Pasco Tri-Cities Airport Master Plan Update

TRI·CITIES AIRPORT

Tri-Cities Airport
Port of Pasco
Pasco, Washington

Prepared by

Mead & Hunt

In association with

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Tri-Cities Airport
Port of Pasco
Pasco, Washington

Background

The Tri-Cities Airport (PSC) is located in Franklin County, Washington, two miles northwest of downtown Pasco. In 2008, PSC had the third most passenger enplanements in the state. In addition to commercial air service, PSC also supports air cargo and general aviation operations, and has over 150 acres of commercial and industrial property on site. PSC, owned and operated by the Port of Pasco, was built in 1929 and was used by the United States Navy to train pilots during World War II. Commercial air service began in the late 1940's and the Port acquired ownership in 1963. PSC is designated as a Primary Commercial Service Non-Hub airport by the Federal Aviation Administration (FAA) National Plan of Integrated Airport Systems (NPIAS).

The Airport is a component of Washington's aviation system, and the only airport in southeast Washington that offers non-stop destinations outside of the state. The Airport Master Plan Update (Plan) addresses planning facility development and resource allocation for the next twenty years. The consultant team assisting the Airport with this effort is lead by Mead & Hunt, with support from J-U-B Engineers, CKJT Architects, and Leibowitz & Horton Airport Management Consultants.

Purpose

This Plan provides information on historic and current airport activity levels, facilities, and operations, and generates activity forecasts that support improvements to satisfy demand over the next twenty years. Information collected from municipalities, governments, and agencies is augmented with data from airport stakeholders, including airport management, airport tenants and users, and the public. The Plan considers commercial, cargo, and general aviation uses, as well as aviation and non-aviation development on airport property and in the vicinity.

Presentation

This Plan consists of the following chapters and appendices.

1. **Inventory –** Presents a baseline of the features and facilities at PSC, including historical aviation activity, geography, and socioeconomic aspects.

2. **Environmental Baseline –** Presents an overview of environmental conditions at PSC, and related activities.

3. **Aviation Activity Forecasts –** Presents forecasts for passenger enplanements, aircraft operations, based aircraft, cargo volume, critical aircraft, and terminal automobile traffic.

4. **Facility Requirements –** Presents items to be considered to support airport activity.

5. **Improvement Alternatives –** Presents options for desired, recommended, and required development. The alternatives are evaluated, and preferred alternatives selected.

6. **Financial Feasibility –** Presents revenue and expense of facilities, operations, and improvements, including a Capital Improvement Program showing the cost and schedule of improvements.

7. **Land Use –** Presents land uses, compatibility concerns, and strategies to address these concerns. Airport property is evaluated for land required for aviation use, and that available for other purposes.

Appendices

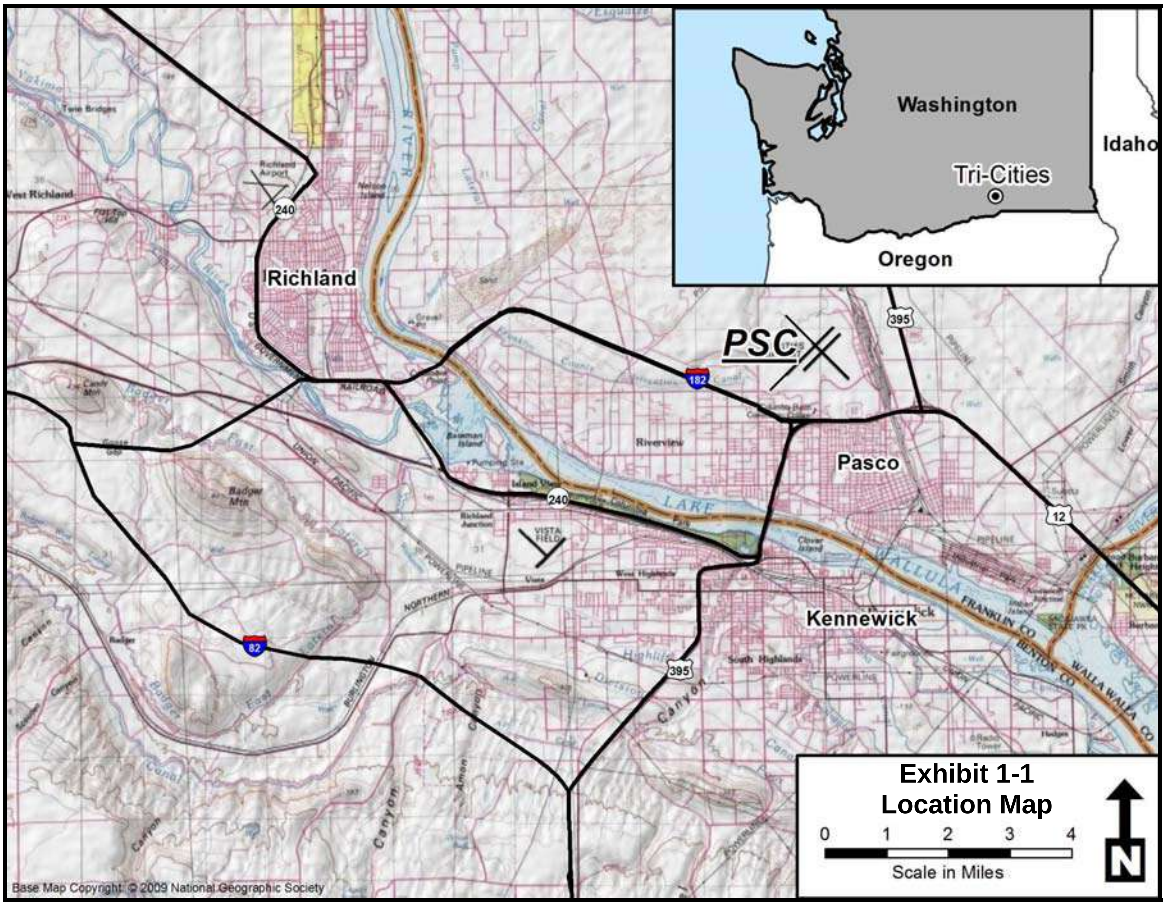
A. **Terminal Building Inventory** – Presents details of an architectural survey.
B. **Environmental Regulation** – Presents regulation associated with airport activities.
C. **FAA Forecast Documentation** – Presents aviation activity forecast material submitted to FAA.
D. **Environmental Evaluation and Cultural Resources Survey** – Presents results of fieldwork conducted to support environmental baseline and improvement alternatives chapters.
E. **Noise** – Presents data input into the FAA Integrated Noise Model software used to generate existing and future noise contours.
F. **Future Runway End 12 Surfaces** – Presents airspace analysis for the proposed extension of Runway End 12.
G. **Financial Implementation Analysis** – Describes Airport income and expenses, and identifies funding to achieve the capital improvement plan.
H. **Limited Rates & Charges Review** – Review of rates and charges at PSC, comparison to other industry standards, and review of existing tenant leases.

1.1 Introduction

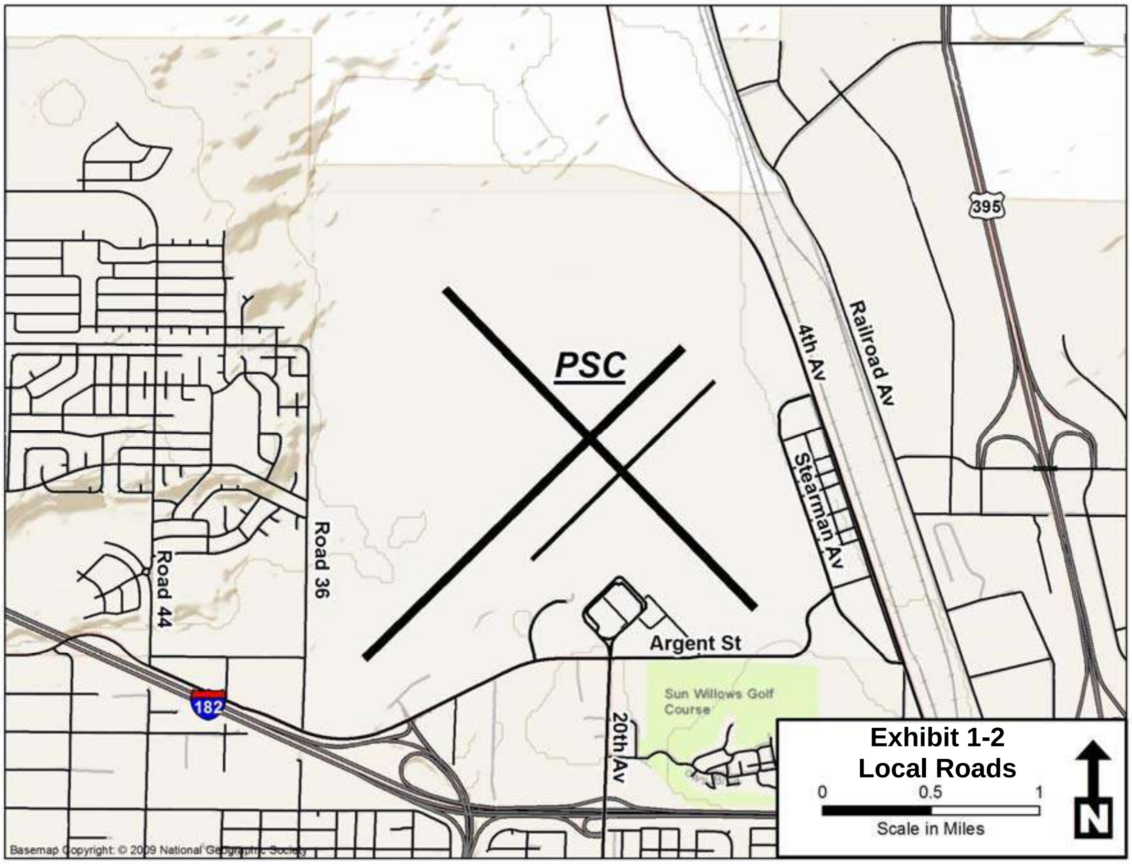
This chapter provides background inventory information on Tri-Cities Airport and the role it serves in the community. Tri-Cities Airport will be referred to by its Federal Aviation Administration (FAA) identifier "PSC" throughout this document. The chapter documents the existing facilities at PSC, and will be used as a baseline for activity forecasts and facility requirements. Airport facilities are described herein, and used as a baseline for other Master Plan elements.

1.1.1 Location

PSC is located two miles northwest of downtown Pasco. Along with Kennewick to the south and Richland to the west, Pasco is part of the metropolitan area known as the Tri-Cities. Pasco is on the northern bank of the Columbia and Snake Rivers in southern Franklin County, while Kennewick and Richland are on the southern bank of the Columbia River in eastern Benton County. Franklin and Benton Counties are located in southeastern Washington State, near the Oregon border. A location map is shown in **Exhibit 1-1.**



The Tri-Cities are located at the junction of three major highways. Interstate 82 heads west towards Yakima and Seattle and south towards Oregon; U.S. Highway 395 heads north to Spokane, and south to Interstate 82; and U.S. Highway 12 heads east towards Walla-Walla and Idaho, and west (with Interstate 82) towards Yakima. Using 20th Avenue, PSC connects to Interstate 182, which connects to the three highways. **Exhibit 1-2** shows the local road network.



1.1.2 History

The original Pasco Airport was located southeast of the existing airfield, and was the site of the first airmail flight in the Northwest in 1926. PSC has existed in its current location since 1929. During World War II, the airfield was used by the U.S. Navy as an air training station. The Navy made significant changes, building four runways, a taxiway system, and over 100 buildings. Passenger air service began in the late 1940's. Airport ownership was transferred from the Navy to the City of Pasco in 1953. The Port of Pasco obtained ownership of the Airport in 1963, and is the current owner. Under Port ownership, a new passenger terminal was built in 1966, the fourth runway was closed in 1975, a facility expansion program was implemented in 1986, and the passenger terminal was remodeled in 2003.

1.1.3 Airport Role

The FAA National Plan of Integrated Airport Systems (NPIAS) is a registry of over 3,400 airports in the country that are significant to national air transportation and eligible to receive federal Airport Improvement Program (AIP) grants. The 2008 NPIAS identifies PSC as a *Non-Hub Commercial Service Primary Airport*. The *Non-Hub Commercial Service* designation indicates that PSC accounts for less than 0.05 percent of nationwide commercial service enplanements. The *Primary Airport* designation indicates that PSC has over 10,000 annual enplaned passengers. **Table 1-1** shows that in 2008, PSC had the third most passenger enplanements in the State of Washington.

Table 1-1: 2008 Passenger Enplanements

Airport	Enplanements
Seattle-Tacoma International	15,784,457
Spokane International	1,785,963
Pasco Tri-Cities	241,907
Bellingham International	241,397
Yakima Air Terminal	58,614

Source: 2008 FAA TAF, PSC

PSC is the primary air transportation gateway in southeastern Washington and northeastern Oregon, drawing passengers from six counties in Washington and five counties in Oregon. In 2009, PSC is served by four scheduled commercial passenger airlines, which provide non-stop service to seven U.S. destinations. (As a fifth scheduled commercial passenger airline serving an eighth U. S. destination, Northwest Airlines provided service between PSC and Minneapolis-St. Paul from April 2009 until September of 2009.) Five destinations are considered hub airports, where air carriers concentrate their operations. Access to these hub airports puts passengers within one stop of cities worldwide. Destinations offered from PSC are shown in **Exhibit 1-3** and listed in **Table 1-2**.

Table 1-2: Non-Stop Destinations	
Destination	**Airline**
Denver (DEN)	United Express
Las Vegas (LAS)	Allegiant Air
Phoenix-Mesa (AZA)	Allegiant Air
Salt Lake City (SLC)	Delta Connection
Seattle (SEA)	Horizon Air
San Francisco (SFO)	United Express
Walla Walla (ALW)	Horizon Air
Charter airlines serve Reno, Las Vegas, and Wendover, NV	

Source: Airlines

The availability of PSC's non-stop air service draws traffic from Benton, Columbia, Franklin, Klickitat, Walla Walla and Yakima counties in Washington, and Gilliam, Morrow, Umatilla, Union, and Wallowa counties in Oregon. These counties comprise PSC's catchment area, which is the area from which the Airport can expect to draw passengers. PSC offers more non-stop destinations than other southeast Washington airports, and is the only airport in southeast Washington that provides non-stop service outside of the state. Several public airports in PSC's catchment area are compared to PSC in **Table 1-3** and shown in **Exhibit 1-4**.

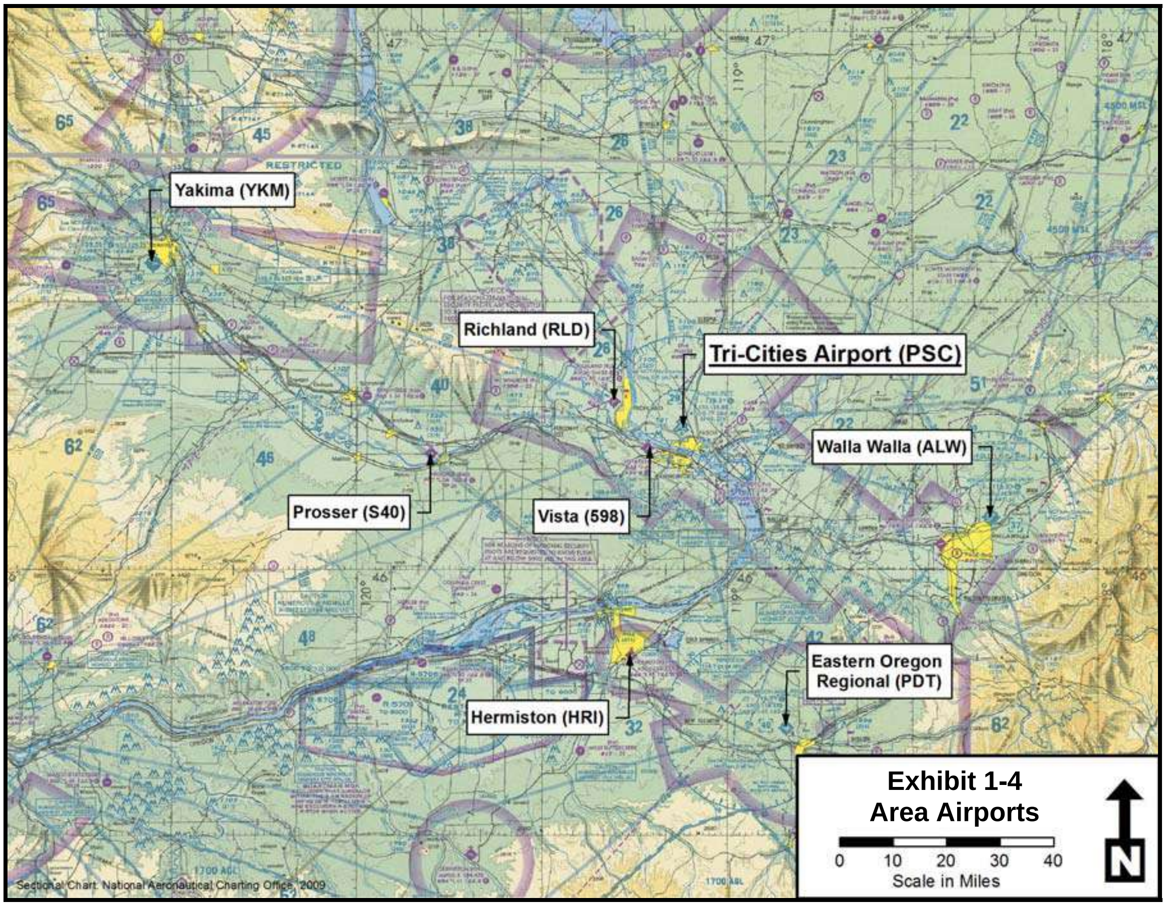


Exhibit 1-4
Area Airports

Table 1-3: Catchment Area Airports			
Airport	**Location**	**Driving Distance from PSC**	**Commercial Air Service**
Tri-Cities	Pasco, WA	0 mi	Delta to Salt Lake City, Horizon to Seattle, United to Denver and San Francisco, and Allegiant to Las Vegas and Phoenix-Mesa
Vista Field	Kennewick, WA	8 miles	None
Richland	Richland, WA	13 miles	None
Prosser	Prosser, WA	35 miles	None
Hermiston Municipal	Hermiston, OR	39 miles	None
Walla Walla Regional	Walla Walla, WA	52 miles	Horizon to Seattle
Eastern Oregon Regional	Pendleton, OR	70 miles	Seaport to Portland
Yakima Air Terminal	Yakima, WA	83 miles	Horizon to Seattle

Source: Airlines

PSC has cargo service provided by three operators. FedEx operates a cargo facility at PSC, and flies daily to Spokane. Airpac and Ameriflight link the Tri-Cities to Seattle and Portland.

PSC has general aviation (GA) activity, ranging from training aircraft to corporate jets, and facilities to serve and store them.

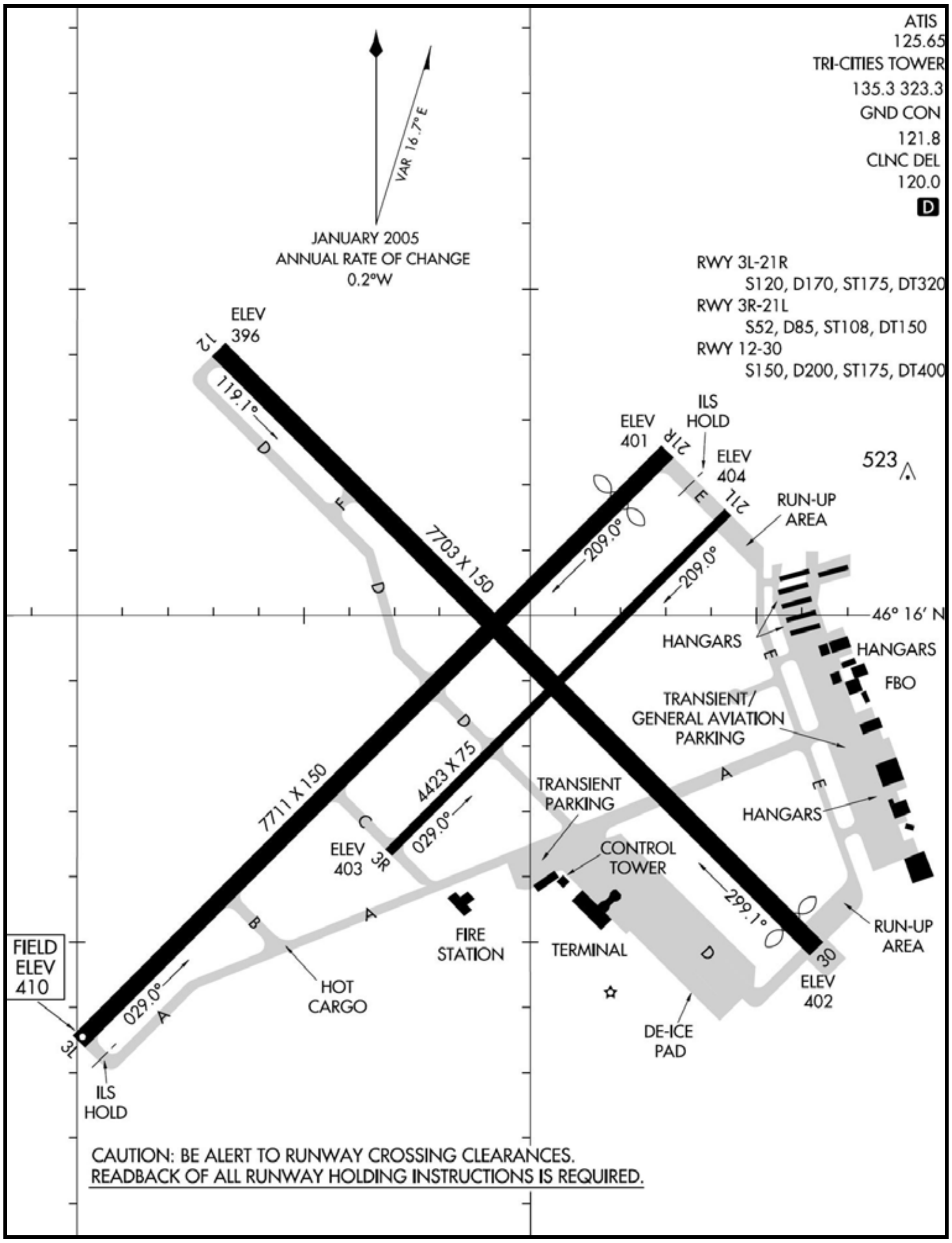
1.1.4 Airports in the Tri-Cities

There are two other GA airports in the Tri-Cities, which do not offer scheduled commercial passenger airline service: Richland Airport in Richland and Vista Field in Kennewick. 2009 FAA data shows that there are 181 aircraft based at Richland Airport and 35 aircraft based at Vista Field. These two airports provide facilities and services for GA and cargo activity.

1.1.5 Airport Layout

PSC is located on 2,235 acres. Airport property used for aviation purposes is classified as either *airside* or *landside*. *Airside* functions facilitate aircraft movement and storage and include runways, taxiways, aprons, tie-downs, and hangars. *Landside* areas include the passenger terminal building, the airport traffic control tower (ATCT), and automobile access and parking facilities. Airport property includes an Airport Business Center, an East Side Industrial Park, and property leased for agricultural purposes. The airport layout is shown in **Exhibit 1-5.**

Exhibit 1-5: Airport Layout



Source: FAA Airport Facilities Directory, July 2009

1.1.6 Airport Ownership and Management

PSC is owned and operated by the Port of Pasco. The Port is a self-governing municipal corporation that is managed by three elected Port Commissioners. The Director of Airports reports to the Port of Pasco Executive Director, who reports to the Port Commissioners. Airport management employs four full-time personnel.

The Port generates revenue through passenger facility charges (PFCs), rental and vendor fees, and property tax levies, and funds projects through municipal bonds and grants. Airport improvement projects are funded by FAA AIP grants and PFCs. Recently, the Airport has used AIP and PFC funds to acquire an aircraft rescue and fire fighting (ARFF) vehicle, rehabilitate an apron, construct a taxiway, and improve signage and markings. Acceptance of AIP grants obligates PSC to keep their facilities in line with FAA standards, including proper airfield maintenance and protection of surrounding airspace from obstructions. Non-compliance with AIP grant assurances can result in the FAA requiring the Port to repay the grants.

1.2 Weather Profile

Weather conditions affect aircraft and airport operations. This section discusses wind and climate characteristics at PSC.

1.2.1 Wind

The historical pattern of prevailing winds influences desirable runway orientation and runway usage. Because crosswinds pose a hazard to safe operations of aircraft, particularly to small and light aircraft, an airport's main runway should be aligned with the prevailing wind.

Wind coverage is the average percentage of time that a runway or grouping of runways is not subjected to crosswinds of magnitude greater than the allowable crosswind component for each runway. FAA defines the desirable minimum wind coverage of an airport's runway configuration as 95 percent of wind velocity and direction observations over the most recent 10-year period. The allowable crosswind component used to compute the wind coverage for a given runway is based on the Airport Reference Code (ARC) of the most demanding aircraft expected to use the runway. The FAA assigns an ARC to an aircraft relative to the aircraft's approach category (based on approach speed) and design group (based on wingspan and tail height). If an aircraft's tail height and wingspan fall into different categories, then the higher design group is used. Approach category and design group definitions are listed in **Table 1-4.**

Table 1-4: Airport Reference Code (ARC) Categories		
Approach Category	**Approach Speed (knots)**	
A	Less than 91	
B	91 or greater, but less than 121	
C	121 or greater, but less than 141	
D	141 or greater, but less than 166	
E	166 or greater	
Design Group	**Wingspan (feet)**	**Tail Height (feet)**
I	<49	<20
II	49 - <79	20 - <30
III	79 - <118	30 - <45
IV	118 - <171	45 - <60
V	171 - <214	60 - <66
VI	214 - <262	66 - <80

Source: FAA AC 150/5300-13

The FAA sets the allowable crosswind component for ARCs A-I and B-I at 10.5 knots; 13 knots for ARCs A-II and B-II; 16 knots for ARCs A-III, B-III, and C-I through D-III; and 20 knots for ARCs A-IV through D-VI. The current and planned ARC for each runway at PSC is shown in **Table 1-5**.

Table 1-5: Runway ARCs		
Runway	**Current ARC**	**Planned ARC**
3L/21R	C-III	C-IV
3R/21L	B-II	B-II
12/30	C-III	C-IV

Source: 2000 Airport Layout Plan

Wind data is reported to and available from the National Oceanic and Atmospheric Administration (NOAA) by an Automated Surface Observing System (ASOS) located at PSC. Wind data from 1999 to 2008 is grouped for three ceiling and visibility categories:

- All-Weather: All wind observations.
- Instrument Flight Rules (IFR): Cloud ceiling less than 1,000 feet and/or visibility less than 3 miles, but cloud ceiling greater than or equal to 200 feet and visibility greater than or equal to 0.5 miles. These conditions occurred approximately three percent of the time from 1999 to 2008.
- Visual Flight Rules (VFR): Cloud ceiling greater than or equal to 1,000 feet and visibility greater than or equal to 3 miles. These conditions occurred approximately 96 percent of the time from 1999 to 2008.

FAA's Airport Design software was used to determine the wind coverage for PSC's runway orientations, both individually and combined. The results are shown in **Table 1-6**.

Table 1-6: Wind Coverage Analysis				
Crosswind Component	Weather Category	Runway 12/30 Wind Coverage	Runway 3L/21R & 3R/21L Wind Coverage	Combined Runways Wind Coverage
10.5 knots	All-Weather	88.07%	96.87%	99.48%
	IFR	98.33%	97.01%	99.22%
	VFR	87.61%	96.83%	99.49%
13 knots	All-Weather	91.88%	98.31%	99.85%
	IFR	98.64%	97.98%	99.51%
	VFR	91.57%	98.31%	99.86%
16 knots	All-Weather	96.33%	99.64%	99.97%
	IFR	98.89%	99.29%	99.76%
	VFR	96.21%	99.65%	99.97%
20 knots	All-Weather	98.63%	99.92%	100.00%
	IFR	99.21%	99.70%	99.91%
	VFR	98.60%	99.93%	100.00%

Sources: FAA Airport Design Software using NOAA data from PSC ASOS, January 1999 to December 2008

Runways 3L/21R and Runway 3R/21L are more closely aligned with the prevailing winds than Runway 12/30. Runway 12/30 provides adequate wind coverage for aircraft with an ARC at or above B-III, but does not provide adequate All-Weather and VFR wind coverage for A-I through B-II aircraft.

1.2.2 Climate

The Tri-Cities lie in the "rain shadow" of the Cascade Mountains, which creates a dry and hot desert climate. NOAA data shows that average annual precipitation at Pasco Tri-Cities Airport is approximately seven inches, with most precipitation falling in the cooler months. **Table 1-7** shows monthly temperature averages.

Table 1-7: Monthly Temperature Averages, 1999-2008		
Month	Mean Daily Maximum Temperature (ºF)	Mean Daily Minimum Temperature (ºF)
January	44.0	28.1
February	51.1	28.0
March	61.2	33.4
April	68.6	37.5
May	77.8	44.8
June	85.2	51.4
July	94.7	56.4
August	92.5	55.1
September	82.2	45.5
October	67.7	38.1
November	51.6	31.8
December	42.4	27.7

Source: NOAA

The hottest month of the year is July, with a mean daily maximum temperature of 94.7˚ F. The coldest month of the year is December, with a mean daily maximum temperature of 42.4˚ F. Temperature affects airfield design requirements because air density decreases at higher temperatures, increasing the length of runway needed to operate an aircraft.

1.3 Airside Facilities

1.3.1 Airfield Design Standards

Airport facilities are designed to comply with FAA standards. Airfield design standards are based on the ARC of the *critical aircraft*, which is the most demanding type of aircraft operating at the airport. There can be different critical aircraft for the airport, runways, taxiways, aprons, and terminal area facilities.

Allegiant Air's Boeing MD-83 aircraft is a demanding aircraft using PSC, with an ARC of D-III. However, the MD-83 does not conduct 500 annual operations at PSC. Common commercial aircraft at PSC include the Bombardier CRJ-200, CRJ-700, CRJ-900, and the Q-400, which are ARC C-III aircraft. Boeing also uses PSC on test flights of 737 (ARC C-III) aircraft. PSC also hosts less demanding aircraft. **Table 1-8** presents common aircraft at PSC.

Table 1-8: Common Aircraft at PSC

Aircraft		Use	ARC
	Lockheed Martin C-130 Hercules	Military	C-IV
	Boeing MD-83	Commercial Aviation	C-III
	Bombardier Q-400	Commercial Aviation	C-III
	Bombardier CRJ-200	Commercial Aviation	C-III
	ATR-72	Air Cargo	B-III
	Beechcraft King Air	Corporate Aviation	B-II
	Cessna Citation CJ-1	Corporate Aviation	B-I
	Cessna 172 Skyhawk	General Aviation	A-I

1.3.2 Runways

PSC has three runways, shown in **Exhibit 1-5.** Runways 3L/21R and 12/30 are used by commercial, cargo, military, and GA aircraft because of their instrument approach procedures and length, and Runway 3R/21L is used by smaller GA aircraft. Runways are equipped with visual aids, which assist pilots using the runways. **Table 1-9** lists runway characteristics.

Table 1-9: Runway Characteristics

Runway	Length x Width	Lighting	Visual Glide Slope Indicator	Weight-Bearing Capacity (thousands of pounds)
3L	7,711' x 150'	REIL, HIRL	PAPI	120S/170D/175ST/320DT
21R		MALSR, HIRL		
3R	4,423' x 75'	None	None	52S/85D/108ST/150DT
21L				
12	7,703' x 150'	REIL, MIRL	VASI	150S/200D/175ST/400DT
30		ODALS, MIRL	PAPI	

HIRL/MIRL- High/Medium Intensity Runway Lights
MALSR- Medium Intensity Approach Lighting System with Runway Alignment Indicator Lights
ODALS- Omni Directional Approach Lighting System
PAPI- Precision Approach Path Indicator
REIL- Runway End Identification Lights
VASI- Visual Approach Slope Indicator
Weight-Bearing Capacity: S-Single Wheel, D-Dual Wheel, ST- Single Tandem, DT- Dual Tandem

Source: FAA Airport Facility Directory, July 2009.

Runway lighting systems enable aircraft to use runways during periods of low visibility, and assist instrument landings. HIRL and MIRL outline the boundary of the runway, and REIL identify the runway ends. ODALS and MALSR are approach lighting systems, consisting of a series of lights located at the runway ends.

Visual glide slope indicators help pilots monitor their angle of descent on approach to a runway. A PAPI is a series of two or four red and white lights aligned horizontally, perpendicular to the runway, while the VASI is two parallel bars of two lights perpendicular to the runway.

The weight-bearing capacity of a runway is not a limit on the size of aircraft that can use the runway, but is an indication of the size of aircraft for which the runway was designed. Continuous use by aircraft heavier than the weight-bearing capacity can result in increased runway maintenance, and premature replacement. In general, single and dual wheel gear equipped aircraft are light aircraft, and single/dual tandem gear equipped aircraft are heavier aircraft.

1.3.3 Instrument Approach Procedures

An instrument approach procedure (IAP) is a series of predetermined maneuvers for the orderly transfer of an aircraft under instrument flight rules (IFR) conditions from the beginning of the initial approach to a landing or to a point from which a landing may be made visually. IAPs are classified as *precision instrument,* with both horizontal and vertical guidance*, non-precision instrument*, with horizontal guidance, and *visual,* without positional guidance.

PSC has six non-precision instrument approach procedures and one precision procedure, which direct aircraft on approach to Runway 3L/21R and Runway 12/30. Runway 3R/21L is a visual runway, and has no instrument approach procedures.

IAPs are generated by the FAA, and provided by electronic satellite- and radio-based technology, which communicates with aircraft equipment. IAPs are categorized by aircraft size, and by the visibility and altitude to which an aircraft can follow the IAP until the pilot can execute the landing. **Table 1-10** lists PSC's IAPs.

Table 1-10: Instrument Approach Procedures

Runway End	Technology	Minimum Decision Altitude*	Visibility Minimum*	Precision or Non-Precision
3L	RNAV (GPS)	300 feet	1 mile	Non-Precision
21R	ILS or LOC	200 feet	1/2 mile	Precision
	RNAV (GPS)	300 feet	1/2 mile	Non-Precision
	VOR	700 feet	1-1/2 mile	Non-Precision
12	RNAV (GPS)	400 feet	1-1/4 mile	Non-Precision
30	RNAV (GPS)	400 feet	1-1/4 mile	Non-Precision
	VOR/DME	500 feet	1-1/4 mile	Non-Precision

RNAV (GPS)- Area Navigation (Global Positioning System)
ILS or LOC- Instrument Landing System or Localizer
VOR- VHF Omni-Directional Range
VOR/DME- VHF Omni-Directional Range/Distance Measuring Equipment
*Values for Category C aircraft.

Source: FAA Terminal Procedures Publication, October 2009.

PSC also has a Departure Procedure, to guide aircraft leaving the Airport's airspace.

1.3.4 Design Surfaces

FAA airport design surfaces are created for safe aircraft operations in accordance with FAA AC 150/5300-13, *Airport Design*, and to prevent obstructions that are hazardous to aircraft navigation.

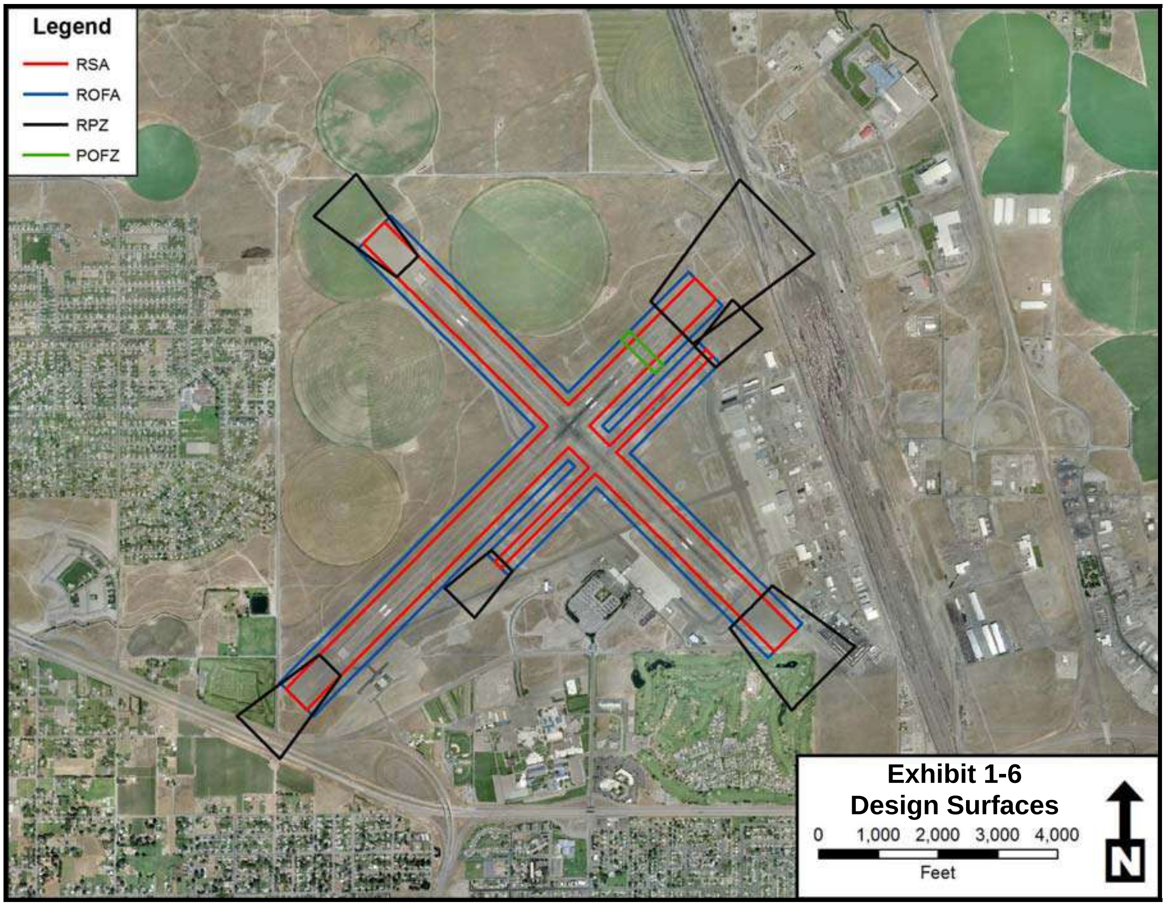
Per the AC, the Runway Safety Area (RSA) "enhances the safety of airplanes which undershoot, overrun, of veer of the runway, and it provides greater accessibility for firefighting and rescue equipment during such incidents". The Runway Object Free Area (ROFA) is for clearing of above-ground objects "non-essential to for air navigation or aircraft ground maneuvering". The Runway Protection Zone (RPZ) enhances "the protection of people and property on the ground". The Precision Obstacle Free Zone (POFZ), applicable to runway ends with precision IAPs, enhances aircraft on approach by clearing "taxiing and parked airplanes and object penetrations".

As PSC accepts FAA grants, the Airport is obligated to provide a safe operating environment by maintaining the runways, taxiways, and associated design surfaces. **Table 1-11** gives an overview of the design surfaces, and **Exhibit 1-6** shows these surfaces.

Table 1-11: Design Surfaces

Runway	Surface	Length	Width
3R/21L	RSA	300 feet*	150 feet
	ROFA	300 feet*	500 feet
	RPZ	1000 feet	500 feet (Inner), 700 feet (Outer)
3L/21R	RSA	600 feet*	500 feet
	ROFA	600 feet*	800 feet
	RPZ (3L)	1700 feet	500 feet (Inner), 1,010 feet (Outer)
	RPZ (21R)	2500 feet	1000 feet (Inner), 1750 feet (Outer)
	POFZ	200 feet	800 feet
12/30	RSA	600 feet*	500 feet
	ROFA	600 feet*	800 feet
	RPZ (12)	1700 feet	500 feet (Inner), 1010 feet (Outer)
	RPZ (30)	1700 feet	1000 feet (Inner), 1510 feet (Outer)

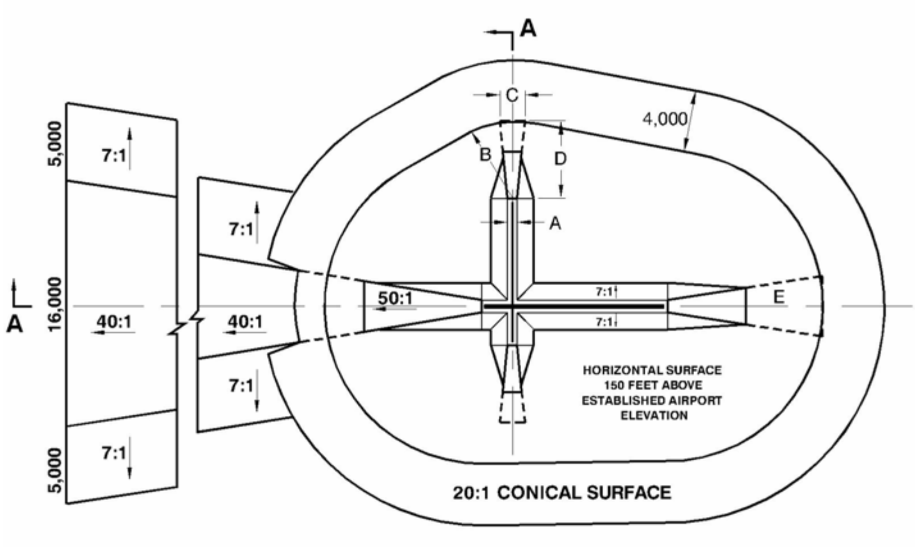
Source: FAA AC 150/5300-13 *Surfaces extend full runway length.



Federal Aviation Regulation (FAR) Part 77 establishes surfaces to define and protect against obstructions. City of Pasco and Franklin County zoning codes protect these surfaces.

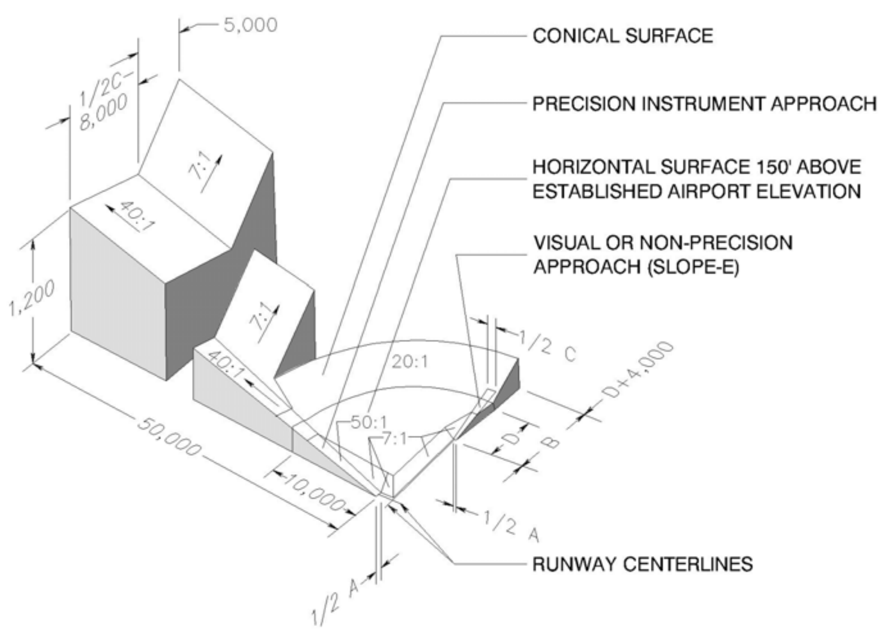
Part 77 includes *approach, primary, transitional, conical*, and *horizontal* surfaces. These surfaces are geometric planes which are parallel and perpendicular to the runway, and which intersect with other sloping surfaces. **Exhibits 1-7** and **1-8** show typical Part 77 Surfaces.

Exhibit 1-7: Part 77 Surfaces – Plan View



Source: FAR Part 77

Exhibit 1-8: Part 77 Surfaces – 3D Isometric View of Section A



Source: FAR Part 77

Similar to Part 77 Surfaces, FAA AC 150/5300-13 Appendix 2 defines surfaces to protect aircraft *approach* and *departure* operations.

1.3.5 Taxiways

PSC has an extensive taxiway system. Taxiways A, E, and D are the primary taxiways that provide access between the runway ends and terminal areas. Taxiways B, C, and F provide mid-runway access. PSC's taxiways are 75 feet wide, except a portion of Taxiway E, between Taxiway A and Runway 30, near the GA ramp, which is 50 feet wide. **Exhibit 1-5** shows the taxiway system.

1.3.6 Aircraft Aprons

Aircraft aprons are places where aircraft park when not in use. There are four aircraft aprons on the airfield. The terminal apron, approximately 634,000 square feet in area, is generally used for commercial aircraft parking, and can accommodate up to six aircraft simultaneously. The northwest portion of this apron has parking space for transient aircraft. FedEx has an apron for its cargo aircraft. The GA apron, approximately 1,134,000 square feet in area, is located on the eastern side of the airfield. Additional new hangars near Taxiway A in the Airport Business Center have apron space. Aprons accommodate aircraft de-icing during cold weather conditions. **Exhibit 1-5** shows the aircraft aprons.

1.3.7 Hangars and Storage Areas

There are two hangar areas on the airfield. Most hangars are located on the eastern side of the airfield. A secured area of newer hangars are located near Runway End 3L. PSC owns the airfield's *box hangar* buildings, which store multiple aircraft. Of the airfield's *T-hangar* buildings, which are clusters of individual aircraft storage units, PSC owns two buildings and leases ground for the others. The aircraft aprons have designated *aircraft tie-down* positions. Aircraft parking and storage facilities are counted in **Table 1-12**.

Table 1-12: Aircraft Parking and Storage Facilities

Type	Count
Box Hangar Buildings	15
T-Hangar Buildings	6
T-Hangar Units	54
Aircraft Tie-Down Positions	75

Source: PSC

1.3.8 Airport Maintenance Personnel and Equipment

PSC employs five full-time maintenance and operations personnel, supplemented by two part-time personnel during the summer to assist in landscaping duties. Maintenance equipment is housed in a 14,000 square foot building located east of the GA area. The Airport has seven vehicles used for snow removal, including two front end loaders, two plows, a high speed broom, a road grader, and a snow removal and sand truck.

1.3.9 Aircraft Rescue and Fire Fighting (ARFF)

PSC is an ARFF Index B airport, meaning that the largest aircraft to regularly use the Airport is longer than 90 feet but shorter than 126 feet. Commercial passenger aircraft operating at PSC fit into this category, with the exception of Allegiant Air's MD-83, aircraft classified as Index C. Federal Aviation Regulations (FAR) Part 139 says that if there are fewer than five average daily departures for the largest aircraft using an airport, as is the case for the MD-83, then the airport is to adopt the next lower index group. ARFF Index B requirements are listed in **Table 1-13**.

Table 1-13: ARFF Index B Requirements

Vehicles	Water	Dry chemicals
1	1,500 gallons	500 pounds
	Or	
1	0 gallons	500 pounds
1	1,500 gallons	0 pounds

Source: FAR 139.317

The ARFF facility is located southwest of the passenger terminal building. The facility is dual use, which allows firefighters to serve the Airport and the surrounding community. This is accomplished with three garage bays opening onto the airfield and three bays opening onto the street. The ARFF facility is staffed by five City of Pasco firefighters and emergency response personnel, 24 hours a day. The facility has two rapid response vehicles capable of carrying the required 500 pounds of dry chemical, and two fire trucks capable of carrying the required 1,500 gallons of water. The ARFF facility also has one ambulance and one command vehicle.

1.3.10 Fixed Base Operators (FBOs)

A fixed base operator (FBO) is a business that provides aircraft services, such as fuel, maintenance, flight training, and pilot lounges. There are two FBOs that provide fuel at PSC, Bergstrom Aircraft and Tri-Cities Aviation. Bergstrom Aviation also provides charter aircraft services, maintenance, and flight training, and partners with Inter-Avionics to service aircraft avionics. Fuel capacity is presented in **Table 1-14.**

Table 1-14: PSC Fuel Capacity

Company	Vessel Type	Fuel Type	Number and Capacity
Bergstrom Aviation	Tank	100 LL	(1)15,000 gallons
	Fuel Truck	100 LL	(2) 1,200 gallons (each)
	Tank	Jet A	(2) 30,000 gallons (each)
	Fuel Truck	Jet A	(3) 3,000, 2,800 and 2,000 gallons
Tri-Cities Aviation	Tank	100 LL	(1) 12,000 gallons
	Fuel Truck	100 LL	(1) 1,200 gallons
	Tank	Jet A	(2) 20,000, 30,000 gallons (On order)
	Fuel Truck	Jet A	(3) 5,000, 3,000, 2,000 gallons

Source: FBOs

1.4 Terminal Building

This section is the result of a July 2009 architectural survey of the terminal building, which analyzed the condition and materials of the building. Survey results are presented in **Appendix A**.

1.4.1 Terminal Building Exterior

The terminal building is a two story concrete construction built in 1966, and a steel frame expansion finished in 1986. The building exterior features flush metal blue painted doors and louvers with canopies that provide protection from the elements. The roof is a series of inward sloped areas that lead to roof drains, with a skylight system that provides natural light.

1.4.2 Terminal Building Interior – Non-Sterile

The non-sterile portion of the terminal building refers to facilities between the parking lot and the security check-point. These facilities are accessible to ticketed passengers and the general public, hence they are not considered sterile from a security point of view.

Entering the terminal building, the main public area is a two-story space centered on a stairway leading to administrative and tenant offices on the second level. A restaurant, gift shop, and vending machines are located on the lower level. The ticketing area has service counters and kiosks. Baggage screening devices are located behind the ticket counters, as are airline offices, baggage processing, and operations areas. The baggage claim area has a pair of baggage conveyors. Rental car stations have service counters. Restrooms are located on both floors.

1.4.3 Terminal Building Interior – Sterile

A Transportation Security Administration (TSA) passenger screening checkpoint separates the sterile and non-sterile areas. Sterile areas are accessible only to ticketed passengers and staff with security clearance. The security checkpoint consists of passenger queuing and security equipment. Beyond the TSA security checkpoint is the hold and gate area where passengers enplane and deplane. This area includes seating for 320 passengers, a gift shop, and restrooms. The maximum occupancy of the hold and gate area is 500. Airline counters near each gate facilitate passenger movement.

There are five boarding gates, labeled numerically one through five. Horizon Air uses gate two; United uses gate three; Delta and Allegiant Air use gate four. Gates one and five are not currently used.

TSA staff includes nine part-time employees for passenger and baggage screening. Terminal building security is provided through contracts with Franklin County and operates 16 hours a day. Airfield security is maintained by three full-time and two part-time security guards employed by PSC. A floor plan of the terminal building is presented in **Exhibit 1-9**.

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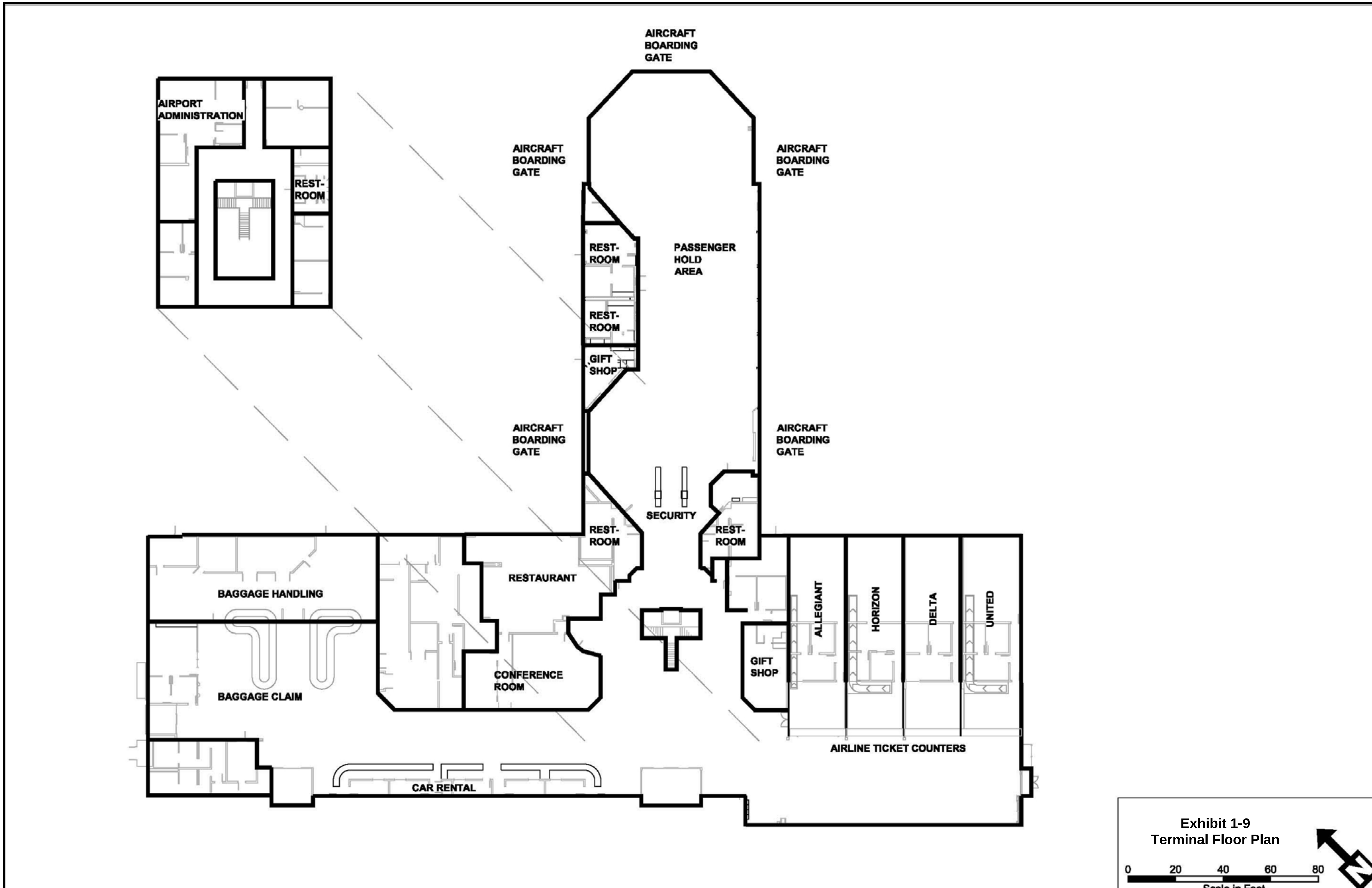

Exhibit 1-9
Terminal Floor Plan

1.5 Landside Facilities

1.5.1 Automobile Access

Access to the Airport is provided via 20th Avenue, linking PSC to Interstate 182 and arterial streets. Argent Street borders PSC to the south, connecting Road 36 to the west and 4th Avenue to the east. Varney Lane connects to the east end of the Airport Business Center and to the ARFF facility. 20th Avenue becomes the terminal access loop road. Terminal Drive runs along the flight line to the terminal area. Stearman Avenue serves GA facilities, FBOs, tenants, and airport maintenance. **Exhibit 1-10** shows the street access to PSC.

TRI-CITIES AIRPORT

1.5.2 Automobile Parking

There is a short-term parking lot located across the loop road from the terminal. Adjacent to the short-term lot is the long-term parking lot. The short- and long-term lots, which require user fees, are operated by a vendor. 273,750 vehicles park at the Airport annually, with a daily average of 500 in the long term lot and 650 using the short term lot. The peak periods of demand occur in the months of January, April, June, July, November and December. The ATCT has its own parking and there is employee parking to the southeast of the passenger terminal that doubles as an overflow lot. There are 39 parking spaces adjacent to the ATCT for staff. FedEx has a parking lot next to its facility on Argent Street. PSC has a range of automobile parking lots, as shown **Exhibit 1-11** and **Table 1-15**.

Exhibit 1-11
Automobile Parking

Table 1-15: Parking Lot Inventory		
Parking Lot	Parking Spots	Handicapped Spots
Short Term	183	8
Long Term	866	14
Employee/Overflow	168	2
Rental Car	229	0
FAA Building	38	2
Rental Overflow	105	0

Source: JUB Engineers

PSC has six rental car companies, which park their cars in the lots to the northwest and southeast of the terminal building. There are 72 rental pick-up spots northwest of the terminal building, and 157 rental pick-up and drop-off spots southeast of the terminal. There are 75 employee parking spaces, south of the rental car return area. Avis and Budget maintain an onsite cleaning and fueling facility, while the other companies use facilities in town. 23,028 cars were rented last year, with the average rental lasting three to four days. The peak rental period occurs during the summer months of April through July.

When TSA elevates the threat advisory level, automobiles must maintain 300 feet separation from the terminal building. This TSA level effectively closes 429 parking spots and the portion of the loop road near the terminal building.

1.5.3 FedEx

The FedEx cargo facility is located at the southern end of the airfield along Taxiway D, near Runway End 30. The facility has parking for employees and delivery trucks, and ramp space for two aircraft. FedEx operates ATR-72 and Cessna Caravan aircraft at PSC, and 36 vans and 1 semi-truck. From this PSC location, FedEx serves eight counties in Washington and Oregon, and processes 40,000 pounds of inbound cargo and 15,000 pounds of outbound cargo daily.

1.5.4 Viper Aircraft

Viper Aircraft builds jet aircraft in its facility adjacent to the GA apron. Aircraft produced by Viper are classified as experimental by the FAA, and require aircraft owners to assemble the aircraft from a kit. Zero Gravity Builders Studio, co-located with the Viper Aircraft facility, offers kit assembly services.

1.5.5 Airport Business Parks

There are two business parks on Airport property: the East Side Industrial Park and the Airport Business Center. The East Side Industrial Park lies on 70 acres and has over 500,000 square feet of office space. The Business Center lies on 86 acres, and offers lots with access to the airfield.

Facility locations are shown in **Exhibit 1-12.**

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Exhibit 1-12
Facility Location Map

1.6 Airspace and Air Traffic Control

The control and use of navigable airspace determines the capacity and operational utility of PSC. There are three main components of the airspace system that pertain to PSC: *enroute*, *transitional*, and *terminal*. Each component serves a different phase of flight and is supported by a network of NAVAIDS and the ATCT.

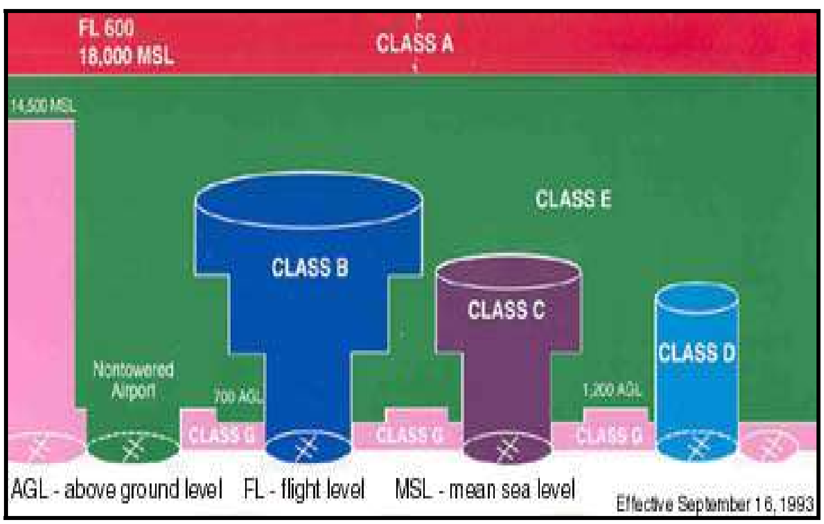
1.6.1 Enroute Airspace

Enroute airspace is for aircraft traveling between airports, which generally follow FAA-defined low altitude "Victor" routes (below 18,000 feet mean sea level (MSL)) and high altitude "jet" routes (above 18,000 MSL) that navigate between ground-based VORs and positional fixes. The FAA's Terminal Radar Approach Control (TRACON) located at PSC handles air traffic for airports in Yakima, Pendleton, Moses Lake, Richland, and Spokane, and controls aircraft requesting air traffic services in the vicinity.

1.6.2 Transitional Airspace

Transitional airspace is identified by the FAA as Class E airspace, which begin 700 feet above the ground and extends to 18,000 feet MSL. Transitional airspace allows aircraft to transition between enroute and terminal airspace. The area immediately surrounding PSC is designated by the FAA as Class D, due to the presence of the ATCT. Aircraft operating within Class D airspace require ATCT communication. When the ATCT is not operational, Class D airspace is reclassified as Class G, which is uncontrolled and does not require ATCT communication. **Exhibit 1-13** shows FAA airspace classes.

Exhibit 1-13: Airspace Classes



Source: FAA

1.6.3 Terminal Airspace

Terminal airspace is the airspace around an airport where airport traffic control or approach control services are provided. These facilities include visual and electronic equipment, NAVAIDs, and ATCT personnel, to assist pilots in finding the airport and making a landing.

1.6.4 Navigational Aids (NAVAIDs)

NAVAIDs provide guidance and positional information to aircraft. NAVAIDs can be airborne or located on the ground, and include lighting systems, radio beacons, signage, global positioning satellites, and pavement markings. NAVAIDs can transmit weather and airport operational information to enroute aircraft, and allow pilots to operate in periods of poor visibility.

In addition to runway-specific NAVAIDs, presented in Table 1-9, PSC is equipped with an automatic terminal information service (ATIS), which transmits information such as weather, active runways, and notices via a radio signal. PSC has a VHF Omni-Directional Range (VOR) that allows aircraft to navigate to the airfield as a destination or as a waypoint enroute to another airport. An automatic surface observation system (ASOS) tracks weather. Other NAVAIDS include wind indicators and a compass calibration pad.

1.6.5 Airport Traffic Control Tower (ATCT)

The ATCT is located northwest of the terminal building. The ATCT operates from 6 am to 10 pm and is accessed by the terminal loop road. The ATCT uses an airport surveillance radar (ASR-9) system, located immediately north of airport property, to track aircraft.

The FAA is developing a new air traffic control and management system to decrease delay and increase capacity. The system, known as NextGen, will make use of global positioning system (GPS) satellites, rather than relying on ground-based radio-navigational aids. PSC's ATCT radar services are NextGen-compatible, to ease the Airport's transition to the new system.

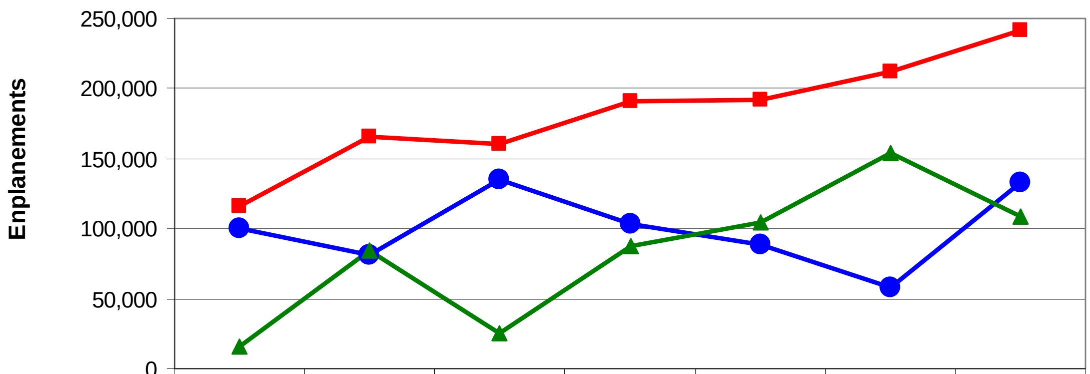
1.7 Aviation Activity

This section provides a historical baseline for aviation activities of passenger enplanements, aircraft operations, based aircraft, and cargo volume. The most recent available year for data is 2008.

1.7.1 Passenger Enplanements

Passenger enplanements are categorized by *air carrier* and *commuter* aircraft. *Air carrier* aircraft are defined by the FAA as aircraft with more than 60 seats. *Commuter* aircraft are defined by the FAA as those having 60 or fewer seats. USDOT data shows that the Bombardier CRJ-200 and Q-200 were the only two commuter aircraft operating at PSC, and that they accounted for 45 percent of passenger enplanements in 2008. Passenger enplanements from 1978 to 2008 are shown in **Exhibit 1-14**.

Exhibit 1-14
Passenger Enplanements 1978-2008



	1978	1983	1988	1993	1998	2003	2008
Air Carrier	100,334	80,983	134,625	102,932	88,098	57,630	132,976
Commuter	16,184	84,186	25,278	88,009	104,141	153,955	108,931
Total	116,518	165,169	159,903	190,941	192,301	211,585	241,907

Year

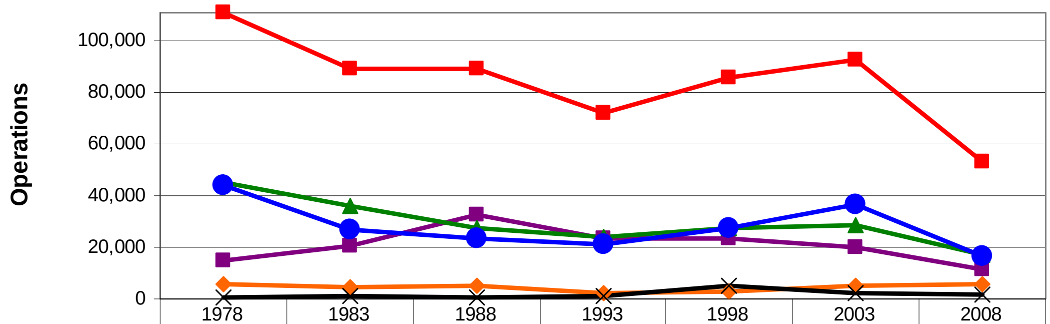
Source: FAA TAF, PSC, USDOT

Passenger enplanements at PSC have risen 25 percent from 1998 to 2008. After a decline beginning in 1988, air carrier enplanements are increasing and commuter enplanements are decreasing. This reflects a nationwide trend of regional airlines increasing the seating capacity of their regional aircraft, such as Horizon Air retiring their 37-seat Q-200 aircraft in favor of the 74-seat Q-400. The FAA *Terminal Area Forecast Summary 2008-2025* defines *regional* airlines as "those airlines whose primary function is to provide passenger feed to mainline carriers, regardless of aircraft size". The only non-regional airline operating at PSC in 2009 is Allegiant Air.

1.7.2 Aircraft Operations

Historical data for aircraft operations is provided by ATCT operational counts and the FAA's Terminal Area Forecast (TAF). An operation is a take-off or a landing, which means a visit to an airport by an aircraft is considered two operations. Operation counts are broken into categories, with *air carrier* representing commercial aircraft with more than nine seats, while *air taxi* commercial aircraft have nine or fewer seats. *Local* GA operations occur when aircraft take-off or land at PSC without leaving the vicinity, and *itinerant* GA operations occur when an aircraft performs either a take-off or a landing at PSC, and performs the other operation at another airport. Aircraft operations from 1978 to 2008 are shown in **Exhibit 1-15**.

Exhibit 1-15
Aircraft Operations 1978-2008



	1978	1983	1988	1993	1998	2003	2008
Air Carrier	5,466	4,816	5,322	2,293	2,774	5,384	5,906
Air Taxi	15,156	20,514	32,499	23,726	23,277	19,863	11,596
Itinerant GA	45,151	35,824	27,230	24,050	27,487	28,796	17,141
Local GA	44,252	27,177	23,246	21,177	27,464	36,660	16,828
Military	793	906	856	1004	5044	2159	1,997
Total	110,818	89,237	89,153	72,250	86,046	92,862	53,468

Year

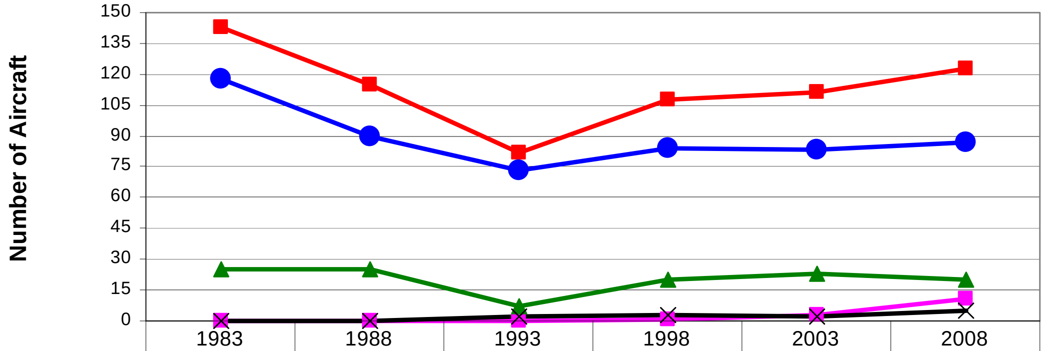
Source: FAA TAF, PSC

Operations have decreased at PSC since 1978. Recent declines can likely be attributed to a nationwide decline in GA activity after September 11th, 2001, which has been prolonged by high fuel prices and economic instability. *FAA Aerospace Forecasts FY2009-2025* indicates that nationwide GA activity declined by 5.6 percent in 2008.

1.7.3 Based Aircraft

Based aircraft are those which hangar or tie-down at PSC. Based aircraft counts from 1983 to 2008 are shown in **Exhibit 1-16**.

Exhibit 1-16
Based Aircraft 1983-2008



	1983	1988	1993	1998	2003	2008
Single-Engine	118	90	73	84	83	87
Jet	0	0	0	1	3	11
Multi-Engine	25	25	7	20	23	20
Helicopter	0	0	2	3	2	5
Total	143	115	82	108	111	123

Year

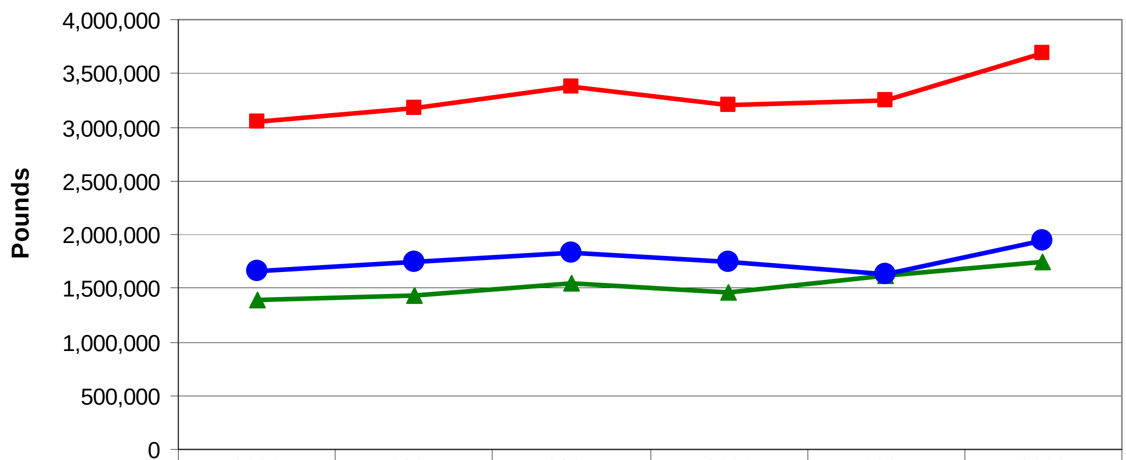
Source: FAA TAF, PSC

Based aircraft declined at PSC through the early 1990s, but has since returned to 1988 levels. As with aircraft operations, recent changes in the makeup of based aircraft at PSC are in line with trends published in *FAA Aerospace Forecasts FY2009-2025*, which predict a nationwide decline in multi-engine aircraft of one percent per year and an increase in jet aircraft of five percent per year.

1.7.4 Air Cargo Volume

FedEx's cargo records are presented in **Exhibit 1-17**.

Exhibit 1-17
FedEx Cargo Volume 2003-2008



	2003	2004	2005	2006	2007	2008
Cargo In	1,384,366	1,432,081	1,553,112	1,456,904	1,618,261	1,739,914
Cargo Out	1,663,251	1,746,562	1,825,393	1,745,864	1,635,147	1,944,819
Total	3,047,617	3,178,643	3,378,505	3,202,768	3,253,408	3,684,733

Year

Source: USDOT

Cargo volume is increasing at PSC. The *FAA Aerospace Forecast FY2009-2025* states that air cargo demand results from economic activity.

While FedEx provides scheduled cargo service, Ameriflight and Airpac provide cargo service on a charter, or as-needed basis. Ameriflight and Airpac use the GA apron to load cargo, onto twin-engine aircraft, including the Piper Chieftain and Seneca, and the Beechcraft BE-1900C and BE-C99. These aircraft have smaller cargo capacities than the FedEx ATR-42, which make them better suited for charter operations, where there is typically less volume. Airpac flies between PSC and Seattle's Boeing Field, and Ameriflight flies between PSC and Portland International Airport.

1.8 Socioeconomic Trends

Socioeconomic trend data is provided by the United States Census Bureau, and the economic forecasting firm Woods & Poole. This section provides a baseline for the population and economic growth in Benton and Franklin Counties.

1.8.1 Population

The population in the Tri-Cities region has grown since 1990. **Table 1-16** shows the population growth of both counties, the state, and the nation, as well as growth rates.

Table 1-16: Population Comparison

Geographic Region	1990	2000	2008	CAGR 1990-2008
Benton County	113,583	143,100	177,900	2.02%
Franklin County	37,748	49,618	78,163	3.58%
Combined Counties	**151,331**	**192,718**	**233,766**	**2.45%**
Washington	4,866,692	5,894,121	6,549,224	1.66%
United States	248,790,925	280,726,081	304,059,724	1.12%

Source: Woods & Poole, US Census Bureau, Washington Office of Financial Management

CAGR: Compound Annual Growth Rate

Population growth in both counties has outpaced both statewide and nationwide population growth. In Franklin County, the population has almost doubled in the past two decades.

1.8.2 Employment

Similar growth has occurred in employment as in population. **Table 1-17** shows employees by industry sector in 1990 and 2008.

Table 1-17: Franklin & Benton Counties - Employment by Industry				
Industry Sector	**1990**	**1998**	**2008**	**CAGR 1990-2008**
State and Local Government	10,242	12,727	15,243	2.23%
Retail Trade	8,516	12,374	14,909	3.16%
Professional and Technical Services	5,734	8,635	12,180	4.27%
Health Care and Social Assistance	5,510	8,204	10,892	3.86%
Administrative and Waste Services	5,312	9,825	10,428	3.82%
Agriculture	8,182	8,513	8,055	-0.09%
Construction	4,246	5,345	7,983	3.57%
Accommodation and Food Services	4,002	5,873	7,107	3.24%
Manufacturing	13,647	6,530	6,315	-4.19%
Other Services Except Public Administration	3,290	4,700	5,958	3.35%
Real Estate, Rental, and Leasing	2,253	2,925	4,161	3.47%
Forestry, Fishing, and Related Activities	3,983	4,160	3,950	-0.05%
Wholesale Trade	1,804	2,309	3,083	3.02%
Finance and Insurance	1,698	2,262	2,947	3.11%
Arts, Entertainment, and Recreation	1,176	1,768	2,376	3.98%
Transportation and Warehousing	1,250	2,136	2,368	3.61%
Federal Civilian Government	1,104	1,452	1,291	0.87%
Educational Services	591	878	1,149	3.76%
Information	1,255	1,619	1,047	-1.00%
Federal Military	804	713	727	-0.56%
Management of Companies and Enterprises	115	174	380	6.87%
Utilities	28	145	196	11.42%
Mining	174	98	61	-5.66%
Total Employment	**84,916**	**103,365**	**122,806**	**2.07%**

Source: Woods & Poole CAGR: Compound Annual Growth Rate

Regional employment growth has outpaced state and national employment growth over the past two decades. The largest and fastest-growing employment sectors include retail trade; professional and technical services; health care and social assistance; administrative and waste services; and construction. Sectors that have shown recent employment decline include agriculture and manufacturing. This indicates that the labor force is shifting from traditional sectors toward technology and development industries.

1.8.3 Gross Regional Product

Gross Regional Product (GRP) has also grown, nearly doubling from 1990 to 2008. **Table 1-18** shows the GRP, and compares it to the Washington gross state product (GSP) and U.S. gross domestic product (GDP).

Table 1-18: Gross Regional Product (in thousands of 2004 dollars)

Geographic Region	1990	2000	2008	CAGR 1990-2008
Benton County	$3,638,896	$4,756,314	$6,277,259	3.08%
Franklin County	$917,745	$1,262,704	$1,729,399	3.58%
Combined Counties	**$4,556,641**	**$6,019,018**	**$8,006,658**	**3.18%**
Washington (GSP)	$159,751,040	$243,486,830	$283,195,140	3.23%
United States (GDP)	$7,612,750,080	$10,694,574,600	$12,428,411,500	2.76%

Source: Woods & Poole, US Bureau of Economic Analysis, US Census Bureau, US Bureau of Labor Statistics CAGR: Compound Annual Growth Rate

Growth in the Benton and Franklin combined GRP kept pace with growth in the Washington GSP from 1990 to 2008. Benton and Franklin combined GRP, as well as Washington GSP, grew 0.5% greater than U.S. GDP during this period. Per Woods & Poole, Washington's economy is one of the 10 fastest-growing state economies, with GSP growth of 2.0% from 2007 to 2008.

1.8.4 Mean Household Income

The labor force is shifting from traditional sectors toward technology and development industries. This shift is reflected in a rise in mean household income. Average regional income has grown as employment has expanded into higher-paying industries. The counties combined outperform the state average and are growing faster than the national average. **Table 1-19** shows the mean household income (MHI).

Table 1-19: Mean Household Income (2004 dollars)

Geographic Region	1990	2000	2008	CAGR 1990-2008
Benton County	$64,177	$77,110	$78,791	1.15%
Franklin County	$58,772	$68,299	$63,099	0.40%
Combined Counties	$61,475	$72,705	$70,945	0.80%
Washington	No Data	$66,504	$64,366	Insufficient Data
United States	$52,406	$62,676	$60,033	0.76%

Source: Woods & Poole, US Census Bureau, US Bureau of Labor Statistics CAGR: Compound Annual Growth Rate

The MHI for 2000 is greater than that for 1990 and 2008, with the exception of Benton County, where the MHI has increased since 1990. The 2008 MHI for combined Benton and Franklin Counties is greater than that for the state and the nation.

1.9 Summary

PSC is an engine and a hub to the transportation and economy of the Tri-Cities. The Airport is as integral to the communities of Benton and Franklin Counties as it is to the national airspace system.

Four scheduled commercial passenger airlines connect to 6 destination airports, and charter passenger service flights connects to more. In 2008, PSC had the third most passenger enplanements in Washington. There are daily cargo operations, regular military aircraft training, and industry aircraft testing of large passenger aircraft and small performance jets. General aviation activity ranges from corporate aviation to training and leisure flights.

There are dedicated passenger, cargo, and general aviation areas. The passenger terminal features TSA security screening, passenger amenities, and rental car services. An intermodal cargo facility supports 8 counties in Washington and Oregon. FBOs offer fuel, aircraft repair, avionics, and pilot services. Hangars and aprons provide aircraft storage. There is airport security and an ARFF station to prevent and respond to emergencies. De-icing services are available to support cold weather flying. Airport personnel tend to airport condition and maintenance.

2,235 acres support aircraft activity and commerce. An Airport Business Center hosts facilities which interact between airside and landside, and the East Side Industrial Park supports business and service opportunities. Agriculture activity occurs outside of aircraft operating areas.

The Airport is equipped with an instrument landing system in addition to six other instrument approach procedures. Onsite FAA ATCT and TRACON facilities track aircraft using radar. There are three runways and a full taxiway system. A summary of major facilities are shown in **Table 1-20**.

Table 1-20: Major Facilities Summary

Runways
- o Runway 3L/21R: 7,711ft x 150ft
- o Runway 12/30: 7,703ft x 150ft
- o Runway 3R/21L: 4,423ft x 75ft

Runway Navigational Aids
- o Runway 3L
  - Precision Approach Path Indicator (PAPI)
  - Runway End Identifier Lights (REIL)
  - High Intensity Runway Lights (HIRL)
  - Non-precision Runway Markings
- o Runway 21R
  - Instrument Landing System (ILS)
  - Precision Approach Path Indicator (PAPI)
  - Medium Intensity Approach Lighting System w/ Runway Alignment Indicator Lights (MALSR)
  - High Intensity Runway Lights (HIRL)
  - Precision Runway Markings
- o Runway 12
  - Visual Approach Slope Indicator (VASI)
  - Runway End Identifier Lights (REIL)
  - High Intensity Runway Lights (HIRL)
  - Non-precision Runway Markings
- o Runway 30
  - Precision Approach Path Indicator (PAPI)
  - Omni-Directional Approach Lighting System (ODALS)
  - Medium Intensity Runway Lights (MIRL)
  - Non-precision Runway Markings
- o Runway 3R
  - Unlighted
  - Visual Markings
- o Runway 21L
  - Unlighted
  - Visual Markings

Airport Navigational Aids
- o Air Traffic Control Tower (ATCT)
- o VHF Omni Directional Range (VOR)
- o Automated Surface Observation System (ASOS)
- o Automated Terminal Information System (ATIS)
- o Wind Indicators
- o Compass Calibration Pad

Instrument Approach Procedures
- o Runway 3L
  - RNAV (GPS)
- o Runway 21R
  - ILS or LOC
  - RNAV (GPS)
  - VOR
- o Runway 12
  - RNAV (GPS)
- o Runway 30
  - RNAV (GPS)
  - VOR/DME

Instrument Departure Procedures
- o Tri-Cities Four

Building Area
- o South central airfield
  - Passenger Terminal
  - FAA Airport Traffic Control
  - Airport Administration
  - FedEx Cargo
  - ARFF Facility
- o East airfield
  - Airport Maintenance
  - Fixed Base Operators
  - Hangars

Fixed Base Operators (FBOs)
- o Bergstrom Aircraft
- o Tri-Cities Aviation
- o Fuel
  - 100LL (full- and self-service)
  - Jet A (full- and self-service)

Emergency and Security
- o ARFF Index B
- o Passenger and baggage screening
- o Curbside and terminal security

2.1 Introduction

This chapter provides an overview of environmental conditions, operations, and development to be considered at the Tri-Cities Airport (PSC). A review of environmental compliance is presented, as are environmental categories.

This overview identifies environmental elements to assist in the avoidance and minimization of environmental effects of airport projects, and highlights elements that may require additional review as part of an environmental documentation process, prior to proposed airport improvement projects.

Conditions were determined primarily by literature and database searches, photography and map interpretation, agency correspondence, and local knowledge. Field investigation is limited to that described.

This chapter is not intended to satisfy environmental clearance requirements outlined in Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts and Procedures*, nor is it intended to fulfill the requirements of the National Environmental Policy Act (NEPA). NEPA requires an action involving federal funding or permit approval to undergo an environmental analysis, to evaluate and document proposed effects. An airport project utilizing federal funds is considered a *federal action* and requires NEPA compliance.

2.2 Environmental Considerations

This section presents social, environmental, and economic considerations, and provides an overview for subsequent analysis under NEPA and Washington's State Environmental Policy Act (SEPA).

2.2.1 Air Quality

Generally, an air quality analysis is needed for projects that, due to their size, scope, or location, have the potential to change or diminish air quality standards. These standards governed by the Clean Air Act (CAA) and the Environmental Protection Agency (EPA), known as National Ambient Air Quality Standards (NAAQS), are established by the Office of Air Quality Planning and Standards. Compliance with NAAQS means that ambient outdoor levels of defined air pollutants are safe for human health and the environment.

Federal regulations require states to define geographic areas as *attainment*, *non-attainment*, or *maintenance* areas for NAAQS. Areas defined as *attainment* meet NAAQS. *Non-attainment* and *maintenance* areas are those in which the concentrations of pollutants exceed NAAQS. Federal actions within non-attainment and maintenance areas usually require air quality analysis. States develop EPA-approved State Implementation Plans to address air quality, and identify a plan to bring non-attainment and maintenance areas into compliance. The Office of Air Quality Planning and Standards considers PSC to be in a NAAQS attainment area.

According to the FAA Order 1050.1E Appendix A, proposed improvements at an airport having less than 180,000 annual general aviation (GA) aircraft operations and less than 1.3 million annual passenger enplanements do not require an air quality analysis. Since PSC GA aircraft operations are expected to be less than 180,000, and since PSC annual passenger enplanements are expected to be less than 1.3 million, no air quality analysis is required.

