CHAPTER 5: Landside Facility Requirements and Development Concepts

Overview

Implementation of the preferred intermediate-term (10-year) and long-term (20-year) airside alternatives will have a significant impact on the landside facilities at PUW. The relocation of the runway will require a reconfiguration of landside facilities at PUW as well. This reconfiguration will open up new opportunities for landside development and will also require the relocation of some existing facilities.

The preferred airside alternatives, facility removals and recommended property acquisitions will present several landside opportunities over the intermediate- and long-term planning horizons. This chapter demonstrates intermediate-term and long-term landside facility scenarios at PUW based on existing and forecasted airport activity. First, the future landside facility requirements are analyzed. Next, areas at PUW that will become available for potential landside development and redevelopment are identified. Intermediate and long-term development concepts to accommodate future landside facility needs are then shown in the identified development areas. At this planning stage, the landside development concepts are schematic. A more detailed analysis of landside facility development will be needed when the runway is relocated and other intermediate-term airside improvements are made.

This chapter is organized into the following sections:

- Landside Facility Requirements
- Potential Landside Development and Redevelopment Areas
- Landside Development Concepts
- Summary
5.1 **Landside Facility Requirements**

The following sections determine landside facility needs through a two-step process. First, the existing landside facilities are described. To this end, an inventory of existing landside buildings is presented in **Exhibit 5-1**. Then the PUW Master Plan forecasts are used to guide an analysis of future landside facility needs including these landside features:

- Passenger Terminal Building
- Vehicle Access, Circulation, Parking and Rental Car Facilities
- Commercial Aircraft Parking Apron
- Aircraft Rescue and Firefighting (ARFF) Facilities
- General Aviation (GA) and Fixed Base Operator (FBO) Facilities
- Air Cargo Facilities
- Airport Equipment Maintenance and Storage Facilities
- Air Traffic Control Tower (ATCT)
- Automated Surface Observation System (ASOS)
- Airport Business Park
- Recommended Property Acquisitions and Easements
- Future State Highway 276 Route
Exhibit 5-1
PUW
Existing Landside Facilities Inventory

0 300 Feet 600
Passenger Terminal Building

The PUW passenger terminal is a one-story building with a footprint of 10,000 square feet (SF). The terminal accommodates passenger processing and holding areas, TSA security screening and staff areas, airport staff office space, rental car company counter and office space, airline counter and operations space, baggage claim and processing areas, restrooms and snack machines, and a public lobby.

Passenger terminal building space requirements are driven largely by passenger enplanements. In 2010, PUW had 32,745 enplanements, equating to 0.305 SF of terminal space per enplanement. Table 5-1 presents a forecast of passenger terminal space requirements that maintains this ratio over the 20-year forecast period. As shown in Table 5-1, PUW will require 15,050 SF of terminal space in the intermediate-term and 18,725 SF of terminal space in the long-term. The intermediate- and long-term landside development concepts will provide for these passenger terminal building footprint sizes.

<table>
<thead>
<tr>
<th>Table 5-1: Passenger Terminal Building Space Requirements Forecast</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Year</td>
</tr>
<tr>
<td>Passenger Enplanements</td>
</tr>
<tr>
<td>Passenger Terminal Space</td>
</tr>
</tbody>
</table>

Vehicle Access, Circulation, Parking and Rental Car Facilities

Ground access to PUW is provided via Airport Road. The PUW passenger terminal building can be accessed by the one-way driveway loop that runs west to east along the parking area. Part of this loop serves as a semi-circular terminal frontage road for passenger drop-offs. There are additional driveways located along Airport Road that grant access to the fixed base operator (FBO) and corporate hangar facilities, as well as badge access gated driveways serving airport maintenance staff, emergency personnel and airport tenants.

Airport Road currently runs along the base of hills located to the immediate north of existing landside airport facilities. This location minimized required cuts and fills during road construction. However, it also constrains the area available for current landside facilities and future airport expansion. Relocation of Airport Road would allow for future, organic growth in some existing landside functional areas, particularly the general aviation (GA) functional areas on the east side of the airfield. There are three auto parking lots in the passenger terminal complex including a 34-space rental car and employee lot; a 173-space passenger lot; and an 11-space airport staff lot. Auto parking space requirements in the passenger terminal complex typically increase at a similar rate to passenger enplanements. The forecast for auto parking space requirements presented in Table 5-2 is based on the forecast of passenger...
enplanements. The forecast shows a future need for an additional 110 parking spaces in the intermediate-term and an additional 189 parking spaces in the long-term. The intermediate- and long-term landside development concepts provide for these parking spaces.

The design of internal circulation and parking facilities considers the needs of motor coach vehicles as well as personal vehicles. Currently at PUW, the internal circulation and parking layout restricts the parking and maneuvering of motor coaches and busses. This has created ground access problems for tour groups and university athletic teams at the Airport. To address this issue, future landside scenarios include a dedicated motor coach/bus parking area. Overhead shelters are also proposed in this area to protect passengers and cargo from the weather during the loading and unloading processes. This area may also be used by public transportation agencies in the future.

