ mile, but not lower than ¼ mile
1200	Lower than ¼ mile

Source: FAA AC 150/5300-13A, Change 1. For Categories A and B, the VIS component translates to a visibility of no less than 1.5 mile

1.5.1.2 Runway Protected Areas

Various areas surrounding, near or adjacent to runways must be protected according to FAA to ensure the safety of airfield operations. The specific types of areas are described below.

Runway Safety Area (RSA): A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of undershooting, overshooting or veering off of the runway. All existing runway safety areas currently meet design standard dimensions. The RSA must be graded, free of surface variations, and capable of supporting aircraft or rescue equipment on an emergency basis.

Runway Object Free Area (ROFA): An area centered on the runway provided to enhance the safety of aircraft operations by being free of objects, except for those required for air navigation or aircraft ground maneuvering purposes.

Runway Protection Zone (RPZ): A trapezoidal area off the runway end to enhance the protection of people and property on the ground. The RPZ begins 200 feet beyond the end of the runway threshold.

Runway Obstacle Free Zone (OFZ): The Runway OFZ is the airspace above and adjacent to the runway but below the 150 foot floor of the horizontal surface as identified in Federal Aviation Regulation (FAR) Part 77. The OFZ is required to be clear of all objects, with the exception of frangible visual navigation aids that are required to provide clearance protection for aircraft landing or taking off and missed approaches.

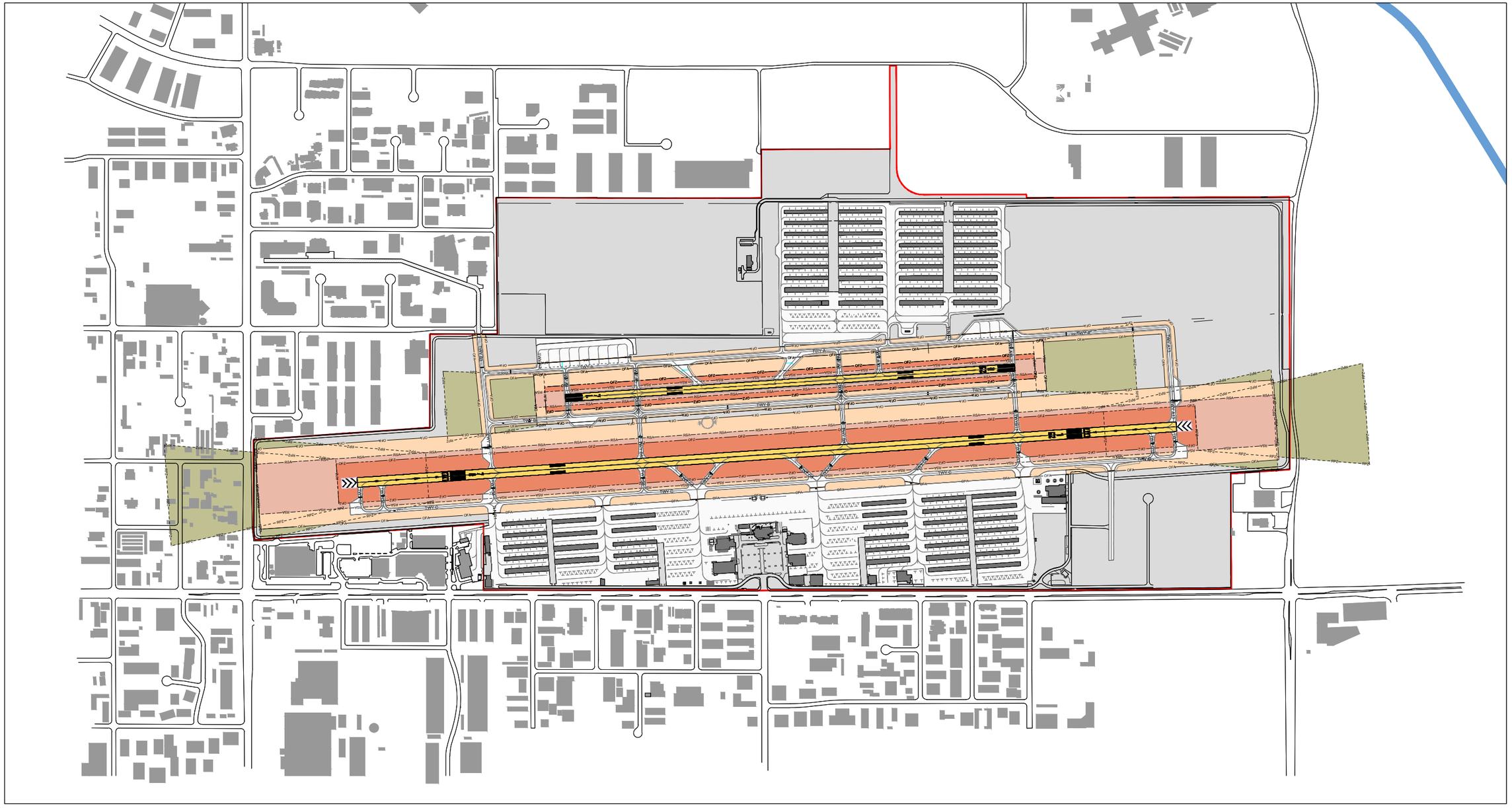
Runway Blast Pad: The surface adjacent to the ends of runways provided to reduce the erosive effect of jet blast and propeller wash.

A summary of the specific runway protected area dimensions provided at DVT are presented in **Table 1-5** and depicted on **Figure 1-3**. The protected areas are generally based on the size of the aircraft utilizing the runway and approach visibility minimums, with larger aircraft and lower approach visibility minimums resulting in larger required protected areas.

Table 1-5: Runway Dimensional Standards

Geometry Element	Runway 7R-25L	Runway 7L-25R
Runway Length	8,196'	4,500'
Runway Width	100'	75'
Runway Design Code	**C/II/5000**	**B/I/VIS**
Approach Visibility Minimum	1.25 mile	1.25 mile
Runway Shoulder Width	10'	10'
Runway Blast Pad Width	120'	95'
Runway Blast Pad Length	150'	150'
Maximum Crosswind Component	16 knots	10.5 knots
Runway Safety Area Width[1]	500'	120'
Runway Safety Area Length Beyond Stop End	1,000'	240'
Runway Safety Area Length Prior to Landing Threshold	600'	240'
Runway Object Free Area Width	800'	400'
Runway Object Free Area Length Beyond Stop End	1,000'	240'
Runway Object Free Area Length Prior to Landing Threshold	600'	240'
Runway Obstacle Free Zone Width	400'	400'
Runway Obstacle Free Zone Length Beyond Stop End	200'	200'
Arrival Runway Protection Zone Length	1,700'	1,000'
Arrival Runway Protection Zone Inner Width	500'	500'
Arrival Runway Protection Zone Outer Width	1,010'	700'
Departure Runway Protection Zone Length	1,700'	1,000'
Departure Runway Protection Zone Inner Width	500'	500'
Departure Runway Protection Zone Outer Width	1,010'	700'

Source: FAA AC 150/5300-13A, Change 1 and HNTB analysis
Note: For Airport Reference Code C-I, C-II, and D-II a RSA Width of 400' is Permissible (AC 150/5300-13A, Table 3-5)



Existing Runway/Taxiways and related Safety Areas

Figure 1-3

Note: Per guidance from the FAA Western-Pacific Region, the OFAs are depicted to extend to the back of the RPZ.

Legend

- Runway Pavement
- Taxiway/Apron Pavement
- Holdbar
- Building
- Airport Property
- Runway Safety Area (RSA)
- Runway/Taxiway Object Free Area (OFA)
- Runway Obstacle Free Zone (OFZ)
- Runway Protection Zone (RPZ)

N

0 1,000

SCALE IN FEET

1.5.1.3 Runway Use Configuration

DVT's two parallel runways are oriented east-west with magnetic compass headings of 74 and 254 degrees and operate in one of two flow patterns at all times, east flow or west flow. East flow is characterized by all takeoffs and landings originating from the west towards the east using Runways 7L and 7R. West flow is characterized by all takeoffs and landings originating from the east towards the west using Runways 25L and 25R. The flow pattern at DVT is dictated largely by the flow pattern that is in use at PHX. Typically, east flow is in use through late morning and subsequently changes to west flow for the remainder of the day.

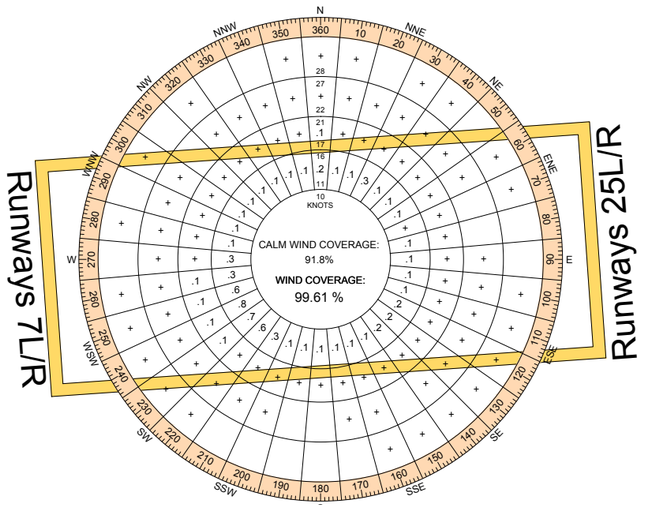
Generally, the most important consideration in determining runway use configuration is the speed and direction of the wind which affects both takeoff and landing distances. Operationally it is preferable for aircraft to take off and land into the wind. This headwind reduces the amount of groundspeed required by an aircraft to take off and reduces the groundspeed upon touchdown. It is also desirable for aircraft to operate with a minimal cross-wind component. Each aircraft has a different maximum cross-wind velocity limit and, generally, smaller aircraft are more affected by cross-wind components.

When a new runway is being planned, historical wind data are used to create a wind coverage diagram or wind rose which aids in determining the optimal runway direction. The wind rose reflects wind velocity, direction, and frequency of occurrences within a given time frame. **Figure 1-4** shows DVT's wind coverage diagram based on approximately 101,076 observations from the National Oceanographic and Atmospheric Administration's (NOAA) National Climactic Data Center (NCDC) between January 2003 and April 2014.