2.2.2 Coastal Resources

The Coastal Zone Management Act established the Federal Coastal Zone Management Program to encourage and assist states in preparing and implementing management programs to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone." The Airport is not located in a coastal zone management area, and airport development is not expected to impact coastal resources.

2.2.3 Compatible Land Use

Land use planning allows the Airport to achieve compatibility with surrounding communities, while maintaining the ability to safely satisfy existing users and accommodate expanded operations to meet aviation demand.

Land use is addressed in Chapter 7.

2.2.4 Construction Impacts

FAA Advisory Circular (AC) 150/5370-10, *Standards for Specifying Construction of Airports,* contains provisions to minimize impacts to air quality, water quality, and soil erosion associated with projects. The AC directs that construction and demolition debris be disposed of per applicable state and federal criteria. Each construction project should determine impacts and identify techniques to reduce impacts.

2.2.5 Cultural Resources

The National Historic Preservation Act recommends measures to coordinate federal historic preservation activities, and to comment on federal actions affecting historic properties included in, or eligible for inclusion in, the National Register of Historic Places. The Archaeological and Historic Preservation Act "provides the survey, recovery, and preservation of significant scientific, prehistorical, historical, archeological, or paleontological data when such data may be destroyed or irreparably lost due to a federal, federally licensed, or federally funded project".

Often airport projects require that buildings be removed or previously undisturbed earth be excavated, which removes evidence of historic buildings and archaeological sites. The FAA requires that the effects of projects on historical, architectural, archaeological, and cultural resources be determined prior to improvement.

A July 2009 cultural resource review concluded that there are no known prehistoric archaeological sites on Airport property. However, the Airport property has potential to contain historic cultural materials associated with the early development of the American airline industry, due to the Varney Air Lines (later to become United Airlines) activity in the early 1930's. In addition, the Airport was used as a Naval Air Station and may have historic materials and remnant structures. It is recommended that a cultural survey, including field work, be conducted to determine the existence of historic resources within Airport property prior to development activities.

An October 2010 archaeological survey, included in **Appendix D**, found no items of archaeological significance within a study area that consisted of land for a proposed parking lot expansion, and the realignment of Taxiway D. This is to be verified as part of the environmental reviews at the time of implementation for these and other airport improvement projects.

2.2.6 Department of Transportation Act, Section 4(f) Resources

Section 4(f) of the Department of Transportation Act provides that the Secretary of Transportation "will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from a historic site of national, state, or local significance as determined by the officials having jurisdiction, thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use."

A July 2009 cultural resource review indicated that the Airport may have materials and remnant structures associated with historic military use. Prior to development, it is recommended that a cultural resource investigation be conducted to determine the existence of historic resources.

2.2.7 Environmental Justice

The purpose of Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-income Populations*, is to identify, address, and avoid disproportionately high and adverse human or environmental effects on minority and low-income populations. Environmental Justice is defined as the right to a safe, healthy, productive, and sustainable environment for all, and in this context, "environment" is considered to include the ecological, physical, social, political, aesthetic, and economic environments.

Based on 2000 census data, there are no disproportionate concentrations of minority, low-income, or people requiring assisted transportation in the vicinity of the Airport. Improvements to PSC are not expected to require relocation of residences and businesses, or to have disproportionately high adverse impacts on minority and low-income populations. Data should be revisited prior to improvement implementation.

2.2.8 Farmlands

The Farmland Protection Policy Act (FPPA) was enacted to minimize the extent to which federal actions and programs contribute to the unnecessary and irreversible conversion of farmland to non-agricultural uses. The FPPA classifies farmland as *prime* farmland, *unique* farmland, or farmland of statewide or local *importance*. *Prime* farmland has the best combination of physical and chemical characteristics for producing food, forage, fiber, and oilseed crops. *Unique* farmland is land other than *prime* farmland used for the production of specific high-value food and fiber crops such as citrus, tree nuts, olives, cranberries, fruits, and vegetables. Farmland of statewide or local *importance* includes soils that do not meet *prime* farmland criteria, but economically produce high yields of crops when treated and managed. A federal action which may result in conversion of farmland to non-agricultural use requires coordination with the U.S. Department of Agriculture Natural Resource Conservation Services (NRCS).

According to the NRCS, Quincy Loam Fine Sand is the dominant soil type, and is considered to be of statewide or local importance. Norvark Silt Loam, a soil type associated with prime farmland if irrigated, encompasses approximately 40 acres of the northwestern portion of the Airport. Potential impact to these soils types will require coordination with the NRCS, to determine FPPA applicability or exemption. Local comprehensive plans designate Airport property as urban area; therefore, future agricultural development is unlikely. **Exhibit 2-1** illustrates these soil types.

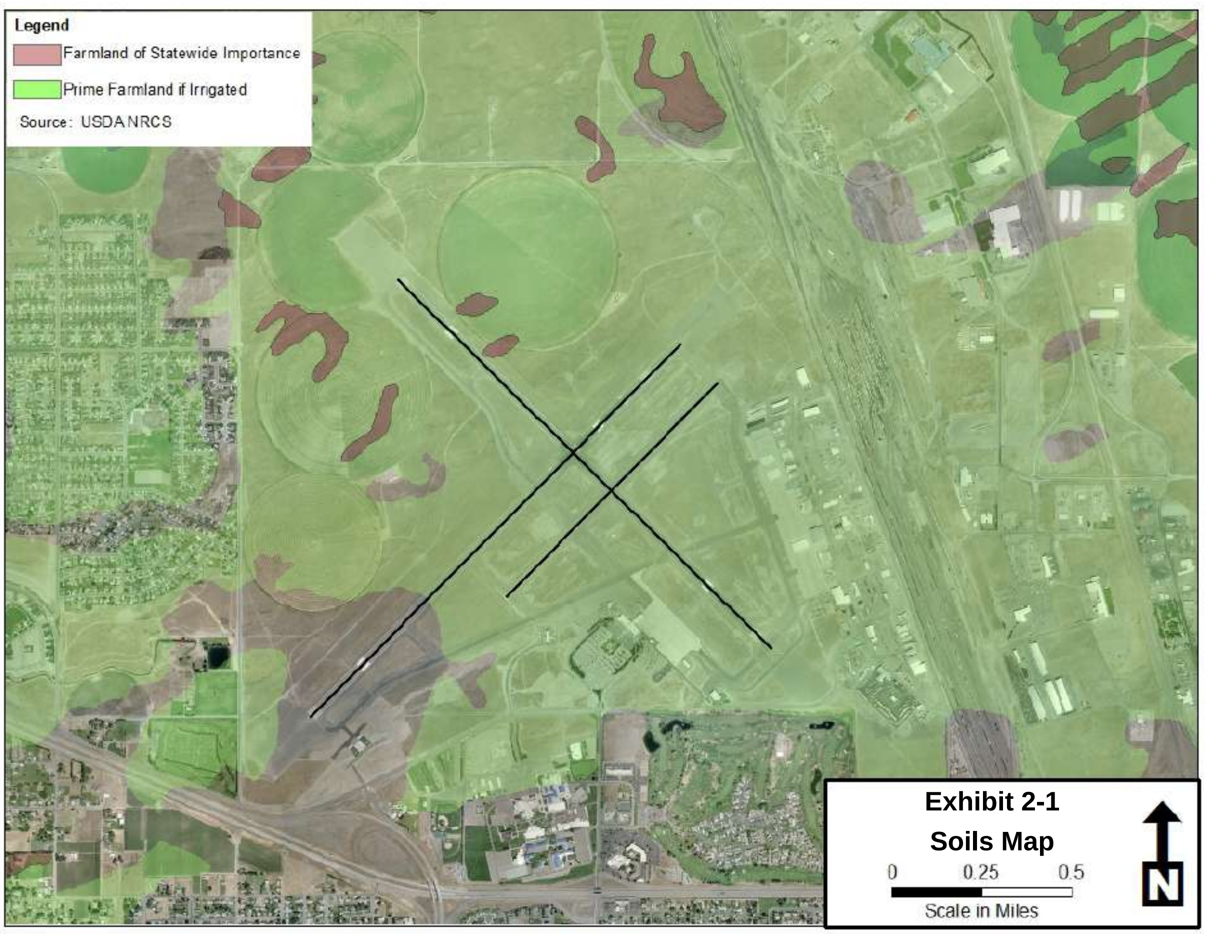


Exhibit 2-1
Soils Map

Fish, Wildlife, and Plants

This section focuses on species listed as *endangered*, *threatened*, or of *special concern* by the federal and state government. An animal or plant species in danger of extinction throughout all or a significant portion of its range is considered *endangered,* and is protected from harm pursuant to federal and state law. A *threatened* species is one that is likely to become endangered. Species of *special concern* are not formally afforded regulatory protection, but reduction in their number and habitat is of concern.

The Endangered Species Act (ESA) provides for protection of plants, animals, and habitats. In compliance with the ESA, agencies overseeing federally-funded projects coordinate with the U.S. Fish and Wildlife Service (FWS) concerning species listed, or proposed to be listed, which may be present. Since the State of Washington is a recipient of federal funds, and oversees federally-funded projects, coordination with the Washington Department of Natural Resources (DNR) is required.

There are five ESA listed (endangered, threatened, special concern, or candidate) species on the 2008 Franklin County Species List

- Pygmy Rabbit
- Bull Trout
- Ute Ladies'-Tresses
- Washington Ground Squirrel
- White Bluffs Bladderpod

A July 2009 information search through the Washington DNR Natural Heritage Information System, to determine the existence of documented rare plants or high-quality native ecosystems on Airport property, yielded no records.

In addition to federal protection, the Washington Department of Fish and Wildlife Priority Habitat and Species (PHS) program protects state sensitive species. A July 2009 review of PHS data identified three state sensitive species on Airport property.

- Black-tailed Jackrabbit
- Burrowing Owl
- Long-billed Curlew

In accordance with the Migratory Bird Treaty Act (MBTA), airports typically discourage bird flyways and habitat, such as standing water or large deciduous tree stands, as such features promote a higher likelihood of wildlife strikes. The Burrowing Owl is a state candidate species, a federal species of special concern, and a migratory bird, protected by the MBTA. It is recommended that a survey for Burrowing Owls in project areas be completed prior to improvement activities.

Airport development projects have the potential to impact species and habitats. An October 2010 biological survey, included in **Appendix D**, found no threatened or endangered species within a study area that consisted of land for a proposed parking lot expansion, and the realignment of Taxiway D. This is to be verified as part of the environmental reviews at the time of implementation for these and other airport improvement projects.

Floodplains

A floodplain is generally a flat, low-lying area adjacent to a stream or river that is subject to inundation during high flows. The relative elevation of a floodplain determines its frequency of flooding. For example, a 100-year floodplain has a frequency of inundation, on average, once every 100 years.

U.S. Department of Transportation (DOT) regulations direct airport development action to avoid floodplains, if another prudent and feasible alternative exists. If no prudent alternative exists, activity in floodplains should minimize adverse impacts.

A July 2009 review of Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Franklin County Geographic Information System (GIS) shows the northwest corner of Airport property within FEMA-designated 100-year floodplain, identified as "Zone A" in **Exhibit 2-2**. Coordination with state and federal agencies is required prior to improvements within floodplains.

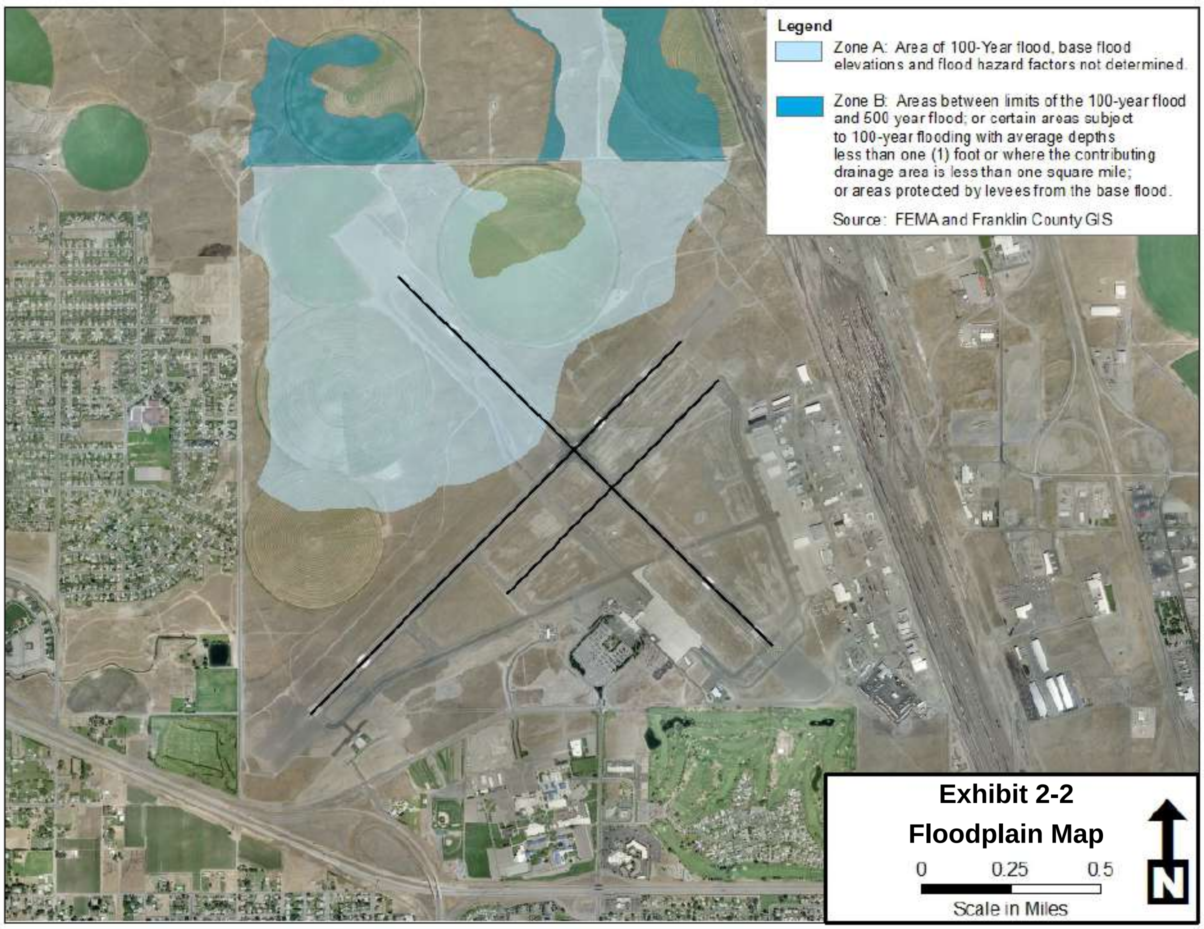


Exhibit 2-2
Floodplain Map

2.2.9 Hazardous Materials, Pollution Prevention, and Solid Waste

Hazardous materials are defined by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), and the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act (RCRA), 42 United States Code (USC) 6901-6992. Hazardous materials include substances that because of their quantity, concentration, or physical, chemical, or infectious characteristics, may present substantial danger to public health or welfare or the environment.

The two statutes of concern to the FAA are the RCRA, as amended by the Federal Facilities Compliance Act, and the CERCLA, as amended by the Superfund Amendments and Reauthorization Act (SARA) and by the Community Environmental Response Facilitation Act. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of release of a hazardous substance, excluding petroleum, into the environment.

A July 2009 review of the DOE Facility Site Atlas identified several “sites of interest” on Airport property. The DOE defines “sites of interest” as state cleanup sites, federal superfund sites, hazardous waste generators, solid waste facilities, underground storage tanks, dairies, or enforcement. Coordination with the DOE is recommended to determine the significance of each site.

Executive Order 12088, *Federal Compliance with Pollution Control Standards*, directs federal agencies to comply with applicable pollution control standards, in the prevention, control, and abatement of environmental pollution, and consult with the EPA, state, interstate, and local agencies concerning the techniques and methods available for the prevention, control, and abatement of environmental pollution.

Solid waste produced on site from construction activities is to be disposed of in accordance with the Washington Department of Environmental Quality (DEQ).

An overview of related regulation associated with activities at PSC is presented in **Appendix B.**

2.2.10 Light Emissions and Visual Impacts

Lighting for aviation security, obstruction identification, and navigation can be considered light emissions. The introduction of a new, or relocation of an existing, airport lighting facility is to be analyzed for affect on residential and other light sensitive land uses.

2.2.11 Natural Resources and Energy Supply

This section considers potential changes in demand for energy or natural resources that would have a measurable effect on local supplies due to implementation of proposed projects. Energy requirements associated with an airport usually fall into two categories: demands for stationary facilities and demands for the movement of air and ground vehicles.

FAA guidance states that airport improvement projects not increase the consumption of energy or natural resources to the point of significant impacts, unless it is found that implementation of a project would cause demand to exceed supply. Airport improvement projects may cause increased energy consumption during construction, but increases are expected to be temporary and not significant.

2.2.12 Noise

Per FAA Order 1050.1E, projects at airports that experience 90,000 annual piston-powered aircraft operations, 700 annual jet-powered aircraft operations, citing a new airport, runway relocation, runway strengthening, or a major runway expansion require a noise analysis including noise contour maps. PSC meets these criteria.

Noise is addressed in Chapter 7.

2.2.13 Socioeconomic Impacts

Airport development can cause induced affects on population movement and growth, public service demands, and changes in economic activity. Improvements at PSC are not expected to create significant change in population, public service, and economic activity, but are expected to have positive impacts through creation of employment opportunity, business growth, and economic activity. Resource agencies should be coordinated prior to implementation.

2.2.14 Water Quality

The Federal Water Pollution Control Act, as amended by the Clean Water Act (CWA), provides the authority to establish water quality standards, control discharges into surface and subsurface waters, develop waste treatment management plans and practices, and issue permits for discharges (section 402) and for dredged or fill material (section 404).

The Fish and Wildlife Coordination Act (FWCA) applies to a proposed federal action which would impound, divert, drain, control, or otherwise modify the waters of stream or body of water, unless the project is for the impoundment of water covering an area of less than ten acres. The FWCA requires consultation with the FWS and applicable state agencies to identify means to prevent loss and damage to wildlife resources resulting from improvements. Coordination with DOE will work to meet state water quality standards.

Surface drainage from improvements are expected to continue to be collected in drainage systems and conveyed to detention basins, to evaporate or percolate into the subsurface. Best management practices should be developed and employed, and construction should incorporate appropriate erosion control measures.

2.2.15 Wetlands

The CWA defines wetlands as “areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas”. Federal regulations require that proposed actions avoid, to the greatest extent possible, long-term and short-term impacts to wetlands, including the destruction and altering of the functions and values of wetlands.

A July 2009 review of National Wetland Inventory (NWI) data indicated wetland features on PSC property, north of Runway End 3L, east of Road 36. Field survey indicates that this wetland no longer exists.

A July 2009 review of NRCS data indicates that native soils generally consist of loamy fine sands. A July 2009 review of the Franklin County portion of the National Hydric Soils List indicates that these soil types are not listed as *hydric*, or wetland, soils. However, several soil types have potential wet spot components, where the saturation criteria could be potentially met to characterize the soil type as hydric, and wetted depressional land forms may contain hydric soils.

Airport operations and improvements should consider effect on wetlands. An October 2010 wetland survey, included in **Appendix D**, found no wetlands within a study area that consisted of land for a proposed parking lot expansion, and the realignment of Taxiway D. This is to be verified as part of the environmental reviews at the time of implementation for these and other airport improvement projects.

2.2.16 Wild and Scenic Rivers

The Wild and Scenic Rivers Act provides protection for certain free-flowing rivers, which have “outstanding or remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values”. A July 2009 review of the National Parks Service Wild and Scenic River Inventory System indicates no Wild and Scenic Rivers within or near PSC.

2.3 Summary

Among the ongoing aviation, social, and commercial activity, PSC is host, neighbor, benefactor, and beneficiary to environmental resources. Airport operations and development can and do occur in balance with the environmental resources on and surrounding PSC. Airport improvements require environmental processes and documentation prior to implementation. Consideration and coordination with agencies and regulation prior to airport improvement will allow PSC to continue to be a good steward of the environment.

1. Purpose and Goals

This chapter contains forecasts of aviation activity at the Pasco Tri-Cities Airport (PSC). These forecasts will form the basis of several key Master Plan (Plan) elements, including demand-driven airport facilities, environmental evaluation, capital improvement plan development, business and financial planning, land use compatibility planning, and local policy decisions.

PSC features commercial passenger and cargo activity, complimented by general aviation and military operations. These uses require facilities for safe and efficient operations. The design and development of these facilities is correlated with aviation activity forecasts. These forecasts will anticipate growth at PSC, help plan improvements, and enable the Airport to obtain funding, prepare a budget, and manage staff.

This chapter forecasts the following activities: passenger enplanements, aircraft operations, based aircraft, and air cargo volume. Multiple methods of forecasting are applied to each category, and the results are compared with the Federal Aviation Administration (FAA) forecasts to select preferred forecasts to guide the Airport.

The forecasts provide a historical baseline from 2006 to 2008. Other time periods were considered, but this time period experienced national and local changes to the aviation industry, such as a rise in the cost of fuel, airline route restructuring, and changes to airline fleet mix that provide a reasonable history on which to build forecasts.

Historical data comes from sources including the FAA Terminal Area Forecast (TAF), the United States Department of Transportation (USDOT), the Benton-Franklin Council of Governments (BFCOG), and the economic forecasting firm Woods & Poole. 2008 data pertaining to airport activity comes from official counts by PSC's air traffic control tower because data from the December 2008 TAF are estimates. The forecast reporting years are five, ten, and twenty years out. Plan projections include analysis of statistical data, professional judgment and interpretation, and industry rules of thumb to support the recommendations. Forecasts included in the Plan are generally expected to represent unconstrained demand that the Airport could realistically expect to serve if the demanded facilities were in place.

The summary that follows describes how different organizations will use and contribute to this forecast.

1.1 Federal Aviation Administration

Aviation forecasts are formally approved by the FAA as part of this Plan. The FAA uses the forecasts primarily to program funding for demand-driven improvements at the Airport.

1.2 Airport Sponsor

The Port of Pasco owns and operates PSC. Airport management focuses on increasing the Airport's level of service to enhance aviation business opportunities for the community. The initial emphasis is to develop a plan that will enable the Airport to expedite aviation-related development, such as corporate hangars, and airport service businesses, and to ensure a wide range of potential commercial air service scenarios are addressed. Continued emphasis is placed on land use compatibility, both on and off airport.

1.3 Beyond Master Plan Approval and Adoption

Since the Airport considers diverse possibilities, planning beyond FAA forecasts and approvals are required. The forecasts will play a key role in the Purpose and Need statement for projects requiring documentation in accordance with the National Environmental Policy Act (NEPA). The Plan is expected to be incorporated by reference into documents such as the Benton and Franklin County General Plans, municipal plans, transportation plans, Airport land use compatibility plans, and special purpose plans.

1.4 FAA Approval Process

Guidance for preparing aviation activity projections is contained in FAA Advisory Circular 150/5070-6B, *Airport Master Plans.* These steps are: identify aviation activity measures, review previous airport forecasts, gather data, select forecast methods, apply forecast methods and evaluate results, compare forecast results to the FAA's Terminal Area Forecasts, and approval of forecasts. These steps are documented in this chapter.

The FAA compares the Plan forecasts with the TAF, and the FAA and the Airport coordinate and adjust to align the forecasts.

1.5 Review of Previous Airport Forecasts

A review of previous forecasts provides information about the underlying methodologies used in their development, and an initial screen of pertinent trends and changed conditions. A summary of previously published forecasts follows.

1.5.1 December 2008 Terminal Area Forecast (TAF)

The FAA has established the TAF as the official federal forecast for airports included in the National Plan of Integrated Airport Systems (NPIAS). As part of NPIAS, PSC is eligible to receive funding through airport improvement program (AIP) grants. The TAF is the policy benchmark for federal review and approval of airport master plan forecasts, and FAA approval of master plan projections is subject to TAF policy guidance. Generally, master plan forecasts are approved readily if they are within 10 percent of TAF projections. Outside of this range, coordination may be necessary to adjust to bring them within 10 percent of one another. TAF projections are updated each federal fiscal year. Primary methodologies used in developing forecasts are time-trend and macro-based. This Plan uses the TAF published in December 2008, which corresponds to these forecast's base year.

1.5.2 FAA Aerospace Forecast 2009-2025 and Long Range Forecast

The FAA Aerospace Forecast provides a 17-year outlook of national aviation demand. These forecasts are a primary source for identifying major national trends in macro-activity and fleet mix.

1.5.3 2009 Washington Long-Term Air Transportation Study (LATS)

The 2009 LATS is a system-wide approach to managing Washington's aviation resources. The LATS forecasts enplanements, commercial operations, and air cargo volume for PSC, while general aviation (GA) operations and based aircraft are forecast for the Tri-Cities area.

PSC's enplanement forecasts have a compound annual growth rate (CAGR) of 2.12 percent, 0.25 percent below the TAF forecast for the same period. PSC's commercial operations forecasts have a CAGR of 0.56 percent, 1.28 percent higher than the TAF's. PSC's cargo volume forecasts have a CAGR of 6.25 percent.

LATS local level forecasts include other airports in the Tri-Cities area, such as Vista Field and Richland. GA growth indicators show a CAGR of 1.35 percent for based aircraft. GA operations have a CAGR of 1.26 percent. The 2008 TAF for PSC has a CAGR of 1.47 percent for based aircraft, and 1.72 percent for GA operations.

1.5.4 2000 Airport Master Plan

The previous PSC Master Plan has a base year of 1995, and forecasts activity levels from 2000 to 2020. Passenger enplanements had a CAGR of 3.24 percent, and assumed that growth would be a combined factor of the area's population growth, and growth in the incidence of flying within the population. This forecast has produced enplanement numbers above the 2008 TAF. When this growth rate is extrapolated to 2028, it produces an enplanement forecast nearly 20 percent above the TAF. The operations forecast for commercial, GA, and military had a CAGR of 1.24 percent, and yield higher numbers than the TAF. A possible explanation of this is that GA operations were higher ten years ago; therefore the historical baseline was above what is being considered today. The 2000 Master Plan had 47,500 GA operations in its base year of 1995, whereas actual 2008 GA operations totaled 33,969, a difference of 28.49 percent.

1.6 Catchment Area Analysis

Activity at PSC is influenced by local and regional factors described in the socioeconomic section of **Chapter 1**. An airport's catchment area is the geographic region from which it is expected to draw users. For the purposes of this Plan, Benton and Franklin Counties represent PSC's catchment area, and population and socioeconomic data in this chapter use the combined data from these counties. Airport users also come from outside this area, but PSC is most directly impacted by socioeconomic changes in these counties.

1.7 Methodologies

Three general methodologies generate PSC specific forecasts: CAGR, market share, and socioeconomic. The CAGR methodology takes the average annual rate of growth from historic data, and projects this average annual rate of growth for the forecast years. Market share methodology identifies the percentage of a national total of a given activity indicator that PSC accounts for. This percentage is projected, meaning that activity levels at PSC will correlate consistently with national activity levels. Socioeconomic methodology correlates activity levels to economic indicators within the catchment area, such as changes in population, per capita income, and gross regional product. As the value of these indicators fluctuates, the level of activity will perform similarly.

These methodologies share the assumption that past relationships between socioeconomic growth and enplanements will remain unchanged into the future, uninfluenced by new variables. Economic recession, volatile fuel prices, and increased security are aspects of aviation create new challenges which may alter past trends. To address these new variables, forecasts are analyzed against industry trends and developments. The combined statistical and judgmental analysis is used to select the preferred forecast for each activity indicator.

2. Passenger Enplanements

An *enplanement* represents the act of a passenger boarding an aircraft. Enplanement figures are collected for passengers on scheduled commercial service flights and non-scheduled charter flights. Air carriers with at least one point of service in the United States report this information to the USDOT.

2.1 Enplanement History and Industry Trends

The 2008 TAF provides enplanement data from 1976 to 2008, during which time enplanements at PSC had a 3.88 percent CARG. Growth has not been linear; PSC has seen enplanements increase and decline during this period. Enplanements at PSC had a 2.16 CAGR between 2006 and 2008. Enplanement history for the past three years is shown in **Table 3-1**.

Table 3-1: Enplanement History

Year	Enplanements
2006	226,913
2007	238,466
2008	241,907
CAGR	2.16%

Source: TAF

Several obstacles have challenged the airline industry since 2006, including variable fuel prices, economic recession, and virus outbreaks. The FAA reports that ten airlines ceased operations in 2008. In order to save costs, airlines have reduced frequencies, cut routes, and grounded aircraft. PSC lost routes to Portland, Pendleton, and Minneapolis-St. Paul, but gained service to San Francisco, and Phoenix-Mesa. Allegiant Air has indicated that they are looking to add new service to Los Angeles International Airport.

The *FAA Aerospace Forecast 2009-2025* indicates that national enplanements fell by one percent from 2007 to 2008. Across the country, airline load factors dropped to 79.3 percent, down by 0.5 percentage points from 2007. U.S. carriers reported losses of 18.5 billion dollars in 2008. The *FAA Aerospace Forecast 2009-2025* predicts a return to growth in 2010, with a national increase in enplanements by an average of 1.64 percent annually. Between 2007 and 2008 PSC saw a 1.4 percent increase in enplanements, and an average load factor of 73 percent. The 73 percent average load factor is used for the forecasts generated in this Plan.

2.2 Enplanement Forecast—Terminal Area Forecast

The TAF serves as a baseline to compare generated forecasts. As the TAF only extends to 2025, a CAGR of 2.60 percent extrapolates the TAF from its end year of 2025 to 2028. The TAF forecast is presented in **Table 3-2.**

Table 3-2: Enplanement Forecast—TAF	
Year	**Enplanements**
2008	241,907
2013	256,639
2018	299,723
2028	404,401
CAGR	2.60%

Source: TAF

This forecast has not been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.3 Enplanement Forecast—Growth Rate

A growth rate forecast applies the Airport's historical average annual growth rate, unchanged through the planning period. The growth rate forecast is 4.89 percent above the TAF forecast in 2013 and 0.06 percent below the TAF in 2018. The growth rate forecast is presented in **Table 3-3**.

Table 3-3: Enplanement Forecast—Growth Rate	
Year	**Enplanements**
2008	241,907
2013	269,186
2018	299,542
2028	370,908
CAGR	2.16%

This forecast has not been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.4 Enplanement Forecast—Market Share Methodology

PSC's market share represents the percentage of national enplanements that occur at the Airport. National enplanement data comes from the *FAA Aerospace Forecast 2009-2025*. Analysis shows that PSC accounted for an average of 0.045 percent of annual national enplanements between 2006 and 2008. This percentage is multiplied by the FAA national enplanements forecasts for the reporting years. The market share forecast is 2.57 percent below the TAF in 2013, and 7.69 percent below the TAF in 2018. The market share forecast is presented in **Table 3-4**.

Table 3-4: Enplanement Forecast—Market Share		
Year	**National Enplanements**	**Enplanements**
2008	522,300,000	241,907
2013	555,900,000	250,042
2018	615,100,000	276,670
2028	723,800,000	325,548
CAGR	1.64%	1.50%

Source: FAA

This forecast has not been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.5 Enplanement Forecast—Master Plan

Due to recent changes in the make up of PSC's air service, a Master Plan forecast has been generated. This forecast presents a scenario where air service to discontinued markets is restored, and new service is added over the 20 year planning horizon. This forecast is based on the following.

Delta Airlines will proceed with their plan to reinstate service to Minneapolis-St. Paul using a CRJ-700 aircraft. Delta will also discontinue use of the Bombardier CRJ-700 to Salt Lake City, which averaged less than a departure per week to in 2008, and replace it with additional service by a CRJ-900 aircraft. Allegiant Air will follow through with their plans to add service to Los Angeles using Boeing MD-80 aircraft, having an 80 percent load factor in line with their other flights, and offering two departures per week. United will begin to use 66 seat Bombardier CRJ-700's more frequently on their Denver route and introduce them on their San Francisco route. United's CRJ-200's will begin to be phased out. These projections lead to 2013 enplanements that are 10.99 percent above the TAF.

By 2018, Horizon Air will resume service to Portland on Bombardier Q400's with ten departures per week, experiencing a 64 percent load factor. United will use more CRJ-700's to San Francisco and use this aircraft exclusively on flights to Denver. These projections lead to 2018 enplanements that are 12.60 percent above the TAF.

By 2028, Delta Airlines will introduce a Boeing 737-700 on higher demand flights to Salt Lake City with a 70 percent load factor and 10 departures per week. United will operate 66 seat aircraft on routes to Denver and San Francisco, and Frontier Airlines will introduce 12 departures per week to Denver on 100 seat aircraft with a 70 percent load factor. Horizon will have doubled their frequency to Portland with 20 departures per week, and Allegiant will add another destination using 150 seat aircraft. These projections lead to 2028 enplanements that are 10.92 percent above the TAF. The Master Plan forecast is presented in **Table 3-5**.

Table 3-5: Enplanement Forecast—Master Plan	
Year	**Enplanements**
2008	241,907
2013	284,846
2018	337,489
2028	448,543
CAGR	3.14%

This forecast has not been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.6 Enplanement Forecast—Socioeconomic

Socioeconomic methodology applies local conditions to enplanements. This methodology correlates historic enplanements with population and per capita income.

2.6.1 Enplanement Forecast—Per Capita Income

Per capita income data is forecast by economic forecasting firm Woods & Poole, and is the average of the individual forecasts for Benton and Franklin Counties. The number of enplanements per dollar of per capita income averaged 9.445 between 2006 and 2008. The per capita income forecast enplanements 4.43 percent below the TAF in 2013, and 13.65 percent below the TAF in 2018. The per capita income enplanement forecast is presented in **Table 3-6**.

Table 3-6: Enplanement Forecast—Per Capita Income		
Year	**Per Capita Income**	**Enplanement Forecast**
2008	$24,928	241,907
2013	$25,969	245,267
2018	$27,403	258,806
2028	$31,236	295,011
CAGR	1.13%	1.00%

Source: Woods & Poole

This forecast has not been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.6.2 Enplanement Forecast—Population

The population forecast comes from the BFCOG and assumes a 2 percent CAGR for the populations of Benton and Franklin counties. There was an average of 1.028 enplanements per person between 2006 and 2008. This enplanement forecast takes into account the national trend of increased enplanements per person as indicated by the FAA's national enplanement forecast in the *FAA Aerospace Forecast 2009-2025,* and the U.S. Census Bureau's national population forecast. These forecasts show national enplanements per person increasing from 2.24 in 2008 to 2.46 in 2018, and 2.75 in 2028. When the enplanement per person increase is applied to the population based forecast, the increase in enplanements per person results in a 2.98 percent CAGR between 2008 and 2028.

Records show an average of 1.028 enplanements per person between 2006 and 2008. To keep in line with national trends that show increased enplanements per person, this rate is adjusted to 1.043 enplanements per person for 2013, 1.119 for 2018, and 1.252 for 2028. This projection forecasts 4.92 percent above the TAF in 2013, and 6.40 percent above the TAF in 2018. The population enplanement forecast is presented in **Table 3-7**.

Table 3-7: Enplanement Forecast—Population

Year	Population	Enplanement Forecast
2008	233,822	241,907
2013	258,225	269,260
2018	285,101	318,907
2028	347,536	435,064
CAGR	2.00%	2.98%

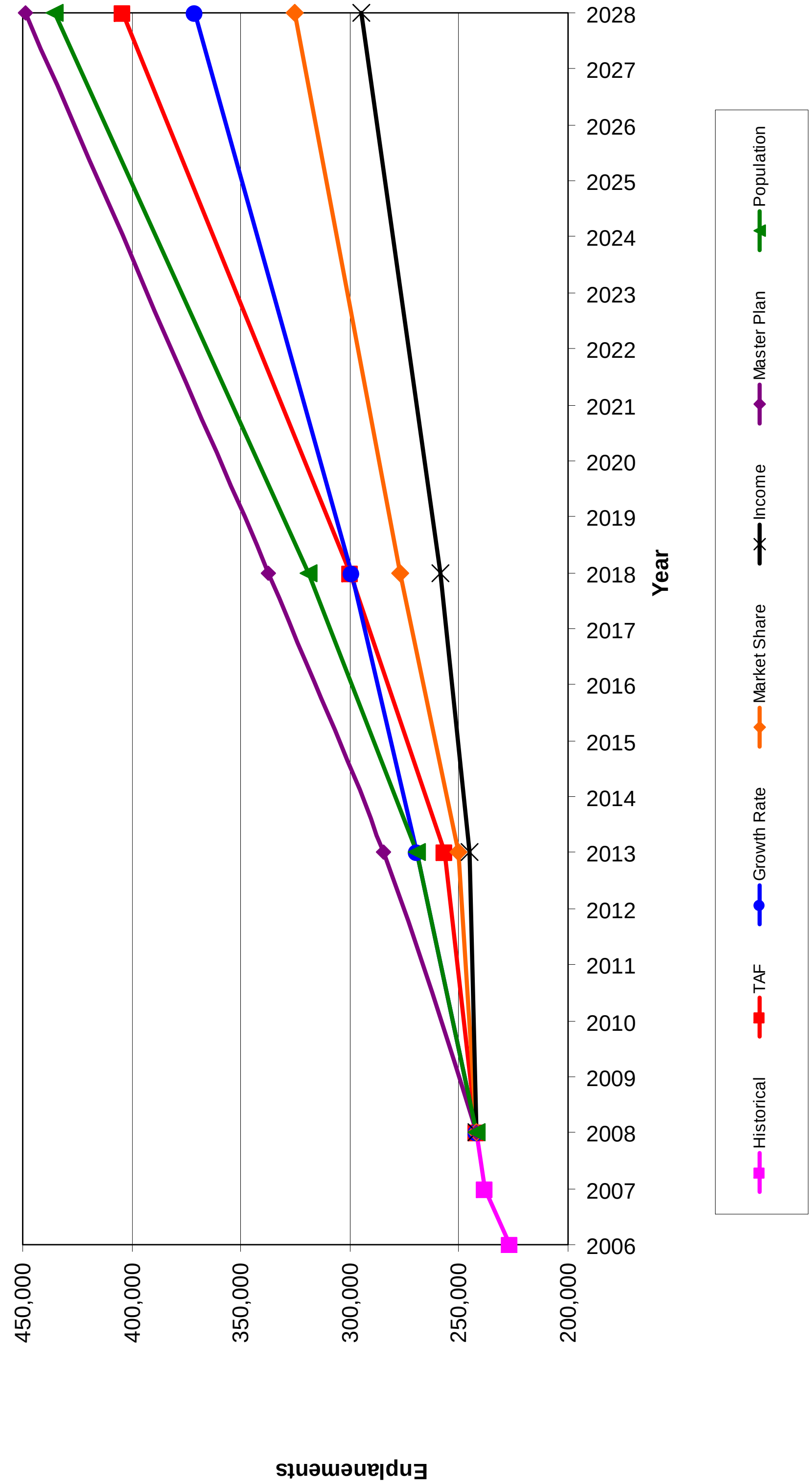
Source: BFCOG, FAA, U.S. Census Bureau,

This forecast has been selected as the preferred enplanement forecast. The reasoning is presented in **Section 2.7**.

2.7 Enplanement Forecast—Method Comparison and Preference

A graph of the enplanement forecasts is presented in **Exhibit 3-1**.

Exhibit 3-1 Passenger Enplanement Forecasts



Enplanement forecasts by *population*, *growth rate*, and *market share* fall within ten percent of the TAF in 2013 and 2018. The *master plan* forecast is within ten percent in 2013, but 11.19 percent above in 2018. The income enplanement forecast produced enplanements that were ten percent below the TAF enplanement forecast. These forecasts were analyzed against local trends and projections to determine the preferred forecast. A summary of the different enplanement forecasts is presented in **Table 3-8**.

Table 3-8: Enplanement Forecast—Method Comparison

Year	TAF	Growth Rate	Market Share	Income	Master Plan	Population
2008	241,907	241,907	241,907	241,907	241,907	241,907
2013	256,639	269,186	250,042	245,267	284,846	269,260
2018	299,723	299,542	276,670	258,806	337,489	318,907
2023	351,162	333,115	300,014	275,465	393,821	377,707
2028	404,401	370,908	325,548	295,011	448,543	435,064
CAGR	2.60%	2.16%	1.50%	1.00%	3.14%	2.98%

Factors that support forecasts above the TAF include growth in local industries; the lack of air service at other airports nearby; and continued population growth in the area. In addition to the demand for technical services at local U.S. Department of Energy facilities, the Tri-Cities area has seen economic development in service industries, and food industries. Long-term growth in enplanements also supports forecasts above the TAF. Enplanements at PSC had a CAGR of 3.88 percent between 1976 and 2008.

Factors that support forecasts below the TAF include economic downturn and future economic uncertainty. In 2008, the U.S. economy went into recession. PSC saw enplanements increase as the American Recovery and Reinvestment Act (ARRA) came into effect in 2009, however the long term effects of the economic recession remain unknown. After the stimulus money from the ARRA is spent, financial analysts debate whether the economy will be fiscally stable enough to support further growth or sustain recovered losses.

The price of fuel remains a concern for the airline industry. Air carriers have already grounded less fuel efficient planes, and cut service to smaller cities when oil prices exceeded 100 dollars per barrel in 2008. If prices return to such a level, smaller markets such as PSC could see a reduction in service. A reduction in service is not necessarily attributable to decreased local demand; in fact, fewer flights often lead to higher load factors as passengers have fewer options. Still, if fewer seats and flights leave the Airport, enplanements may decline.

The *population* forecast constitutes the preferred forecast for this Master Plan. Local conditions that support this forecast include new routes to Phoenix and Los Angeles, growth in local medical, service, food processing, and agriculture industries, and continued demand for technical services associated with local U.S. Department of Energy facilities. This forecast also ties into local transportation plans because it is based on the same 2.0 percent population CAGR that the BFCOG is using for their regional transportation plan. As stated in the methodology, this forecast also assumes that the incidence of flying will increase within the population itself. Air service to new markets and increased service on existing ones may increase competition, which will lower ticket prices and encourage more people to fly from PSC.

The *income* forecast was not selected because it was outside of the TAF's ten percent tolerances. The *Market Share* forecast was within ten percent of the TAF, but due to the increase in routes and the growth in enplanements over the past it is anticipated that PSC will increase its market share. The *growth rate* forecast tracks higher than the TAF for the first ten years, but falls short of the TAF over 20 years. It is anticipated that air service at PSC will build upon its own success. As more routes are added, ticket prices will drop and more passengers will fly which will increase the rate of growth. The *Master Plan* forecast has been identified as a *high growth* scenario, but it is too speculative to be selected as the preferred forecast.

2.7.1 Enplanement Forecast—Preferred

The population based enplanement forecast is the preferred enplanement forecast. The preferred enplanement forecast is categorized into enplanements by *air carrier* aircraft, which have more than 60 seats, and *air taxi* aircraft, which have 60 or fewer seats. Horizon's Bombardier Q200 aircraft was retired in 2008, and the 50 seat Bombardier CRJ-200 is the only remaining air taxi aircraft still operating at the Airport. The load factor that the CRJ-200 attained in 2008, 73.84 percent, is applied to the preferred commercial operations forecast in **Section 3.1.2** to develop the preferred enplanement forecast by scheduled air taxi aircraft. It is expected that air carrier aircraft will represent the remaining enplanements. Expected enplanements by air carrier and air taxi aircraft are presented in **Table 3-9**.

Table 3-9: Enplanement Forecast—Preferred

Year	Air Carrier	Air Taxi	Total
2008	133,049	108,858	241,907
2013	230,494	38,766	269,260
2018	291,217	27,690	318,907
2028	425,824	9,240	435,064
CAGR	5.99%	-11.60%	2.98%

The decline in passengers enplaned on air taxi aircraft is attributable to the reduction in available seats. With only one type of air taxi aircraft expected to operate at the Airport, and a forecasted reduction in utilization of this aircraft type, air taxi enplanements decline with a CAGR of negative 11.60 percent. Load factors are expected to remain at 73.84 percent, but operations will decline as described in **Section 3.1.2**. Air taxi enplanements are calculated by multiplying the number of available seats by the expected load factor for the forecast reporting years. Air carrier aircraft are expected to transport the other forecasted enplanements, which results in a CAGR of 5.99 percent.

3. Aircraft Operations

An aircraft operation is one takeoff or landing; therefore, one trip to and from an airport represents two operations. Air carriers report their operations to the USDOT. The air traffic control tower (ATCT) at PSC records operations, and reports them to the FAA. Operations are categorized as *commercial service*, *GA*, and *military*. Categories are refined as to whether the operation was local, and stayed in the area of the airport without landing at another airport, or itinerant, and began or ended at another airport. Data from 2006 to 2008 serves as the historical baseline, as this period of time reflects activity during the recent increase in non-stop destinations available at PSC, changes in the aircraft fleet mix, and market adjustment during the economic recession.

This section separates commercial, GA, and military operations forecasts, due to differences in forecasting methodologies.

3.1 Scheduled Commercial Operations History

Air taxi aircraft conducted close to 75 percent of scheduled commercial operations at PSC between 2006 and 2008. The TAF does not distinguish between scheduled and non-scheduled air taxi service, but the USDOT does. The FAA indicates that carriers are replacing air taxi aircraft with new aircraft in the 70-100 seat range. This trend is apparent at PSC, as 50 seat Bombardier CRJ-200 is the only scheduled air taxi aircraft after Horizon Air retired the Bombardier Q200 from service in 2008. The Q200 has been replaced by the Bombardier Q400, which has 74 seats and is an air carrier aircraft. This has caused air taxi operations to decline, and air carrier operations to increase. Scheduled commercial operations from 2006 to 2008 are shown in **Table 3-10**.

Table 3-10: Scheduled Commercial Operations History

Year	Air Carrier	Air Taxi	Total
2006	1,448	10,864	12,312
2007	2,916	10,260	13,176
2008	4,926	7,112	12,038

Source: USDOT

3.1.1 Scheduled Commercial Operations—Terminal Area Forecast

The December 2008 TAF is shown in **Table 3-11.**

Table 3-11: Commercial Operations—TAF Forecast

Year	Air Carrier	Air Taxi	Total
2008	4,926	7,112	12,038
2013	6,423	13,972	20,395
2018	6,423	14,922	21,345
2028	6,423	17,387	23,810

Source: FAA

The TAF's commercial operations forecast is not used as the preferred commercial operations forecast.

The TAF has a flat growth rate for air carrier operations, and air taxi operations that do not separate scheduled and non-scheduled service. A change in aircraft type by Horizon in 2008 resulted in air carrier operations growing more quickly than air taxi operations, which increased air carrier operations, and decreased air taxi operations. This change is not reflected in the December 2008 TAF. As seat demand increases, SkyWest's 50-seat CRJ-200 may be replaced by the larger CRJ-700 and CRJ-900. This would eliminate scheduled air taxi operations at PSC, unless air taxi aircraft are reintroduced. The fleet change by Horizon Air supports generating a master plan forecast, which will incorporate the fleet change.

3.1.2 Scheduled Commercial Operations—Master Plan Forecast

The Master Plan commercial operations forecast projects air carrier and scheduled air taxi operations, based on trends in the USDOT and aviation industry data, the preferred passenger enplanement forecast, and local variables. Across the world, airlines are reducing flight frequencies and increasing the number of passengers per flight, which results in higher load factors and less operations.

The following local parameters shape this forecast: the smallest scheduled passenger aircraft to serve PSC will have 50 seats, and a load factor of 73.84 percent. Frequencies of 50-seat aircraft will drop by an estimated 6.51 percent annual average by 2028. Aircraft with more than 100 seats will have four new weekly departures by 2013, and aircraft with 80-100 seats will begin operating from PSC by 2018. Aircraft with 60-80 seats will see operations grow with a CAGR of 4.93 percent through 2028, and load factors will average 70 percent for air carrier aircraft. This forecast expects that PSC will not lose current air service routes.

The results of this forecast are presented in **Table 3-12**.

Table 3-12: Scheduled Commercial Operations—Master Plan Forecast

Seat Range	Example Aircraft	2008	2013	2018	2028
<40	Q200	1,636	0	0	0
40-59	CRJ-200	1,920	2,100	1,500	500
60-80	Q400, CRJ-700, CRJ-900	2,293	3,400	4,500	6,000
80-100	E190	0	0	312	624
100+	MD-80, 737, 757	170	340	660	1,000
Total Departures		6,019	5,840	6,972	8,124
Total Operations		12,038	11,680	13,944	16,248

Source: USDOT

3.1.3 Scheduled Cargo Operations

The cargo operations forecast applies the 2008 cargo capacity throughout the planning period, and forecasts the number of departures needed to transport the forecasted cargo volume from **Section 5.6**. The possibility of operations by an aircraft with greater cargo capacity was considered, but dismissed due to the presence of a FedEx sorting facility at Spokane International Airport. In 2008, the USDOT reported FedEx aircraft transporting 19,252,137 pounds of cargo out of Spokane, while 1,944,819 pounds were transported out of PSC. It is unlikely that the catchment area around PSC will generate enough cargo volume to attract larger aircraft on a regular basis. Due to the time sensitive nature of air cargo, reducing flight frequency and consolidating cargo is not common, making it unlikely that the PSC will regularly see larger cargo aircraft. It is anticipated that the Airport will see an increase in operations by ATR-72 aircraft to manage increasing cargo volumes. It is expected that there will be no fleet change over the planning period.

The underlying methodology provides that cargo load factor, the percentage of cargo capacity that each aircraft normally transports per departure, will not change. The 2008 load factor was 58.51 percent for the ATR-72, and 42.97 percent for the Cessna 208. The load factor is used to determine aircraft departures needed to transport the volume as indicated in the preferred cargo forecast. ATR-72 aircraft transported 71 percent of the 2008 cargo volume. Cessna 208 aircraft have experienced an annual decline of 33 percent in their share of the cargo volume between 2006 and 2008. Keeping with observed trends, ATR-72 aircraft will account for 96 percent of cargo volume transported in 2013, 99.5 percent in 2018, and 99.9 percent in 2028. Scheduled cargo departures are presented in **Table 3-13**.

Table 3-13: Scheduled Cargo Operations

Aircraft	Cargo Capacity	2008	2013	2018	2028	CAGR 2008-2028
Cessna 208	3,400 lbs	124	62	9	2	-17.96%
ATR-72	16,000 lbs	183	406	480	628	6.36%
Total Departures		307	468	489	630	3.66%
Total Operations		614	936	977	1,260	

Source: USDOT

3.1.4 Critical Commercial Aircraft

The critical commercial aircraft is the most demanding commercial aircraft expected to operate at the airport. As demand at PSC increases and enplanement levels rise, airlines may consider operating larger aircraft. The critical commercial aircraft for PSC is the Boeing 757-200, which has an airport reference code (ARC) of C-IV. Allegiant Air intends on serving Hawaii from the West Coast of the continental U.S. with 757 series aircraft, and may operate some routes from PSC. Other operators of the 757, Delta and United Airlines, serve PSC through regional carriers, but may transition to 757's should the demand exist. Other operators of the 757 include cargo airlines, and the U.S. military. Critical aircraft are discussed further in **Chapter 4**.

3.2 GA Operations History

PSC shares GA operations with three other airports: Vista Field (598), Richland (RLD), and Prosser (S40). This divides the GA market and has yielded slower growth at PSC than might be expected given the Tri-Cities' economic growth. Nationwide, GA operations have been decreasing, and the FAA forecasts national GA operations to decline in 2009, then slowly recover and pass 2008 levels in 2018. PSC's GA operation counts for the past three years are presented in **Table 3-14**.

Table 3-14: GA Operations History			
Year	**Local**	**Itinerant**	**Total**
2006	16,723	19,904	36,627
2007	20,063	20,518	40,581
2008	16,828	17,141	33,969
CAGR	0.21%	-4.86%	-2.48%

Source: TAF

3.2.1 GA Operations Forecast—Terminal Area Forecast

The TAF serves as the baseline for operations forecasts. Local operations constitute approximately 53 percent of total operations. This split between local and itinerant operations is applied to all generated forecasts. The TAF forecasts local operations growing faster than itinerant operations, and overall operations increasing with a CAGR of 1.72 percent, as shown in **Table 3-15**.

Table 3-15: GA Operations Forecast—TAF			
Year	**Local**	**Itinerant**	**Total**
2008	16,828	17,141	33,969
2013	20,628	18,107	38,735
2018	22,194	19,547	41,741
2028	26,292	22,817	49,109
CAGR	2.26%	1.44%	1.86%

Source: TAF

This forecast has not been selected as the preferred GA operations forecast. The reasoning is presented in **Section 3.2.5**.

3.2.2 GA Operations Forecast—Market Share

The market share forecast applies a fixed percentage of national GA operations to PSC. The FAA indicates that PSC accounted for an average of 0.11 percent of national GA activity from 2006 to 2008. Applying this percentage to the GA operations forecast found in the *FAA Aerospace Forecast 2009-2025* yields the results shown in **Table 3-16**.

Table 3-16: GA Operations Forecast—Market Share			
Year	National Operations	PSC Operations	Variance to TAF
2008	31,289,000	33,969	
2013	30,034,500	34,202	-11.70%
2018	31,606,600	35,992	-13.77%
2028	34,751,000	39,573	-17.13%
CAGR	0.53%	0.77%	

Source: FAA

This forecast has not been selected as the preferred GA operations forecast. The reasoning is presented in **Section 3.2.5**.

3.2.3 GA Operations Forecast—Operations Per Based Aircraft

The operations per based aircraft divides annual GA operations by the number of GA aircraft based at PSC that year. When this method is applied to based aircraft and GA operations records from 2006 to 2008, it produces an average of 324 annual GA operations per based aircraft. This metric is not intended to count the number of operations conducted by each aircraft based at the Airport, but uses the number of based aircraft as an indicator of GA traffic. A factor of 324 is applied to the preferred based aircraft forecast in **Section 4.7**, and the results are shown in **Table 3-17**.

Table 3-17: GA Operations Forecast—Operations Per Based Aircraft			
Year	Based Aircraft	Operations	Variance to TAF
2008	123	33,969	
2013	129	41,926	+8.24%
2018	143	46,290	+10.90%
2028	174	56,427	+14.90%
CAGR	1.76%	2.57%	

This forecast has not been selected as the preferred GA operations forecast. The reasoning is presented in **Section 3.2.5**.

3.2.4 GA Operations Forecast—Growth Rate

Using the growth rate that occurred at PSC over the past three years yields a 0.70 percent CAGR. Applying the 0.70 growth rate results in a GA operations forecast that falls well below the TAF. Instead of using past trends, this forecast applies a 2 percent CAGR, in line with the BFCOG projections about the region's population growth. The results are shown in **Table 3-18**.

Table 3-18: GA Operations Forecast—Growth Rate		
Year	**Operations**	**Variance to TAF**
2008	33,969	
2013	37,504	-3.18%
2018	41,408	-0.80%
2028	50,476	+2.78%
CAGR	2.00%	

This forecast has been selected as the preferred GA operations forecast. The reasoning is presented in **Section 3.2.5**.

3.2.5 GA Operations Forecast—Method Comparison and Preference

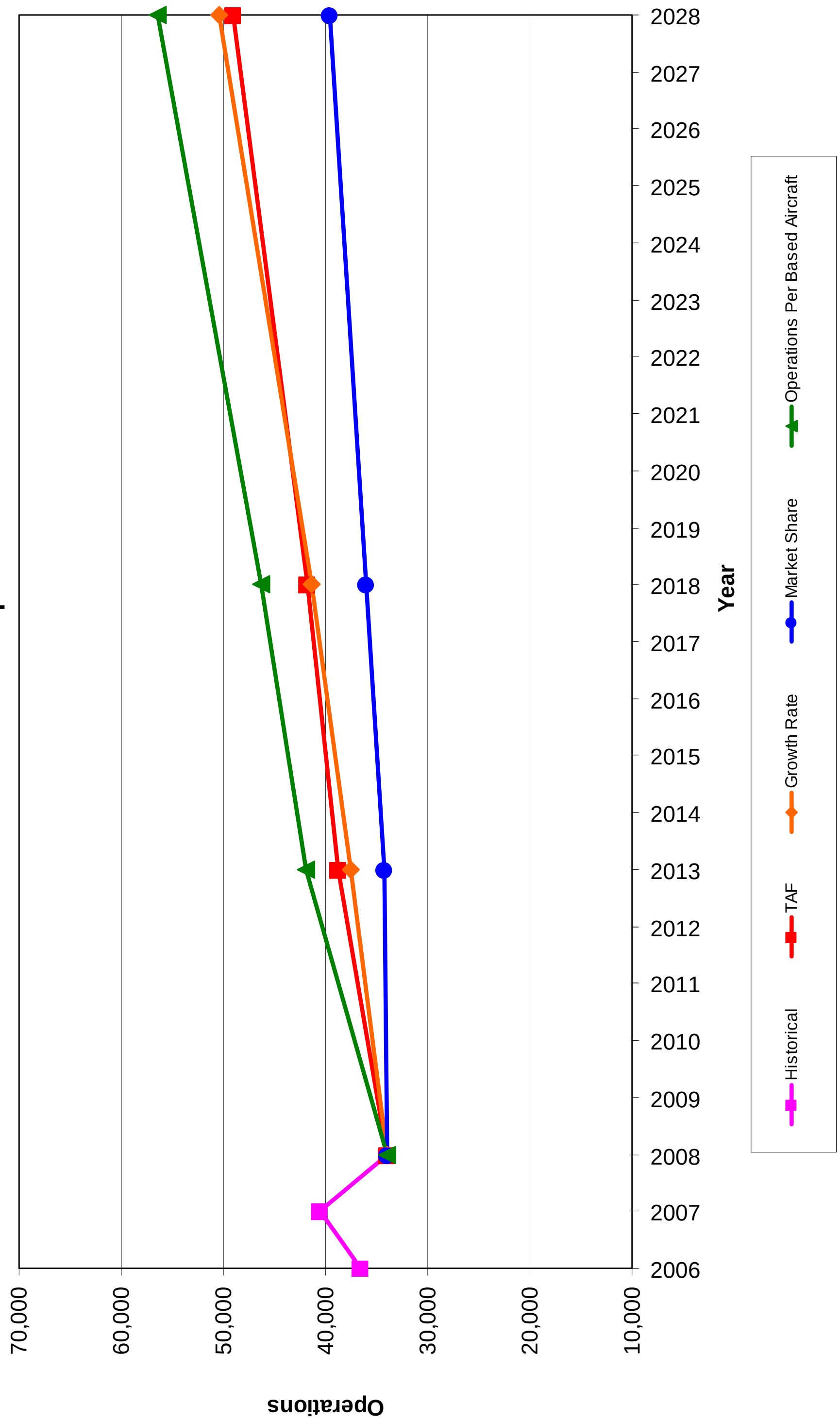
The *growth rate* forecast is the preferred GA forecast. This forecast is based on the belief that although the region has seen dramatic population growth over recent years, growth will not continue at its current rate. The BFCOG has come to an agreement that a 2 percent CAGR represents a more sustainable expectation of growth. This forecast anticipates that GA activity will grow in line with population growth. This does not assume that new residents moving to the area will be aircraft owners; rather, it treats population growth as an indicator of the economic success of Benton and Franklin Counties.

Challenges to this forecast include competition for GA facilities, fuel prices, and regional economic performance. With three other airports in close vicinity, the region could see higher than expected growth, but little of that growth could be reflected in PSC's GA operations if pilots use other facilities. The price of fuel has grounded many recreational pilots in recent years, and should fuel prices climb, operations will likely decline or remain at their current levels. The economy plays a role in GA activity. If growth does not occur, or occurs through businesses that have no need or cannot afford to use GA, then GA traffic may remain at current levels, regardless of economic development. A summary of the GA operations forecasts are presents in **Table 3-19**.

Table 3-19: GA Operations Forecast—Method Comparison				
Year	**TAF**	**Growth Rate**	**Market Share**	**Operations Per Based Aircraft**
2008	33,969	33,969	33,969	33,969
2013	38,735	37,504	34,202	41,926
2018	41,741	41,408	35,992	46,290
2023	49,109	50,476	39,573	56,427
CAGR	1.86%	2.00%	0.77%	2.57%

A summary of the different GA operations forecasts is presented in **Exhibit 3-2**.

Exhibit 3-2 GA Operations



3.2.6 Critical GA Aircraft

The critical GA aircraft is the most demanding GA aircraft expected to operate at the airport. GA aircraft at PSC range from single engine aircraft to private jets. GA aircraft are used for travel, recreation, and business and economic development in the Tri-Cities area may lead to more business aircraft using the Airport. Some of these aircraft are within the D approach category, such as the Gulfstream IV (D-II), and the Learjet 35A and 36A (D-I). These aircraft represent the critical business aircraft. Critical aircraft are discussed further in **Chapter 4**.

3.3 Operations Forecast—Military

Decisions made by the U.S. Department of Defense drive military operations, not socioeconomic and industry activity, which makes forecasting military activity challenging. Because there are no military units based at PSC, and use of the airport is a choice, the operational forecast assumes that military activity will remain at 2008 levels throughout the planning period. The preferred military forecast is based on the 2008 tower count of 1,997 annual operations, which is shown in **Table 3-20**.

Table 3-20: Operations Forecast—Military

Year	Forecast	TAF
2008	1,997	2,034
2013	1,997	2,034
2018	1,997	2,034
2028	1,997	2,034
CAGR	0%	0%

3.4 Operations Forecast—Unscheduled Air Taxi

Unscheduled air taxi includes for-hire air taxis, and charter flights that occur periodically throughout the year on an as-needed basis. This forecast does not include scheduled air carrier flights categorized as air taxi. From 2006 to 2008, unscheduled air taxi operations accounted for an average of 13.07 percent of the sum of scheduled commercial, military, and GA operations at PSC. This percentage is applied to operations totals throughout the forecast years to generate the unscheduled air taxi forecast, which is has a CAGR of 3.63 percent. The unscheduled air taxi forecast is shown in **Table 3-21**.

Table 3-21: Operations Forecast—Unscheduled Air Taxi

Year	Forecast
2008	4,484
2013	6,811
2018	7,623
2028	9,151
CAGR	3.63%

3.5 Preferred Operations Forecast

Total operations at PSC have a CAGR of 2.01 percent between 2008 and 2028. Operations levels for scheduled commercial (air carrier and scheduled air taxi), scheduled cargo, military, GA (local and itinerant), and unscheduled air taxi based on their preferred forecasts. A summary of the operations forecasts is presented in **Table 3-22,** and a graph is presented in **Exhibit 3-3.**

Table 3-22: Preferred Operations Forecast

Year	Scheduled Commercial	Scheduled Cargo	Military	Unscheduled Air Taxi	GA	Total
2008	12,038	614	1,977	4,484	33,969	53,102
2013	11,680	936	1,997	6,811	37,504	58,928
2018	13,944	977	1,997	7,623	41,408	65,949
2028	16,248	1,260	1,997	9,151	50,476	79,132
CAGR	1.66%	3.66%	0%	3.63%	2.00%	2.01%

Historical operations between 1976 and 2008 had a CAGR of 3.88 percent. A lower CAGR has been chosen for the preferred forecast because consultation with the BFCOG indicates that while the Tri-Cities have seen strong economic growth in the past, this growth is unlikely to be sustainable. The preferred forecast 2.01 percent CAGR anticipates future growth will be more conservative and measured than it has been in the past.

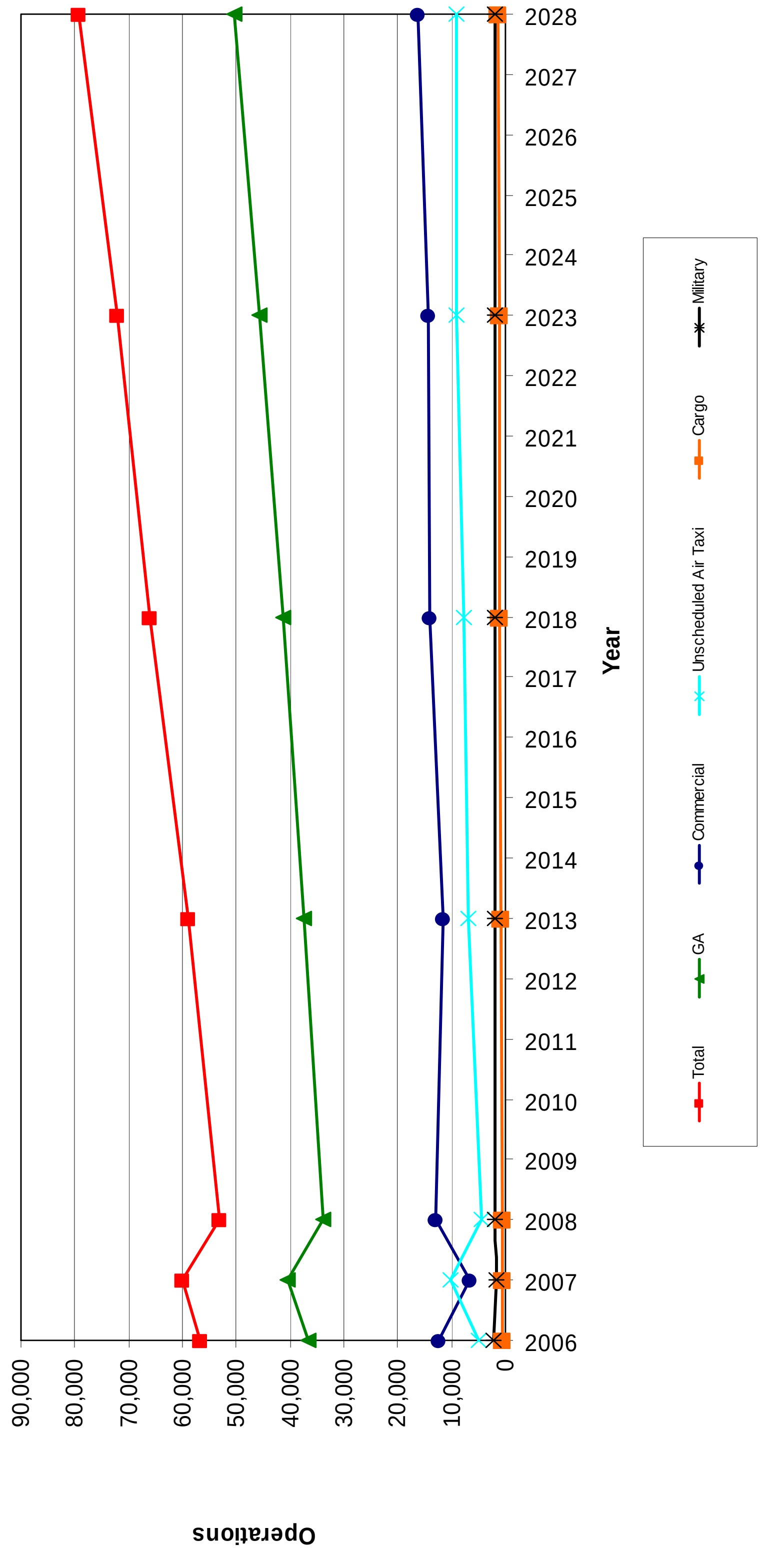
3.5.1 Instrument and Visual Operations

Operations are also categorized as operations conducted under visual flight rules (VFR), and instrument flight rules (IFR). The FAA reports that from 2006 through 2008, an average of 42.96 percent of operations were conducted under IFR. This percentage has been applied to the preferred operations forecast, and presented in **Table 3-23**.

Table 3-23: Instrument and Visual Operations

Year	IFR	VFR	Total
2008	22,433	30,669	53,102
2013	25,314	33,615	58,928
2018	28,330	37,619	65,949
2028	33,992	45,140	79,132
CAGR	2.10%	1.95%	2.01%

Exhibit 3-3 Operations Summary



4. Based Aircraft

Based aircraft represent those stored at PSC regularly. These aircraft are often registered locally, or frequently visit PSC. Based aircraft counts come from Airport records and the TAF. The TAF organizes this data based on the design of the aircraft: *single engine* and *multiengine* non-jet, *jet*, helicopter or *rotor*, and *other*. There has not been an "other" aircraft at PSC since 1981; therefore it is not included in the forecasts. 2008 data comes from PSC, all other data comes from the TAF. Apart from the TAF and the Trend by Aircraft Type forecasts, the forecasts look at the based aircraft fleet as a whole.

4.1 Based Aircraft History

Airport counts indicate 123 based aircraft in 2008. This was made up of 87 *single engine*, 20 *multiengine*, 11 *jet*, and five *rotor*. Based aircraft had a CAGR of 3.48 percent from 2006 to 2008, as shown in **Table 3-24**.

Table 3-24: Based Aircraft History

Year	Based Aircraft
2006	111
2007	111
2008	123
CAGR	3.48%

Source: TAF

4.2 Based Aircraft Forecast—Terminal Area Forecast

The TAF forecasts based aircraft growing by a CAGR of 1.35 percent. The TAF for based aircraft is shown in **Table 3-25**.

Table 3-25: Based Aircraft Forecast—Terminal Area Forecast

Year	Single	Multi	Jet	Rotor	Total
2008	87	20	11	5	123
2013	94	19	6	6	125
2018	103	21	6	7	137
2028	122	25	6	8	161
CAGR	1.76%	0.83%	-3.50%	2.80%	1.35%

Source: TAF

This forecast has not been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.3 Based Aircraft Forecast—Trend by Aircraft Type

The trend by aircraft type forecasts growth for each aircraft category by fitting a constant growth rate, based on data from 2006 to 2008. The results of this forecast are presented in **Table 3-26**.

Table 3-26: Based Aircraft Forecast—Trend by Aircraft Type

Year	Single	Multi	Jet	Rotor	Total	Variance to TAF
2008	87	20	11	5	123	
2013	96	27	23	5	151	17.21%
2018	106	35	35	5	181	24.31%
2028	126	50	60	5	241	33.20%
CAGR	1.88%	4.64%	8.87%	0%	3.42%	

This forecast has not been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.4 Based Aircraft Forecast—Market Share

The market share methodology correlates a fixed percentage of the national GA fleet to what is based at PSC. Historical records between 2006 and 2008 serve as the baseline for this forecast, which show that an average of 0.05 percent of the national GA fleet has been based at PSC. This percentage is applied to the forecasted GA fleet as published in the *FAA Aerospace Forecasts 2009-2025.* The results of this forecast are shown in **Table 3-27**.

Table 3-27: Based Aircraft Forecast—Market Share

Year	National GA Fleet	Based Aircraft	Variance to TAF
2008	234,015	123	
2013	245,720	123	-1.38%
2018	257,160	129	-5.83%
2028	280,040	140	-12.68%
CAGR	0.90%	0.67%	

Source: FAA

This forecast has not been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.5 Based Aircraft Forecast—Growth Rate

The growth rate methodology applies the CAGR from 2006 to 2008, 5.27 percent, to PSC based aircraft. The results are shown in **Table 3-28**.

Table 3-28: Based Aircraft Forecast —Growth Rate

Year	Based Aircraft	Variance to TAF
2008	123	
2013	159	27.19%
2018	206	50.00%
2028	343	113.39%
CAGR	5.27%	

This forecast has not been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.6 Based Aircraft Forecast—Socioeconomic

The socioeconomic forecast correlates growth in based aircraft to growth in population and per capita income. Between 2006 and 2008 there were 0.0005 aircraft per person, and there were 0.00461 aircraft per dollar of per capita income at PSC. These ratios have been applied to socioeconomic forecasts. The population forecast comes from the BFCOG's two percent CAGR, and income data comes from Woods & Poole.

4.6.1 Based Aircraft Forecast—Per Capita Income

Between 2006 and 2008 there were 0.00461 aircraft at PSC per dollar of per capita income in Benton and Franklin counties. This ratio has been applied the BFCOG's 2.00 percent CAGR population forecast. The results are presented in **Table 3-29**.

Table 3-29: Based Aircraft Forecast — Per Capita Income

Year	Per Capita Income	Based Aircraft	Variance to TAF
2008	$24,928	123	
2013	$25,969	120	-4.30%
2018	$27,403	126	-7.86%
2028	$31,236	144	-10.57%
CAGR	1.13%	0.79%	

Source: Woods & Pool

This forecast has not been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.6.2 Based Aircraft Forecast—Population

Between 2006 and 2008 there were 0.0005 aircraft at PSC per person in Benton and Franklin counties. This ratio has been applied the BFCOG's two percent CAGR population forecast. The results are presented in **Table 3-30**.

Table 3-30: Based Aircraft Forecast—Population			
Year	Population	Based Aircraft	Variance to TAF
2008	233,882	123	
2013	258,225	129	3.55%
2018	285,101	143	4.31%
2028	347,536	174	8.27%
CAGR	2.00%	1.76%	

Source: BFCOG

This forecast has been selected as the preferred based aircraft forecast. The reasoning is presented in **Section 4.7**.

4.7 Based Aircraft Forecast—Method Comparison and Preference

Regional variables have been incorporated into selecting the preferred based aircraft forecast. Competition by Richland, Vista Field, and Prosser airports distributes the regional GA fleet over a large area. Costs of fuel and pilot training affect aircraft sales, which impacts the national GA fleet. Factors such as the price of aircraft storage, the availability of fixed base operators (FBOs), services, and airfield design and procedure impact an aircraft owner's decision to pick an airport at which to base aircraft.

The preferred based aircraft forecast for this Plan is based on population. This forecast demonstrates steady growth within ten percent of the TAF for the 5- and 10-year reporting period. The region's based GA fleet could grow, yet PSC could see little to no change in the number of based aircraft. It is assumed that PSC has the necessary space to build facilities that will accommodate an increase in based aircraft. The different based aircraft forecasts are presented in **Table 3-31**, and **Exhibit 3-4**.

Table 3-31: Based Aircraft Forecast—Method Comparison						
Year	TAF	Growth Rate	Trend By Aircraft Type	Population	Income	Market Share
2008	123	123	123	123	123	123
2013	118	159	151	129	120	123
2018	129	206	181	143	126	129
2028	151	343	241	174	144	140
CAGR	1.03%	5.27%	3.42%	1.76%	0.79%	0.67%

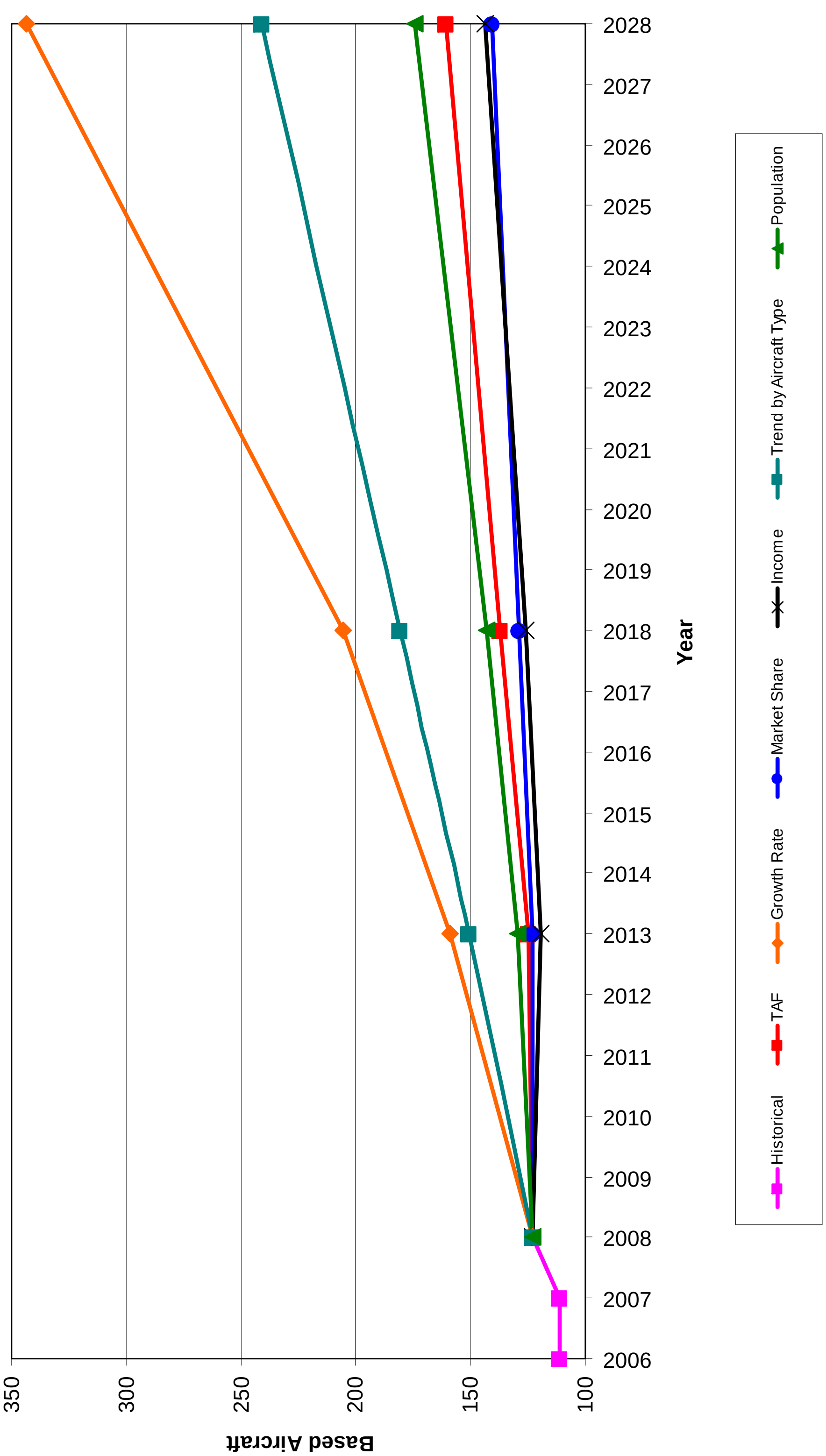
4.7.1 Based Aircraft Forecast—Preferred by Aircraft Type

The preferred based aircraft forecast is categorized by aircraft type. These projections are based on the type maintaining the same percentage of aircraft in proportion to the total number of aircraft in 2008. This forecast is presented in **Table 3-32**.

Table 3-32: Based Aircraft Forecast—Preferred by Aircraft Type

Year	Single	Multi	Jet	Rotor	Total
2008	87	20	11	5	123
2013	92	20	11	6	129
2018	102	22	13	6	143
2028	124	27	16	8	174
CAGR	1.77%	1.55%	1.78%	2.10%	1.76%

Exhibit 3-4 Based Aircraft



5. Cargo

Air cargo transports goods and mail to the Tri-Cities. FedEx is PSC's scheduled cargo carrier with a dedicated cargo facility at the Airport. This facility processes freight and mail. Charter cargo carriers Airpac and Ameriflight fly as needed, and use the GA apron to transfer cargo. Charter cargo carriers are not required to report cargo volumes to the USDOT. The FAA classifies air cargo as either mail or freight, and tracks cargo by volume in pounds. Mail is transported in an arrangement between FedEx and the U.S. Postal Service. Passenger airlines transport some cargo, but volumes have dropped due to increased security screening.

2008 USDOT records show Horizon Air carried 28,598 pounds of outbound cargo; other airlines combined reported 386 pounds. This section forecasts combined inbound and outbound air cargo volumes for scheduled cargo carriers, and does not include cargo and mail carried by charter cargo and passenger airlines.

5.1 Cargo History

Cargo volume from 2006-2008 is presented in **Table 3-33**.

Table 3-33: Cargo History	
Year	**Pounds**
2006	3,202,768
2007	3,253,408
2008	3,684,733
CAGR	4.78%

Source: USDOT

5.2 Cargo Forecast—Growth Rate

The growth rate methodology takes the 4.78 percent CAGR recorded between 2006 and 2008 and uses it to forecast cargo volume. These volumes are shown in **Table 3-34**.

Table 3-34: Cargo Forecast—Growth Rate	
Year	**Pounds**
2008	3,684,733
2013	4,654,506
2018	5,879,510
2028	9,381,587
CAGR	4.78%

This forecast has not been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

5.3 Cargo Forecast—Market Share

Market share methodology correlates PSC's total cargo volume to the national cargo volume in the *FAA Aerospace Forecast 2009-2025,* expressed in revenue ton miles (RTMs). An RTM equals a ton of cargo flown for one mile, and is an indicator of the national cargo volume. PSC generated 0.12 percent of the national cargo volume between 2006 and 2008. 0.12 percent is applied to the FAA cargo forecasts to generate the market share forecast. This forecasting method assumes that PSC will maintain this market share throughout the forecasting period, and cargo volumes will fluctuate with national trends. The FAA indicates that RTMs are tied to the national gross domestic product. Cargo volume forecast using the market share methodology is presented in **Table 3-35**.

Table 3-35: Cargo Forecast—Market Share

Year	US All Cargo Carriers (Millions of RTMs)	Pounds at PSC
2008	27,755.8	3,684,733
2013	31,673.9	3,797,444
2018	40,786.4	4,889,959
2028	59,011.4	7,074,989
CAGR	3.84%	3.32%

Source: FAA

This forecast has not been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

5.4 Cargo Forecast—Boeing Company

The Boeing Company's *World Air Cargo Forecast 2008-2009* publication is a source of air cargo evaluation and projection. Boeing shows that the U.S. domestic air cargo market has kept a consistent volume since 2004, which indicates a mature market. The forecast predicts that the U.S. domestic market will grow at a rate of 2.6 percent through to 2028. This growth rate remains constant throughout the planning period. This 2.6 percent CAGR is applied to PSC's cargo volume in **Table 3-36**.

Table 3-36: Cargo Forecast—Boeing Company

Year	Pounds
2008	3,684,733
2013	4,189,313
2018	4,762,990
2028	6,156,774
CAGR	2.60%

Source: Boeing

This forecast has not been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

5.5 Cargo Forecast—Socioeconomic

The economic development forecast correlates air cargo volume to three economic indicators for the catchment area: gross regional product (GRP), population, and per capita income. This methodology correlates air cargo volume to the socioeconomic activity of the region. Economic forecasts from Woods and Poole provide per capita income and GRP data, and the BFCOG two percent CAGR forecast is used for the population.

5.5.1 Cargo Forecast—Population

An average of 14.23 pounds of cargo per person in Benton and Franklin counties passed through PSC between 2006 and 2008. This ratio has been used to calculate the forecast years. The results are presented in **Table 3-37**.

Table 3-37: Cargo Forecast—Population		
Year	**Population**	**Pounds**
2008	233,882	3,684,733
2013	258,225	3,803,694
2018	285,101	4,199,586
2028	347,536	5,119,272
CAGR	2.00%	1.66%

Source: Woods & Poole

This forecast has not been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

5.5.2 Cargo Forecast—Per Capita Income

An average of 135.41 pounds of cargo per dollar of per capita income in Benton and Franklin counties passed through PSC between 2006 and 2008. This ratio has been used to calculate the forecast years. The results are presented in **Table 3-38**.

Table 3-38: Cargo Forecast—Per Capita Income		
Year	**Per Capita Income (2004 Dollars)**	**Pounds**
2008	$24,928	3,684,733
2013	$25,969	3,516,525
2018	$27,403	3,710,652
2028	$31,236	4,229,742
CAGR	1.13%	0.69%

Source: Woods & Poole

This forecast has not been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

5.5.3 Cargo Forecast—Gross Regional Product

An average of 864.98 pounds of cargo per dollar of GRP in Benton and Franklin counties passed through PSC between 2006 and 2008. This ratio has been used to calculate the forecast years. The results are presented in **Table 3-39**.

Table 3-39: Cargo Forecast—Gross Regional Product

Year	GRP (Millions of 2004 Dollars)	Pounds at PSC
2008	$4,003.33	3,684,733
2013	$4,570.65	3,953,554
2018	$5,215.95	4,511,725
2028	$6,794.45	5,877,112
CAGR	2.68%	2.36%

Source: Woods & Poole

This forecast has been selected as the preferred cargo forecast. The reasoning is presented in **Section 5.6**.

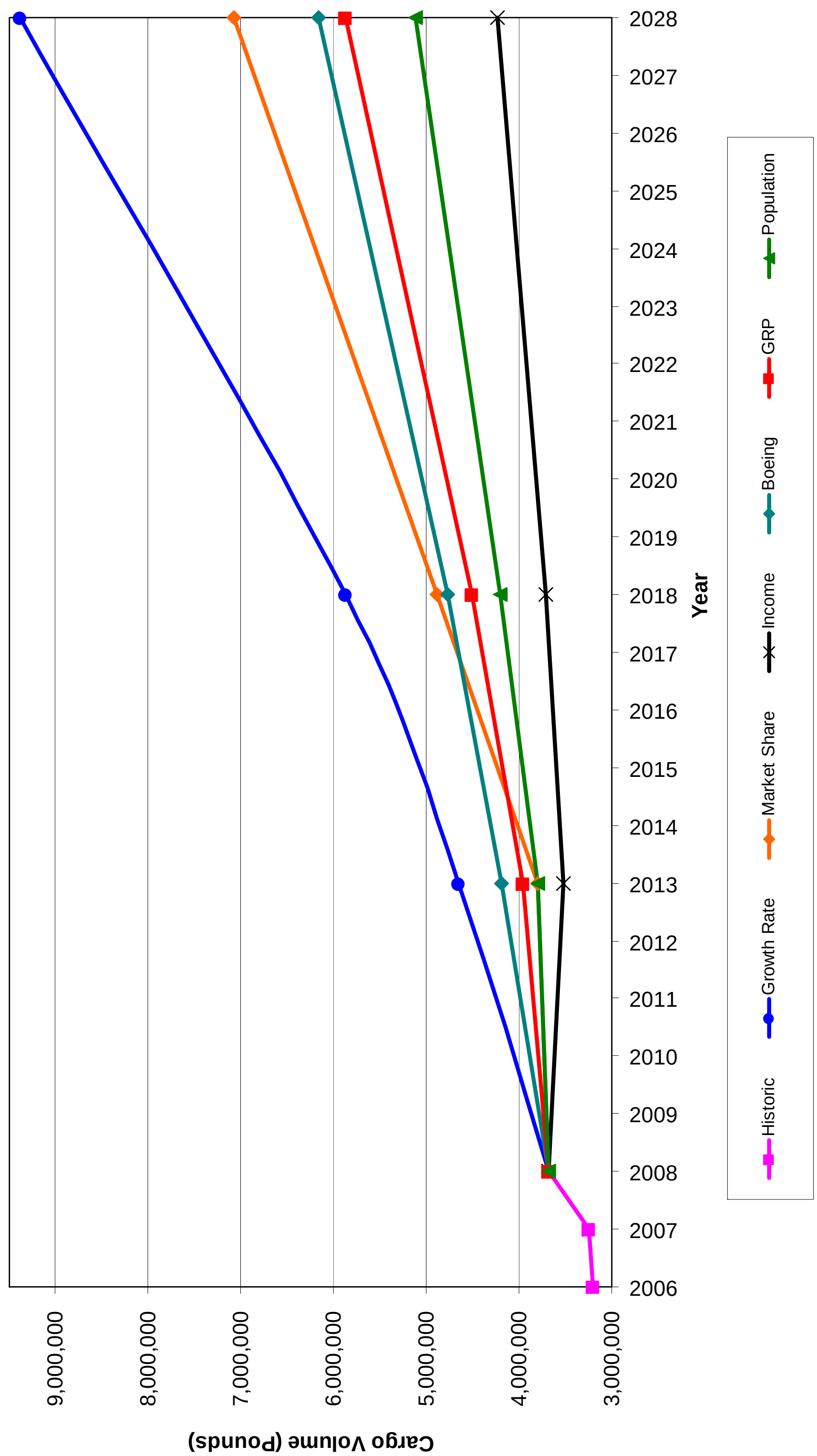
5.6 Cargo Forecast—Method Comparison and Preference

The GRP forecast is the preferred cargo forecast for this Master Plan. This forecast uses the FAA methodology of tying cargo volume to GRP. Unlike the market share forecast, which is based on the national gross domestic product, this methodology uses a local GRP forecast, making it more sensitive to regional fluctuations. Cargo forecasts are presented in **Table 3-40** and **Exhibit 3-5**.

Table 3-40: Cargo Forecast—Method Comparison

Year	Growth Rate	Market Share	Population	GRP	Income	Boeing
2008	3,684,733	3,684,733	3,684,733	3,684,733	3,684,733	3,684,733
2013	4,654,506	3,797,444	3,803,694	3,953,554	3,516,525	4,189,313
2018	5,879,510	4,889,959	4,199,586	4,511,725	3,710,652	4,762,990
2028	9,381,587	7,074,989	5,119,272	5,877,112	4,229,742	6,156,774
CAGR	4.78%	3.32%	1.66%	2.36%	0.69%	2.60%

Exhibit 3-5 Cargo Forecasts



6. Peak Aviation Demand

The preferred forecasts for enplanements and operations can be used to generate forecasts of peak demand. Peak demand represents the maximum usage that an airport facility can expect during a given period of time, be it the busiest hour, day, or month. The following methodologies are used to develop the peak demand forecasts for operations, and enplanements.

6.1 Peak Operations

A *commercial operation* includes scheduled and unscheduled air carrier, air taxi, and cargo operations. *GA* represents both local and itinerant operations. Historical analysis shows GA activity divided evenly between local and itinerant operations; therefore the peak GA demand will be similarly split for the average peak *hour*, *day*, and *month*. From 2006 through 2008, military operations occurred during off-peak times, and are not anticipated to impact peak operations levels.

Analysis of PSC, FAA, and USDOT data identifies the 2008 peak month for operations. Commercial operations peaked in July with 9.49 percent of the annual total, and GA operations peaked in August with 11.45 percent of the annual total. These percentages are used to calculate the peak month for the forecast years.

Data from the FAA Enhanced Traffic Management System (ETMS) database provides the peak day of the peak month. In 2008, July peak day commercial operations were 4.88 percent of monthly totals, while August peak day GA operations were 5.70 percent of monthly totals. These percentages are used to calculate the peak day for the forecast years.

Peak hour operations are calculated by multiplying the peak day value by the percentage of operations that occur during the peak hour. PSC flight records indicate an average of 9 peak hour commercial operations, which is 11.27 percent of the peak day commercial operations. There were 45 peak hour GA operations, which is 20.49 percent of the peak day. These percentages are used to calculate the peak hour for the forecast years.

6.2 Peak Enplanements

Enplanements peaked in June with 9.34 percent of the annual total. Peak day enplanements were calculated by dividing the peak month total by the number of days in the month, 30. 2008 airline records show that the peak hour for enplanements had 264 available seats, which is 35.09 percent of the peak day. The total available seats are forecast to increase as smaller aircraft are replaced, with a total of 39.05 percent of enplanements projected to occur during the peak hour of the forecast years. The forecast values assume 100 percent load factors, which are rare, but have been experienced at PSC.

Peak aviation demand characteristics are presented in **Table 3-41**.

Table 3-41: Peak Aviation Demand Characteristics

Peak Factor		Passenger Enplanements	Aircraft Operations			
			Commercial	GA	Military	Total
2008	Annual	241,907	17,136	33,969	1,997	53,102
	Peak Month*	22,594	1,626	3,889	312	5,827
	Peak Day	753	79	222	10	311
	Peak Hour	264	9	45	1	55
2013	Annual	269,260	19,427	37,504	1,997	58,928
	Peak Month*	25,149	1,844	4,294	312	6,449
	Peak Day	838	90	245	10	345
	Peak Hour	327	10	50	1	61
2018	Annual	318,907	22,544	41,408	1,997	65,949
	Peak Month*	29,786	2,139	4,741	312	7,192
	Peak Day	993	104	270	10	385
	Peak Hour	388	12	55	1	68
2028	Annual	435,064	26,659	50,476	1,997	79,132
	Peak Month*	40,635	2,530	5,779	312	8,621
	Peak Day	1,354	123	329	10	463
	Peak Hour	529	14	67	1	82

*: Peak Month has historically been June for enplanements, and July for Operations.

7. Preferred Forecast—Summary

These levels are used during facility planning to identify improvement scale and timeline. Passenger enplanements, aircraft operations, and based aircraft forecasts are compared to forecasts from the December 2008 TAF. A negative variance means that the Plan forecast is below the TAF. **Table 3-42** presents a summary of aviation demand projections for PSC.

Table 3-42: Preferred Forecast—Summary

Year	Passenger Enplanements	Variance to TAF	Aircraft Operations	Variance to TAF	Based Aircraft	Variance to TAF	Cargo (pounds)
2008	241,907		53,102		123		3,684,733
2013	269,260	4.92%	58,928	-3.66%	129	4.38%	3,953,554
2018	318,907	6.40%	65,949	1.27%	143	4.00%	4,511,725
2028	435,064	7.58%	79,132	4.00%	174	8.14%	5,877,112
CAGR	2.98%		2.01%		1.76%		2.36%

Note: TAF values have been extrapolated to 2028 using CAGR from 2008-2025.

Selection of preferred forecasts assumes that PSC has the necessary facilities in terms of terminals, fixed base operators, aircraft parking and storage, airspace capacity, and runway length, to attract airlines, aircraft owners, users, and operators, and to accommodate increased activity. Specifics of facilities needed to accommodate this activity are discussed in **Chapter 4, Facility Requirements**.

FAA-format forecasting spreadsheets are included in **Appendix C**.

7.1 Preferred Forecast—50-Year Outlook

Using the same growth rates as the preferred forecast summary, activity levels have been projected to 2058. These values are used for ultimate scenario planning, and are presented in **Table 3-43**.

Table 3-43: Preferred Forecast—50-Year Outlook

Year	Passenger Enplanements	Aircraft Operations	Based Aircraft	Air Cargo (lbs)
2008	241,907	53,269	123	3,684,733
2058	1,050,250	144,083	294	11,828,233
CAGR	2.98%	2.01%	1.76%	2.36%

1. Introduction

This chapter identifies facility recommendations and requirements to accommodate the forecasted level of demand at the Tri-Cities Airport (PSC). These recommendations and requirements are developed in coordination with the aviation activity forecasts found in **Chapter 3**, Airport management and stakeholders, and Federal Aviation Administraion (FAA) advisory circulars (AC) 150/5070-6B *Airport Master Plans*, AC 150/5300-13 *Airport Design*, and AC 150/5060-5 *Airport Capacity and Delay*. Additional technical guidance comes from AC 150/5360-9, *Planning and Design of Airport Terminal Buildings at Non-hub Locations*, AC 150/5360-13, *Planning and Design Guidelines for Airport Terminal Facilities*, the Airport Cooperative Research Program (ACRP) Report 23, *Airport Passenger-Related Processing Rates Guidebook,* and the Transportation Security Administration's (TSA) *Recommended Security Guidelines for Airport Planning, Design, and Construction*. This chapter is organized into the following sections.

- Airfield Demand and Capacity Analysis
- Airfield Facilities
- Passenger Terminal Facilities
- Air Cargo Facilities
- General Aviation (GA) Facilities
- Support Facilites
- Automobile Access and Parking
- Property
- Summary

This chapter ties need for facility development to activity level triggers. These triggers have a year associated with them, which is an estimate based on the preferred forecasts. Facility improvements are demand driven rather than planned for a specific year.

2. Airfield Demand and Capacity Analysis

AC 150/5060-5, *Airport Capacity and Delay,* defines capacity as "a measure of the maximum number of aircraft operations which can be accomodated on the airport or airport component in an hour." Methodology used to quantify capacity focuses on the annual service volume (ASV). AC 150/5060-5 defines ASV as "a reasonable estimate of an airport's annual capacity. It accounts for differences in runway use, aircraft mix, weather condition, etc., that would be encountered over a year's time."

ASV is calculated by pairing PSC's runway configuration to layouts contained in AC 150/5060-5, and generating a fleet mix index. The fleet mix index is found by multiplying the percent of operations by aircraft that weigh more than 12,500 pounds but less than 300,000 pounds, desingated as *C*, plus three times the percent of operations by aircraft that weigh over 300,000 pounds, designated as *D*. Each runway configuration has an hourly capacity for visual flight rules (VFR) and instrument flight rules (IFR) operations, and ASV based on the fleet mix index.

Most commercial operations at PSC are conducted by aircraft in the C weight range. Sample D aircraft are the Boeing 767 and the Airbus A300, which do not have scheduled operations at the Airport. In 2008, approximately 32.5 percent of operations were conducted by commercial aircraft. To estimate what percentage of GA operations are conducted by aircraft in the C weight range, the assumption is made that piston aircraft have a maximum takeoff weight (MTOW) of no more than 12,500 pounds, and jet aircraft have a MTOW of more than 12,500 pounds. 2008 based aircraft counts indicate that 91 percent of the based aircraft at PSC were single- or multi-engine piston, or rotor. Based on these numbers, nine percent, which is 3,057, GA operations were conducted by aircraft weighting over 12,500 pounds. The fleet mix index for PSC is 41.5 percent, with an ASV of 275,000 operations per year. In 2008, the Airport operated at 20 percent of its capacity, and forecasts show operations reaching 30 percent of airfield capacty by 2028. In 50 years, Airport operations are forecasted to be 54 percent of capactiy. The fleet mix index also provided capacity figures of 142 VFR or 57 IFR operations per hour.

Based on this analysis, PSC's runway configuration is expected to be adequate through 50 years, no additional runways are expected.

3. Airfield Facilities

Airfield facility requirements are developed for each of the Airport's following functional areas.

- Airfield Layout
- Critical Aircraft
- Runway Length
- Runway Width
- Runway Pavement Strength
- Taxiway System
- Design Standards and Part 77 Surfaces
- Navigational Aids
- Aircraft Apron

3.1 Airfield Layout

PSC has three runways with combined wind coverage above 99 percent for crosswind components up to 20 knots. The taxiway system provides access to each runway end, and mid-runway exits. Aprons provide space for aircraft parking and loading. This layout gives PSC the capacity to handle projected aircraft demand through 2028.

3.2 Critical Aircraft

A critical aircraft is the most demanding aircraft expected to operate at the Airport. This section identifies the critical aircraft for each runway, selected as an aircraft that meets the design criteria, and is likely to operate at PSC. The airport reference code (ARC) that is associated with each aircraft and used in facility planning is defined in **Chapter One**.

3.2.1 Runway 3R/21L

Runway 3R/21L is a visual runway, and is used by GA aircraft. The 2000 ALP shows that the current and future ARC is B-II. The critical aircraft is the Beechcraft King Air 350. Fixed base operator (FBO) records show 14 based King Air aircraft, which is 11 percent of 2008 based aircraft. This aircraft is expected to remain the critical aircraft throughout the planning period. Runway 3R/21L is 4,423 feet long and 75 feet wide. These dimensions accommodate the King Air.

The air traffic control tower (ATCT) reports that Runway 3R/21L is primarily used by single and twin piston aircraft operating under visual flight rules conditions. Having parallel 3/21 runways allows separation of aircraft fleet mix by approach speed. At PSC during peak periods, Runway 3L/21R is used for larger, faster aircraft, and parallel Runway 3R/21L is used for smaller, slower aircraft. The Airport is forecasted to see an increase in scheduled air carrier and unscheduled air taxi operations, as well as GA operations. As airspace around the Airport becomes busier, the ATCT will need Runway 3R/21L to continue to separate more and less demanding aircraft. It is recommended that the Airport maintain the length, width, and pavement condition of Runway 3R/21L.

3.2.2 Runways 3L/21R and 12/30

The 2000 ALP shows that Runways 3L/21R and 12/30 have an ARC of C-III, with plans to increase to C-IV. The existing critical aircraft for these runways is the Boeing 737 (C-III), and the future critical aircraft is the Boeing 757-200 (C-IV). The 737 is part of the United, Delta, and Alaska (Horizon) Airlines fleets. The 757-200 is part of the Delta and United Airlines fleets, as is the Boeing 757-300 (C-IV), which is not used as a critical aircraft. Delta and United airlines use regional jets to serve PSC, but if passenger volumes continue to increase, they may transition to a 737 or 757 in response to demand.

Low cost carriers are another potential operator of the 737 and 757 aircraft. As mainstream air carriers retire their 757s, and older 737s, low cost carriers may reintroduce these aircraft into service, such as Allegiant Air did with retired MD-83 aircraft. As the MD-83's reach the end of their service life, they will need to be replaced by new aircraft. As of 2008, Allegiant has no plans to replace aircraft, but acknowledges that the MD-83 is an out of production model for both airframe and engines, making replacement parts increasingly expensive, and difficult to find. Allegiant may consider different aircraft, and the 737 and 757 may replace the MD-83. In 2010, Allegiant purchased 757-200 aircraft to serve the Hawaiian market from the west coast. These aircraft will be added to Allegiant's existing fleet.

The 737 and 757 are also used as cargo aircraft. The 737-700C has the capacity to carry up to 40,000 pounds of cargo, or to be split and carry both passengers and cargo. Alaska Airlines operates 737-400 aircraft in an all cargo, and a combination of passenger and cargo variants. Cargo operators such as FedEx are introducing retrofitted 757s into their fleets to replace less fuel efficient aircraft. FedEx cargo service at PSC is operated by smaller ATR-72 and Cessna 208 Caravan aircraft. Should volumes increase significantly, FedEx may introduce a direct flight to a logistics hub on a larger aircraft.

The U.S. Military uses military variants of the 737-700 (as the C-40B/C), and the 757-200 (as the C-32A). These aircraft are used for executive transport of high-ranking military officers and elected officials, and also during times of disaster and emergency to transport troops and supplies.

The Boeing Aircraft Company builds 737s, and the 757's replacement, the 767, in the Seattle area. These aircraft use PSC during test flights.

Economic development in the Tri-Cities area may lead to more business aircraft using the Airport, as indicated by the forecasted growth in unscheduled air taxi service. Some of these aircraft are within the D approach category, such as the Gulfstream IV (D-II), and the Learjet 35A and 36A (D-I). The C-21 is the military variant of the Learjet 35A, and is used for cargo and passenger airlift. FBO records indicate that there are two Gulfstream IV's based at the Airport. These aircraft represent the critical business aircraft.

Although there is no set date for the introduction of scheduled service by 737 or 757 aircraft, they have been selected as the critical air carrier aircraft, upon which design standards are based, because of the fleet mix of existing air carriers, the purchase of 757's by Allegiant, the U.S. Department of Energy's local facility, and due to the military presence in the northwestern U.S. PSC is the only airport in the Tri-Cities with a runway long enough to accommodate these aircraft. By maintaining the airfield to accommodate these aircraft, PSC will maintain the flexibility of serving them without requiring facility upgrades when the need arises.

In order to accommodate the approach category D business aircraft, and design group IV air carrier aircraft, it is recommended that the Airport plan for a future ARC of D-IV. This will provide the appropriate facilities for high approach speed business jets such as the Gulfstream IV's that are based at the Airport, and larger air carrier aircraft. By preserving D-IV design standards, the Airport will be able to accommodate certain larger aircraft if necessary, without having to place circulation restrictions on other pavement. Preserving D-IV design surfaces may also reduce the need for future runway, taxiway, or apron realignment to accommodate larger aircraft, while continuing to accommodate approach category D business jets and design group IV air carrier aircraft.

3.3 Runway Length

Runway length requirements are determined by analyzing the needs of the Airport's critical aircraft. Runway 3R/21L has a length of 4,423 feet, which is adequate for the aircraft using the runway, and should be maintained.

Runways 3L/21R and 12/30 are being evaluated for a runway extension. AC 150/5325-4B, *Runway Length Requirements for Airport Design*, states that "the recommended length for the primary runway is determined by considering either the family of airplanes having similar performance characteristics or a specific airplane needing the longest runway." The AC also indicates that the length of the crosswind runway should be equal to that of the primary runway when the runways are designed for the same design group. This AC supports that if one runway is extended, the other should be as well.

The runway length requirements presented for 3L/21R and 12/30 are based on national and local trends of aircraft requiring greater runway lengths. The purpose of these lengths is so the Airport can preserve land necessary for runway extension in airfield planning. Further study and justification will be required before any extension project begins.

Runway length requirements are presented for aircraft that weigh more than 60,000 pounds, and aircraft that weigh 60,000 pounds or less.

3.3.1 Aircraft that Weight More than 60,000 Pounds

AC 150/5325-4B, *Runway Length Requirements for Airport* Design, indicates that aircraft with a MTOW greater than 60,000 pounds, and commercial jets that carry fewer than 100 passengers regardless of weight, should be evaluated in accordance with manufacturer specifications. Runway length requirements vary among aircraft. Engine selection for a particular aircraft results in varied levels of performance. Aircraft operators have additional specifications for runway length considering length of haul, aircraft performance, pilot procedure, airport elevation, and ambient temperature. Generalized lengths are used in this chapter. The adequacy of existing runway length will need to be evaluated on a case-by-case basis. A range of take-off runway lengths which represent different engine options at the maximum take-off weight are presented in **Table 4-1**.

Table 4-1: Take-Off Runway Length for Aircraft that Weigh More Than 60,000 Pounds

Aircraft	Minimum Length (Feet)	Maximum Length (Feet)	ARC
Boeing 737 Series	6,587	14,638	C-III
Boeing 757-200	8,783	12,686	C-IV
Bombardier CRJ Series	6,343	10,500	C-III/C-II
Boeing MD-83	9,759	10,003	C-III
Gulfstream IV	6,648	6,648	C-II
Bombardier Q400	5,123	6,099	C-III

Source: Manufacturer Airport Planning Manuals *Lengths Adjusted for Airport Altitude*

PSC's runway lengths were adequate for commercial aircraft with more than 500 operations in 2008; however some configurations of the Bombardier CRJ may have performance restrictions. Allegiant Air is increasing operations at PSC, which may create justification to extend runway length once the MD-83 exceeds 500 annual operations. Future operations by 757, 737, and other aircraft may also need a longer runway.

3.3.2 Aircraft That Weigh 60,000 Pounds or Less

The FAA's *Airport Design* computer program is used to estimate runway lengths for GA aircraft, including piston aircraft and business jets. The software breaks aircraft into three categories: small airplanes that weigh 12,500 pounds or less (like the Beechcraft King Air 200), large airplanes grouped by family that weigh 60,000 pounds or less (like the Dassault Falcon 900EX), and individual large airplanes of more than 60,000 pounds (like the Gulfstream IV). GA runway lengths are presented in **Table 4-2**.

Table 4-2: Take-Off Runway Length for Aircraft That Weigh LessThan 60,000 Pounds

Aircraft Description	Length (Feet)
Small Airplanes with less than 10 passenger seats	3,870
Small Airplanes with 10 or more passenger seats	4,420
Large Airplanes, 60 percent useful load	5,840
Large Airplanes, 90 percent useful load	9,170

Source: FAA

According to the FAA software, operations by large GA airplanes at PSC support a runway length up to 9,170 feet. The 2000 ALP shows a future runway length of 8,700 feet. A 9,170 foot long runway will enable the Airport to accommodate business jets that wish to make longer trips, which require more fuel, and subsequently require a greater runway take off length.

It is recommended that PSC consider extending a runway to 9,170 feet when aircraft operators indicate that they have to compromise their operations, or reduce their loads when using the Airport.

3.3.3 Declared Distances

Appendix 14 of AC 150/5300-13 defines declared distances as a means of providing "an equivalent runway safety area (RSA), runway object free area (ROFA), or runway protection zone (RPZ) in accordance with the design standards [...] at capacity constrained airports." As a result of declared distances, runways are allowed to have varying lengths for accelerate stop distance available (ASDA), landing distance available (LDA), takeoff distance available (TODA), and takeoff run available (TORA), which are different than the physical runway length. Runways 3L/21R and 12/30 are operating with declared distances.

For Runway 3L/21R, the threshold of Runway End 21R is displaced by 600 feet to accommodate the approach slope over the railroad tracks. This results in 7,111 feet of LDA, with other distances being the full runway length of 7,711 feet.

For Runway 12/30, the threshold of Runway End 30 is displaced by 200 feet to accommodate the RSA and Argent Road. The runway has an ASDA and LDA of 7,503 feet, with other distances being the full runway length of 7,703 feet.

As Runways 3L/21R and 12/30 are considered for length extension, the elimination of declared distances should be considered, as extension improvements can include correction of the existing declared distance situation. Declared distance elimination may also be accomplished by shortening the runways, but this is not recommended as it reduces runway capacity and utility.

It is recommended that Runway 3L/21R be considered for extension, and the 600 feet currently lost due to the declared distance be recuperated. It is recommended that Runway 12/30 be considered for extension, and the 200 feet currently lost due to the declared distance be recuperated. A runway extension is a significant airfield improvement that likely requires additional planning.

As Runway 3L/21R is extended, it is recommended that Taxiway E near the existing Runway End 21R be relocated to the new Runway End 21R threshold. As Runway 12/30 is extended, it is recommended that Taxiway D and E near the existing Runway End 30 be relocated to the new Runway End 30 threshold.

3.4 Runway Width

AC 150/5300-13 indicates that the required runway width for a design group III airport is 100 feet, and 150 feet for design group IV. The AC states that design group III aircraft with a MTOW greater than 150,000 pounds, such as the MD-83 and the 737, require a 150 foot wide runway. PSC's Runways 3L/21R and 12/30 are 150 feet wide. Runway 3R/21L is 75 feet wide, which meets visual runway width requirements for design group II aircraft. PSC's current runway widths accommodate aircraft forecasted to operate at PSC through 2028.

It is recommended that PSC maintain these runway widths to serve the critical aircraft throughout the forecast period. Existing widths support the forecasted critical aircraft, so that the Airport does not need to upgrade the airfield should airlines begin to use larger, more demanding aircraft.

3.5 Runway Pavement Strength

PSC's runway pavement strengths are presented in **Chapter One**. Runway pavement demands for MTOW, and maximum landing weight (MLW) of aircraft that commonly use the Airport are presented in **Table 4-3**.

Table 4-3: Runway Pavement Demands

Aircraft	Wheel Configuration	MTOW (Pounds)	MLW (Pounds)
Boeing 757-200	Dual-Tandem	255,000	224,000
Boeing 737 Series	Dual	187,700	157,300
Boeing MD-83	Dual	160,000	139,500
Bombardier CRJ Series	Dual	84,500	75,000
Gulfstream IV	Dual	73,900	66,000
Bombardier Q400	Dual	64,500	61,750
Beechcraft King Air 350	Dual	15,000	15,000

Source: Manufacturer Specifications *Heaviest weight for aircraft series shown.*

Current pavement strengths at PSC are adequate for the aircraft that they serve. Runway 3L/21R underwent rehabilitation in 2009, and rehabilitation of Runways 12/30 and 3R/21L is expected in the near-term. The highest MTOW of the 737 series exceeds the recommended weight bearing capacity of 3L/21R by up to 17,700 pounds. Because of its wheel configuration, the MTOW of the 757 series is accommodated by Runways 3L/21R and 12/30. Aircraft loads should be adjusted accordingly to avoid stress on the pavement.

It is recommended that PSC improve and maintain runway pavement strength to accommodate design aircraft.

3.6 Taxiway System

Taxiway dimension standards in AC 150/5300-13 indicate that taxiways for design group III aircraft should be 50 feet wide, and those for design group IV should be 75 feet wide. Taxiways at PSC are 75 feet wide, with the exception of a 50 foot wide portion of Taxiway E, between Runway 12/30 and Taxiway A. The Airport should consider widening the 50 foot wide section of Taxiway E for ease and options of circulation by larger aircraft. The 75 foot width, which supports the existing 737 and future 757 design aircraft, should be maintained to accommodate current and future users of the Airport.

Based on the dimensions supplied in AC 150/5300-13, the taxiway system is adequate to handle the most demanding aircraft forecasted at the Airport through 2028. As indicated in **Section 3.3.3**, the Airport should look at relocating Taxiway E at its intersection of Runway 30. Also, Taxiway A, from Taxiway D to Taxiway E, does not cross Runway 12/30 perpendicularly. The airlines have reported that when Runway 3L/21R or Taxiway D are closed and they use Runway 30 to taxi, this angle of the intersection of Runway 12/30 and Taxiway A is difficult to negotiate.

It is recommended that the 50 foot wide section of Taxiway E be widened by 25 feet, to 75 feet in width. It is also recommended that Taxiway A be realigned to cross Runway 12/30 perpendicularly.

Standard right angle taxiway connectors provide access to the runways at PSC. This type of taxiway is well suited to provide access to runway ends, but in other places they require aircraft to reduce speed, turn, then apply engine thrust to regain taxiing speed. Acute angle, “high-speed,” taxiway connectors allow increased efficiency in aircraft movement between runway and taxiway, allowing landing aircraft to vacate the runway more quickly. This allows aircraft operations to be spaced more closely together and increases capacity. Consideration should be given to installation of acute angle taxiway connectors at appropriate places.

It is recommended that PSC maintain its taxiway width to accommodate design aircraft, relocate the taxiways near the end of Runway 30, and install high speed taxiway connectors at appropriate places.

3.7 Design Standards and Part 77 Surfaces

FAA airport design standards are created for safe aircraft operations. These standards are identified in AC 150/5300-13, and include runway and taxiway safety areas and object free areas, runway object free zone, runway protection zone, precision obstacle free zone, and runway end siting requirement surfaces. Part 77 of the Code of Federal Aviation Regulations identifies the airspace around PSC to be protected from obstructions, and includes the approach, primary, transitional, conical, and horizontal surfaces. Existing design and Part 77 surfaces are defined in **Chapter One**.

3.8 Navigational Aids (NAVAIDs)

AC 150/5070-6B, *Airport Master Plans*, defines NAVAIDs as "aids to navigation [that] provide pilots with information to assist them in locating the airport and to provide horizontal and/or positional guidance during landing." The type, mission, and volume of aeronautical activity, in association with airspace, meteorological conditions, and capacity data, determine the need and eligibility for NAVAIDs. NAVAID requirements are based on guidelines contained in FAA Handbook 7031.2C *Airway Planning Standard Number One,* and AC 150/5300-13.

PSC has an on-airfield very high frequency omni-directional range (VOR) station. Besides the navigational support provided by the VOR, the VOR restricts development and expansion of the terminal and transient aprons. Removal or relocation would increase airside development opportunities. Nationwide, the FAA has begun to phase out funding and maintenance for VOR stations.

It is recommended that PSC investigate removing or relocating its VOR.

3.9 Instrument Procedures

Instrument procedures are developed for approach and departure at an airport. Instrument procedures are commonly used regardless of the weather. Commercial aircraft regularly use instrument procedures, as do business GA flights. GA flights have discretion whether to use instrument or visual procedures, provided visibility and cloud ceiling are adequate. The Airport was subject to instrument flight rules (IFR) weather for three percent of the time between 1999 and 2008. Runway Ends 3L, 21R, 12, and 30 have instrument approach procedures (IAPs).

The Airport has an instrument departure procedure. As runways ends are extended and improved, PSC's instrument departure procedure should be maintained to allow for aircraft departure on the four ends of Runways 3L/21R and 12/30.

The air traffic control tower (ATCT) is equipped with NextGen compatible airport surveillance radar technology. The VOR on property will serve aircraft not equipped with the avionics necessary to use the NextGen for the time being; however future IAPs will likely be developed in coordination with the NextGen system.

Satellite based navigation has become a priority for the FAA, as the Next Generation Air Transportation System (NextGen) is implemented. PSC has area navigation (RNAV) global positioning system (GPS) with localizer performance with vertical guidance (LPV) based IAPs into the four primary runway ends, which will facilitate the Airport's transition into NextGen. RNAV IAPs are capable of providing visibility minimums as low as a half mile, although current RNAV IAPs at PSC are not lower than one mile.

Runway End 21R has a precision IAP, provided by an instrument landing system, which includes an approach light system, and precision runway markings. Runway End 30 has an RNAV LPV IAP, but does not have precision runway markings. Runway Ends 3L and 12 have RNAV LPV approaches, but do not have an approach light system, and do not have precision runway markings. To support a precision IAP, runway ends should have an approach light system, and precision runway markings. The FAA Western Flight Procedures office has indicates that adding precision marking to Runway End 30, and precision runway markings, and approach lighting to Runway Ends 3L and 12 will aid pilots, and is a step in receiving a precision certification.

Increased airport access can also be provided by the implementation of a Category (CAT) II/III IAP, which will reduce the amount of time that the Airport is closed when visibility minimums are below half a mile. A CAT II/III system consists of elaborate in-pavement lighting, approach lights, and pavement markings. CAT II IAPs allow visibility down to 1,200 feet, and CAT III IAPs allow aircraft to use an auto-land feature, with no visibility minimum. CAT II/III systems require special aircraft equipment and flight crew training.

It is recommended that Runway End 30 be considered for precision runway markings, and that Runway Ends 3L and 12 are considered for approach light systems and precision runway markings. As a runway end is designated for precision IAPs, there are associated changes to design standards and airspace surfaces. It is recommended that consideration be given to the implementation of a CAT II/III system. These are significant airfield improvements that likely require additional planning. Preliminary coordination with the FAA Western Flight Procedures Office indicates that the Airport is a candidate for a CAT II/III IAP. Further study and coordination will be required before implementing new IAPs.

3.10 Aircraft Aprons

There are three aprons. The transient parking and terminal aprons are connected by pavement, but serve different purposes. The GA apron is used by based and transient aircraft.

3.10.1 Terminal Apron

The terminal apron has four parking spaces surrounding the terminal building, and three additional remote aircraft parking spaces. The apron is capable of serving seven aircraft at a time. Turn time, which is the time it takes an aircraft to land, unload, load, and depart, is used to estimate apron capacity.

ACRP Report 23 provides an estimated turn time of 52 minutes for an aircraft with 201 passengers, which is 0.258 minutes per passenger. Using this ratio, turn times have been adjusted to reflect the types of aircraft operating at PSC, and used to estimate the terminal aprons capacity in one hour. The shorter turn times have been capped at 30 minutes minimum to account for pilot and cabin crew pre-flight preparation, availability of fuel services, and potential delay during the boarding process. The aircraft turn times are presented in **Table 4-4**.

Table 4-4: Terminal Apron		
Aircraft	**Seats**	**Turn Time (Minutes)**
Boeing 757-200	184	48
Boeing MD-83	150	39
Boeing 737-700	124	32
Bombardier CRJ-900	76	30
Bombardier Q400	74	30
Bombardier CRJ-200	50	30

Source: ACRP, Airline Seating Charts

PSC's terminal apron can accommodate up to 14 aircraft in an hour, unless one of these is an aircraft with 100 or more seats, which lowers the total to 13. The terminal apron is capacity constrained by the number of passenger boarding gates which have a limit of 8 operations per hour using the four boarding gates and 30 minute turn times.

It is recommended that the terminal apron be able accommodate the future critical aircraft, the Boeing 757. This may require the expansion of the apron, or the relocation of existing parking spaces. The implications of 757 operations at PSC are discussed in **Chapter 5**.

3.10.2 Transient Apron

The transient apron is primarily used by GA aircraft. This apron does not have access to fuel facilities, but can be used as overflow for the GA apron, and as storage for air carrier aircraft that are not in use. This apron will become more important if there is an extended period of time between flights for a certain aircraft, and other aircraft need access to the gate. Growth of this apron is constrained by Taxiway A, the air traffic control tower (ATCT), and a parking lot. There is room to expand this apron, towards the ARFF facility.

It is recommended that the Airport consider preserving land to expand the transient apron.

3.10.3 General Aviation Apron

The GA apron is primarily used by the FBOs, transient aircraft, and based aircraft for access to hangars, tie-downs, and services. GA operations are forecasted to increase, which will place additional demand on the apron. As the apron ages, and without proper care, the apron pavement will deteriorate. This creates loose pieces of pavement, which when affected by aircraft propeller wash and jet blast, becomes foreign object debris (FOD), and results in aircraft damage. Maintenance and rehabilitation will preserve the pavement utility, and reduce the risk of FOD damage.

It is recommended that the Airport maintain and rehabilitate the GA apron.

4. Passenger Terminal Facilities

The passenger terminal is the face of the Airport to the community, and the front door of the Airport to many users. It is the first thing many visitors see when they come to the Tri-Cities. Amenities provided to the traveling public encourage use of the Airport, adds value to the passenger experience, and improves the perception of the Airport. The passenger terminal was last given an update in 1986. It is recommended that the Airport consider incorporating aesthetic upgrades during terminal renovations, and work towards creating a new style that creates a connection between the Airport and the region that it serves.

Airport passenger numbers and non-stop destinations are increasing, and larger aircraft are anticipated to begin operating at the Airport. The 2000 Master Plan indicated a need for 5,511 square feet of additional passenger terminal space between 2000 and 2020. This demand experienced a setback as passenger levels declined in 2001, but recovered and exceeded pre-2001 levels in 2004. With passenger levels forecast to increase with a compound annual growth rate (CAGR) of 2.16 percent through 2028, it will be necessary to increase the capacity of terminal facilities. Many of the passenger terminal space recommendations are based on peak hour forecasts, presented in **Chapter 3**.

This section looks at the following components of the terminal facility and identifies the associated facility recommendations.

- Airline Ticket Counters
- Airline Operations Area
- Ticket Lobby
- Security Checkpoints
- Passenger Holdroom
- Passenger Boarding Gates
- Concessions
- Restrooms
- Rental Car Counters
- Baggage Claim
- Circulation and Public Space
- Utilities and Mechanical Systems

4.1 Airline Ticket Counters

The ticket counter area is used to purchase tickets, check-in for flights, check baggage, receive boarding passes, and for customer service. New technology and airline business practices are changing the way that ticket counters are used. Internet check-in has reduced the number of passengers using the ticket counter, while airline bag fees have modified how passengers travel. This approach allows passengers to pay for only the services they value, which shapes how passengers travel. Now that passengers departing from PSC often pay to check their baggage, some passengers are traveling with fewer bags, or packing a carry-on bag. A passenger checking in without baggage requires less time to process, which increases the ticket counter's efficiency. PSC's ticket counter is approximately 96 feet long, with stations for four airlines (Allegiant, Horizon, United, and Delta), which is approximately 24 feet per airline.

Three methods have been calculated to determine airline ticket counter recommendations: the 2000 Master Plan methodology; and the two values produced by AC 150/5360-9, *Planning and Design of Airport Terminal Facilities at Non-hub locations*. The methodology used in the 2000 Master Plan identified the length of counter needed to accommodate 50 percent of the peak hour enplanements in 20 minutes. This methodology anticipates 4 minutes to process each passenger, and 4.5 feet of counter space per agent. This methodology generates the *high* ticket counter recommendations. AC 150/5360-9 provides a range of lengths based on peak hour enplanements, and these represent the *low* and *mid* ticket counter recommendations. Airline ticket counter lengths are presented in **Table 4-5**.

Table 4-5: Airline Ticket Counter Lengths

Year	Low (Feet)	Mid (Feet)	High (Feet)
2008	96 (Existing)		
2013	69	83	147
2018	77	92	175
2028	96	115	239

Source: FAA

High length recommendations have been dismissed as excessive due to the lack available space for airline ticket counter expansion, increased efficiency per passenger as a result of less baggage, and the reduction in airline ticket counter usage. Regarding airports nationwide, ACRP Report 23, *Airport Passenger-Related Processing Rates Guidebook*, states that "most passengers use some form of electronic check-in," that the check-in process is becoming more decentralized, and that airlines are experimenting by placing check-in counters outside of the ticket lobby. Given these trends, it is anticipated that the required airline ticket counter length will be between the mid and low projections.

PSC's airline ticket counter area has limitations which are not reflected in FAA formulas. The airlines operating at PSC have maximized the available counter space, which restricts adding a new carrier without existing airlines having to share space. Shared check-in counters increase utilization, but create conflicts when flights by different airlines operate at the same time. During interviews, airline representatives raised concerns about space available for expansion. By 2028, it is anticipated that the ticket counter will need at space for at least one more airline. Provided current space allocations remain the same, this airline will need 24 feet of space.

It is recommended that the airline ticket counter be extended to accommodate one additional airline that requires 24 liner feet of space, for a total of 120 feet of counter space for five airlines.

4.2 Airline Operations Area

The airline operations area (AOA) includes the airline ticket office (ATO), and outbound baggage. The existing configuration provides each of the four airlines a rectangular area that is approximately 24 feet wide and 62 feet long, and occupies 1,488 square feet. The area between the AOA and the ticket counter is 96 feet wide and 20 feet from counter to wall, and occupies an area of 1,920 square feet. Expansion of the AOA should be coordinated with expansion of the ticket counter, and the needs of each airline.

It is recommended that the AOA be reconfigured to enclose TSA baggage screening behind the wall, provide a common-use AOA, and that the walls separating each airline's baggage processing area be eliminated. Airlines will maintain individual offices. It is also recommend that the wall behind the ticket counter be moved forward by 10 feet, reducing the separation from 20 feet to 10 feet. This will create an area of approximately 6,912 square feet for TSA baggage screening, airline offices, and outbound baggage processing. This modification is intended to provide the airlines a more efficient and cost effective way of using existing building space, and will provide in-line baggage screening. Relocating the baggage screening equipment may reduce cooling costs as it will be in a smaller room. It does not require expansion of the existing building footprint. It is recommended that these changes be coordinated with the TSA.

If the ticket counter is extended to 120 feet, it is recommended that 1,488 square feet be added to the reconfigured common-use AOA's 6,912 square feet, for a total of 8,400 square feet of AOA.

4.3 Ticket Lobby

The demand for agent staffed ticket counters is being reduced by fewer passengers checking baggage, and by passengers proceeding directly to the security checkpoint. However, the space in front of the counter area remains utilized, as passengers enter the ticket lobby to check flight status, and use the self-service check in kiosks in the airline ticketing area. Passengers using the ticket lobby occasionally have non-passengers accompanying them, which can increase congestion. There is approximately 3,665 square feet of space in the ticket lobby, which includes seating, circulation corridors, and automated check-in machines.

AC 150/5360-9 provides guidance for ticketing lobby area, based on peak hour enplanements. AC 150/5360-9 does not provide guidance past 400 peak hour enplanements, whereas 529 are forecasted for PSC in 2028. AC 150/5360-13 is used for the 2028 values and recommends 12 to 15 feet of queuing space and 20 feet of circulation space per foot of counter space. These ranges provide low and high values. The recommendations are presented in **Table 4-6**.

Table 4-6: Ticket Lobby Area

Year	Peak Hour Enplanements	Low (Square Feet)	High (Square Feet)
2008	264	3,665 (Existing)	
2013	269	1,150	1,400
2018	388	1,550	1,850
2028	529	2,112	2,400

Source: FAA

Automated check-in machines are the future of the industry. In addition, many airports are installing common use self-service check-in machines that allow passengers to check-in, regardless of what airline they are flying. New technology is emerging that allows passengers to tag their own bags and drop them on a conveyer belt which sends them to TSA for screening. These advances in check-in technology support the low recommendations for ticket lobby area. It is anticipated that the Airport will need to expand the ticket lobby to accommodate an additional airline.

It is recommended that the existing 3,665 square feet of ticket lobby space be maintained, and check-in facilities be upgraded as the equipment becomes available.

4.4 Security Checkpoints

Airport security and security screening checkpoints (SSCP), which are the area that passengers walk through to access the passenger holdroom, have changed since the Airport's Master Plan was last updated in 2000. The TSA's 2006 *Recommended Security Guidelines for Airport Planning, Design, and Construction* states that "all airports represent points of entry into the aviation system, and must meet minimum criteria." PSC currently has a *holding area* SSCP, which the TSA defines as where "screening is carried out at an entrance to an area designed to hold passengers awaiting a specific flight." The TSA goes on to describe this situation as ideal for airports with fewer gates and limited screening requirements such as PSC.

AC 150/5360-13 estimates that a SSCP with one walk through detector and one x-ray has the capacity of 500-600 passengers per hour. PSC has one walk through detector, and two x-ray machines. This indicates that the SSCP will be approaching maximum capacity if peak hour enplanements reach 529, as they are forecasted to do in 2028. This passenger processing rate is reduced when a passenger requires additional screening.

It is recommended that PSC add an additional walk through detector to the SSCP. The TSA estimates that a configuration consisting of two walkthrough detectors, and two x-ray machines will require an area that is 22 feet wide, and 42 feet long, for an area of 924 square feet. The existing SSCP area is approximately 24 feet wide by 41 feet long, which equals 984 square feet. New developments in TSA procedures are seeing the deployment of body-scanning devices, which require approximately and area of 7 feet by 9 feet, which is 63 square feet. PSC should reserve space for a body-scanning device.

It is recommended that PSC maintain the two existing x-ray machines, add one walk through detector, and one body-scanning device, for a total of two x-ray machines, two walk through detectors, and one body-scanning device.

4.5 Passenger Holdroom

The demand for holdroom space is tied to the peak hour demand, the number of flights operating during the peak hour, and the number of seats on the critical aircraft serving the passenger holdroom. As PSC does not have connecting passengers, peak hour demand equals peak hour enplanements. Due to the absence of a concessions area with dedicated seating in the passenger holdroom, it is anticipated that arriving passengers will immediately leave the area, do not occupy seats, and minimally add to congestion. The holdroom occupies approximately 9,000 square feet.

Three methodologies have been used to estimate the holdroom recommendations. AC 150/5360-13 derives holdroom facility recommendations through analyzing the total number of available seats versus the enplaning load factor. The AC states that "the departure lounge area is a function of the number of passengers anticipated to be in the lounge 15 minutes prior to aircraft boarding." Airline security and boarding practices require passengers to be at the gate as early as 40 minutes prior to departure, making these the low passenger holdroom estimates. The values of the mid passenger holdroom forecast are based on the values provided in AC 150/5360-13, but doubled based on the following: the boarding process ends ten minutes prior to departure, and passengers must be at the gate at least 40 minutes prior to departure, leaving a window of 30 minutes during which passengers will be in the holdroom. A third methodology uses industry rule of thumb, and allocates 1,800 square feet of holdroom space per gate, and bases its results on three operational gates in 2013, four in 2018, and five in 2028. This represents the high passenger holdroom forecast. Holdroom estimates are presented in **Table 4-7**.

Table 4-7: Passenger Holdroom				
Year	**Peak Hour Enplanements**	**Low (Square Feet)**	**Mid (Square Feet)**	**High (Square Feet)**
2008	264	9,000 (Existing)		
2013	327	3,800	7,600	5,400
2018	388	3,800	7,600	7,200
2028	529	3,800	7,600	9,000

Source: FAA

Holdroom design is adequate for the forecasted peak hour enplanements. Factors that influence peak hour enplanements, such as aircraft size and flight scheduling, may place additional demand on the passenger holdroom. One scenario would be if airlines operating at PSC transition away from regional aircraft and institute service by larger aircraft. In this scenario, peak hour enplanements could surpass forecasts without an increase in flight frequency, or additional destinations. Service by multiple aircraft in the 100+ seat range, such as the Boeing MD-80 and 757, at the same time as peak regional jet operations, could push peak hour enplanements beyond forecasted levels.

It is recommended that PSC maintain the 9,000 square feet of holdroom space.

4.6 Passenger Boarding Gates

The Airport has five boarding gates; one is a passenger boarding bridge (PBB) directly to the aircraft, and four are doors that lead to the terminal apron. In 2008, three of the boarding gates were in use, one was not, and one is not usable because of the location of the PBB. Passenger boarding capacity is calculated by using the turn times generated in **Section 3.10.1**. In 2008, peak hours saw five airline operations, which is 62.50 percent of the total peak hour commercial operations. This percentage has been used to forecast passenger boarding gate demand for the forecast years. Two scenarios are presented, one where all operations have a turn time of 30 minutes, and one where one operation takes longer than 30 minutes. The results are presented in **Table 4-8**.

Table 4-8: Passenger Boarding Gates			
Year	**Peak Hour Airline Operations**	**Gates Needed (30 Minute Turn Time)**	**Gates Needed (>30 Minute Turn Time)**
2008	5	3	3
2013	7	4	4
2018	8	4	5
2028	9	5	5

Source: FAA

It is expected that PSC will need five boarding gates to accommodate expected peak hour airline operations. This results in the need for two additional gates to the existing three operational gates, for a total of five operational gates. The Airport currently has five gates, but one is unused, and another is unusable because of the location of the existing PBB. To meet the expected demand, the Airport will need to activate the unused gate, and add one additional boarding gate. It is recommended that one of the boarding gates, new or existing, be considered for a new PBB. PBBs generally expedite the loading process by delivering passengers directly to the aircraft's door, instead of having them climb steps. PBBs also facilitate loading passengers with disabilities.

It is recommended that PSC maintain the three operational boarding gates, activate the fourth existing, non-operational boarding gate, and add one new gate, for a total of five gates. It is also recommended that one of the boarding gates considered for an additional PBB, for a total of two PBBs.

4.7 Concessions

Concession may include restaurants, gift and convenience stores, and cocktail lounges. PSC has a restaurant and a gift shop in the non-sterile side of the SSCP, and a gift shop in the sterile area. In addition to passengers, the airport restaurant on the non-sterile side of the SSCP serves the public. AC 150/5360-9 provides a range estimates for concession space based on *peak hour passengers*, which includes enplaning and deplaning passengers. In 2008, there were 338 seats available on arriving or departing aircraft during the peak hour, which is 128 percent of the peak hour enplanement total. This percentage is used to determine the peak hour passengers for the forecast years.

AC 150/5360-9 represents the high concessions area forecasts. The AC does not provide a range up to 2028 peak hour passenger levels, so that value has been extrapolated using a trend line. Due to the absence of connecting passengers at PSC; a range based on peak hour enplaned passengers has also been generated from AC 150/5360-9. This represents the low and mid concessions area forecasts. Recommendations are presented in **Table 4-9**.

Table 4-9: Concessions

Year	Peak Hour		Low (Square Feet)	Mid (Square Feet)	High (Square Feet)
	Enplanements	Passengers			
2008	264	388	2,877 (Existing)		
2013	327	419	1,900	2,500	3,200
2018	388	497	2,100	2,900	3,950
2028	529	677	2,900	4,300	5,300

Source: FAA, Mead & Hunt

The mid concessions area forecasts are preferred because in the absence of connecting passengers, the peak hour enplaned passenger based projection should provide a more accurate assessment of demand. PSC's restaurant dining room occupies approximately 1,877 square feet, which, combined with the approximately 1,000 square feet of gift shop space, creates 2,877 square feet of concessions area. The Airport is considering adding a coffee stand on the sterile side of the SSCP. There may be advantages to adding additional dining room space on the sterile side of the SSCP as enplanements grow. Studies conducted after the attacks of September 11th, 2001 have shown that concessions on the sterile side of the SSCP are more profitable. Increasing the time passengers spend on the sterile side of the SSCP amounts to increased revenue. Another advantage of concessions in the sterile area is that they may entice passengers to clear the SSCP earlier. This may reduce the peak demand placed on the SSCP.

It is recommended that PSC add concessions to the sterile side of the SSCP, and add 1,423 square feet of concessions area to the existing 2,877 square feet in the passenger terminal building, for a total of 4,300 square feet.

4.8 Restrooms

The Airport has approximately 1,846 square feet of restroom area. AC 150/5360-13 advises that restroom space varies greatly from airport to airport, however minimums are defined by local codes. The Washington State Building Code (Code) specifies the minimum number of *water closets*, or toilet stalls, that an area must have based on its *population*, which is the peak hour passenger level. This methodology divides the peak hour passengers evenly in terms of gender, and acknowledges that populations are unlikely or unable to cross the SSCP to use the restroom. Both sides of the SSCP are evaluated for peak hour passengers.

The Code requires fewer water closets than exist at the Airport. The recommended number of water closets maintains the existing ratio of sterile and non-sterile restrooms in relation to Code minimums. Restroom recommendations are presented in **Table 4-10**.

Table 4-10: Restroom Water Closets

Year	Peak Hour Passengers	Water Closets: Male Sterile/Non-Sterile		Water Closets: Female Sterile/Non-Sterile	
		Code	Recommended	Code	Recommended
2008	388	4/4	6/8 (Existing)	4/4	6/10 (Existing)
2013	419	5/5	8/10	5/5	8/13
2018	497	5/5	8/10	5/5	8/13
2028	677	6/6	9/12	6/6	9/15

Sources: Washington State Building Code

The existing restroom configuration provides 61.53 square feet of space per water closet. Using this ratio, the area expected to be needed for restrooms is calculated in **Table 4-11**.

Table 4-11: Restroom Area			
Year	Water Closets: Sterile/Non-Sterile	Sterile Area (Square Feet)	Non-Sterile Area (Square Feet)
2008	12/18 (Existing)	664	1,182
2013	16/23	984	1,415
2018	16/23	984	1,415
2028	18/27	1,108	1,661

It is recommended that PSC add six water closets on the sterile side of the SSCP to the existing 12, for a total of 18 water closets. It is recommended that PSC add nine water closets to the non-sterile side of the SSCP to the existing 18, for a total of 27 water closets. It is anticipated that these additions will require 444 additional square feet of space on the sterile side of the SSCP, and 479 square feet on the non-sterile side. It is recommended that the Airport consider providing one family restroom on both sides of the SSCP for passengers with children. It is recommended that PSC add 923 square feet of restroom space to the existing 1,846, for a total of 2,769 square feet of restroom space in the Airport.

4.9 Rental Car Counters

The rental car counter is 98 feet long and serves five companies. AC 150/5360-13 indicates that between 350 and 400 feet of rental car counter space are needed per million annual enplanements. These calculations represent low and high facility recommendations, and are presented in **Table 4-12**.

Table 4-12: Rental Car Counters			
Year	Annual Enplanements	Low (Feet)	High (Feet)
2008	241,907	98 (Existing)	
2013	269,260	94	108
2018	318,907	112	128
2028	435,064	152	174

Source: FAA

The roadway network of the Tri-Cities area is conducive to automobile transportation, which supports high demand forecasts of rental car facilities, and results in an expected increase of 76 feet. This equals 35 feet of counter space per company, or 29 feet per company if a sixth company begins operations.

It is recommended that PSC add 76 feet of rental car counter space to the existing 98 feet, for a total of 174 feet.

4.10 Baggage Claim Area

The baggage claim area occupies 4,090 square feet, with approximately 717 square feet occupied by the two baggage claim displays. The recommendations for baggage claim are calculated by analyzing the peak hour *deplaned* passengers, or passengers arriving at PSC. Peak deplaning periods saw 174 passengers in 2008, which is 66 percent of the peak hour enplanement level. This percentage has been used to calculate the peak hour deplanements for the forecast years. AC 150/5360-13 provides guidance for public baggage claim area. This produces low and high values, which are presented in **Table 4-13**.

Table 4-13: Baggage Claim Area

Year	Peak Hour Deplanements	Low (Square Feet)	High (Square Feet)
2008	174	4,090 (Existing)	
2013	216	1,220	1,490
2018	256	1,380	1,660
2028	349	1,660	1,990

Source: FAA

The baggage claim area is expected to have sufficient space to handle deplaning passengers throughout the forecast period. If airlines continue to charge for checked baggage, and passengers increase the use of carry-on luggage, fewer passengers may utilize the baggage claim.

It is recommended that PSC maintain the size of the current baggage claim area.

4.10.1 Baggage Claim Display

The baggage claim display transport bags from the baggage handling room, into the baggage claim area, via conveyer belts. PSC has two belts, each approximately 56 feet in length. Recommended baggage claim display length is based to peak hour deplaned passengers in AC 150/5360-9. The range in this AC is presented as low and high values in **Table 4-14**.

Table 4-14: Baggage Claim Display

Year	Peak Hour Deplanements	Low (Feet)	High (Feet)
2008	174	112 Feet (Existing)	
2013	216	45	55
2018	256	52	64
2028	349	67	81

Source: FAA

The combined length of PSC's two belts is 112 feet. This length is adequate for the forecasted peak hour deplanements. Factors that influence baggage claim demand, such as aircraft size, number of passengers that check bags, and number of flights operating during the peak hour may influence this demand. It is recommended that PSC maintain its current baggage claim display length.

4.11 Circulation and Public Space

Circulation inside the terminal impacts passenger experience, and ease of access to different terminal facilities such as rental car counters, SSCP, and airline ticket counters. Passengers must pass through the lobby at least once to get from surface transportation to the passenger holdroom. Congestion in public space is increased by non-flying terminal occupants, normally well wishers of departing passengers, or meet-and-greet parities for arriving passengers. Circulation and public space is measured in terms of corridor width between passenger facilities, and lobby area seating. This process is used to identify any potential congestion areas within the terminal building, and analyze the area's ability to handle the projected passenger demand.

Modern terminal design incorporates different methods of providing natural light in public circulation corridors. Architectural studies have found that the presence of natural light, windows, and open spaces facilitates passenger way-finding within an airport as passengers can see where they need to go and how to get there. These studies also indicate that natural light has a calming effect on people, and helps reduce a building's lighting cost. It is recommended that the design of terminal improvements take into account the benefits of providing daylight.

4.11.1 Corridor Width Capacity

The design of the Airport's terminal leaves it largely devoid of corridors, which are narrow passages through which passengers pass to reach different terminal facilities. PSC's corridors include the 22 foot wide path between the lobby and baggage claim, and the SSCP, which is discussed in **Section 4.4**.

AC 150/5360-13 refers to a corridor's useful width as the *effective design width*, defined as "the total width less obstacles." The effective design width of the corridor between the lobby and the baggage claim area is 7 feet. Using a depth-separation analysis outlined in AC 150/5360-13, it is determined that the corridor can accommodate the 349 forecasted peak hour deplaning passengers in 4.33 minutes or less. This is provided all passengers pass through the corridor, which is unlikely as not all passengers check luggage or rent cars, and would not have a reason to pass through this part of the terminal.

It is recommended that PSC maintain current corridor widths, and keep them free of competing uses and obstructions.

4.11.2 Lobby Seating

The lobby between baggage claim, the SSCP, and the ticket counters occupies approximately 5,630 square feet. This area is a waiting area for meet-and-greet parties of arriving passengers, well-wishers, and ticketed passengers that have not passed through the SSCP. The existing seating is referred to as "beam seating," where a bar or arm separates one seat from the next. Some airports have begun offering what is known as "soft-seating" which is exemplified by a bench or couch, and has no pre-set divisions of seats. Architectural practices have found that these seats are seen as more inviting, and may cause arriving passengers to spend time in the Airport terminal, which increases the chance they will purchase concessions.

AC 150/5360-13 recommends that the lobby provide seating for 15 to 20 percent of the peak hour enplaning passengers. These calculations represent low and high lobby seating recommendations, and are presented in **Table 4-15**.

Table 4-15: Lobby Seating

Year	Peak Hour Enplanements	Low (Seats)	High (Seats)
2008	264	113 (Existing)	
2013	327	49	65
2018	388	58	78
2028	529	79	106

Source: FAA

Tighter security restrictions encourage passengers to spend more time in the sterile side of the SSCP while waiting for a flight, which supports the low lobby seating recommendations.

It is recommended that PSC consider maintaining the existing 113 seats in the lobby as the Airport approaches 529 peak hour enplanements, and that the Airport consider replacing some existing seats with soft-seating.

4.12 Utility and Mechanical Systems

Utility and mechanical systems include the electrical; plumbing; heating, ventilation, and air conditioning (HVAC); security; and telecommunications systems. PSC has approximately 1,254 square feet of space inside the terminal building for these systems. The HVAC air condensers are located in a fenced yard outside of the terminal building, which has an area of approximately 826 square feet, and is not included in the terminal space recommendations. The July 2009 Terminal Building Inventory, presented in **Appendix A**, noted that some of the mechanical systems appeared to be at or beyond their service lives, and need to be replaced.

This survey did not include an in-depth analysis of these systems, but did note that a building the size of the existing passenger terminal generally requires at least 2,000 square feet for utility and mechanical systems. Should there be an expansion to the terminal building, these systems will also need to be expanded, and adequate space will need to be allotted. Expansion will need to take into account the increased cooling and venting demands of new security screening devices.

The July 2009 Terminal Building Inventory recommended that the Airport undertake an energy audit to identify where it uses the most power. At the same time, it is recommended that the Airport model its historical utility data. The result of these processes provides a better understanding of the building's emissions and carbon footprint. This will enable the Airport to make better informed decisions about energy management, which is intended to reduce the Airport's environmental impact, and save money.

It is recommended that locate their mechanical and utility systems in a centralized location. There is a 306 square foot utility room located near the restrooms in the passenger holdroom that should be relocated if possible.

It is recommended that PSC add 746 square feet of space for utility and mechanical systems to the existing 1,254 square feet, for a total of 2,000 square feet. It is also recommended that PSC consider upgrading or replacing the aging utility and mechanical systems. PSC should consider creating an energy management plan to maximize energy efficiency, and minimize operation costs of their utility and mechanical systems.

5. Air Cargo Facilities

As the Tri-Cities area continues to develop and attract new business, the area will have an increased demand for air cargo services. Cargo forecasts grow by CAGR of 2.36 percent, which will increase demand on existing cargo infrastructure, and potentially drive demand for new facilities.

5.1 FedEx

FedEx has a dedicated sorting facility at the Airport. FedEx representatives have indicated that their facility is capacity constrained in terms of parking for customers and staff, and in terms of building and ramp capacity. The ATR-72 and Cessna 208 aircraft that use the ramp do not crowd Taxiway D, but if the facility needed to accommodate additional FedEx aircraft, the taxiway would be closed for the duration of the aircraft's visit. The forecasted growth in cargo aircraft operations and cargo volume in **Chapter 3** indicates that FedEx will need to expand their existing facility.

It is recommended that PSC plan for FedEx expansion, and coordinate with FedEx to determine facility requirements.

5.2 Charter Cargo Carriers

Charter cargo carriers Ameriflight and Airpac use the GA ramp to transfer cargo. On occasion, these carriers provide services for UPS.

It is recommended that the Airport coordinate with Ameriflight, Airpac, and UPS to determine UPS, volume, and facility requirements.

5.3 Cargo on Passenger Airlines

The FAA and TSA have increased screening requirements on cargo which is transported on passenger aircraft. In addition, the U.S. Postal Service contracts with FedEx to transport air mail. These events have contributed to a decline in the volume of cargo transported on passenger aircraft. As a result, Horizon Air is the only passenger carrier that reported 2008 cargo volumes in excess of 1,000 pounds to the U.S. Department of Transportation.

The TSA has mandated that 50 percent of cargo carried on passenger aircraft be screened in the same way that passenger baggage is screened by February 2009, and 100 percent by August 2010. This process requires air cargo to be screened as an individual item, rather than as a pallet of several items. The facilities needed to break down, screen, and reassemble large cargo shipments will place heavier demand on air carrier baggage facilities, and may encourage air carriers to outsource cargo shipments to dedicated cargo carriers. This may cause cargo volume to grow much more quickly, and increase the need for a larger facility.

This may accelerate the demand for a larger FedEx facility, and could also increase the demand placed on charter cargo carriers.

6. General Aviation Facilities

GA facilities at PSC support the based aircraft fleet, and transient aircraft. FBOs, located in the GA area provide fuel to commercial aircraft. GA traffic represented approximately 64 percent of total operations in 2008, and is expected to comprise 63 percent in 2028. Based aircraft are anticipated to grow at an annual rate of 1.76 percent.

6.1 Aircraft Parking and Storage

Aircraft parking and storage consists of T-hangars, box hangars, and aircraft tie-downs, located near the GA apron, and in the Airport Business Center. Aircraft tie-downs are used by based aircraft and transient aircraft. There are 75 aircraft tie-down positions. 38 percent of available aircraft storage is in T-hangars, 10 percent in box hangars, and 52 percent are aircraft tie-downs. Box hangars may contain multiple aircraft while T-hangars generally hold one. Aircraft tie downs are not expected to increase above current levels, while T-hangar and box hangars are expected to become more utilized as aircraft and avionics become more expensive and require protection. There are 1.17 storage spaces per based aircraft. This ratio is used to estimate the storage recommendations. Annual growth rates of 3.21 percent for T-hangar units and 2.98 percent for box hangar units are used to estimate the distribution. Aircraft parking and storage is presented in **Table 4-16**.

Table 4-16: Aircraft Parking and Storage

Year	Based Aircraft	T-Hangar Units	Box Hangars	Tie-Downs
2008	123	54	15	75
2013	129	58	18	75
2018	143	71	21	75
2028	174	102	27	75

The development of aircraft parking and storage areas requires improvements such as automobile access and parking, and airfield access and circulation via taxiways and taxilanes.

It is recommended that PSC add 48 new T-hangar units to the existing 54, for a total of 102, and 12 new box hangars to the existing 15, for a total of 27, and maintain the 75 existing aircraft tie-downs as the Airport approaches 174 based aircraft.

6.2 Fixed Base Operators

There are two FBOs at PSC. Multiple FBOs tend to keep prices consistent with other airports, which benefits aircraft owners and pilots. PSC built a new 5,000 square foot facility after Bergstrom Aviation lost their facility in a fire in 2003. The facility requirements for the FBO’s depend on their staffing and equipment to keep up with an anticipated increase in demand. New and expanded FBO buildings will be necessary as companies reach capacity in their existing locations. Continued growth in GA activity may also encourage the establishment of an additional FBO.

It is recommended that PSC plan for new and expanded FBOs.

7. Support Facilities

Support facilities house the equipment responsible for safe day-to-day operations at PSC. These facilities include emergency response, airport maintenance, and aircraft deicing facilities. These facilities may need to be expanded and upgraded, to handle increased levels of activity and different aircraft operators.

7.1 Aircraft Rescue and Firefighting (ARFF)

The ARFF building was completed in 2007, and is a dual-use facility serving the community and the Airport. Federal Aviation Regulations (FAR) Part 139, *Certification of Airports* includes requirements for ARFF equipment, which are defined in **Chapter One**. The 737, 757, and MD-83 are ARFF Index C, meaning their length is between at least 126 feet, but less than 159 feet. The 757-300, which is not the existing critical aircraft, but still operated by several of the carriers currently serving PSC, is an Index D, meaning that its length is at least 159 feet, but less than 200 feet. The ARFF facility requirements apply when these aircraft reach 500 annual operations. ARFF requirements are presented in **Table 4-17**.

Table 4-17: ARFF Facility Requirements

Index	Vehicles	Water	Dry Chemical
B	1 or 2	1,500 gallons	500 pounds
C	2 or 3	3,000 gallons	500 pounds
D	3	4,000 gallons	500 pounds

Source: FAR 139.317

The Airport's ARFF facility operates two rapid response vehicles capable of carrying 500 pounds of dry chemical, and two fire trucks which are capable of carrying 1,500 gallons of water. The ARFF facility will need to increase its water carrying capacity by 1,500 gallons, if it becomes an Index C Airport. This may require the addition of one more vehicle.

It is recommended that PSC add one ARFF vehicle when it reaches Index C, to the existing four vehicles, for a total of five ARFF vehicles, to carry 3,000 gallons of water and 500 pounds of dry chemical.

7.2 Airport Maintenance

Airport maintenance handles the upkeep, protection, and preservation of the Airport, and the snow and ice removal from pavements. Maintenance has a 10,000 square foot building detached from the main terminal for operations and equipment storage.

It is recommended that airport maintenance facilities are expanded as equipment and services are added.

7.3 Aircraft Deicing

The Airport constructed two deicing pads in 2007, between the terminal apron, and the FedEx facility. The capacity of these pads is dependent on the size of the aircraft using them as larger aircraft take longer to deice. The deicing pad has the capacity for one Boeing 737-sized aircraft, or two Bombardier Q400-sized aircraft. The deicing pad will need to be expanded to accommodate the 757-200. Up to nine peak hour air carrier departures are forecasted by 2028, which may require an additional deicing pad to be installed.

It is recommended that PSC consider expanding the deicing pad as air carrier operations increase, and to accommodate the critical air carrier aircraft.

8. Automobile Access and Parking

Road access to the Airport is provided by North 20th Avenue, which from its intersection with Argent Road transitions from two lanes to two bypass lanes and one drop-off lane at the passenger terminal. This lane configuration is expected to provide adequate terminal access through the forecast period.

Airport parking records show an annual average of 273,750 cars use the parking facilities at PSC. Airport management indicates that during peak periods between November and January, and during the peak enplanement month of June, the parking lot approaches capacity. Airport management has also indicated that parking facilities come close to capacity during periods that were previously considered off-peak. This supports adding parking spaces to better accommodate passengers throughout the year.

The long- and short-term parking lots fill to near capacity during the peak holiday period from November to January. A 2005 study determined that 190 spaces could be added by converting the existing storm water retention basin (located between the long- and short-term lots) to parking. The study also considered a multi-level parking structure, to provide additional parking near the terminal without significant change to the parking footprint.

When the TSA sets the national threat advisory to *high*, there is significant loss of available parking spaces, and automobile roadway access to the terminal. No vehicles are allowed within 300 feet of the terminal. During this time, 429 parking spaces are lost, including all of the short-term parking spaces. Roadway access to the front of the terminal is lost, as is access to the ATCT, even by FAA staff. This reduction places high demand on the remaining parking spaces and access roadways, and places logistical demand on Airport management to reroute and accommodate traffic. This inconveniences the traveling public, as time to accessing at the Airport is increased, and the ease of traveling is reduced.

The FedEx facility has insufficient parking for employees and customers.

8.1 Long-Term Parking

The long-term lot has 900 parking spaces. Airport records indicate that the average use of the long-term lot is 500 cars daily, which is 0.0020 cars per enplanement. During peaking periods, this level approaches 720 cars daily, which is .0029 cars per enplanement. The long-term parking lot often reaches 80 percent or more of its capacity during peak periods. Airport management reports that peaking periods are occurring more frequently, and at times other than the winter holidays, and the peak enplanement month of June. As Allegiant increases service at the Airport, it is probable that passengers will spend at least three to four days parked in the long-term lot, which will increase lot utilization. The peaking ratio of .0029 cars per enplanement has been used to calculate the average daily usage of the long-term lot for the forecast years, which are presented in **Table 4-18**.

Table 4-18: Long-Term Parking			
Year	**Enplanements**	**Expected Demand**	**Recommended Spaces**
2008	241,907	720	900 (Existing)
2013	269,260	800	1,000
2018	318,907	950	1,188
2028	435,064	1,295	1,618

The long-term parking forecasts indicate that the lot the 900 existing parking spaces will be operating at 105 percent of its capacity when annual enplanements reach 318,907 and 144 percent of its capacity when enplanements reach 435,064. The recommended parking spaces are intended to keep the lot at 80 percent of its capacity to accommodate peak periods.

It is recommended that PSC add 718 long-term parking spaces to the existing 900, for a total of 1,618. It is expected that this number of spaces will allow the lot to operate at 80 percent of its capacity, and provide additional space for peak periods.

8.2 Short-Term Parking

There are 183 parking spaces in the short-term lot. These spaces are generally used for dropping off and picking up passengers, and priced to discourage long-term parking. It is expected that a short-term parking space will be used several times during the day. Short-term parking is expected to have daily peaking characteristics that relate to commercial aircraft operations. A greater passenger volume is expected to create a greater demand for short term parking.

Airport records indicate that the average use of the short-term lot is 650 cars daily, which is 1.675 cars per peak hour passenger. This ratio has been used to calculate the average daily usage of the short-term lot for the forecast years, which are presented in **Table 4-19**.

Table 4-19: Short Term Parking		
Year	**Peak Hour Passenger**	**Average Daily Usage**
2008	388	650
2013	419	702
2018	497	833
2028	677	1,134

It is recommended that PSC add 183 short-term parking spaces to the existing 183, for a total of 366, as peak hour passenger levels approach 677.

8.3 Rental Car Parking

In the absence of data from the rental car companies, the volume of rental car parking needed is tied to annual enplanements. There were 229 rental car parking spaces in 2008, which is one for every 1,056 enplanements. This ratio is used to estimate the rental car parking spaces needed for the forecast years, presented in **Table 4-20**.

Table 4-20: Rental Car Parking		
Year	**Enplanements**	**Parking Spaces Needed**
2008	241,907	229
2013	269,260	255
2018	318,907	302
2028	435,064	412

183 additional rental car spaces are expected to be needed by 2028. Rental car lots do not necessarily need to be located near the terminal. An off-site car rental location may be appropriate if more public parking spaces are needed or passenger volume reaches sufficient levels to sustain shuttle service. PSC should coordinate with rental car companies.

It is recommended that PSC add 183 rental car parking spaces to the existing 183, for a total of 412, as enplanements approach 435,064.

8.4 Overflow Parking

There were 168 overflow spaces available in 2008. Employee parking is located in the overflow lot. This lot provides adequate employee parking throughout the planning period, although temporary accommodations may be necessary during periods of overflow from other parking lots, or due to a *high* national threat advisory level. It is recommended that the overflow lot provide 20 percent of the spaces provided by the long-term parking lot.

It is recommended that PSC consider adding 156 parking spaces to the 168 existing overflow parking spaces, for a total of 324.

9. Property

The Airport is located on 2,235 acres of land which includes airside facilities, landside facilities, support facilities, and parking facilities. This property also includes the Airport Business Center, the East Side Industrial Park, and property leased for agricultural purposes. It is expected that existing property boundaries will provide sufficient land to support the development of the landside facilities, support facilities, and parking facilities. The Airport's runway development may require acquisition of property to protect the approach and departure surfaces. This acquisition will be limited to the runway corridors. These properties will be identified in **Chapter 5, Improvement Alternatives**.

It is recommended that the Airport consider acquiring property off the ends of the primary runways in order to protect the approach and departure surfaces.

10. Facility Requirements Summary

The following is a summary of the facility recommendations and requirements identified in this chapter.

10.1 Facilities to be Changed or Upgraded

Airfield

Design and maintain the airfield to accommodate D-IV aircraft.
Consider extending Runway 3L/21R by 1,459 feet, from 7,711 feet to 9,170 feet.
Consider extending Runway 12/30 by 1,467 feet, from 7,703 feet to 9,170 feet.
Eliminate declared distances as a result of displaced thresholds at Runway Ends 21R and 30.
Increase Runway 3L/21R's dual wheel pavement strength from 170,000 pounds to 187,700.
Realign Taxiway A to cross Runway 12/30 perpendicularly.
Widen the 50 foot wide section of Taxiway E by 25 feet, to 75 feet in width.
Investigate removing or relocating the on-Airport VOR.
Consider precision instrument markings for Runway End 30.
Consider precision instrument markings, and approach lighting for Runway Ends 3L and 12.

Passenger Terminal

Add 24 feet to the 96 foot airline ticket counter, for a total of 120 feet.
Restructure the individual AOAs into 6,912 square foot common-use AOA.
Expand the common-use AOA to 8,400 square feet with ticket counter expansion.
Move the wall behind the airline ticket counter 10 feet closer to the counter.
Relocate TSA baggage screening to the common-use airline operations area.
Add one walk through metal detector at the SSCP, for a total of two walk through metal detectors.
Preserve 63 square feet of space in the SSCP for a body scanning device.
Add one additional boarding gate, for a total of five boarding gates.
Add one jet bridge boarding gate for a total of two jet bridge boarding gates.
Add 1,423 square feet of concessions area to the existing 2,877, for a total of 4,300 square feet.
Add 15 water closets to the existing 30, for a total of 45 water closets.
Add 923 square feet of restroom area to the existing 1,846, for a total of 2,769 square feet.
Add 76 feet of rental car counter space to the existing 98, for a total of 174 feet.
Consider replacing the existing beam seating with soft seating fixtures.
Add 746 square feet of utility and mechanical system space to the existing 1,254, for a total of 2,000 square feet.

Air Cargo

Coordinate with FedEx to determine requirements for cargo facility expansion.
Coordinate with Ameriflight, Airpac, and UPS to determine facility requirements.

General Aviation

Add 48 new T-hangar units to the existing 54, for a total of 102 T-hangar units.
Add 12 new box hangars to the existing 15, for a total of 27 box hangars.
Consider placement for a new and expanded FBO.

Support

Add one ARFF vehicle to the existing four, for a total of five ARFF vehicles.

Expand Airport maintenance facilities as new equipment and services are added.

Consider expanding the deicing pad to accommodate 757-200 aircraft.

Automobile Access and Parking

Add 718 long-term parking spaces to the existing 900, for a total of 1,618.

Add 183 short-term parking spaces to the existing 183, for a total of 366.

Add 183 rental car parking spaces to the existing 229, for a total of 412.

Add 156 overflow parking spaces to the existing 168, for a total of 324.

10.2 Facilities to be Maintained or Rehabilitated

Airfield

Maintain Runways 3L/21R and 12/30's width of 150 feet.

Maintain Runway 3R/21L at 75 feet wide, 4,423 feet long.

Maintain 75 foot taxiway width where it exists.

Maintain terminal apron to accommodate a Boeing 757.

Maintain and rehabilitate the GA apron.

Consider preserving land to expand the transient apron.

Passenger Terminal

Maintain 3,665 square feet of check-in lobby area.

Maintain 984 square feet of SSCP area.

Maintain 9,000 square feet of passenger holdroom area.

Activate the non-operational boarding gate.

Maintain the 4,090 square feet of baggage claim area, and the two existing baggage claim belts.

Maintain 7 feet of effective design width between main lobby and baggage claim.

Maintain the existing 113 seats in the lobby.

General Aviation

Maintain the 75 existing aircraft tie-downs.

Automobile Access and Parking

Maintain the existing configuration of North 20th Avenue that provides access to the Airport.

1. Introduction

The purpose of developing airport alternatives is to determine ways to meet the facility requirements set forth in **Chapter 4**. This chapter identifies which facility requirements require physical improvements to Airport facilities, and then compares methods of progress towards these requirements by evaluating alternatives and identifying a preferred alternative. The Airport Master Plan Update (Plan) has identified the following area of improvement at Pasco Tri-Cities Airport (PSC).

- Airfield
- Passenger Terminal
- General Aviation
- Airfield Access and Parking

Airfield alternatives will be designed to integrate into the existing airfield, while meeting the facility requirements of PSC. An overview of the existing airport layout is shown in **Exhibit 5-1**.

Any development situation has an alternative, but in some cases only one is feasible. For some facility improvements, where there is one clearly advantageous development scenario, improvement alternatives are not developed, and only the recommended improvement is presented.

1.1 Evaluation Criteria

The Airport development alternatives are evaluated based on the following criteria:

- The movement of aircraft in the air and on the ground is a primary factor in alternative evaluation. Safety is a priority. Development alternatives are evaluated for conformance with FAA standards for separation, clearance, and dimension.
- Alternatives are evaluated for compatibility with the existing airfield and ongoing aircraft operations. Alternatives are designed to be compatible with planned development as airport facility improvement often require multiple funding cycles which limits the volume of work that can be conducted simultaneously. Potential of expansion beyond planned levels is also considered.
- Accessibility and convenience to Airport users, operators, pilots, passengers, and employees, is evaluated. Accessibility and convenience affect public perception of PSC, and may influence the Airport's operational efficiency.
- Potential environmental effects are considered. The Plan is intended to be a forerunner of the National Environmental Policy Act (NEPA) process, and identifies areas of environmental interest.
- Cost of implementation is considered for preferred alternatives. This will assist the Airport in preparing financial plans, applying for grants, and budgeting.

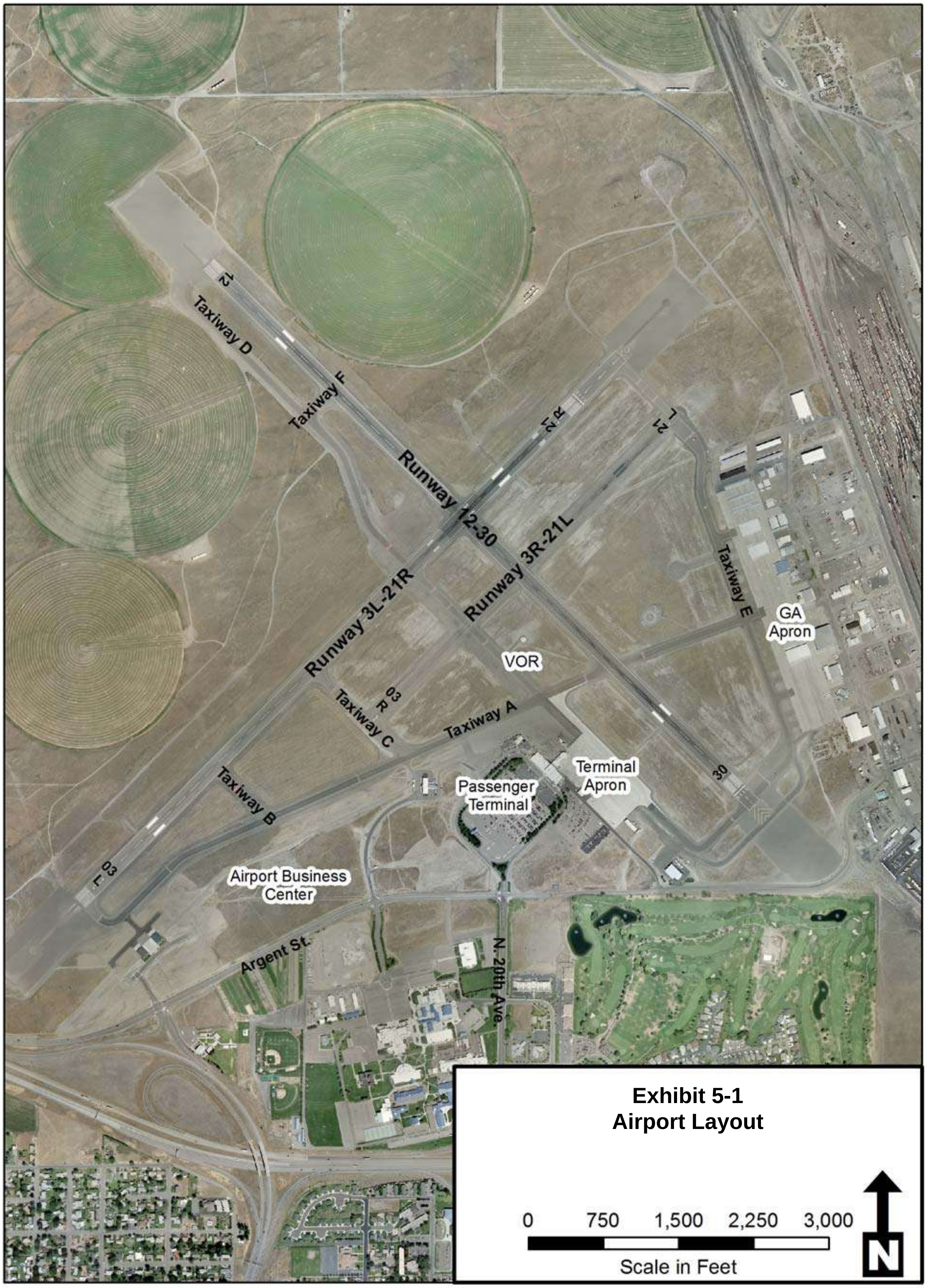


Exhibit 5-1
Airport Layout

2. Airfield

Airfield improvements are interrelated, although projects generally do not occur simultaneously. As runway layout drives taxiway layout, taxiway improvements accommodate the runway improvements. The proposed high-speed exits from Runway 12-30 to Taxiway D are dependent on the preferred Taxiway D alternative. Runway and taxiway projects depend on the relocation of on-airport NAVAIDs. These alternatives and development scenarios are presented individually, then merged into a preferred airfield development scenario.

2.1 Runway Extension

Runway extensions are complex projects that require extensive coordination with the FAA and local stakeholders. This section presents runway extension options, and configures other airfield development alternatives around them. The future runway layout of this Plan will help the Airport identify land and features to be protected for future runway development. A airfield needs assessment study and environmental review will likely be necessary at the time there is justification to pursue runway extension.

Common elements to the proposed runway modifications include upgrading the four ends of the primary and crosswind runways to plan and protect for precision approach capability. This includes runway marking and lighting upgrades to meet the requirements for precision instrument procedures, with medium intensity approach lighting system (MALSR) on each end. It is expected that emerging aircraft and flight technology will accommodate these procedures, and therefore these runways should be improved accordingly.

Local constraints influence the development of runway improvements. The Airport is bordered by public roads and railways to the south, east, and west. An unpaved, private road to the airport surveillance radar and crops lies to the north. Existing surface streets, and existing use of off-airport property by third parties limit the extent that the Airport's runways can be extended. Extension proposals have been developed for Runway Ends 21R and 12. A relocation proposal has been developed for Runway End 30. Extension of Runway Ends 3L and 30 are unlikely because of off-airport constraints. Proposals investigating such scenarios have not been developed. Runway 3R-21L adequately serves the existing and forecast small general aviation (GA) aircraft fleet mix. No extension or relocation of Runway 3R-21L is planned.

Environmental considerations for extensions include the loss of farmland, and potential noise concerns. Residential development is clustered to the west of the Airport. A recent development in noise compatibility planning uses satellite navigation to make precise flight paths that avoid noise sensitive areas. This technique can be used to mitigate aircraft noise and over-flight of residential areas.

Runway extension will provide long-term convenience to Airport users by provided additional landing length, which improves safety. The increased runway length will allow more demanding aircraft to operate at the Airport.

2.1.1 Runway End 21R

Existing Runway End 21R has its threshold displaced by 600 feet to accommodate the approach slope over the railroad tracks. It is recommended that Runway End 21R be relocated to eliminate the existing displaced threshold and declared distances. This relocation can be accomplished by shortening the runway by 600 feet, or extending the runway by 490 feet.