For an existing runway network the wind coverage indicates the percentage of time cross-wind components are within an acceptable velocity which, per FAA guidelines, must be a minimum of 95% regardless of weather conditions. The weather conditions are a reflection of the cloud ceiling and visibility and dictate which flight rules are used. In visual meteorological conditions (VMC), the cloud ceiling is at least 1,000 feet, the horizontal visibility is at least three statute miles and Visual Flight Rules (VFR) are in effect. In restricted visibility or instrument meteorological conditions (IMC), the cloud ceiling is less than 1,000 feet, the horizontal visibility is less than three statute miles, and Instrument Flight Rules (IFR) are in effect. At DVT, IMC conditions occur approximately 1.04% of the year.

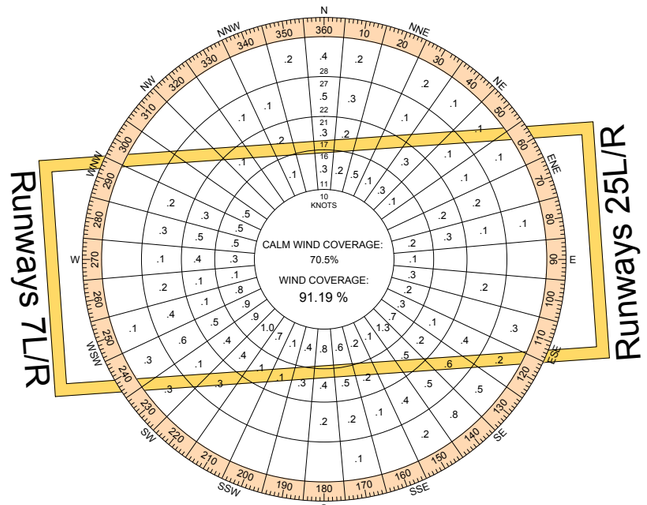
Wind coverage data are shown in **Table 1-6**. Under VFR, DVT runways cover 99.89% of historical wind observations, and under IFR, the runways cover 94.74% of historical wind observations. Under both VFR and IFR, the runways cover 99.83% of historical wind observations. As shown, the existing runway network is oriented to best maximize prevailing wind coverage and minimize cross-wind components. Calm wind coverage allows for a runway operating condition that enables maximum flexibility and operating capacity. During all weather conditions, calm winds occur at DVT approximately 91% of the time.

VFR WIND ROSE



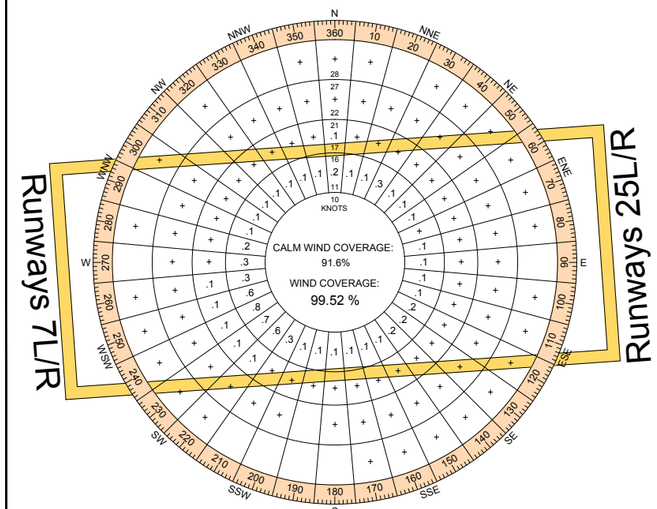
16 Knot Wind Rose - ARC: C-II

IFR WIND ROSE



16 Knot Wind Rose - ARC: C-II

ALL WEATHER WIND ROSE



16 Knot Wind Rose - ARC: C-II

RUNWAYS 7L/R-25L/R WIND COVERAGE

CROSSWIND COMPONENT	VFR COVERAGE	IFR COVERAGE	ALL WEATHER COVERAGE
10.5 Knots	97.15%	83.01%	97.00%
13 Knots	98.67%	87.39%	98.55%
16 Knots	99.61%	91.19%	99.52%
20 Knots	99.89%	94.74%	99.83%

Note: Data collected from the National Oceanic and Atmospheric Administration's (NOAA) National Climatic Data Center (NCDC); Station: Phoenix Deer Valley; Dates 1/2003 - 4/2014; Number of Observations: 101,076.

Note: IFR conditions occur approximately 1.04% of each year.

DVT Wind Roses and Wind Coverage

Figure 1-4

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NOT TO SCALE

Table 1-6: Runways 7L/R-25R/L Wind Coverage

Crosswind Component	VFR Coverage	IFR Coverage	All Weather Coverage
10.5 Knots	97.15%	83.01%	97.00%
13 Knots	98.67%	87.39%	98.55%
16 Knots	99.61%	91.19%	99.52%
20 Knots	99.89%	94.74%	99.83%

Source: NOAA NCDC and HNTB Analysis

Other pertinent climate information for DVT includes the average temperature distribution throughout the year and precipitation, both of which impact runway takeoff and landing length calculations. The average (mean) temperature of the hottest month (July) is 105.1° F. The mean temperature of the coolest month (January) is 65.6° F. The average annual precipitation at DVT is 8.4 inches, with August as the most precipitous month with an average rainfall of 1.35 inches. June is the least precipitous month with an average rainfall of 0.12 inches.

1.5.1.4 Runway Bearing Strengths

Runway pavement bearing strengths define the weight limits at or below which an aircraft may operate on the runways without causing undue stress on the pavement. Bearing strengths are classified by the various main landing gear system configurations that are able to operate on runways at DVT. Single wheel aircraft have one wheel on each side of their main landing gear and are typically characterized by piston aircraft as well as some turboprop and smaller jet aircraft. Double wheel aircraft have two wheels on each side of their main landing gear and are characterized by larger corporate jet and turboprop aircraft. Dual tandem aircraft have four wheels on each side of their main landing gear and are characterized by larger commercial aircraft. **Table 1-7** summarizes the runway pavement bearing strengths for each runway at DVT.

Table 1-7: Runway Pavement Bearing Strengths

Landing Gear System	Runway 7L-25R	Runway 7R-25L
Single Wheel (SW)	119,000 Lbs.	65,000 Lbs.
Double Wheel (DW)	186,000 Lbs.	93,000 Lbs.
Dual Tandem (DTW)	315,000 Lbs.	178,000 Lbs.
Double Dual Tandem (DDTW)	N/A	N/A

Source: Applied Pavement Technology, DVT Final Report, 2014
N/A = Not applicable

1.5.1.5 Taxiways

Taxiways provide a network of pavement for aircraft to move around the airfield, connecting various airfield components and providing access to the runways and aircraft aprons. Taxiways are part of the movement area, which is an area under positive control by ATC. Taxilanes connect aircraft parking positions with taxiways and are generally not part of the movement area. The geometrical design standards for taxiways and taxilanes are derived from the RDC and the Taxiway Design Group (TDG). Similar to the RDC, the FAA has defined the TDG to

determine taxiway/taxilane width standards, fillet radii, and some taxiway/taxilane separations[1]. TDG is based on the undercarriage dimensions of the critical aircraft (main gear width and main gear to cockpit distance). The RDC defines most of the separation standards and clearance offsets. **Table 1-8** defines DVT's taxiway/taxilane dimensional standards.

Table 1-8: Taxiway Dimensional Standards

Geometry Element	Runway 7R-25L	Runway 7L-25R
Runway Design Code	C/II/5000	B/I/VIS
Taxiway Design Group	1B	1A
Runway Centerline to:		
Holdline	250'	200'
Parallel Taxiway/Taxilane Centerline	300'	225'
Aircraft Parking Area	400'	200'
Taxiway Width	25'	25'
Taxiway Shoulder Width	10'	10'
Taxiway Edge Safety Margin	5'	5'
Taxiway Centerline to:		
Parallel Taxiway/Taxilane Centerline	105'	69'
Fixed or Moveable Object	65.5'	44.5'
Taxiway Safety Area Width	79'	49'
Taxiway Object Free Area Width	131'	89'
Taxiway Wingtip Clearance	26'	20'
Taxilane Centerline to:		
Parallel Taxilane Centerline	97'	64'
Fixed or Moveable Object	57.5'	39.5'
Taxilane Object Free Area Width	115'	79'
Taxilane Wingtip Clearance	18'	15'

Source: FAA AC 150/5300-13A, Change 1 and HNTB analysis

As depicted in **Figure 1-3,** Taxiways A, B, and C run parallel to the two runways and are the busiest taxiways at DVT. Taxiway A is located north of Runway 7L-25R and primarily serves aircraft originating or terminating their flights at the north side t-hangars. Taxiway A has a centerline to centerline separation with Runway 7L-25R of 300 feet. Taxiway B is located between the two parallel runways and has a centerline to centerline separation with Runway 7L-25R of 200 feet. Taxiway C, which is DVT's busiest taxiway, is located south of Runway 7R-25L and has a centerline to centerline separation with Runway 7R-25L of 300 feet. The complete taxiway network at DVT is depicted in **Figure 1-3** and the width and description of each taxiway is provided in **Table 1-9**.