Facility requirements indicate the need for runway extension; therefore it is recommended that Runway 3L-21R be extended by 490 feet at Runway End 21R. The proposed length of Runway 3L-21R would be 8,200 feet. The existing width of 150 feet is to be maintained. The existing displaced threshold will be eliminated, and Runway End 21R will be remarked. The extension length of 490 feet was determined by off-airport constraints associated with the railway facility northeast of Runway End 21R. Further extension of Runway End 21R may require an increase in instrument visibility and decision height minimums, which is not desirable.

The RSA and ROFA of proposed Runway 3L-21R would remain on Airport property. One existing unpaved road would be located within the RSA, and should be relocated. Runway extension would also move the runway protection zone (RPZ) further off airport property. Extending Runway End 21R will increase the area of the RPZ not on airport property from 25 acres to 42 acres.

In addition to pavement and labor costs, the relocation of Runway End 21R will have costs associated with marking, and relocating precision approach path indicator (PAPI) for the new threshold. Runway end identifier lights (REIL), high-intensity runway lights (HIRL), and the MALSR are to be relocated.

It is expected that existing obstructions beyond Runway End 21R will need to be removed prior to runway extension. Extension of Runway End 21R is not a preferred alternative at this time, but it is recommended that the Airport retain this alternative should off-Airport land use change. The proposed extension of Runway End 21R is shown in **Exhibit 5-2**.

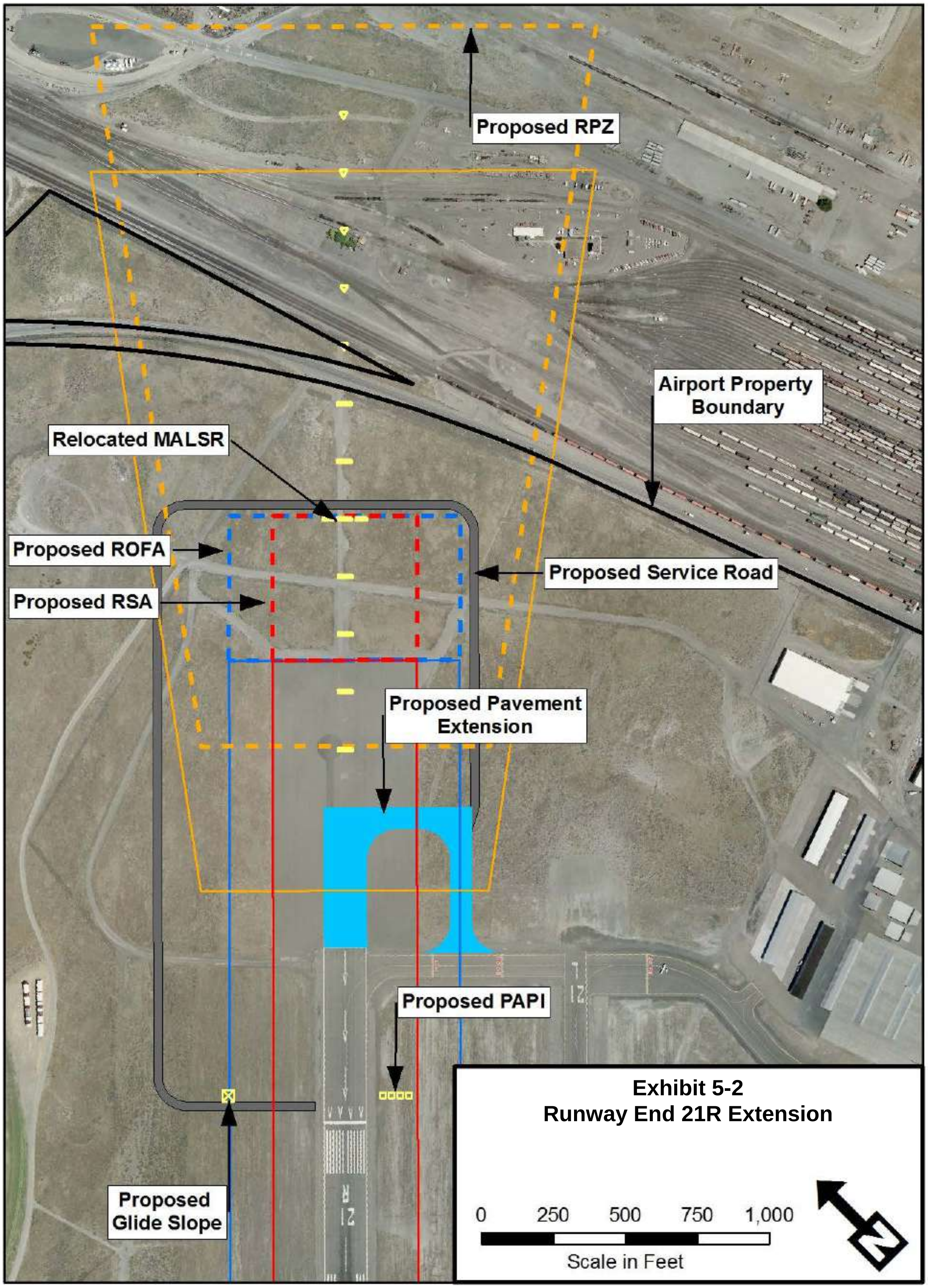


Exhibit 5-2
Runway End 21R Extension

TRI-CITIES AIRPORT

2.1.2 Runway End 03L

No modifications to the length and width of Runway End 03L are proposed. The RSA and ROFA will maintain existing dimensions. No modifications to the existing unpaved service road are proposed. The RPZ will increase in area to protect for precision IAPs, and as a result, will be located farther off airport property. The area of the RPZ not on airport property will increase from 7 acres to 40 acres.

It is recommended that Runway End 03L be marked with precision runway markings, and that a MALSR be installed. It is recommended that the runway be evaluated the FAA Western Flight Procedures Office (FPO) for a precision satellite based instrument approach procedure (IAP).

The proposed MALSR for Runway End 03L is shown in **Exhibit 5-3**.

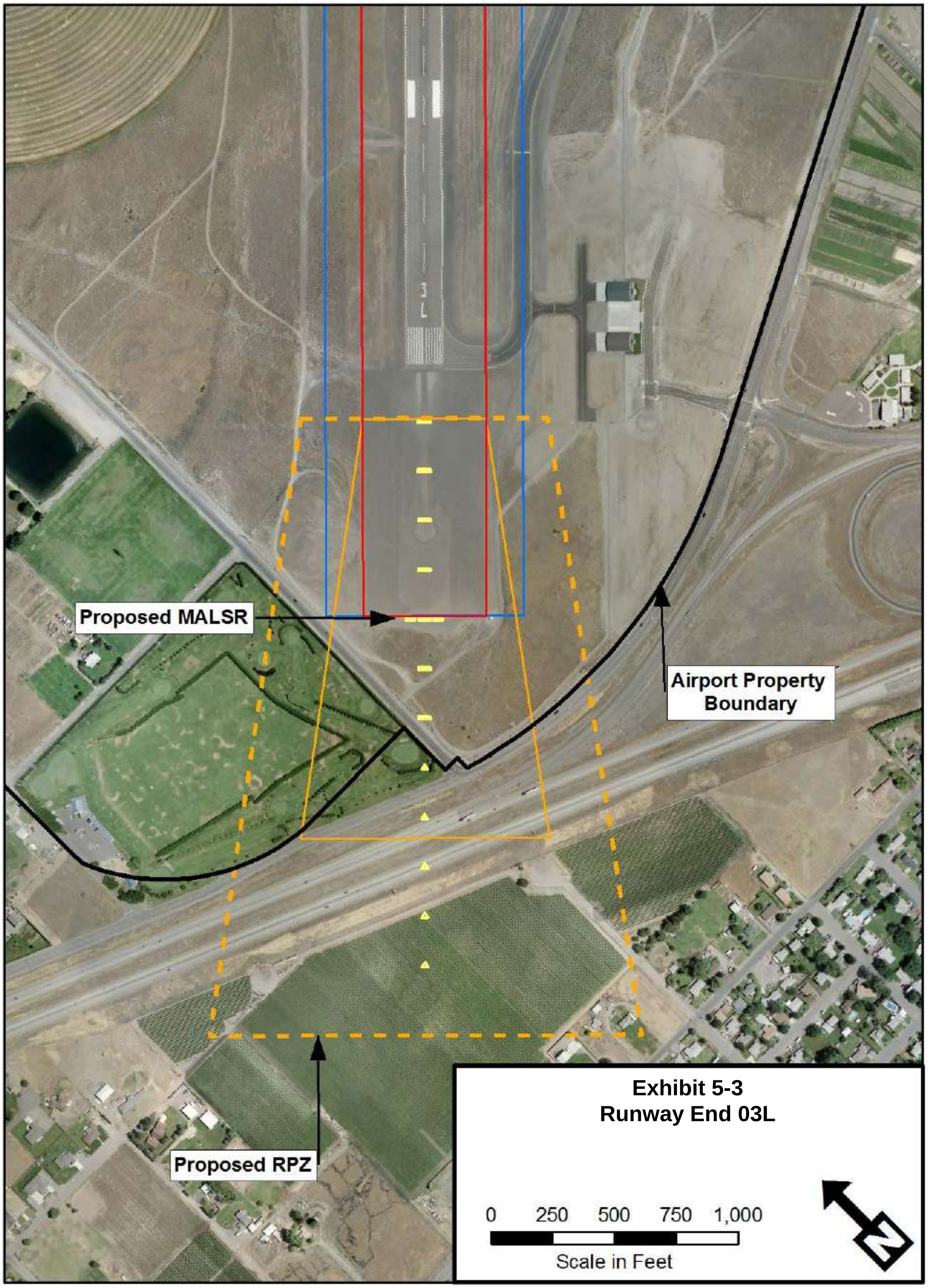


Exhibit 5-3
Runway End 03L

2.1.3 Runway End 12

An extension of 1,850 feet is possible to the northwest of existing Runway End 12. This runway extension, combined with the relocation of Runway End 30, will provide 9,200 feet in runway length for Runway 12-30. The existing width of 150 feet is to be maintained. The runway extension will require a 1,850 foot extension of Taxiway D, and the relocation of some of the crops located to the northwest of the Runway End.

An extension of Taxiway D will provide access to proposed Runway End 12. Relocation of the unpaved road is necessary to keep it out of the RSA. One acre of the proposed RPZ would be located outside of the Airport's property boundary. Runway End 12 can be extended farther, but additional RPZ area will be located off-airport property.

At the time of runway extension, it is recommended that Runway End 12 be marked with precision runway markings, and that a MALSR be installed. Runway End 12 should also be upgraded from a visual approach slope indicator (VASI) to a PAPI at this time if it has not occurred. It is recommended that the runway be evaluated the FAA Western FPO precision satellite based instrument approach procedure (IAP).

The proposed extension of Runway End 12 is shown in **Exhibit 5-4**.

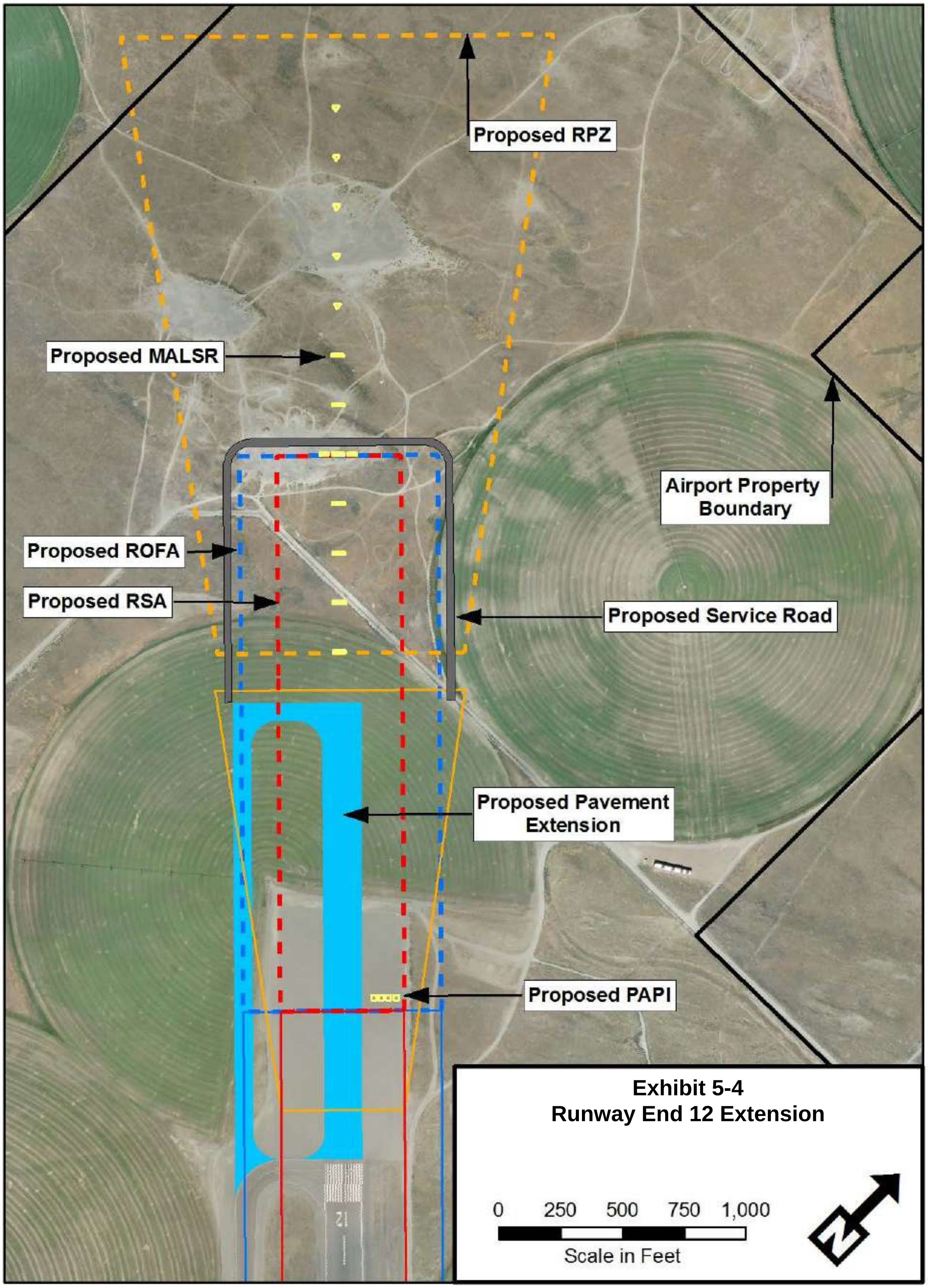


Exhibit 5-4
Runway End 12 Extension

2.1.4 Runway End 30

Existing Runway End 30 has a displaced threshold, and the ROFA extends off airport property. It is recommended that Runway 12-30 be shifted to the northwest by 350 feet to eliminate the displaced threshold at Runway End 30. Relocation of Runway End 30, combined with an extension of Runway End 12, will provide 9,200 feet in runway length for proposed Runway 12-30. The existing width of 150 feet is to be maintained. Access to relocated Runway End 30 relocation will require realignment of Taxiway D, and Taxiway E. The Taxiway D hold apron should be relocated as needed. Former runway and taxiway pavements behind future Runway End 30 should be removed.

RPZ dimensions will increase with precision approach capabilities. Existing RPZ area located outside of airport property is 15 aces. Proposed runway relocation places 21 acres of the RPZ outside of airport property. This portion of the proposed RPZ is on the adjacent golf course.

It is recommended that the service road that passes behind the end of existing Runway End 30 be relocated. The preferred alignment of this road is outside of the RSA and ROFA. This road is used by vehicles moving between the GA apron and the terminal apron, and required air traffic control tower (ATCT) clearance before crossing. Relocating this road will eliminate this requirement, allowing the ATCT to focus on aircraft operations. Relocation will be possible on airport property when the RSA and ROFA are relocated with the runway.

Runway end relocation will require runway components to be moved along with it. The PAPI would need to be relocated to accommodate the new runway end. It is recommended that the existing omnidirectional approach lighting system (ODALS) be upgraded to a MALSR. At the time of relocation, it is recommended that the runway be evaluated the FAA Western FPO for a precision satellite based IAP.

The proposed relocation of Runway End 30 is shown in **Exhibit 5-5**.

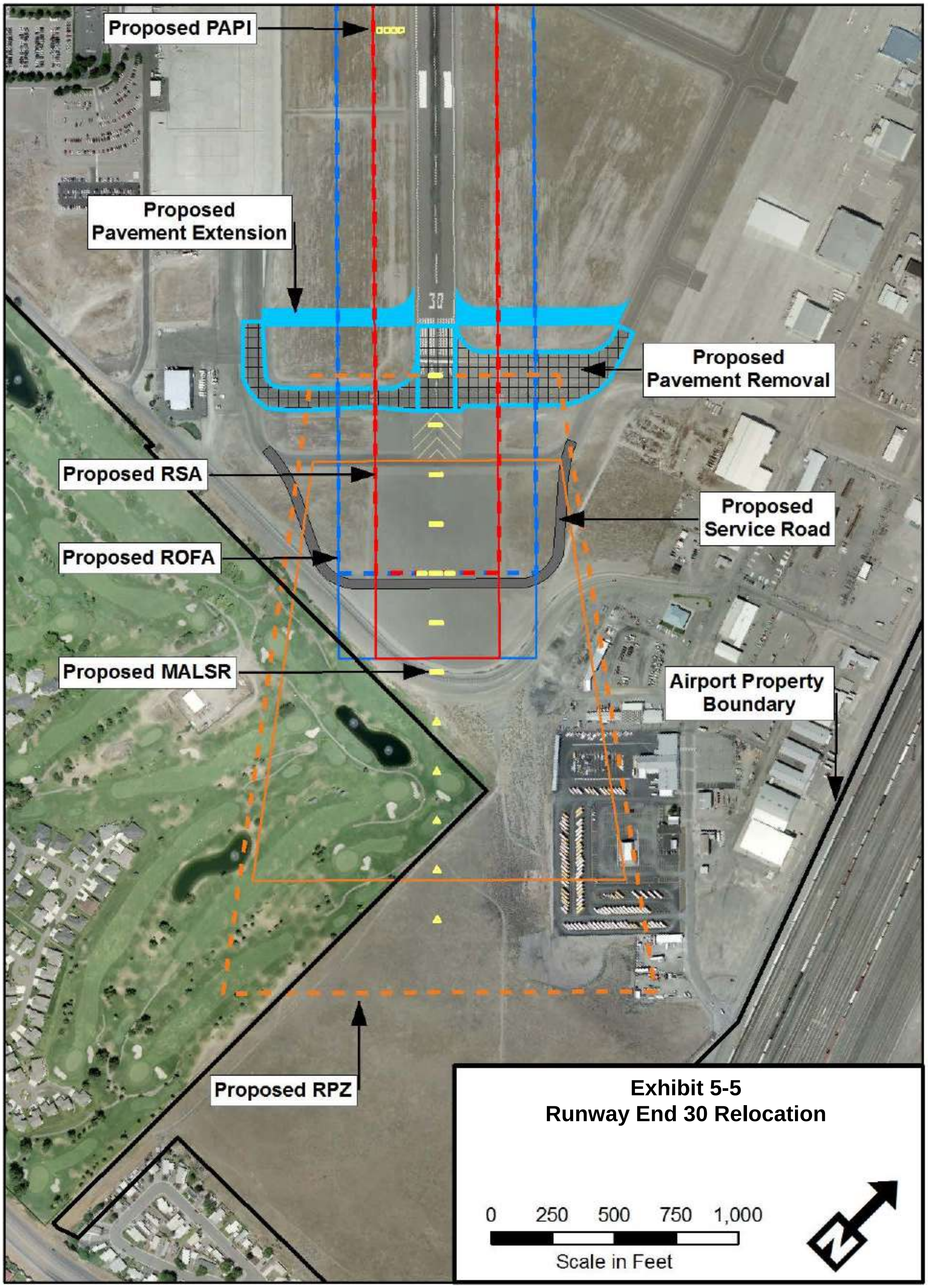


Exhibit 5-5
Runway End 30 Relocation

2.2 Realignment of Taxiway A

Existing Taxiway A is not parallel to Runway 3R-21L, and crosses Runway 12-30 at a skewed angle. To correct this alignment, three alternatives are presented for the relocation of Taxiway A so that it is parallel to Runways 3R-21L. Realigning Taxiway A to parallel will create perpendicular intersections with existing Taxiway D and Runway 12-30. Perpendicular intersections improve situational awareness of pilots by providing equal lines of sight in both directions at intersections, which improves airfield safety. Realignment of Taxiway A, combined with expansion of the terminal apron, will also give the terminal apron additional room to accommodate a higher volume of aircraft. The existing width of 75 feet is maintained by Taxiway A realignment alternatives.

Taxiway A realignment alternatives are shown in **Exhibit 5-6**.

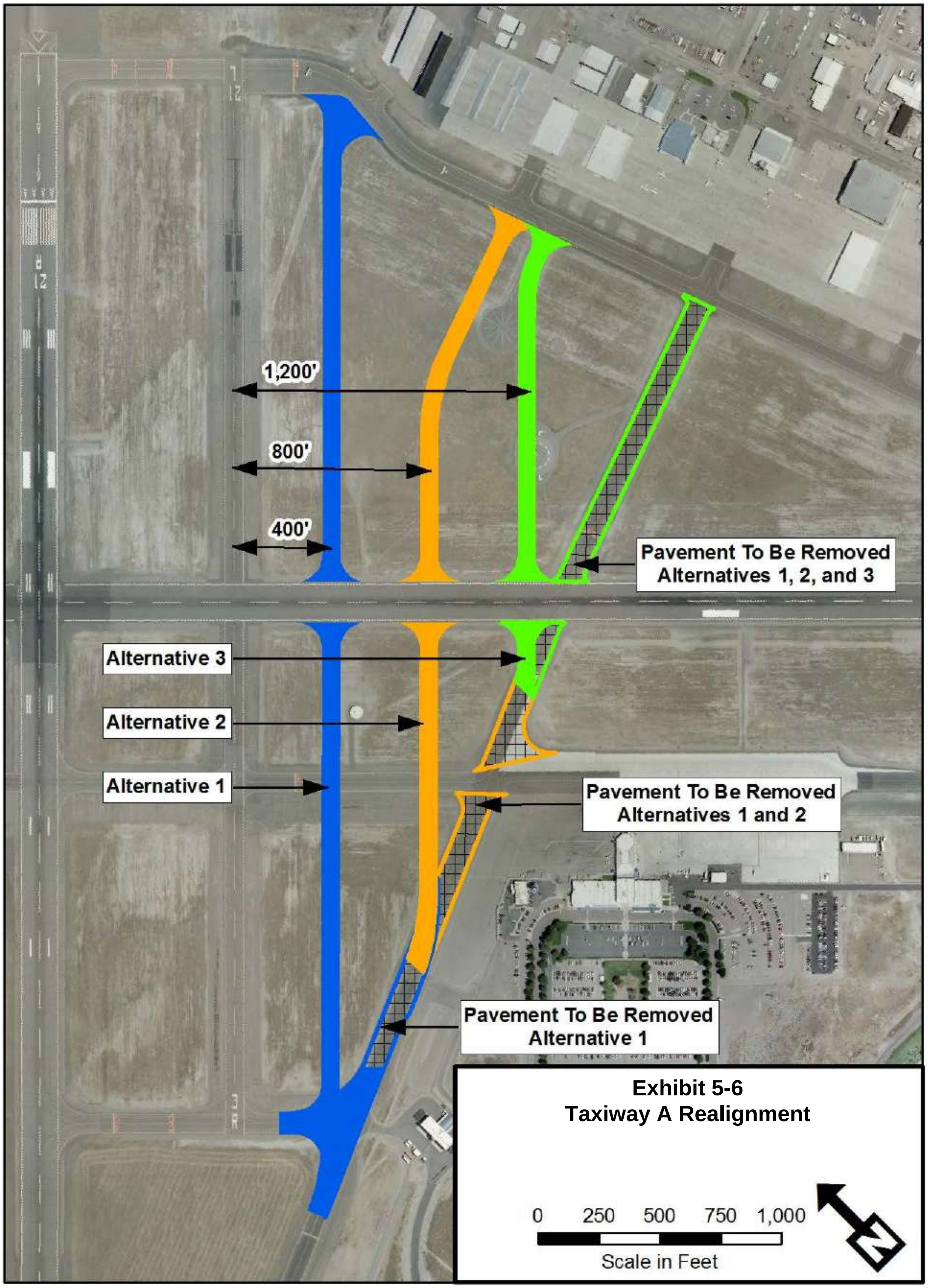


Exhibit 5-6
Taxiway A Realignment

2.2.1 Taxiway A Alternative 1

Taxiway A Alternative 1 realigns a 4,350-foot long section of existing Taxiway A to provide 400 feet of separation from the centerline of Runway 3R-21L. The two pavement sections will be parallel to one another. This meets the FAA minimum runway-taxiway separation standards for PSC's planned aircraft design group (ADG), Group IV. This alternative provides land for terminal apron expansion, which is discussed in **Section 3**. Access to Runway Ends 21R and 21L will be improved by eliminating the need for aircraft to taxi to the GA apron and Taxiway E before turning towards Runway Ends 21R and 21L.

Taxiway A Alternative 1 eliminates direct access to the center of the GA ramp. GA aircraft landing on Runway Ends 21R and 21L must taxi on Taxiway E to access the south GA ramp, or use Taxiway D and cross Runway End 30.

A proposed extension of Taxiway A, beyond Taxiway E, would provide access to relocated Runway End 21R (**Section 2.1.1**) if Runway End 21R is extended. The proposed Taxiway A extension would be constructed around the RSA and ROFA of Runway 3R-21L. This extension of Taxiway A, coupled with Taxiway A Alternative 1, would provide a full parallel taxiway to primary Runway 3L-21R. This extension is shown in **Exhibit 5-7**.

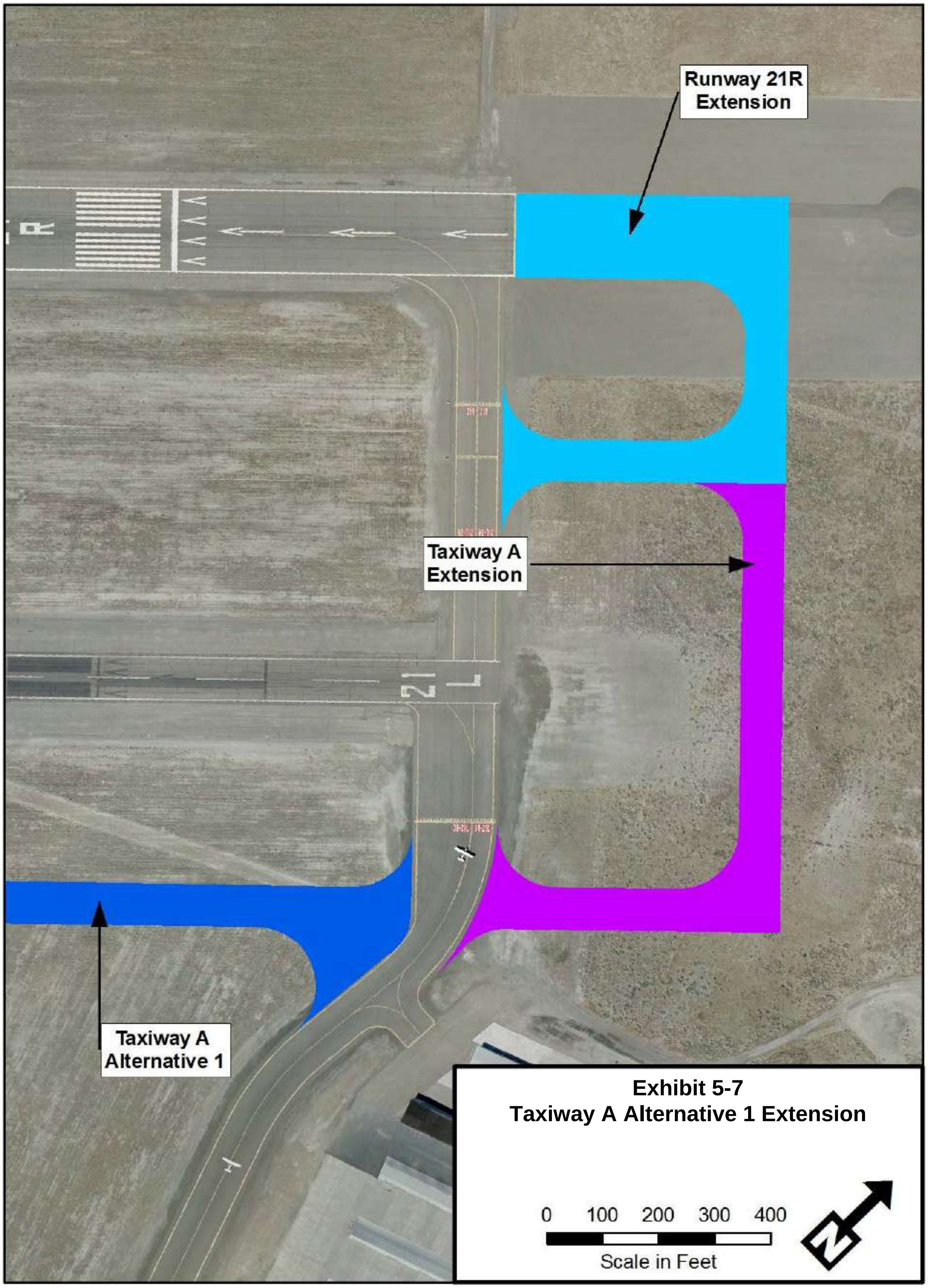


Exhibit 5-7
Taxiway A Alternative 1 Extension

2.2.2 Taxiway A Alternative 2

Taxiway A Alternative 2 realigns a 3,140-foot long section of existing Taxiway A to be parallel with Runway 3R-21L, maintaining an 800 foot separation. Alternative 2 would create perpendicular intersections with Runway 12-30, Taxiway D, and Taxiway E. This alternative would provide access closer to the center of the GA ramp than Alternative 1.

Alternative 2 would infringe on land that could be used for terminal apron expansion, and would require relocation of the existing compass calibration pad to accommodate the realigned taxiway's object free area (TOFA). The realigned Taxiway A would not be entirely parallel to Runway 3R-21L as a dog-leg turn would be necessary for a perpendicular intersection with Taxiway E.

2.2.3 Taxiway A Alternative 3

Alternative 3 would realign a 1,460-foot long section of existing Taxiway A parallel with Runways 3L-21R and 3R-21L, and provides a 1,200 foot separation between the realigned Taxiway A centerline and the centerline of Runway 3R-21L. Alternative 3 maintains access to the center of the GA apron.

Alternative 3 infringes on expansion for the terminal apron, and requires relocation of the compass calibration pad, tetrahedron, and wind indicator to accommodate the realigned taxiway. Taxiway A Alternative 3 is not a full parallel taxiway, as it requires a dog-leg turn for a parallel intersection with Taxiway E.

2.2.4 Alternative Comparison and Preference

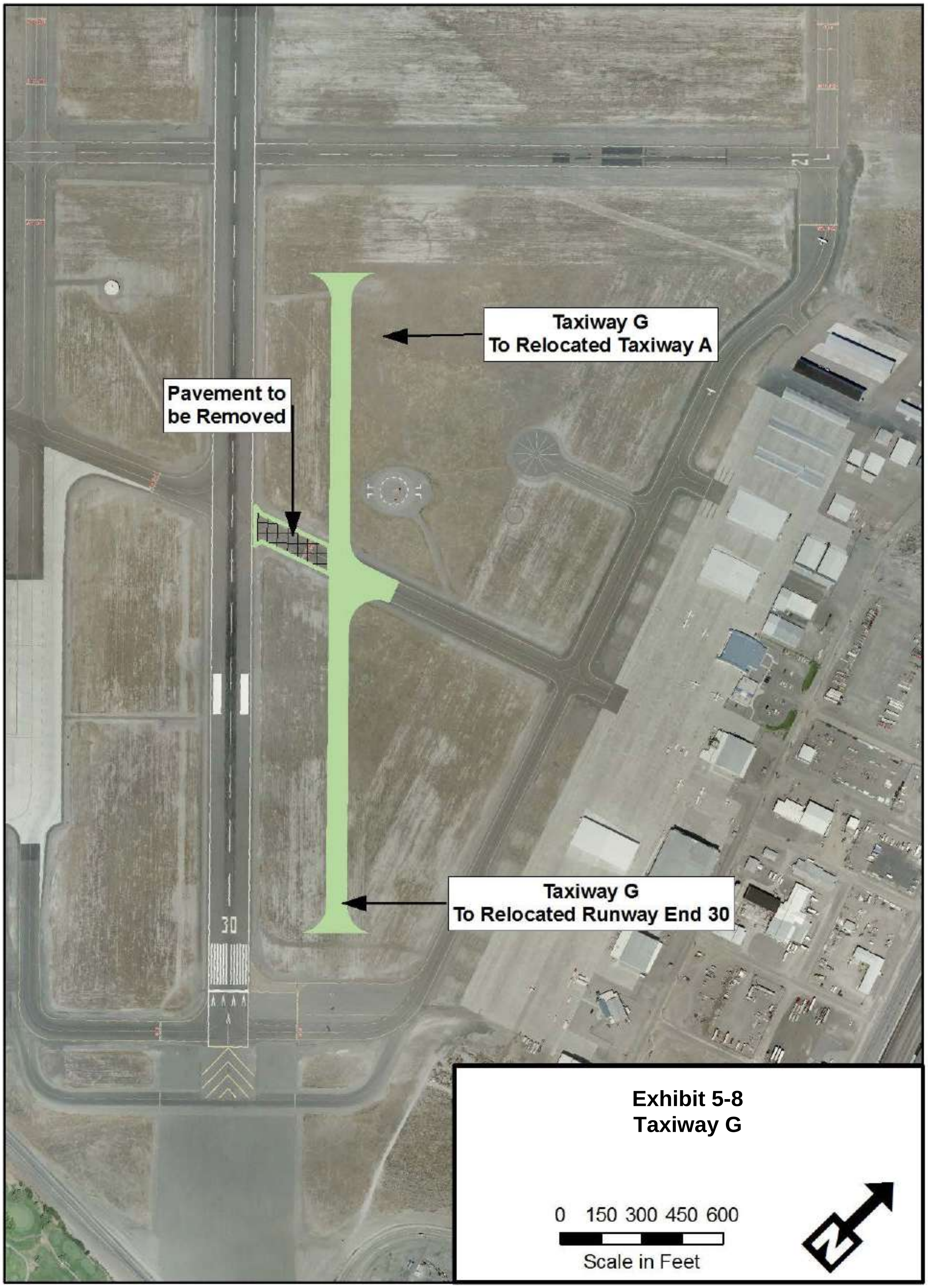
The preferred Taxiway A Alternative is Alternative 1. This will provide a full parallel taxiway to primary Runway 3R-21L. Alternative 1 will maximize the area available for apron expansion by minimizing the offset between the centerlines of realigned Taxiway A and Runway 3R-21L. This realignment will create perpendicular intersections for Taxiway A at Taxiways D and E, and Runway 12-30. This alignment will provide direct access from the terminal apron to Runway End 21R, and provide a perpendicular intersection with Runway 12-30. Taxiway A Alternative 1 will be carried forth as the preferred Taxiway A realignment alternative, and is incorporated into the design of other alternatives when applicable.

2.3 New Taxiway G

A new parallel taxiway is proposed on the east side of Runway 12-30, to maintain airfield accessibility from the GA apron once Taxiway A is realigned. Existing Taxiway A provides direct connection from the GA apron to Runway 12-30. FAA has issued guidance that discourages this direct connection as a safety risk. New Taxiway G is designed to provide a perpendicular intersection with Taxiway A, and the access taxiway to Runway End 30 at the end of Taxiway E. It is recommended that new Taxiway G be designed to meet ADG-IV standards, with a width of 75 feet.

Taxiway G would have two sections; one section from relocated Runway End 30 to existing Taxiway A, and a second section from existing Taxiway A to realigned Taxiway A.

Taxiway G is shown in **Exhibit 5-8**.



Taxiway G
To Relocated Taxiway A
Pavement to
be Removed
Taxiway G
To Relocated Runway End 30
30
21
Exhibit 5-8
Taxiway G
0 150 300 450 600
Scale in Feet
N

2.4 Realignment of Taxiway D

Existing Taxiway D has a separation from Runway 12-30 of 750 feet in the south and, via an “S” curve, turns north of Runway 3L-21R to a 400-foot separation. FAA requires 400 feet of separation for facilities designed to ADG-IV standards. The “S” curve generates inefficient aircraft movement, and the excessive 750 foot separation consumes space that could instead be used for terminal area facility expansion. To correct this issue it is recommended that the centerline separation be reduced to the FAA design standard of 400 feet, in line with the existing separation of the north end of Taxiway D. Two alternatives are presented for the relocation of Taxiway D. These alternatives incorporate the extension of Taxiway D parallel to the extension of Runway End 12.

2.4.1 High-speed Taxiway Exits

High-speed taxiway exits are considered for Runway 12-30. For Runway 3L-21R, high-speed exits would send aircraft onto Runway 3R-21L, which creates a safety issue. High-speed exits for Runway 3L-21R are not further considered.

High-speed taxiway exits off of Runway 12-30 will allow aircraft of leave the runway more quickly, which will improve safety. Locations of the proposed high-speed exits are northwest of the intersection of Runways 12-30 and 3L-21R, and southwest of the intersection of Runways 12-30 and 3R-21L. The alternatives are integrated with Taxiway D realignment alternatives.

2.4.2 Taxiway D Alternative 1

Taxiway D Alternative 1 realigns a 5,190-foot long section of Taxiway D to provide 400 feet of runway-taxiway centerline separation with Runway 12-30, and includes 2 high-speed exits. This alternative eliminates the “S” curve northwest of Runway 3L-21R. Relocating the Taxiway D closer to Runway 12-30 will increase area available for expansion of the terminal apron, cargo facility, and deicing pads. The existing Taxiway D width of 75 feet is to be maintained.

Taxiway D Alternative 1 conforms to the existing runway alignments by keeping runway-taxiway intersections perpendicular. Convenience and safety for airport users will be improved with this alternative. High-speed exits allow aircraft to depart the runway more quickly, and the perpendicular intersections with Taxiway A, Runway 3R-21L, and Runway 3L-21R improve pilot line of sight.
Taxiway D Alternative 1 is shown in **Exhibit 5-9**.

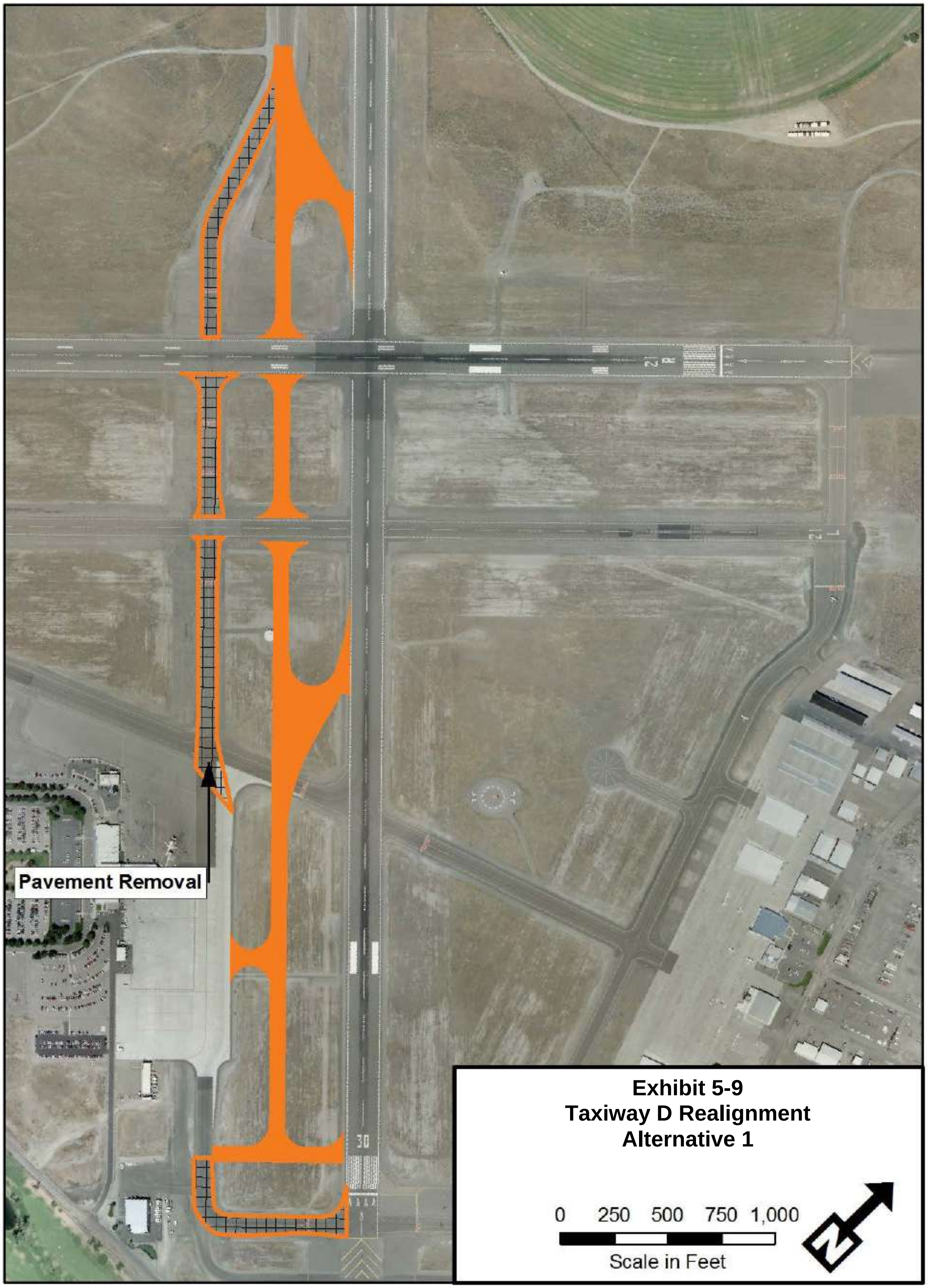


Exhibit 5-9
Taxiway D Realignment
Alternative 1

2.4.3 Taxiway D Alternative 2

Taxiway D Alternative 2 realigns a 2,960-foot long section of Taxiway D to provide 400 feet of taxiway-runway centerline separation with Runway 12-30, and includes two high-speed exits. Taxiway D Alternative 2 moves Taxiway D closer to Runway 12-30, then rejoins the existing alignment of Taxiway D between Runways 3L-21R and 3R-21L. This creates one more “S” curve, for a total of two.

Taxiway D Alternative 2 conforms to the existing runway alignments by providing perpendicular intersections. The intersection between Taxiway A Alternative 1 and Taxiway D Alternative 2 is not perpendicular. This intersection would also not be perpendicular if Taxiway A were to remain in its existing alignment. Non-perpendicular intersections provide pilots with improved line of sight in one direction, and reduced line of sight in the other. This reduces situational awareness and increase responsibility of air traffic control tower (ATCT) staff to separate aircraft during taxi.

Taxiway D Alternative 2 is shown in **Exhibit 5-10**.

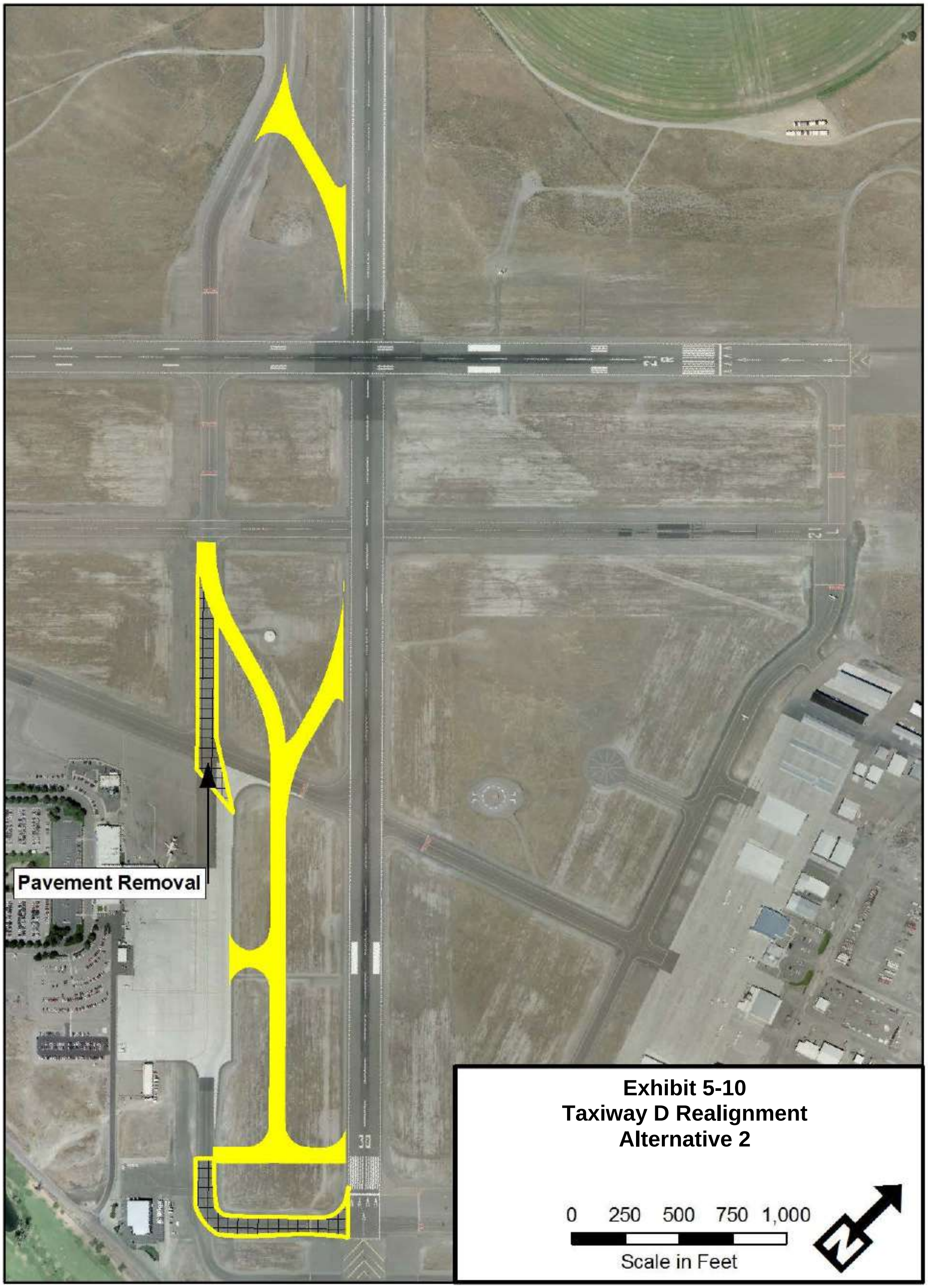


Exhibit 5-10
Taxiway D Realignment
Alternative 2

2.4.4 Alternative Comparison and Preference

Taxiway D Alternative 1 will improve airfield circulation through the creation of perpendicular intersections at Taxiway A Alternative 1, Runway 3R-21L, and Runway 3L-21R. Although Taxiway D Alternative 2 provides a perpendicular intersection with Runways 3R-21L and 3L-21R, it does not provide a perpendicular intersection with Taxiway A. Introducing another “S” curve generates more inefficient aircraft movement.

2.4.5 Environmental Consideration

Potential environmental effects of both alternatives include waste generation associated with pavement removal. It is not anticipated that the alternatives will disturb previously untouched terrain, or create additional emissions and noise beyond existing levels after construction is completed. Environmental documentation should precede construction. An environmental review, included in **Section 6,** was conducted as part of this project.

2.5 Terminal Area Expansion

The reconfiguration to Taxiways A and D will allow the terminal area to expand outward to the northeast and northwest, to increase area available for expansion of the terminal apron, cargo facility, and deicing pads. It is recommended that the Airport maintain this area by keeping it free of other development.

Initial environmental review for this improvement is expected as part of this project.

2.5.1 Terminal Apron Expansion

Section 3 identifies the expansion of the passenger terminal building, which is expected to require the expansion of the terminal apron, to accommodate additional parking area for additional and larger aircraft.

2.5.2 Cargo Apron Expansion

It is recommended that the Airport reserve area for expansion of the cargo apron. Cargo location on the airfield should continue to be at the existing FedEx facility. Cargo development, including FedEx and operations occurring on the GA apron, should be consolidated to this cargo apron. Coordination with cargo operators is recommended to determine the appropriate time and scale of cargo apron expansion.

2.5.3 Deicing Pad Expansion

With the anticipated increase of aircraft activity at PSC, and to accommodate peak hour demand, comes an anticipated increase of aircraft deicing. Additional deicing pads will reduce weather delay in winter. The existing pads are capable of deicing an aircraft as large as a 757, but when this is occurring, no other aircraft can be deiced. Additional deicing pads will allow multiple aircraft to be processed simultaneously. Expansion of the deicing pads may require expansion of the deicing fluid capture system to handle the additional run-off.

The terminal area expansion is shown in **Exhibit 5-11**.

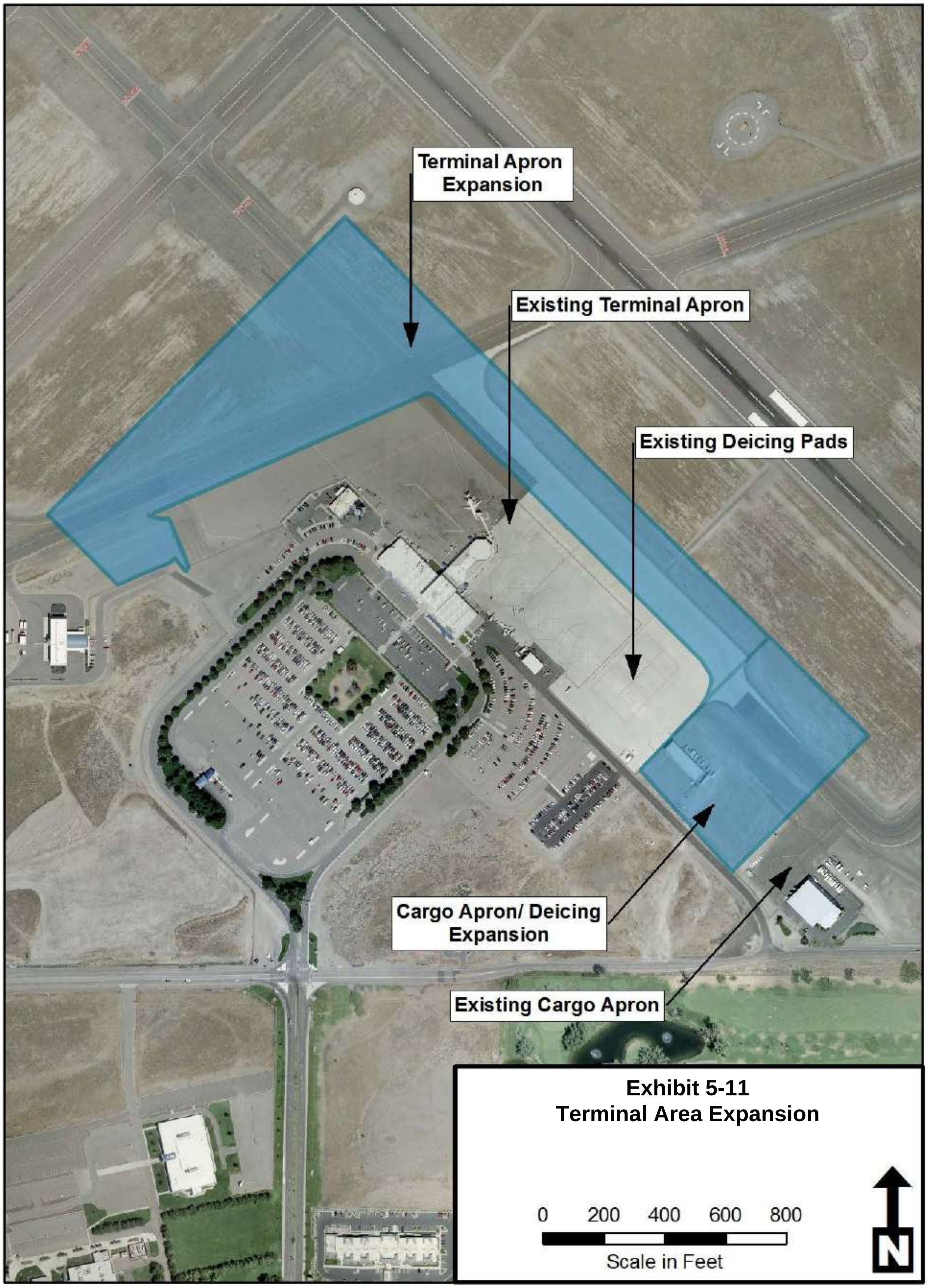


Exhibit 5-11
Terminal Area Expansion

2.6 VOR Removal/Relocation

Chapter 4 identifies the on-airport Very High Frequency Omnidirectional Range (VOR) NAVAID as a development constraint for taxiway realignment and terminal apron expansion. It is recommended that the VOR be removed, or relocated. AC 150/5300-13, *Airport Design*, specifies that VORs must be at least 250 feet away from taxiway centerlines, 500 feet away from runway centerlines, and 1,000 feet away from structures. Additionally, a surface gradient of no more than four percent is permitted between 200 feet and 1000 feet of the VOR. FAA Order 6820.10, *VOR Siting Criteria* indicates that farming is permitted up to the VOR structure.

Removal of the VOR will increase area available for development around the terminal area. It will also make possible the preferred alignments of Taxiways A and D. Airport user experience will be improved with the improved taxiway system, but may decline with the loss of the VOR as a NAVAID. The FAA is transitioning from a national airspace system (NAS) dependent on ground-based NAVAIDs to one that relies on satellite guidance. Aircraft are increasingly equipped with avionics to use satellite-based NAVAIDs for enroute guidance and instrument approaches. Satellite-based NAVAIDs are the future of the NAS, and the technology is being universally adopted.

An alternative to VOR removal is relocation away from airfield development. A site in the northern or western airfield would keep the VOR clear of planned airfield development. This site could be on airport property, or placed on Bureau of Land Management property with the airport surveillance radar, since the VOR is not owned or operated by the Airport, but by the FAA.

PSC instrument approach procedures, and FAA victor airways, will need to be modified to reflect the VOR removal/relocation. It is recommended that VOR removal or relocation be evaluated the FAA Western FPO.

Two potential new VOR locations are shown in **Exhibit 5-12**; however VOR removal is preferred.

2.7 Airfield Layout

A collective layout of preferred airfield components discussed in this chapter is shown in **Exhibit 5-13**.

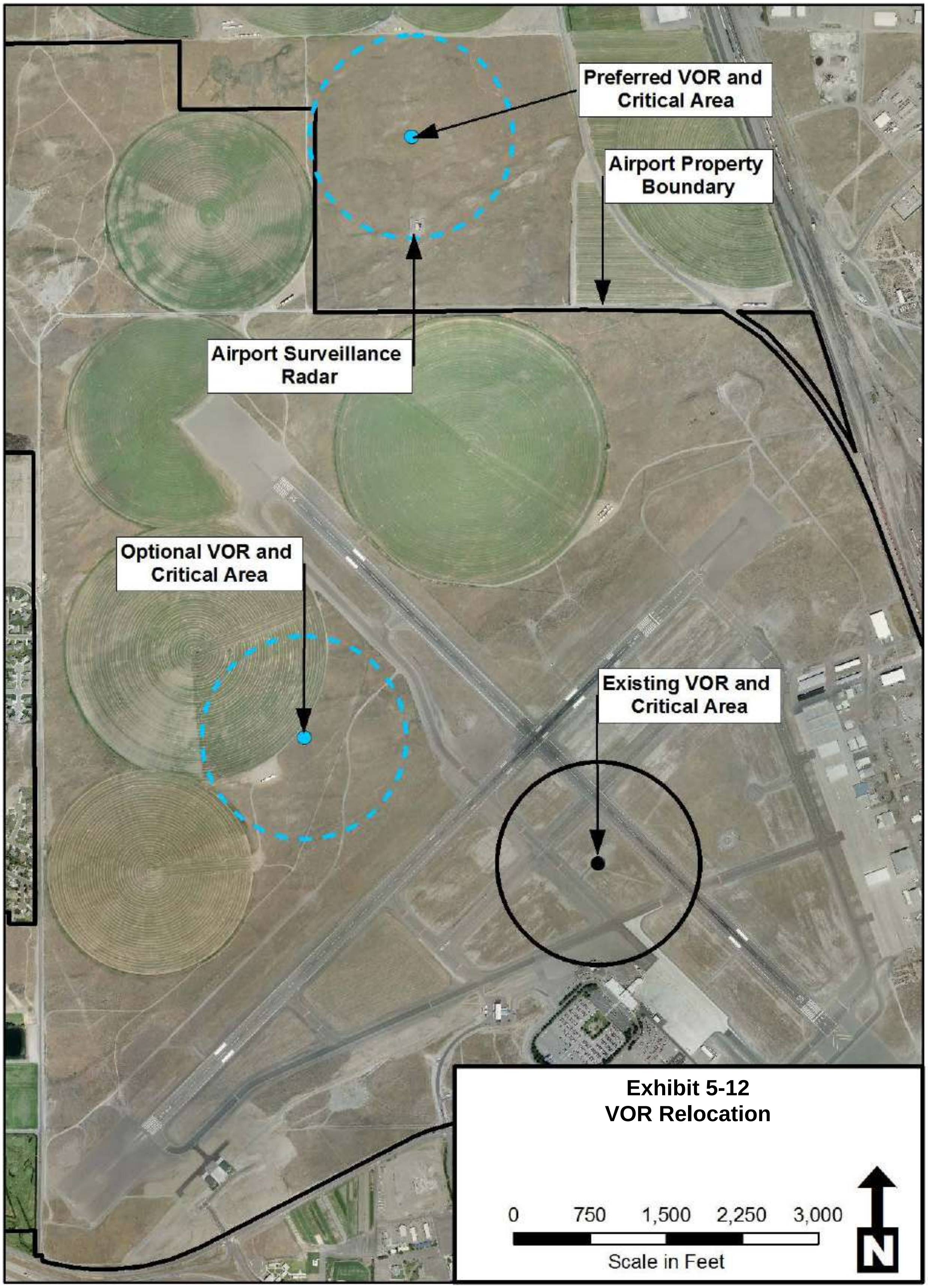


Exhibit 5-12
VOR Relocation

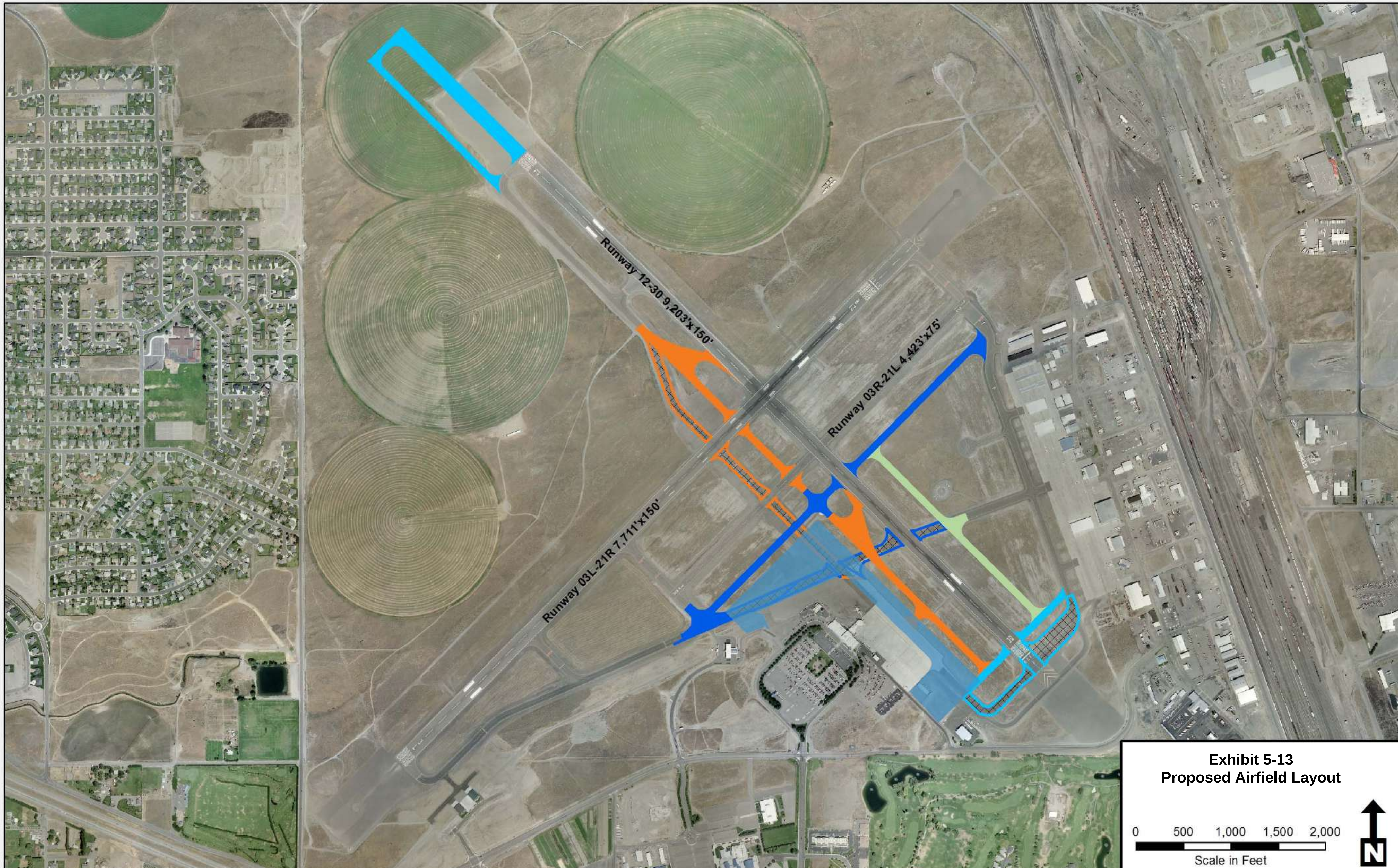


Exhibit 5-13
Proposed Airfield Layout

3. Passenger Terminal Building

Chapter 4 identified passenger terminal improvements intended to reduce congestion, provide additional services to passengers, and accommodate larger aircraft expected to operate at the Airport. As PSC continues to see the increase of passenger volume, number of destination served, and air carrier flights per day, the passenger terminal building will need improvements to meet demand. Development alternatives for the passenger terminal include: expansion of the passenger check-in area, airline ticket counters, and airline operations areas; reconfiguration of the security screening checkpoint (SSCP) and restrooms; reconfiguration of the passenger boarding area; and expansion of the rental car counters. By providing additional food and beverage services and reducing passenger terminal building congestion, the Airport can improve its public perception, and increase PSC's appeal to travelers. Good public rapport can improve marketability and increase the Airport's catchment percentage of the local population, and service the community.

3.1 Passenger Check-in Area

The existing airline ticket counter area has space for the existing four airlines, each in their own airline ticket office (ATO), but has no room to expand. This existing space has been retrofitted to incorporate Transportation Security Administration (TSA) baggage screening equipment, which limits space available for airline staff operations. There is a need and desire to make available space behind the airline ticket counters by relocating TSA equipment, which will increase space for self-check-in equipment and seating.

The improvements identified in **Section 3.2**, associated with the new SSCP, result in the relocation of the existing gift shop to a new site next to the ATOs. The new SSCP results in the relocation of existing restrooms to a new site in the airline ticket lobby.

Chapter 4 identified a need for additional rental car counter space. This development is recommended to occur contiguous to the existing rental car counter space, and not in the expanded passenger check-in area.

The expanded passenger check-in area is shown in **Exhibit 5-14**.

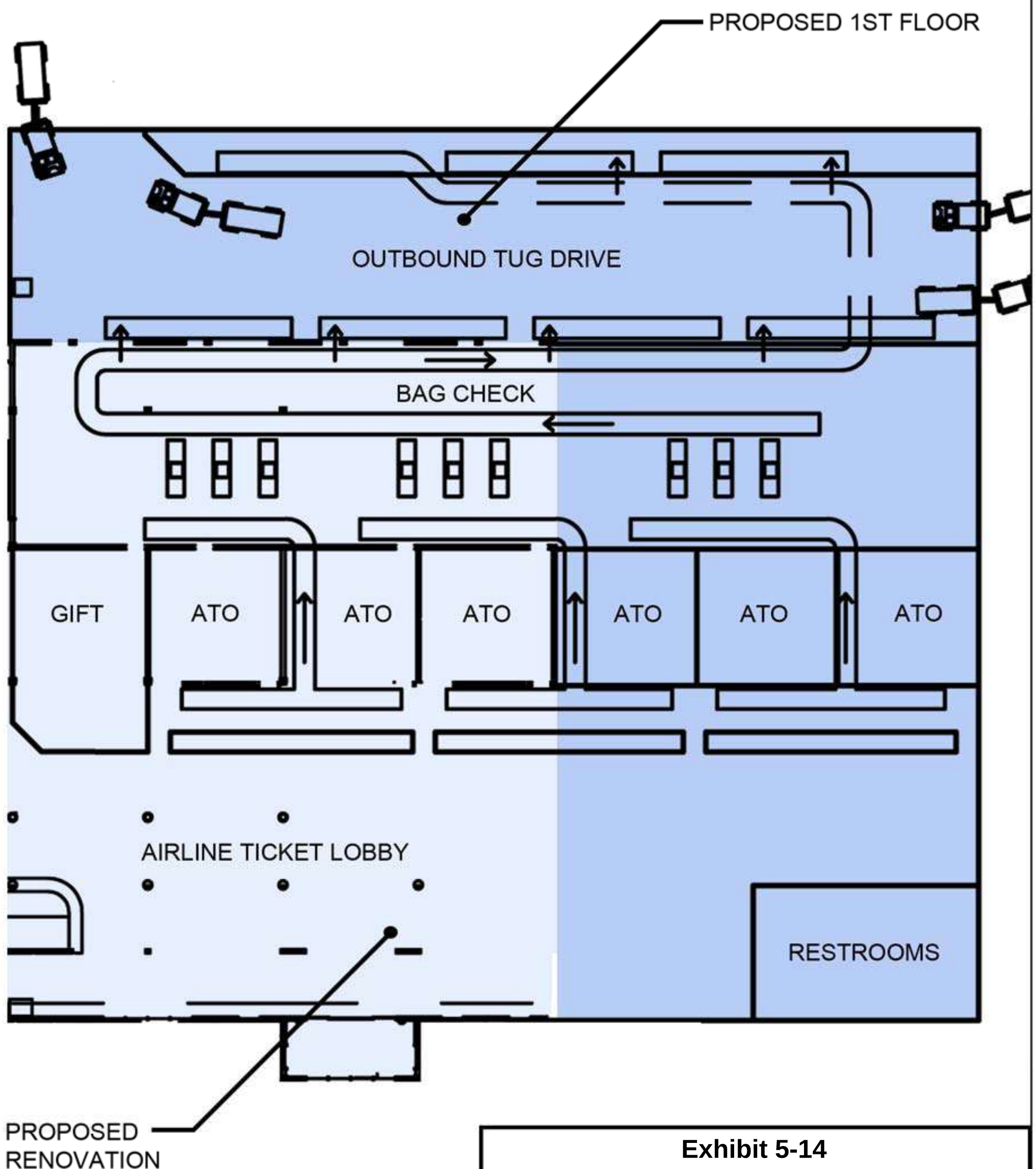


Exhibit 5-14
Passenger Check-in Area

3.1.1 Airline Ticket Counter

The purpose of extending the airline ticket counter is to provide space for additional airlines, and passenger check-in. There will be six ATOs. The passenger check-in area will increase in size, which will permit additional seating, restroom facilities, and space for more self-check-in kiosks.

Proposed reconfiguration of the airline ticket counters relocates the existing interior wall within the existing building footprint by 50 feet towards the rental car parking lot to provide an additional 36 feet of airline ticket counter space, (to 132 feet), and to increase the passenger queuing area by 2,400 square feet (to 6,000 square feet). This space can be used for ordered queuing for ticket agent positions, and for self-check-in facilities.

3.1.2 Airline Operations Area

The purpose of expanding the airline operations area (AOA) is to provide space for additional airlines, to incorporate TSA screening into the in-line baggage system, and to provide a covered area for loading baggage tugs. The intent is to create an efficient, automated baggage system that reduces the need for airline employees to lift bags. In-line security screening improves baggage processing time, and reduces congestion.

Proposed reconfiguration of the AOA expands exterior walls and building footprint northeast, towards the terminal apron to provide additional area for baggage screening and makeup. TSA equipment will be relocated to behind a new interior wall, out of public view. Conveyer belts feed baggage from the airline ticket counters to TSA screening. It is recommended that the Airport coordinate with TSA during the design and implementation of this system.

Screened baggage runs onto another conveyer belt to the airline baggage processing area and the outbound tug drive. Area for baggage processing will be created by moving the existing exterior wall 38 feet closer to the terminal apron. Screened baggage will be sorted, loaded onto baggage carts, and taken to aircraft. Baggage screening and the outbound tug drive will increase in area by 11,000 square feet (to 18,000 square feet)

3.2 Security Screening Checkpoint

The SSCP and the associated queuing areas around it represent a bottleneck to terminal circulation. When several flights depart near the same time, passenger queuing for the SSCP extends into the passenger terminal building lobby. This interrupts access to the restrooms, gift shop, restaurant, and the airline ticket lobby.

The SSCP will be improved to better accommodate passenger queuing and processing. This space is reconfigured for a more efficient layout of the walkthrough metal detectors, x-ray machines, passenger queuing, sterile area exitway, TSA office, and PSC law enforcement office. This reconfiguration is accomplished without moving exterior walls.

SSCP expansion requires change to adjacent terminal building services and facilities. On the non-sterile side, the restrooms and gift shop are relocated to the improved passenger check-in area (**Section 3.1**). On the sterile side, gates 1 and 2, and the café, are relocated into the improved passenger boarding area (**Section 3.3**). These relocations will be phased with other terminal building improvements. No modifications are expected to the second floor office stairway, the restaurant, and the sterile-side restrooms.

The SSCP reconfiguration is shown in **Exhibit 5-15**.

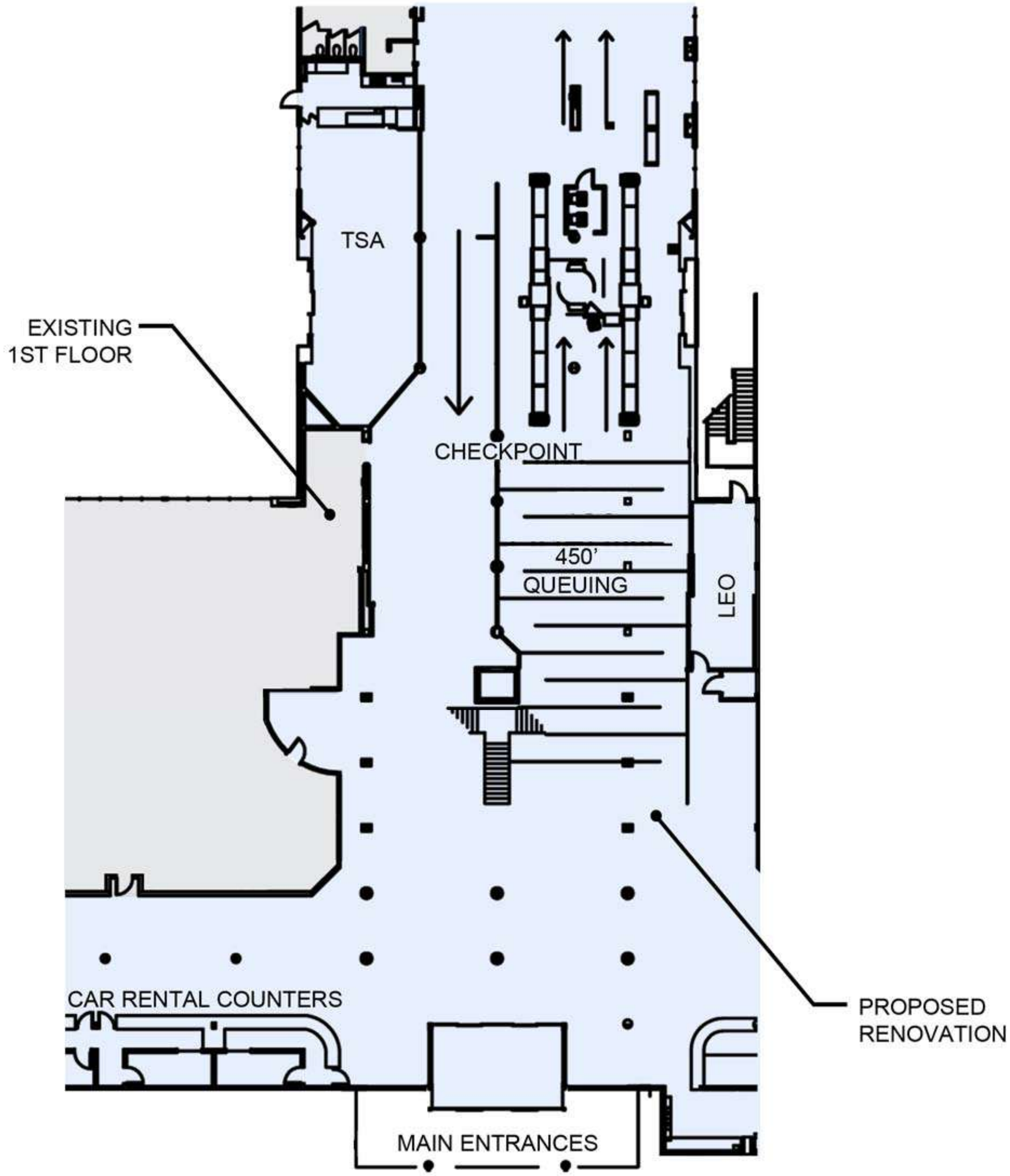


Exhibit 5-15
SSCP

3.3 Passenger Boarding Area

The purpose of expanding the passenger boarding area is to provide an additional passenger boarding bridge (PBB) for a total of two PBBs, and to provide four functional boarding doors. Expansion will offset the relocation of gates 1 and 2, and the café, stemming from SSCP improvements (**Section 3.2**). Additional space includes passenger amenities of a bar and a café, which will generate airport revenue, and improve passenger experience. Having these amenities on the secure side of the SSCP is expected to increase passenger dwell time, which generally results in higher ancillary revenue per enplaned passenger for the Airport.

Three alternatives have been developed for expansion of the passenger boarding area. Each features four passenger boarding doors, two PBBs, and a second floor to accommodate the PBBs. For each alternative, access to the second floor is provided by stairs, escalators, and elevator.

Aircraft apron utilization is segmented so larger aircraft that generally have longer turn times will use the passenger boarding gates on one side of the terminal, and smaller aircraft with shorter turn times will be kept on the other. For each alternative, ground service equipment (GSE), primarily for baggage transport, will be required to take a different and longer route than followed for the existing configuration.

As each alternative accommodates larger and increased number of aircraft than does the existing terminal building and apron, each alternative is expected to require the expansion of the terminal apron.

3.3.1 Passenger Boarding Area Alternative 1

Alternative 1 features a second level above existing gates 3, 4, and 5. Passengers access the second level by escalators and an elevator located between existing gates 3 and 4. Four new gates and hold areas are located southeast toward the existing deicing pad. Existing gates 1, 2, 4, 5, and the existing PBB at gate 3 are relocated and reconfigured.

Departing the SSCP, gate access is linear to simplify passenger wayfinding, such that there are no options for gate-bound passengers to deviate from the path, reducing the chance that passengers miss their gate. A 500-foot walk is required between the SSCP and the farthest gate 6.

The bar is located on the first floor, beneath gate 2, to put passengers in visual contact with the bar while proceeding to the gate. The café is located on the first floor. Strategically locating the bar and café on passenger paths should increase utilization and revenue.

In the long-term, the terminal is readily expandable to the northwest towards Taxiway A, and expansion to the southeast is constrained by the deicing pads.

Alternative 1 is shown in **Exhibit 5-16**.

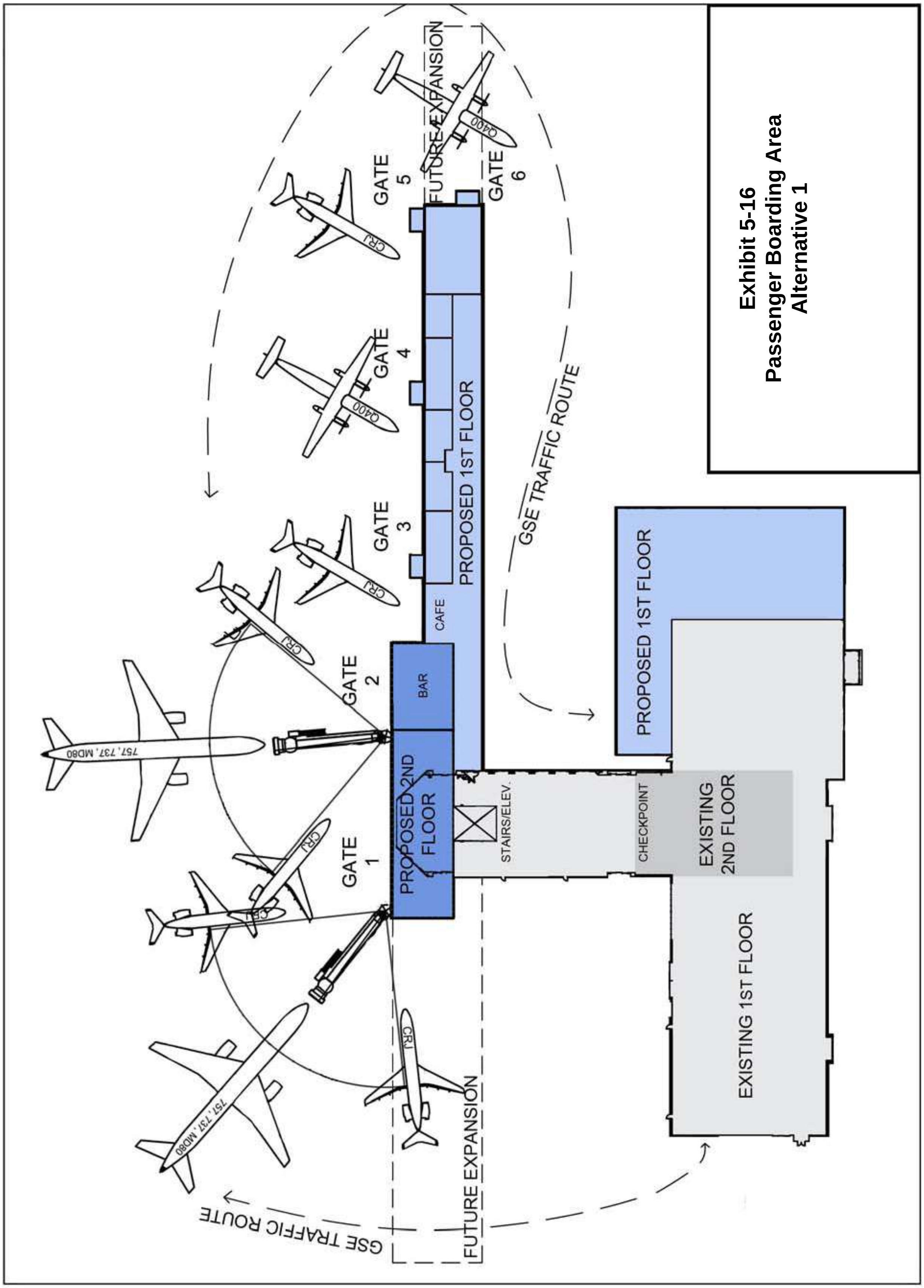


Exhibit 5-16
Passenger Boarding Area
Alternative 1

3.3.2 Passenger Boarding Area Alternative 2

Alternative 2 expands the existing passenger terminal area along the terminal apron to the southeast and northwest. Alternative 2 relocates the existing PBB. Four new passenger gates are created to the southeast of existing gate 3, and two PBBs are located northwest of existing gate 4.

The “T” shaped layout improves passenger wayfinding by using shorter distances, which generally allow passengers to see their gate. The distance between the SSCP and the farthest gate 6 is 350 feet.

The café is on the first floor, and the bar is on the second floor. Passengers will pass the café while proceeding to their gate, which should increase utilization and revenue. The bar will be visible from the base of the stairwell, which will invite passengers to the upper level.

There is ample space before the deicing pads to accommodate long-term expansion to the southeast. The PBB at gate 1 will require relocation to accommodate long-term expansion to the northwest toward Taxiway A.

Alternative 2 is shown in **Exhibit 5-17**.

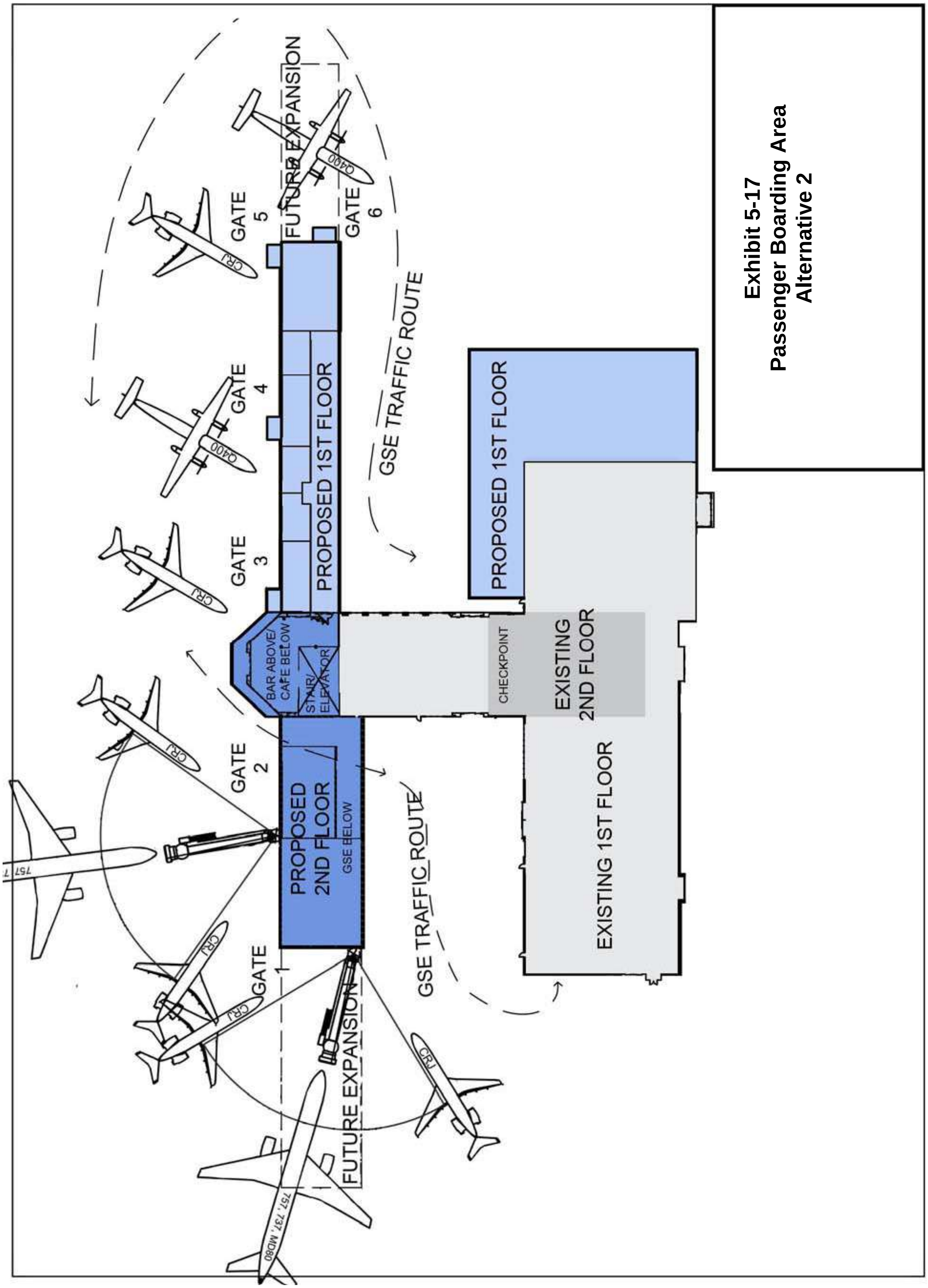


Exhibit 5-17
Passenger Boarding Area
Alternative 2

3.3.3 Passenger Boarding Area Alternative 3

Alternative 3 features a second level above the existing passenger hold room area for gates 3, 4, and 5,. Four ground level gates are in the concourse to the southeast.