[1] FAA *Advisory Circular 150/5300-13A Change 1, Figure 1-1*

Table 1-9: Existing Taxiways

Taxiway	Width (Feet)	Function
A	35	Parallel Taxiway
B	35	Parallel Taxiway
C	35	Parallel Taxiway
A3	42	Ramp Connector
A4	35	Runway Entrance/Exit
A5	35	Runway Entrance/Exit
A9	35	Runway Entrance/Exit
A10	35	Runway Entrance/Exit
A11	35	Runway Entrance/Exit
A13	35	Runway Entrance/Exit
B3	35	Ramp Connector
B4	35	Runway Entrance/Exit
B5	35	Runway Entrance/Exit
B9	35	Runway Entrance/Exit
B11	40	Runway Entrance/Exit
C1	37	Runway Entrance/Exit
C2	37	Runway Entrance/Exit
C3	37	Runway Entrance/Exit
C6	38	Runway Entrance/Exit
C7	38	Runway Entrance/Exit
C8	38	Runway Entrance/Exit
C9	38	Runway Entrance/Exit
C10	38	Runway Entrance/Exit
C11	37	Runway Entrance/Exit
C12	37	Runway Entrance/Exit
C13	37	Runway Entrance/Exit

Source: 2014 DVT eALP survey prepared by Woolpert

1.5.1.6 Pavement Condition

The Aviation Department commissioned an update to DVT's airport pavement management study (APMS) in 2013 to identify current pavement conditions in order to proactively plan for rehabilitation of failing pavement. Pavements have potential Pavement Condition Index (PCI) values that range from 0 (completely failed pavement) up to a value of 100 (pavements that are in excellent condition). A PCI value greater than 85 is generally considered to be in good condition and requires periodic preventative maintenance to stay in that range. Pavements with PCI values ranging between 56 and 85 generally require more significant maintenance such as mill and overlay or joint resealing. PCI values below 55 typically require significant rehabilitation including replacement of sub-grade material. Runway 7L-25R has a PCI value of 100, having been rehabilitated in 2012. Runway 7R-25L has an average PCI value of 76 indicating average wear. In review of DVT's parallel taxiways, Taxiway C will require the most near-term rehabilitation. Taxiway C's lowest PCI section was reported to be 59, indicating that near-term rehabilitation will be required. Taxiway A was recently reconstructed and relocated, and there are near-term plans to reconstruct and relocate Taxiway B to 300 feet from Runway

7L-25R's centerline. DVT's runway crossing taxiways, B3, B5, B9, and B11, will all require near-term rehabilitation as their PCI scores range between 15 and 42. A significant portion of the apron also requires near-term pavement rehabilitation. Low-scoring areas include: the City of Phoenix Police Air Support Unit (Air Support Unit) apron, Cutter Aviation apron, and Atlantic Aviation apron.

The study also reviewed the pavement classification number (PCN) for DVT's airfield infrastructure. According to the FAA, the PCN is a numerical value that represents relative load capacity of a pavement in terms of a standard single wheel load with a tire pressure of 181 pounds per square inch (psi). As discussed in Applied Pavement Technology's May 2014 Final Report, *Strength Analysis of Airfield Pavements at Phoenix Deer Valley Airport*, a PCN is composed of the following categories:

Pavement Type
- R = Rigid
- F = Flexible

Subgrade Strength Category
- A = High (CBR > 13; k-value > 442 psi/in)
- B = Medium (CBR = 8 to 13; k-value = 221 to 442 psi/in)
- C = Low (CBR = 4 to 8; k-value = 92 to 221 psi/in)
- D = Very Low (CBR < 4; k-value < 92 psi/in)

Maximum Allowable Tire Pressure
- W = High (no limit)
- X = Medium (146 to 218 psi)
- Y = Low (74 to 145 psi)
- Z = Very Low (< 73 psi)

Evaluation Method
- T = Results of technical evaluation
- U = Based on the current using aircraft

The number preceding the letters is the equivalent single wheel load based on the maximum allowable load for the critical aircraft for that pavement. Runway 7L-25R has a PCN designation of 50/F/A/X/T while Runway 7R-25L has a minimum PCN designation of 29/F/C/Y/T. The PCI and PCN information indicate that Runway 7R-25L will require near-term maintenance to continue to serve the fleet mix that use the runway today and into the future.

1.5.1.7 Airfield Lighting and Signage

Runway edge lighting provides aid to pilots in times of low visibility and during nighttime operations. At DVT, both runways have medium intensity runway edge lighting (MIRL), which is consistent with the established approach visibility minimums at DVT. Similarly, DVT's taxiways are equipped with medium intensity taxiway edge lighting (MITL). In addition, DVT has airfield signage to assist pilots

in identifying their location on the airfield and to convey critical information to pilots, such as distance remaining on the runway.

1.5.1.8 Aprons and Aircraft Parking

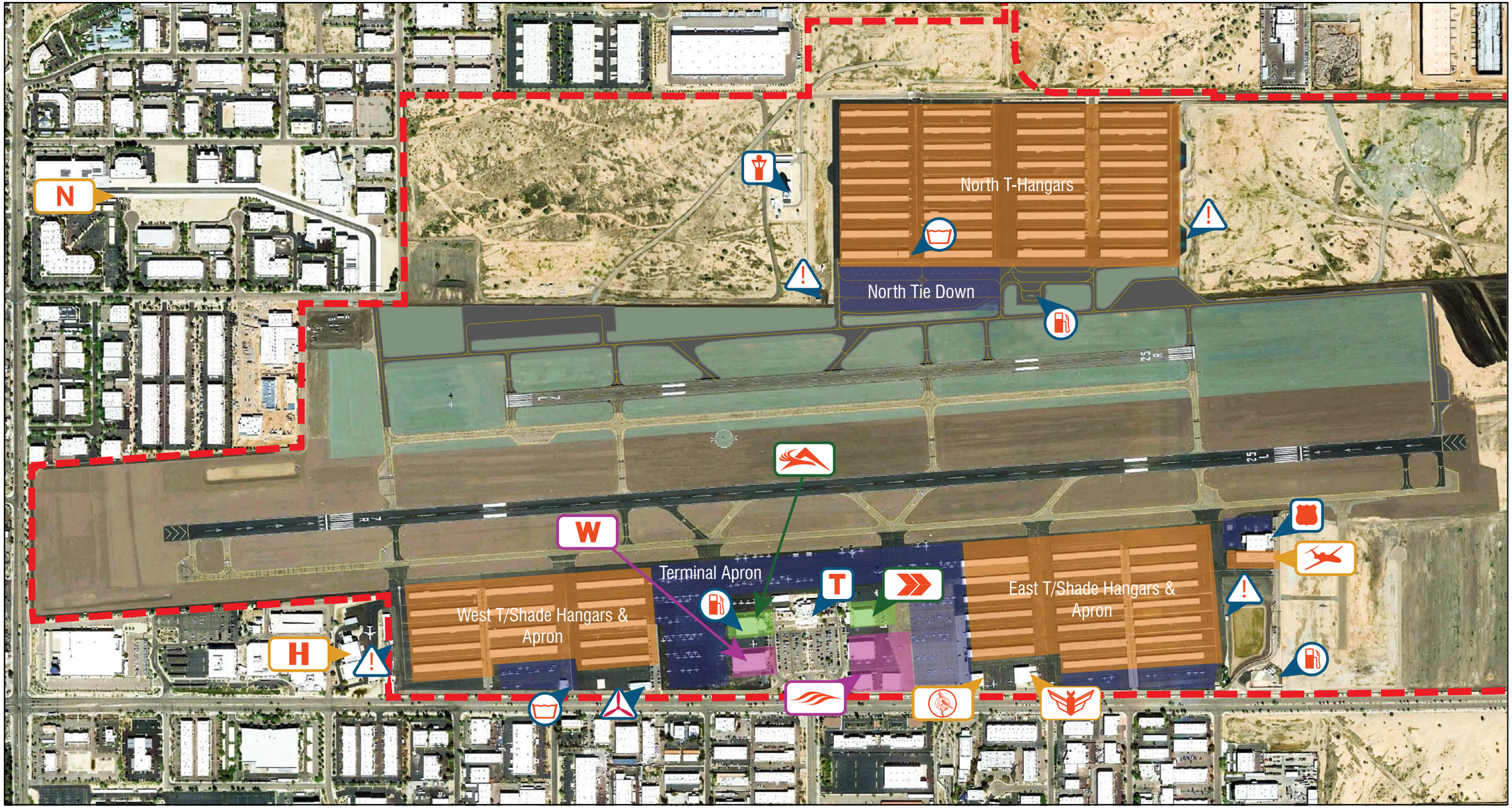
DVT's total aircraft apron area is approximately 247,760 square yards of pavement divided among seven apron areas and includes approximately 372 aircraft parking positions. The seven apron areas (shown on **Figure 1-5**) include: north t-hangar apron, east t-hangar apron, west t-hangar apron, terminal apron, Atlantic Aviation apron, Cutter Aviation apron, and the Police Air Support Unit apron.

The north t-hangar apron is located on the north side of DVT and has approximately 86 aircraft tie-down parking positions spanning nearly 61,000 square yards. This apron also provides access to and from the north t-hangars. The east t-hangar apron is located south of the furthest east t-hangars and provides 21 aircraft tie-down parking positions for based aircraft, including the Arizona Game and Fish Department. The east t-hangar apron is approximately 7,500 square yards. The west t-hangar apron is located south of the west t-hangars and provides 38 aircraft tie-down parking positions for based aircraft, spanning approximately 13,060 square yards. The terminal apron is located directly north of the terminal building and provides 52 aircraft tie-down parking positions, spanning approximately 37,500 square yards. The terminal apron is primarily used by transient aircraft. The Atlantic Aviation apron is located west of the terminal building and provides 70 aircraft tie-down parking positions, spanning approximately 60,600 square yards. The Atlantic Aviation apron is utilized by Atlantic Aviation for FBO operations and by Westwind School of Aeronautics' flight training aircraft. The Cutter Aviation apron is located east of the terminal and provides 96 aircraft tie-down parking positions, spanning approximately 61,800 square yards. The Cutter Aviation apron is utilized by Cutter Aviation for FBO operations and by TransPac Aviation Academy's flight training aircraft. The Police Air Support Unit apron is located east of the furthest t-hangars on the south side of DVT and provides two aircraft tie-down parking positions, spanning approximately 6,300 square yards. A summary of the seven aprons' size and parking positions is presented in **Table 1-10** below.

Table 1-10: Aircraft Aprons

Apron	Size (Square Yards)	Aircraft Parking Positions
North T-Hangar Apron	61,000	86
East T-Hangar Apron	7,500	21
West T-Hangar Apron	13,060	38
Terminal Apron	37,500	52
Atlantic Aviation Apron	60,600	70
Cutter Aviation Apron	61,800	96
Police Air Support Unit Apron	6,300	2
Total	**247,760**	**372**

Source: Coffman and Associates Airport Layout Plan Narrative Report, 2014



DVT Functional Areas

Figure 1-5

Legend

- Aircraft Hangars
- Aircraft Tie-Down Area
- Fixed Base Operators
- Flight Schools
- Airport Property Boundary
- Fueling Facility
- Aircraft Maintenance
- Wash Rack
- Hazardous Waste Collection Site
- FAA Air Traffic Control Tower
- Terminal Building
- Police Air Support Unit
- Civil Air Patrol

FBOs
- Atlantic Aviation
- Cutter Aviation

Flight Schools
- Westwind School of Aeronautics
- TransPac Aviation Academy

Other Facilities
- Warbirds Hangar
- Honeywell
- Executive Hangars
- Arizona Game & Fish Hangar
- Northwest Industrial Airpark

N

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HNTB

1.5.1.9 Aircraft Hangars

In addition to apron parking positions, DVT has three covered aircraft parking options, including t-hangars, shade hangars, and box hangars. T-hangars have the largest supply of the three covered aircraft parking options. There are 22 t-hangar buildings on the south side of DVT and 36 t-hangar buildings on the north side of DVT, totaling approximately 952,950 square feet. DVT offers two configurations of t-hangar buildings, 44 t-hangar buildings with 14 smaller parking positions and 14 t-hangar buildings with 12 larger parking positions. Shade hangars have the next largest supply at DVT. There are 12 shade hangar buildings, all of which are located on the south side of DVT, totaling approximately 221,411 square feet. There are 11 box hangar buildings throughout DVT, totaling approximately 161,317 square feet. DVT currently has a wait list of aircraft for large and small t-hangars, while there is current availability for shade hangars. Box hangars are managed by tenants and as such; they do not have a readily available wait list. A summary of DVT's hangar facilities is presented in **Table 1-11** below.

Table 1-11: Aircraft Hangars

Apron	Buildings	Aircraft Parking Positions	Area (Sq. Feet)
T-Hangars	58	768	952,950
Shade Hangars	12	240	221,411
Box Hangars	11	N/A[1]	161,317
Total	**81**	**1,008**	**1,335,678**

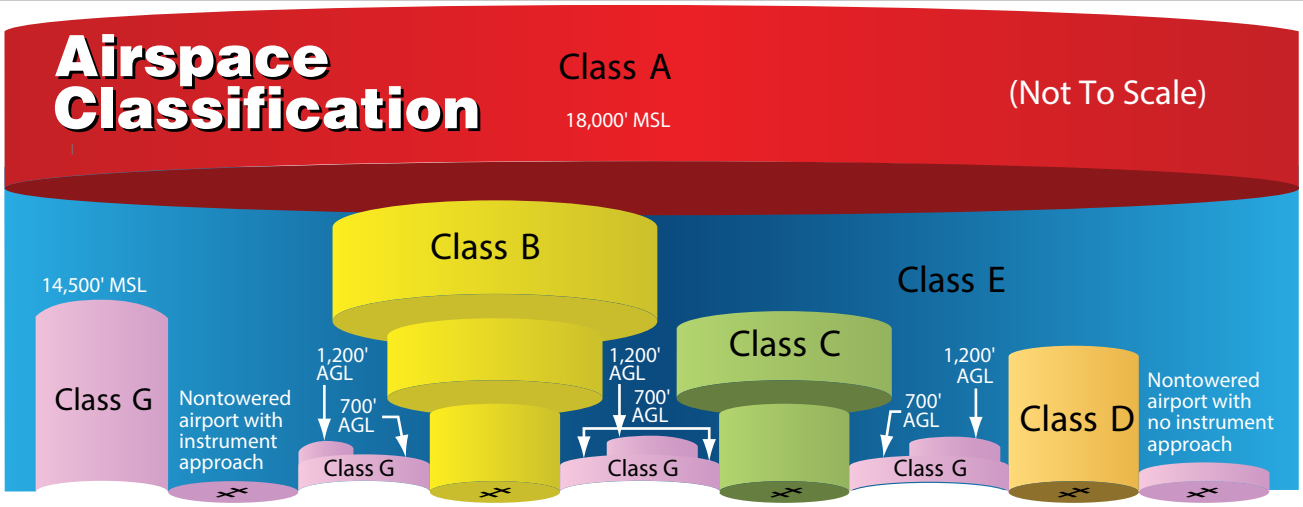
Source: HNTB Analysis and City of Phoenix Aviation Department
Note 1: Aircraft do not have defined parking positions within box hangars.

1.5.2 Area Airspace and Traffic Control

1.5.2.1 Airspace Structure

The National Airspace System is the network of United States airspace which includes air navigation facilities, equipment, procedures, airports, and air traffic controllers. The NAS consists of six, 3-dimensional classes, lettered A, B, C, D, E, and G, that differ based on the flight rules appropriate to the airspace and level of interaction between the aircraft and ATC. **Figure 1-6** shows the NAS classes, entry requirements, pilot qualifications, and visibility minimums.

The classification of airspace above DVT varies depending on whether or not the ATCT is open. During operational hours, which currently range from 6:00 am to 12:00 am (midnight) daily, DVT's airspace is classified as Class D airspace. While the ATCT is closed between 12:00 am (midnight) and 6:00 am, DVT's airspace is classified as Class G. Class D airspace applies to airports with an operational ATCT. DVT's Class D airspace is comprised of a cylinder with a radius of approximately 4.4 miles and a height extending from the surface up to, but not including 4,000 feet above DVT's reported airport elevation of 1,478 feet MSL. Aircraft must establish two-way radio communications with ATC prior to entering the airspace and maintain communications within the airspace. Control within the Class D airspace is handled by ATC controllers stationed at DVT's ATCT, located on the north side of DVT, who are responsible for coordinating arriving and departing aircraft and ground taxi movement on the airport surface.



	Class A	Class B	Class C	Class D	Class E	Class G
Entry Requirements	ATC clearance	ATC clearance	Prior two-way communications	Prior two-way communications	Prior two-way communications*	Prior two-way communications*
Minimum Pilot Qualifications	Instrument Rating	Private or Student certification—local restrictions apply.	Student certificate	Student certificate	Student certificate	Student certificate
Two-Way Radio Communications	Yes	Yes	Yes	Yes	Yes, under IFR flight plan*	Yes*
Special VFR Allowed	No	Yes	Yes	Yes	Yes	N/A
VFR Visibility Minimum	N/A	3 statute miles	3 statute miles	3 statute miles	3 statute miles**	1 statute mile †
VFR Minimum Distance from Clouds	N/A	Clear of clouds	500' below, 1,000' above, 2,000' horizontal	500' below, 1,000' above, 2,000' horizontal	500' below,** 1,000' above, 2,000' horizontal	Clear of clouds †
VFR Aircraft Separation	N/A	All	IFR aircraft	Runway operations	None	None
Traffic Advisories	Yes	Yes	Yes	Workload permitting	Workload permitting	Workload permitting
Airport Application	N/A	• Radar • Instrument approaches • Weather • Control tower • High density	• Radar • Instrument approaches • Weather • Control tower	• Instrument approaches • Weather • Control tower	• Instrument approaches • Weather	• Control tower

*Exception: temporary tower or control tower present
**True only below 10,000 feet
†True only during day at or below 1,200 feet AGL (see 14 CFR part 91)

AGL—above ground level
FL—flight level
MSL—mean sea level

National Airspace Classification

Source: FAA Instrument Flying Handbook (FAA-H-8083-15A), Ch. 8, The National Airspace System, 2009

Figure 1-6

When Class G airspace is in effect, the airspace in the vicinity of DVT is considered uncontrolled and ATC does not maintain responsibility for providing separation between aircraft. Class G airspace begins at the surface and terminates at the Class E airspace above DVT, approximately up to 1,200 feet above ground level.

Beyond the Class D airspace area at DVT, ATC is provided by the Phoenix Terminal Radar Approach Control (TRACON) facility located at PHX. The Phoenix TRACON controls the airspace within a 40-nautical mile radius around PHX and up to 21,000 feet above MSL excluding Luke Air Force Base's airspace. The Phoenix TRACON also controls airspace north of the valley when Prescott's ATCT is open. Beyond the Phoenix TRACON, aircraft flying en route to or from DVT on an IFR flight plan must correspond with the Air Route Traffic Control Center (ARTCC) in Albuquerque, New Mexico. The Albuquerque ARTCC controls airspace through portions of the southwestern U.S. from the Arizona / California border to Amarillo and El Paso, Texas.

1.5.2.2 Special Use Airspace

In addition to the airspace classifications discussed above, there are additional airspace limitations known as special use airspace (**Figure 1-7**), defined below. Restrictions are often put on aircraft flying through special use airspace depending on the classification of that airspace.