Features of Alternative 3 include utilization of the existing building footprint by placing the second level above existing gates 3, 4, and 5. By placing access to the second floor immediately following the SSCP, passengers using second floor gates 1 and 2 can easily access the appropriate hold room. There is a 400 foot walk between the SSCP and the farthest gate 6.

There is a bar beneath the second floor, created by expanding the building onto the terminal apron, towards Taxiway D. A café is located on the first floor.

In the long-term, the terminal is readily expandable to the northwest towards Taxiway A, and expansion to the southeast is constrained by the deicing pads.

Alternative 3 is shown in **Exhibit 5-18**.

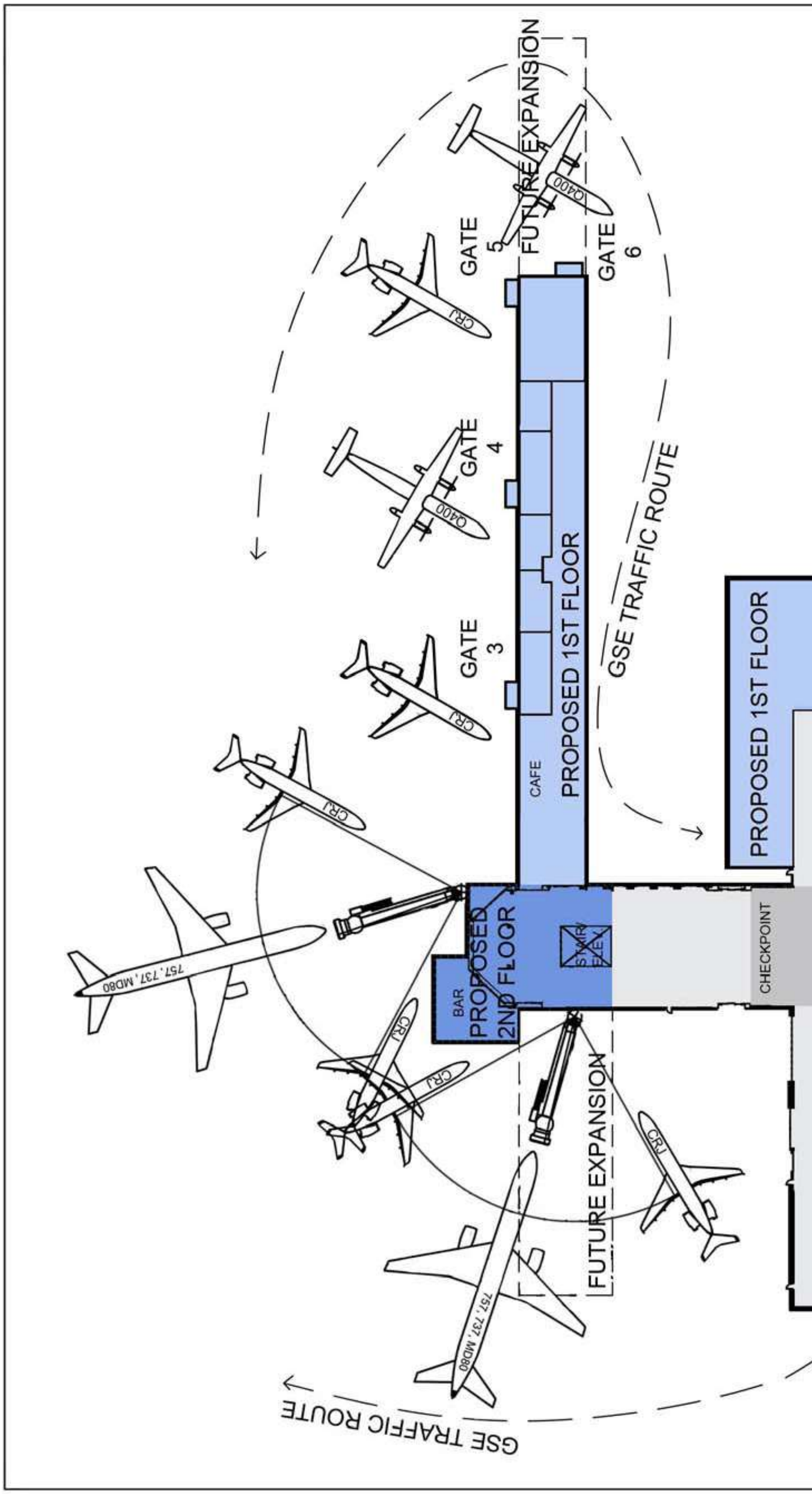


Exhibit 5-18
Passenger Boarding Area
Alternative 3

3.3.4 Alternative Comparison and Preference

In order to select the preferred alternative, the characteristics of each alternative are compared. Since alternatives have been generated to meet the needs of the facility requirements, alternatives are not scored on categories such as floor space and PBBs. Instead, alternatives are compared on a relative scale. Alternative comparison is presented in **Table 5-1.**

Table 5-1: Passenger Boarding Area Alternative Comparison

Category (1=Lowest, 3=Highest)	Alternative 1	Alternative 2	Alternative 3
Expansion Opportunities	1	3	1
Passenger Way-finding	3	3	1
Passenger Walking Distance	1	3	2
Service Vehicle Circulation	1	3	1
Utilization of Existing Building Footprint	1	2	3
Total	**7**	**14**	**8**

Alternative 2 is preferred. The "T" shaped layout allows greater room and options for expansion to either side. This allows the Airport to continue terminal expansion to meet the long-term demands to include more gates and PBBs.

Alternative 2 features the shortest walking distance from the SSCP to the farthest gate, which helps passengers find their way visually. The first floor café, combined with the second floor bar, provides passengers dining options, and allows passengers to wait for flights away from the disturbances associated with gates.

Compared to Alternatives 1 and 3, Alternative 2 has a shorter GSE route, which passes underneath elevated gates 1 and 2. Also, Alternative 2 imposes less impact on deicing pad access and utilization. Compared to Alternative 3, Alternative 2 does not infringe on apron area to provide amenities.

3.4 Rental Car Facilities

It is anticipated that the passenger terminal's rental car counter will require additional length to meet the anticipated demand. Further expansion within the passenger terminal is unlikely; however it is possible to reconfigure the rental car counters when the restrooms near the SSCP are relocated. It is anticipated that this improvement will allow the existing buildings wall to be push out towards the curb. Rental car counters can be rotated by 90 degrees, allowing counter space on both sides, and increasing total counter length. In addition to increased counter space, rental car companies at PSC have indicated the need for a carwash on airport property. This carwash can be incorporated into the parking lot alternatives in **Section 5**.

3.5 Passenger Terminal Sustainability

Sustainability practices can improve public perception of a facility, increase revenue, and reduce energy costs and environmental footprint. In addition, impending regulatory requirements can be mitigated by pursuing efficient systems replacement. It is recommended that sustainable building and operating practices be incorporated into passenger terminal building improvements.

Methods of incorporating sustainable elements include: undertaking an energy audit to identify inefficient systems and to establish a baseline of historical utility usage for future analysis; increasing interior daylight through high performance insulated energy efficient windows; implementing an extensive recycling program; integrating building automation controls; using energy efficient mechanical and electrical systems and baggage conveyance equipment; replacing existing plumbing with resource efficient fixtures; incorporating recycled materials into building construction and furnishings; and constructing future building expansions to maximize the energy related benefits of passive daylighting and control.

4. General Aviation

GA hangar requirements have been identified in **Chapter 4**. Continued development is anticipated on the GA apron area, on the eastern side of the airfield, and in the Airport Business Center (ABC), on the southwest side of the airfield. A product and function of existing and proposed airside and landside development, proposed hangars are sited to provide ease of access to airfield pavements and access roadways, to provide efficient aircraft movement, and be capable with other planned airfield development. Details of hangar size, taxilanes, aprons, roadways, and automobile parking are expected to be identified with proposed developments, prior to implementation.

Chapter 4 identified the possibility of an additional or expanded Fixed Base Operator (FBO), should market conditions support it. FBOs require road access and apron space in addition to building space. The preferred location for an additional or expanded FBO is as much a factor of available space as it is the FBOs clientele. FBOs that serve mainly transient aircraft can be located away from hangar development while FBOs with clientele based at the Airport will prefer to be located near hangar development. Those areas shown for future development of hangars and aircraft storage can be instead developed as FBO facilities, as the opportunity arises.

4.1 GA Apron

Proposed development on the existing GA apron includes four T-hangar buildings and three box hangar buildings to the north, and six box hangar buildings to the south. This will provide a total of 25 box hangar buildings and 11 T-hangar buildings on the GA apron.

Hangar development on the GA ramp will focus and maintain most GA activity to the east side of the airfield. This provides convenient access to the FBOs. Maintaining the east GA apron area continues the beneficial separation of GA from commercial aircraft activity on the southwest side of the airfield.

Future GA development to the north should consider the access taxiway to Runway End 21R (**Section 2.2.1**). One proposed T-hangar building is near a proposed taxiway, so priority should be established prior to implementation. Hangars to the south side will reduce the number of aircraft tie-down spaces by two.

It is recommended that cargo operations which occur on the GA apron be relocated across Runway 12-30, and consolidated on the cargo apron currently used by FedEx (**Section 2.5.2**). This will provide greater security for cargo operations, and open the GA apron to other uses.

It is recommended that existing buildings be considered for demolition, especially those that are World War II era or otherwise dilapidated. Demolition could require evaluation of historical significance and agency coordination. Removal of existing buildings can provide space for a hangars, tie-downs, and FBO development.

Hangar locations are shown in **Exhibit 5-19**.

Exhibit 5-19
GA Apron

4.2 Airport Business Center

The ABC is PSC's newest GA development area, with two existing hangars. Future development in the ABC is aimed at high-profile business aviation. There are no tie-downs or T-hangars proposed for this area, only box hangars. Aviation activity forecasts and facility requirements indicate the PSC will need additional box hangars. The ABC has been subdivided to accommodate aviation and non-aviation related businesses. Aviation related business will have airfield access, and connect to Taxiway A. The proposed layout includes 20 additional box hangars for a total of 22 box hangars.

The ABC provides quick access to Interstate 182 and U.S. Highway 395. Aircraft using the ABC will be near Runway End 3L, and have access to the rest of the airfield along Taxiway A.

As the ABC does not have existing fuel facilities, ABC-based aircraft have fueling options: self-fueling requires airport and agency oversight; taxi from ABC requires lengthy passage across active airfield pavements; and FBO fuel trucks require lengthy haul routes across active airfield pavements to serve ABC. There may be an opportunity for an FBO to open a facility or provide a fueling tank at the ABC. Consideration should be given to fueling characteristics as the ABC develops with based aircraft.

The proposed layout of the ABC is shown in **Exhibit 5-20**.

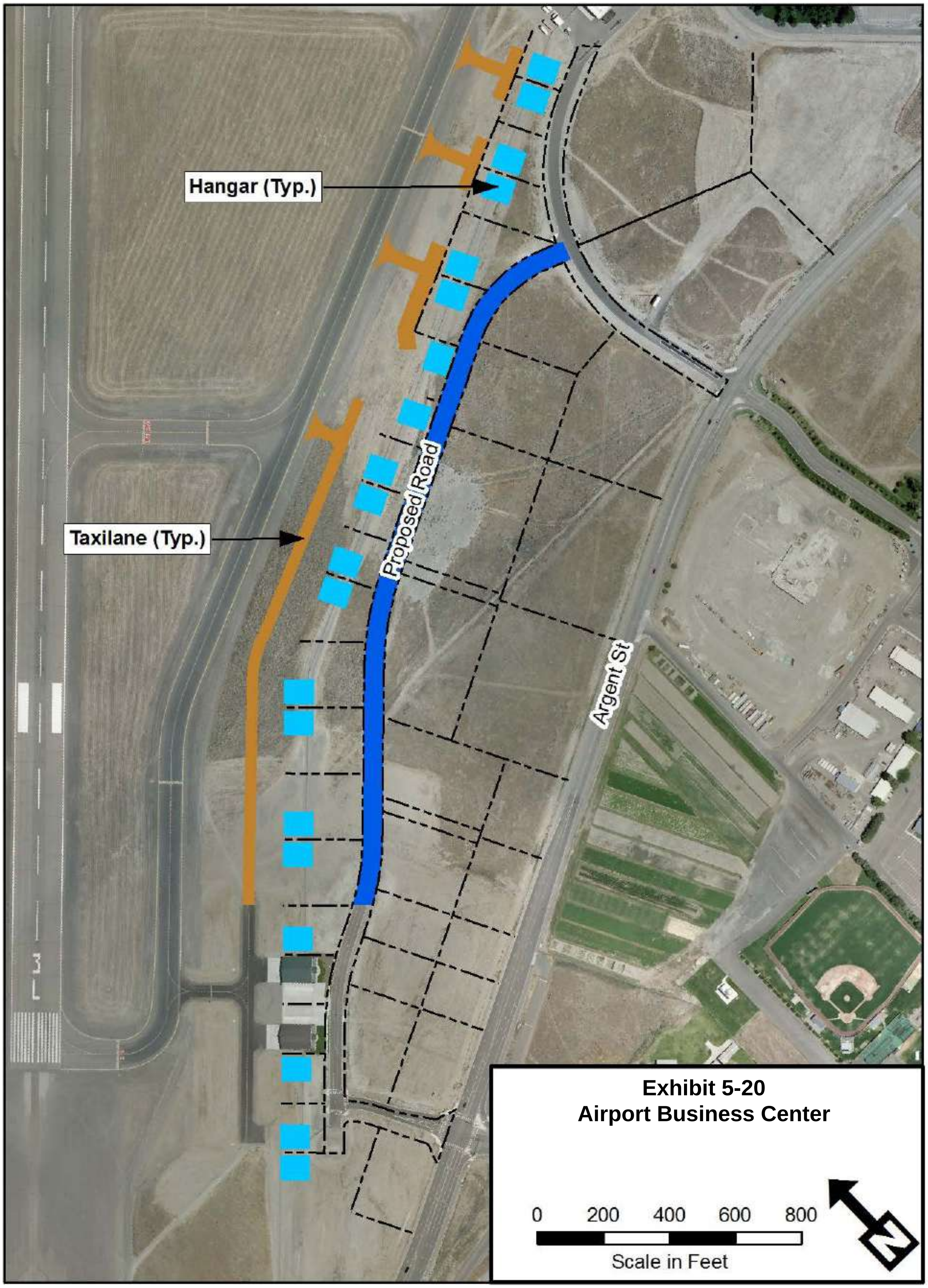


Exhibit 5-20
Airport Business Center

5. Automobile Access and Parking

Airport management has identified expansion of the number of automobile parking spaces as an immediate need. PSC has seen passenger volume continue to increase through 2009 and into 2010. Peak travel periods place high demand on the existing automobile parking facilities. These spaces will provide service and convenience to the traveling public, and a source of income for the Airport.

The Airport began a project to add 219 additional parking spaces in 2010. These spaces are to be located in place of the drainage area in the center of the existing long-term parking lot. The parking alternatives anticipate that the 2010 parking lot expansion will be complete. No change to the ATCT parking lot is proposed by the alternatives.

5.1 Parking

Three alternatives have been created for parking expansion. Two alternatives look at utilizing open space, which requires the realignment of the Terminal Access Road. The alternatives keep parking spaces close to the passenger terminal building by expanding parallel to it. The third alternative proposes a parking garage.

Consideration should be given to increasing employee and customer parking for cargo facilities. As cargo parking is adjacent to the cargo apron, it is not considered as part of these alternatives.

5.1.1 Parking Alternative 1

In Alternative 1, the long-term lot is expanded to the east and west, and the Terminal Access Road is relocated to accommodate the 170 additional long-term parking spaces. The short-term lot is expanded to the southwest into the existing long-term lot to provide 204 additional spaces. The rental car lot is expanded to the southwest, providing 92 additional spaces. To the east of the existing short-term lot, 135 parking spaces are added for rental car, and employee parking. The existing rental/overflow lot is expanded to accommodate 72 additional spaces.

Alternative 1 distributes parking so that the farthest space from the terminal building door remains at the existing 1,000 feet. The average adult walks at a rate of 4.3 feet per second, and can cover 1,000 feet in about 4 minutes.

Alternative 1 relocates the Terminal Access Road. The location of the proposed road will limit future long-term parking lot expansion, unless the road is relocated again, or parking spaces are built on the opposite side of the road. The existing airport rotating beacon is located within the proposed rental car/ employee lot, and will need to be relocated.

For long-term expansion, it is recommended that the Airport consider keeping the short- and long-term lots within the Terminal Access Road, as it is not advisable to have passengers crossing the access road.

Alternative 1 is shown in **Exhibit 5-21**.

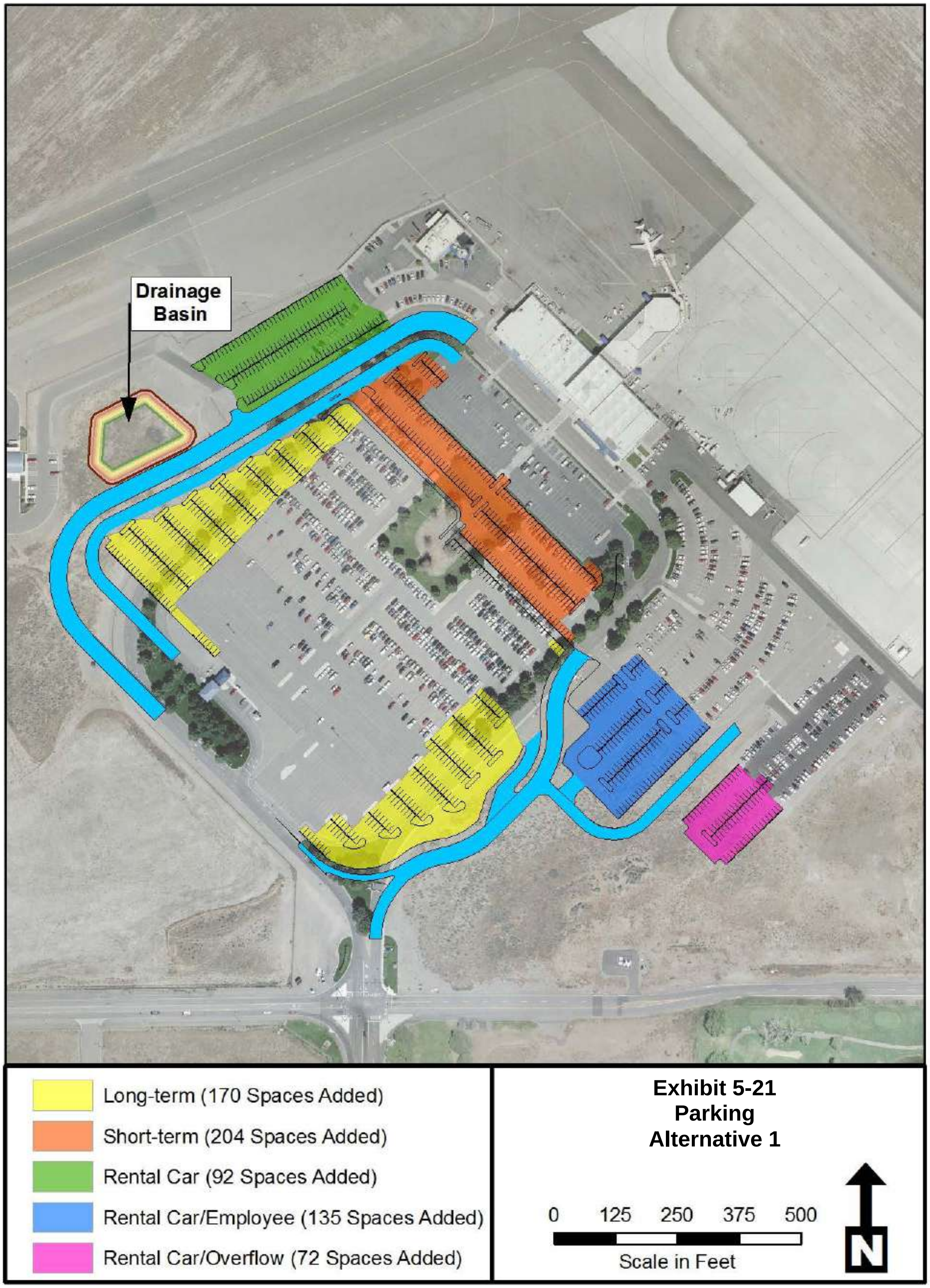


Exhibit 5-21
Parking
Alternative 1

5.1.2 Parking Expansion Alternative 2

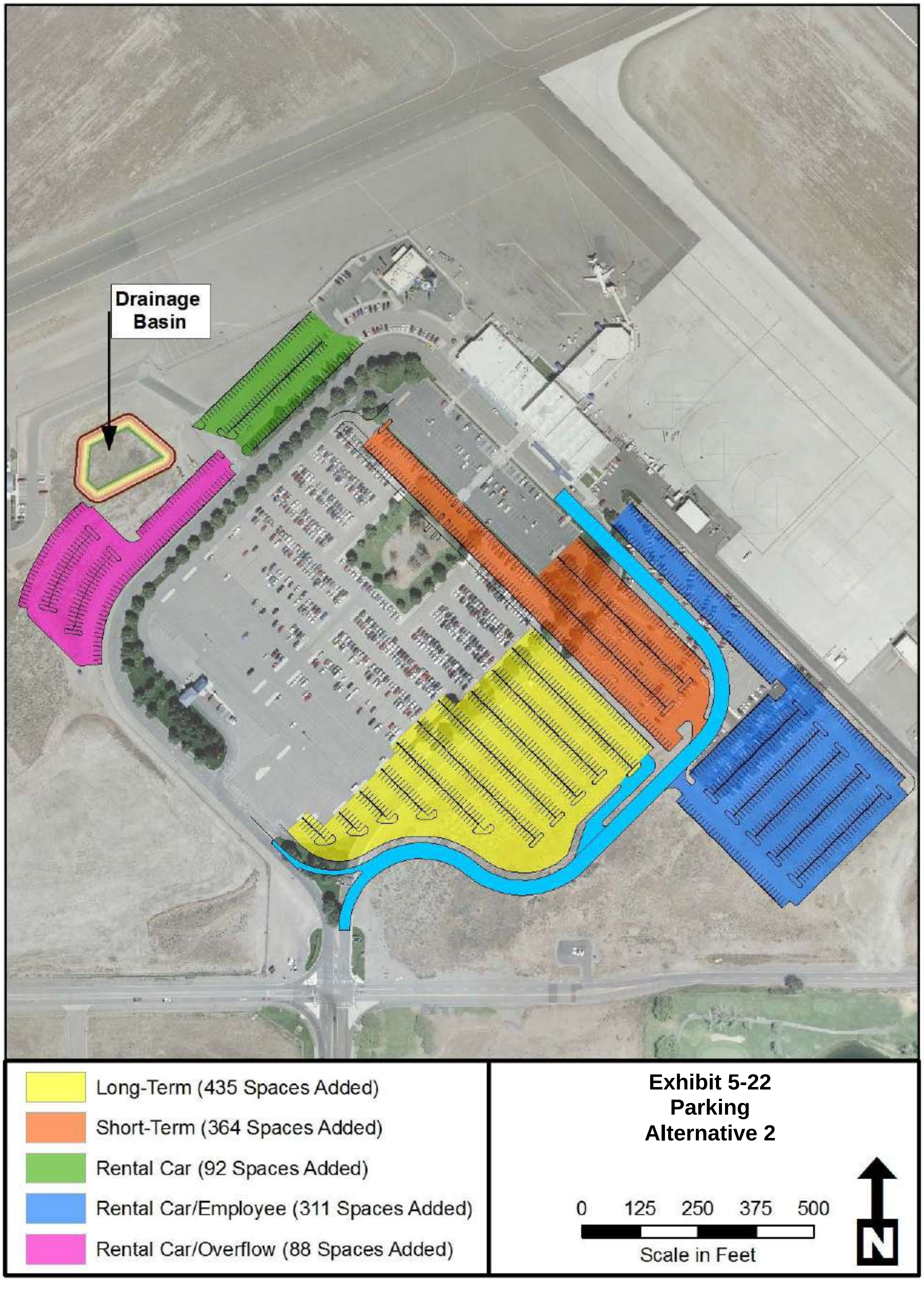
Alternative 2 focuses on extending the short- and long-term lots to the southeast, along with the Terminal Access Road. The rental car/overflow lot is relocated to the western side of the parking lots, between the Terminal Access Road and the Aircraft Rescue and Firefighting (ARFF) station. 92 parking spaces will be added to the rental car lot. 364 short-term parking and 435 long-term parking spaces will be added. The rental car/employee lot will be shifted to the east, and 311 additional spaces are added

Distance from the farthest parking space remains at the existing 1,000 feet for the long-term lot. The distance from the farthest space in the rental/overflow lot is 1,150 feet, which is within a five minute walk to the front of the passenger terminal building.

Alternative 2 relocates the Terminal Access Road. The location of the proposed road will limit future long-term parking lot expansion, unless the road is relocated again, or parking spaces are built on the opposite side of the road. The existing airport rotating beacon is located within the proposed long-term parking lot expansion, and will need to be relocated.

For long-term expansion, it is recommended that the Airport consider keeping the short- and long-term lots within the Terminal Access Road, as it is not advisable to have passengers crossing the access road.

Alternative 2 is shown in **Exhibit 5-22**.


Drainage Basin
Long-Term (435 Spaces Added)
Short-Term (364 Spaces Added)
Rental Car (92 Spaces Added)
Rental Car/Employee (311 Spaces Added)
Rental Car/Overflow (88 Spaces Added)
Exhibit 5-22
Parking
Alternative 2
0 125 250 375 500
Scale in Feet
N

5.1.3 Parking Expansion Alternative 3

Alternative 3 locates a parking garage across the Terminal Access Road from the passenger terminal building. A 3-story structure, with 540 spaces, could accommodate shot- and long-term parking, rental car parking, and service facilities as desired.

Multi-level parking structures provide space more spaces for a given area than do surface lots. This added density comes with a higher cost, parking structures generally have higher user fees than surface lots.

A parking structure offers enhanced passenger conveniences such as sheltered parking, and direct access to the passenger terminal building. In summer and winter months, passengers are largely sheltered from the elements. Parking structures allow more vehicles to park near the passenger terminal building, which reduces passenger walk time.

Because airports generally offset the cost of parking structures by charging passengers for the convenience, consideration should be given ton how much the community values these services. Airports that have a large volume of originating passengers, like PSC, can see significant revenue generation from a parking structure, but only if the community is willing to pay to use it.

Alternative 3 is shown in **Exhibit 5-23**.

Exhibit 5-23
Parking
Alternative 3

5.1.4 Alternative Comparison and Preference

The parking alternatives are evaluated quantitatively by the number of parking spaces, in **Table 5-2**, and qualitatively on the degree of impact they have on the existing road structure.

Table 5-2: Comparison						
Area	**Alternative 1**		**Alternative 2**		**Alternative 3**	
	Added	**Total**	**Added**	**Total**	**Added**	**Total**
Long-Term	170	1,036	435	1,301	450	1,316
Short-Term	204	387	364	547	90	273
Rental Car	92	161	92	161	0	69
Rental Car/ Employee	135	463	311	639	0	328
Rental Car/Overflow	72	177	88	193	0	105
Total Spaces Added	673	2,224	1,290	2,841	540	2,091

Source: JUB Engineers; Mead & Hunt

Alternative 1 relocates the Terminal Access Road on the east and west side of the parking lot, while Alternative 2 uses existing roadway on the west side, and shifts the Terminal Access Road farther east. Although both alternatives consume existing airport property, there is available land that has been preserved for this purpose.

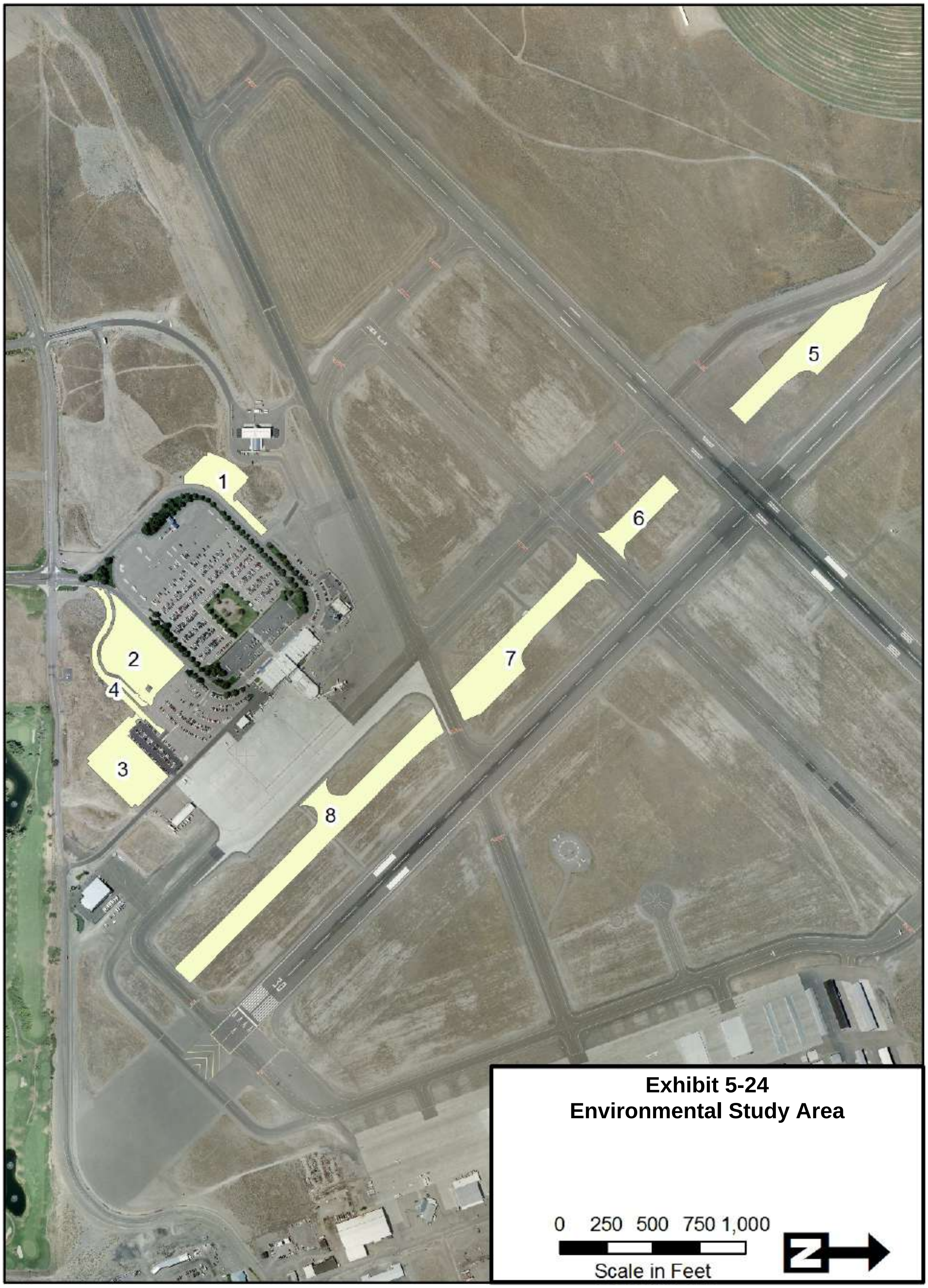
Alternative 3 is not expected to require road reconfiguration, apart from access lanes. A parking structure would add a higher ratio of parking spaces per square foot of lot footprint than a surface lot, which would help the Airport maximize use of available area. From a visibility consideration, the structure would be the dominant landscape feature, instead of the terminal building. Other aesthetic considerations include natural sunlight reaching the terminal, which would be blocked by the structure.

Alternative 2 is preferred. This alternative provides the highest gains in parking spaces of the two surface lot alternatives, and requires less disruption of surface streets. Implementation of Alternative 2 allows for the future development of aspects of Alternative 1, and for the development of Alternative 3.

6. Environmental Review

An environmental review was conducted for the areas that would be impacted by Taxiway D Alternative 1 and Parking Expansion Alternative 2. This review included fieldwork and analysis of archeological, cultural, biological, and wetland resources within the 23.3 acres of land (study area) that will likely be disturbed as part of these projects. Summaries are included in this section. Reports are included in **Appendix D**. A description of the study area is included in **Table 5-3**, and map of the study area is included in **Exhibit 5-24**.

Table 5-3: Environmental Study Area			
Improvement	**Area**	**Acres**	**Map ID**
Parking Lot	Rental Car/Overflow	1.4	1
	Long-Term	3.1	2
	Rental Car/Employee	2.4	3
	Road	0.9	4
	Parking Lot Subtotal	**7.8**	
Taxiway D	Northwest	3.5	5
	Between 3R-21L and 3L-21R	1.4	6
	SE of 3R-21L	4.8	7
	Southeast	5.8	8
	Taxiway D Subtotal	**15.5**	
TOTAL	**Parking Lot and Taxiway D**	**23.3**	


1
2
3
4
5
6
7
8
Exhibit 5-24
Environmental Study Area
0 250 500 750 1,000
Scale in Feet
N

6.1 Archaeological and Cultural Resources

An archaeological and cultural resources survey took place on October 21, 2010, and consisted of a pedestrian survey of 15 meter spaced transects over the non-paved and partially paved land parcels, and shovel testing of six test pits within the study area. Prior to the pedestrian survey publications were reviewed regarding pre-historical and historical significance of Airport land. Items of interest include Native American artifacts, and facilities from the Airport's use as a Navy training facility during World War II.

The archeological and cultural resources survey found no prehistoric or historic sites within the study area. Two crushed cans located on the surface of the study area appear to have been disturbed by modern processes associated with the construction of the runways. It was determined that the cans "definitively lacked cultural resource or historic archeological value." It is believed "there are no prehistoric or historic sites eligible for inclusion in the [National Register of Historic Places] within the 23.3 acres."

The proposed projects are not anticipated to have effect on archaeological or cultural resources. This is to be verified as part of the environmental reviews at the time of project implementation.

6.2 Biological Resources

A biological survey was conducted on October 21, 2010, and consisted of a pedestrian survey. Prior to the pedestrian survey, consultation with the U.S. Fish and Wildlife Service (USFWS), the Washington Department of Natural Resources, and the Washington Department of Fish and Game occurred. The USFWS identified six species protected under the Endangered Species Act (ESA) that could potentially occur on airport property.

The biological resources survey found no species protected by the ESA in the study area. It is noted that "no suitable habitat exists within the defined study area that would coincide with any of the six previously mentioned ESA species. The [study area] can be characterized as developed and disturbed, and poses very little to no viable ecological habitat." The Airport is not considered a migratory bird flyway, and does not provide migratory bird habitat. It is believed that "this project will yield "no effect" on wetlands, streams, fish habitat, ESA listed species, and designated habitats, state listed sensitive species and habitats, and habitats protected under the [Migratory Bird Treaty Act]."

The proposed projects are not anticipated to have effect on biological resources. This is to be verified as part of the environmental reviews at the time of project implementation.

6.3 Wetland Resources

A wetland survey was conducted on October 21, 2010. The Glade, Washington National Wetlands Inventory map does classify streams or wetlands within the study area. The study finds that "no wetlands, streams, or fish habitat exist within or adjacent to the [study area]."

The proposed projects are not anticipated to have effect on wetland resources. This is to be verified as part of the environmental reviews at the time of project implementation.

7. Summary

The following is a summary of the preferred improvement alternatives and improvement proposals.

Airfield

Extend Runway End 12 by 1,850 feet.

Relocate Runway End 30 by 350 feet and eliminate the displaced threshold.

Realign Taxiway A parallel with Runway 3R-21L, and provide 400 feet of separation.

Build new Taxiway G on the east side of Runway 12-30

Realign Taxiway D parallel with Runway 12-30, provide 400 feet of separation, and two high-speed exits.

Remove the VOR NAVAID.

Passenger Terminal Building

Extend the Airline Ticket Counter by 36 feet to accommodate up to six airlines.

Reconfigure the Airline Operations Area to accommodate baggage screening and make-up areas.

Reconfigure the SSCP and surrounding areas.

Reconfigure the passenger boarding area into a “T” shaped design, as described by Alternative 2.

General Aviation

Expand the GA apron to the north and south to accommodate hangar development.

Expand development of the Airport Business Center to accommodate high-profile business aviation.

Automobile Access and Parking

Expand existing parking facilities by relocating the terminal access road, as described by Alternative 2.

Environmental Considerations

The proposed projects are not anticipated to have effect on archaeological, cultural, biological, and wetland resources. This is to be verified as part of the environmental reviews at the time of project implementation.

1. Introduction

Finances drive the ability to plan, implement, and operate facilities and improvements. Quantifying the expense and revenue of facilities, operations, and properties identifies available funding and required financing. This section includes the Pasco Tri-Cities Airport (PSC) capital improvement plan (CIP), and a financial implementation analysis (FIA).

The CIP is a planning document in which airport improvement alternatives identified in **Chapter 5** are assigned cost estimates, and an order of implementation. The FIA reviews Airport financial records, Port of Pasco (Port) policies, and airline agreements to establish PSC's baseline financial condition. The FIA reviews the CIP, in conjunction with Federal Aviation Administration (FAA) approved aviation activity forecasts in **Chapter 3**, to generate expected revenue available for airport improvement projects. Other potential sources of capital are identified to make up balance.

The CIP and FIA are developed with input from airport management, Port commissioners, and airport tenants. The result of the CIP and FIA is a financial plan that the Airport may use to implement improvement projects. The CIP and FIA will assist in federal, state, and local grant applications, budget preparations, and improvement project timing. Financial feasibility analysis enables the Airport to gauge the expected return on investment of planned airport improvement projects prior to implementation.

The chapter is organized into the following sections.

- Existing Airport Financial Structure
- Capital Improvement Plan
- Financial Implementation Analysis Summary

2. Existing Airport Financial Structure

The existing airport financial structure is a summary of revenues and expenses at PSC in 2010. Revenues include: landing fees; passenger terminal building rent from retailers, airlines, and car rental agencies; fuel flowage fees; advertising fees; hangar, land, and warehouse rental fees; and reimbursement from the Transportation Security Agency (TSA) for space occupied. Expenses include personnel salaries and benefits, supplies necessary for airport operation and administration, contractual services from consultants and local governments, utilities, repairs, and routine maintenance.

Airport financial structure influences tenant rent, staffing levels, and expenditures that support related businesses in the local economy. PSC management budgets so that revenues exceed expenses, and the Airport makes profit. Revenue generated that exceeds expenses can be used to improve airport services and facilities, enhance airport user and tenant experience, and pay for airport improvement projects. A summary of the Airport's 2010 financial structure is presented in **Table 6-1**.

Table 6-1: 2010 Financial Structure	
Revenues	
Airline Revenue	$1,300,000
Non-Airline Revenue	$3,800,000
Non-Operating Revenue	$3,000
Total Revenues	$5,103,000
Expenses	
Personnel Expenses	$1,550,000
Supplies	$80,000
Contractual Services	$350,000
Utilities	$230,000
Repairs and Maintenance	$260,000
Other Operating Expenses	$190,000
Local Government Services	$1,000,000
Total Expenses	$3,660,000
Operating Net Cash Flow (Revenues – Expenses)	$1,443,000

Source: Lebowitz & Horton, 2011, numbers are rounded. *Values in 2010 Dollars*

Expected net cash flow surpluses may be carried forward to earn interest, and pay for capital improvement projects. Additional sources of airport funding are discussed in **Section 3**.

3. Capital Improvement Plan

The CIP includes projects planned from 2012 through 2032. Projects are assigned a year to indicate preference and priority; however, the Airport may alter project implementation scheduling. Projects identified in **Chapter 5** will be required when the Airport meets certain activity levels. Aviation activity forecasts in **Chapter 3** are used to identify when activity levels will meet the level necessary for an improvement project; however, projects may need to be delayed or expedited as actual activity varies from forecasted activity.

The CIP is organized in three phases, which include Near-term, the Intermediate-term, and Long-term projects. Near-term projects are expected to be implemented between 2012 and 2016, Intermediate-term projects are expected to be implemented between 2017 and 2024, and Long-term projects are expected to be implemented between 2025 and 2032.

Airport improvement projects are funded through a variety of sources. The Airport receives annual airport improvement program (AIP) entitlement money from the FAA for being a commercial service non-hub airport in the FAA National Plan of Integrated Airport Systems. The Airport can request additional FAA funding from the AIP Discretionary program for projects that are more expensive than available AIP Entitlement funds. AIP Discretionary money is not guaranteed, and PSC competes with airports in nationwide for AIP Discretionary funding. Regulations and requirements for the use of AIP entitlement and discretionary funding are included in FAA Order 5100.38C, *Airport Improvement Program Handbook*.

As a commercial service airport, PSC is eligible for revenue from passenger facility charges (PFCs). PFCs are levied on commercial airline tickets on a per-passenger basis. The Airport is authorized to use PFCs for improvement projects that benefit the traveling public by providing safety, capacity, and efficiency. PFC funding levels vary based on the number of emplaning passengers at the Airport. The preferred passenger enplanement forecast has been used to generate expected PFC funding.

Federally funded projects require the Airport to contribute a local match of at least five percent of the project cost.

Additional funding may come from the Washington State Department of Transportation Aviation (WSDOT Aviation). WSDOT Aviation funding, called the Airport Grants Program (WSDOT Aviation AGP), works similarly to AIP Discretionary funding, where the Airport competes with other Washington Airports. The maximum amount of a WSDOT Aviation AGP is 250,000 dollars, with the airport sponsor contributing at least five percent of the project cost.

Projects not eligible for FAA funding and other sources require full payment by the Airport. These funds are identified on the CIP as Cash Reserve, and are funded by surplus cash flow, defined in **Section 2**. The Airport may use PFCs as a local match if the project meets PFC eligibility requirements.

The CIP identifies potential funding sources for airport improvement projects based on 2011 accepted practices. Funding requirements and availability may change based on local, national, and global events. Available funding is to be confirmed prior to project implementation.

The CIP includes 140 million dollars of airport improvement projects over a 20-year period. Cost estimates have been developed in 2010 dollars, and inflated at three percent annually. Project cost estimates are for planning purposes only, and require a detailed cost estimate prior to implementation so the Airport can obtain the funding necessary to implement the projects. A summary of the CIP cost estimates and expected funding sources is included in **Table 6-2**.

Table 6-2: CIP Cost Estimate and Funding Summary (In Millions)

CIP Phase	Project Cost	PFC	AIP		Cash Reserve	Unidentified
			Entitlement	Discretionary		
Near-term	$26.2	$10.8	$8.0	$6.7	$1.6	$0.0
Inter.-term	$31.7	$14.1	$10.3	$1.9	$5.4	$0.0
Long-term	$82.4	$15.2	$14.6	$0	$0.8	$51.7
Total	$140.3	$40.1	$32.9	$8.6	$7.8	$51.7

Numbers may not add due to rounding.

It is estimated that 58 percent of CIP projects will be paid for with AIP and PFC programs. The Port will contribute six percent of funding for local match, and for improvement projects that are ineligible for AIP and PFC funding. The remaining 36 percent of the CIP is unidentified. Potential funding sources for these projects include WSDOT Aviation AGP funds, AIP discretionary funds, and Port cash reserves.

The CIP presents cost estimates and funding sources by project. Cost estimates were developed in 2010 dollars, and adjusted for inflation at a rate of three percent annually. The CIP is included in **Table 6-3**.

Table 6-3: Capital Improvement Plan (2012-2017)

Year	Project	Estimated Cost	Funding Percentage					Funding Source				
			PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified	PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified
2012	East GA Apron Rehabilitation (1 of 3)	$1,910,000	0%	95%	0%	5%	0%	$0	1,810,000	$0	$1000,000	$0
	Terminal Building-Concept Budget Report	$330,000	100%	0%	0%	0%	0%	$330,000	$0	$0	$0	$0
	Terminal Building - Phase 1 Part A (Design) *Security Checkpoint & Restroom Relocation*	$210,000	100%	0%	0%	0%	0%	$210,000	$0	$0	$0	$0
	VOR Concept Study	$75,000	0%	93%	0%	7%	0%	$0	$70,000	$0	$5,000	$0
	Annual Pavement Maintenance	$80,000	0%	0%	0%	100%	0%	$0	$0	$0	$80,000	$0
2013	Terminal Building - Phase 1 Part A (Construction) *Security Checkpoint & Restroom Relocation*	$2,150,000	100%	0%	0%	0%	0%	$2,150,000	$0	$0	$0	$0
	Taxiway D and VOR Relocation (Design) *Includes FAA VOR study in 2012*	$1,000,000	5%	95%	0%	0%	0%	$50,000	$950,000	$0	$0	$0
	Airport Equipment-Sweeper	$350,000	100%	0%	0%	0%	0%	$350,000	$0	$0	$0	$0
	Terminal Building - Phase 1 Part B (Design) *Security Checkpoint Widening and Holdroom Expansion*	$630,000	100%	0%	0%	0%	0%	$630,000	$0	$0	$0	$0
	Annual Pavement Maintenance	$80,000	0%	0%	0%	100%	0%	$0	$0	$0	$80,000	$0
2014	Terminal Building - Phase 1 Part B1 (Const.) *Security Checkpoint Widening and Holdroom Expansion*	$4,800,000	100%	0%	0%	0%	0%	$4,800,000	$0	$0	$0	$0
	Taxiway D and VOR Relocation (Const.)	$10,528,000	6%	31%	63%	0%	0%	$550,000	$3,300,000	$6,678,000	$0	$0
	Annual Pavement Maintenance	$80,000	0%	0%	0%	100%	0%	$0	$0	$0	$80,000	$0
2015	Runway 12-30 MIRL Lighting Replacement	$1,780,000	95%	0%	0%	5%	0%	$1,700,000	$0	$0	$80,000	$0
	Annual Pavement Maintenance	$80,000	0%	0%	0%	100%	0%	$0	$0	$0	$80,000	$0
2016	East GA Apron Rehabilitation (2 of 3)	$2,000,000	0%	95%	0%	5%	0%	$0	$1,900,000	$0	$100,000	$0
	Annual Pavement Maintenance	$90,000	0%	0%	0%	100%	0%	$0	$0	$0	$90,000	$0
2017	Airport's GIS	$580,000	5%	95%	0%	0%	0%	$30,000	$550,000	$0	$0	$0
	Terminal Access Road Realignment	$1,240,000	5%	95%	0%	0%	0%	$60,000	$1,180,000	$0	$0	$0

Table 6-3: Capital Improvement Plan (2018-2025)

Year	Project	Estimated Cost	Funding Percentage					Funding Source				
			PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified	PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified
2018	Taxiway A Realignment	$4,690,000	10%	50%	40%	0%	0%	$470,000	$2,350,000	$1,870,000	$0	$0
	Annual Pavement Maintenance	$90,000	0%	0%	0%	100%	0%	$0	$0	$0	$90,000	$0
2019	Parking Lot Expansion *Long-Term (3 of 3), Short-Term (2 of 2)*	$1,640,000	0%	0%	0%	100%	0%	$0	$0	$0	$1,640,000	$0
	Annual Pavement Maintenance	$100,000	0%	0%	0%	100%	0%	$0	$0	$0	$100,000	$0
2020	Parking Lot Expansion *Rental Car Area (1 of 2), Rental Car/Employee (1 of 2))*	$1,420,000	0%	0%	0%	100%	0%	$0	$0	$0	$1,420,000	$0
	Master Plan Update	$800,000	5%	95%	0%	0%	0%	$40,000	$760,000	$0	$0	$0
	Airport Equipment-ARFF	$700,000	5%	95%	0%	0%	0%	$35,000	$665,000	$0	$0	$0
	Annual Pavement Maintenance	$100,000	0%	0%	0%	100%	0%	$0	$0	$0	$100,000	$0
2021	Terminal Building - Phase 1 Part B2 (Const.) *Holdroom Expansion*	$1,815,000	100%	0%	0%	0%	0%	$1,815,000	$0	$0	$0	$0
	Terminal Building- (Phase 2) Environmental *Ticketing, Baggage Handling, Bag Claim, and Restrooms*	$40,000	100%	0%	0%	0%	0%	$40,000	$0	$0	$0	$0
	Parking Lot Expansion *Rental Car Lot (2 of 2), Rental Car/Employee Lot (2 of 2)*	$1,450,000	0%	0%	0%	100%	0%	$0	$0	$0	$1,450,000	$0
	Annual Pavement Maintenance	$100,000	0%	0%	0%	100%	0%	$0	$0	$0	$100,000	$0
2022	Terminal Building- Phase 2 (1 of 3) *Terminal Access Road Realignment*	$1,240,000	10%	90%	0%	0%	0%	$124,000	$1,116,000	$0	$0	$0
	East GA Apron Expansion (1 of 5)	$1,240,000	0%	95%	0%	5%	0%	$0	$1,178,000	$0	$62,000	$0
	Annual Pavement Maintenance	$100,000	0%	0%	0%	100%	0%	$0	$0	$0	$100,000	$0
2023	Terminal Building- Phase 2 (2 of 3) *Ticketing, Baggage Handling, Bag Claim, and Restrooms*	$5,650,000	100%	0%	0%	0%	0%	$5,650,000	$0	$0	$0	$0
	East GA Apron Expansion (2 of 5)	$1,280,000	0%	95%	0%	5%	0%	$0	$1,216,000	$0	$64,000	$0
	Annual Pavement Maintenance	$110,000	0%	0%	0%	100%	0%	$0	$0	$0	$110,000	$0
2024	Terminal Building- Phase 2 (3 of 3) *Ticketing, Baggage Handling, Bag Claim, and Restrooms*	$5,840,000	100%	0%	0%	0%	0%	$5,840,000	$0	$0	$0	$0
	East GA Apron Expansion (3 of 5)	$1,320,000	0%	95%	0%	5%	0%	$0	$1,254,000	$0	$66,000	$0
	Annual Pavement Maintenance	$110,000	0%	0%	0%	100%	0%	$0	$0	$0	$110,000	$0
2025	Runway End 03L Approach Lighting and Marking (1 of 2)	$1,330,000	0%	95%	0%	5%	0%	$0	$1,264,000	$0	$66,000	$0
	Environmental Assessment-Runway End 12 and Taxiway Extension, and Runway End 30 Relocation	$400,000	5%	95%	0%	0%	0%	$20,000	$380,000	$0	$0	$0
	Terminal Building-Concourse Expansion (Long-term) (1 of 5)	$3,390,000	100%	0%	0%	0%	0%	$3,390,000	$0	$0	$0	$0
	East GA Apron Expansion (4 of 5)	$1,360,000	95%	0%	0%	5%	0%	$1,292,000	$0	$0	$68,000	$0
	Annual Pavement Maintenance	$110,000	0%	0%	0%	100%	0%	$0	$0	$0	$110,000	$0

Table 6-3: Capital Improvement Plan (2026-2032)												
			Funding Percentage					Funding Source				
Year	Project	Estimated Cost	PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified	PFC	AIP Entitlement	AIP Discretionary	Cash Reserves	Unidentified
2026	Runway End 03L Approach Lighting and Marking (2 of 2)	$1,370,000	0%	95%	0%	5%	0%	$0	$1,302,000	$0	$68,000	$0
	Runway End 30 Relocation, (1 of 2)	$2,280,000	5%	95%	0%	0%	0%	$114,000	$2,166,000	$0	$0	$0
	Taxiway A End-Around (1 of 2)	$890,000	5%	95%	0%	0%	0%	$45,000	$845,000	$0	$0	$0
	Terminal Building-Concourse Expansion (Long-term) (2 of 5)	$3,500,000	100%	0%	0%	0%	0%	$3,500,000	$0	$0	$0	$0
	East GA Apron Expansion (5 of 5)	$1,390,000	5%	95%	0%	0%	0%	$70,000	$1,320,000	$0	$0	$0
2027	Runway End 30 Relocation, (2 of 2)	$2,350,000	5%	95%	0%	0%	0%	$118,000	$2,232,000	$0	$0	$0
	Taxiway A End-Around, (2 of 2)	$920,000	5%	95%	0%	0%	0%	$46,000	$874,000	$0	$0	$0
	Terminal Apron Expansion, (1 of 3)	$8,490,000	50%	50%	0%	0%	0%	$4,245,000	$4,245,000	$0	$0	$0
	Terminal Building-Concourse Expansion (Long-term) (3 of 5)	$3,600,000	65%	0%	0%	0%	35%	$2,340,000	$0	$0	$0	$1,260,000
	Annual Pavement Maintenance	$120,000	0%	0%	0%	100%	0%	$0	$0	$0	$120,000	$0
2028	Runway End 12 and Taxiway Extension, (1 of 3)	$3,710,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$3,710,000
	Terminal Apron Expansion, (2 of 3)	$8,750,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$8,750,000
	Terminal Building-Concourse Expansion (Long-term) (4 of 5)	$3,710,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$3,710,000
	Master Plan Update	$1,000,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$1,000,000
	Annual Pavement Maintenance	$120,000	0%	0%	0%	100%	0%	$0	$0	$0	$120,000	$0
2029	Environmental Assessment-Runway End 21R and Taxiway Extension	$400,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$400,000
	Runway End 12 and Taxiway Extension, (2 of 3)	$3,820,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$3,820,000
	Terminal Apron Expansion, (3 of 3)	$9,010,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$9,010,000
	Terminal Building-Concourse Expansion (Long-term) (5 of 5)	$3,820,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$3,820,000
	Annual Pavement Maintenance	$130,000	0%	0%	0%	100%	0%	$0	$0	$0	$130,000	$0
2030	Runway End 21R and Taxiway Extension (1 of 3)	$2,550,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$2,550,000
	Runway End 12 and Taxiway Extension (3 of 3)	$3,930,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$3,930,000
	Annual Pavement Maintenance	$130,000	0%	0%	0%	100%	0%	$0	$0	$0	$130,000	$0
2031	Runway End 21R and Taxiway Extension (2 of 3)	$2,630,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$2,630,000
	New Taxiway G (1 of 2)	$2,050,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$2,050,000
	Annual Pavement Maintenance	$140,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$140,000
2032	Runway End 21R and Taxiway Extension, (3 of 3)	$2,710,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$2,710,000
	New Taxiway G (2 of 2)	$2,110,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$2,110,000
	Annual Pavement Maintenance	$140,000	0%	0%	0%	0%	100%	$0	$0	$0	$0	$140,000

4. Financial Implementation Analysis

The FIA explains how PSC will fund the CIP. Funding source risks and assumptions are identified, and financial reasonableness is assessed. The FIA uses baseline data from expected Airport cash flow, summarized in **Section 2**, and expected capital improvement funding sources, summarized in **Section 3**, to assess financial feasibility of airport improvement projects. The complete FIA is included in **Appendix H**.

The FIA estimates future Airport expense and revenue, using the same three percent rate of inflation as the CIP cost estimates. Airport revenue and expense are used with the preferred enplanement forecast for a given year to provide costs per enplaned passenger (CPEP), and revenues per enplaned passenger (RPEP). Compared to national averages for commercial service non-hub airports, PSC has lower CPEP and RPEP.

4.1 Costs per Enplaned Passenger

In 2011, PSC operating and maintenance expenses were $4.2 million, and the Airport had 322,860 passenger enplanements. The CPEP in 2011 was $12.90. According to FAA Operating and Financial Summary Report #127, the national average CPEP for commercial service non-hub airports in 2011 was $29.00.

Operating and maintenance expenses may increase for reasons including inflation, aviation activity growth, and facility expansion. CPEP is anticipated to grow to $14.58 in the Intermediate-term, and $16.15 in the Long-term; however, CPEP at PSC is expected to remain below 40 percent of the national average for commercial service non-hub airports. Low operating and maintenance costs contribute to financial stability.

4.2 Revenues per Enplaned Passenger

PSC operating revenues were $4.6 million in 2011, with a RPEP of $14.24. According to FAA Operating and Financial Summary Report #127, the national average RPEP for commercial service non-hub airports in 2011 was $32.98.

RPEP in the Intermediate-term is forecasted at $19.78, and RPEP for the Long-term is forecasted at $23.79. The national average for commercial service non-hub is $43.77 in the Intermediate-term, and $55.45 in the Long-term.

The cost-structure of PSC allows the Airport to provide services at a lower cost because the Airport is not spending as much on operating expenses as other commercial service non-hub airports. Comparison of operating cost and operating revenue indicates that in 2011, the Airport had a positive operating cash flow of $870,000. Positive operating cash flow indicates that the Airport is financially stable at its current level of expense and revenue.

The FIA forecasts continue positive operating cash flow in the Intermediate-term and Long-term.

4.3 Summary

The FIA allocates funding sources for the CIP and operating expenses through to 2032. Capital improvement projects in the Near- and Intermediate-term have potential funding sources identified; however, some Long-term capital improvement projects do not have funding sources identified.

The FIA includes assumptions and forecasts that impact project funding sources and project necessity. These assumptions and forecasts include availability of federal funds, and aviation activity levels. Deviation from assumptions and forecasts may require changes to the CIP and FIA. It is recommended that the Airport updated the CIP and FIA annually.

The FIA indicates that projects with AIP discretionary funding sources are not feasible until funding is confirmed. The competitive nature of discretionary funding may delay or advance these projects to a year other than specified. Uncertainty about the future of AIP entitlement funding is a risk identified in the FIA. The CIP anticipates AIP entitlement funding will be $2,400,000 in 2012, and grow at a rate of 0.5 percent per year. Deviation from this assumption will require reevaluation of the FIA, and correction of the CIP.

The CIP relies on continued scheduled commercial passenger airline activity at PSC to sustain PFC revenues. Passenger enplanements influence need and timing for terminal expansion, and automobile parking projects. It is recommended that the PFC revenues forecast be reviewed in future years to assess accuracy.

1. Introduction

The nature of airport operations extends an airport's area of influence beyond the property boundary. The Pasco Tri-Cities Airport (PSC) sits on 2,235 acres. Surrounding property includes residential, commercial, industrial, and agricultural land uses.

Land use compatibility planning near PSC provides safety for aircraft, and for people and property on the ground. Compatible land use around the Airport will enhance public perception, and help the Airport meets its goal of being a good neighbor to the surrounding community. This chapter provides a baseline of existing and planned development around PSC, and local, state, and national guidance pertaining to airport land use compatibility, and a plan to release parcels of airport property from aviation use.

1.1 Land Use Inventory

The land use inventory considers existing and planned land use within the Airport's area of influence (AOI). The AOI is defined by final approach segments and touch and go flight tracks provided by the airport traffic control tower (ATCT). Land in the AOI primarily falls under the jurisdiction of the City of Pasco, with land to the north and southwest falling under the jurisdiction of Franklin County. South of the Columbia River, AOI land is under the jurisdiction of the City of Kennewick, and Benton County. Planning and zoning documents of these governments are reviewed regarding airport land use compatibility. Existing and planned conditions are compared to state and federal land use compatibility guidelines in **Appendix F**.

Noise analysis is included in **Section 3**. Noise contours are used in determining existing and potential land use compatibility concerns. Flight tracks provided by the ATCT are used to develop the noise contours, and identify over-flight concerns.

A map of the AOI is included in **Exhibit 7-1**.

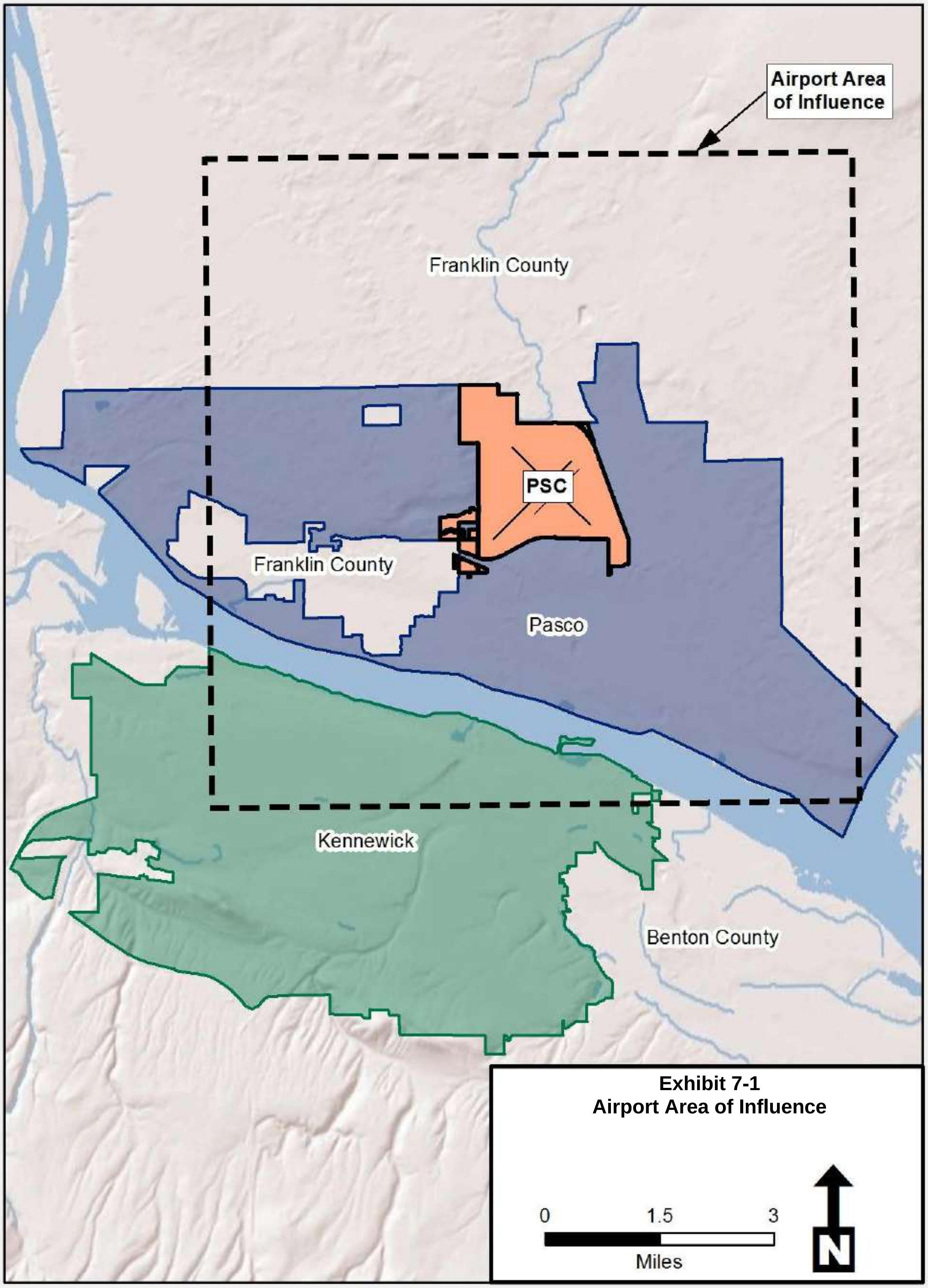


Exhibit 7-1
Airport Area of Influence

1.2 Guidance Documents

The following documents were reviewed during land use evaluation. These documents contain land use restrictions, and assist in identifying what constitutes incompatible land use.

- Airport Cooperative Research Program (ACRP) Report 27, *Enhancing Airport Land Use Compatibility*
- 2002 California Airport Land Use Planning Handbook
- City of Pasco Comprehensive Plan 2007-2027 (Pasco Plan)
- City of Kennewick Comprehensive Plan 2009: Horizons (Kennewick Plan)
- FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning*
- Franklin County Code—Title17—Zoning (Franklin County Zoning Code)
- Franklin County Growth Management Comprehensive Plan, adopted February 27, 2008 (Franklin County Plan)
- Kennewick City Code—Chapter 18.12—Zoning Districts and Standards (Kennewick Zoning Code)
- Kennewick City Code—Chapter 18.33—Airport Zoning (Kennewick Airport Zoning)
- Pasco Municipal Code—Title 25—Zoning (Pasco Zoning Code)
- Revised Code of Washington (RCW), Chapters 14.12, 35A.63, 36.70, 36.70A
- Washington State Department of Transportation Airports and Compatible Land Use Guidebook 2011 (WSDOT Guidebook)

2. Federal Regulation

The Federal Aviation Administration (FAA) is responsible for administering matters of national aviation. Per the Supremacy Clause, Article VI, Clause II, of the U.S. Constitution, federal law takes precedence over state and local regulations. Through the supremacy clause, state and local governments may not impose restrictions on development and operations at federally funded airports through zoning laws and operational restrictions. Federal law does not restrict zoning outside of airport property. Coordination between airport staff and local stakeholders promotes compatible development around airports.

The FAA provides regulation and guidance that pertain to height and compatible land use surrounding airports. The FAA provides guidance regarding airport noise emissions, and noise impacts on surrounding land use. Aircraft noise can be a nuisance to noise sensitive land uses surrounding an airport. Noise sensitive land uses can include residences, hotels, schools, churches, and office complexes. Noise can be a detrimental factor in the relationship between an airport and the surrounding community. Proper land use planning and protection lead to minimization of airport noise impacts.

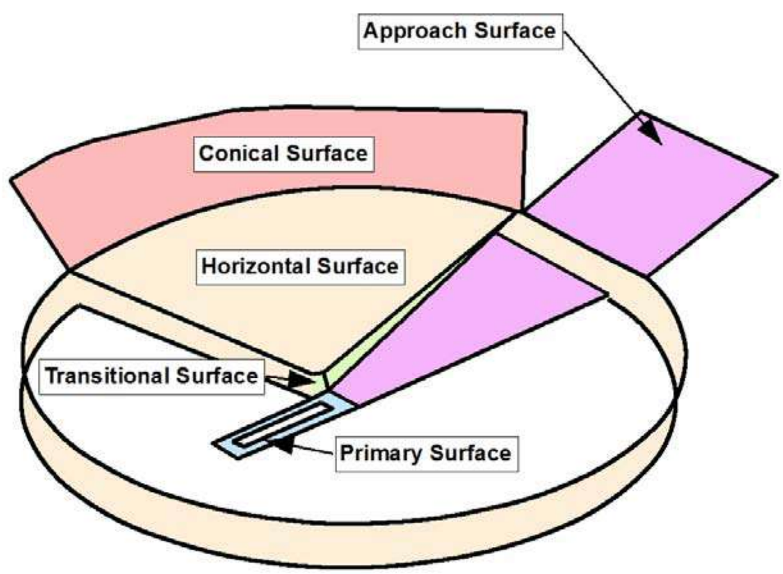
2.1 Grant Assurances

Federal grant assurances are required as part of federal funds requested by an airport sponsor. Upon acceptance of grant money, these assurances are incorporated into the grant agreement. The airport sponsor is obligated to comply with grant assurances, which include the maintenance of compatible land use within the vicinity of the airport.

Grant Assurance 21 (GA21) requires airports that accept federal money to take appropriate action against incompatible land uses in the vicinity of the airport. This includes keeping approach and departure paths, and the surfaces contained in Federal Aviation Regulation (FAR) Part 77 clear of obstructions to air navigation. Such action includes adopting zoning that will increase airport land use compatibility. GA21 obligates an airport sponsor to protect the federal investment through the maintenance of a safe operating environment. The challenge associated with GA21 is that land uses near the airport are often outside the control of the airport sponsor. The responsibility falls to local governments to regulate the land uses near airports.

2.2 FAR Part 77

Airport sponsors benefit from working with local governments to protect airports. FAR Part 77 identifies imaginary surfaces to be protected for air navigation, and to be kept free of obstructions. Failure to keep FAR Part 77 surfaces free of obstructions can be a violation of an airport's grant assurances. FAR Part 77 surfaces are the basis of airport overlay zones in Franklin County and the City of Pasco. Typical FAR Part 77 surfaces are shown in **Exhibit 7-2.**



Source: FAA

Exhibit 7-2
FAR Part 77 Surfaces

2.3 Noise

To evaluate noise impacts, the FAA, the Environmental Protection Agency (EPA), and the Department of Housing and Urban Development (HUD) have established the 65 decibel day-night average sound level (65 DNL) as a threshold for determination of significant noise impacts to noise sensitive land uses. Noise sensitive land uses experiencing aircraft noise levels at or above 65 DNL are considered to have significant noise impacts. The FAA's Integrated Noise Model (INM) is the accepted industry tool for evaluating aircraft noise impacts. The INM assists in analyzing changes in noise impacts resulting from: new and extended runways, and runway configurations; assessing new traffic demand, aircraft fleet mixes; and, evaluating modifications to operational procedures.

The INM procedure and results are included in **Section 3**.

3. Noise Analysis

This section compares noise exposure levels for 2008 with projected noise exposure levels for 2028. Noise exposure levels are determined for annual averages, and presented as contours. Runway improvements identified in **Chapter 5** are included in the 2028 noise analysis.

3.1 Methodology

The INM requires information concerning the number of aircraft operations, the types of aircraft (fleet mix), the time (day or night), runway utilization, and the typical flight tracks. Coordination with airport staff and the FAA, and evaluation of the aviation demand forecasts, presented in **Chapter 3**, provided the necessary information to model noise exposure levels at PSC. Data input into INM are included in **Appendix E**. The INM and this analysis include no noise monitoring, and no observations.

3.1.1 Aircraft Fleet Mix

PSC has a diverse fleet mix. Aircraft range from small, single-engine general aviation aircraft such as the Cessna 172 to regional and narrow-body commercial service aircraft like the Bombardier CRJ700 and the Boeing MD-80. The airport accommodates corporate jet aircraft, military aircraft, and helicopters. PSC's fleet mix was provided by airport staff.

3.1.2 Airport Operations

The frequency of aircraft operations are based on the FAA-approved aviation activity forecasts, presented in **Chapter 3**. Aircraft operations are categorized as approach, departure, and touch and go. ATCT staff estimate that 27 percent of operations are touch and go. Remaining operations are divided into arrivals and departures. High altitude enroute over-flights and aircraft operating near but not at PSC are not included in this analysis.

3.1.3 Daytime-Nighttime Operations

The INM assigns "penalties" to nighttime operations, occurring between 10:00 p.m. and 7:00 a.m., because aircraft noise is perceived to be louder at night when ambient sound levels are lower. The proportions of daytime and nighttime activity for commercial operations are based on 2008 published flight schedules. ATCT staff estimate that 95 percent of remaining operations occur during the daytime, and five percent during the nighttime.

3.1.4 Runway Utilization

Runway utilization includes the number, location, and orientation of the runways, as well as the directions and types of operations that occur on each runway. Runway utilization depends on wind direction and speed, air traffic control procedures, separation standards, aircraft origin and destination (in the air and on the ground), taxiing distances, and runway lengths. Runway utilization is shown in **Table 7-1**.

Table 7-1: Runway Utilization

Runway End	Percent of Annual Operations
03L	1%
21R	25%
03R	1%
21L	15%
12	15%
30	43%

Source: ATCT Staff

3.1.5 Flight Tracks

Flight tracks represent the path over the ground followed by aircraft. Instead of using tracks created by individual aircraft, the FAA suggests that tracks be consolidated to represent corridors consisting of estimated average flight tracks. Flight tracks were developed based on discussion with ATCT staff.

3.2 Noise Contours

Noise analysis generates the required 65 DNL contour. Noise contours for 2008 and 2028 are shown in **Exhibit 7-3**.

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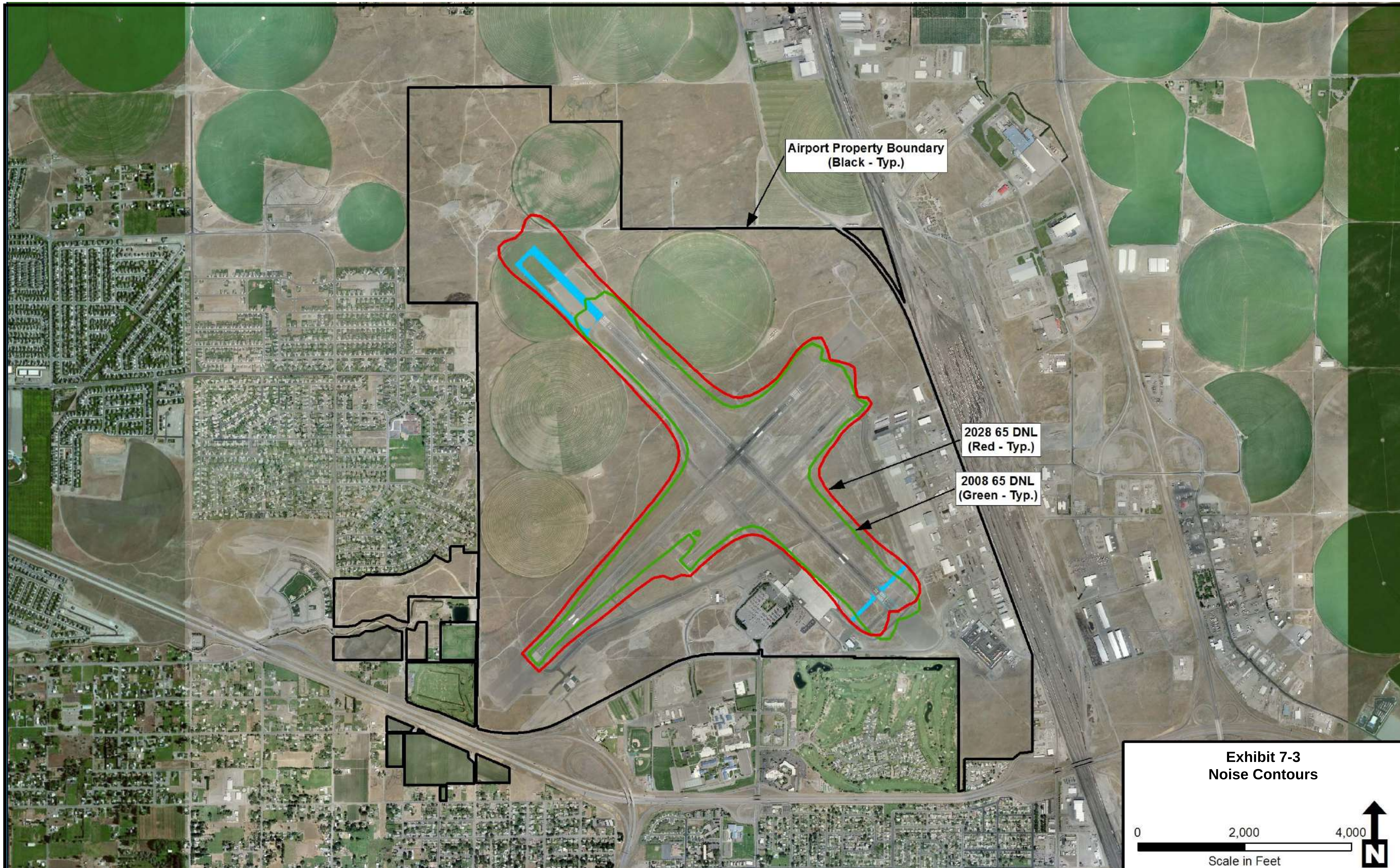

Airport Property Boundary
(Black - Typ.)
2028 65 DNL
(Red - Typ.)
2008 65 DNL
(Green - Typ.)
Exhibit 7-3
Noise Contours
0
2,000
4,000
Scale in Feet
N

3.3 Noise Summary

Noise sensitive land uses near the Airport include single-family residential to the south and west. The INM shows the 65 DNL contour to be contained within airport property for 2008 and 2028 operations. No significant noise impacts associated with planned airport improvements and future activity levels are expected.

Aircraft over-flight is another method of evaluating land use compatibility. Over-flight is the act of an aircraft flying above a particular land use or observer. Aircraft operations from the six runway ends at PSC have been evaluated for potential over-flight impacts using zoning and comprehensive plan information provided by the jurisdiction where the property is located. *High* impacts pass directly above noise sensitive land uses, *medium* impacts pass near but not directly above noise sensitive land uses, and *low* impacts do not pass above or near noise sensitive land uses. Potential over-flight noise impacts are presented in **Table 7-2**.

Table 7-2: Potential Over-flight Noise Impacts

Runway	2008 Operations[1]	Approach[2]	Departure[2]
03R	1%	High	Low
21L	15%	Low	Medium
03L	1%	High	Low
21R	25%	Low	High
12	15%	Medium	Low
30	43%	Low	Medium

Source:
1:ATCT Staff Counts
2: Mead & Hunt

High impacts on approach to Runway Ends 03R and 03L, and on departure from Runway End 21R, are due to the residential neighborhood southwest of the Airport. Potentially noise sensitive single-family homes are located beneath the flight tracks associated with these operations. Approaches to Runway Ends 03R and 03L represent one percent of annual aircraft operations, and departures from Runway End 21R represent 12.5 percent of annual aircraft operations. Runway End 21L is considered a medium impact because the runway end if farther away from the noise sensitive land uses. Departures from Runway End 21L represent 7.5 percent of annual aircraft operations.

Medium impacts associated with approaches to Runway End 12 and departures from Runway End 30 are due to planned single-family residential development to the northwest of the Airport. It is possible that noise impacts may be increased if Runway End 12 is extended as shown in **Chapter 5**. Potential impacts are discussed in **Section 5**.

Low impacts are associated with flight tracks passing over the railroad and industrial properties to the east of the Airport. Railroad and industrial properties are not normally considered noise sensitive land uses, and are expected to be compatible with aircraft noise.

4. State Regulation and Guidance

Revised Code of Washington (RCW) requires comprehensive plans of cities, and counties to incorporate strategies that discourage siting incompatible land uses around public use airports. Washington laws pertaining to airports, airspace, and land use compatibility include the following.

- RCW 14.12, *Airport Zoning Act,* allows local jurisdictions to incorporate controls that protect airspace surrounding airports from buildings and structures that may be hazardous to aviation activity, and provides guidance on how to manage these hazards.
- RCW 35A.63, *Planning and Zoning in Code Cities,* requires municipalities to establish a comprehensive plan that includes a land use element.
- RCW 36.70, *Planning Enabling Act*, requires counties to establish a comprehensive plan that includes a land use element.
- RCW 36.70A, *Growth Management Act*, expands on RCW 36.70 by requiring additional elements in comprehensive plans including a transportation element. RCW 36.70A requires public participation during the development of comprehensive plans, and address the siting of "essential public facilities." Essential public facilities, as defined by RCW 36.70A.020(12) must be protected such that cities, and counties "ensure that those public facilities and services necessary to support development shall be adequate to serve the development at the time the development is available for occupancy and use without decreasing current service levels below locally established minimum standards."

The WSDOT Guidebook is a tool for governments to promote compatible land use around airports. The intention of the WSDOT Guidebook is to promote compatible land uses that will be beneficial to airport and aircraft operations, and protect the health, safety, and welfare of people living and working near airports. The WSDOT Guidebook draws elements from the 2002 California Airport Land Use Planning Handbook.

5. Property Release and Acquisition

The Aviation Activity Forecasts, Facility Requirements, and Improvement Alternatives chapters identify property necessary to support airport operations and development, and property owned by the Airport that is not needed for aviation-related purposes. Property suitable for a land release is described, and the FAA land release process is outlined. Property that could be acquired to support future development is also described.

5.1 Land Release

The proposed land release includes five Airport-owned parcels west of Road 36, near Runway End 03L. This section identifies federal, state, and local regulations that pertain to the parcels. The Airport intends to release these parcels from aviation use, and to work with the FAA and the City of Pasco to promote development of aviation compatible land uses.

5.1.1 Federal Aviation Administration

The parcels were purchased by the Port of Pasco without federal funds; however, the parcels are depicted as "Airport Property" on the Exhibit "A" Property Line Map of the Airport Layout Plan approved by the FAA. Inclusion in the Exhibit "A" imposes on the parcels the same obligations as on other airport property. Since acquiring the parcels, the Airport has accepted FAA grants. Because the PSC has accepted FAA grants, the Airport is obligated to maintain airport property, including the parcels, for aviation use.

For the parcels to be used for purposes other than aviation, the Airport will need to request the FAA to release the parcels from airport property. The support of this release is being documented as part of the Airport Master Plan Update (Plan). The Plan identifies this parcel as being not necessary for expected airport improvement projects. The Plan supports the release of this parcel from aviation use.

As a result of a recent decision at the Afton, Wyoming airport, the FAA has been directed to be diligent in the expectation of sponsors to retain all lands identified within Exhibit "A", regardless of properties being purchased with federal funds; to maintain grant assurances to those properties; and, to control land use surrounding the airport.

The parcels are outside of the FAA 65 day-night level (DNL) contour for 2028 forecasted noise levels. 38 acres of the parcels are inside of the 55 DNL contour. Federal and state laws do not recognize the 55 DNL contour as a significant noise impact, but it is used as a planning tool. Land inside the 55 DNL may not be suitable for housing, schools, hospitals, places of worship, and other noise sensitive land uses.

5.1.2 City of Pasco Zoning

The parcels are zoned as a Residential Transition District (R-T). Chapter 25.20 of the Pasco Zoning Code states that an "R-T district is intended to be applied or assigned to areas that are essentially undeveloped, however, ultimately intended for suburban or urban residential use." Permitted uses include "single-family dwellings" and "new factory assembled homes" at a minimum density of one dwelling unit per five acres. Conditional uses include "agricultural uses (commercial)," and "outdoor recreational activities".

Development of the parcels for other land uses will require rezoning, per Pasco Zoning Code Chapter 25.88**.** Rezoning is subject to the approval of the City of Pasco Planning Commission. The Airport must demonstrate that local conditions warrant a rezone, and that such a rezone will advance public health, safety, and general welfare. If the requested zone conflicts with the City of Pasco Comprehensive Plan, Pasco Zoning Code 25.88.050 states that "said amendment or change shall not be entertained until and if the comprehensive plan is amended".

5.1.3 City of Pasco Comprehensive Plan

The City of Pasco Comprehensive Plan (2007-2027) depicts the parcels as "Parks/Open Space", and as "Airport Reserve". Open Space is described as "land where development is severely restricted […]". Airport Reserve is "land owned and reserved by the Port of Pasco to preclude development not compatible with Airport operations". The City of Pasco Comprehensive Plan states that "as Airport needs change and future plans are developed not all of the airport reserve lands may be needed to protect airport operations".

Pasco Zoning Code Chapter 25.92.020 defines the process for amending the City of Pasco Comprehensive Plan. A motion to amend may be filed by individuals, corporations, City Council, and the Planning Commission. Plan amendments are granted once a year, except in emergencies.

5.1.4 Proposed Action

The parcels were purchased by the Airport to protect for the potential extension of Runway End 03L, and to protect for a potential new runway parallel to and north of Runway 03L-21R. The Airport Master Plan Update does not show a need for such improvements. Protecting the parcels for runway improvement and for aviation use is no longer necessary. It is expected that the parcels can be put to a higher and better use. Released land will not be used for residential development.

The Airport is in discussion with the FAA regarding land use planning in the parcels considered for release or sale.

There is no intention to use the released land for residential development.

The following actions are recommended to support the release of the parcels.

Internal

- Develop a strategy for presenting the land release to the FAA, considering both unencumbered sale of the Parcel, and partial release with conditions on different portions of the parcels.
- Create a land use development plan, showing the Airport's preferred land use on the parcels. FAA guidance, and local zoning and planning documents will be used to determine land use.

External

- Coordinate with the FAA for the agency's perspective and guidance regarding the release.
- Refer to the 2012 Airport Master Plan to show no aviation need for the parcel for the next 50 years.
- Coordinate with the City of Pasco to initiate amendment to the City of Pasco Comprehensive Plan land use designation, to be completed prior to filing for re-zoning with the City.
- Proceed with steps involving appraisal, survey, and site review.
- Formally request release of the parcels to the FAA.
- Following, initiate re-use and development of the parcels.

The parcels proposed for release are presented in **Exhibit 7-4**.