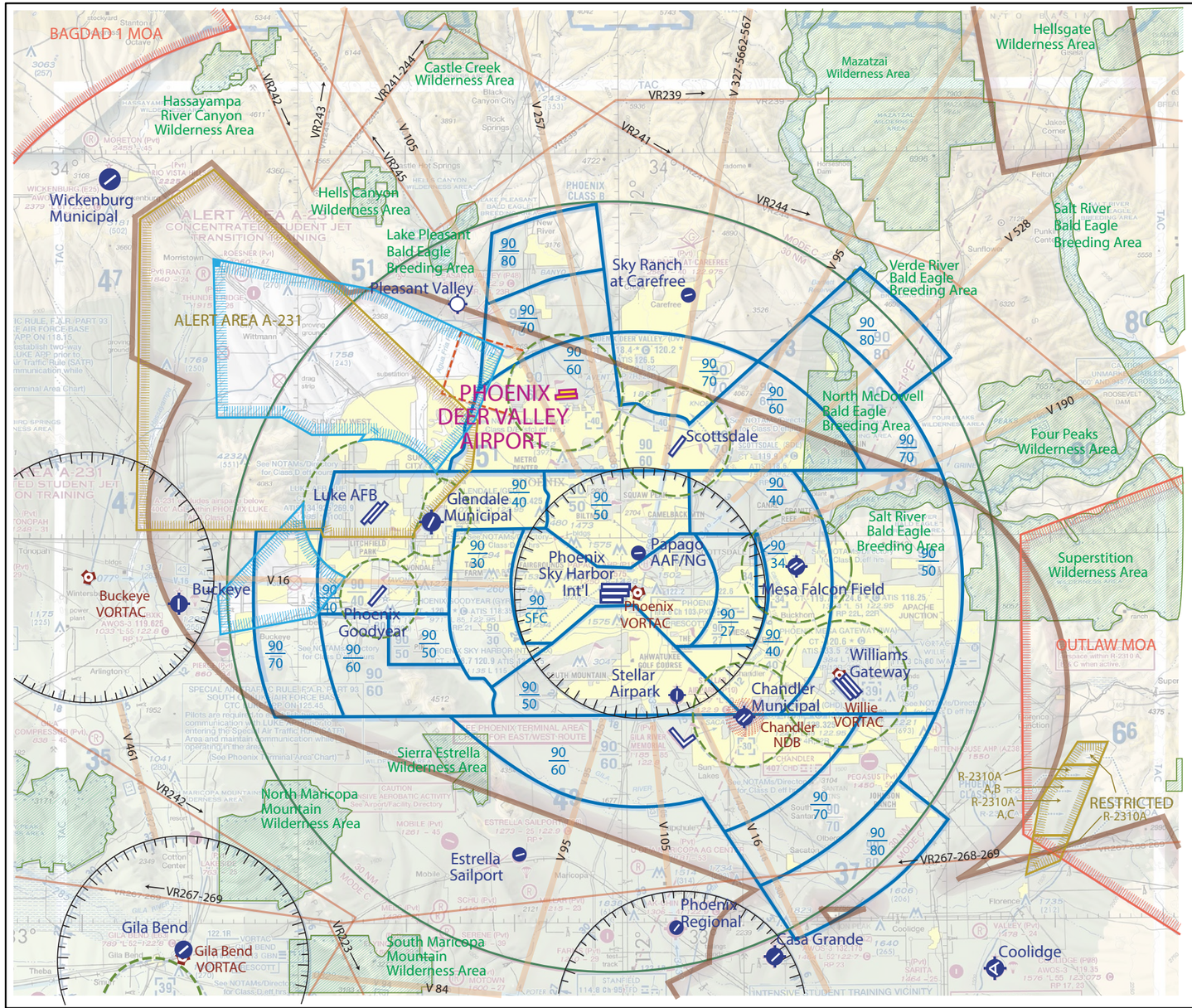
Military Operating Areas (MOAs): Within the vicinity of DVT there are several MOAs including Bagdad 1, Gladden 1, Turtle, and Quail to the northwest, Outlaw and Jackal to the east, and Sells 1 to the south. Aircraft wishing to cross these areas must be in contact with Albuquerque Center.

Military Training Routes: There are many military training routes throughout the Phoenix Metropolitan area, including visual and instrument routes. Aircraft can transit through/along these routes at or below 10,000 feet MSL.

Wilderness Areas: There are a large number of wilderness areas in the Phoenix Metropolitan area including national parks and protected-species breeding grounds. Aircraft are advised to maintain a minimum of 2,000 AGL over these locations. The Lake Pleasant Bald Eagle Breeding Area is located north of DVT.

Alert Areas: Alert Areas have large concentrations of aircraft, often for training purposes. The closest alert area to DVT is Alert Area A-231, which is located west of DVT surrounding Luke Air Force Base. Due to the volume of military training activity, a Special Air Traffic Rule (SATR) was established which requires aircraft to maintain two-way contact with Luke Air Force Base's Approach Control when entering or while in the airspace. The SATR does not prevent aircraft from entering the airspace.

Restricted Airspace: Restricted Airspace includes airspace closed to unauthorized aircraft and often includes potential hazard areas such as gunnery ranges, bomb ranges, and other military activities. Restricted Airspace is located to the far south and west of the Phoenix Metropolitan area.



Legend

- Airport with other than hard-surfaced runways
- Airport with hard-surfaced runways 1,500' to 8,069' in length
- Airports with hard-surfaced runways greater than 8,069' or some multiple runways less than 8,069'
- VORTAC
- Non-Directional Radiobeacon (NDB)
- VOR Compass Rose
- Military Operations Area (MOA)
- Prohibited, Restricted, Warning and Alert Areas
- Special Air Traffic Rule (SATR)
- Wilderness Areas
- Mode C Transponder
- Military Training Routes
- Victor Airways
- Class B Airspace
- Class D Airspace
- Class E Airspace with floor 700' above surface

Source: FAA Phoenix Terminal Area Chart (TPHX 92 Oct 16 -2014)

DVT/ Phoenix Airspace

Figure 1-7

N

NOT TO SCALE

1.5.2.3 Navigational Aids

Navigational Aids enhance the wayfinding ability and approach visibility of an airport. NAVAIDs are generally classified into three categories, precision NAVAIDs, non-precision NAVAIDs and visual NAVAIDs. Precision NAVAIDs include the components of a precision instrument approach: vertical and horizontal instrument guidance. These usually include: glideslope, localizer, precision approach radar (PAR), and select Global Positioning Systems (GPS). DVT does not have any existing NAVAIDs that would be considered as precision systems. DVT does have a wide variety of NAVAIDs that are considered non-precision systems. These include GPS, Airport Surveillance Radar 9 (ASR-9), near-by very high frequency (VHF) omni-directional range (VOR) with or without distance measuring equipment (DME), and tactical air navigation (TAC). DVT's visual NAVAIDs include precision approach path indicator (PAPI), medium intensity runway lighting (RITL), MITL, and non-precision runway markings.

1.5.2.4 Instrument Procedures

There are four existing instrument approach procedures (IAPs) published by the FAA for DVT, each with different approach visibility minima and decision altitudes depending on the aircraft approach category of the aircraft using the IAP and the specific approach used. **Table 1-12** lists the available IAPs for DVT and presents the lowest minimums for each approach. The minimums listed within the table are provided for Aircraft Approach Category C aircraft, consistent with DVT's existing airport reference code. The IAPs include the following approaches: Localizer Performance with Vertical Guidance (LPV), Lateral Navigation/Vertical Navigation (LNAV/VNAV), Lateral Navigation (LNAV) only, and circling approaches. It is important to note that there are not any existing straight-in approaches to Runway 7L-25R. Pilots can use a circling approach to either end of the runway provided the visibility is within the lowest published minimums.

In addition to the IAPs, DVT has a published instrument departure procedure, *Deer Valley One Departure (Obstacle)*, which presides over each of the four runway ends.

Table 1-12: Published Instrument Approach Procedures

Approach	Horizontal Visibility Minima (miles)	Vertical Decision Height (feet)
RNAV (GPS) Runway 7R		
LPV	1.25	400
LNAV/VNAV	2.25	700
LNAV	1.50	600
Circling	2.75	1,000
RNAV (GPS) Runway 25L		
LPV	1.25	400
LNAV	2.75	900
Circling	2.75	1,000
RNAV (GPS)-B	2.75	1,000
RNAV (GPS)-C	2.75	1,000

Source: FAA Instrument Approach Procedures – 8/13/2014

1.5.2.5 Visual Flight Procedures

Aircraft that are not operating under Instrument Flight Rules will operate under Visual Flight Rules. VFR aircraft have the responsibility of maintaining their own separations from other aircraft and obstacles. Given the flight training nature of DVT and the large number of based aircraft, DVT has many VFR flights daily.

1.5.2.6 Regional Airports

The Phoenix Metropolitan area has many airports in close proximity to each other (shown on **Figure 1-1**) that serve various purposes to the region, state, and NAS. In order of proximity to DVT, other regional airports and their associated primary role include:

- Scottsdale Municipal Airport – General Aviation Reliever - Primarily jet / corporate traffic
- Glendale Municipal Airport – General Aviation Reliever - Primarily light GA traffic
- Phoenix Sky Harbor International Airport – Primary Commercial Service Airport
- Luke Air Force Base – Active Air Force Base
- Phoenix-Goodyear Airport - General Aviation Reliever – Role is evolving to maintenance, repair, and overhaul
- Pleasant Valley Airport – General Aviation Reliever – Primarily light GA traffic including gliders
- Falcon Field Airport – General Aviation Reliever – Primarily light GA traffic and Boeing military helicopters
- Phoenix-Mesa Gateway Airport – Commercial Service Airport – Commercial service alternative for the Phoenix area
- Chandler Municipal Airport – General Aviation Reliever – Primarily light GA traffic

1.5.3 Landside Facilities

The landside facilities at DVT include the terminal building, Cutter Aviation and Atlantic Aviation FBOs, Westwind School of Aeronautics and TransPac Aviation Academy flight schools, fueling facilities, major utilities, and support facilities. DVT's landside facilities, including tenant locations, are illustrated in **Figure 1-5**.

1.5.3.1 Terminal Building

The Terminal Building is located on the south side of DVT between the Atlantic Aviation and Cutter Aviation FBOs. The Terminal Building is a two level structure with a total building area of approximately 20,800 square feet. The Terminal Building features several facilities including the Deer Valley Airport Restaurant, TeeBird Air Pilot Shop, Airport Administration and Operations, conference room, lounge, vending machines, outdoor observation areas, and a pilot briefing room.

1.5.3.2 Fixed Base Operators

There are two FBOs that are currently based at DVT: Atlantic Aviation and Cutter Aviation. Atlantic Aviation is located west of the Terminal Building and subleases

space to the Westwind School of Aeronautics. Atlantic Aviation's terminal building is approximately 2,000 square feet and includes a wide variety of amenities, including: pilot's lounge, waiting area/lounge, weather station, restroom, showers, kitchenette, and conference rooms. In addition to its FBO terminal, Atlantic Aviation provides a myriad of services to its clients including: charter flights, rental car, aircraft sales, aircraft rental, aircraft maintenance and parts supply, hangar rental, aircraft tie-down parking, avionics sales/repair, and aircraft fueling.

Cutter Aviation is located east of the terminal building and subleases space to the TransPac Aviation Academy. Cutter's terminal building is approximately 30,000 square feet and includes the following amenities: pilot's lounge, sleep room, lobby, restrooms, flight planning, and weather station. In addition to its FBO terminal, Cutter Aviation provides the following services to its clients: rental car, aircraft sales, hangar rental, aircraft tie-down parking, aircraft maintenance, avionics sales/repair, and aircraft fueling. A large portion of Cutter's apron is in poor condition and is in need of near-term pavement rehabilitation.

1.5.3.3 Flight Schools

There are two flight schools currently based at DVT, the Westwind School of Aeronautics and the TransPac Aviation Academy. Both flight schools offer comprehensive flight training programs for private pilots and career airline pilots. The Westwind School of Aeronautics operates from Atlantic Aviation's leasehold while the TransPac Aviation Academy operates from Cutter Aviation's leasehold. Both flight schools support significant foreign pilot training from rapidly growing countries including China, South Korea, and Vietnam. The flight schools operate daily, year-round, but are typically busiest Monday through Friday.

1.5.3.4 Other Tenants

The Police Air Support Unit includes fixed wing and rotor-craft aircraft to support the Police Department's mission within the City. The Air Support Unit is conveniently located on the southeast side of DVT, allowing the unit to rapidly respond to calls within the City without having to cross-over arriving/departing air traffic. Sections of the Air Support Unit's aircraft apron as well as main operations building are in poor condition. Fire and emergency support services are provided by the City of Phoenix Fire Department Station 36, located at the intersection of W. Melinda Lane and N. 9th Avenue just south of DVT.

DVT has two through-the-fence agreements in place. Through-the-fence operations have access to the airfield from private property not contained within the Airport Operations Area (AOA). Honeywell has a through-the-fence operation on the south side of DVT, located west of the west t-hangar apron. Aircraft have direct access to Taxilane R1 from Honeywell's property. The Northwest Industrial Air Park is the second through-the-fence operation and is located at the northwest corner of DVT. Aircraft must taxi across Williams Drive to enter the AOA.

1.5.3.5 Fueling Facilities

There are three on-airport fueling facilities at DVT, including the Sibran self-fueling station on the north side of DVT and fueling at both the Atlantic Aviation and Cutter

Aviation FBOs. Fuel providers generally supply only two varieties of aviation fuel, 100-Low Lead (AVGAS) and Jet-A fuel. AVGAS is used mainly by piston-powered general aviation aircraft while Jet-A is typically used by turboprop and jet-powered aircraft. The Sibran self-fueling station includes a single above-ground 15,000 gallon AVGAS tank. Atlantic Aviation's full-service fueling facilities include a single above-ground 17,000 gallon AVGAS tank and a single above-ground 25,000 gallon Jet-A tank. Cutter Aviation's full service fueling facilities include a single above-ground 20,000 gallon Jet-A tank, one above-ground 20,000 gallon AVGAS tank, one below-ground 20,000 gallon AVGAS tank, and a single below-ground 2,000 gallon red-dye diesel tank for ground service equipment. A summary of the various fuel tanks is provided in **Table 1-13** below.

Table 1-13: Fuel Tank Inventory

Provider	Type	Above/Below Ground	Volume (Gallons)
Sibran	AVGAS	Above	15,000
Atlantic Aviation	AVGAS	Above	17,000
Atlantic Aviation	Jet-A	Above	25,000
Cutter Aviation	AVGAS	Above/Below	40,000
Cutter Aviation	Jet-A	Above	20,000
Cutter Aviation	Red-Dye Diesel	Below	2,000
Total			**119,000**

Source: City of Phoenix Aviation Department and Tenant Interviews

1.5.3.6 Aircraft Rescue and Firefighting

DVT does not have an on-airport Aircraft Rescue and Firefighting (ARFF) station. Existing City of Phoenix Fire Station 36, which is located at the intersection of West Melinda Lane and North 9th Avenue, is the station assigned to respond to on-airport emergencies. It should be noted that Station 36 is approaching the end of its service life and will require significant reconstruction or relocation within the next 10 years.

1.5.3.7 Airport Maintenance

DVT operates a small area for airport related maintenance in the southwest corner of airport property between Honeywell and the southwest t-hangars. The area includes a building and maintenance yard to store equipment and vehicles.

1.5.3.8 Utilities

Major utilities serving DVT include water, sanitary sewer, electrical, phone, and data services. The City of Phoenix Water Department provides all water and sanitary sewer services for DVT. Electric service is provided by Arizona Public Service Corporation. Telephone and data services are provided by CenturyLink.

1.6 Vehicle Access and Circulation

1.6.1 Regional Access

Regional access to DVT is provided from Interstate 17 two miles west of DVT and Arizona (AZ) Highway 101 Loop one mile south of DVT which intersects with

Interstate 17 southwest of DVT. DVT is bordered by 19th Avenue to the west; Deer Valley Road to the south, and 7th Street to the east. Pinnacle Peak Road connects 7th Street and 19th Avenue north of DVT. An exit off Interstate 17 at Deer Valley Road and an exit off AZ Highway 101 Loop at 7th Avenue provide primary access to DVT while the Pinnacle Peak exit off Interstate 17 and the 7th Street exit off AZ Highway 101 Loop provide secondary access to DVT and facilities on the north side.

Adjacent to DVT, Deer Valley Road is an east-west six-lane thoroughfare with a median, sidewalks, bike lanes, and curbs. Running north-south, 19th Avenue has five-lanes plus a center turn lane (three northbound lanes and two southbound lanes) with bike lanes and sidewalks near DVT. To the east 7th Street is a two lane roadway running north-south with no curbs, sidewalks, or bike lanes. Extending from AZ Highway 101 Loop across Deer Valley Road, 7th Avenue provides access from the south directly to DVTs south entrance. It has four-lanes, a center turn lane, bike lanes, and sidewalks.

1.6.2 Access Roadways

There are two primary vehicular access points at DVT. The south entrance is located at Deer Valley Road and 7th Avenue, leading to the Terminal Building, FBO's and flight schools. Airport Boulevard runs from 7th Street to the north t-hangar area and FAA ATCT along the northern boundary of DVT. There is no direct access to the north area from 19th Avenue or Pinnacle Peak Road and vehicles coming from all directions must traverse 7th Avenue on the east side of DVT to reach Airport Boulevard.

Recently a short segment of 7th Avenue was constructed on the north side of DVT connecting Pinnacle Peak Road with the FedEx Ground Facility. This portion of the roadway is 850 feet long and 23 feet wide. If the roadway was widened and extended it would connect directly with the north-south alignment of Airport Boulevard connecting directly into the ATCT.

1.6.3 Internal Circulation

Internal circulation is provided through a combination of perimeter roads, the Terminal Building parking lot, taxilanes and aprons. To access facilities on the south side of DVT, vehicles can travel along the paved airport perimeter road running parallel with Deer Valley Road to both the east and west of the main Terminal Building parking lot. Airfield gates are positioned at either end of the perimeter road to restrict access to the airfield to authorized users. On the east end, the gate is located outside of the Police Air Support Unit.

On the north side of DVT, internal circulation is provided to the t-hangar facilities and FAA ATCT from Airport Boulevard. Past the airfield gates on the secure side of DVT, the airport perimeter road provides internal access around both ends of the runways, to the airport maintenance facility, and to all hangar and apron areas.

1.6.4 Parking and Transportation Options

1.6.4.1 Terminal Parking Lot

The primary general parking area is located south of the terminal and is 179,200 square feet, providing 361 parking spaces including 14 designated handicapped spaces. This parking area is used by employees and visitors to the terminal building as well as employees and customers of the FBOs and flight schools located near the terminal building.

1.6.4.2 Rental Cars

Enterprise offers rental car services from the Cutter Aviation facility Monday through Friday from 8:00 am to 5:00 pm and weekends from 10:00 am to 4:00 pm. Hertz Local Edition offers rental car services from the Atlantic Aviation facility Monday through Friday from 8:00 am to 5:30 pm and weekends from 08:00 am to 12:00 pm.

1.6.4.3 Bus

The Valley Metro transit system stops near DVT. Bus Route 19 runs from the west side of downtown Phoenix to DVT and has a stop located at 19th Avenue and Deer Valley Road. Route 19 operates Monday through Friday northbound from 6:18 am to 11:21 pm and southbound from 4:42 am to 9:10 pm. On the weekend, Route 19 operates northbound from 7:24 am to 8:57 pm and southbound from 5:36 am to 7:10 pm.

Bus Route 7 also runs from downtown Phoenix, on the east side, to DVT and stops along Deer Valley Road at both 19th Avenue and 7th Street. Route 7 operates Monday through Friday northbound from 7:01 am to 11:13 pm and southbound from 5:01 am to 10:02 pm. On the weekend, Route 7 operates northbound from 7:23 am to 9:01 pm and southbound from 6:04 am to 7:44 pm.

1.6.4.4 Hangar Parking

Vehicular parking is provided at the hangar facilities with 213 spaces provided near the west t-hangars off of the south perimeter road. An additional 275 spaces are provided near the east t-hangars also accessed off the south perimeter road. In the north 269 spaces are provided for the north t-hangars accessed from Airport Boulevard.

1.7 Environmental Inventory

This section summarizes the environmental factors considered in the evaluation of alternative development options. Available information about the existing environmental conditions at DVT has been derived from the previous Master Plan Update and confirmed through City and agency resources.

1.7.1 Wetlands

The U.S. Army Corps of Engineers (ACOE) regulates the discharge of dredge and/or fill material into waters of the United States, including adjacent wetlands, under Section 404 of the Clean Water Act.

Wetlands are defined by *Executive Order 11990, Protection of Wetlands,* as "those areas that are inundated by surface or groundwater with a frequency sufficient to support and under normal circumstances does or would support a prevalence of vegetation or aquatic life that requires saturated or seasonally saturated soil conditions for growth and reproduction." Categories of wetlands include swamps, marshes, bogs, sloughs, potholes, wet meadows, river overflows, mud flats, natural ponds, estuarine area, tidal overflows, and shallow lakes and ponds with emergent vegetation. Wetlands exhibit three characteristics: hydrology, hydrophytes (plants able to tolerate various degrees of flooding or frequent saturation), and poorly drained soils.

The ACOE previously determined there were no wetlands on DVT property. A review of National Wetland Inventory (NWI) maps prepared by the U.S. Fish and Wildlife Service also indicate a lack of wetland resources within the DVT environs.