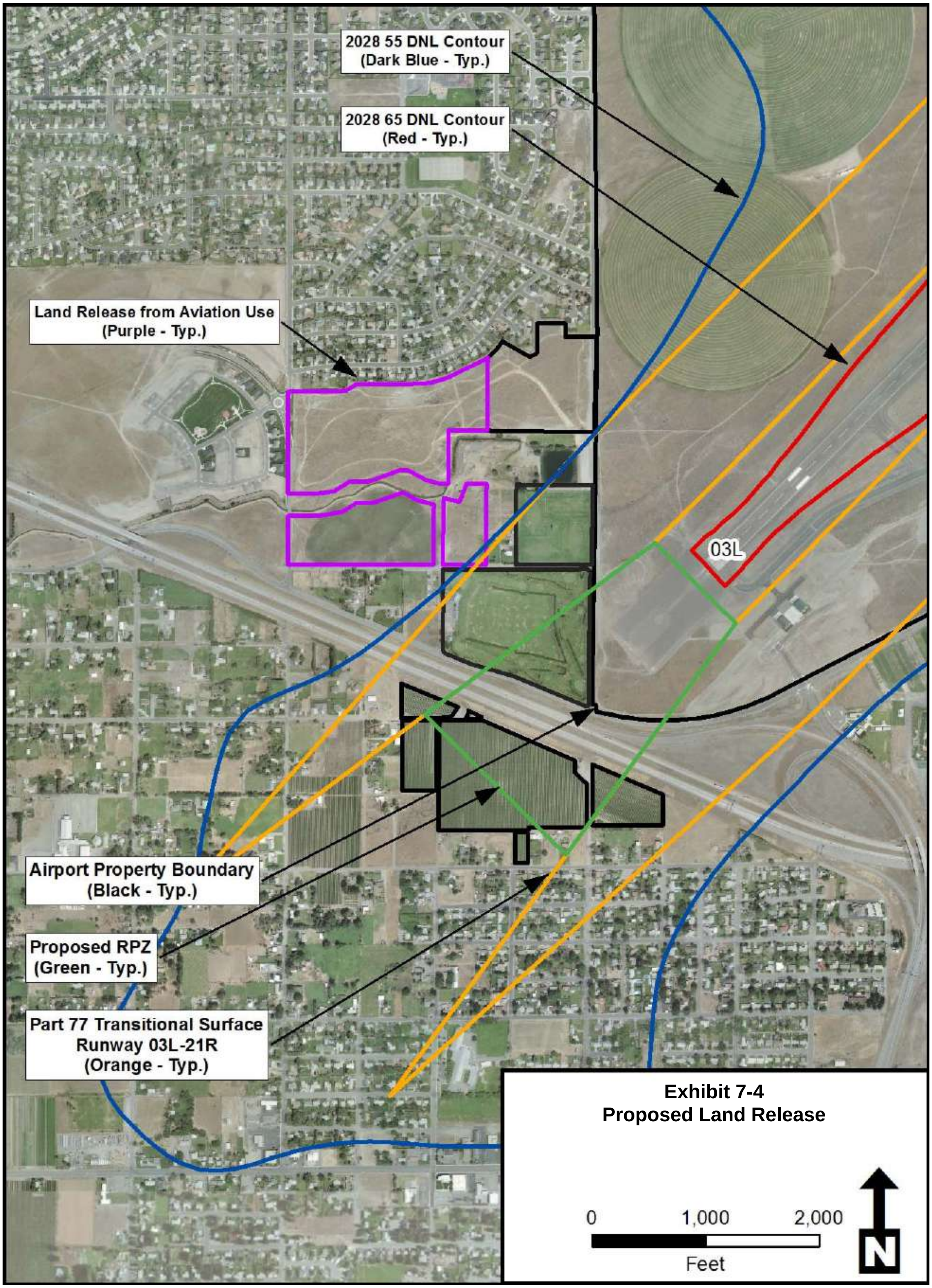


Exhibit 7-4
Proposed Land Release

5.2 Land Acquisition

Review of possible land use impacts off the end of the future Runway 12 extension finds an existing planned residential development within the footprint of the future AC 150/5300-13 threshold siting surfaces, and the FAR Part 77 approach surface. There is a substantial terrain rise approximately 1200 to 3000 feet off existing Runway End 12. Upwards of 50 to 75 feet of terrain will impact the future Part 77 approach surface, and AC 150/5300-13 threshold siting surfaces. Technical exhibits of the potential impacts of development in this area are included in **Appendix F**.

It is recommended that the Airport address potential impacts caused by the proposed development. These efforts may include a combination of working with the City of Pasco and Franklin County planning department to control the land use, and partial acquisition of the property where possible.

7. Summary

The following is a summary of the land use chapter.

- Franklin County and the City of Pasco have airport zoning overlays to protect FAR Part 77 surfaces.
- Existing and future 65 DNL noise contours are expected to remain on airport property.
- Existing noise sensitive land uses exist beyond Runway Ends 03R and 03L.
- Approaches into Runway Ends 03R and 03L contribute one percent of annual aircraft operations.
- Departures from Runway Ends 21R and 21L contribute 20 percent of annual aircraft operations.
- Proposed development north of Runway End 12 may be incompatible with aircraft operations.
- Land use east of the Airport is expected to be compatible with aircraft operations.
- The Airport is seeking to release some property west of Runway End 03L that is no longer necessary for aviation use.
- It is recommended that the Airport acquire property north of Runway End 12 to protect for a future runway extension.

Appendix A

Terminal Building Inventory
Prepared by Mead & Hunt, Inc.
July 2009

1.0 Introduction

This Appendix reports on a July 28, 2009 architectural survey of the Tri-Cities Airport terminal building. This Appendix supplements the terminal building information contained in Chapter 1. Pictures begin on page A-5. This inventory did not evaluate the building for compliance with fire and other applicable code.

1.1 Terminal Building Description

The terminal building offers passenger services from arrival to departure, with services ranging from airline ticketing and rental cars to restaurant and gift shops. Automobile parking and ground transportation are available near the terminal building.

2.0 Vicinity Description

2.1 Landside

The building is approached by a bituminous entry drive, bordered on the left by mounded lawn green space with mature understory deciduous trees, which provide moderate shade cover. Parking is provided on three areas adjacent to the terminal, separated by the entry drive and access roads. Parking areas, generally in good condition, are paved with bituminous material, bordered by concrete curb and gutter and periodic concrete sidewalks, providing pedestrian and ambulatory access. Medium height pole-mounted cut-off lighting provides what appears to be consistent light coverage. Wayfinding signage is throughout in a color and font pattern to complement the building.

2.2 Airside

The airside apron underwent rehabilitation from 2007 to 2009. The new material is concrete, to match the existing material, with surfaces in generally good condition. As typical with airport terminal buildings, the airside area is devoid of vegetation. Pole mounted apron lighting is provided throughout. Air service ground-mounted equipment is located on elevated concrete pads, surrounded by reinforced concrete bollards. Building-related mechanical systems (cooling tower, transformer, and generator) are within a screened enclosure, clad in a material matching the terminal building. The mechanically-fastened cladding facing the equipment has experienced cracking, with large open holes. Galvanized metal chain link with three strand barbed wire faces the secured areas, with periodic rolling access gates.

3.0 Exterior

The terminal building proper is clad with a flush panelized composite panel system in an organized and geometric gridded pattern. The panels have been applied to the entire terminal building, including the original building. The panels are mounted to a steel stud wall with batt insulation infill. The panel joints return into a series of dry extrusions to allow for a closed uniform joint width following a consistent vertical drainage path. The panels directly intersect with the horizontal surfaces and grade. The panels are a light tan color, and are generally in good condition. The panels are capped with a silver colored sheet metal coping system that is flush with the wall panels, and terminated with a hemmed drip edge. Composite paneled parapets, many of which are cracked, complete the vertical envelope.

The building exterior is populated with flush metal blue painted doors and louvers. Wall pack lights are mounted to provide general illumination. Security cameras are wall-mounted.

The basic structural system of the 1986 addition is a steel frame building with metal deck over steel bar joists for the roof framing. The structure of the 1966 building appears to be largely of an inverted concrete roof system supported by concrete columns. Exterior walls and other high abuse areas in the baggage/mechanical areas are concrete masonry units behind exterior cladding. Based on the minimal visible areas of the structural system, it appears to be in sound condition. Further exploration of existing systems will indicate their condition.

Both the original 1966 building and 1986 addition employed a basement of poured-in-place concrete and concrete masonry walls to house mechanical and electrical systems. The interior walls appear to be in good structural condition and free of obvious moisture intrusion.

Building window arrangement is provided within the gridded pattern throughout the elevations. Clear anodized aluminum storefront systems are used with blue colored infill panels at grade conditions. Insulated, solar reflective glazing is provided within the storefront system, observed to be in average condition.

The roof envelope is waterproofed by a built-up bituminous layer system (over rigid insulation), with a silver metallic reflective coating. The roof was undergoing extensive patching and recoating during this inventory. The roof insulation removed was very aged and beyond its effective life. The original inverted roof is a series of inward sloped areas leading to roof drains. The building addition roof areas are more uniformly sloped leading to roof drains. A central pyramidal skylight system of insulated translucent material in an aluminum frame provides modulated interior day-lighting. The skylight system is curb-mounted and appears to be in good condition. A similar single-slope skylight system is provided at the building's front. Roof mounted equipment and roof penetrations are observed throughout the roof plane. In addition, gas, sprinkler, and other piping run parallel to roof areas.

On the landside, an entrance canopy runs the building length, the majority of which is hip-roofed with a blue standing seam metal panel system. A skylight system similar to that on the roof covers the center and right side of the canopy element. The canopy provides weather and sun protection, and is supported by round concrete columns with steel roof framing over exposed linear metal panels/decking.

On the airside, metal framed weather and shade canopies with stretched blue fabric provide protection from the elements. The canopies are three sided, open to the air on one side.

4.0 Interior – Non-Sterile

The non-sterile area refers to areas accessible without passing through a security checkpoint.

4.1 Entrance Lobby

The main public area upon entering the terminal is a two-story space centered on a stairway leading to administrative and tenant offices and support on the second level. The floor finishes in this area are terrazzo, and with the exception of a long expansion crack at the front, the flooring is in good condition. The crack appears to be located approximately at the intersection of the original building and subsequent addition. Stainless steel column covers enclose the structural system. The walls appear to be clad primarily in vinyl wall covering and/or painted gypsum wallboard, the condition of which is average. Periodic stainless steel corner guards offer protection. The second floor office entrances are aluminum and clear glass storefront system, some having curtains for privacy and light reduction. Metal and glass railings line the stairs and upper floor edge.

A restaurant, gift shop, and vending are located on each side of the main area. The entrances are primarily glass. The interior conditions of the restaurant and gift shop are above average.

4.2 Ticketing

The ticketing area has carpet floors, vinyl wall covering, painted gypsum walls, and an acoustic suspended ceiling. Each of these interior finishes is in average and serviceable condition. Painted hollow metal doors and stainless steel column covers are also present. The Transportation Security Administration (TSA) has located baggage screening devices behind the ticket counters. The ticket counters are laminate clad, in average condition. The presence of flight information display monitors, ticketing devices, and security equipment produces warm temperatures. The afternoon sun penetrating the glass also produces warm temperatures near the storefront windows and doors.

4.3 Rental Cars and Baggage Claim

The rental car area is occupied by five companies and is similar in finish to the ticketing area. Painted pipe rail handrails provide protection along the wall surfaces opposite the rental counters. The baggage claim area has a pair of flat plate baggage conveyors. The ceiling is a suspended acoustic tile with linear metal panels directly over the conveyor devices. Stainless steel kick-plates are mounted on the doors to provide protection in this high abuse area.

4.4 Restrooms

Restrooms are located on both levels of the non-sterile area and in the passenger hold room beyond security. This description includes all restrooms. A sheet product was installed on the floors, and is in disrepair in the lower level men's restroom prior to the TSA checkpoint. Other restrooms have ceramic tile. Overall, the floor condition is average and serviceable. The walls are predominately ceramic tile and in good condition. The ceilings are painted gypsum board. The sink counters are a composite/solid surface material with an integral bowl. Toilet partitions are a solid surface material and in acceptable condition. The plumbing fixtures are a mixture of manual and motion/sensor activated.

5.0 Interior – Sterile

Sterile areas are accessible only by passing a security checkpoint, and certain areas are accessible only to authorized airport personnel.

5.1 Security Checkpoint

This area has terrazzo floors, with a linear metal ceiling. TSA equipment, tables, and partitions fill this space beyond capacity. As found in the ticketing area, the equipment produces warm temperatures.

5.2 Secured Passenger Hold Areas

There are five aircraft boarding gates beyond the TSA checkpoint. The passenger hold areas for the gates are populated with gate beam seating, arranged back to back except along the walls. The floors are carpeted and the walls are vinyl wall covering/painted gypsum wallboard. The ceilings are a mixture of suspended acoustic ceiling grid and linear metal with gypsum soffits and fascias. The general condition of these areas is good.

5.3 Tenant Areas

These include airline offices and operations areas. The finishes are a combination of the finishes for the passenger hold areas. The general condition of the airline ticket offices is poor. Open spaces are cluttered with debris, furniture, and equipment.

5.4 In-Bound / Out-Bound Baggage

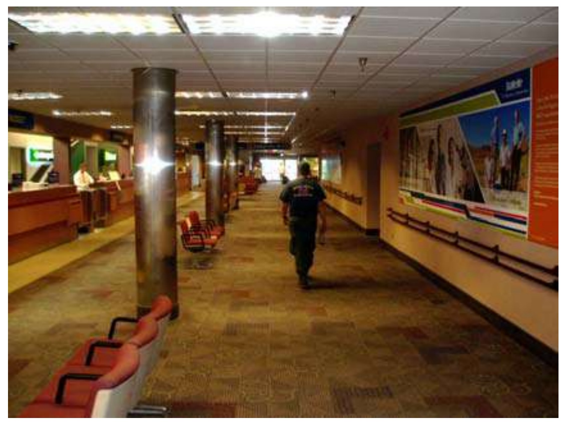
This area appears to be well used, but in serviceable condition. Wall protection is provided for related equipment. Insulated metal overhead doors appear operational. The interior fire shutters and baggage conveyors were not observed.

5.5 Mechanical, Electrical and Plumbing Systems

An in-depth engineering analysis of the entire HVAC/Electrical/Plumbing systems was not performed. The mechanical systems were observed to be a mixture of electrical and gas-fired units, appearing to be at or beyond their effective service. The terminal building has full sprinkler coverage.

Electrical lighting is primarily a mixture of fluorescent lamps. Exterior lighting operations were not observed. Electrical panels were observed to be in various conditions. Data panels throughout were open and disassembled. It is understood that a building access control system repair is underway.

6.0 Photographs







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A.O.Smith

Appendix B

Environmental Regulation
Prepared by Mead & Hunt, Inc.
November 2009

1.0 Introduction

This Appendix describes environmental regulation associated with activities at PSC relating to Hazardous Material, Pollution Prevention, and Solid Waste.

2.0 Definitions

For the purpose of this Appendix, the following definitions apply.

Significant Materials include, but are not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA); any chemical the facility is required to report pursuant to the Superfund Amendments and Reauthorization Act (SARA); fertilizers; pesticides; and waste products such as ashes, slag, and sludge that have the potential to be released with stormwater discharges.

Industrial Activities are classified as equipment maintenance, including: rehabilitation, mechanical repairs, painting, fueling, or lubrication; equipment cleaning operations; aircraft deicing, and pavement deicing. Areas not associated with industrial activities include: employee parking; access roads and rail lines; passenger loading, unloading, and holding areas; and administrative buildings.

3.0 Regulation

State and federal regulations associated with the storage and use of significant materials are described below.

Federal Oil Program

The Federal Oil Program was established by the Environmental Protection Agency (EPA) to prevent, prepare for, and respond to oil spills that occur in and around inland waters of the United States. Under 40 Code of Federal Regulations (CFR) 112 *Spill Prevention, Control, and Countermeasure* (SPCC), the EPA regulates owners and operators of non-transportation related facilities with a total above ground oil storage capacity of greater than 1,320 gallons or underground oil storage capacity of greater than 42,000 gallons, and are located such that they could reasonably be expected to discharge oil to a navigable waterway. Facilities subject to the SPCC rule must prepare and implement SPCC plans detailing the facility's oil storage (greater than 55 gallons) spill prevention and control measures and response procedures.

State Spills Program

The Washington Department of Ecology (DOE) Spills Program focuses on the prevention of oil spills to Washington waters and land. Under 173-180-610 Washington Administrative Code (WAC) plan preparation, "spill prevention countermeasure and control plans, operation manuals, and other prevention documents which meet federal requirements under 33 CFR 154, 33 CFR 156, 40 CFR 109, 40 CFR 112, or the Federal Oil Pollution Act may be submitted to satisfy plan requirements under this chapter if ecology deems that such federal requirements equal or exceed those of ecology, or if the plans are modified or appended to satisfy plan requirements under this chapter". Therefore, a facility that prepares and implements an SPCC plan may submit that plan to the DOE.

State Storage Tanks Program

Aboveground Storage Tanks (ASTs) in Washington are required to be inspected and maintained in accordance with America Petroleum Institute (API) Standard 653, and are subject to the Internal Fire Code, which is part of the Washington Uniform Building Code, administered by the local fire district. There are no underground storage tanks at PSC.

State Water Quality Program

State of Washington DOE Water Quality Program focuses prevention of water pollution within the state. Point sources of pollution are regulated under the National Pollutant Discharge Elimination System (NPDES) Permit. The DOE provides permit coverage under the Industrial Stormwater General Permit (General Permit) for transportation facilities classified under Standard Industrial Classification (SIC) 4500, *Transportation by Air*, which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations.

Industrial facilities that discharge stormwater to the ground, and have no point source discharge to surface water or a municipal storm sewer, do not require coverage under the General Permit, unless determined to be a significant contributor of pollutants to ground water. Industrial facilities that discharge wastewater to a Publicly Owned Treatment Works or to ground are subject to the DOE's Waste Discharge Permit, 173-216 WAC. Discharge to ground includes infiltration basins, dry wells, drain fields, and grassy swales. Industrial facilities that discharge to a drywell, drainfield, or infiltration system that uses perforated pipe to discharge to the subsurface must comply with the Underground Injection Control Program, 173-218 WAC.

4.0 Activities

Drainage

Airport drainage is collected on-site in swales, drywells, and networks, and stormwater is not discharged off-site. Runoff from the commercial portion of the terminal apron is collected in trench drains and discharged to oil-water separators, which discharge into percolation trenches located on the northeast side of Taxiway D. Runoff from the transient portion of the terminal apron is collected in storm sewer and discharged to an infiltration basin located southwest of the apron, between the airport traffic control tower (ATCT) and the airport rescue and fire fighting (ARFF) facility. Runoff from the terminal building and automobile parking area is collected in storm sewer and discharged to an infiltration basin between the short-term and long-term parking lots. Aircraft washing occurs on the GA apron which discharges to an infiltration basin. Runoff from pavement surfaces drain to infiltration devices, where runoff enters the ground and percolates to groundwater.

In November 2005, the DOE determined that PSC is exempt from permitting under the General Permit, as the Airport drains to the ground and PSC has not been deemed a significant contributor of pollutants to groundwater.

Fueling

Bergstrom Aviation and Tri-Cities Aviation each have oil storage capacity which requires compliance with the Federal Oil Program. The two fixed-base operators (FBOs) each maintain their own SPCC Plans, and have registered their ASTs with the state. Both FBOs have mobile refueling vehicles to provide service around the Airport.

PSC stores maintenance equipment and conducts vehicle maintenance within the Airport Maintenance Building. PSC does not store oil products over the 55 gallon amount for qualifying facilities, and is therefore not required to and does not hold a SPCC Plan.

Deicing

Aircraft deicing occur primarily on the deicing pad, located on the terminal apron ramp. This effluent is collected in an adjacent facility and tank, where it is either transported or discharged to the City of Pasco's sanitary sewer system. Aircraft deicing also occurs at Bergstrom Aviation, on the general aviation (GA) apron. This effluent discharges to the City of Pasco's sanitary sewer system, and is permitted under the DOE's Waste Discharge Permit program. Pavement deicing agents are used on walkways, and deicing agents stored indoors. Pavement deicers are not used on airfield pavements.

In September 2009, the EPA published proposed rulemaking *Effluent Limitation Guidelines and New Source Performance Standards for the Airport Deicing Category*. The rule's intent is stronger regulation of commercial service airports utilizing sprayed deicing fluids and urea-based airfield pavement deicers. The rule applies to primary commercial service airports that conduct deicing operations and have more than 1,000 annual scheduled commercial jet operations, which includes PSC. The rule separates airports into classes.

1. Airports with less than 10,000 annual departures must:
   - certify use of non-urea based pavement deicers or meet a daily ammonia effluent limit of 14.7 mg per liter (mg/l).
2. Airports with 10,000 or more annual departures which use less than 460,000 gallons of aircraft deicing fluid (ADF) annually must:
   - collect 20 percent of available ADF;
   - treat wastewater to meet a daily effluent limit of 271 mg/l and a weekly average of 154 mg/l, and;
   - certify use of non-urea based pavement deicers or meet a daily ammonia effluent limit of 14.7 mg/l.
3. Airports with 10,000 or more annual departures which use 460,000 or more gallons of ADF annually must:
   - collect 60 percent of available ADF;
   - treat wastewater to meet a daily effluent limit of 271 mg/l and a weekly average of 154 mg/l, and;
   - certify use of non-urea-based pavement deicers or meet a daily ammonia effluent limit of 14.7 mg/l.

PSC meets the first class, based on the current and expected number of commercial jet operations. PSC uses an average of 6,000 to 9,000 gallons of aircraft deicing fluid per year. As PSC activity increases, the applicable class may change. PSC should continue to monitor the progress of the draft regulation.

Appendix C

FAA Forecast Documentation
Prepared by Mead & Hunt, Inc.
April 2010

Comparing Airport Planning and TAF Forecasts

AIRPORT NAME: Pasco Tri-Cities Airport

	Year	Airport Forecast	TAF	AF/TAF (% Difference)
Passenger Enplanements				
Base yr.	2008	241,907	220,552	9.68%
Base yr. + 5yrs.	2013	269,260	256,639	4.92%
Base yr. + 10yrs.	2018	318,907	299,723	6.40%
Base yr. + 15yrs.	2023	375,787	316,722	18.65%
Commercial Operations				
Base yr.	2008	17,136	19,508	-12.16%
Base yr. + 5yrs.	2013	19,427	20,395	-4.75%
Base yr. + 10yrs.	2018	22,544	21,345	5.62%
Base yr. + 15yrs.	2023	22,939	22,359	2.59%
Total Operations				
Base yr.	2008	53,102	58,681	-9.51%
Base yr. + 5yrs.	2013	58,928	61,164	-3.66%
Base yr. + 10yrs.	2018	65,949	65,120	1.27%
Base yr. + 15yrs.	2023	70,688	69,443	1.79%

NOTES: TAF data is on a U.S. Government fiscal year basis (October through September).
AF/TAF (% Difference) column has embedded formulas.
NOTE: Chapter reports only Base Yr, Base Yr +5yrs, Base Yr. +10yrs, and Base Yr. +20yrs.

Pasco Tri-Cities Airport Planning Forecasts

NOTE: Chapter reports only Base Yr, Base Yr +5yrs, Base Yr. +10yrs, and Base Yr. +20yrs.

AIRPORT NAME: Pasco Tri-Cities Airport **Specify base year:** 2008

A. Forecast Levels and Growth Rates

	Base Yr. Level	Base Yr. + 1yr.	Base Yr. + 5yrs.	Base Yr. + 10yrs.	Base Yr. + 15yrs.	Average Annual Compound Growth Rates: Base yr. to +1	Base yr. to +5	Base yr. to +10	Base yr. to +15
Passenger Enplanements									
Air Carrier	133,049	181,978	230,494	291,217	318,408	36.78%	11.62%	8.15%	5.99%
Commuter	108,858	67,138	38,766	27,690	17,126	-38.33%	-18.66%	-12.79%	-11.60%
TOTAL	241,907	249,116	269,260	318,907	375,787	2.98%	2.17%	2.80%	2.98%
Operations									
Itinerant									
Air carrier	4,926	5,221	9,580	12,444	11,777	5.98%	14.23%	9.71%	5.98%
Commuter/air taxi/Cargo	12,210	11,512	9,847	10,100	11,162	-5.71%	-4.21%	-1.88%	-0.60%
Total Commercial Operations	17,136	16,733	19,427	22,544	22,939	-2.35%	2.54%	2.78%	1.96%
General aviation	17,141	17,422	17,627	19,462	21,109	1.64%	0.56%	1.28%	1.40%
Military	599	599	599	599	599	0.00%	0.00%	0.00%	0.00%
Local									
General aviation	16,828	17,223	19,877	21,946	24,643	2.35%	3.39%	2.69%	2.58%
Military	1,398	1,398	1,398	1,398	1,398	0.00%	0.00%	0.00%	0.00%
TOTAL OPERATIONS	53,102	53,375	58,928	65,949	70,688	0.51%	2.10%	2.19%	1.93%
Instrument Operations	22,433	22,905	25,314	28,330	30,650	2.10%	2.45%	2.36%	2.10%
Peak Hour Operations	55	56	61	68	74	2.02%	2.09%	2.14%	2.02%
Cargo/mail (enplaned + deplaned tons)	1,842	1,842	1,886	1,977	2,256		2.36%	1.42%	2.05%
Based Aircraft									
Single Engine (Non-jet)	87	89	92	102	113	1.77%	1.12%	1.60%	1.77%
Multi Engine (Non-jet)	20	20	20	22	25	1.55%	0.00%	0.96%	1.55%
Jet Engine	11	11	11	13	14	1.78%	0.00%	1.68%	1.78%
Helicopter	5	5	6	6	7	2.10%	3.71%	1.84%	2.10%
Other	0	0	0	0	0	0.00%	0.00%	0.00%	0.00%
TOTAL	123	125	129	143	160	1.75%	0.96%	1.52%	1.75%

B. Operational Factors

	Base Yr. Level	Base Yr. + 1yr.	Base Yr. + 5yrs.	Base Yr. + 10yrs.	Base Yr. + 15yrs.
Average aircraft size (seats)					
Air carrier	87.6	87.6	87.6	87.6	93.7
Commuter	44.0	50.0	50.0	50.0	50.0
Average enplaning load factor					
Air carrier	73.0%	73.0%	73.0%	73.0%	73.0%
Commuter	69.5%	73.8%	73.8%	73.8%	73.8%
GA operations per based aircraft	276	277	291	290	287

Note: Show base plus one year if forecast was done. If planning effort did not include all forecast years shown interpolate years as needed, using average annual compound growth rates.

U.S. Department
of Transportation

**Federal Aviation
Administration**

Seattle Airports District Office
1601 Lind Avenue, S. W., Ste 250
Renton, Washington 98055-4056

May 11, 2010

Jim Morasch
Airport Manager
3601 N 20th Ave
Pasco, WA 99301

Dear Mr. Morasch:

Approval of Activity Forecasts: Tri-Cities Airport
AIP Number 3-53-0046-32

I have reviewed the Forecast chapter for the Tri-Cities Airport submitted by Mead and Hunt.

I find adequate justification exists for the figures cited in the Forecasts of Aviation Activity and hereby approve the Forecast Summary. The chapter appears to be well-done and I believe that you and your Consultant are off to a good start for the rest of the Master Planning process.

If you have any questions, please feel free to contact me at: 425-227-1654 or by e-mail at: deepeka.parashar@faa.gov.

Sincerely,

Deepa Parashar
Airport Planner, Washington

cc: Damon Smith, Mead & Hunt (email)

Appendix D

Environmental Survey
Prepared by JUB Engineers
December 2010

Cultural Resources Survey
Prepared by Transect Archaeology
November 2010

J-U-B ENGINEERS, Inc.

Memo

To: Mitchell Hooper, Aviation Services Planner (Mead & Hunt, Inc.)
Chuck Larson, P.E. (JUB)

From: Vincent Barthels, Biologist (JUB)

Date: December 22, 2010

Subject: 2010 Master Plan Update Environmental Evaluation related to the proposed Parking Lot and Taxiway D improvement alternatives located at the Tri-Cities Airport, Pasco, Washington.

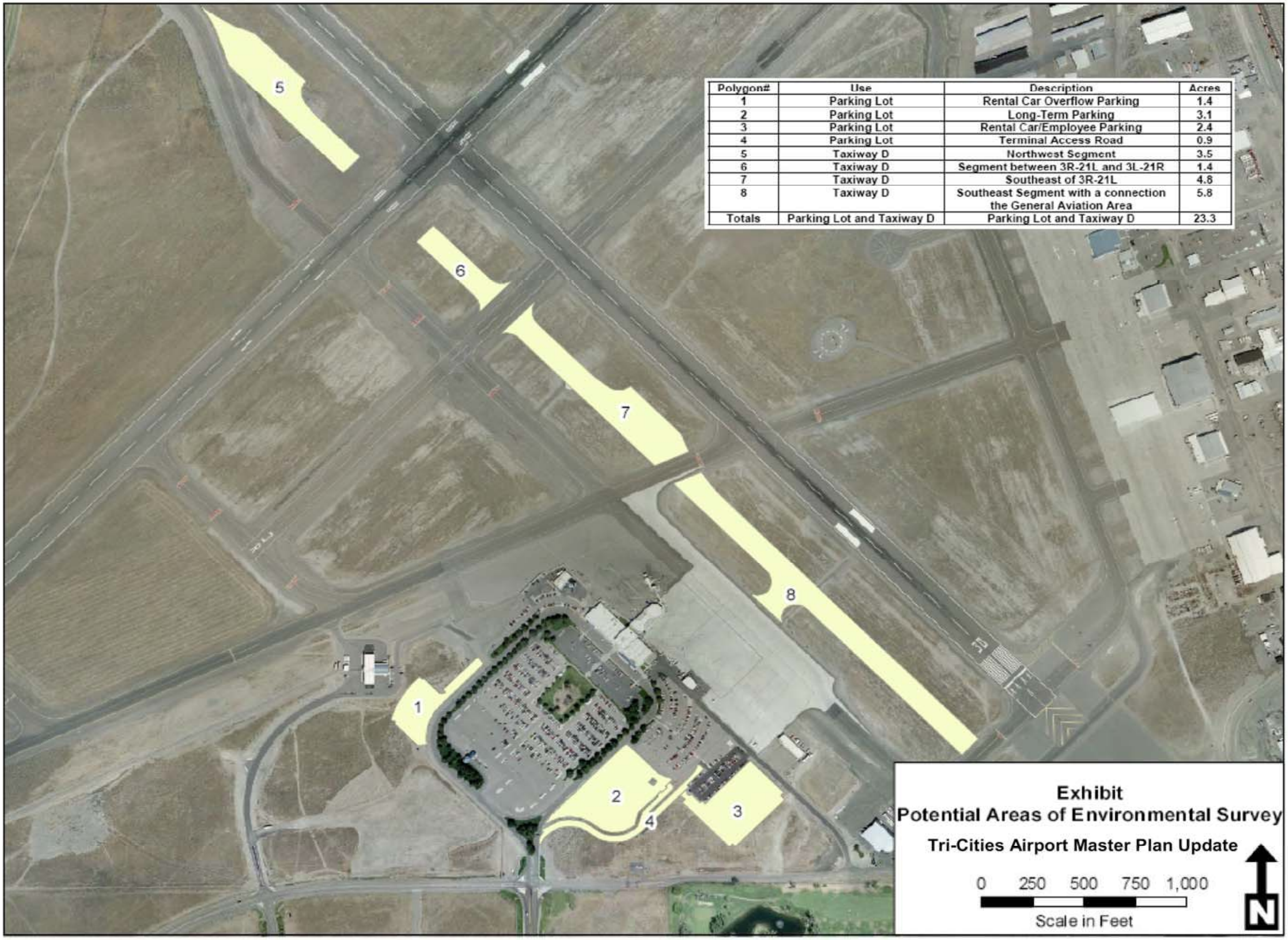
Introduction

This environmental evaluation was authorized by the Port of Pasco and contains three primary components (i.e. a biological assessment, a wetlands clearance and a cultural resource report). The proposed airport improvements linked to this evaluation are situated within eight separate polygons of land that encompass a total of 23.3 acres; more specifically, the proposed improvements are located in the Sections 18 and 19, Township 9 N, Range 30 E, and Section 13, Township 9 N, Range 29 E, in Franklin County, WA. The defined project study areas are illustrated on the Aerial Exhibit (see page 2). The purpose of this evaluation is to document: any potential impacts to Endangered Species Act (ESA) listed species, state listed sensitive species or habitats, or species and habitats protected by the Migratory Bird Treaty Act (MBTA); any potential critical areas (namely, wetlands, streams and/or fish habitat); and, any potential prehistoric cultural resources or historic sites that may be located in the defined project study areas.

Methods

The defined study areas, encompassing approximately 23.3 acres, were assessed through a pedestrian survey conducted on 10/21/10 by Vincent Barthels, Biologist with J-U-B Engineers Inc. and Lyle Nakonechny, an archaeologist with Transect Archaeology. The J-U-B Biologist conducted a general site assessment to document the baseline biological habitat present. Agencies such as U.S. Fish and Wildlife Service (USFWS), the Washington Department of Natural Resources (DNR) and Washington Department of Fish and Wildlife (WDFW) were consulted to determine the potential presence or absence of critical species and/or habitat for the defined study areas. The National Wetland Inventory (NWI) Map and Soil Survey Map were referenced for baseline conditions. The specific methods associated with the cultural resources survey component of this evaluation are depicted in the attached report (dated 11-9-10).

Aerial Exhibit - outlining the project study areas.



Polygon#	Use	Description	Acres
1	Parking Lot	Rental Car Overflow Parking	1.4
2	Parking Lot	Long-Term Parking	3.1
3	Parking Lot	Rental Car/Employee Parking	2.4
4	Parking Lot	Terminal Access Road	0.9
5	Taxiway D	Northwest Segment	3.5
6	Taxiway D	Segment between 3R-21L and 3L-21R	1.4
7	Taxiway D	Southeast of 3R-21L	4.8
8	Taxiway D	Southeast Segment with a connection the General Aviation Area	5.8
Totals	Parking Lot and Taxiway D	Parking Lot and Taxiway D	23.3

Discussion

The defined project study areas are divided into eight separated polygons (as illustrated on the attached Aerial Exhibit). Polygons 1 through 4 encompass a combined area of approximately 7.8 acres and define the anticipated project limits associated with the Parking Lot Expansion Projects; whereas, polygons 5 through 8, encompass a combined area of approximately 15.5 acres and define the anticipated project limits associated with the proposed development of Taxiway D. Table 1 below quantifies and characterizes the individual polygons to size (acreage) and the proposed function of the area, respectively.

Table 1: Summary of defined project study areas linked to the Aerial Exhibit (attached).

Polygon #	Airport Improvement	Function of the Area	Size of the Area (Acres)
1	Parking Lot	Rental Car/Overflow Parking	1.4
2	Parking Lot	Long-Term Parking	3.1
3	Parking Lot	Rental Car/Employee Parking	2.4
4	Parking Lot	Terminal Access Road	0.9
5	Taxiway D	Northwest Segment	3.5
6	Taxiway D	Segment between 3R-21L and 3L-21R	1.4
7	Taxiway D	Southeast of 3R-21L	4.8
8	Taxiway D	Southeast Segment with a connection to the General Aviation Area	5.8
Totals	Parking Lot and Taxiway D	Parking Lot and Taxiway D	23.3

The defined project study areas are relatively flat (0-5% slopes). Soils throughout the study areas are mapped to be Quincy loamy fine sand (see attached Soils Survey Map). These sandy soils are non-hydric soils (meaning, non-wetland soils) and have a drainage class that falls within the excessively drained category. Vegetation assemblages within the proposed Taxiway D footprint consist of mowed (to a height of 8 to 10 inches) upland grasses (i.e. cheat-grass (*Bromus tectorum*) and crested wheatgrass (*Agropyron cristatum*)) and annual weeds (i.e. tumble mustard (*Sisymbrium altissimum*) and Russian thistle (*Salsola iberica*)). Within polygons 1 through 4, the vegetation assemblages are not mowed, and contain the same upland grasses and annual weeds described above, with the addition of a very sparse (less than approximately 5%) native shrub cover, composed of rabbitbrush (*Chrysothamnus nauseosus*) and tall sagebrush (*Artremisia tridentata*). The entire project study area contains very low to no ecological valued habitat because of the following three reasons: (1) there is a lack of habitat continuity, since the defined project study areas are immediately adjacent to existing airport operation areas that generally contain impervious surfaces; (2) undisturbed native vegetative communities are lacking; and, (3) the existing airport operations (e.g. mowing the in-field and the ambient noise levels associated with aircraft operations) are generally not conducive to promoting viable wildlife habitat.

The photo on the right captures the mowed vegetative community, which is typical in Polygons 5-8. This photo was taken looking northwesterly from the central portion of Polygon 8.

The photo on the left illustrates the high percentage of un-mowed, weedy (dominated by Russian thistle) vegetative cover that is representative of Polygons 1-4. This photo was taken looking in a northwesterly direction from within the central portion of Polygon 2.

The NWI Map does not classify any streams and/or wetlands within the defined project study areas (see attached Glade, WA NWI map). All of the project study areas are designated as “upland” areas.

The DNR Washington Natural Heritage Program was contacted to obtain information from their database concerning rare plants or high quality ecosystems listed for individual Sections across Washington State. The information search yielded no records for the defined project areas (see DNR Rare Plant and Ecosystem database results (dated 10-5-10)).

Based on a review of the WDFW Priority Habitat and Species (PHS) data, dated 12/15/10, there are several noted occurrences of burrowing owl (*Athene cunicularia*), black-tailed jackrabbits (*Lepus californicus*) and long-billed curlews (*Numenius americanus*) scattered in the vicinity of the Airport Property. All of these species are considered state sensitive species. No ESA listed species were documented in the defined study areas.

The U.S. Fish and Wildlife Service (USFWS) was one of the agencies contacted in order to determine whether potential ESA listed species and designated or proposed critical habitat occur within the project action areas (see attached - USFWS Franklin Countywide Species Listing; dated 9-29-10). USFWS identified six species that warrant ESA considerations: bull trout (*Salvelinus confluentus*), pygmy rabbit (*Brachylagus idahoensis*), Ute ladies'-tresses (*Spiranthes diluvialis*), Washington ground squirrel (*Spermophilus washingtoni*), White Bluffs bladderpod (*Physaria tuplashensis*), and Yellow-billed cuckoo (*Coccyzus aremicanus*). In addition, bull trout habitat is designated as critical habitat within Franklin County. These considerations were derived from habitat conditions coupled with potential species occurrence within Franklin County, Washington.

Table 2: Summary of ESA Listed Species for Franklin County, Washington.

Common Name	Scientific Name	ESA Status
Bull trout	*Salvelinus confluentus*	Threatened
Pygmy rabbit	*Brachylagus idahoensis*	Endangered
Ute ladies-tresses	*Spiranthes diluvialis*	Threatened
Washington ground squirrel	*Spermophilus washingtoni*	Candidate
White Bluffs bladderpod	*Physaria tuplashensis*	Candidate

Yellow-billed cuckoo	*Coccyzus americanus*	Candidate

Species Descriptions

The following paragraphs briefly discuss the ESA listed species and their habitat descriptions.

Bull trout and Critical Habitat

Bull trout are salmonids that are members of the char family. They have grayish to dark green sides with white to pinkish spots. The fish is recognized by the white margins on its pectoral, ventral, and anal fins (Eddy and Underhill 1978). The dorsal fin also lacks the spots that cover the back and sides of the body. Bull trout spawn in the fall in streams with cold, unpolluted water, clean gravel and cobble substrate, and gentle stream slopes (USFWS 1998). Bull trout eggs require a long incubation period, hatching in late winter or early spring. Some may live near areas where they were hatched; however, others migrate from streams to lakes or reservoirs a few weeks after emerging from the gravel. Bull trout habitat consists mainly of oligotrophic lakes and deep pools of pristine cold fluvial habitats in mountainous regions, mainly 45 to 55 degrees Fahrenheit (Sternberg 1996). Bull trout critical habitat, within Franklin County, pertains to the Columbia River.

Pygmy rabbit

The smallest rabbit species in North America, the pygmy rabbit measures 9.2-11.6 inches in length, weighs a slight 0.88-1.02 lbs, and is able to fit in the palm of a hand. Pygmy rabbits are generally limited to areas on deep soils with tall, dense sagebrush which they use for cover and food (Green and Flinders 1980). The pygmy rabbit is the only native leporid that digs burrows. Washington populations were historically found in sagebrush habitat in Benton, Adams, Grant, Lincoln and Douglas counties. Washington's extant pygmy rabbit population totals fewer than 50 individuals and occurs on Sagebrush Flat in central Douglas County (Warren 2001).

Ute ladies'-tresses

Ute ladies'-tresses is a member of the orchid family. It was first described in 1984 and was federally listed as "threatened" by the USFWS under the ESA in January, 1992 (USFWS, 1995). Populations have been found in Utah, Colorado, Wyoming, Montana, Nevada, Idaho, and Washington. The elevation ranges in which populations have been found vary from 750 to 7,000 feet, with most populations above 4,000 feet. It is found in wetlands and riparian areas, including spring habitats, mesic meadows, river meanders and floodplains. They require open habitats, and populations decline if trees and shrubs invade the habitat. They are not tolerant of permanent standing water, and do not compete well with aggressive species such as reed canary grass (*Phalaris arundinacea*). The survey time for the species, as identified by the U.S. Fish and Wildlife Service (1995), is mid-August through mid-September.

Washington Ground Squirrel

Washington ground squirrels are small and gray-brown with light spots on the back (Betts 1999). Historically, the Washington ground squirrel was distributed over much of the shrub-steppe habitat of southeastern Washington and northeastern Oregon, but it range has contracted due to habitat loss, and it now occurs at only three discontinuous areas (two in Washington). In Washington, the remaining large areas of appropriate habitat are near the center of the species' range (Betts 1999). Although the species is associated with sagebrush and native bunch grasslands of the Columbia Plateau, recent studies indicate that deep silty loam soils, especially those classified as Warden soils, are of particular importance (Greene 1999). The Washington ground squirrel spends much of its time underground. Adults emerge from hibernation between January and early March, depending on elevation and microhabitat conditions, with males emerging before females (Rickart and Yensen 1991). Adults return to their burrows by late May – early June, and juveniles return about a month later.

White Bluffs bladderpod (*Physaria tuplashensis*, previously *Lesquerella tuplashensis*)

White Bluffs bladderpod is a low growing, taprooted perennial herb in the mustard family (Caplow 2003). White Bluffs bladderworts have a dense rosette of broad gray-green pubescent leaves and produce showy yellow flowers on short stems in May through July (USFWS 2008).

There is one known population of this species, found on the upper zone and the top of a near vertical exposure of cemented, highly alkaline “caliche” soil (Center for Biological Diversity 1999). The species occupies a narrow ribbon of habitat that is 5-40 feet wide, and about 10 miles long, at the top edge of the White Bluffs above the Columbia River (Center for Plant Conservation 2010). The entire population lies within the Wahluke Unit of the Hanford Reach National Monument (Caplow 2003), with an elevation ranging from 780 to 890 feet above sea level (Center for Plant Conservation 2010).

Threats to this species include erosion, resulting from agriculture and irrigation, which has caused mass-failure landslides in portions of the White Bluffs (USFWS 2010). White Bluffs bladderwort has not been found in areas disturbed by landslides, regardless of whether the landslide disturbance is moderate or severe (Center for Biological Diversity 1999).

Western Yellow-billed Cuckoo

The western yellow-billed cuckoo is a federally listed “candidate” species. As the name suggests, has a yellow lower mandible (Alsop 2001). It has rufous wings that contrast against the gray-brown wing coverts and upperparts. The underparts are white and they have large white spots on a long black undertail (Alsop 2001). It is a neotropical migrant, which winters in South America. Breeding often coincides with the appearance of massive numbers of cicadas, caterpillars, or other large insects (Ehrlich et al. 1992). Its incubation/nesting period is the shortest of any known bird because it is one of the last neotropical migrants to arrive in North America and chicks have very little rearing time before embarking on their transcontinental migration. Yellow-billed cuckoos are considered a riparian obligate and are usually found in large tracts of cottonwood/willow habitats with dense sub-canopies (below 33 ft).

FAA Wildlife Strike Database

Lastly, a review of Federal Aviation Administration’s (FAA) National Wildlife Strike database identified 47 separate strike occurrences from its commencement in 1990 to present. Of these recorded wildlife strikes, none of them involved any of the species discussed above.

Findings

No wetlands, streams or fish habitat exist within or adjacent to the anticipated project action areas. None of the six aforementioned ESA listed species should occur within the defined project study areas based on habitat considerations. No suitable habitat exists within the defined study area that would coincide with any of the six previously mentioned ESA species. The 23.3 acre defined study area can be characterized as developed and disturbed, and poses very little to no viable ecological habitat.

During the site visit, one killdeer (*Charadrius vociferous*) was observed in polygon 8; a grouping of six California quail (*Callipepla californica*) was present in polygon 2; and, a single form of coyote (*Canis latrans)* scat (that was sun-faded and light gray in color) was observed in polygon 5. All of these three species are common species, prevalent throughout the County; none of which are considered a state listed sensitive species.

In terms of potential state listed sensitive species occurring within the defined study areas, there was no evidence of any burrowing owls or existing burrows, or black-tailed jackrabbits or any forms, or any long-billed curlews or any nests. Note: shallow depressions where jackrabbits rest are called "forms." The review of the PHS data revealed recent documented occurrences of burrowing owls surrounding the airport property; one documented occurrence involves a web camera that had a sighting as recent of April of 2009. Burrowing owl presence, as well as the other 2 state listed species, on the airport periphery and surrounding the airport is likely to occur. However, based on the habitat conditions, these three state listed sensitive species should not occur in the defined project study areas.

The airport property is not considered a migratory bird flyway. Airport operations deter birds from flocking, flying through or foraging on airport grounds due to the elevated risk of potential wildlife strikes with aircrafts. Therefore, based on habitat conditions coupled with the existing airport operations, the defined project study areas are not characterized as viable migratory bird habitat.

Transect Archaeology's fieldwork and report were conducted with the same standards as would be employed for Section 106 of the National Historic Preservation Act or Washington Executive Order (EO) 05-05 actions, but the archaeological survey was not triggered by either of these laws. No formalized Area of Potential Effects (APE) has been established through consultation with the Washington Department of Archaeology and

Historic Preservation, and Tribal consultations have not yet been initiated. This survey and report (please see attached) could contribute to Section 106 and EO 05-05 processes in the future. A records search failed to locate any prerecorded cultural resource sites located within, or adjacent to, the proposed Parking Lot and Taxiway D improvement alternatives projects. Pedestrian archaeological survey and shovel testing identified sediment-stabilizing treatments consistent with the historic use of the area as an airport, but no sites, structures, or features were identified. The report author believes that the proposed Parking Lot and Taxiway D improvement alternatives will have no effect on any prehistoric archaeological sites, and will not have an adverse effect on any historic sites eligible for inclusion in the National Register of Historic Places.

Conclusion

Based on habitat considerations, it is determined that this project will yield “no effect” on wetlands, streams, fish habitat, ESA listed species and designated habitats, state listed sensitive species and habitats, and habitats protected under the MBTA. The results of the cultural resource survey also indicated that the proposed projects will have a no effect on cultural resources (see attached report).

If any questions or comments arise from the information discussed within this memo or if any additional information is requested, please contact Vincent Barthels at 509-458-3727 or via email at vbarthels@jub.com. It should be noted that the final regulatory authority rests with the appropriate state and federal agencies.

Attachments

1. Cultural Resources Report (dated 11-9-10)
2. Soil Survey Map
3. Glade, WA NWI Map
4. USFWS Franklin Countywide Species Listing (dated 9-29-10)
5. DNR Rare Plant and Ecosystem database results (dated 10-5-10)

References Cited

Alsop, F.J. 2001. Birds of North America, Western Region. DK Publishing, Inc. New York, New York.

Betts, B.J. 1999. Current status of Washington ground squirrels in Oregon and Washington. Northwestern Naturalist 80:35-38.

Biosystems Analysis, Inc. 1989. Endangered Species Alert Program Manual: Species Accounts and Procedures. Southern California Edison Environmental Affairs Division.

Caplow, F.E. 2003. Current Status of White Bluffs bladderpod (*Lesquerella tuplashensis*) on the Hanford site in Evans et al., Eds. Biodiversity studies of the Hanford site, final report: 2002-2003. Accessed 11/29/2010 at http://www.pnl.gov/ecomon/docs/biodiversity/biodiversity_03.pdf

Center for Biological Diversity. 1999. Candidate Petition Project: Plants, Petition to list as Federally Endangered Species. Accessed 11/24/2010 at http://www.biologicaldiversity.org/campaigns/candidate_project/pdfs/plants-non-Hawaiian-petition.pdf.

Center for Plant Conservation. 2010.CPC National Collection Plant Profile: *Physaria tuplashensis*. Accessed 11/24/2010 at http://www.centerforplantconservation.org/collection/cpc_viewprofile.asp?CPCNum=15821.

Eddy, S. and J.C. Underhill. 1978. How to Know Fresh Water Fishes. Brown Company Publishers, USA.

FAA's National Wildlife Aircraft Strike Database. Accessed 12/1/2010 at http://wildlife-mitigation.tc.faa.gov

Green, J.S. and J.T. Flinders. 1980. *Brachylagus idahoensis*. Mammalian species. 125: 1-4.

Greene, E. 1999. Abundance and habitat associations of Washington ground squirrels in north-central Oregon. Master of Science Thesis, Oregon State University, Corvallis.

NatureServe. 2006. NatureServe Explorer: An online encyclopedia of life [On-line]. Version 6.0. NatureServe, Arlington, Virginia. Accessed 11/7/07 at http://www.natureserve.org/explorer.

Rickart, E.A. and E. Yensen. 1991. *Spermophilus washingtoni*. Mammalian Species 371:1-5.

Sternberg, D. 1996. Freshwater Game Fish of North America. Cy DeCosse, Inc. Minnetonka, Minnesota.

U.S. Fish and Wildlife Service (USFWS). 1998. Bull trout facts (*Salvelinus confluentus*) [On-line]. Accessed 2/15/06 at http://www.fws.gov/pacific//news/bulltrout/bultrt2.pdf

USFWS. 1995. *Ute ladies'-tresses (Spiranthes diluvialis) Draft Recovery Plan*. U.S. Fish and Wildlife Service, Denver, Colorado.

USFWS. 2008. Species Assessment and Listing Priority Assignment Form. Accessed 11/24/2010 at http://www.fs.fed.us/r6/sfpnw/issssp/documents/planning-docs/cp-fws-candidate-va-physaria-tuplashensis-2008-04.pdf.

USFWS. November 10, 2010. Endangered and Threatened Wildlife and Plants; Review of Native Species That Are Candidates for Listing as Endangered or Threatened; Annual Notice of Findings on Resubmitted Petitions; Annual Description of Progress on Listing Actions. 75 Fed. Reg., 69222. Accessed 11/29/2010 at http://www.federalregister.gov/articles/2010/11/10/2010-27686/endangered-and-threatened-wildlife-and-plants-review-of-native-species-that-are-candidates-for

Warren, C. 2001. Emergency rule to list the Columbia Basin distinct population segment of the pygmy rabbit (*Brachylagus idahoensis*) as endangered. November 30, 2001. Federal Register, Vol. 66, No. 231:pp 59734-59749.

CULTURAL RESOURCES REPORT COVER SHEET

Author: **Lyle D. Nakonechny**

Title of Report: **A Cultural Resources Survey for the Tri-Cities Airport Master Plan Update: Parking Lot and Taxiway D Areas,in the City of Pasco, Franklin County, Washington.**

Date of Report: 11/9/10

County (ies): Section: _____ Township: _____ Range: _____ E/W

Quad: _____ Acres: _____

T.9N., R.29E., Section 13
T.9N., R.30E., Sections 18 & 19
Franklin County, WA.
Glade, WA 7.5 min. 23.3 acres

CD Submitted? ☐ Yes ☐ No PDF of Report? ■ Historic Property Export Files? ☐

Archaeological Site(s)/Isolate(s) Found or Amended? ☐ Yes ■ No

TCP(s) found? ☐ Yes ☐ No

Replace a draft? ☐ Yes ■ No

Satisfy a DAHP Archaeological Excavation Permit requirement? ☐ Yes # _____ ☐ No

DAHP Archaeological Site #:

_____
_____
_____
_____
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_____
_____
_____
_____

- Please submit paper copies of reports ***unbound.***
- Submission of PDFs is encouraged.
- Please be sure that any PDF submitted to DAHP has its cover sheet, figures, graphics, appendices, attachments, correspondence, etc., compiled into one single PDF file.
- Please check that the PDF displays correctly when opened.

TRANSECT ARCHAEOLOGY
CULTURAL RESOURCES REPORT # 2010C

A Cultural Resources Survey for the Tri-Cities Airport Master Plan Update: Parking Lot and Taxiway D Areas, in the City of Pasco, Franklin County, Washington.

by

Lyle D. Nakonechny

November 2010

11/9/10

SUMMARY STATISTICS:

Project Area:	
	T.9N., R.29E., Section 13 T.9N., R.30E., Sections 18 & 19 Franklin County, WA.
USGS Quads:	23.3 acres
Sites/Isolates Found:	0 Prehistoric 0 Historic Sites
Location of Field Notes:	Transect Archaeology 720 NE Michigan Pullman, WA 99163

Transect Archaeology
720 NE Michigan
Pullman, WA 99163
509-334-1236
archaeological@aol.com

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INTRODUCTION: Purpose and Scope

This report documents research, pedestrian survey, and shovel testing procedures that were conducted to identify archaeological sites associated with the proposed Parking Lot and Taxiway D improvement alternatives within the Tri-Cities Airport, Pasco, Washington. The cultural resource consultant Transect Archaeology, of Pullman, WA, completed the research, survey, and report for J-U-B Engineers Inc., Mead & Hunt Inc., and the Port of Pasco. The improvement alternatives will potentially involve adding parking and a new taxiway to the airfield.

The fieldwork and report were conducted with the same standards as would be employed for Section 106 of the National Historic Preservation Act or Washington Executive Order (EO) 05-05 actions, but the archaeological survey was not triggered by either of these laws. No formalized Area of Potential Effect (APE) has been established through consultation with the Washington Department of Archaeology and Historic Preservation, and Tribal consultations have not yet been initiated. This survey and report could contribute to Section 106 and EO 05-05 processes in the future.

Transect Archaeology conducted an intensive pedestrian survey of 8 unpaved and partially paved land polygons within the Tri-Cities Airport property that totaled 23.3 acres. The surveyor produced 6 shovel test holes within the 23.3 acres to sample the subsurface sediments for cultural materials. The goal of the survey was to locate all discoverable sites within, and adjacent to, the survey areas that may be potentially impacted by proposed improvement alternative projects. The surveyor discovered no prehistoric cultural resources within or adjacent to the survey parcels. The surveyor did not locate any historic sites within the survey areas. The surveyor identified evidence of continuous long-term historic use of the taxiway area as a runway/taxiway area in the form of oil and cemented sand treatments of the local surface sediments. A thin layer (approximately 2-4 mm) of sand encrusted oil-like material (likely for dust prevention) was identified on and near the surface of portions the taxiway area. Some eastern portions of the taxiway area surface sediments exhibit 1-3 cm thick layers of chemically cemented local sand that was likely associated with historic use of the airport. The report author believes that the proposed Parking Lot and Taxiway D improvement alternatives will not have an effect on any National Register of Historic Places (NRHP) eligible sites.

PROJECT LOCATION

The survey area is visible on the Glade, WA 7.5 minute quadrangle map and is located in the City of Pasco, Franklin County, Washington. The survey area consists of eight discrete polygons within the airport property totaling 23.3 acres, and located in T.9N., R.29E., Section 13, and T.9N., R.30E., Sections 18 & 19. The survey areas are within the operations area of the airport for the Taxiway D improvements; and outside of the airfield, but adjacent to existing parking lots, for the parking expansion project areas. The locations of areas 1-8 are illustrated in Figure 1. Figure 2 illustrates the locations of shovel pit testing and the location and directions of pedestrian survey transects.

Polygon#	Use	Description	Acres
1	Parking Lot	Rental Car Overflow Parking	1.4
2	Parking Lot	Long-Term Parking	3.1
3	Parking Lot	Rental Car/Employee Parking	2.4
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Totals	Parking Lot and Taxiway D	Parking Lot and Taxiway D	23.3

Figure 1. Survey Areas 1-8 at the Tri-Cities Airport.

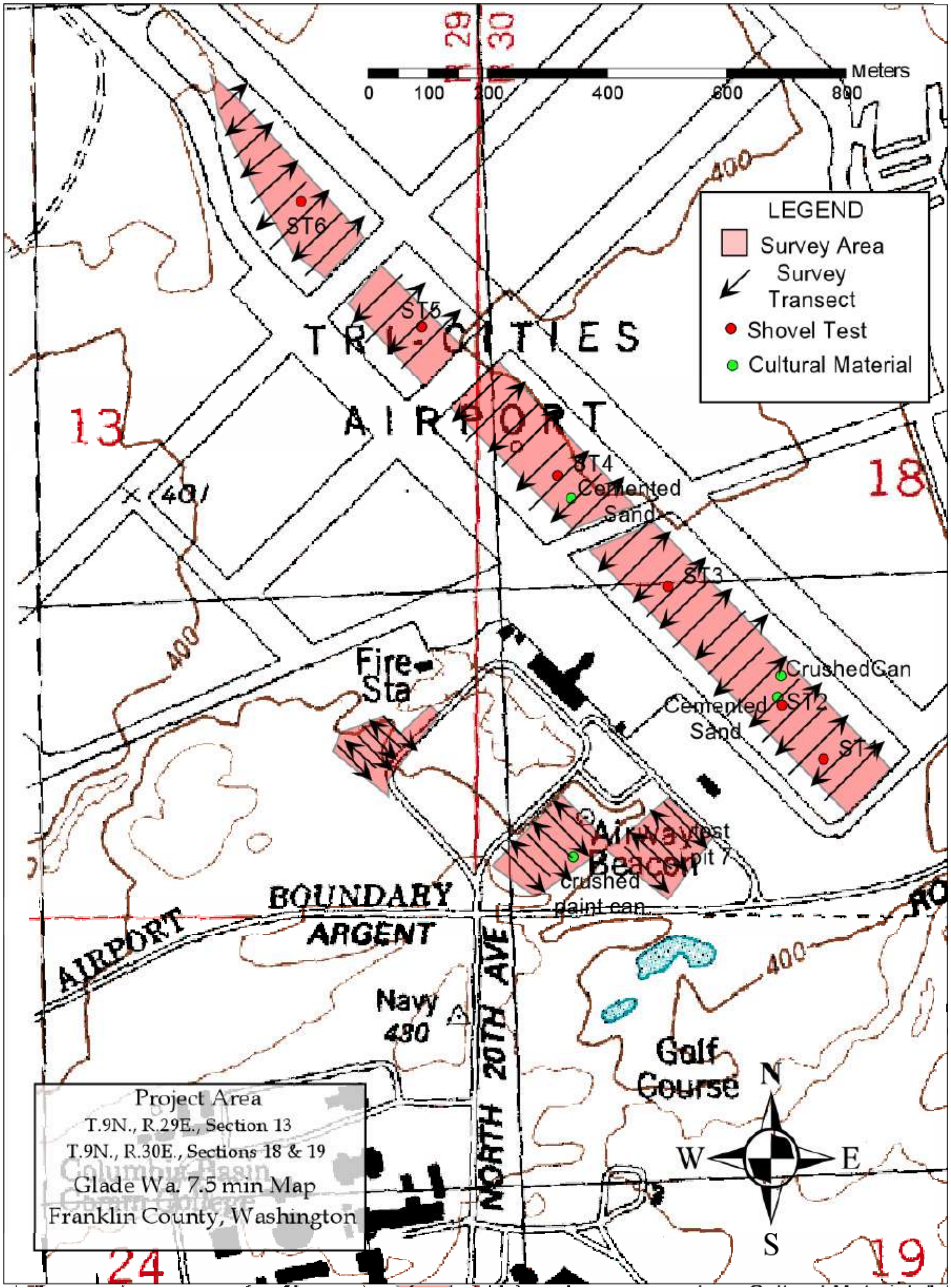


Figure 2. Location of Survey Transects and Shovel Testing at the Tri-Cities Airport.

ENVIRONMENTAL SETTING

The Tri-Cities Airport is situated over a bedrock of Miocene basalts capped with massive beds of late Pleistocene flood deposited gravels, sands, and loess, as well as eolian deposits of loess. The Airport is built primarily on beds of Quincy loamy fine sand. Cadastral survey notes (1860) describe the sections as a sage prairie with sandy soil. The airport landform does have the potential to contain cultural deposits dating from the late Pleistocene through the Holocene. The surveyor encountered sand and sand with silt sediments in all survey areas. There are rounded pebbles and cobbles of diverse flood transported rocks. There are naturally occurring ccs agate materials present as pebbles within the survey area.

The local floral environment is characteristic of the shrub-steppe zone (Franklin and Dyrness 1973) with sage, rabbit brush, and grasses. The vegetation adjacent to the runway area has been suppressed and is frequently mowed. Rabbits, birds, and other miscellaneous rodents were likely the most abundant fauna available for prehistoric and historic resource procurement in the immediate Airport area.

Photographs of the survey area and local sediment are shown in Figures 3 and 4.

Figure 3. Survey Area Overview: Taxiway D Area. View to the Northwest

Figure 4. Photograph of survey area sandy sediment with rounded pebbles & cobbles.

ARCHAEOLOGICAL AND ETHNOGRAPHIC OVERVIEW

Prehistory

There is an abundance of prehistoric archaeological resources located adjacent to the Columbia River approximately 1.5 miles south of the Tri-Cities Airport. These archaeological deposits indicate that riverine oriented cultural groups occupied the region since the Early Holocene. Prehistoric cultural sequences for the central Columbia River region have been presented by Ames (1998), Chatters and Pokotylo (1998), and Galm (1981). No Prehistoric archaeological sites have been identified within a mile of the Tri-Cities Airport. There has been little archaeological survey of the landscape away from the Columbia River. The sediments within the Tri-Cities Airport area are old enough to contain cultural deposits dating to the early Holocene, and there would have been resources (such as rabbits and birds) available within the area for local prehistoric populations.

History

The Pasco region began to develop in the late 1800's as railroads were developed throughout the inland northwest. Aviation in the Pasco region began in 1906 when Charles A. Zornes opened an airplane workshop and school adjacent to the Columbia River approximately 2 miles south of the present Tri-Cities Airport. Zornes operated the workshop from 1906 to approximately 1910 (Oberst 1978; Nunmaker 1990). In 1925, the Kelly Act directed the federal government to contract airmail services, and Walter T. Varney was sole bidder for the pacific NW feeder route (C.A.M. 5) (Nunmaker 1990). In

1926 the City of Pasco purchased 160 acres of land located approximately 1 mile southeast of the present Tri-Cities Airport facility (east of Oregon Ave., and south of the Cemetary). The county commissioners provided funds for the county roads crew to build a runway and hangar on this property in 1926 (Oberst 1978; Nunmaker 1990; Arsdol 1990).

The first Pasco Airport was built to support the federal contracted airmail services of Varney Airlines. In April of 1926, the first airmail was delivered from the field, including bottled grape juice intended for President Coolidge. In 1927 Charles Lindbergh dropped a message onto the original airport location from the Spirit of St. Louis. These historic events took place outside of the present airport boundary.

In 1929, the airport hangar was moved to a 188 acre parcel north of the present runway, and Franklin County Airport was developed with a 9,000,000 candle power revolving beacon, a 20,000 watt field light, and a 100 foot deep well. By 1930, Varney Airlines (still contracted for airmail) had initiated passenger flights. In 1931, Varney merged with Boeing Air Transport, Pacific Air Transport, and National Air Transport to form United Aircraft. In 1934, local aviation suffered a set-back when United Aircraft merged again to become United Air Lines Transport Company (United Airlines) and moved their home base to Pendleton, Oregon. This was the beginning of an almost 15 year hiatus in passenger air service from Pasco. After United Aircraft (Varney) left the Franklin County Airport, Edward Cook operated a flying school in the mid 1930s (Oberst 1978; Nunmaker 1990; Arsdol 1990).

The US Navy established the Pasco Naval Aviation Training Station at the site of the present airport on March 23rd, 1942. Additional land was acquired around the existing Franklin County Airport to include 2,285 acres for a facility that could eventually be used by fighter planes. The Naval Air Station was commissioned July 31st, 1942. On December 24th, 1942, the first enlisted women to be quartered on a Navy station arrived in Pasco as part of the WAVES (Women Accepted for Volunteer Emergency Service) program. The Pasco Naval Air Station began to dismantle their facilities in 1947, when the Navy leased (then sold) the airport land to the City of Pasco and removed a navy hospital building and 46 barracks to north Richland. The Naval Air Station was placed on inactive status on July 1st, 1947. While the Naval Air Station was no longer active in Pasco, Empire Air Service resumed passenger air service in 1949. The Port of Pasco purchased the airport in 1963 (Oberst 1978; Nunmaker 1990; Arsdol 1990).

PREVIOUS SURVEYS / RESEARCH

There have been five previous archaeological & cultural resource surveys within an approximately 1 mile radius of the Tri-Cities Airport. These surveys are summarized in Table 1. The five previous surveys did not identify prehistoric or historic sites.

Table 1. Previous Cultural Resource Surveys

NADB #	Author, date	Results
1346240	NWAA,2005	No Effect
1345109	AINW,2005	No Cultural Res.
1345455	AHS, 1999	No Sites.
1348417	AAR, 2006	No Sites.
1352727	HPN, 2002	No Effect

There are two National Register of Historic Properties (NRHP) in the city of Pasco south of the Tri-Cities Airport. The Franklin County Courthouse (Building #78002740, 1016 N. 4th St., Pasco) is approximately 1.4 miles south of the Tri-Cities Airport. The Pasco Carnegie Library (Building #82004212, 305 N. 4th St., Pasco) is located approximately 1.7 miles south of the Tri-Cities Airport.

An examination of the Bureau of Land Management's (BLM) land status and cadastral records did not reveal any cultural features (other than survey markers) within the airport property in the 1860's. The BLM Land Patent records do reveal homestead act and private purchases of parcels of the airport property between 1908 and 1911, but no details regarding potential historic structures have been identified at this time.

SURVEY DESIGN and INVENTORY METHOD

Lyle D. Nakonechny surveyed the 23.3 acres, divided into 8 separate polygons, on October 21st 2010. Lyle Nakonechny holds a masters degree in anthropology from Washington State University (1998). The weather was clear with sunny conditions, little wind, and an approximate temperature of 60 degrees.

Pre-field research helped Mr. Nakonechny develop expectations about what types of sites could be found by surveying the areas. Mr. Nakonechny was aware that the areas could potentially contain evidence of the historic WWII era airport. The surveyor was aware of the possibility of locating air travel or military artifacts or features. There was also the possibility that there could be prehistoric materials in the project area.

Mr. Nakonechny performed a high-density intensive pedestrian survey of the acreage by walking 15 meter spaced transects over the non-paved and partially paved land parcels. The direction of survey transects is illustrated in Figure 2. The surveyor encountered 90% surface visibility and significant mechanical and biological (burrowing) disturbance throughout the survey parcels. The surveyor produced 6 shovel test pits (30 cm diameter) within the survey parcels to test for subsurface cultural deposits and to examine the local sediments. The shovel test pit sediments were screened through ¼ inch mesh. The locations of all shovel test pits are illustrated in Figure 2.

FINDINGS AND MANAGEMENT RECOMMENDATIONS

Findings

The pedestrian archaeological survey did not locate any prehistoric or historic sites. The surveyor identified two crushed and rusted metal cans within the survey area that may be isolated WWII era materials, but definitively lack cultural resource or historic archaeological value. The crushed cans were located on the surface and have been disturbed by modern processes associated with construction of modern runways.

The surveyor identified evidence of continuous long-term historic use of the taxiway area as a runway/taxiway area in the form of stabilizing treatments of the local sandy surface sediments. A thin layer (approximately 2-4 mm) of sand encrusted oil-like material (likely for dust prevention) was identified on and near the surface of portions of the taxiway area. Some eastern portions of the taxiway area surface sediments exhibit 1-3 cm thick layers of chemically cemented local sand that was likely associated with historic use of the airport as an airport.

The shovel testing revealed a consistent sediment profile throughout the airport property consisting of a massive bed of sand with pebbles and cobbles. The near-surface sediments have been significantly disturbed. No prehistoric or historic artifacts were identified in the shovel test pits. Shovel test pit data is summarized in Table 2.

Table 2. Shovel Test Pit Results.

Test #	Depth cm	Cultural Materials?
ST 01	50	None
ST 02	50	None
ST 03	60	None
ST 04	55	None
ST 05	45	None
ST 06	50	None

Recommendations

The report author believes there are no prehistoric or historic sites eligible for inclusion in the NRHP within the 23.3 acres of polygons 1 through 8. The author believes the survey parcels may be within an as-yet unidentified WWII-era historic Pasco airport district, but contain no contributing historic sites, structures, or features.

The author believes the planned proposed Parking Lot and Taxiway D improvement alternatives will not have an adverse effect on any sites eligible for inclusion in the NRHP.

If suspected cultural resources or burials are inadvertently encountered by construction activities, work in the immediate vicinity of the find should cease and the Washington DAHP and local tribes should be contacted immediately.

CONCLUSIONS

A records search failed to locate any prerecorded cultural resource sites located within, or adjacent to, the proposed Parking Lot and Taxiway D improvement alternatives projects. Pedestrian archaeological survey and shovel testing identified sediment stabilizing treatments consistent with the historic use of the area as an airport, but no sites, historic structures, or features were identified. The report author believes that the proposed Parking Lot and Taxiway D improvement alternatives will have no effect on any prehistoric archaeological sites, and will not have an adverse effect on any historic sites eligible for inclusion in the National Register of Historic Places.

REFERENCES

Ames, K. M., D. E. Dumond, J. R. Galm and R. Minor
1998 Prehistory of the Southern Plateau. In *Handbook of North American Indians*, Volume 12, Plateau, edited by D. E. Walker, pp. 103 - 119. Smithsonian Institution, Washington D. C.

Chatters, J. C. and D. L. Pokotylo
1998 Prehistory: Introduction. In *Handbook of North American Indians, Volume 12, Plateau*, edited by D. E. Walker, pp. 73 - 80. Smithsonian Institution, Washington D. C.

Franklin, Jerry F., C.T. Dyrness
1973 *Natural Vegetation of Oregon and Washington*. USDA-FS PNW For.and Range Expt. Sta., repr. Oregon State Univ. Press, Corvallis, OR. 452 p.

Galm, J. R., G. D. Hartmann, R. A. Masten and G. O. Stephenson
1981 *A Cultural Resource Overview of Bonneville Power Administration's Mid-Columbia Project, Central Washington*. Reports in Archaeology and History 100-16. Eastern Washington University. AHS, Cheney.

Nunmaker, Susan
1990 Pasco Airport History. *Franklin Flyer* 24 (1)

Oberst, Walter A.
1978 *Railroads, Reclamation and the River: A History of Pasco*. Franklin County Historical Society, Pasco.

Van Aradol, Ted
1990 *Tri-Cities: The Mid-Columbia Hub.* Windsor Publications, Chatsworth CA.

Soil Map—Franklin County, Washington
(Tri Cities Airport)

Map Scale: 1:19,400 if printed on A size (8.5" x 11") sheet.

N

0 250 500 1,000 1,500 Meters

0 1,000 2,000 4,000 6,000 Feet

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Units

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other

Special Line Features

- Gully
- Short Steep Slope
- Other

Political Features

- Cities

Water Features

- Oceans
- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

MAP INFORMATION

Map Scale: 1:19,400 if printed on A size (8.5" × 11") sheet.

The soil surveys that comprise your AOI were mapped at 1:20,000.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 11N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Franklin County, Washington
Survey Area Data: Version 8, Jun 9, 2009

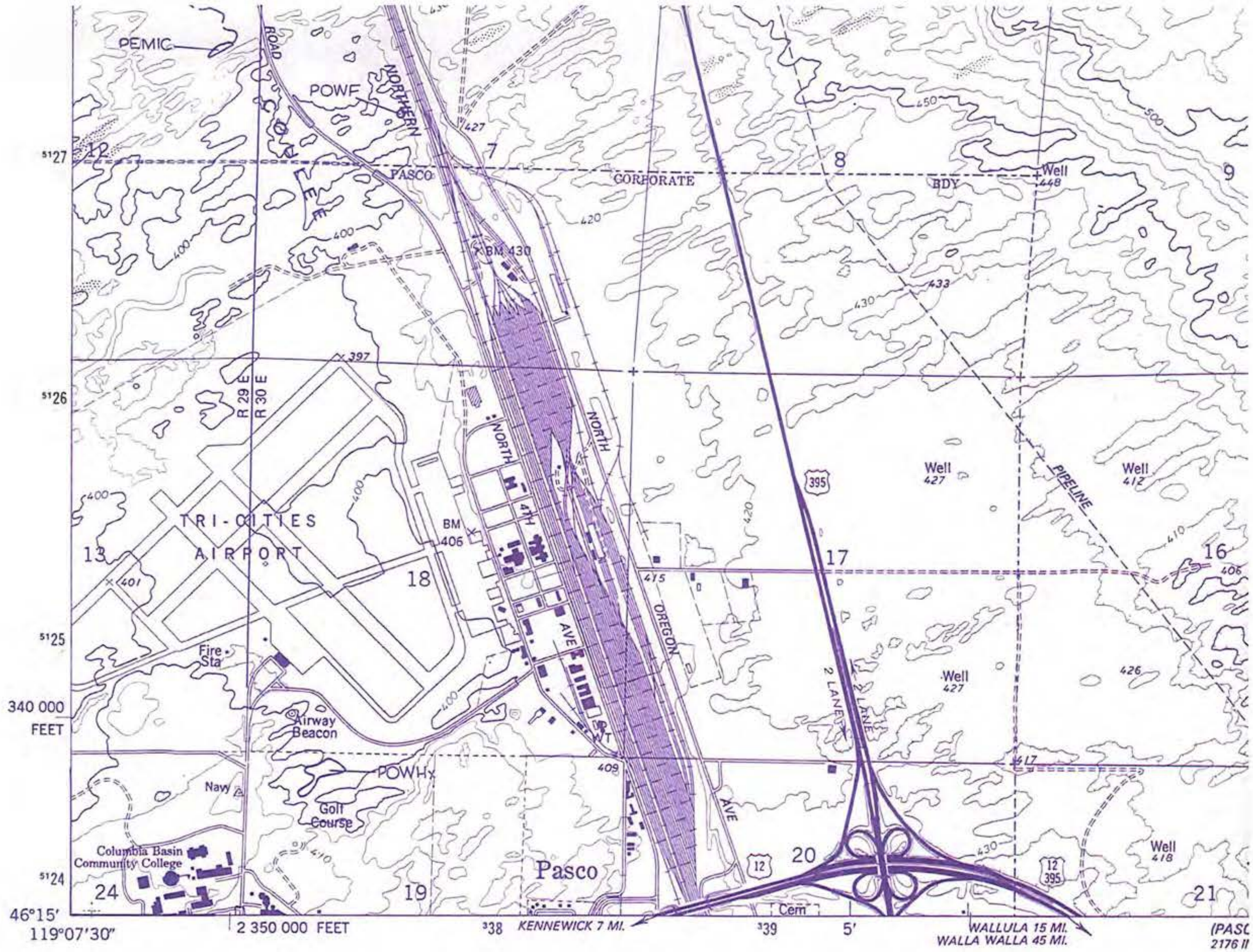
Date(s) aerial images were photographed: 6/26/2006

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Franklin County, Washington (WA021)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
4	Burbank loamy fine sand, 0 to 5 percent slopes	7.2	1.1%
66	Novark silt loam, 2 to 5 percent slopes	14.0	2.2%
89	Quincy loamy fine sand, 0 to 15 percent slopes	557.9	85.9%
92	Quincy loamy fine sand, loamy substratum, 0 to 10 percent slopes	3.3	0.5%
126	Royal loamy fine sand, 0 to 10 percent slopes	67.5	10.4%
Totals for Area of Interest		**649.8**	**100.0%**

Glade, WA - NWI Map



LISTED AND PROPOSED ENDANGERED AND THREATENED SPECIES AND CRITICAL HABITAT; CANDIDATE SPECIES; AND SPECIES OF CONCERN IN FRANKLIN COUNTY AS PREPARED BY THE U.S. FISH AND WILDLIFE SERVICE CENTRAL WASHINGTON FIELD OFFICE

(Revised September 29, 2010)

LISTED

Bull trout *(Salvelinus confluentus)* – Columbia River DPS
Pygmy rabbit (*Brachylagus idahoensis*) – Columbia Basin DPS

Major concerns that should be addressed in your Biological Assessment of project impacts to listed animal species include:

1. Level of use of the project area by listed species.

2. Effect of the project on listed species' primary food stocks, prey species, and foraging areas in all areas influenced by the project.

3. Impacts from project activities and implementation (e.g., increased noise levels, increased human activity and/or access, loss or degradation of habitat) that may result in disturbance to listed species and/or their avoidance of the project area.

Spiranthes diluvialis (Ute ladies'-tresses)

Major concerns that should be addressed in your Biological Assessment of project impacts to listed plant species include:

1. Distribution of taxon in the project vicinity.

2. Disturbance (trampling, uprooting, collecting, etc.) of individual plants and loss of habitat.

3. Changes in hydrology where taxon is found.

DESIGNATED

Critical habitat for the bull trout

PROPOSED

Revised critical habitat for the bull trout

CANDIDATE

Washington ground squirrel *(Spermophilus washingtoni)*
Yellow-billed cuckoo *(Coccyzus americanus)*
Physaria tuplashensis (White Bluffs bladderpod)

SPECIES OF CONCERN

Bald eagle *(Haliaeetus leucocephalus)*
Burrowing owl *(Athene cunicularia)*
California floater *(Anodonta californiensis)*
Columbia clubtail *(Gomphus lynnae)*
Ferruginous hawk *(Buteo regalis)*
Giant Columbia spire snail *(Fluminicola columbiana)*
Loggerhead shrike *(Lanius ludovicianus)*
Long-eared myotis *(Myotis evotis)*
Pacific lamprey *(Lampetra tridentata)*
Pallid Townsend's big-eared bat *(Corynorhinus townsendii pallescens)*
Redband trout *(Oncorhynchus mykiss)*
River lamprey *(Lampetra ayresi)*
Sagebrush lizard *(Sceloporus graciosus)*
Western brook lamprey *(Lampetra richardsoni)*
Cryptantha leucophaea (gray cryptantha)

Sections that Contain Natural Heritage Features
Data Current as of November 5, 2010

List of surveyed land sections in Washington identified by the Natural Heritage Program as reported to contain Natural Heritage Features. Contact the Washington Natural Heritage Program at (360) 902-1667 for more detailed information on locations and occurrences.

Town. Range Sec.	Town. Range Sec.	Town. Range Sec.	Town. Range Sec.
T09N R20E S08	T09N R43E S18	T10N R05E S02	T10N R15E S14
T09N R20E S17	T09N R43E S22	T10N R05E S03	T10N R16E S20
T09N R20E S18	T09N R43E S23	T10N R05W S04	T10N R16E S21
T09N R25E S24	T09N R43E S24	T10N R06E S02	T10N R26E S01
T09N R25E S25	T09N R43E S25	T10N R07E S02	T10N R26E S02
T09N R25E S26	T09N R43E S26	T10N R07E S08	T10N R26E S03
T09N R25E S35	T09N R43E S27	T10N R07E S11	T10N R26E S04
T09N R25E S36	T09N R43E S34	T10N R07E S17	T10N R26E S05
T09N R26E S14	T09N R43E S35	T10N R07E S29	T10N R26E S06
T09N R26E S15	T09N R43E S36	T10N R07E S37	T10N R26E S08
T09N R26E S16	T09N R44E S07	T10N R07W S08	T10N R26E S09
T09N R26E S17	T09N R44E S09	T10N R08E S21	T10N R26E S10
T09N R26E S19	T09N R44E S10	T10N R08E S22	T10N R26E S11
T09N R26E S20	T09N R44E S15	T10N R08E S24	T10N R26E S12
T09N R26E S21	T09N R44E S18	T10N R08W S03	T10N R27E S05
T09N R26E S22	T09N R44E S19	T10N R08W S04	T10N R27E S06
T09N R26E S23	T09N R44E S27	T10N R08W S09	T10N R27E S07
T09N R26E S24	T09N R44E S28	T10N R08W S10	T10N R27E S08
T09N R26E S25	T09N R44E S29	T10N R08W S28	T10N R27E S09
T09N R26E S27	T09N R44E S30	T10N R08W S33	T10N R27E S16
T09N R26E S28	T09N R44E S32	T10N R08W S34	T10N R27E S17
T09N R26E S29	T09N R44E S33	T10N R09E S05	T10N R27E S18
T09N R26E S30	T09N R44E S34	T10N R09E S06	T10N R27E S19
T09N R26E S31	T09N R45E S01	T10N R09E S08	T10N R27E S20
T09N R27E S13	T09N R45E S04	T10N R09E S17	T10N R28E S01
T09N R27E S14	T09N R45E S05	T10N R09E S18	T10N R28E S02
T09N R27E S15	T09N R45E S11	T10N R09E S19	T10N R28E S11
T09N R27E S19	T09N R45E S12	T10N R09E S20	T10N R28E S12
T09N R27E S22	T09N R45E S13	T10N R09E S24	T10N R28E S14
T09N R27E S23	T09N R45E S14	T10N R09E S29	T10N R28E S29
T09N R27E S24	T09N R45E S20	T10N R09W S01	T10N R29E S06
T09N R27E S29	T09N R45E S24	T10N R10E S08	T10N R31E S01
T09N R27E S30	T09N R45E S28	T10N R10E S10	T10N R31E S02
T09N R27E S31	T09N R45E S29	T10N R10E S11	T10N R31E S03
T09N R27E S32	T09N R46E S06	T10N R10E S14	T10N R31E S10
T09N R27E S33	T09N R46E S13	T10N R10E S33	T10N R31E S11
T09N R28E S18	T09N R46E S18	T10N R10E S34	T10N R31E S12
T09N R28E S19	T09N R46E S19	T10N R10E S35	T10N R31E S13
T09N R28E S22	T09N R46E S24	T10N R10W S01	T10N R31E S14
T09N R28E S26	T09N R47E S18	T10N R10W S02	T10N R31E S15
T09N R28E S27	T09N R47E S19	T10N R10W S05	T10N R31E S16
T09N R38E S04	T10N R01W S26	T10N R10W S07	T10N R31E S22
T09N R38E S05	T10N R01W S33	T10N R10W S08	T10N R32E S04
T09N R41E S21	T10N R01W S35	T10N R10W S18	T10N R32E S05
T09N R42E S01	T10N R02W S15	T10N R10W S31	T10N R32E S06
T09N R42E S12	T10N R02W S16	T10N R11W S04	T10N R32E S07
T09N R43E S07	T10N R02W S20	T10N R11W S05	T10N R32E S08
T09N R43E S08	T10N R02W S21	T10N R11W S09	T10N R32E S09
T09N R43E S10	T10N R02W S22	T10N R11W S32	T10N R32E S17
T09N R43E S11	T10N R02W S27	T10N R11W S33	T10N R32E S18
T09N R43E S13	T10N R02W S28	T10N R11W S34	T10N R33E S01
T09N R43E S14	T10N R02W S29	T10N R11W S35	T10N R34E S06
T09N R43E S15	T10N R03W S11	T10N R11W S36	T10N R34E S07
T09N R43E S17	T10N R05E S01	T10N R15E S11	T10N R42E S04

Appendix E

FAA Integrated Noise Model Data
Prepared by Mead & Hunt, Inc.
March 2011

FAA Integrated Noise Model Data

The following pages include data as input into the FAA Integrated Noise Model (INM) software. INM is used to create existing and forecasted noise contours, included in **Chapter 7**. Noise contours are created for 2008, and 2028. Increase in operations by certain aircraft types, and the introduction of new aircraft types are derived from FAA approved aviation activity forecasts in **Chapter 3**. INM input data represents operations of the average day of the peak month, and is split amongst flight tracks, and not a record of operations for a specific day or time period.

INM data is arranged in the following order.