1.7.2 Floodplains

As defined in *FAA Order 1050.1E,* floodplains consist of "lowland and relatively flat areas adjoining inland and coastal water including flood prone areas of offshore islands, including at a minimum, that area subject to one percent or greater chance of flooding in any given year." Federal agencies are directed to take action to reduce the risk of flood loss, minimize the impact of floods on human safety, health and welfare, and restore and preserve the natural and beneficial values served by floodplains. Floodplains have natural and beneficial values, such as providing groundwater recharge, water quality maintenance, fish, wildlife, plants, open space, natural beauty, outdoor recreation, agriculture and forestry. *FAA Order 1050.1E (12) (*c) indicates that "if the proposed action and reasonable alternatives are not within the limits of a base floodplain (100-year flood area)," that it may be assumed that there are no floodplain impacts. The limits of base floodplains are determined by Flood Insurance Rate Maps (FIRM) prepared by the Federal Emergency Management Agency (FEMA). According to the City of Phoenix General Plan, DVT is not located within a floodplain.

1.7.3 Water Supply and Quality

The City maintains a Water Facilities Master Plan that is updated approximately every five years. Water supplies for DVT are provided by the City of Phoenix Water Services Department. The City currently operates and maintains approximately 5,600 miles of water mains and operates five water treatment plants, including one near DVT.

The stormwater permitting process provides a mechanism to require the implementation of controls designed to prevent harmful pollutants from being washed into local water bodies by stormwater runoff. The City is currently regulated under the Arizona Pollutant Discharge Elimination System (AZPDES) Stormwater Multi-Sector General Permit for Industrial Activities AZMSGP2010-002 (MSGP-2010) released by the Arizona Department of Environmental Quality (ADEQ) for its stormwater runoff. The Aviation Department prepared a Stormwater Pollution Prevention Plan (SWPPP) in accordance with MSGP-2010 for DVT in April 2014. The

Aviation Department has identified airport tenants that conduct industrial activities at DVT as co-permittees and in addition to co-permittees, the Aviation Department requires all airport tenants and operators conducting activities with the potential to cause stormwater pollution to comply with the SWPPP. Entities potentially subject to the MSGP-2010 include tenants such as FBOs and others providing on-site services, such as aircraft, vehicle and equipment wash service providers and aircraft, vehicle and equipment maintenance providers. Companies requiring MSGP-2010 coverage for industrial activities and choosing not to participate as co-permittees must develop and implement their own SWPPPs which are required to be as stringent as the Aviation Department's SWPPP.

There are also entities doing business at DVT whose activities may impact stormwater quality but that are not covered by the MSGP-2010, such as private general aviation tenants and car rental agencies. These entities are not co-permittees but must comply with the requirements of this SWPPP in order to operate at DVT.

DVT has a Wash Rack Policy that was enacted in the 1990's specifying that only general aviation aircraft and Aviation Department owned vehicles are allowed to be washed on-site and only in Aviation Department provided wash racks because of storm water drainage controls.

1.7.4 Biotic Resources

Biotic resources refer to those flora and fauna (i.e., vegetation and wildlife) habitats which are present in an area. Impacts to biotic communities are determined based on whether a proposal would cause a minor permanent alteration of existing habitat or whether it would involve the removal of a sizable amount of habitat, habitat which supports a rare species, or a small, sensitive tract.

DVT is located in the Sonoran Desert which is home to a wide variety of wildlife and the most diversely populated vegetative growth of any desert in the world. The desert is home to numerous threatened and endangered plant and animal species. **Table 1-14** depicts federally-registered threatened and endangered species and species of special concern listed for Maricopa County.

In 1999, two biological evaluations were completed for parcels located adjacent to DVT. During these studies, specifically for the Southwestern willow flycatcher and the Cactus ferruginous pygmy owl (a previously listed endangered species), it was determined the habitats required by the species listed at that time did do not exist on DVT property.

Table 1-14: Threatened and Endangered Species of Maricopa County

Common Name	Scientific Name	Status
Birds		
Bald eagle	Haliaeetus leucocephalus	Recovery
Yuma clapper rail	Rallus longirostris yumanensis	Endangered
American peregrine falcon	Falco peregrinus anatum	Recovery
Brown pelican	Pelecanus occidentalis	Recovery
California least tern	Sterna antillarum browni	Endangered
Yellow-billed Cuckoo	Coccyzus americanus	Proposed Threatened
Mexican spotted owl	Strix occidentalis lucida	Threatened
Southwestern willow flycatcher	Empidonax traillii extimus	Endangered
Sprague's pipit	Anthus spragueii	Candidate
Fishes		
Colorado pikeminnow	Ptychocheilus lucius	Endangered
Gila topminnow	Poeciliopsis occidentalis	Endangered
Woundfin	Plagopterus argentissimus	Experimental Population
Roundtail chub	Gila robusta	Candidate
Desert pupfish	Cyprinodon macularius	Endangered
Razorback sucker	Xyrauchen texanus	Endangered
Flowering Plants		
Acuna Cactus	Echinomastus erectocentrus	Endangered
Arizona Cliff-rose	Purshia subintegra	Endangered
Mammals		
Sonoran pronghorn	Antilocapra americana sonoriensis	Endangered
Lesser long-nosed bat	Leptonycteris curasoae yerbabuenae	Endangered
Reptiles		
Tucson shovel-nosed Snake	Chionactis occipitalis klauberi	Candidate
Sonoran desert tortoise	Gopherus morafkai	Candidate

Source: U.S Fish and Wildlife Service, Maricopa County Species online report, August 2014

The Southwestern willow flycatcher breeds in dense riparian areas and most nests found have been located near water or saturated soil conditions. It is likely that some transient flycatchers of varying subspecies may be observed in the project area; however, breeding habitat for this species is not present in the project area. The previously listed Cactus ferruginous pygmy owl (removed from the federally-registered threatened and endangered species list in 2011) is known to occur in desert-scrub habitats. This habitat is found near DVT; however, the vegetation sparsely covers the area and is not dense enough to constitute the vegetation structure required by the pygmy owl.

According to the Arizona Game and Fish Department's HabiMap™ tool, distributions of the federally-registered threatened and endangered species do not occur on DVT

property. A Breeding Bird Query showed that none of the birds listed as threatened or endangered are determined to be possible, probable, or confirmed breeding bird species in the DVT map quadrant. A Heritage Data Query which creates a sensitive species list generated from the Heritage Data Management System based on known occurrences also showed no listed species as occurring in the DVT map quadrant.

It should be noted that the occurrence of federally listed transient species may appear in the project area, however, such appearances would be expected to be infrequent, as the habitat which supports most of the species identified consists of treed areas or locations near rivers, streams, or marshes. Field surveys would be needed to verify this determination.

DVT does not currently have a wildlife management plan, although new FAA requirements specify that general aviation airports perform a wildlife hazard assessment. The results of the assessment may require a wildlife management plan. ADOT is conducting a state effort that will assess each general aviation airport in its plan, which includes DVT. The project kicked-off in September 2014 and will continue with one year of observations. In 2012, there was only one bird strike at DVT.

The protection of birds is regulated by the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). The U.S. Fish and Wildlife Service provides a list of migratory birds within their Information, Planning, and Conservation System (IPaC) tool. As shown in **Table 1-15**, 16 birds are on the migratory birds of concern list for the DVT vicinity.

1.7.5 Air Quality

The Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for seven criteria pollutants which include: Ozone (O_3), Carbon Monoxide (CO), Sulfur Dioxide (SO_2), Nitrogen Dioxide (NO_2), Particulate Matter (PM_{10}), Fine Particulate Matter ($PM_{2.5}$), and Lead (Pb). The PM_{10} and $PM_{2.5}$ are cited as Particle Pollution.

Primary air quality standards are established at levels to protect the public health and welfare from any known or anticipated adverse effects of a pollutant. The Phoenix area is designated as a nonattainment area for Particulate Matter (as PM_{10}) and Ozone (8-hour), and is designated as a maintenance area for CO. In 2008, the EPA lowered the primary air quality standard for lead and required mandatory lead monitoring for certain facilities including DVT. Maricopa County installed a lead monitor and began collecting samples in July 2010. The observed lead values through February 2014 are significantly less than the primary air quality standard.

Table 1-15: Migratory Birds of Concern in Airport Vicinity

Species Name	Bird of Conservation Concern (BCC)	Seasonal Occurrence in Project Area
Bald eagle (*Haliaeetus leucocephalus*)	Yes	Wintering
Bell's Vireo (*Vireo bellii*)	Yes	Breeding
Bendire's Thrasher (*Toxostoma bendirei*)	Yes	Year-round
Black-chinned Sparrow (*Spizella atrogularis*)	Yes	Breeding
Brewer's Sparrow (*Spizella breweri*)	Yes	Wintering
Burrowing Owl (*Athene cunicularia*)	Yes	Year-round
Chestnut-collared Longspur (*Calcarius ornatus*)	Yes	Wintering
Costa's Hummingbird (*Calypte costae*)	Yes	Breeding
Gila Woodpecker (*Melanerpes uropygialis*)	Yes	Year-round
Golden eagle (*Aquila chrysaetos*)	Yes	Year-round
Lucy's warbler (*Vermivora luciae*)	Yes	Breeding
Mountain plover (*Charadrius montanus*)	Yes	Wintering
Prairie Falcon (*Falco mexicanus*)	Yes	Year-round
Red-faced Warbler (*Cardellina rubrifrons*)	Yes	Breeding
Sonoran Yellow Warbler (*Dendroica petechia ssp. sonorana*)	Yes	Breeding
Williamson's Sapsucker (*Sphyrapicus thyroideus*)	Yes	Wintering

Source: U.S. Fish and Wildlife Service IPaC Initial Project Scoping Tool (DVT Vicinity), August 2014

Air contaminants increase the aggravation and the production of respiratory and cardiopulmonary diseases. The standards also establish the level of air quality which is necessary to protect the public health and welfare, including among other things, effects on crops, vegetation, wildlife, visibility, and climate, as well as effects on materials, economic values, and on personal comfort and well-being.

As part of the EPA's review of impacts of low lead AVGAS at general aviation airports, the Maricopa County Air Quality Department installed a lead monitor at DVT. Lead levels have consistently been below regulated levels.