- Runway End 12 2008 Departures and Arrivals
- Runway End 30 2008 Departures, Arrivals, and Touch and Goes
- Runway End 03L 2008 Departures and Arrivals
- Runway End 21R 2008 Departures, Arrivals, and Tough and Goes
- Runway End 03R 2008 Departures and Arrivals
- Runway End 21L 2008 Departures, Arrivals, and Touch and Goes
- Runway End 12 2028 Departures and Arrivals
- Runway End 30 2028 Departures, Arrivals, and Touch and Goes
- Runway End 03L 2028 Departures and Arrivals
- Runway End 21R 2028 Departures, Arrivals, and Tough and Goes
- Runway End 03R 2028 Departures and Arrivals
- Runway End 21L 2028 Departures, Arrivals, and Touch and Goes

Runway End 12 2008 Departures																												
12-ITN OP	5736.848	Daytime Operations		0.95	Nighttime Operations		0.05	PSC Average Day OPS		15.71739																		
		Runway End 12-D		2868.42375	Figures below represent OPS divided by:				2	then	365																	
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**5**	**6**	**6**	**6**	**7**	**7**	**7**	**8**	**8**	**8**
Code	12-D	YKM/SEA	Day	Night	PDX	Day	Night	SFO/LAX/LAS	Day	Night	BOI/SLC	Day	Night	ALW/DEN	Day	Night	LWS/MSP	Day	Night	GEG	Day	Night	MWH	Day	Night	SEA/NUW	Day	Night
Air Carrier/Cargo																												
CRJ9-ER		0.000	0.000	0.000	X	X	X	X	X	X	0.381	0.362	0.019	X	X	X	X	X	X	X	X	X	X	X	X	0.000	0.000	0.000
CRJ701		0.005	0.005	0.000	X	X	X	X	X	X	0.012	0.011	0.001	0.154	0.146	0.008	X	X	X	X	X	X	X	X	X	0.002	0.002	0.000
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.001	0.001	0.000	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	0.751	0.713	0.038	0.402	0.382	0.020	X	X	X	X	X	X	X	X	X	X	X	X
DHC83		0.203	0.193	0.010	0.305	0.290	0.015	0.304	0.289	0.015	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.203	0.193	0.010
DHC830		0.503	0.478	0.025	X	X	X	X	X	X	0.001	0.001	0.000	0.002	0.002	0.000	0.001	0.001	0.000	0.001	0.001	0.000	X	X	X	0.501	0.476	0.025
MD83		X	X	X	X	X	X	0.098	0.094	0.005	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		0.001	0.001	0.000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.080	0.076	0.004	X	X	X	X	X	X
CNA208		0.012	0.012	0.001	X	X	X	0.001	0.001	0.000	X	X	X	X	X	X	X	X	X	0.085	0.081	0.004	X	X	X	0.000	0.000	0.000
737400		X	X	X	X	X	X	X	X	X	0.002	0.002	0.000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		0.001	0.001	0.000	X	X	X	0.004	0.003	0.000	X	X	X	X	X	X	X	X	X	0.001	0.001	0.000	X	X	X	0.002	0.001	0.000
Military																												
C17A		0.037	0.035	0.002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.037	0.035	0.002
P3C		0.037	0.035	0.002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.037	0.035	0.002
			0.000	0.000																								
Corporate	400.197																											
GIV	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
Lear35	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
Lear31	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
Bec9F	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
Citation I	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
FAL20A	66.6995	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001	0.020	0.019	0.001
Other GA	1285.575																											
CNA182	321.3938	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005
CNA206	321.3938	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005
GASEPF	321.3938	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005
GASEPV	321.3938	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005	0.098	0.093	0.005

Runway End 12 2008 Arrivals																															
Runway End 12- A		2868.42375																													
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**5**	**6**	**6**	**6**	**7**	**7**	**7**	**8**	**8**	**8**	**9**	**9**	**9**
Code	12-A	YKM/SEA	Day	Night	PDX	Day	Night	SFO/LAX/LAS	Day	Night	BOI/SLC	Day	Night	BOI/SLC	Day	Night	ALW/DEN	Day	Night	LWS/MSP	Day	Night	GEG	Day	Night	MWH	Day	Night	SEA/NUW	Day	Night
Air Carrier/Cargo																															
CRJ9-ER		0.000	0.000	0.000	X	X	X	X	X	X	0.095	0.091	0.005	0.095	0.091	0.005	X	X	X	X	X	X	X	X	X	X	X	X	0.000	0.000	0.000
CRJ701		0.005	0.005	0.000	X	X	X	X	X	X	0.006	0.006	0.000	0.006	0.006	0.000	0.154	0.146	0.008	X	X	X	X	X	X	X	X	X	0.002	0.002	0.000
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.001	0.001	0.000	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	0.375	0.357	0.019	0.375	0.357	0.019	0.402	0.382	0.020	X	X	X	X	X	X	X	X	X	X	X	X
DHC83		0.203	0.193	0.010	0.305	0.290	0.015	0.304	0.289	0.015	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.203	0.193	0.010
DHC830		0.503	0.478	0.025	X	X	X	X	X	X	0.000	0.000	0.000	0.000	0.000	0.000	0.002	0.002	0.000	0.001	0.001	0.000	0.001	0.001	0.000	X	X	X	0.501	0.476	0.025
MD83		X	X	X	X	X	X	0.098	0.094	0.005	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		0.001	0.001	0.000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.080	0.076	0.004	X	X	X	X	X	X
CNA208		0.012	0.012	0.001	X	X	X	0.001	0.001	0.000	X	X	X	X	X	X	X	X	X	X	X	X	0.085	0.081	0.004	X	X	X	0.000	0.000	0.000
737400		X	X	X	X	X	X	X	X	X	0.001	0.001	0.000	0.001	0.001	0.000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		0.001	0.001	0.000	X	X	X	0.004	0.003	0.000	X	X	X	X	X	X	X	X	X	X	X	X	0.001	0.001	0.000	X	X	X	0.002	0.001	0.000
Military																															
C17A		0.037	0.035	0.002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.037	0.035	0.002
P3C		0.037	0.035	0.002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.037	0.035	0.002
Corporate	400.197																														
GIV	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
Lear35	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
Lear31	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
Bec9F	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
Citation I	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
FAL20A	66.6995	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001	0.018	0.017	0.001
Other GA	1285.575																														
CNA182	321.3938	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004
CNA206	321.3938	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004
GASEPF	321.3938	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004
GASEPV	321.3938	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004	0.088	0.084	0.004

Runway End 30 2008 Departures																															
30-ITN OP	16449.18	Daytime Operations		0.95	Nighttime Operations		0.05																								
		Runway End 30-D		8224.58825	Figures below represent OPS divided by:				2	then	365																				
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**5**	**6**	**6**	**6**	**7**	**7**	**7**	**8**	**8**	**8**	**9**		
Code	30-D	BOI/SLC	Day	Night	BOI/SLC	Day	Night	SFO/LAX/LAS	Day	Night	PDX	Day	Night	SEA/YKM	Day	Night	SEA/NUW	Day	Night	MWH	Day	Night	GEG	Day	Night	LWS/MSP	Day	Night	ALW/DEN	Day	Night
Air Carrier/Cargo																															
CRJ9-ER		0.2840	0.2698	0.0142	0.2840	0.2698	0.0142	X	X	X	X	X	X	0.0009	0.0008	0.0000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CRJ701		0.0179	0.0170	0.0009	0.0179	0.0170	0.0009	X	X	X	X	X	X	0.0143	0.0136	0.0007	0.0143	0.0136	0.0007	X	X	X	X	X	X	X	X	X	0.4572	0.4343	0.0229
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0036	0.0034	0.0002	X	X	X	X	X	X
CLREGJ		1.1162	1.0604	0.0558	1.1162	1.0604	0.0558	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.1966	1.1368	0.0598
DHC83		X	X	X	X	X	X	0.9037	0.8585	0.0452	0.9073	0.8619	0.0454	0.6046	0.5743	0.0302	0.0018	0.0017	0.0001	X	X	X	X	X	X	X	X	X	X	X	X
DHC830		0.0009	0.0008	0.0000	0.0009	0.0008	0.0000	X	X	X	X	X	X	1.4966	1.4218	0.0748	0.0036	0.0034	0.0002	X	X	X	0.0018	0.0017	0.0001	0.0036	0.0034	0.0002	0.0054	0.0051	0.0003
MD83		X	X	X	X	X	X	0.2929	0.2783	0.0146	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	X	X	X	0.0021	0.0020	0.0001	X	X	X	X	X	X	0.2300	0.2185	0.0115	X	X	X	X	X	X
CNA208		X	X	X	X	X	X	0.0021	0.0020	0.0001	X	X	X	0.0351	0.0333	0.0018	0.0007	0.0007	0.0000	X	X	X	0.2447	0.2325	0.0122	X	X	X	X	X	X
737400		0.0036	0.0034	0.0002	0.0036	0.0034	0.0002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		X	X	X	X	X	X	0.0107	0.0102	0.0005	X	X	X	0.0027	0.0025	0.0001	0.0045	0.0042	0.0002	X	X	X	0.0018	0.0017	0.0001	X	X	X	X	X	X
Military																															
C17A		X	X	X	X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X
P3C		X	X	X	X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X
Corporate	1147.68																														
GIV	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
Lear35	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
Lear31	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
Bec9F	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
Citation I	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
FAL20A	191.28	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026	0.0524	0.0498	0.0026
Other GA	3685.315																														
CNA182	921.3288	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126
CNA206	921.3288	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126
GASEPF	921.3288	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126
GASEPV	921.3288	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126	0.2524	0.2398	0.0126

Runway End 30 2008 Arrivals and Touch and Goes																																	Total	Left	Right	
	Runway End 30- A		8224.58825																												Runway End 30- T&G		9477.52	7108.14	2369.38	
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**5**	**6**	**6**	**6**	**7**	**7**	**7**	**8**	**8**	**8**			**LEFT**	**LEFT**	**LEFT**	**RIGHT**	**RIGHT**	**RIGHT**
Code	30-A	BOI/SLC	Day	Night	SFO/LAX/LAS	Day	Night	PDX	Day	Night	SEA/YKM	Day	Night	SEA/NUW	Day	Night	MWH	Day	Night	GEG	Day	Night	LWS/MSP	Day	Night	ALW/DEN	Day	Night			Total	Day	Night	Total	Day	Night
Air Carrier/Cargo																														% of OPS						
CRJ9-ER		0.5679	0.5395	0.0284	X	X	X	X	X	X	0.0009	0.0008	0.0000	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		0.0000	X	X	X	X	X	X
CRJ701		0.0357	0.0339	0.0018	X	X	X	X	X	X	0.0143	0.0136	0.0007	0.0143	0.0136	0.0007	X	X	X	X	X	X	X	X	X	0.4572	0.4343	0.0229			X	X	X	X	X	X
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0036	0.0034	0.0002	X	X	X	X	X	X			X	X	X	X	X	X
CLREGJ		2.2325	2.1208	0.1116	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.1966	1.1368	0.0598			X	X	X	X	X	X
DHC83		X	X	X	0.9037	0.8585	0.0452	0.9073	0.8619	0.0454	0.6046	0.5743	0.0302	0.0018	0.0017	0.0001	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC830		0.0018	0.0017	0.0001	X	X	X	X	X	X	1.4966	1.4218	0.0748	0.0036	0.0034	0.0002	X	X	X	0.0018	0.0017	0.0001	0.0036	0.0034	0.0002	0.0054	0.0051	0.0003			X	X	X	X	X	X
MD83		X	X	X	0.2929	0.2783	0.0146	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	0.0021	0.0020	0.0001	X	X	X	X	X	X	0.2300	0.2185	0.0115	X	X	X	X	X	X			X	X	X	X	X	X
CNA208		X	X	X	0.0021	0.0020	0.0001	X	X	X	0.0351	0.0333	0.0018	0.0007	0.0007	0.0000	X	X	X	0.2447	0.2325	0.0122	X	X	X	X	X	X			X	X	X	X	X	X
737400		0.0071	0.0068	0.0004	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737800		X	X	X	0.0107	0.0102	0.0005	X	X	X	0.0027	0.0025	0.0001	0.0045	0.0042	0.0002	X	X	X	0.0018	0.0017	0.0001	X	X	X	X	X	X			X	X	X	X	X	X
Military																														% of OPS	547.3268			182.4423		
C17A		X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X		0.0770	0.7498	0.7123	0.0375	0.2499	0.2374	0.0125
P3C		X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X			0.7498	0.7123	0.0375	0.2499	0.2374	0.0125
Corporate	1147.68																													% of OPS						
GIV	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029		0.0000	X	X	X	X	X	X
Lear35	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029			X	X	X	X	X	X
Lear31	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029			X	X	X	X	X	X
Bec9F	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029			X	X	X	X	X	X
Citation I	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029			X	X	X	X	X	X
FAL20A	191.28	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029	0.0582	0.0553	0.0029			X	X	X	X	X	X
Other GA	3685.315																													% of OPS	6560.8132			2186.9377		
CNA182	921.3288	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140		0.9230	4.4937	4.2690	0.2247	1.4979	1.4230	0.0749
CNA206	921.3288	0.3155	0.2997	0.0158	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140			4.4937	4.2690	0.2247	1.4979	1.4230	0.0749
GASEPF	921.3288	0.3155	0.2997	0.0158	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140			4.4937	4.2690	0.2247	1.4979	1.4230	0.0749
GASEPV	921.3288	0.3155	0.2997	0.0158	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140	0.2805	0.2664	0.0140			4.4937	4.2690	0.2247	1.4979	1.4230	0.0749

Runway End 03L 2008 Departures and Arrivals																						
03L-ITN OI	382.4565	Daytime Operations		0.95	Nighttime Operations		0.05															
		Runway End 03L-D		191.22825	Figures below represent OPS divided by:				2	then	365			Runway End 03L- A		191.2283						
Track		0	0	0	1	1	1	2	2	2				0	0	0	1	1	1	2	2	2
Code	03L-D	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night			03L-A	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night
Air Carrier/ v	OPS v																					
CRJ9-ER	9.6532	0.0044	0.0042	0.0002	0.0044	0.0042	0.0002	0.0044	0.0002	0.0002				0.0044	0.0042	0.0002	0.0044	0.0042	0.0002	0.0044	0.0042	0.0002
CRJ701	8.6075	0.0039	0.0037	0.0002	0.0039	0.0037	0.0002	0.0039	0.0002	0.0002				0.0039	0.0037	0.0002	0.0039	0.0037	0.0002	0.0039	0.0037	0.0002
EMB170	0.0606	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000				0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
CLREGJ	58.1917	0.0266	0.0252	0.0013	0.0266	0.0252	0.0013	0.0266	0.0013	0.0013				0.0266	0.0252	0.0013	0.0266	0.0252	0.0013	0.0266	0.0252	0.0013
DHC83	40.9918	0.0187	0.0178	0.0009	0.0187	0.0178	0.0009	0.0187	0.0009	0.0009				0.0187	0.0178	0.0009	0.0187	0.0178	0.0009	0.0187	0.0178	0.0009
DHC830	25.6710	0.0117	0.0111	0.0006	0.0117	0.0111	0.0006	0.0117	0.0006	0.0006				0.0117	0.0111	0.0006	0.0117	0.0111	0.0006	0.0117	0.0111	0.0006
MD83	4.9705	0.0023	0.0022	0.0001	0.0023	0.0022	0.0001	0.0023	0.0001	0.0001				0.0023	0.0022	0.0001	0.0023	0.0022	0.0001	0.0023	0.0022	0.0001
ATR72	3.9389	0.0018	0.0017	0.0001	0.0018	0.0017	0.0001	0.0018	0.0001	0.0001				0.0018	0.0017	0.0001	0.0018	0.0017	0.0001	0.0018	0.0017	0.0001
CNA208	4.7957	0.0022	0.0021	0.0001	0.0022	0.0021	0.0001	0.0022	0.0001	0.0001				0.0022	0.0021	0.0001	0.0022	0.0021	0.0001	0.0022	0.0021	0.0001
737400	0.1212	0.0001	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001	0.0000	0.0000				0.0001	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001	0.0001	0.0000
737800	0.2879	0.0001	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001	0.0000	0.0000				0.0001	0.0001	0.0000	0.0001	0.0001	0.0000	0.0001	0.0001	0.0000
Military																						
C17A		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0001	0.0001				0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0015	0.0001
P3C		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0001	0.0001				0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0015	0.0001
Corporate (	26.6798												26.6798									
GIV	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
Lear35	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
Lear31	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
Bec9F	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
Citation I	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
FAL20A	4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0002	0.0002			4.4466	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002	0.0041	0.0039	0.0002
Other GA	85.7050												85.7050									
CNA182	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0010	0.0010			21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010
CNA206	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0010	0.0010			21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010
GASEPF	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0010	0.0010			21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010
GASEPV	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0010	0.0010			21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010

Runway End 2008 21R Departures																												
21R-ITN O	9563.186	Daytime Operations		0.95	Nighttime Operations		0.05																					
		Runway End 21R-D		4781.593	Figures below represent OPS divided by:					2	then	365																
Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8
Code	21R-D	GEG	Day	Night	MWH	Day	Night	SEA/NUW	Day	Night	SEA/YKM	Day	Night	PDX	Day	Night	SFO/LAX/LA	Day	Night	BOI/SLC	Day	Night	ALW/DEN	Day	Night	LWS/MSP	Day	Night
Air Carrier/Cargo																												
CRJ9-ER		X	X	X	X	X	X	0.0005	0.0005	0.0000	0.0005	0.0005	0.0000	X	X	X	X	X	X	0.3302	0.3137	0.0165	X	X	X	X	X	X
CRJ701		X	X	X	X	X	X	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	X	X	X	X	X	X	0.0208	0.0197	0.0010	0.2658	0.2525	0.0133	X	X	X
EMB170		0.0021	0.0020	0.0001	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.2979	1.2330	0.0649	0.6957	0.6609	0.0348	X	X	X
DHC83		X	X	X	X	X	X	0.3504	0.3329	0.0175	0.3515	0.3339	0.0176	0.5275	0.5011	0.0264	0.5254	0.4991	0.0263	X	X	X	X	X	X	X	X	X
DHC830		0.0010	0.0010	0.0001	X	X	X	0.8659	0.8226	0.0433	0.8701	0.8266	0.0435	X	X	X	X	X	X	0.0010	0.0010	0.0001	0.0031	0.0030	0.0002	0.0021	0.0020	0.0001
MD83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.1703	0.1618	0.0085	X	X	X	X	X	X	X	X	X
ATR72		0.1337	0.1270	0.0067	X	X	X	0.0012	0.0012	0.0001	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CNA208		0.1423	0.1352	0.0071	X	X	X	0.0004	0.0004	0.0000	0.0204	0.0194	0.0010	X	X	X	0.0012	0.0012	0.0001	X	X	X	X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0042	0.0039	0.0002	X	X	X	X	X	X
737800		0.0010	0.0010	0.0001	X	X	X	0.0026	0.0025	0.0001	0.0016	0.0015	0.0001	X	X	X	0.0062	0.0059	0.0003	X	X	X	X	X	X	X	X	X
Military																												
C17A		X	X	X	X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
P3C		X	X	X	X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corporate (	667.2192																											
GIV	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
Lear35	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
Lear31	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
Bec9F	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
Citation I	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
FAL20A	111.2032	0.0339	0.0322	0.0017	0.0339			0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017
Other GA	2142.6250																											
CNA182	535.6563	0.1631	0.1549	0.0082	0.1631			0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082
CNA206	535.6563	0.1631	0.1549	0.0082	0.1631			0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082
GASEPF	535.6563	0.1631	0.1549	0.0082	0.1631			0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082
GASEPV	535.6563	0.1631	0.1549	0.0082	0.1631			0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082

Runway 21R 2008 Arrivals and Touch and Goes																																	Total	Left	Right	
	Runway End 21R- A		4781.593																												Runway End 21R- T&G		5467.8	4100.85	1366.95	
Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8			LEFT	LEFT	LEFT	RIGHT	RIGHT	RIGHT
Code	**21R-A**	**PDX**	**Day**	**Night**	**SEA/YKM**	**Day**	**Night**	**SEA/NUW**	**Day**	**Night**	**MWH**	**Day**	**Night**	**GEG**	**Day**	**Night**	**ILS**	**Day**	**Night**	**LWS/MSP**	**Day**	**Night**	**ALW/DEN**	**Day**	**Night**	**SFO/LAX/I**	**Day**	**Night**			**Total**	**Day**	**Night**	**Total**	**Day**	**Night**
Air Carrier/Cargo																														% of OPS						
CRJ9-ER		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3307	0.3142	0.0165	X	X	X	X	X	X	X	X	X		0.0000	X	X	X	X	X	X
CRJ701		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.2949	0.2801	0.0147	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0021	0.0020	0.0001	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.9935	1.8939	0.0997	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	1.4043	1.3341	0.0702	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC830		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.8794	0.8355	0.0440	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
MD83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.1703	0.1618	0.0085	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.1349	0.1282	0.0067	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
CNA208		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.1643	0.1561	0.0082	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0042	0.0039	0.0002	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737800		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0099	0.0094	0.0005	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
Military																														% of OPS	315.7655			105.2552		
C17A		X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		0.0770	0.4326	0.4109	0.0216	0.1442	0.1370	0.0072
P3C		X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			0.4326	0.4109	0.0216	0.1442	0.1370	0.0072
Corporate	667.2192																													% of OPS						
GIV	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017		0.0000	X	X	X	X	X	X
Lear35	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017			X	X	X	X	X	X
Lear31	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017			X	X	X	X	X	X
Bec9F	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017			X	X	X	X	X	X
Citation I	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017			X	X	X	X	X	X
FAL20A	111.2032	0.0339	0.0322	0.0017	0.0339	0.0322	0.0016	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017	0.0339	0.0322	0.0017			X	X	X	X	X	X
Other GA	2142.6250																													% of OPS	3785.0846			1261.6949		
CNA182	535.6563	0.1631	0.1549	0.0082	0.1631	0.1549	0.0077	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082		0.9230	2.5925	2.4629	0.1296	2.5925	2.4629	0.1296
CNA206	535.6563	0.1834	0.1743	0.0092	0.1631	0.1549	0.0077	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082			2.5925	2.4629	0.1296	2.5925	2.4629	0.1296
GASEPF	535.6563	0.1834	0.1743	0.0092	0.1631	0.1549	0.0077	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082			2.5925	2.4629	0.1296	2.5925	2.4629	0.1296
GASEPV	535.6563	0.1834	0.1743	0.0092	0.1631	0.1549	0.0077	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082	0.1631	0.1549	0.0082			2.5925	2.4629	0.1296	2.5925	2.4629	0.1296
Runway End 03R 2008 Departures																																				
03R-ITN O	171.41	Daytime Operations		0.95	Nighttime Operations		0.05																													
		Runway End 03R-D		85.705	Figures below represent OPS divided by:				2	then	365			Runway End 03R- A		85.705																				
Track		0	0	0	1	1	1	2	2	2					0	0	0	1	1	1	2	2	2													
Code	**03R-D**	**LEFT**	**Day**	**Night**	**STRAIGHT**	**Day**	**Night**	**RIGHT**	**Day**	**Night**				**03R-A**	**LEFT**	**Day**	**Night**	**STRAIGHT**	**Day**	**Night**	**RIGHT**	**Day**	**Night**													
Other GA	85.705												85.705	DEP																						
CNA182	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010				21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010													
CNA206	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010				21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010													
GASEPF	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010				21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010													
GASEPV	21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010				21.4263	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010	0.0196	0.0186	0.0010													
Runway End 21L 2008 Arrivals and Touch and Goes																																				
21L-ITN OI	2571.15	Daytime Operations		0.95	Nighttime Operations		0.05																				Total	Left	Right							
		Runway End 21L-D		1285.575	Figures below represent OPS divided b				2	then	365			Runway End 21L- A		1285.575									Runway End 21L- T&G		3280.68	3280.68	0							
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**					**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**		**LEFT**	**LEFT**	**LEFT**									
Code	21L-D	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night				21L-A	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night		Total	Day	Night									
Other GA	1285.5750	DEP											1285.5750	DEP										% of OPS	3280.6800											
CNA182	321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147				321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	1.0000	2.2470	2.1347	0.1124									
CNA206	321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147				321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147		2.2470	2.1347	0.1124									
GASEPF	321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147				321.3938	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147	0.2935	0.2788	0.0147		2.2470	2.1347	0.1124									

Runway End 12 2028 Departures

12-ITN OP 8686.1355 Daytime Operations 0.95 Nighttime Operations 0.05

Runway End 12-D 4343.068 Figures below represent OPS divided by: 2 then 365

Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8
Code	**12-D**	**YKM/SEA**	**Day**	**Night**	**PDX**	**Day**	**Night**	**SFO/LAX/I**	**Day**	**Night**	**BOI/SLC**	**Day**	**Night**	**ALW/DEN**	**Day**	**Night**	**LWS/MSP**	**Day**	**Night**	**GEG**	**Day**	**Night**	**MWH**	**Day**	**Night**	**SEA/NUW**	**Day**	**Night**
Air Carrier/Cargo																												
CRJ9-ER		0.0003	0.0003	0.0000	X	X	X	X	X	X	0.4431	0.4210	0.0222	X	X	X	X	X	X	X	X	X	X	X	X	0.0003	0.0003	0.0000
CRJ701		0.0063	0.0059	0.0003	X	X	X	X	X	X	0.0313	0.0297	0.0016	0.4001	0.3801	0.0200	X	X	X	X	X	X	X	X	X	0.0031	0.0030	0.0002
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3077	0.2923	0.0154	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	0.1605	0.1525	0.0080	0.0860	0.0817	0.0043	X	X	X	X	X	X	X	X	X	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DHC830		1.0319	0.9804	0.0516	X	X	X	X	X	X	0.0024	0.0023	0.0001	0.0073	0.0070	0.0004	0.0049	0.0046	0.0002	0.0024	0.0023	0.0001	X	X	X	1.0222	0.9711	0.0511
MD83		X	X	X	X	X	X	0.4537	0.4310	0.0227	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		0.0028	0.0027	0.0001	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3069	0.2915	0.0153	X	X	X	X	X	X
CNA208		0.0001	0.0001	0.0000	X	X	X	0.0000	0.0000	0.0000	X	X	X	X	X	X	X	X	X	0.0009	0.0008	0.0000	X	X	X	0.0000	0.0000	0.0000
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		0.0031	0.0030	0.0002	X	X	X	0.0249	0.0237	0.0012	X	X	X	X	X	X	X	X	X	0.0042	0.0039	0.0002	X	X	X	0.0073	0.0069	0.0004
Military																												
C17A		0.0366	0.0348	0.0018	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0366	0.0348	0.0018
P3C		0.0366	0.0348	0.0018	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0366	0.0348	0.0018
Corporate	816.7268																											
GIV	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
Lear35	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
Lear31	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
Bec9F	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
Citation I	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
FAL20A	136.1211	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021	0.0414	0.0394	0.0021
Other GA	1910.2913																											
CNA182	477.5728	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073
CNA206	477.5728	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073
GASEPF	477.5728	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073
GASEPV	477.5728	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073	0.1454	0.1381	0.0073

Runway End 12 2028 Arrivals

Runway End 12- A 4343.068

Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9	9	9
Code	**12-A**	**YKM/SEA**	**Day**	**Night**	**PDX**	**Day**	**Night**	**SFO/LAX/I**	**Day**	**Night**	**BOI/SLC**	**Day**	**Night**	**BOI/SLC**	**Day**	**Night**	**ALW/DEN**	**Day**	**Night**	**LWS/MSP**	**Day**	**Night**	**GEG**	**Day**	**Night**	**MWH**	**Day**	**Night**	**SEA/NUW**	**Day**	**Night**
Air Carrier/Cargo																															
CRJ9-ER		0.0003	0.0003	0.0000	X	X	X	X	X	X	0.1108	0.1052	0.0055	0.1108	0.1052	0.0055	X	X	X	X	X	X	X	X	X	X	X	X	0.0003	0.0003	0.0000
CRJ701		0.0063	0.0059	0.0003	X	X	X	X	X	X	0.0156	0.0148	0.0008	0.0156	0.0148	0.0008	0.4001	0.3801	0.0200	X	X	X	X	X	X	X	X	X	0.0031	0.0030	0.0002
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3077	0.2923	0.0154	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	0.0803	0.0763	0.0040	0.0803	0.0763	0.0040	0.0860	0.0817	0.0043	X	X	X	X	X	X	X	X	X	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DHC830		1.0319	0.9804	0.0516	X	X	X	X	X	X	0.0012	0.0012	0.0001	0.0012	0.0012	0.0001	0.0073	0.0070	0.0004	0.0049	0.0046	0.0002	0.0006	0.0006	0.0000	X	X	X	1.0222	0.9711	0.0511
MD83		X	X	X	X	X	X	0.4537	0.4310	0.0227	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		0.0028	0.0027	0.0001	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.3069	0.2915	0.0153	X	X	X	X	X	X
CNA208		0.0001	0.0001	0.0000	X	X	X	0.0000	0.0000	0.0000	X	X	X	X	X	X	X	X	X	X	X	X	0.0009	0.0008	0.0000	X	X	X	0.0000	0.0000	0.0000
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		0.0031	0.0030	0.0002	X	X	X	0.0249	0.0237	0.0012	X	X	X	X	X	X	X	X	X	X	X	X	0.0042	0.0039	0.0002	X	X	X	0.0073	0.0069	0.0004
Military																															
C17A		0.0366	0.0348	0.0018	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0366	0.0348	0.0018
P3C		0.0366	0.0348	0.0018	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0366	0.0348	0.0018
Corporate	400.1970																														
GIV	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
Lear35	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
Lear31	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
Bec9F	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
Citation I	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
FAL20A	66.6995	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009	0.0183	0.0174	0.0009
Other GA	1285.5750																														
CNA182	321.3938	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044
CNA206	321.3938	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044
GASEPF	321.3938	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044
GASEPV	321.3938	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044	0.0881	0.0837	0.0044

Runway End 30 2028 Departures																															
30-ITN OP	24905.707	Daytime Operations		0.95	Nighttime Operations		0.05																								
		Runway End 30-D		12452.85	Figures below represent OPS divided by:				2	then	365																				
Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8	9		
Code	30-D	BOI/SLC	Day	Night	BOI/SLC	Day	Night	SFO/LAX/I	Day	Night	PDX	Day	Night	SEA/YKM	Day	Night	SEA/NUW	Day	Night	MWH	Day	Night	GEG	Day	Night	LWS/MSP	Day	Night	ALW/DEN	Day	Night
Air Carrier/Cargo																															
CRJ9-ER		0.6278	0.5964	0.0314	0.6278	0.5964	0.0314	X	X	X	X	X	X	0.0010	0.0009	0.0000	0.0010	0.0009	0.0000	X	X	X	X	X	X	X	X	X	X	X	X
CRJ701		0.0443	0.0421	0.0022	0.0443	0.0421	0.0022	X	X	X	X	X	X	0.0177	0.0168	0.0009	0.0177	0.0168	0.0009	X	X	X	X	X	X	X	X	X	1.1336	1.0769	0.0567
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.8719	0.8283	0.0436	X	X	X
CLREGJ		0.2274	0.2160	0.0114	0.2274	0.2160	0.0114	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.2438	0.2316	0.0122
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DHC830		0.0035	0.0033	0.0002	0.0035	0.0033	0.0002	X	X	X	X	X	X	2.9239	2.7777	0.1462	2.8961	2.7513	0.1448	X	X	X	0.0069	0.0066	0.0003	0.0139	0.0132	0.0007	0.0208	0.0197	0.0010
MD83		X	X	X	X	X	X	2.8961	2.7513	0.1448	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	X	X	X	0.0087	0.0082	0.0004	X	X	X	X	X	X	0.8695	0.8261	0.0435	X	X	X	X	X	X
CNA208		X	X	X	X	X	X	0.0000	0.0000	0.0000	X	X	X	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	X	X	X	0.0024	0.0023	0.0001	X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		X	X	X	X	X	X	0.0706	0.0671	0.0035	X	X	X	0.0088	0.0084	0.0004	0.0206	0.0196	0.0010	X	X	X	0.0118	0.0112	0.0006	X	X	X	X	X	X
Military																															
C17A		X	X	X	X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X
P3C		X	X	X	X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X
Corporate (	2342.1985																														
GIV	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
Lear35	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
Lear31	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
Bec9F	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
Citation I	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
FAL20A	390.3664	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053	0.1069	0.1016	0.0053
Other GA	5476.1683																														
CNA182	1369.0421	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188
CNA206	1369.0421	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188
GASEPF	1369.0421	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188
GASEPV	1369.0421	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188	0.3751	0.3563	0.0188

Runway End 30 2028 Arrivals and Touch and Goes																																				
	Runway End 30- A		12452.85																												Runway End 30- T&G		13729.79	10297.345	3432.448	
Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8			LEFT	LEFT	LEFT	RIGHT	RIGHT	RIGHT
Code	30-A	BOI/SLC	Day	Night	SFO/LAX/LAS	Day	Night	PDX	Day	Night	SEA/YKM	Day	Night	SEA/NUW	Day	Night	MWH	Day	Night	GEG	Day	Night	LWS/MSP	Day	Night	ALW/DEN	Day	Night			Total	Day	Night	Total	Day	Night
Air Carrier/Cargo																														% of OPS						
CRJ9-ER		1.2556	1.1928	0.0628	X	X	X	X	X	X	0.0010	0.0009	0.0000	0.0010	0.0009	0.0000	X	X	X	X	X	X	X	X	X	X	X	X		0.0000	X	X	X	X	X	X
CRJ701		0.0886	0.0841	0.0044	X	X	X	X	X	X	0.0177	0.0168	0.0009	0.0177	0.0168	0.0009	X	X	X	X	X	X	X	X	X	1.1336	1.0769	0.0567			X	X	X	X	X	X
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.8719	0.8283	0.0436	X	X	X			X	X	X	X	X	X
CLREGJ		0.4548	0.4321	0.0227	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.2438	0.2316	0.0122			X	X	X	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC830		0.0069	0.0066	0.0003	X	X	X	X	X	X	2.9239	2.7777	0.1462	2.8961	2.7513	0.1448	X	X	X	0.0069	0.0066	0.0003	0.0139	0.0132	0.0007	0.0208	0.0197	0.0010			X	X	X	X	X	X
MD83		X	X	X	2.8961	2.7513	0.1448	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	0.0087	0.0082	0.0004	X	X	X	X	X	X	0.8695	0.8261	0.0435	X	X	X	X	X	X			X	X	X	X	X	X
CNA208		X	X	X	0.0000	0.0000	0.0000	X	X	X	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	X	X	X	0.0024	0.0023	0.0001	X	X	X	X	X	X			X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737800		X	X	X	0.0706	0.0671	0.0035	X	X	X	0.0088	0.0084	0.0004	0.0206	0.0196	0.0010	X	X	X	0.0118	0.0112	0.0006	X	X	X	X	X	X			X	X	X	X	X	X
Military																														% of OPS	792.8956			264.2985		
C17A		X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X		0.0770	1.0862	1.0319	0.0543	0.3621	0.3440	0.0181
P3C		X	X	X	X	X	X	X	X	X	0.1050	0.0998	0.0053	0.1050	0.0998	0.0053	X	X	X	X	X	X	X	X	X	X	X	X			1.0862	1.0319	0.0543	0.3621	0.3440	0.0181
Corporate (	2342.1985																													% of OPS						
GIV	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059		0.0000	X	X	X	X	X	X
Lear35	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059			X	X	X	X	X	X
Lear31	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059			X	X	X	X	X	X
Bec9F	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059			X	X	X	X	X	X
Citation I	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059			X	X	X	X	X	X
FAL20A	390.3664	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059	0.1188	0.1129	0.0059			X	X	X	X	X	X
Other GA	5476.1683																													% of OPS	9504.4499			3168.1500		
CNA182	1369.0421	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208		0.9230	6.5099	6.1844	0.3255	2.1700	2.0615	0.1085
CNA206	1369.0421	0.4689	0.4454	0.0234	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208			6.5099	6.1844	0.3255	2.1700	2.0615	0.1085
GASEPF	1369.0421	0.4689	0.4454	0.0234	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208			6.5099	6.1844	0.3255	2.1700	2.0615	0.1085
GASEPV	1369.0421	0.4689	0.4454	0.0234	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208	0.4168	0.3959	0.0208			6.5099	6.1844	0.3255	2.1700	2.0615	0.1085

Runway End 03L 2028 Departures and Arrivals

03L-ITN OI	579.0757	Daytime Operations		0.95	Nighttime Operations		0.05															
		Runway End 03L-D		289.5379	Figures below represent OPS divided by:						2	then	365	Runway End 03L- A		289.5379						
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**		**Track**		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**
Code	**03L-D**	**LEFT**	**Day**	**Night**	**STRAIGHT**	**Day**	**Night**	**RIGHT**	**Day**	**Night**		**Code**	**03L-A**	**LEFT**	**Day**	**Night**	**STRAIGHT**	**Day**	**Night**	**RIGHT**	**Day**	**Night**
Air Carrier/ v	OPS v											Air Carrier/Cargo										
CRJ9-ER	18.0000	0.0082	0.0078	0.0004	0.0082	0.0078	0.0004	0.0082	0.0004	0.0004		CRJ9-ER		0.0082	0.0078	0.0004	0.0082	0.0078	0.0004	0.0082	0.0078	0.0004
CRJ701	18.0000	0.0082	0.0078	0.0004	0.0082	0.0078	0.0004	0.0082	0.0004	0.0004		CRJ701		0.0082	0.0078	0.0004	0.0082	0.0078	0.0004	0.0082	0.0078	0.0004
EMB170	12.4800	0.0057	0.0054	0.0003	0.0057	0.0054	0.0003	0.0057	0.0003	0.0003		EMB170		0.0057	0.0054	0.0003	0.0057	0.0054	0.0003	0.0057	0.0054	0.0003
CLREGJ	10.0000	0.0046	0.0043	0.0002	0.0046	0.0043	0.0002	0.0046	0.0002	0.0002		CLREGJ		0.0046	0.0043	0.0002	0.0046	0.0043	0.0002	0.0046	0.0043	0.0002
DHC83	X	X	X	X	X	X	X	X	X	X		DHC83		X	X	X	X	X	X	X	X	X
DHC830	84.0000	0.0384	0.0364	0.0019	0.0384	0.0364	0.0019	0.0384	0.0019	0.0019		DHC830		0.0384	0.0364	0.0019	0.0384	0.0364	0.0019	0.0384	0.0364	0.0019
MD83	18.4000	0.0084	0.0080	0.0004	0.0084	0.0080	0.0004	0.0084	0.0004	0.0004		MD83		0.0084	0.0080	0.0004	0.0084	0.0080	0.0004	0.0084	0.0080	0.0004
ATR72	12.5600	0.0057	0.0054	0.0003	0.0057	0.0054	0.0003	0.0057	0.0003	0.0003		ATR72		0.0057	0.0054	0.0003	0.0057	0.0054	0.0003	0.0057	0.0054	0.0003
CNA208	0.0400	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		CNA208		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
737400	X	X	X	X	X	X	X	X	X	X		737400.0000		X	X	X	X	X	X	X	X	X
737800	1.6000	0.0007	0.0007	0.0000	0.0007	0.0007	0.0000	0.0007	0.0000	0.0000		737800.0000		0.0007	0.0007	0.0000	0.0007	0.0007	0.0000	0.0007	0.0007	0.0000
Military												Military										
C17A		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0001	0.0001		C17A		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0015	0.0001
P3C		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0001	0.0001		P3C		0.0016	0.0015	0.0001	0.0016	0.0015	0.0001	0.0016	0.0015	0.0001
Corporate	54.4485											Corporate GA	54.4485	DEP								
GIV	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		GIV	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
Lear35	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		Lear35	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
Lear31	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		Lear31	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
Bec9F	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		Bec9F	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
Citation I	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		Citation I	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
FAL20A	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0004	0.0004		FAL20A	9.0747	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004	0.0083	0.0079	0.0004
Other GA	127.3528											Other GA	127.3528	DEP								
CNA182	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0015	0.0015		CNA182	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
CNA206	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0015	0.0015		CNA206	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
GASEPF	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0015	0.0015		GASEPF	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
GASEPV	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0015	0.0015		GASEPV	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015

Runway End 21R 2028 Departures

21R-ITN O	14479.618	Daytime Operations		0.95	Nighttime Operations		0.05																					
		Runway End 21R-D		7239.809	Figures below represent OPS divided by:					2	then	365																
Track		**0**	**0**	**0**	**1**	**1**	**1**	**2**	**2**	**2**	**3**	**3**	**3**	**4**	**4**	**4**	**5**	**5**	**5**	**6**	**6**	**6**	**7**	**7**	**7**	**8**	**8**	**8**
Code	**21R-D**	**GEG**	**Day**	**Night**	**MWH**	**Day**	**Night**	**SEA/NUW**	**Day**	**Night**	**SEA/YKM**	**Day**	**Night**	**PDX**	**Day**	**Night**	**SFO/LAX/LAS**	**Day**	**Night**	**BOI/SLC**	**Day**	**Night**	**ALW/DEN**	**Day**	**Night**	**LWS/MSP**	**Day**	**Night**
Air Carrier/Cargo																												
CRJ9-ER		X	X	X	X	X	X	0.0006	0.0006	0.0000	0.0006	0.0006	0.0000	X	X	X	X	X	X	0.7386	0.7016	0.0369	X	X	X	X	X	X
CRJ701		X	X	X	X	X	X	0.0104	0.0099	0.0005	0.0104	0.0099	0.0005	X	X	X	X	X	X	0.0521	0.0495	0.0026	0.6668	0.6335	0.0333	X	X	X
EMB170		0.5129	0.4872	0.0256	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.2676	0.2542	0.0134	0.1434	0.1362	0.0072	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
DHC830		0.0041	0.0039	0.0002	X	X	X	1.7036	1.6184	0.0852	1.7199	1.6339	0.0860	X	X	X	X	X	X	0.0041	0.0039	0.0002	0.0122	0.0116	0.0006	0.0082	0.0077	0.0004
MD83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.7562	0.7184	0.0378	X	X	X	X	X	X	X	X	X
ATR72		0.5115	0.4859	0.0256	X	X	X	X	X	X	0.0047	0.0044	0.0002	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
CNA208		0.0014	0.0014	0.0001	X	X	X	0.0000	0.0000	0.0000	0.0002	0.0002	0.0000	X	X	X	0.0000	0.0000	0.0000	X	X	X	X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
737800		0.0069	0.0066	0.0003	X	X	X	0.0121	0.0115	0.0006	0.0052	0.0049	0.0003	X	X	X	0.0415	0.0395	0.0021	X	X	X	X	X	X	X	X	X
Military																												
C17A		X	X	X	X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
P3C		X	X	X	X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Corporate	1361.6688																											
GIV	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
Lear35	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
Lear31	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
Bec9F	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
Citation I	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
FAL20A	226.9448	0.0691	0.0656	0.0035	0.0691			0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035
Other GA	3183.8188																											
CNA182	795.95469	0.2423	0.2302	0.0121	0.2423			0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121
CNA206	795.95469	0.2423	0.2302	0.0121	0.2423			0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121
GASEPF	795.95469	0.2423	0.2302	0.0121	0.2423			0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121
GASEPV	795.95469	0.2423	0.2302	0.0121	0.2423			0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121

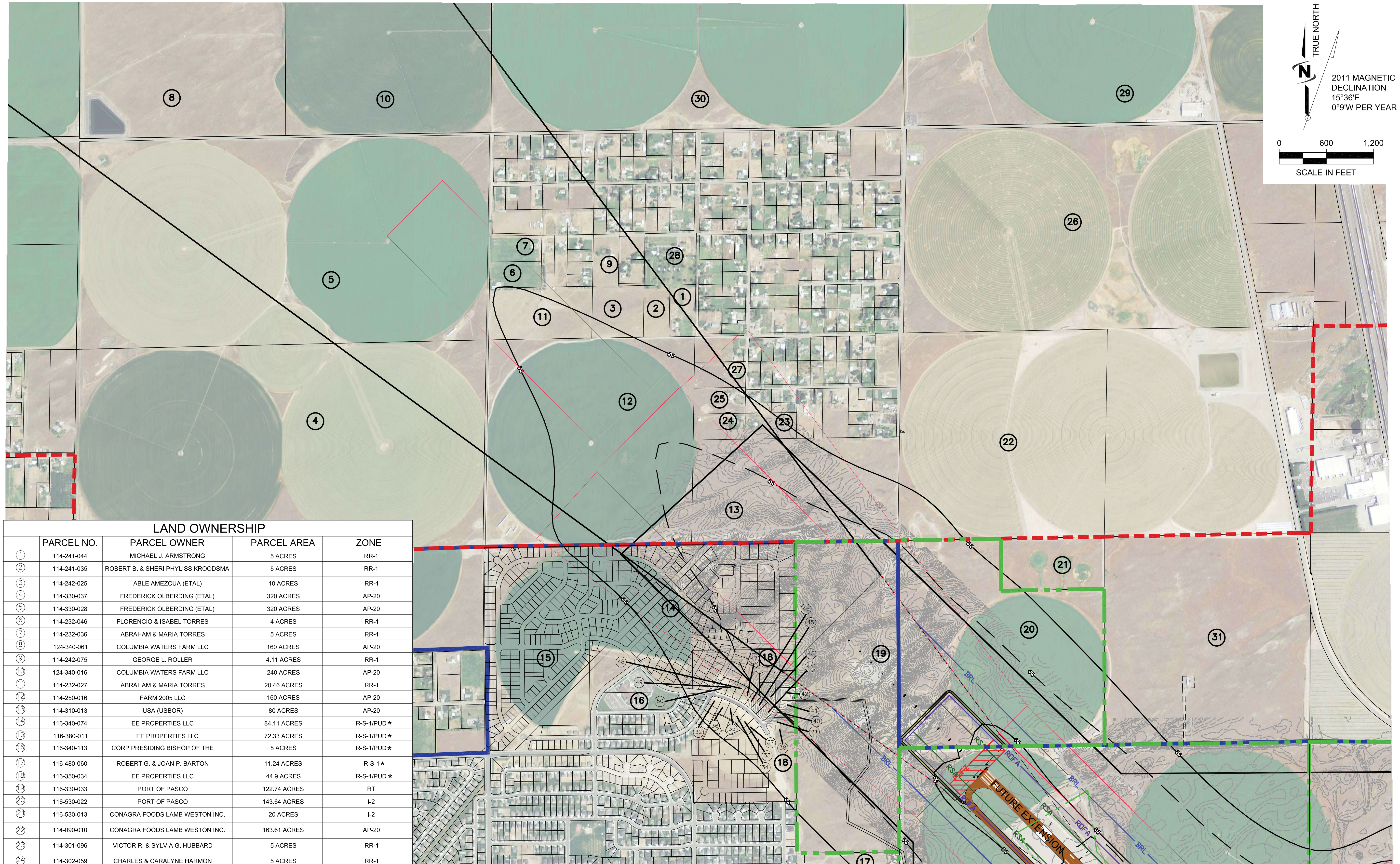
Runway End 21R 2028 Arrivals and Touch and Goes																																	Total	Left	Right	
	Runway End 21R- A		7239.809																												Runway End 21R- T&G		7921.035	5940.7762	1980.259	
Track		0	0	0	1	1	1	2	2	2	3	3	3	4	4	4	5	5	5	6	6	6	7	7	7	8	8	8			LEFT	LEFT	LEFT	RIGHT	RIGHT	RIGHT
Code	21R-A	PDX	Day	Night	SEA/YKM	Day	Night	SEA/NUW	Day	Night	MWH	Day	Night	GEG	Day	Night	ILS	Day	Night	LWS/MSP	Day	Night	ALW/DEN	Day	Night	SFO/LAX/I	Day	Night			Total	Day	Night	Total	Day	Night
Air Carrier/Cargo																														% of OPS						
CRJ9-ER		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.7397	0.7027	0.0370	X	X	X	X	X	X	X	X	X		0.0000	X	X	X	X	X	X
CRJ701		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.7397	0.7027	0.0370	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
EMB170		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.5129	0.4872	0.0256	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
CLREGJ		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.4110	0.3904	0.0205	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
DHC830		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	3.4521	3.2795	0.1726	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
MD83		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.7562	0.7184	0.0378	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
ATR72		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.5162	0.4904	0.0258	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
CNA208		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0033	0.0032	0.0002	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737400		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
737800		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	0.0658	0.0625	0.0033	X	X	X	X	X	X	X	X	X			X	X	X	X	X	X
Military																														% of OPS	457.4398			152.4799		
C17A		X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		0.0770	0.6266	0.5953	0.0313	0.2089	0.1984	0.0104
P3C		X	X	X	0.0610	0.0580	0.0031	0.0610	0.0580	0.0031	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X			0.6266	0.5953	0.0313	0.2089	0.1984	0.0104
Corporate	1361.6688																													% of OPS						
GIV	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035		0.0000	X	X	X	X	X	X
Lear35	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035			X	X	X	X	X	X
Lear31	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035			X	X	X	X	X	X
Bec9F	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035			X	X	X	X	X	X
Citation I	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035			X	X	X	X	X	X
FAL20A	226.9448	0.0691	0.0656	0.0035	0.0691	0.0656	0.0033	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035	0.0691	0.0656	0.0035			X	X	X	X	X	X
Other GA	3183.8188																													% of OPS	5483.3365			1827.7788		
CNA182	795.9547	0.2423	0.2302	0.0121	0.2423	0.2302	0.0115	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121		0.9230	3.7557	3.5679	0.1878	3.7557	3.5679	0.1878
CNA206	795.9547	0.2726	0.2590	0.0136	0.2423	0.2302	0.0115	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121			3.7557	3.5679	0.1878	3.7557	3.5679	0.1878
GASEPF	795.9547	0.2726	0.2590	0.0136	0.2423	0.2302	0.0115	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121			3.7557	3.5679	0.1878	3.7557	3.5679	0.1878
GASEPV	795.9547	0.2726	0.2590	0.0136	0.2423	0.2302	0.0115	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121	0.2423	0.2302	0.0121			3.7557	3.5679	0.1878	3.7557	3.5679	0.1878

Runway End 03R 2028 Departures and Arrivals																						
03R-ITN O	254.7055	Daytime Operations		0.95	Nighttime Operations		0.05															
		Runway End 03R-D		127.3528	Figures below represent OPS divided by:				2	then	365		Runway End 03R- A		127.3528							
Track		0	0	0	1	1	1	2	2	2				0	0	0	1	1	1	2	2	2
Code	03R-D	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night			03R-A	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night
Other GA	127.3528											127.3528										
CNA182	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015			31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
CNA206	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015			31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
GASEPF	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015			31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015
GASEPV	31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015			31.8382	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015	0.0291	0.0276	0.0015

Runway End 21L 2028 Departures, Arrivals, and Touch and Goes																														
21L-ITN OI	3820.5825	Daytime Operations		0.95	Nighttime Operations		0.05																				Total	Left	Right	
		Runway End 21L-D		1910.291	Figures below represent OPS divided b			2	then	365			Runway End 21L- A		1910.291										Runway End 21L- T&G		4752.621	4752.621	0	
Track		0	0	0	1	1	1	2	2	2				0	0	0	1	1	1	2	2	2			LEFT	LEFT	LEFT	RIGHT	RIGHT	RIGHT
Code	21L-D	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night			21L-A	LEFT	Day	Night	STRAIGHT	Day	Night	RIGHT	Day	Night			Total	Day	Night	Total	Day	Night
Other GA	1910.2913	DEP										1910.291257	DEP											% of OPS	4752.621			0		
CNA182	477.57281	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			477.5728	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807		1	3.25522	3.092459	0.162761	0	0	0
CNA206	477.57281	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			477.5728	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			3.25522	3.092459	0.162761	0	0	0
GASEPF	477.57281	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			477.5728	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			3.25522	3.092459	0.162761	0	0	0
GASEPV	477.57281	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			477.5728	0.43614	0.414333	0.021807	0.436139556	0.414333	0.021807	0.43614	0.414333	0.021807			3.25522	3.092459	0.162761	0	0	0

Appendix F

Future Runway End 12 Surfaces
Prepared by JUB Engineers
March 2012



LAND OWNERSHIP

	PARCEL NO.	PARCEL OWNER	PARCEL AREA	ZONE
1	114-241-044	MICHAEL J. ARMSTRONG	5 ACRES	RR-1
2	114-241-035	ROBERT B. & SHERI PHYLISS KROODSMA	5 ACRES	RR-1
3	114-242-025	ABLE AMEZCUA (ETAL)	10 ACRES	RR-1
4	114-330-037	FREDERICK OLBERDING (ETAL)	320 ACRES	AP-20
5	114-330-028	FREDERICK OLBERDING (ETAL)	320 ACRES	AP-20
6	114-232-046	FLORENCIO & ISABEL TORRES	4 ACRES	RR-1
7	114-232-036	ABRAHAM & MARIA TORRES	5 ACRES	RR-1
8	124-340-061	COLUMBIA WATERS FARM LLC	160 ACRES	AP-20
9	114-242-075	GEORGE L. ROLLER	4.11 ACRES	RR-1
10	124-340-016	COLUMBIA WATERS FARM LLC	240 ACRES	AP-20
11	114-232-027	ABRAHAM & MARIA TORRES	20.46 ACRES	RR-1
12	114-250-016	FARM 2005 LLC	160 ACRES	AP-20
13	114-310-013	USA (USBOR)	80 ACRES	AP-20
14	116-340-074	EE PROPERTIES LLC	84.11 ACRES	R-S-1/PUD *
15	116-380-011	EE PROPERTIES LLC	72.33 ACRES	R-S-1/PUD *
16	116-340-113	CORP PRESIDING BISHOP OF THE	5 ACRES	R-S-1/PUD *
17	116-480-060	ROBERT G. & JOAN P. BARTON	11.24 ACRES	R-S-1 *
18	116-350-034	EE PROPERTIES LLC	44.9 ACRES	R-S-1/PUD *
19	116-330-033	PORT OF PASCO	122.74 ACRES	RT
20	116-530-022	PORT OF PASCO	143.64 ACRES	I-2
21	116-530-013	CONAGRA FOODS LAMB WESTON INC.	20 ACRES	I-2
22	114-090-010	CONAGRA FOODS LAMB WESTON INC.	163.61 ACRES	AP-20
23	114-301-096	VICTOR R. & SYLVIA G. HUBBARD	5 ACRES	RR-1
24	114-302-059	CHARLES & CARALYNE HARMON	5 ACRES	RR-1
25	114-302-040	DONALD A. & JANEIE WATERS	5 ACRES	RR-1
26	114-020-014	CONAGRA FOODS LAMB WESTON INC.	267.16 ACRES	AP-20
27	114-302-031	JAMES C. & TRUDY CALDWELL	5 ACRES	RR-1
28	114-241-053	SHERRI KROODSMA (ETAL)	10 ACRES	RR-1
29	124-360-012	DEPT. OF NATURAL RESOURCES	558.72 ACRES	AP-20
30	124-350-023	FREDERICK OLBERDING (ETAL)	478.79 ACRES	AP-20
31	116-490-021	USA (USBOR)	160 ACRES	I-2
32 - 50	VARIES	VARIES	0.40 - 0.83 ACRES	R-S-1/PUD *

* CITY OF PASCO ZONING

LEGEND

CITY LIMIT BOUNDARY
URBAN GROWTH AREA BOUNDARY
PORT OF PASCO PROPERTY BOUNDARY
EXISTING NOISE CONTOURS
PROPOSED NOISE COUNTOURS

TRI-CITIES AIRPORT
PORT OF PASCO

J-U-B
J-U-B ENGINEERS, INC.
J-U-B ENGINEERS, INC.
2810 W. Clearwater Ave.
Suite 201
Kennewick, WA 99336
Phone: 509.783.2144
Fax: 509.736.0790
www.jub.com

PRELIMINARY PLANS

NOT FOR CONSTRUCTION

NO.	DESCRIPTION	BY	APR.	DATE

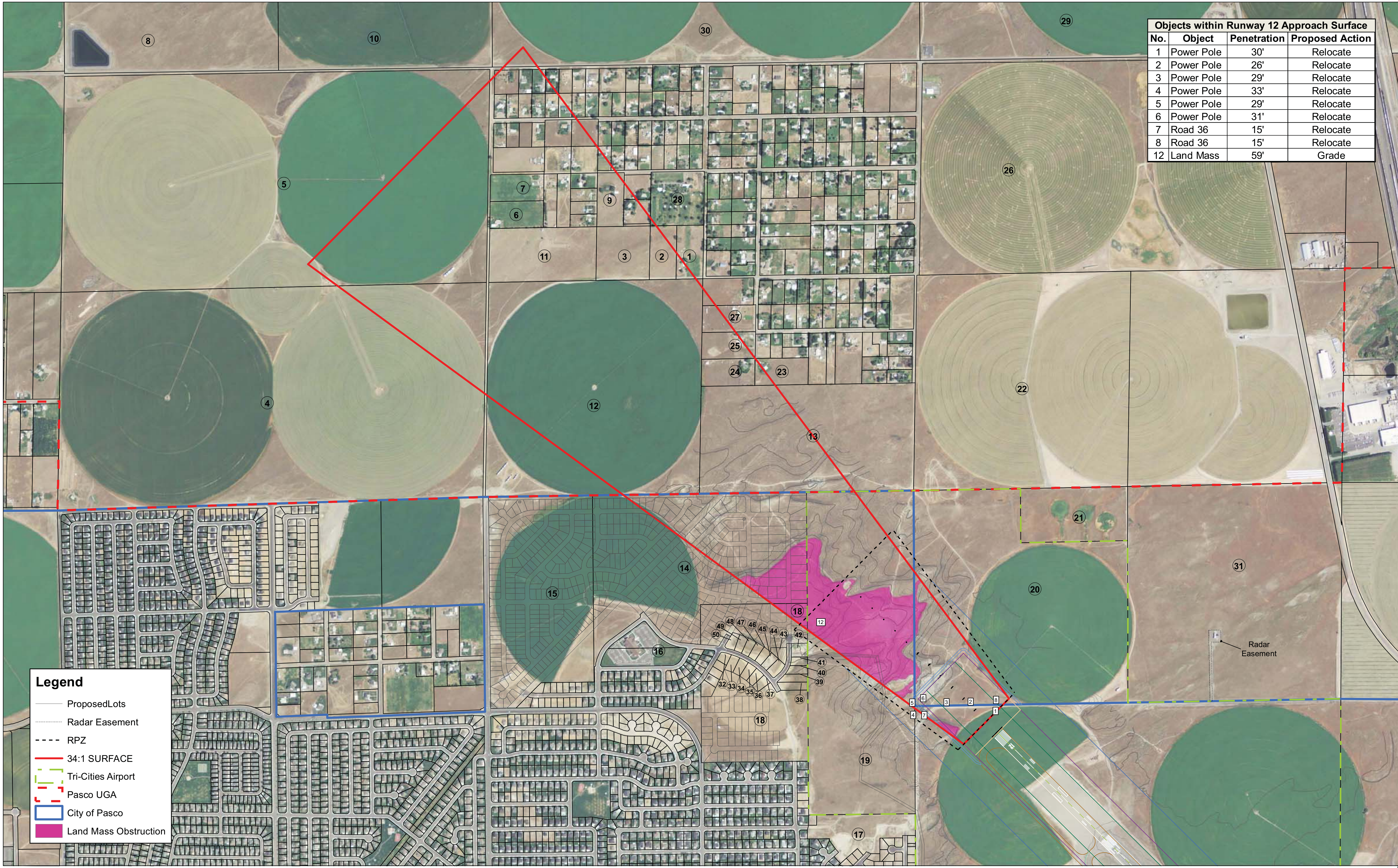
REVISION

TRI-CITIES AIRPORT MASTER PLAN UPDATE
PORT OF PASCO

RUNWAY 12 EXTENSION LAND OWNERSHIP

FILE : 30-09-008-LAND OWNERSHIP
JUB PROJ. # : 30-09-008
DRAWN BY: MMG
DESIGN BY: JTB
CHECKED BY: ###
ONE INCH
AT FULL SIZE, IF NOT ONE INCH, SCALE ACCORDINGLY
LAST UPDATED: 2/23/2012
SHEET NUMBER:
1

Plot Date:2/24/2012 8:32 AM Plotted By: Mary M. Ganske
Date Created:1/19/2012 F:\PROJECT\12777 - PORT OF PASCO - GENERAL\12777-580 RUNWAY 12 EXTENSION LAND USE COMMITTEE\CAD\EXHIBITS\LAND OWNERSHIP\30-09-008-LAND OWNERSHIP.DWG

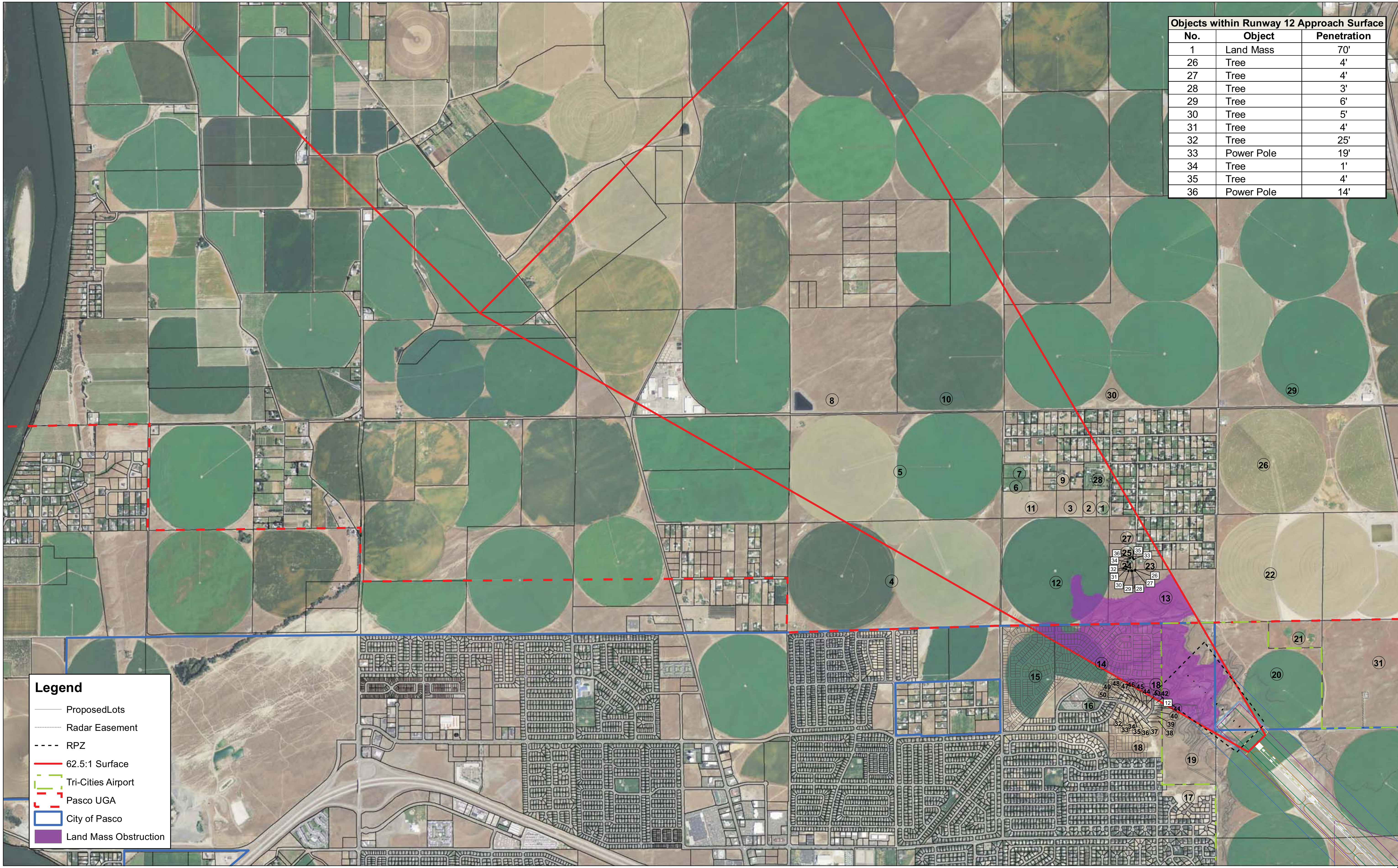


Objects within Runway 12 Approach Surface

No.	Object	Penetration	Proposed Action
1	Power Pole	30'	Relocate
2	Power Pole	26'	Relocate
3	Power Pole	29'	Relocate
4	Power Pole	33'	Relocate
5	Power Pole	29'	Relocate
6	Power Pole	31'	Relocate
7	Road 36	15'	Relocate
8	Road 36	15'	Relocate
12	Land Mass	59'	Grade

J-U-B ENGINEERS, INC. PORT OF PASCO TRICITIES AIRPORT

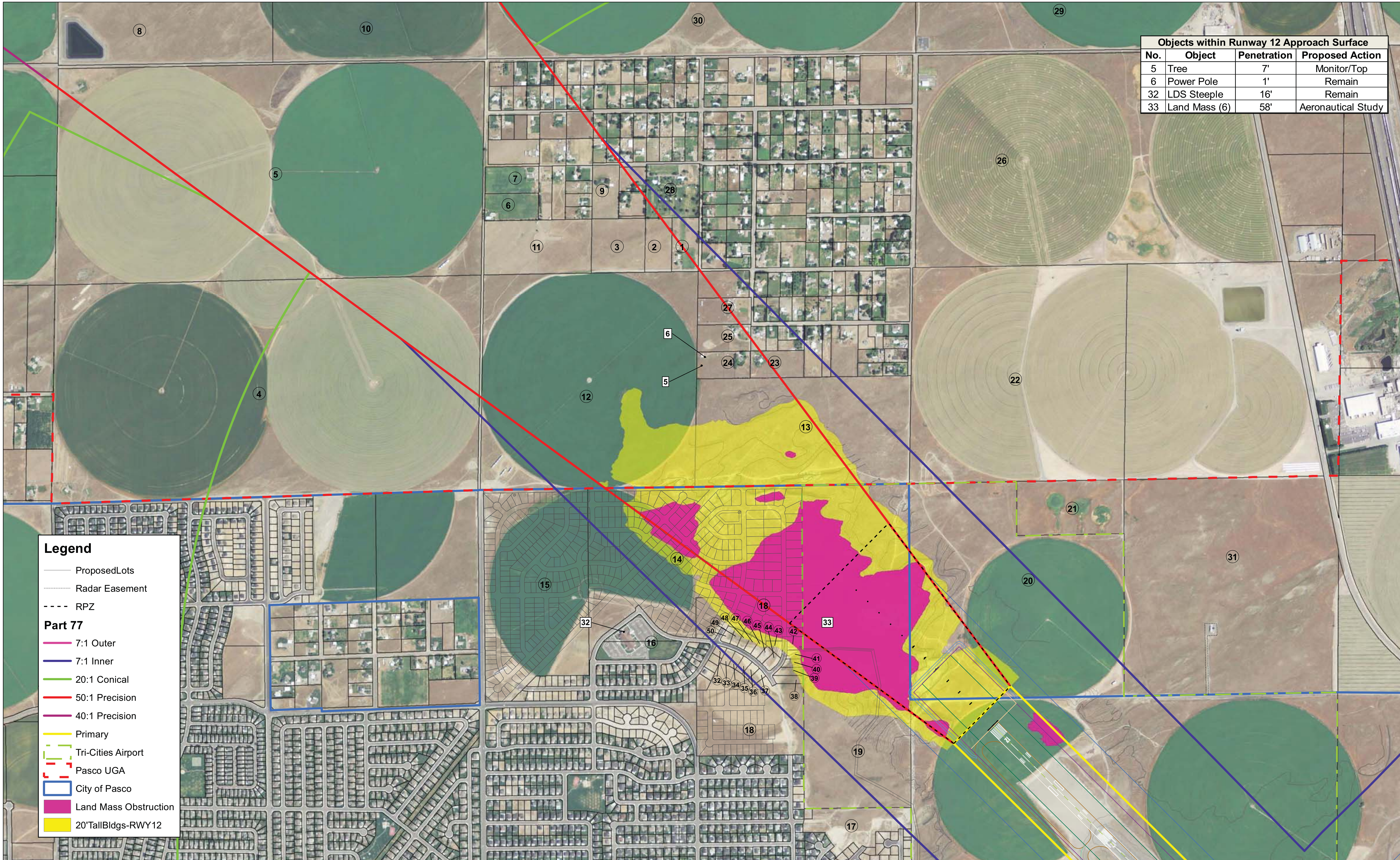
TRI-CITIES AIRPORT
FUTURE 34:1 APPROACH SURFACES



Objects within Runway 12 Approach Surface		
No.	Object	Penetration
1	Land Mass	70'
26	Tree	4'
27	Tree	4'
28	Tree	3'
29	Tree	6'
30	Tree	5'
31	Tree	4'
32	Tree	25'
33	Power Pole	19'
34	Tree	1'
35	Tree	4'
36	Power Pole	14'

J-U-B ENGINEERS, INC. PORT OF PASCO TRICITIES AIRPORT

TRI-CITIES AIRPORT
FUTURE 62.5:1 DEPARTURE SURFACES



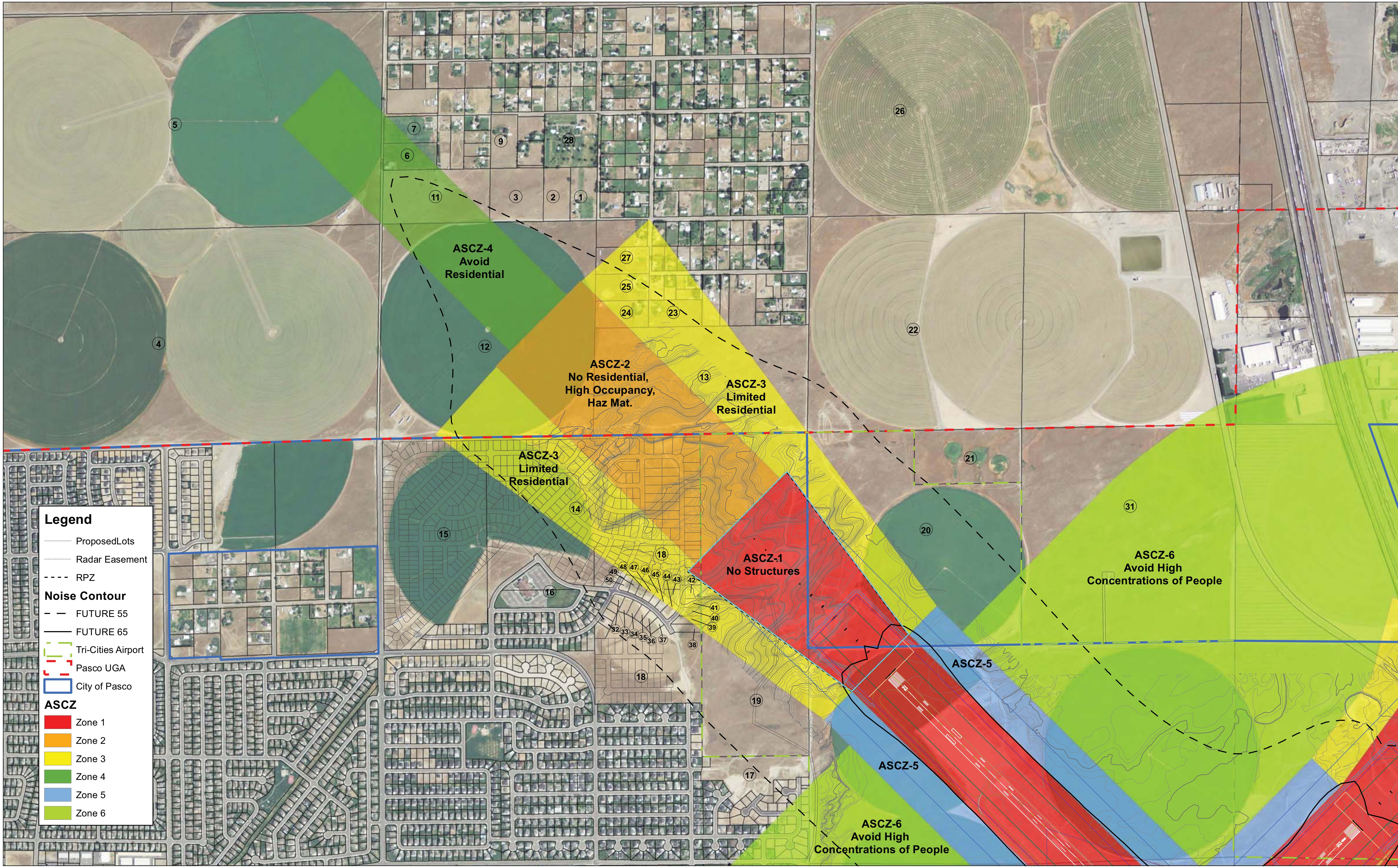
Objects within Runway 12 Approach Surface			
No.	Object	Penetration	Proposed Action
5	Tree	7'	Monitor/Top
6	Power Pole	1'	Remain
32	LDS Steeple	16'	Remain
33	Land Mass (6)	58'	Aeronautical Study

J-U-B ENGINEERS, INC.

PORT OF PASCO

TRICITIES AIRPORT

TRI-CITIES AIRPORT FUTURE PART 77 SURFACES



J-U-B ENGINEERS, INC.

PORT OF PASCO

TRICITIES AIRPORT

TRI-CITIES AIRPORT
WSDOT ASCZ & NOISE CONTOURS

Feet
0 500 1,000
1 inch = 500 feet

N

Appendix G

Financial Implementation Analysis
Prepared by Leibowitz & Horton AMC
May 2012

TRI-CITIES AIRPORT
Master Plan Update - Financial Implementation Analysis
Table of Contents

EXHIBITS

TABLES

G.1 Financial Analysis Objectives

The primary objective of the Financial Implementation Analysis for the Tri-Cities Airport Master Plan is to evaluate the Airport's capability to fund the Capital Improvement Program and to finance Airport operations. The program is planned for implementation through three phases of development including a five-year Near Term period (2012-2016), an eight-year Intermediate Term period (2017- 2024) and an eight-year Long Term period (2025-2032). The analysis includes development of a detailed Financial Implementation Plan. Objectives for developing the Financial Implementation Plan include presenting the results of the implementation evaluation and providing practical guidelines for matching an appropriate amount and timing of financial sources with the planned use of funds.

G.2 Overall Approach

The overall approach for conducting the Financial Implementation Analysis included the following steps:

- Gathering and reviewing key Airport documents related to historical financial results, capital improvement plans, operating budgets, regulatory requirements, Port policies, airline agreements and other operating agreements with Airport users
- Interviewing key Airport officials to gain an understanding of the existing operating and financial environment, relationships with the airlines and overall management philosophy
- Reviewing the aviation traffic forecast previously developed in the Master Plan
- Reviewing the Capital Improvement Program project cost estimates and development schedules anticipated for the planning period and projecting the overall financial requirements for the program
- Determining and analyzing the sources and timing of capital funds available to meet the financial requirements for operating the Airport and financing the Capital Improvement Program
- Analyzing historical operations and maintenance expenses, developing operations and maintenance expense growth assumptions, reviewing assumptions with Airport management and projecting future operations and maintenance expenses for the planning period
- Analyzing historical revenue sources, reviewing the Airport's existing rates and charges methodology, developing revenue growth assumptions, reviewing assumptions with Airport management and projecting future airline and non-airline revenues for the planning period
- Completing results of the review in a Financial Analysis Summary that evaluates the financial reasonableness of the Capital Improvement Program

G.3 Capital Funding Sources

In the past, the Airport has used a combination of FAA Airport Improvement Program (AIP) entitlement and discretionary grants, passenger facility charges, debt financing and cash reserves/net revenues to fund capital improvements. These funding sources will continue as the Airport's primary sources to finance the Master Plan Capital Improvement Program (CIP).

G.3.1 Airport Improvement Program Grants

The Airport receives grants from the Federal Aviation Administration (FAA) to finance the eligible costs of certain capital improvements. These federal grants are allocated to commercial passenger service airports through the Airport Improvement Program (AIP). AIP grants include passenger entitlement grants, which are allocated among airports by a formula that is based on passenger enplanements and discretionary grants which are awarded in accordance with FAA guidelines. In February 2012, after several years of continuing budget resolutions in Congress, the FAA Modernization and Reform Act of 2012 was enacted and authorizes funding for the AIP through September 30, 2015. Under this AIP re-authorization legislation, eligible projects are funded on a 90% AIP grant/10% local match basis for small and non-hub airports. Under this authorization, the Airport is projected to receive current year entitlements of about $2.4 million in 2012 and future annual grants which are projected to grow to $2.7 million by 2032 - the end of the planning period. Non-Hub airports (those with annual enplanements up to about 360,000 passengers) can accumulate up to three years of unspent entitlements plus the current year before the awards are revoked. For 2011, the Airport had accumulated about $583,000 in unspent entitlements that are carried forward and available for expenditure in 2012. The implementation analysis assumes the application of AIP passenger entitlement funds will be about $9.6 million during the Near Term planning period, $19.4 million during the Intermediate Term and $21.4 during the Long Term.

The approval of AIP discretionary funding is based on a project eligibility ranking method the FAA uses to award grants, at their discretion, based on a project's priority and importance to the national air transportation system. In the past, Pasco has received discretionary funding support for various eligible capital projects. It is reasonable to assume that the Airport will receive additional discretionary funding during the planning period for higher priority, eligible projects, such as the Taxiway D/VOR Relocation, Taxiway A Realignment and numerous other airfield pavement projects planned for the long term CIP. The implementation analysis assumes the application of AIP discretionary funds will be $6.5 million during the Near Term, about $1.5 million during the Intermediate Term and about $34.5 during the Long Term planning periods. Since the future availability of AIP discretionary grants is not certain until an actual grant is awarded, it should be noted that any CIP projects which have discretionary funds indicated as a funding source in the implementation plan may need to be delayed until such funds actually become available.

The implementation analysis further assumes that the current AIP program will continue to be extended through 2032 and that future program authorizations will provide substantially similar funding levels as it currently does and as it has historically provided since the program was established in 1982.

G.3.2 Passenger Facility Charges

The Aviation Safety and Capacity Expansion Act of 1990 established the authority for commercial service airports to apply to the FAA for imposing and using a Passenger Facility Charge (PFC) of up to $3.00 per enplaned passenger. With the passage of AIR-21 in June 2000, airports could apply for an increase in the PFC collection amount from $3.00 per eligible enplaned passenger to $4.50. The proceeds from PFCs are eligible to be used for AIP eligible projects and for certain additional projects that preserve or enhance capacity, safety or security; mitigate the effects of aircraft noise; or enhance airline competition. PFCs may also be used to pay debt service on bonds (including principal, interest and issue costs) and other indebtedness incurred to carry out eligible projects. In addition to funding future planned projects, the legislation permits airports to collect PFCs to reimburse the eligible costs of projects that began on or after November 5, 1990.

Since 1993, Tri-Cities has submitted five PFC applications that are closed and three (PFC #6, #7 and #8) that are currently open and in effect. The current collection authority for the open applications is $20,745,433 of which over $7.0 million has been disbursed. An amendment to Application #6 is currently in process of preparation but has not yet been submitted.

The implementation analysis assumes that the Airport will submit additional PFC applications and amendments, as required, to ensure that the collection of PFC revenues continues beyond the authorized expiration date through the end of the twenty-one year planning period in 2032. The implementation analysis specifically assumes that PFCs will be used to service a $6,615,000 debt issue during the Near Term period for a fifteen-year term to finance terminal area improvements related to expanded security checkpoint and passenger holdroom facilities. The implementation analysis further assumes that PFCs will be used during the Near Term on a pay-as-you-go basis to fund an additional $3 million in terminal improvements as well as about $460,000 for various other eligible projects. Overall PFC pay-as-you-go revenues are expected to fund $5.5 million in project costs during the Near Term planning period, none during the Intermediate Term and about $16.1 million during the Long Term.

G.3.3 Debt Financing

In the past, the Port has used debt financing to fund capital improvements that could not be funded by other means. Currently, portions of the Port's 2001 and 2004 general obligation debt that financed Airport projects are outstanding and require about $140,000 to $210,000 annual cash flow for debt service. The Airport's sound financial condition and the availability of future PFC revenues allows the Port to consider additional debt for needed capital projects. As noted in Section 6.3.2 above, the Port plans to issue $6,615,000 in debt that will be serviced with PFC revenues.

G.3.4 Cash Reserves/Airport Net Operating Revenues

Due to sound financial practices and a revised structure of airline rates and charges that was adopted by the Port over the past ten years, the Airport has accumulated about $3 million in cash reserves at the beginning of 2012 and anticipates generating over $1 million annually in net operating revenues for several years into the future. As a result, the Airport plans to use its operating cash flow to fund $4.7 million in capital project costs during the Near Term planning period, about $13.0 million during the Intermediate Term and about $10.6 million during the Long Term.

G.4 Financial Analysis and Implementation Plan for the CIP

This analysis, along with the tables presented at the end of Chapter 6, provides the results of evaluating the financial reasonableness of implementing the Master Plan Capital Improvement Program during the planning period from 2012 through 2032.

G.4.1 Estimated Project Costs and Development Schedule

The Capital Improvement Program (CIP) Estimated Project Costs and Development Schedule is derived from previous results of the Master Plan analysis. The CIP for capital expansion and improvement projects is projected on an annual basis for the Near Term planning period from 2012 through 2016, in total for the Intermediate Term planning period from 2017 through 2024 and in total for the Long Term planning period from 2025 through 2032. For each of these planning periods, **Table H-1** (provided at the end of **Appendix G**) presents the Capital Improvement Program including estimated costs and anticipated development schedule for the identified projects.

As shown in **Table H-1**, the total estimated cost of projects is $106,744,952 in 2011 dollars. The estimated costs for projects scheduled during the period 2012 through 2032 are adjusted by an assumed 3% rate of annual inflation. The resulting total project costs escalated for inflation are $153,100,167. **Exhibit G-1** presents a summary of the Table and provides a comparison of 2011 base year costs with escalated costs adjusted for inflation for each of the planning periods.

Exhibit G-1: 2011 Base Year and Total Escalated Costs for the Master Plan CIP

Planning Periods	**2011 Base Year Costs**	**Total Escalated Costs**
Near Term Projects (2012-2016)	$30,412,785	$36,812,667
Intermediate Term Projects (2017-2024)	26,542,269	33,807,500
Long Term Projects (2025-2032)	49,789,898	82,480,000
Total Project Costs	$106,744,952	$153,100,167

Source: Leibowitz & Horton AMC analysis

G.4.2 Debt Capacity and Debt Funding Requirements

The funds flow section of **Table H-1** provides an overall analysis of the annual availability of the Airport's various funding sources along with an indication of the adequacy of cash flow (both capital and operating) to meet funding needs of the capital program. The preferred project development schedule presented in **Table H-1** indicates significant funding needs to support expansion of the security checkpoint and passenger holdroom terminal facilities during the Near Term planning period. Because of insufficient cash reserve balances and net operating cash flows, this expansion objective cannot be achieved without debt financing. The Port's current debt capacity is based on the Airport's level of cash flow available to service debt while still maintaining a sound financial condition. The Port's most appropriate cash flow source to pay debt service for this project is Tri-Cities' future PFC revenue. The Airport's current level of PFC revenue is approximately $1.2 million per year which would be supplemented by net operating revenues (about $1 million/year) to provide a total of about $2.2 million per year available to pay debt service. **Table H-2** at the end of Chapter 6 provides a summary level debt service schedule assuming a net proceeds requirement of $6,615,000, a 1/1/2014 issue date, a 6.5% interest rate, a 15 year term and level annual debt service payments. No assumptions were provided for issue costs and reserve requirements that would be part of an actual debt issue. This table indicates required debt service payments of about $700 thousand per year compared with the availability of $2.2 million in cash flow from PFCs and net operating revenue. The Port could manage this level of debt funding very reasonably within a financially prudent capital implementation plan. As shown in **Table H-1**, this minimally structured debt issue results in an approximate debt service coverage ratio ranging from 2.7x in 2014 to about 3.0x in 2016.

G.4.3 Sources and Uses of Capital Funding

Funding sources for the CIP depend on many factors, including AIP and PFC project eligibility, the ultimate type and use of facilities to be developed, management's current and desired levels of the Airport's airline cost per enplaned passenger, the availability of other financing sources and the priorities for scheduling project completion. For master planning purposes, assumptions were made related to the funding source of each capital improvement.

Table H-3 lists each of the CIP projects, their estimated costs (escalated annually for inflation) and the assumed funding sources and amounts. In the Near Term planning period (2012-2016), it was assumed that the East General Aviation Apron Rehabilitation and Runway 12/30 MIRL Replacement would be funded primarily with AIP entitlement grants. It was assumed that the Terminal Security Checkpoint Improvements, Restroom Relocation and Holdroom Expansion would be funded with PFC serviced debt and PFC pay-as-you-go revenues. The Taxiway D/VOR Relocation was assumed to be funded with both AIP entitlement and significant discretionary grants. Terminal Parking Lot Improvements, Runway 12 Land Acquisition and Pavement Maintenance projects were assumed to be funded with Airport cash reserves.

In the Intermediate Term planning period (2017-2024), it was assumed that Terminal Access Road Improvements, Terminal Building Expansions, SRE & ARFF Equipment, Taxiway Rehabilitation, East General Aviation Apron Expansions and other eligible projects would be funded with AIP entitlements. The Taxiway A realignment was assumed to be funded with AIP entitlement and discretionary grants. Parking Lot and Pavement Maintenance projects were assumed to be funded with Airport cash reserves.