1.7.6 Hazardous Materials and Solid Waste

The latest environmental agency database review of possible hazardous materials issues at DVT was completed in September 2008 during the acquisition of the 40-acre vacant land parcel located near the southeast corner of Deer Valley Road on 7th Street. The only issues noted in this report were that DVT is listed as a Small Quantity Generator of hazardous waste; ten underground storage tanks (USTs) were formerly operated on DVT property; and two leaking UST (LUST) cases were located on DVT property but remediated in 1997 and Lone Cactus Landfill didn't receive hazardous waste, hazardous spills, or illegally dumped materials.

Information on fuel facilities can be found in the Section 1.5.3.5. Small amounts of regulated materials are stored on DVT property in the Aviation Department's maintenance yard, and at each of the larger tenant sites.

Solid waste disposal facilities are known to attract large numbers of hazardous wildlife, particularly birds, and landfills are considered hazards to aircraft if they are within 5,000 feet of an airport. Lone Cactus Landfill is located approximately 1,000 feet south of the DVT property boundary; however, it is identified as a Construction and Demolition Debris Landfill. According to FAA's AC 150/5200-33B (*Hazardous Wildlife Attractants on or Near Airports*), Construction and Demolition Debris landfills are less likely to attract hazardous wildlife and are acceptable if maintained in an orderly manner, admit no putrescible waste, and are not co-located with other waste disposal operations. The 2008 Phase I report indicated that the Lone Cactus Landfill accepts primarily construction and demolition debris and indicated that it does monitor for methane gas.

The Skunk Creek Municipal Solid Waste Landfill, closed in 2006, was located northwest of DVT on Happy Valley Road, west of I-17 approximately four miles (21,120 feet) from DVT. The landfill was replaced with the Phoenix North Transfer Station, located east of I-17 approximately seven miles from DVT. The Cave Creek Transfer Station is located approximately 2.5 miles (13,200 feet) east of DVT and the Deer Valley Transfer Station is located approximately 1.5 miles (7,920 feet) west of DVT. A transfer station is where municipal solid waste is consolidated from local collection vehicles and reloaded into larger trailers for shipment to disposal sites. These transfer stations are all located more than 5,000 feet from DVT and therefore do not qualify as a wildlife hazard to aircraft operating at DVT.

There are four hazardous waste accumulation sites provided at DVT located at the far west end of the west t-hangar apron, the far east end of the east t-hangar ramp, and at the east and west ends of the north t-hangar apron (shown on **Figure 1-5**). These sites are places for DVT's users to deposit wastes, including: oil, batteries, hydraulic fluids, solvents, aircraft tires and other waste. These wastes are deposited into proper containers inside containment. The Aviation Department monitors the sites weekly and arranges for proper waste determination, waste profiling, waste manifesting, and waste transport for treatment or disposal.

1.7.7 Historical and Cultural Resources

Two cultural resource surveys were completed on DVT property in 2004. The first survey was conducted on a 40-acre parcel planned for hangar development. Nine isolated resource sites were recorded in this area. The second survey consisted of an 80-acre parcel for the ATCT. This survey indicated four isolated sites. These sites represent a scatter of prehistoric ceramics and lithics and are associated with the general prehistoric use of the area. No significant archaeological resources were identified during either survey.

As noted above, no significant archaeological resources were found during previous cultural resource surveys; however, the area does have a rich prehistory. The possibility of artifacts being uncovered on DVT property that has not been previously disturbed cannot be ruled out.

1.8 Sustainability

As part of this Master Plan an evaluation of possible sustainability initiatives was conducted (Chapter 8, Sustainability Considerations). Sustainability initiatives focus on those, which if implemented, may result in reduced energy consumption and/or environmental impacts from normal airport development and operation. The Aviation Department is committed to incorporating sustainability principles and practices into their operational, management and administrative processes as witnessed by the Aviation Department's development of a Sustainability Management Plan. Likewise the Aviation Department's use of the U.S. Green Building Council's Leadership in Energy Environmental Design (LEED®) standards and has developed a *Sustainable Horizontal Design and Construction Green Guide* (DCS Green Guide) prepared by CDM in December 2010. Specific sustainability considerations and initiatives at DVT are discussed in the following sections.

1.8.1 Design and Construction

In 2010 the Aviation Department developed the DCS Green Guide addressing horizontal construction projects (e.g. non-building design and construction where LEED® standards do not apply) to reduce impacts and resource use. The DCS Green Guide outlines performance standards for heavy civil design and construction and was intended to be consistent with the sustainability initiatives developed by the City for vertical construction through implementation of Leadership in Energy and Environmental Design (LEED®) standards. The DCS Green Guide includes Life Cycle Analysis and Life Cycle Cost Analysis tools for use during project development.

Specific construction related goals are also applied to each project, such as recycling pavement materials. Where feasible, excavated soils, asphalts, and concrete removed during rehabilitation projects are reused in new pavement designs, reducing waste and debris transportation emissions.

1.8.2 Waste Management and Recycling

At DVT, some metals and green waste are recycled. Recyclables collected in the terminal are collected by the City's Public Works Department and landfilled waste is collected by Waste Management Inc. The Aviation Department has a dedicated Recycling Coordinator who manages and plans to expand the existing recycling program and provide recycling to tenants.

1.8.3 Air Quality

Currently none of the eight fleet vehicles operated by the Aviation Department at DVT are powered using alternative fuels. At this time the alternative fuel fleet is limited due a lack of alternative fuel infrastructure at DVT and adding the infrastructure for a small vehicle fleet is not cost effective, however, the Aviation Department is always looking for opportunities to increase the sustainable fleet. The Aviation Department manages an on-airport fueling facility for Aviation Department vehicles and equipment. The fueling facility is located at the maintenance facility on the far west end of DVT property.

The Aviation Department uses a number of methods to reduce airborne dust at DVT. Leftover millings from other aviation projects are used to create roadway surfaces and gravel is applied to disturbed soil areas. During construction, water is applied to disturbed soil and dust palliatives are applied to soil stockpiles per dust control plans. Gravel mulch has been applied to the infields so that mowing is avoided.

1.8.4 Water Management and Water Quality

DVT is conducting a water audit as part of the Sustainability Management Plan and is developing an action plan for water conservation. As part of this process DVT will be a member airport of the water conservation task force.

Water conservation is a priority for the City and the Aviation Department has implemented water conservation measures to support City goals and future sustainability planning. As part of the Sustainability Management Plan to support the Aviation Department's water conservation goals and future sustainability planning, the City conducted an inventory of all metered water use at DVT in order to establish a water usage baseline. The inventory included all Aviation Department water meters for active accounts listed by the Aviation Department and City Water Services Finance Department. Additionally, a high level evaluation of water usage was conducted to identify monthly water use per meter, categorical use by City cost center code, and sub-metering recommendations for large water demand equipment near meters inventoried.

As part of the inventory, baseline usage was separated among the 14 water meters inventoried as commercial and landscape consumption. Commercial refers to building or inside airport use, while landscape refers to outside use. There were 13 meters identified as commercial and one meter representative of landscape use. A summary of annual water usage for both commercial and landscape meters identified in the water inventory is presented in **Table 1-16**.

Table 1-16: DVT Annual Water Usage Summary

Use Category	PCY 2010[1] (gallons)	CY 2011 (gallons)	CY 2012 (gallons)	CY 2013 (gallons)	PCY 2014[2] (gallons)
Commercial	3,193,960	3,766,180	5,826,172	3,205,180	543,048
Landscape	88,264	191,488	258,808	163,064	62,084
Total	**3,282,224**	**3,957,668**	**6,084,980**	**3,368,244**	**605,132**

Source: Weston Solutions, Inc - Water Meter Inventory, Phoenix Deer Valley Airport, Water Meter Report Compilation, March 2015

CY: Calendar Year
PCY: Partial Calendar Year
1) The term PCY 2010 represents a partial calendar year for the usage period between March 2010 and December 2010.
2) The term PCY 2014 represents a partial calendar year for the water usage period of January 2014 and June 2014.

The inventory shows an increase of 54% year over year in 2012, dropping 55% in 2013. DVT staff report that breaks in the landscape irrigation lines in the terminal parking lot may have led to increased usage in 2012, along with meters on the North Ramp reporting incorrect information. The irrigation lines have since been repaired and meter repairs have been completed resolving those issues and reducing reported water usage.

1.8.5 Energy Management

DVT purchases its electricity from Arizona Public Service (APS) Company. The only natural gas used on-site is at the restaurant in the terminal building. A summary of the annual energy usage as presented in the 2013 LeighFisher *Sustainability Baseline Report – Phoenix Airport System* is provided by cost center in **Table 1-17**. The total annual energy consumption, not including utilities paid for directly by tenants, for calendar year 2012 is approximately 2,031,405 kWh, with a corresponding annual utility cost of $242,670. Approximately 85% of the energy used is associated with the main terminal building and the hangars. Due to varying APS rate structures the cost for the hangars is higher than the main terminal although the terminal uses slightly more electricity.

In recent years the following energy initiatives have been implemented at DVT:

- Lighting has been upgraded and lights are turned off when not in use, either manually or via occupancy sensors
- Hangar buildings are low energy use (no air conditioning) limiting their use to aircraft storage

Table 1-17: DVT 2012 Energy Usage by Service Area

Service	kWh	Cost ($)	Percent
Runway Lights	36,768	$6,563	1.8%
Covered Wash Area	55,801	$8,169	2.7%
Police Air Support Unit Hangar	2,088	$595	0.1%
Main Terminal	877,080	$92,354	43.2%
Hangars (tenants)	848,760	$105,938	41.8%
Jet Fuel Storage	9,327	$1,684	0.5%
Aircraft Maintenance Bays	105,520	$13,211	5.2%
Maintenance Building	64,720	$10,412	3.2%
Arizona Public Service (APS) Company	Est. kWh 31,341	$3,744	1.5%
Total	**2,031,405**	**$242,670**	**100%**

Source: LeighFisher Sustainability Baseline Report – Phoenix Airport System based on City of Phoenix, PWD data, 2013

Note: The 'Estimated APS kWh' represents an estimate of electricity purchased that has not yet been attributable to a specific meter or cost center. It is calculated using the cost difference between APS payment history and the City's database of kWh usage by meter.