In the Long Term planning period (2025-2032), a significant number of projects were related to airfield pavement improvements and terminal apron expansion. These projects are eligible for AIP entitlement/discretionary grants and PFC funding and those funding sources were assumed in the financial implementation analysis when they were sufficiently available. The Long Term period also included several million dollars in expansion projects for the terminal concourse to meet passenger demand that is anticipated in the Master Plan enplanement forecast for that time period. These terminal projects were assumed to be funded with AIP entitlement grants, PFC revenues and Airport cash reserves for local match requirements when these funding sources were sufficiently available. However, the magnitude and significance of AIP/PFC eligible capital projects that are contemplated for the Long Term period are substantially larger than are likely to be funded from these federal sources. If this funding is not adequately available when planned, then the related projects will need to be delayed until the funding becomes available.

A summary of the sources of capital funding by type and uses of capital funding by planning period for the CIP is presented in **Exhibit G-2**.

Exhibit G-2: Sources and Uses of Capital Funding for the Master Plan CIP	
Sources of Capital Funding	
AIP Entitlement Grants	$50,283,904
AIP Discretionary Grants	42,468,462
Passenger Facility Charges (PAYG)	21,597,800
Passenger Facility Charges (Debt)	10,552,855
Cash Reserves/Airport Net Revenue	28,197,147
Total Sources of Capital Funding	$153,100,167
Uses of Capital Funding	
Near Term Projects (2012-2016)	$36,812,667
Intermediate Term Projects (2017-2024)	33,807,500
Long Term Projects (2025-2032)	82,480,000
Total Uses of Capital Funding	$153,100,167

Note: *Addition errors are due to rounding of calculated amounts.*

Source: Leibowitz & Horton AMC analysis

G.4.4 Projected Operations and Maintenance Expenses

Operations and maintenance expense projections for the Near Term (2012 to 2016), the Intermediate Term (2017 to 2024) and the Long Term (2025 to 2032) planning periods are based on the Airport's current budget, the anticipated impacts of inflation, aviation traffic increases, facility improvements and the recent experience of other similarly-sized airports.

G.4.4.1 Operations and Maintenance Expense Projection Assumptions

Operations and maintenance expense growth assumptions, as reflected in **Table H-4**, were developed to project the Airport's operating expenses during the planning period. Actual amounts for 2009 and 2010 and budgeted amounts for 2011 provide a comparison with expenses that are projected for the period 2012 through 2032. For each of the following expense categories listed below, individual line item projections are based on 2011 budgeted amounts with an assumed 3% annual rate of inflation beginning in 2012.

- Personnel Expenses - This category includes all expenses associated with operating salaries, Airport administrative salaries and fringe benefits.
- Supplies - This category includes expenses for operating supplies, gasoline expense and office expenses & supplies.
- Contractual Services - This category includes expenses for labor consultants, janitorial supplies & services, legal fees, professional consultants, contract maintenance services, advertising, outside services employed, leased auto and property insurance.
- Utilities - This category includes expenses for electricity, natural gas, water, waste disposal and telephone services.
- Repairs & Maintenance - This category includes repair and maintenance expenses for roads & grounds, equipment, water, sewer & fire, the airfield and all buildings.
- Other Operating Expenses - This category includes expenses for parking area expenses, general taxes, security access expense, membership dues & fees, publications & networks, employee training, promotional/hosting, travel & related expenses and miscellaneous expenses.
- Local Government Services - This category includes expenses reimbursed to the City of Pasco for fire protection services, law enforcement services provided by Franklin County and administrative overhead from the Port of Pasco.

G.4.4.2 Projection of Operations and Maintenance Expenses and Operating Expenses Per Enplaned Passenger

The projection of operations and maintenance expenses is provided in **Table H-4**. As shown in the table, total expenses are expected to grow from $4,216,393 budgeted in 2011 to $4,887,955 in 2016 reflecting an overall growth rate of 3% per year and a total of $23,056,965 during the Near Term planning period. Intermediate Term expenses are projected to total $44,769,299 reflecting a 3% annual growth rate for the eight-year period 2017-2024 and Long Term expenses are projected to total $56,712,409 reflecting a 3% annual growth rate for the eight-year period 2025-2032.

Table H-4 also provides a comparison of Pasco's total operating expenses per enplaned passenger versus the industry average for non-hub airports. Pasco's operating expenses per enplaned passenger are projected to increase from $12.90 budgeted for 2011 to an average of $16.15 during the Long Term planning period. Over the same period of time, the industry average for non-hub airports grows from $29.00 in 2011 to an average of $48.75 during the Long Term (Source: FAA Operating and Financial Summary Report #127 for non-hubs and FAA Air Carrier Activity Information System enplanement database). This comparison shows that budgeted and projected operating expenses at Pasco are 56% to 67% lower than other airports of similar size throughout the twenty-one year planning period. This implies that the Airport currently manages operations in a very cost efficient manner and is expected to continue management practices that will yield cost efficient results in future years.

G.4.5 Projected Operating Revenues

Table H-5 presents actual, budgeted and projected operating revenues for the Airport from 2009 through 2032. Actual amounts for 2009 and 2010 and budgeted amounts for 2011 provide a comparison with revenues that are projected for the period 2012 through 2032. Assumptions for all revenue categories are presented in the following section.

G.4.5.1 Operating Revenue Projection Assumptions

Operating revenue projections for the Near Term (2012 to 2016), the Intermediate Term (2017 to 2024) and the Long Term (2025 to 2032) planning periods are based on the Airport's current budget, current leasing practices, the anticipated impacts of inflation, aviation traffic increases, facility expansions and the recent experience of other similarly-sized airports. Annual revenue growth assumptions for the period 2012 through 2032 are provided in the following sections.

- **Airline Revenues**
  - **Landing Fees** - Projections are based on the 2011 budget with growth at a 3% annual inflation rate and plus increases in aircraft landed weight using annual growth at ½ the rate of Master Plan forecast of passenger enplanements. This reflects the airlines' practice of managing increased load factors before additional flights are provided.
  - **Terminal Rent** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
- **Non-Airline Revenues**
  - **Other Air Carrier Landing Fees** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Fuel Flowage Fees** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Car Rental Concession Fees** - Projections are based on the 2011 budget and 3% annual inflation plus the annual rate of forecast enplanement growth.
  - **Car Rental Space Rent** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Terminal Office Space Rent** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Advertising Display Fees** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Public Parking Fees** - Projections are based on the 2011 budget and 3% annual inflation plus the annual rate of forecast enplanement growth. Also, the Airport recently raised parking rates as of 7/1/12 to generate approximately $300,000 in additional fees in 2012 and $600,000 additional fees in 2013 and later years.
  - **Hangar Rental** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Land Leases** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Restaurant/Gift Shop Rent** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Warehouse Rental** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **East Side Building Revenue** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **TSA Security Reimbursement** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.
  - **Miscellaneous Income** - Projections are based on the budget for 2011 with 3% annual inflation growth thereafter.

G.4.5.2 Projection of Operating Revenues, Airline Cost per Enplaned Passenger and Operating Revenues per Enplaned Passenger

The projection of operating revenues is provided in **Table H-5** at the end of Chapter 6. As shown in the table, airline revenues are expected to grow from $1,235,721 budgeted for 2011 to $1,463,206 projected for 2016 with a total of $6,845,450 during the five-year Near Term planning period. During the eight-year Intermediate Term period, airline revenues are projected to total $13,675,371 and during the eight-year Long Term period, revenues are projected to total $17,949,341. The overall annual growth rate for airline revenues is 3.5% during the twenty-one year planning period. Non- Airline revenues are expected to grow from $3,417,315 budgeted for 2011 to $4,863,739 projected for 2016 with a total of $22,170,434 during the Near Term period. During the Intermediate Term period, non-airline revenues are projected to total $47,052,507 and during the Long Term period, non-airline revenues are projected to total $65,619,605. The overall annual growth rate for non-airline revenues is 5.0%. Total Airport revenues are expected to grow from $4,653,036 budgeted for 2011 to $6,326,945 projected for 2016 with a total of $29,015,884 during the Near Term period. During the Intermediate Term period, revenues are projected to total $60,727,878 and during the Long Term period, revenues are projected to total $83,568,945. The overall annual growth rate for total Airport revenues is 4.6%.

Table H-5 also provides a comparison of the Airport's airline cost per enplaned passenger versus the industry average for non-hub airports. The airline cost per enplaned passenger (all airline fees and rentals divided by enplaned passengers) is a measure airlines use to compare their cost of operations among the airports they serve. Pasco's airline cost per enplaned passenger is projected to grow from $3.78 budgeted for 2011 to an average of $5.11 during the Long Term planning period. Over the same period, the industry average for non-hub airports grows from $7.02 in 2011 to an average of $11.79 during the Long Term (Source: FAA Operating and Financial Summary Report #127 for non- hubs and FAA Air Carrier Activity Information System enplanement database). This result shows that airline rates and charges at Pasco are currently low (46% below the non-hub average) and are projected to remain significantly below those of other similarly sized airports throughout the twenty-one year planning period. However, since the Port revised its airline rate structure in 2002, it has made significant progress to approach cost recovery-based rates and has generated significant additional revenues to support financial operations as well as the capital improvement program. The recent financial weakness in the airline industry from 2008 through 2010 caused Pasco to impose rates that were less than could have been imposed according to the airline agreement but represented a responsible reaction to the industry's weakness. This recent condition should not prevent the Airport from continuing the formula-based rate methodology in the future that the Airport has so successfully used for the past ten years.

Table H-5 also provides a comparison of Pasco's total operating revenue per enplaned passenger versus the industry average for non-hub airports. The Airport's total operating revenue per enplaned passenger is projected to grow from $14.24 budgeted for 2011 to an average of $23.79 during the Long Term planning period. Over the same period, the industry average for non-hub airports grows from $32.98 in 2011 to an average of $55.45 during the Long Term (Source: FAA Operating and Financial Summary Report #127 for non-hubs and FAA Air Carrier Activity Information System enplanement database). This comparison indicates that total Airport revenues are currently about 57% lower than the industry average and are expected to remain lower throughout the twenty-one year planning period. This result is primarily due to lower than average fees and rental amounts charged to the airlines. The Airport's practices for setting non-airline rates and leasing facilities appear to be effective in generating non-airline revenues based on its level of commercial aviation activity.

G.4.6 Financial Analysis Summary for the Master Plan CIP

The Financial Plan Summary presented in **Table H-6** at the end of Appendix H includes a Capital Cash Flow section that presents a summary of projected capital funding (from **Table H-3**) and scheduled capital expenditures (from **Table H-1**) with the cash flow that results from implementing the Master Plan Capital Improvement Program. **Table H-6** also includes an Operating Cash Flow section that summarizes totals for operating revenues (from **Table H-5**) and operating expenses (from **Table H-4**) less existing general obligation debt service requirements and with the addition of cash reserve balances to provide the cash flow that results from these activities.

In **Table H-1** of the Financial Implementation Analysis, practical approaches were provided for scheduling capital expenditures to match the availability of capital funding. **Table H-3** provided practical approaches for matching specific capital funding sources with each of the identified projects. Based on the assumptions underlying the Financial Implementation Analysis summarized in the Capital Cash Flow section of **Table H-6**, implementation of projects in the Master Plan CIP that are scheduled for development during the Near Term and Intermediate Term planning periods are financially reasonable. Implementation of capital projects in these periods that have AIP discretionary grants indicated as a funding source are subject to the availability of those grants which are provided at the sole discretion of the FAA. If the identified portion of discretionary funding is not awarded by the FAA, then these projects will need to be delayed until funding is available.

During the Master Plan CIP Long Term period (2025-2032) over $80 million in airfield pavement, terminal apron and terminal building concourse expansion projects are planned. Even though most of these projects are eligible for federal funding, the magnitude and significance of development contemplated for the period are substantially larger than are likely to be funded from AIP or pay-as- you-go local PFC sources. If this funding is not adequately available when planned, then these projects will not be financially feasible until actual funding can be confirmed and will need to be delayed. This is especially true for projects that have significant AIP discretionary grants indicated as a key funding source.

Additionally, the Financial Implementation Analysis relies on achievement of the Master Plan forecast of aviation activity. Actual aviation traffic may temporarily vary from the projected levels of activity without a significant adverse impact on the capital program. If decreased traffic levels occur and persist, implementation of all the proposed projects may not be financially feasible. It should also be noted, however, that if the forecast activity levels are not met, then a number of the planned capital improvements may not be necessary.

G.5 Financial Analysis Tables

Financial analysis **Tables G-1** through **G-6** are presented on the following pages.

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program	Funding Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
Funds Used for Capital Improvement Projects									
AIP Entitlement Grants	$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants	0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges	3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028	0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments	0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service	578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year	6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year	3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year	(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>			2.72x	2.85x	2.98x				

Estimated Project Costs and Development Schedule

	Capital Project Description	2011 Base Year Costs	Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
	Near Term Projects (2012-2016)										
1	East GA Apron Rehabilitation (1 of 2)	$2,427,184	$2,500,000					$2,500,000			$2,500,000
2	Sand Storage Building (3,200 sf)	223,301	230,000					230,000			230,000
3	Terminal Area Plan	320,388	330,000					330,000			330,000
4	Terminal Building-Phase 1 Part A (Design)-Widening Ahead of Security Checkpoint & Restroom Relocation	203,884	210,001					210,001			210,001
5	Long-Term Parking Lot Rehabilitation (Phase III & IV)	631,068	650,000					650,000			650,000
6	Runway 12 Land Acquisition Phase 1	1,000,000	1,000,000					1,000,000			1,000,000
7	Annual Pavement Maintenance	77,670	80,000					80,000			80,000
	Total Capital Projects 2012	$4,883,495	$5,000,000	$0	$0	$0	$0	$5,000,000	$0	$0	$5,000,000
8	Terminal Building-Phase 1 Part A (Construction)-Widening Ahead of Security Checkpoint & Restroom Relocation	$2,026,581		$2,150,000				$2,150,000			$2,150,000
9	Taxiway D and VOR Relocation (Design)-Includes FAA VOR Study in 2012	942,596		1,000,000				1,000,000			1,000,000
10	Parking Lot Expansion (Overflow Parking) (1 of 6)	744,651		790,000				790,000			790,000
11	Airport Equipment-Sweeper	612,687		650,000				650,000			650,000
12	Terminal Building-Phase 1 Part B (Design)-Security Checkpoint Widening & Holdroom Expansion	593,835		630,000				630,000			630,000
13	Runway 12 Land Acquisition Phase 2	1,000,000		1,000,000				1,000,000			1,000,000
14	Annual Pavement Maintenance	75,408		80,000				80,000			80,000
	Total Capital Projects 2013	$5,995,758	$0	$6,300,000	$0	$0	$0	$6,300,000	$0	$0	$6,300,000

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program	Funding Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
Funds Used for Capital Improvement Projects									
AIP Entitlement Grants	$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants	0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges	3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028	0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments	0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service	578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year	6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year	3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year	(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>			2.72x	2.85x	2.98x				

Estimated Project Costs and Development Schedule

No.	Capital Project Description	2011 Base Year Costs	Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
15	Terminal Building-Phase 1 Part B1 (Construction)-Security Checkpoint Widening & Holdroom Expansion	$4,392,680			$4,800,000			$4,800,000			$4,800,000
16	Taxiway D and VOR Relocation (Construction)	9,634,611			10,528,000			10,528,000			10,528,000
17	Parking Lot Expansion-Add 3rd Lane & Ticket Booth	320,300			350,000			350,000			350,000
18	Annual Pavement Maintenance	73,211			80,000			80,000			80,000
	Total Capital Projects 2014	$14,420,802	$0	$0	$15,758,000	$0	$0	$15,758,000	$0	$0	$15,758,000
19	Runway 12-30 MIRL Lighting Replacement	$1,581,285				$1,779,750		$1,779,750			$1,779,750
20	Terminal Building-Phase 1 Part B2 (Construction)-Holdroom Expansion	1,612,604				1,815,000		1,815,000			1,815,000
21	Annual Pavement Maintenance	71,079				80,000		80,000			80,000
	Total Capital Projects 2015	$3,264,968	$0	$0	$0	$3,674,750	$0	$3,674,750	$0	$0	$3,674,750
22	East GA Apron Rehabilitation (2 of 2)	$1,735,623					$2,012,063	$2,012,063			$2,012,063
23	Terminal Building-Phase 2-Renovation/Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms-Environmental Document	34,504					40,000	40,000			40,000
24	Annual Pavement Maintenance	77,635					90,000	90,000			90,000
	Total Capital Projects 2016	$1,847,762	$0	$0	$0	$0	$2,142,063	$2,142,063	$0	$0	$2,142,063
	Total Near Term Project Costs Before Financing	$30,412,785	$5,000,000	$6,300,000	$15,758,000	$3,674,750	$2,142,063	$32,874,812	$0	$0	$32,874,812
	Financing Costs for Debt Serviced with PFCs	-			429,975	412,194	393,258	1,235,427	2,455,122	247,306	3,937,855
	Total Near Term Project Costs	$30,412,785	$5,000,000	$6,300,000	$16,187,975	$4,086,945	$2,535,321	$34,110,240	$2,455,122	$247,306	$36,812,667

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program	Funding Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
Funds Used for Capital Improvement Projects									
AIP Entitlement Grants	$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants	0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges	3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028	0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments	0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service	578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year	6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year	3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year	(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>			2.72x	2.85x	2.98x				

Estimated Project Costs and Development Schedule

	Capital Project Description	2011 Base Year Costs	Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
	Intermediate Term Projects (2017-2024)										
25	Terminal Building-Phase 2 (1 of 3)-Terminal Access Road Realignment	$1,038,480						$0	$1,240,000		$1,240,000
26	Parking Lot Expansion (2 of 6)-Long Term (1 of 3)	770,486						0	920,000		920,000
27	Airport GIS	483,647						0	577,500		577,500
28	Airport Equipment-Snow Plow	544,365						0	650,000		650,000
29	Parking Lot Expansion (Overflow Parking)	75,374						0	90,000		90,000
30	Taxiway A Realignment	3,813,399						0	4,690,000		4,690,000
31	Terminal Building-Phase 2 (2 of 3)-Renovation/Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms	4,593,967						0	5,650,000		5,650,000
32	Parking Lot Expansion (3 of 6)-Long Term (2 of 3), Short Term (1 of 2)	1,292,816						0	1,590,000		1,590,000
33	Annual Pavement Maintenance	73,178						0	90,000		90,000
34	Terminal Building-Phase 2 (3 of 3)-Renovation/Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms	4,610,150						0	5,840,000		5,840,000
35	Parking Lot Expansion (4 of 6)-Long Term (3 of 3), Short Term (2 of 2)	1,294,631						0	1,640,000		1,640,000
36	Annual Pavement Maintenance	78,941						0	100,000		100,000
37	Parking Lot Expansion (5 of 6)-RAC Area (1 of 2), RAC Employee (1 of 2)	1,088,312						0	1,420,000		1,420,000

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program		Funding Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
Funds Used for Capital Improvement Projects										
AIP Entitlement Grants		$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants		0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges		3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028		0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments		0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service		578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year		6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year		3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year		(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year		$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>				2.72x	2.85x	2.98x				

Capital Project Description	2011 Base Year Costs	Estimated Project Costs and Development Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
38 Master Plan Update	613,133						0	800,000		800,000
39 Airport Equipment-ARFF	536,492						0	700,000		700,000
40 Annual Pavement Maintenance	76,642						0	100,000		100,000
41 Taxiway Rehabilitation	1,488,188						0	2,000,000		2,000,000
42 Parking Lot Expansion (6 of 6)-RAC (2 of 2), RAC Employee (2 of 2)	1,078,936						0	1,450,000		1,450,000
43 Annual Pavement Maintenance	74,409						0	100,000		100,000
44 East GA Apron Expansion (1 of 5)	895,802						0	1,240,000		1,240,000
45 Annual Pavement Maintenance	72,242						0	100,000		100,000
46 East GA Apron Expansion (2 of 5)	897,766						0	1,280,000		1,280,000
47 Annual Pavement Maintenance	77,152						0	110,000		110,000
48 East GA Apron Expansion (3 of 5)	898,856						0	1,320,000		1,320,000
49 Annual Pavement Maintenance	74,905						0	110,000		110,000
Total Intermediate Term Project Costs Before Financing	$26,542,269	$0	$0	$0	$0	$0	$0	$33,807,500	$0	$33,807,500
Financing Costs for Debt Serviced with PFCs	-							0		0
Total Intermediate Term Project Costs	$26,542,269	$0	$0	$0	$0	$0	$0	$33,807,500	$0	$33,807,500

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program	Funding Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
Funds Used for Capital Improvement Projects									
AIP Entitlement Grants	$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants	0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges	3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028	0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments	0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service	578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year	6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year	3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year	(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>			2.72x	2.85x	2.98x				

	Capital Project Description	2011 Base Year Costs	Estimated Project Costs and Development Schedule: Near Term 2012	2013	2014	2015	2016	Total	Intermdiate Term 2017-2024	Long Term 2025-2032	Total Escalated Costs
	Long Term Projects (2025-2032)										
50	Runway End 03L Approach Lighting & Marking (1 of 2)	$879,287						$0		$1,330,000	$1,330,000
51	Environmental Assessment-Runway End 12 & Parallel Taxiway Extension	264,447						0		400,000	400,000
52	Terminal Bldg-Concourse Expansion (Long Term) (1of5)	2,241,189						0		3,390,000	3,390,000
53	East GA Apron Expansion (4 of 5)	899,120						0		1,360,000	1,360,000
54	Annual Pavement Maintenance	72,723						0		110,000	110,000
55	Runway End 03L Approach Lighting & Marking (2 of 2)	879,351						0		1,370,000	1,370,000
56	Runway End 30 Relocation (1 of 2)	1,463,445						0		2,280,000	2,280,000
57	Taxiway A End-Around (1 of 2)	571,257						0		890,000	890,000
58	Terminal Bldg-Concourse Expansion (Long Term) (2of5)	2,246,517						0		3,500,000	3,500,000
59	East GA Apron Expansion (5 of 5)	892,188						0		1,390,000	1,390,000
60	Annual Pavement Maintenance	77,024						0		120,000	120,000
61	Runway End 30 Relocation (2 of 2)	1,464,442						0		2,350,000	2,350,000
62	Taxiway A End-Around (2 of 2)	573,314						0		920,000	920,000
63	Terminal Apron Expansion (1 of 3)	5,290,687						0		8,490,000	8,490,000
64	Terminal Bldg-Concourse Expansion (Long Term) (3of5)	2,243,401						0		3,600,000	3,600,000
65	Annual Pavement Maintenance	74,780						0		120,000	120,000
66	Runway End 12 & Parallel Taxiway Extension (1 of 3)	2,244,611						0		3,710,000	3,710,000

Table H-1. Estimated Project Costs and Development Schedule

Capital Improvement Program		Funding Schedule								
		Near Term						Intermdiate Term	Long Term	Total Escalated
		2012	2013	2014	2015	2016	Total	2017-2024	2025-2032	Costs
Funds Used for Capital Improvement Projects										
AIP Entitlement Grants		$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379	$50,283,904
AIP Discretionary Grants		0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820	42,468,462
Passenger Facility Charges		3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598	32,150,655
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028		0	0	6,615,000	0	0	6,615,000	0	0	6,615,000
Less Principal Payments		0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)	(6,615,000)
Net Operating Cash Flow Less Existing Debt Service		578,317	936,870	1,027,703	1,123,886	1,225,702	4,892,479	15,459,483	26,856,536	47,208,498
Funds Available Current Year		6,644,893	4,276,240	17,253,967	4,263,582	4,393,459	36,832,141	42,692,308	92,587,069	172,111,518
Beginning Cash Balance/Funds Carried Over from Prior Year		3,000,000	4,644,893	2,621,134	3,687,125	3,863,763	3,000,000	5,721,902	12,151,587	3,000,000
Funds Used Current Year		(5,000,000)	(6,300,000)	(16,187,975)	(4,086,945)	(2,535,321)	(34,110,240)	(36,262,622)	(82,727,305)	(153,100,167)
Funds Carried Over to Next Year		$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351	$22,011,351
DSC rough est (including existing PSC portion LT GOB 2001&2004) >>				2.72x	2.85x	2.98x				

Capital Project Description	2011 Base Year Costs	Estimated Project Costs and Development Schedule								
		Near Term						Intermdiate Term	Long Term	Total Escalated
		2012	2013	2014	2015	2016	Total	2017-2024	2025-2032	Costs
67 Terminal Apron Expansion (2 of 3)	5,293,894						0		8,750,000	8,750,000
68 Terminal Bldg-Concourse Expansion (Long Term) (4of5)	2,244,611						0		3,710,000	3,710,000
69 Master Plan Update	605,016						0		1,000,000	1,000,000
70 Annual Pavement Maintenance	72,602						0		120,000	120,000
71 Environmental Assessment-Runway End 21R & Parallel Taxiway Extension	234,958						0		400,000	400,000
72 Runway End 12 & Parallel Taxiway Extension (2 of 3)	2,243,847						0		3,820,000	3,820,000
73 Terminal Apron Expansion (3 of 3)	5,292,426						0		9,010,000	9,010,000
74 Terminal Bldg-Concourse Expansion (Long Term) (5of5)	2,243,847						0		3,820,000	3,820,000
75 Annual Pavement Maintenance	76,361						0		130,000	130,000
76 Runway End 21R & Parallel Taxiway Extension (1 of 3)	1,454,229						0		2,550,000	2,550,000
77 Runway End 12 & Parallel Taxiway Extension (3 of 3)	2,241,224						0		3,930,000	3,930,000
78 Annual Pavement Maintenance	74,137						0		130,000	130,000
79 Runway End 21R & Parallel Taxiway Extension (2 of 3)	1,456,167						0		2,630,000	2,630,000
80 New Taxiway G (1 of 2)	1,135,035						0		2,050,000	2,050,000
81 Annual Pavement Maintenance	77,515						0		140,000	140,000
82 Runway End 21R & Parallel Taxiway Extension (3 of 3)	1,456,759						0		2,710,000	2,710,000
83 New Taxiway G (2 of 2)	1,134,229						0		2,110,000	2,110,000
84 Annual Pavement Maintenance	75,257						0		140,000	140,000
Total Long Term Project Costs Before Financing	$49,789,898	$0	$0	$0	$0	$0	$0	$0	$82,480,000	$82,480,000
Financing Costs for Debt Serviced with PFCs	-						0		0	0
Total Long Term Project Costs	$49,789,898	$0	$0	$0	$0	$0	$0	$0	$82,480,000	$82,480,000
Total Project Costs	$106,744,952	$5,000,000	$6,300,000	$16,187,975	$4,086,945	$2,535,321	$34,110,240	$36,262,622	$82,727,305	$153,100,167

Table H-2. PFC Serviced Debt Issue

Debt Issue Structure

Issue Date:	01-Jan-14	
Interest:	6.5%	
Term:	15 Years	
Project Funding Requirement:	$6,615,000	
Debt Service Reserve Fund Requirement (MADS):	0	< no assump
Capitalized Debt Issue Costs (2.5%):	0	< no assump
Total Debt Requirement:	$6,615,000	

Notes:

(1) Assumes no interest earnings on Construction Fund balance or Debt Service Reserve Fund deposit.

(2) Assumes DSRF funded from the issue amount

Debt Service Schedule

Payment Number	Year	Beginning Principal	Annual Debt Service	Interest Payment	Principal Payment	Ending Principal
1	2014	$6,615,000	$703,524	$429,975	$273,549	$6,341,451
2	2015	6,341,451	703,524	412,194	291,329	6,050,122
3	2016	6,050,122	703,524	393,258	310,266	5,739,856
4	2017	5,739,856	703,524	373,091	330,433	5,409,423
5	2018	5,409,423	703,524	351,613	351,911	5,057,512
6	2019	5,057,512	703,524	328,738	374,785	4,682,727
7	2020	4,682,727	703,524	304,377	399,146	4,283,580
8	2021	4,283,580	703,524	278,433	425,091	3,858,489
9	2022	3,858,489	703,524	250,802	452,722	3,405,768
10	2023	3,405,768	703,524	221,375	482,149	2,923,619
11	2024	2,923,619	703,524	190,035	513,488	2,410,130
12	2025	2,410,130	703,524	156,658	546,865	1,863,265
13	2026	1,863,265	703,524	121,112	582,411	1,280,854
14	2027	1,280,854	703,524	83,255	620,268	660,586
15	2028	660,586	703,524	42,938	660,586	(0)
	Totals		$10,552,855	$3,937,855	$6,615,000	

Table H-3. Projected Capital Funding Sources

#	Capital Improvement Projects	Total Escalated Costs	AIP Entitlement Funding	AIP Discretionary Funding	Total AIP Funding	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Cash Reserves/ Net Revenues	Total Funding
	Near Term Projects (2012-2016)								
1	East GA Apron Rehabilitation (1 of 2)	$2,500,000	$2,250,000		$2,250,000			$250,000	$2,500,000
2	Sand Storage Building (3,200 sf)	230,000			0			230,000	230,000
3	Terminal Area Plan	330,000			0		330,000	0	330,000
4	Terminal Building-Phase 1 Part A (Design)-Widening Ahead of Security Checkpoint & Restroom Relocation	210,001			0		210,001	0	210,001
5	Long-Term Parking Lot Rehabilitation (Phase III & IV)	650,000			0			650,000	650,000
6	Runway 12 Land Acquisition Phase 1	1,000,000			0			1,000,000	1,000,000
7	Annual Pavement Maintenance	80,000			0			80,000	80,000
	Totals for 2012	$5,000,000	$2,250,000	$0	$2,250,000	$0	$540,000	$2,210,000	$5,000,000
8	Terminal Building-Phase 1 Part A (Construction)-Widening Ahead of Security Checkpoint & Restroom Relocation	$2,150,000			$0		$2,150,000	$0	$2,150,000
9	Taxiway D and VOR Relocation (Design)-Includes FAA VOR Study in 2012	1,000,000	900,000		900,000		100,000	0	1,000,000
10	Parking Lot Expansion (Overflow Parking) (1 of 6)	790,000			0			790,000	790,000
11	Airport Equipment-Sweeper	650,000			0		650,000	0	650,000
12	Terminal Building-Phase 1 Part B (Design)-Security Checkpoint Widening & Holdroom Expansion	630,000			0		630,000	0	630,000
13	Runway 12 Land Acquisition Phase 2	1,000,000			0			1,000,000	1,000,000
14	Annual Pavement Maintenance	80,000			0			80,000	80,000
	Totals for 2013	$6,300,000	$900,000	$0	$900,000	$0	$3,529,999	$1,870,001	$6,300,000
15	Terminal Building-Phase 1 Part B1 (Construction)-Security Checkpoint Widening & Holdroom Expansion	$4,800,000			$0	$4,800,000		$0	$4,800,000
16	Taxiway D and VOR Relocation (Construction)	10,528,000	3,000,000	6,500,000	9,500,000		1,028,000	0	10,528,000
17	Parking Lot Expansion-Add 3rd Lane & Ticket Booth	350,000			0			350,000	350,000
18	Annual Pavement Maintenance	80,000			0			80,000	80,000
	Totals for 2014	$15,758,000	$3,000,000	$6,500,000	$9,500,000	$4,800,000	$1,028,000	$430,000	$15,758,000
19	Runway 12-30 MIRL Lighting Replacement	$1,779,750	$1,601,775		$1,601,775		$177,975	$0	$1,779,750
20	Terminal Building-Phase 1 Part B2 (Construction)-Holdroom Expansion	1,815,000			0	1,815,000		0	1,815,000
21	Annual Pavement Maintenance	80,000			0			80,000	80,000
	Totals for 2015	$3,674,750	$1,601,775	$0	$1,601,775	$1,815,000	$177,975	$80,000	$3,674,750
22	East GA Apron Rehabilitation (2 of 2)	$2,012,063	$1,810,856		$1,810,856		$201,206	$0	$2,012,063
23	Terminal Building-Phase 2-Renovation/Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms-Environmental Document	40,000			0		40,000	0	40,000
24	Annual Pavement Maintenance	90,000			0			90,000	90,000
	Totals for 2016	$2,142,063	$1,810,856	$0	$1,810,856	$0	$241,206	$90,000	$2,142,063
	Total Near Term Projects Before Financing	$32,874,812	$9,562,631	$6,500,000	$16,062,631	$6,615,000	$5,517,180	$4,680,001	$32,874,812
	Financing Costs for Debt Serviced with PFCs	3,937,855				3,937,855			3,937,855
	Total Near Term Projects	$36,812,667	$9,562,631	$6,500,000	$16,062,631	$10,552,855	$5,517,180	$4,680,001	$36,812,667

Table H-3. Projected Capital Funding Sources

	Capital Improvement Projects	Total Escalated Costs	AIP Entitlement Funding	AIP Discretionary Funding	Total AIP Funding	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Cash Reserves/ Net Revenues	Total Funding
Intermediate Term Projects (2017-2024)									
25	Terminal Building-Phase 2 (1 of 3)-Terminal Access Road Realignment	$1,240,000	$1,116,000		$1,116,000			$124,000	$1,240,000
26	Parking Lot Expansion (2 of 6)-Long Term (1 of 3)	920,000			0			920,000	920,000
27	Airport GIS	577,500	519,750		519,750			57,750	577,500
28	Airport Equipment-Snow Plow	650,000	585,000		585,000			65,000	650,000
29	Parking Lot Expansion (Overflow Parking)	90,000			0			90,000	90,000
30	Taxiway A Realignment	4,690,000	2,726,358	1,494,642	4,221,000			469,000	4,690,000
31	Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms	5,650,000	5,085,000		5,085,000			565,000	5,650,000
32	Parking Lot Expansion (3 of 6)-Long Term (2 of 3), Short Term (1 of 2)	1,590,000			0			1,590,000	1,590,000
33	Annual Pavement Maintenance	90,000			0			90,000	90,000
34	Expansion of Ticketing, Baggage Handling, Bag Claim & Restrooms	5,840,000	2,711,986		2,711,986			3,128,014	5,840,000
35	Parking Lot Expansion (4 of 6)-Long Term (3 of 3), Short Term (2 of 2)	1,640,000			0			1,640,000	1,640,000
36	Annual Pavement Maintenance	100,000			0			100,000	100,000
37	Parking Lot Expansion (5 of 6)-RAC Area (1 of 2), RAC Employee (1 of 2)	1,420,000			0			1,420,000	1,420,000
38	Master Plan Update	800,000	720,000		720,000			80,000	800,000
39	Airport Equipment-ARFF	700,000	630,000		630,000			70,000	700,000
40	Annual Pavement Maintenance	100,000			0			100,000	100,000
41	Taxiway Rehabilitation	2,000,000	1,800,000	0	1,800,000			200,000	2,000,000
42	Parking Lot Expansion (6 of 6)-RAC (2 of 2), RAC Employee (2 of 2)	1,450,000			0			1,450,000	1,450,000
43	Annual Pavement Maintenance	100,000			0			100,000	100,000
44	East GA Apron Expansion (1 of 5)	1,240,000	1,116,000		1,116,000			124,000	1,240,000
45	Annual Pavement Maintenance	100,000			0			100,000	100,000
46	East GA Apron Expansion (2 of 5)	1,280,000	1,152,000		1,152,000			128,000	1,280,000
47	Annual Pavement Maintenance	110,000			0			110,000	110,000
48	East GA Apron Expansion (3 of 5)	1,320,000	1,188,000		1,188,000			132,000	1,320,000
49	Annual Pavement Maintenance	110,000			0			110,000	110,000
Total Intermediate Term Projects Before Financing		$33,807,500	$19,350,093	$1,494,642	$20,844,735	$0	$0	$12,962,765	$33,807,500
Financing Costs for Debt Serviced with PFCs		0				0			0
Total Intermediate Term Projects		$33,807,500	$19,350,093	$1,494,642	$20,844,735	$0	$0	$12,962,765	$33,807,500

Table H-3. Projected Capital Funding Sources

#	Capital Improvement Projects	Total Escalated Costs	AIP Entitlement Funding	AIP Discretionary Funding	Total AIP Funding	Passenger Facility Charges (Debt)	Passenger Facility Charges (PAYG)	Cash Reserves/ Net Revenues	Total Funding
	Long Term Projects (2025-2032)								
50	Runway End 03L Approach Lighting & Marking (1 of 2)	$1,330,000	$1,197,000		$1,197,000		$133,000	$0	$1,330,000
51	Environmental Assessment-Runway End 12 & Parallel Taxiway Extension	400,000	360,000		360,000		40,000	0	400,000
52	Terminal Bldg-Concourse Expansion (Long Term) (1of5)	3,390,000			0		3,390,000	0	3,390,000
53	East GA Apron Expansion (4 of 5)	1,360,000	1,224,000		1,224,000			136,000	1,360,000
54	Annual Pavement Maintenance	110,000			0			110,000	110,000
55	Runway End 03L Approach Lighting & Marking (2 of 2)	1,370,000	1,233,000		1,233,000		137,000	0	1,370,000
56	Runway End 30 Relocation (1 of 2)	2,280,000	2,052,000		2,052,000		228,000	0	2,280,000
57	Taxiway A End-Around (1 of 2)	890,000	801,000		801,000		89,000	0	890,000
58	Terminal Bldg-Concourse Expansion (Long Term) (2of5)	3,500,000			0		3,500,000	0	3,500,000
59	East GA Apron Expansion (5 of 5)	1,390,000	1,251,000		1,251,000		139,000	0	1,390,000
60	Annual Pavement Maintenance	120,000			0			120,000	120,000
61	Runway End 30 Relocation (2 of 2)	2,350,000	2,115,000		2,115,000		235,000	0	2,350,000
62	Taxiway A End-Around (2 of 2)	920,000	828,000		828,000		92,000	0	920,000
63	Terminal Apron Expansion (1 of 3)	8,490,000	6,971,180	669,820	7,641,000		849,000	0	8,490,000
64	Terminal Bldg-Concourse Expansion (Long Term) (3of5)	3,600,000			0		3,600,000	0	3,600,000
65	Annual Pavement Maintenance	120,000			0			120,000	120,000
66	Runway End 12 & Parallel Taxiway Extension (1 of 3)	3,710,000	3,339,000	0	3,339,000		371,000	0	3,710,000
67	Terminal Apron Expansion (2 of 3)	8,750,000		7,875,000	7,875,000		875,000	0	8,750,000
68	Terminal Bldg-Concourse Expansion (Long Term) (4of5)	3,710,000			0		2,402,620	1,307,380	3,710,000
69	Master Plan Update	1,000,000			0			1,000,000	1,000,000
70	Annual Pavement Maintenance	120,000			0			120,000	120,000
71	Environmental Assessment-Runway End 21R & Parallel Taxiway Extension	400,000			0			400,000	400,000
72	Runway End 12 & Parallel Taxiway Extension (2 of 3)	3,820,000		3,438,000	3,438,000			382,000	3,820,000
73	Terminal Apron Expansion (3 of 3)	9,010,000		8,109,000	8,109,000			901,000	9,010,000
74	Terminal Bldg-Concourse Expansion (Long Term) (5of5)	3,820,000			0			3,820,000	3,820,000
75	Annual Pavement Maintenance	130,000			0			130,000	130,000
76	Runway End 21R & Parallel Taxiway Extension (1 of 3)	2,550,000		2,295,000	2,295,000			255,000	2,550,000
77	Runway End 12 & Parallel Taxiway Extension (3 of 3)	3,930,000		3,537,000	3,537,000			393,000	3,930,000
78	Annual Pavement Maintenance	130,000			0			130,000	130,000
79	Runway End 21R & Parallel Taxiway Extension (2 of 3)	2,630,000		2,367,000	2,367,000			263,000	2,630,000
80	New Taxiway G (1 of 2)	2,050,000		1,845,000	1,845,000			205,000	2,050,000
81	Annual Pavement Maintenance	140,000			0			140,000	140,000
82	Runway End 21R & Parallel Taxiway Extension (3 of 3)	2,710,000		2,439,000	2,439,000			271,000	2,710,000
83	New Taxiway G (2 of 2)	2,110,000		1,899,000	1,899,000			211,000	2,110,000
84	Annual Pavement Maintenance	140,000			0			140,000	140,000
	Total Long Term Projects Before Financing	$82,480,000	$21,371,179	$34,473,820	$55,844,999	$0	$16,080,620	$10,554,380	$82,480,000
	Financing Costs for Debt Serviced with PFCs	0				0			0
	Total Long Term Projects	$82,480,000	$21,371,179	$34,473,820	$55,844,999	$0	$16,080,620	$10,554,380	$82,480,000
	Total Project Costs	$153,100,167	$50,283,904	$42,468,462	$92,752,366	$10,552,855	$21,597,800	$28,197,147	$153,100,167

Table H-4. Actual, Budgeted and Projected Operations & Maintenance Expenses

				Near Term						Intermediate	Long
				Projected						Term	Term
Operations & Maintenance Expenses	Actual 2009	Actual 2010	Budgeted 2011	2012	2013	2014	2015	2016	Total	2017-2024	2025-2032
Personnel Expenses:											
Operating Salaries	$676,785	$689,320	$760,000	$782,800	$806,284	$830,473	$855,387	$881,048	$4,155,992	$8,069,615	$10,222,347
Administrative Salaries	314,397	337,729	361,000	371,830	382,985	394,474	406,309	418,498	1,974,096	3,833,067	4,855,615
Fringe Benefits	528,391	518,774	539,500	555,685	572,356	589,526	607,212	625,428	2,950,207	5,728,365	7,256,521
Total Personnel Expenses	1,519,573	1,545,823	1,660,500	1,710,315	1,761,624	1,814,473	1,868,907	1,924,975	9,080,295	17,631,047	22,334,482
Supplies:											
Operating Supplies	28,099	25,699	30,000	30,900	31,827	32,782	33,765	34,778	164,052	318,537	403,514
Gasoline Expense	29,632	32,416	35,000	36,050	37,132	38,245	39,393	40,575	191,394	371,627	470,766
Office Expenses & Supplies	11,430	20,563	21,000	21,630	22,279	22,947	23,636	24,345	114,837	222,976	282,460
Total Supplies	69,161	78,678	86,000	88,580	91,237	93,975	96,794	99,698	470,283	913,141	1,156,739
Contractual Services:											
Labor Consultants	4,271	7,227	10,000	10,300	10,609	10,927	11,255	11,593	54,684	106,179	134,505
Janitorial Supplies & Services	23,613	22,348	35,000	36,050	37,132	38,245	39,393	40,575	191,394	371,627	470,766
Legal Fees	5,424	8,365	10,000	10,300	10,609	10,927	11,255	11,593	54,684	106,179	134,505
Professional Consultants	51,251	31,304	50,000	51,500	53,045	54,636	56,275	57,964	273,420	530,896	672,523
Contract Maintenance Services	36,973	39,201	45,000	46,350	47,741	49,173	50,648	52,167	246,078	477,806	605,271
Advertising	3,206	2,320	2,500	2,575	2,652	2,732	2,814	2,898	13,671	26,545	33,626
Outside Services Employed	29,714	20,481	37,000	38,110	39,253	40,431	41,644	42,893	202,331	392,863	497,667
Leased Auto	5,600	5,600	5,600	5,768	5,941	6,119	6,303	6,492	30,623	59,460	75,323
Property Insurance	247,904	209,803	250,000	257,500	265,225	273,182	281,377	289,819	1,367,102	2,654,479	3,362,614
Total Contractual Services	407,956	346,649	445,100	458,453	472,207	486,373	500,964	515,993	2,433,989	4,726,034	5,986,798
Utilities:											
Utilities	240,471	212,794	275,000	283,250	291,748	300,500	309,515	318,800	1,503,813	2,919,926	3,698,875
Telephone	11,167	13,340	12,000	12,360	12,731	13,113	13,506	13,911	65,621	127,415	161,405
Total Utilities	251,638	226,134	287,000	295,610	304,478	313,613	323,021	332,712	1,569,434	3,047,341	3,860,281
Repairs & Maintenance:											
Road & Grounds/Lawn Maintenance	13,062	12,208	25,000	25,750	26,523	27,318	28,138	28,982	136,710	265,448	336,261
Equipment Maintenance	28,844	26,632	35,000	36,050	37,132	38,245	39,393	40,575	191,394	371,627	470,766
Water, Sewer & Fire Maintenance	217	444	5,000	5,150	5,305	5,464	5,628	5,796	27,342	53,090	67,252
Airfield Maintenance	84,372	84,917	100,000	103,000	106,090	109,273	112,551	115,927	546,841	1,061,791	1,345,046
Building Maintenance	95,311	130,906	85,000	87,550	90,177	92,882	95,668	98,538	464,815	902,523	1,143,289
Total Repairs & Maintenance	221,806	255,107	250,000	257,500	265,225	273,182	281,377	289,819	1,367,102	2,654,479	3,362,614

Table H-4. Actual, Budgeted and Projected Operations & Maintenance Expenses

				Near Term						Intermediate	Long
	Actual	Actual	Budgeted	Projected						Term	Term
Operations & Maintenance Expenses	2009	2010	2011	2012	2013	2014	2015	2016	Total	2017-2024	2025-2032
Other Operating Expenses:											
Uncollectible Revenue	0	0	0	0	0	0	0	0	0	0	0
Parking Area Expense	21,365	16,670	15,000	15,450	15,914	16,391	16,883	17,389	82,026	159,269	201,757
Miscellaneous	1,334	1,683	10,000	10,300	10,609	10,927	11,255	11,593	54,684	106,179	134,505
General Taxes	18,062	21,253	16,000	16,480	16,974	17,484	18,008	18,548	87,495	169,887	215,207
Security Access Expense	9,189	1,082	10,000	10,300	10,609	10,927	11,255	11,593	54,684	106,179	134,505
Special Security	93,790	91,016	40,000	41,200	42,436	43,709	45,020	46,371	218,736	424,717	538,018
Membership Dues & Fees	9,600	28,262	20,000	20,600	21,218	21,855	22,510	23,185	109,368	212,358	269,009
Publications & Networks	8,849	2,472	10,000	10,300	10,609	10,927	11,255	11,593	54,684	106,179	134,505
Employee Training	0	0	0	0	0	0	0	0	0	0	0
Promotional/Hosting/Meals	3,065	4,745	7,000	7,210	7,426	7,649	7,879	8,115	38,279	74,325	94,153
Equipment for LEOs	6,325	2,051	3,000	3,090	3,183	3,278	3,377	3,478	16,405	31,854	40,351
Travel & Related Expenses	27,107	22,611	45,000	46,350	47,741	49,173	50,648	52,167	246,078	477,806	605,271
Total Other Operating Expenses	198,686	191,845	176,000	181,280	186,718	192,320	198,090	204,032	962,440	1,868,753	2,367,280
Local Governmental Services:											
City of Pasco - ARFF	460,000	424,000	460,000	473,800	488,014	502,654	517,734	533,266	2,515,469	4,884,241	6,187,210
Franklin County - Security	260,000	290,000	305,000	314,150	323,575	333,282	343,280	353,579	1,667,865	3,238,464	4,102,389
Port of Pasco - Administration	292,496	324,511	546,793	563,197	580,093	597,495	615,420	633,883	2,990,088	5,805,801	7,354,615
Total Local Governmental Services	1,012,496	1,038,511	1,311,793	1,351,147	1,391,681	1,433,432	1,476,435	1,520,728	7,173,422	13,928,506	17,644,214
Total Operations & Minatenance Expense	$3,681,316	$3,682,747	$4,216,393	$4,342,885	$4,473,171	$4,607,366	$4,745,587	$4,887,955	$23,056,965	$44,769,299	$56,712,409
Annual Growth Rate	-	0.0%	14.5%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Operating Expenses Per Enplaned Passenger:											
Tri-Cities Airport	$14.35	$11.94	$12.90	$13.07	$13.24	$13.40	$13.58	$13.75	$13.41	$14.58	$16.15
Non-Hub Industry Average	$27.33	$28.15	$29.00	$29.87	$30.76	$31.68	$32.64	$33.61	$31.71	$38.48	$48.75

Table H-5. Actual, Budgeted and Projected Operating Revenues

	Actual	Actual	Budgeted	Near Term						Intermediate Term	Long Term
				Projected							
Operations & Maintenance Expenses	2009	2010	2011	2012	2013	2014	2015	2016	Total	2017-2024	2025-2032
Airline Revenues											
Landing Fees	$552,555	$630,768	$612,721	$636,460	$661,119	$686,733	$713,340	$740,978	$3,438,631	$7,060,411	$9,569,707
Terminal Rent	600,486	629,018	623,000	641,690	660,941	680,769	701,192	722,228	3,406,819	6,614,961	8,379,634
Total Airline Revenues	$1,153,041	$1,259,786	$1,235,721	$1,278,150	$1,322,060	$1,367,502	$1,414,532	$1,463,206	$6,845,450	$13,675,371	$17,949,341
Annual Growth Rate	-	9.3%	-1.9%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.4%	3.5%
Airline Cost Per Enplaned Passenger:											
Tri-Cities Airport	$4.50	$4.09	$3.78	$3.85	$3.91	$3.98	$4.05	$4.12	$3.98	$4.45	$5.11
Non-Hub Industry Average	$6.61	$6.81	$7.02	$7.23	$7.44	$7.67	$7.90	$8.13	$7.67	$9.31	$11.79
Non-Airline Revenues											
Other Carrier Landing Fees	$23,681	$27,033	$26,259	$27,047	$27,859	$28,694	$29,555	$30,442	$143,597	$278,821	$353,202
Fuel Flowage Fees	14,448	15,588	13,000	13,390	13,792	14,205	14,632	15,071	71,089	138,033	174,856
Car Rental Concession Fees	649,761	724,320	649,425	680,265	712,569	746,408	781,854	818,983	3,740,079	8,118,710	11,767,395
Car Rental Space Rent	33,533	34,539	35,575	36,642	37,742	38,874	40,040	41,241	194,540	377,734	478,502
Terminal Office Space Rent	50,228	50,412	50,000	51,500	53,045	54,636	56,275	57,964	273,420	530,896	672,523
Advertising Display Fees	33,209	28,527	28,000	28,840	29,705	30,596	31,514	32,460	153,115	297,302	376,613
Public Parking Fees	1,298,357	1,662,632	1,438,000	1,806,288	2,177,819	2,281,240	2,389,572	2,503,049	11,157,968	24,813,133	35,964,574
Hangar Rental	128,757	117,838	118,503	122,058	125,720	129,491	133,376	137,377	648,023	1,258,255	1,593,919
Land Leases	454,589	380,723	295,518	304,384	313,515	322,920	332,608	342,586	1,616,014	3,137,785	3,974,852
Restaurant/Gift Shop Rent	67,076	79,058	75,000	77,250	79,568	81,955	84,413	86,946	410,131	796,344	1,008,784
Warehouse Rental	207,212	207,212	207,212	213,428	219,831	226,426	233,219	240,215	1,133,120	2,200,159	2,787,096
East Side Building Revenue	352,840	362,394	370,823	381,948	393,406	405,208	417,365	429,885	2,027,812	3,937,367	4,987,738
TSA Security Reimbursement	134,223	132,360	110,000	113,300	116,699	120,200	123,806	127,520	601,525	1,167,971	1,479,550
Miscellaneous Income	372	423	0	0	0	0	0	0	0	0	0
Total Non-Airline Revenues	$3,448,286	$3,823,059	$3,417,315	$3,856,340	$4,301,270	$4,480,856	$4,668,230	$4,863,739	$22,170,434	$47,052,507	$65,619,605
Annual Growth Rate	-	10.9%	-10.6%	12.8%	11.5%	4.2%	4.2%	4.2%	7.3%	4.2%	4.3%
Non-Operating Revenues											
Interest Income	$5,742	$183	$0	0	0	0	0	0	0	0	0
Other Non-Operating Revenues	8,231	3,308	0	0	0	0	0	0	0	0	0
Total Non-Operating Revenues	$13,973	$3,491	$0	$0	$0	$0	$0	$0	$0	$0	$0
Annual Growth Rate	-	-75.0%	-100.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%
Total Revenues	$4,615,300	$5,086,336	$4,653,036	$5,134,490	$5,623,329	$5,848,358	$6,082,762	$6,326,945	$29,015,884	$60,727,878	$83,568,945
Annual Growth Rate	-	10.2%	-8.5%	10.3%	9.5%	4.0%	4.0%	4.0%	6.3%	4.0%	4.1%
Operating Revenues Per Enplaned Passenger:											
Tri-Cities Airport	$17.94	$16.48	$14.24	$15.45	$16.64	$17.02	$17.40	$17.80	$16.88	$19.78	$23.79
Non-Hub Industry Average	$31.09	$32.02	$32.98	$33.97	$34.99	$36.04	$37.12	$38.23	$36.07	$43.77	$55.45

Table H-6. Financial Plan Summary - Projected Net Revenues, Capital Funding and Capital Expenditures

Operating/Capital Cash Flow	Near Term						Intermdiate	Long
	Projected						Term	Term
	2012	2013	2014	2015	2016	Total	2017-2024	2025-2032
Operating Cash Flow								
Revenues:								
Airline Revenues	$1,278,150	$1,322,060	$1,367,502	$1,414,532	$1,463,206	$6,845,450	$13,675,371	$17,949,341
Non-Airline Revenues	3,856,340	4,301,270	4,480,856	4,668,230	4,863,739	22,170,434	47,052,507	65,619,605
Total Revenues	$5,134,490	$5,623,329	$5,848,358	$6,082,762	$6,326,945	$29,015,884	$60,727,878	$83,568,945
Operations & Maintenance Expenses	($4,342,885)	($4,473,171)	($4,607,366)	($4,745,587)	($4,887,955)	($23,056,965)	($44,769,299)	($56,712,409)
Operating Net Cash Flow Before Existing Debt Service	$791,605	$1,150,158	$1,240,991	$1,337,174	$1,438,990	$5,958,919	$15,958,579	$26,856,536
Less GO Bond Debt Service	(213,288)	(213,288)	(213,288)	(213,288)	(213,288)	(1,066,440)	(499,096)	0
Total Airport Operating Funds Available For Capital Expenditures	$578,317	$936,870	$1,027,703	$1,123,886	$1,225,702	$4,892,479	$15,459,483	$26,856,536
Capital Cash Flow								
Beginning Cash Balance	$3,000,000	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$3,000,000	$5,721,902	$12,151,587
Other Capital Funding Sources:								
AIP Entitlement Grants	$2,966,576	$2,107,350	$2,131,873	$2,156,813	$2,182,177	$11,544,789	$18,423,735	$20,315,379
AIP Discretionary Grants	0	0	6,500,000	0	0	6,500,000	1,494,642	34,473,820
Passenger Facility Charges	3,100,000	1,232,020	1,252,938	1,274,212	1,295,847	8,155,017	11,191,040	12,804,598
PFC Debt Proceeds (15 yrs, 6.5%) Thru 2028	0	0	6,615,000	0	0	6,615,000	0	0
Less Principal Payments	0	0	(273,549)	(291,329)	(310,266)	(875,144)	(3,876,591)	(1,863,265)
Total Other Capital Funding Sources	$6,066,576	$3,339,370	$16,226,263	$3,139,696	$3,167,757	$31,939,662	$27,232,825	$65,730,533
Total Funds Available for Capital Expenditures	$9,644,893	$8,921,133	$19,875,100	$7,950,708	$8,257,222	$39,832,141	$48,414,210	$104,738,657
Capital Improvement Program Expenditures	5,000,000	6,300,000	16,187,975	4,086,945	2,535,321	34,110,240	36,262,622	82,727,305
Ending Cash Balance	$4,644,893	$2,621,134	$3,687,125	$3,863,763	$5,721,902	$5,721,902	$12,151,587	$22,011,351

Appendix H

Limited Rates and Charges Review
Prepared by Leibowitz & Horton AMC
April 2013

TRI-CITIES AIRPORT
Master Plan Update - Limited Rates & Charges Review
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TABLES

H.1. Limited Rates & Charges Review Objectives

The primary objective of the Limited Rates & Charges Review project was to review and evaluate the Tri-Cities Airport (PSC) non-airline aeronautical rates, lease documents and leasing policy and recommend appropriate changes to reflect current industry standards and the federal regulatory environment. This objective includes a review of the Airport's tenant leases and concession agreements to evaluate the appropriateness and consistency of terms in relation to common industry practice. Revenue enhancement opportunities will be identified, reviewed and recommended for leases and rate structure, as appropriate.

H.2. Overall Approach

The Limited Rates & Charges Review uses surveys of the rates of other airports which have aviation activity that is similar to Tri-Cities Airport as an economical method to estimate appropriate rentals and fees for the use of airport property. However, the most accurate approach for establishing appropriate rates is the conduct of a competent real estate appraisal. Consequently, we recommend that the Airport use real estate appraisals to confirm the appropriateness and current market value fees and rentals when practical and cost-effective. This includes engaging an appraiser that specializes in evaluating airport property so that their experience and their access to numerous comparable airport facilities can be included in the review. In recent years, these airport appraisal specialists have developed large data bases that include extensive listings of airport property that enhance the results of the appraisal.

The detailed approach for conducting the Limited Rates & Charges Review included the following steps:

- Interview key Airport staff to determine objectives and philosophies for establishing non-airline aeronautical rates & charges.

- Review the Airport's current lease log, Summary of Airport Lessees Occupying Space, general aviation leases, concession agreements and other non-airline aeronautical use and lease agreements (excluding commercial/industrial leases).

- Evaluate the Airport's leasing policy and available aviation-related tenant leases and operating privilege agreements from a business (rather than legal) standpoint. For each type of aviation-related agreement consider the rate structure/rental level and rental adjustment provisions. Provide recommendations to revise the leases reviewed in relation to the Airport's local environment, common industry practice and federal regulations.

- Review various airport rate surveys including AAAE survey data for other airports of similar size and operation, Washington State DOT data, Airnav.com and rate surveys conducted by other airports and compare survey results to existing Airport rates in the Summary of Airport Lessees Occupying Space.

- Complete the Limited Rates & Charges Review report which documents rate comparisons and provides recommendations.

- Review and discuss with key Airport staff results of the Limited Rates & Charges Review and recommend revisions/improvements for each type of lease agreement.

H.3 Survey Data Used

The Limited Rates & Charges Review uses rate survey data from a number of sources.

Table 1 (all tables are located in **Section H.7** of this review) provides survey data that were obtained from the AAAE Survey of 1999-2000 Airport Rates and Charges that was originally conducted in the Airline Rates & Charges Study in 2002. These survey results provide a comparison of Tri-Cities Airport's non-airline rates and charges with those of the next ten largest and next ten smallest non-hub airports included in the survey as well as the AAAE national non-hub averages. Since this data is no longer collected, the survey results have been updated by applying the U.S. Bureau of Labor Statistics Consumer Price Index (CPI-urban-all cities) to adjust rates from 2000 to 2012 (approximately 2.34% inflation per year). Even though this method does not exactly reflect “surveyed” rates, the results match well with the consultant’s experience with more than ninety airports across the U.S.

Table 2 provides survey data from the Washington State DOT (WSDOT) Airport Facilities and Services Report. The rate information included in this report was limited but did provide some useful data for comparing Tri-Cities with local/regional general aviation airports.

Additionally, various other airport rate surveys were reviewed from different areas of the U.S. to evaluate the consistency of data provided in the primary survey sources.

H.4 Comparison Rates

The rates and charges review was focused to obtain the following information:

- Fuel Flowage Fees
- Ground Rent
- Large Hangar/Building Rent
- Tie-Down Fees
    - Single Engine Aircraft (SE)
    - Twin/Multi-Engine Aircraft (TE)
    - Monthly
    - Daily
- Monthly T-Hangar Rent
    - Single Engine Aircraft (SE)
    - Twin/Multi-Engine Aircraft (TE)
- Rental Car Concession Fees and Rent
- Restaurant/Gift Shop Concession Fees
- Public Parking Fees

H.5 Results of the Review

As shown in **Table 1**, the Airport's fuel flowage fee of $.035 per gallon of aviation fuel is significantly lower than the $.062 average rate charged by similarly sized airports as well as the $.082 AAAE national non-hub average. The Airport's current fee is the same as it was in the 2002 Rates & Charges Study and has been the same for at least twenty years. The Airport should consider increasing its fuel flowage fee to a level that is more competitive with other non-hub airports. A reasonable approach would be to increase the fee by $.02/gallon in 2014 and another $.02/gallon in 2016 resulting in a fuel flowage fee of $.075/gallon by 2016.

As shown in **Tables 1 and 3**, the Airport's rental rate for ground leases under property used for aviation purposes averages $.179 per square foot per year (psfpy). This compares with the similar-size airport (**Table 1**) average of $.21 psfpy and the AAAE national non-hub average of $.27 psfpy. The WSDOT data (**Table 2**) for smaller local/regional airports reflected an average of $.17 psfpy. The consultant's experience in reviewing numerous other aeronautical ground leases is that a common rate for unimproved land is $.20-$.23 and for improved land is $.30- $.35 psfpy. Airport management has indicated that the last real estate appraisal for non-aviation land was conducted in 2009 and that it is uncertain when the last appraisal for aviation-use land was conducted. When lease terms allow, the Airport should consider conducting an aviation-qualified appraisal for aeronautical use land to adjust ground lease rates to more market-based levels. In the interim, a reasonable approach would be to increase rental rates by CPI every year.

As shown on **Tables 1 and 3**, the Airport's large hangar/building average rental rate ($.733 psfpy) is lower than both the same-size airport (**Table 1**) average ($1.48 psfpy) as well as AAAE national non-hub average ($1.78 psfpy). When the terms of these leases permit, market value rental rates could be further evaluated by comparing the size, location, quality and amenities of each facility with similar facilities at other airports of comparable size. If cost effective, the most supportive method for determining market value rates is to obtain professional lease appraisals performed by a specialized airport appraiser. In the interim, a reasonable approach would be to increase rental rates by $.03/psfpy in 2014 and another $.03/psfpy in 2016 in addition to the annual CPI increases indicated in the existing leases.

As shown in **Tables 1 and 2**, the Airport's tie-down fees (monthly - $18.00; overnight - $2.00/day) are substantially lower than both the same -size airport and AAAE national non-hub averages. The same-size airport averages were $40.77/month and $8.82/day while the AAAE national non-hub averages were $57.53/month and $14.79/day. The WSDOT data (**Table 2**) also showed higher average rates than Tri-Cities with $39/month and $6/day for SE aircraft and $43/month and $8/day for T/ME aircraft. The Airport should consider raising these rates to more competitive levels as soon as it considers appropriate.

As shown in **Table 1**, the Airport's rental rates for single and twin engine aircraft T- hangars are comparable to the industry averages and appear to be reasonable at current levels. These rates should, however, be increased annually for general price level growth as measured by the local Consumer Price Index.

The Airport’s rental rates and percentage concession fees for rental car tenants in the terminal building reflect an up-to-date rate structure in the aviation industry and should be maintained in the future. Space rental rates should be adjusted by CPI on an annual basis.

Currently, the Airport’s restaurant/gift shop tenant in the terminal building pays a minimum rental guarantee of $3,000/month with the overall concession fee based on 10% of gross revenues. For the last several years, the current tenant has substantially exceeded the minimum guarantee. It is common in the airport industry to charge a 10% concession fee for food/gift sales with a 12% concession fee for alcoholic beverage sales. When lease terms allow, the Airport should consider negotiating this higher level of percentage concession fees.

As shown in **Table 1**, The Airport's $12.00 maximum daily short term public parking rate is higher than the average same-size airport rate ($6.94/day) as well as the AAAE national non-hub average rate ($6.72/day). The Airport's $9 maximum daily long term public parking rate is also higher than both the average same-size airport rate ($5.97/day) and the AAAE national non-hub average rate ($5.59/day). The established rates are reasonable compared to the industry averages but should be periodically adjusted for general price level growth as measured by the local Consumer Price Index.

H.6 Additional Considerations

A common approach in the aviation industry for adjusting building and land rental rates to reflect market value levels is to conduct real estate appraisals every five years with an annual CPI increase for each year between appraisals. If cost justified, the Airport should consider adopting this approach. Under all circumstances, the annual CPI adjustment currently allowed in most of the Airport's leases should be imposed without exception.

It was noted in reviewing the Airport's lease log that a number of leases are currently on a month-to-month basis. The Airport should consider starting the process for negotiating longer term leases when reasonable and appropriate. Shorter term and month-to-month leases should garner higher lease rates due to the tenant commitment represented by execution of longer term leases.

H.7 Rate Review Tables

The following rate review tables are provided in this section.

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Table 1

Limited Rates & Charges Review
Rates and Charges Survey of Other Comparable Airports

26-Apr-13

City/State	Airport	2011 Enplaned Pax	Fuel Flowage Fees Per Gallon	Other General Aviation Fees: Ground Rent (psfpy)	Hangar Rent (psfpy)	Tie-Down Fees: Monthly	Tie-Down Fees: Overnight	Monthly T-Hangar Rent: SE	Monthly T-Hangar Rent: TE	Public Parking Daily Maximum: Short Term	Public Parking Daily Maximum: Long Term
Elko, NV	Elko Regional	23,543	$0.020	$0.33	--	$32.99	$3.96	$46.15	--	$2.64	$2.64
Monroe, LA	Monroe Regional	107,290	$0.053	--	--	--	--	--	--	$6.60	$6.60
Alexandria, LA	Alexandria Int'l.	188,286	$0.079	--	--	$65.98	--	$244.12	--	$6.60	$6.60
Bismarck, ND	Bismarck Municipal	197,181	$0.066	$0.33	--	--	--	$176.82	$191.33	$6.60	$6.60
Grand Junction, CO	Walker Field	217,988	$0.053	$0.09	--	--	--	--	--	$6.60	$6.60
Mosinee, WI	Central Wisconsin	135,965	$0.066	$0.30	$1.43	--	--	$125.36	--	--	$3.96
Fayetteville, NC	Fayetteville Regional	259,445	$0.066	--	--	$46.18	$13.20	$217.73	$263.91	$7.92	$5.28
Panama City, FL	Panama City/Bay Cnty Int'l.	417,902	$0.053	--	--	--	--	--	--	$5.94	$5.94
Jackson, WY	Jackson Hole	279,065	$0.079	--	--	$49.48	$45.19	$343.08	$461.84	$6.60	$6.60
Lynchburg, VA	Lynchburg Regional	73,821	$0.092	$0.26	--	$26.39	$6.60	--	--	$7.92	$6.60
Pasco, WA	Tri-Cities	327,008	$0.035	$0.179	$0.733	$18.00	$2.00	$181.74	$297.82	$12.00	$9.00
Lafayette, LA	Lafayette Regional	222,795	$0.106	--	$1.39	--	--	$96.04	$203.21	$10.56	$2.64
Rapd City, SD	Rapid City Regional	254,292	$0.040	$0.26	--	--	$6.60	$311.41	--	$6.60	$6.60
Missoula, MT	Missoula Int'l.	292,501	$0.066	$0.13	--	$65.98	$3.96	$197.93	$362.88	$10.56	$7.26
Augusta, GA	Augusta Regional	267,631	$0.066	$0.33	$0.15	$32.99	$3.96	--	--	$9.24	$6.60
Bloomington, IL	Central Illinois Regional	284,852	$0.066	$0.13	--	$26.39	$3.96	$151.75	--	--	--
Fargo, ND	Hector Int'l.	346,459	$0.026	$0.21	--	--	--	$296.90	--	$9.90	$6.60
Blountville, TN	Tri-Cities Regional	220,586	$0.079	$0.17	$0.90	$65.98	$3.96	--	--	$7.26	$5.94
Bozeman, MT	Gallatin Field	397,870	$0.066	$0.09	$0.89	$19.79	$6.60	$118.76	--	$5.94	$5.94
Medford, OR	Rogue Valley Int'l.	301,742	$0.079	$0.25	$2.14	$57.11	$3.96	$290.30	--	$7.26	$7.26
Avoca, PA	Wilkes-Barre Int'l.	228,367	$0.026	--	$3.50	--	$3.96	--	--	$7.26	$7.26
	Other Non-Hub Averages (1)		$0.062	$0.21	$1.48	$40.77	$8.82	$201.26	$296.63	$6.94	$5.97
	AAAE Non-Hub Averages (2)		$0.082	$0.27	$1.78	$57.53	$14.79	$231.57	$245.42	$6.72	$5.59

NOTES:
(1) Other non-hub averages are calculated based on available rates for the next ten largest and smallest non-hub airports in the U.S.
(2) Source: AAAE Survey of 2000 Airport Rates and Charges adjusted by the BLS CPI-U through 2012 (average = 2.34% inflation per year)

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Table 2

Limited Rates & Charges Review
Washington State DOT Airport Facilities and Services Report

26-Apr-13

		Commercial	General		Average Monthly Rent				Land Leases		Tie-Down Fees							
		Enplaned	Aviation	Based	Individual Hangar		Open Hangar		Aero	Non-Aero	Single Engine				Multi-Engine			
City	**Airport**	**Pax 2010**	**Operations**	**Aircraft**	**< 50 '**	**>= 50 '**	**< 50 '**	**>= 50 '**	**(psfpy)**	**(psfpy)**	**Daily**	**Weekly**	**Monthly**	**Annual**	**Daily**	**Weekly**	**Monthly**	**Annual**
Pasco	Tri-Cities	308,380	30,349	134	$200	$275	$150	$250	$0.71	$0.11	$2		$18		$3		$20	
Richland	Richland	-	70,000	194									$20				$20	
College Place	Martin Field	-	7,900	57	$110	$226			$0.37		$3		$22		$5		$22	
Walla Walla	Walla Walla	29,050	28,827	126	$140	-			$0.27	$0.27	$3		$20		$5		$20	
Kennewick	Vista Field	-	44,895	22	$163	$320			$0.05				$15				$15	
Prosser	Prosser	-	6,000	46									$54	$648			$54	$648
Yakima	Yakima	55,911	36,332	136					$0.18	$0.20	$3		$45		$3		$45	
Pullman/Mosc	Pullman/Mosc	33,500	42,000	70	$197				$0.10		$5		$50	$325	$10			
Colfax	Whitman	-	11,020	24	$148				$0.03	$0.02			$15					
Spokane	Felts Field	-	63,496	163	$230						$25		$30		$35			
Moses Lake	Grant Cnty	-	35,776	117	$250	$300							$170				$170	
Moses Lake	Moses Lake	-	13,500	55		$150			$0.12	$0.12			$15	$180			$15	$180
Mattawa	Desert Aire	-	1,150	18							$5	$20		$300	$5	$20		$300
Wenactchee	Pangborn	46,837	35,190	130	$165		$185		$0.17	$0.05	$5		$50	$570	$5		$50	$570
Ephrata	Ephrata	-	30,500	87			$135		$0.11		$2		$20		$5		$40	
Camas	Grove Field	-	7,000	82	$157	$293			$0.21		$5		$34		$5		$34	
Dalles	Colum Gorge	-	46,551	70	$265	$425			$0.21	$0.26	$3		$30		$3		$30	
	WSDOT GA Averages				$183	$245	$160	-	$0.17	$0.15	$6	$20	$39	$405	$8	$20	$43	$425

NOTE: Source: WSDOT 2013 data base updated as appropriate with AIRNAV.com data.

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Table 3

Limited Rates & Charges Review

Summary of Airport Lesses Occupying Space as of 12/31/2012
Tenants Paying Leasehold Tax at Tri-Cities Airport

26-Apr-13

TENANT NAME	DESCRIPTION OF LEASE	Sq ft/Acres	TERMS OF LEASE	MONTHLY RENT	ANNUAL RENT	SF FT	Rent Per Sq Ft Per Year
T-Hangars							
Gehlen, Mark	4326 Stearman Ave, 1-76, #3		Month to Month	$181.74	$2,180.88	-	-
Watts, Doug	4326 Stearman Ave T Hangar 1-76 #9		Month to Month	$297.82	$3,573.84	-	-
Krogsrud, Steve	4326 Stearman Ave, 1-76, #10		Month to Month	$181.74	$2,180.88	-	-
Ransom, Bob	4326 Stearman ave T Hangar 1-76 #11		Month to Month	$181.74	$2,180.88	-	-
Heaton, William	4326 Stearman Ave, T Hangar 1-76 #12		Month to Month	$181.74	$2,180.88	-	-
Christensen, Peter	4326 Stearman Ave, T Hangar 1-76 #13		Month to Month	$181.74	$2,180.88	-	-
Rogers, Loren	4326 Stearman Ave T Hangar 1-76 #14		Month to Month	$181.74	$2,180.88	-	-
Clark, Lahn	4326 Stearman #1-76 #15		Month to Month	$181.74	$2,180.88	-	-
Watts, Doug	4326 Stearman Ave T Hangar 1-76 #16		Month to Month	$297.82	$3,573.84	-	-
Follansbee, James	4328 Stearman Ave #1-69 E end	240 sf	Month to Month	$42.71	$512.52	-	-
Mc Donald, John	4328 Stearman Ave T Hangar 1-69, #1		Month to Month	$181.74	$2,180.88	-	-
Wolfjohn & Associates	4328 Stearman Ave T Hangar 1-69 #4		Month to Month	$181.74	$2,180.88	-	-
MacHugh, Adam	4328 Stearman T-Hangar 1-69 #5		Month to Month	$181.74	$2,180.88	-	-
Eaggen, Dale	4328 Stearman Ave T Hangar 1-69 #6		Month to Month	$181.74	$2,180.88	-	-
Fleming, Ray	4328 Stearman Ave T Hangar 1-69, #7		Month to Month	$181.74	$2,180.88	-	-
Follansbee, James	4328 Stearman Ave T Hangar 1-69, #8		Month to Month	$205.07	$2,460.84	-	-
Wagner, Gary	4328 Stearman Ave, T Hangar 1-9,#2		Month to Month	$178.69	$2,144.28	-	-

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Table 3

Limited Rates & Charges Review

Summary of Airport Lesses Occupying Space as of 12/31/2012
Tenants Paying Leasehold Tax at Tri-Cities Airport

26-Apr-13

TENANT NAME	DESCRIPTION OF LEASE	Sq ft/Acres	TERMS OF LEASE	MONTHLY RENT	ANNUAL RENT	SF FT	Rent Per Sq Ft Per Year
Land Rent							
Astley's Transmission	4302 Swallow Ave #1-81	3/4 acre	Month to Month	$420.81	$5,049.72	32,670	$0.155
Big D Construction	3902 Swallow Ave #3-93	1 acre	5/16/08 to 5/15/202	$776.19	$9,314.28	43,560	$0.214
Budget Rent A Car	3504 Stearman Ave #3-54 Land	1/3 acre	Month to Month	$197.46	$2,369.52	14,520	$0.163
Buxbaum, Mark	4324 Stearman Ave (Land Area)	1/4 acre	4/1/96 to 3/31/2016	$153.86	$1,846.32	10,890	$0.170
CAS Properties (Fed EX)	1705 Argent ST #1-92 (land area)	1 acre	7/15/92 to 7/14/202	$827.42	$9,929.04	43,560	$0.228
Columbia Basin LLC	4216 Stearman Ave #2-96	1/3 acre	7/1/06 to 7/1/2016	$186.53	$2,238.36	10,890	$0.206
Connell Oil	3802 Swallow Ave #2-96	1/4 Acre	5/1984 to 5/2009	$689.30	$8,271.60	43,560	$0.190
Craig Co Electric	3406 Streaman Ave #140	1/3 acre	Month to Month	$546.39	$6,556.68	14,520	$0.452
Duzan, Tom	4322 Stearman Ave #3-96	1/3 acre	9/11/1996 to 8/31/2	$149.77	$1,797.24	14,520	$0.124
Easterday Farms	4220 Swallow Ave	6.7 acres	05/1/2004 to 04/30/	$2,091.88	$25,102.56	291,852	$0.086
ECS Northwest, LLC	4020 Swallow Ave (land)	1 acre	2/07 to 3/2014	$491.74	$5,900.88	43,560	$0.135
Funk, Pat	4330 Stearman #2-79/4410 Stearman#1-8	1 acre	9/1/2007 to 8/31/20	$525.32	$6,303.84	43,560	$0.145
Guantt, Chep	3025 Rickenbacker Drive	.5 acres	7/1/08 to 3/31/2028	$215.00	$2,580.00	21,780	$0.118
Klein, Doug	4320 Stearman #1-93	1/3 acre	9/1/93 to 8/31/2013	$170.59	$2,047.08	14,520	$0.141
MacHugh Farms	4220 Stearman Ave #1-99	11,035 sf	8/1/99 to 7/31/2019	$148.36	$1,780.32	11,035	$0.161
Musser, Scott	3035 Rickenbacker Drive	.35 acres	7/1/08 to 3/31/28	$215.00	$2,580.00	15,246	$0.169
Napier, Art	4308 Stearman #1-97 (land)	1/3 acre	4/1/97 to 3/31/2017	$193.09	$2,317.08	14,520	$0.160
Peterson, Robert	4402 Stearman Ave #2-80 (land)	3/4 acre	11/1/93 to 10/31/20	$465.44	$5,585.28	32,670	$0.171
Sierra Electric	4120 Swallow Ave #3-79 (land)	1 acre	3/1/2006 to 2/28/20	$425.71	$5,108.52	43,560	$0.117
Storage Systems NW, Inc	3404 Stearman Ave	1/2 Acre	Month to Month	$241.16	$2,893.92	21,780	$0.133
Sun Pacific Energy	2305 W Argent Dr	1.75 acres	7/1/10 to 6/30/2040	$3,100.00	$37,200.00	76,230	$0.488
TC Aviaton	3702 Stearman Ave	1,200 sf land	7/1/10 to 1/15/2028	$87.00	$1,044.00	1,200	$0.870
Watts, Doug	4218 Stearman Ave #1-79 (Land)	1/2 acre	8/11/05 to 6/30/201	$305.73	$3,668.76	21,780	$0.168
Wirth, Terri	4412 Stearman Ave #2-93 (land)	1/3 acre	11/1/93 to 10/31/20	$515.43	$6,185.16	14,520	$0.426
Wolfjohn & Associates	3405 Stearman Ave Land	1/3 acre	Month to Month	$446.76	$5,361.12	14,520	$0.369
				Average Land Rent per Sq Ft per Year =			$0.179

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Table 3

Limited Rates & Charges Review

Summary of Airport Lesses Occupying Space as of 12/31/2012
Tenants Paying Leasehold Tax at Tri-Cities Airport

26-Apr-13

TENANT NAME	DESCRIPTION OF LEASE	Sq ft/Acres	TERMS OF LEASE	MONTHLY RENT	ANNUAL RENT	SF FT	Rent Per Sq Ft Per Year
Hangar/Building Rent							
All Season Contractors, Ir	3409 Stearman Ave #141	2352 sf	11/15/10 to 11/30/2	$1,128.62	$13,543.44	2,352	$5.76
American Linen	642 Grumman Bldg #84	2500 sf	Month to Month	$572.43	$6,869.16	2,500	$2.75
Andrews, Carol	3420 Swallow #58	700 sf	Month to Month	$60.29	$723.48	700	$1.03
Astley's Automotive Whs	606 Boeing #107	16,000 sf	Month to Month	$2,091.39	$25,096.68	16,000	$1.57
Battelle NW	3804 Stearman Ave #71	20.000 sf	11/1/97 to 9/30/06	$1,984.16	$23,809.92	20,000	$1.19
Bergstrom Aircraft	3904 Stearman Ave # 71 & #142	25,800 sf	Month to Month	$1,054.81	$12,657.72	25,800	$0.49
Bergstrom Aircraft	4102 Stearman Ave		6/1/2006 to 5/31/20	$4,314.59	$51,775.08	???	-
Bergstrom Aircraft	3806 Stearman (for above ground tanks)	6,020 sf	Annual	$60.65	$727.80	6,020	$0.12
Bogert Avaition	3606 Swallow Ave	8,000 SF	1/1/09 to 12/31/201	$1,538.00	$18,456.00	8,000	$2.31
Bogert International, Inc	3411 Stearman bldg#1-91	5,000 sf	12/1/09 to 11/30/10	$1,145.83	$13,749.96	5,000	$2.75
Cost Less Carpet	4405 Stearman Ave #2-87	2,000 SF	11/2002-10/2012	$1,498.01	$17,976.12	2,000	$8.99
GLB Farms	641 Fairchild St #40	3,000 sf	Month to Month	$994.81	$11,937.72	3,000	$3.98
Four Rivers	3510 Stearman Ave #68	6,000 sf	Month to Month	$454.34	$5,452.08	6,000	$0.91
Frodel, Greg	4306 Stearman	15,825 sf	3/1/04 to 2/28/2024	$188.32	$2,259.84	15,825	$0.14
Funk, Pat	4404 Stearman #1-03	37,600 sf	8/1/2003 to 7/31/20	$464.30	$5,571.60	37,600	$0.15
Heaton, Troy	3904 Stinson Ave #35	6,000 sf	Month to Month	$492.19	$5,906.28	6,000	$0.98
Help U Move	3416 Swallow Ave #59	2,500 SF	Month to Month	$387.50	$4,650.00	2,500	$1.86
Help U Move	3412 Stearman Ave #60	9,000 sf	Month to Month	$605.78	$7,269.36	9,000	$0.81
Inter Avonics	4110 Stearman #2-01	943 sf	5 years	$813.84	$9,766.08	943	$10.36
Lampson International	4222 Stearman Ave #2-99	10,965 sf	9/1/99 to 8/31/2019	$148.36	$1,780.32	10,965	$0.16
Lane Y Donaldson	4502 Stearman Ave #2-69	68000 sf	12/16/04 to 12/15/2	$611.45	$7,337.40	68,000	$0.11
Layne of WA, Inc	3602 Stearman Ave #69	12,900 sf	Month to Month	$1,402.97	$16,835.64	12,900	$1.31
Les Schwab	3906 Stinson #35	5,400 sf	Month to Month	$492.19	$5,906.28	5,400	$1.09
LKQ Foster Auto Parts	640 Grumman St #84	3,500 sf	Month to Month	$638.39	$7,660.68	3,500	$2.19
McNeil, Jim	4318 Stearman Ave 1-98	7,956 SF	9/2005-3/2017	$151.42	$1,817.04	7,956	$0.23
Pasco Hanger	4217 Stearman Ave #1-07		4/1/2007 to 3/31/20	$257.00	$3,084.00	???	-
Pasco Hanger	3900 Stearman		8/15/08 to 8/14/202	$319.00	$3,828.00	???	-
Pasco Hanger	4219 Stearman Ave		3/1/08 to 2/29/2028	$248.00	$2,976.00	???	-
Pierce, Norman	3611 Stearman Ave #101	2,000 sf	Month to Month	$707.21	$8,486.52	2,000	$4.24
Power City	639 Fairchild ST #35,#36	12134 sf	Annual	$1,834.23	$22,010.76	12,134	$1.81
Sanborne AIP, LLC	645 Lockheed	86235 sf	25 years	$690.39	$8,284.68	86,235	$0.10
Scheerer Construction	3608 Stearman Ave Bldg #69	Storage	Month to Month	$88.88	$1,066.56	???	-
Scott's Cabinets	3704 Swallow Ave #92	4,896 sf	Month to Month	$628.54	$7,542.48	4,896	$1.54
TC Aviaton	3702 Stearman Ave	6,000 sf	7/1/10 to 6/10/11	$60.00	$720.00	6,000	$0.12
TC Aviaton	3704 Stearman Ave Bldg#70	5,400 sf	12/1/08 to 11/30/20	$1,017.00	$12,204.00	5,400	$2.26
Terry's Dairy	3420 Swallow #58	3,654	4/1/10 to 3/31/2013	$657.72	$7,892.64	3,654	$2.16
Tri City Waterfollies	3903 Stearman Ave #39	6,000 sf	Month to Month	$454.33	$5,451.96	6,000	$0.91
Watts, Doug	509 Rockwell	3,500 sf	7/1/10 to 6/30/2015	$360.22	$4,322.64	3,500	$1.24
Watts, Doug	4020 Stearman Ave #72		Month to Month	$470.21	$5,642.52	???	-
Whitten Farms	4316 Stearman Ave #2-99	7,140 sf	11/1/99 to 10/31/20	$147.61	$1,771.32	7,140	$0.25
Wolfjohn & Associates	3405 Stearman Ave #63	2,500 sf	Month to Month	$302.90	$3,634.80	2,500	$1.45
Zero Gravity	4020 Stearman Ave #72	6,900 sf	Month to Month	$72.00	$864.00	6,900	$0.13
Zero Gravity	3904 Stearman Ave-NE Crnr 142	925 sf	Month to Month	$75.00	$900.00	925	$0.97
			Average Hangar/Building Rent per Sq Ft per Year =				$0.733