Table 5-2: Passenger Terminal Complex Auto Parking Space Requirements Forecast

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Enplanements</td>
<td>32,745</td>
<td>49,286</td>
<td>61,307</td>
</tr>
<tr>
<td>Passenger Parking Spaces</td>
<td>173</td>
<td>260</td>
<td>324</td>
</tr>
<tr>
<td>Rental Car &amp; Employee Parking Spaces</td>
<td>34</td>
<td>51</td>
<td>64</td>
</tr>
<tr>
<td>Airport Staff Parking Spaces</td>
<td>11</td>
<td>17</td>
<td>21</td>
</tr>
<tr>
<td>Total Terminal Area Parking</td>
<td>218</td>
<td>328</td>
<td>409</td>
</tr>
</tbody>
</table>

Another design feature of parking and circulation areas is exterior lighting. At PUW, the current exterior lighting is insufficient to meet the needs of the traveling public. During focus group sessions, passengers and other users commented that the parking lots are too dark at night and requested additional exterior lighting. Pavement condition is another design feature that will be improved in the long-term as parking lots and drives are reconstructed. In the intermediate-term, pavement will be maintained and improved by patching and other spot treatments. A final design consideration for the parking areas is the elevation difference between parking areas and the terminal building, which currently limits accessibility to those with mobility challenges.

As future landside facilities are designed, overall layout and functional proximity of operations will be considered. For example, the two small car wash buildings used by the rental car companies are currently located adjacent to the GA apron. The distance between these buildings and the rental car parking lot causes operational inefficiencies for the rental car operators. To address this issue, the long-term landside development concept should reserve an area for a new car wash facility closer to the rental car parking lot.
Commercial Aircraft Parking Apron

The existing commercial aircraft parking apron has an area of 13,000 square yards (SY) and is capable of accommodating two Bombardier Q400 aircraft simultaneously. Space is provided in the secure apron area for ground service equipment parking and maneuvering, baggage make-up and baggage return. At times, this space is inadequate to serve the current, combined commercial and charter activity at PUW.

Peak demand for the aircraft parking apron is generated by two primary factors. One is the use of charter aircraft to support university athletics and other events, especially during the fall. These Part 121 charter aircraft include the Boeing 737 or the Airbus A319, which often stay overnight at PUW. The other factor is inclement weather, especially during winter months, which results in delays and cancellations of scheduled commercial flights. Current airport activity suggests the need for enough space on the commercial aircraft apron to accommodate Part 121 charter aircraft while also accommodating Bombardier Q400 aircraft.

The intermediate- and long-term landside development concepts include expansion of the commercial aircraft apron to simultaneously accommodate two Bombardier Q400s and two Boeing 737s. The total apron space required to accommodate these four aircraft simultaneously will depend on the configuration of the aircraft parking positions. However, based on aircraft wingspans and lengths of the Bombardier Q400 and Boeing 737, it is expected that at least 15,000 SY of additional apron space will be required to accommodate all four aircraft.

Aircraft Rescue and Fire Fighting (ARFF) Facilities

The Aircraft Rescue and Fire Fighting (ARFF) building is located to the immediate east of the passenger terminal building. The ARFF building has three vehicle bays and a building footprint of approximately 3,400 SF. The airport will be adding a new firefighting vehicle by the summer of 2011, and expects to add an additional 3,500 SF ARFF vehicle bay to accommodate the new vehicle for a total of 6,900 SF. A 420,000-gallon water tank connected to the fire hydrant supply line sits on top of a hill north of Airport Road across from the airline terminal. The water line enters Airport property near the ARFF building, extends to the east and terminates near the far end of the airfield. Multiple sub-surface fire hydrants are connected to the water line.

Commercial airport certification requirements contained in Federal Aviation Regulations (FAR) Part 139 designate the ARFF Index of an airport based on the length of the longest air carrier aircraft with an average of five departures per day. The ARFF Index of an airport determines ARFF personnel, equipment, extinguishing agent, readiness and response requirements. ARFF Index ratings range from Index A (aircraft length less than 90 feet) to Index E (aircraft length of at least 200 feet). Because there
is no air carrier aircraft that currently has an average of five departures per day from PUW, the Airport was initially designated as an ARFF Index A airport. After a recent re-certification inspection by the FAA, the Airport was moved to an Index B rating. Index B is based on an aircraft between 90 and 126 feet in length. Based on the air carrier operation forecasts contained in Chapter 2, the Index B classification will meet the needs of PUW throughout the 20-year planning horizon.

The expanded square footage of the ARFF building is expected to be adequate in both the intermediate- and long-term. However, the ARFF facility is outdated and its current location permits improperly parked commercial aircraft to block emergency response vehicles. In addition, implementation of the preferred airside alternatives will result in increased emergency response times due to longer ARFF vehicle driving distances to both runway ends. The intermediate-term landside development concept should reserve a preferred site for a new, relocated ARFF facility. The location for a future ARFF facility is based on several considerations, but the primary issue is the readiness and response of emergency vehicles. To this end, the location of the ARFF building must allow at least one ARFF vehicle to reach the midpoint of the farthest runway and initiate discharge of extinguishing agent within three minutes of alarm.

**General Aviation (GA) and Fixed Base Operator (FBO) Facilities**

The existing GA tie-down and hangar area is located on the eastern end of the airfield. It is physically separated from the passenger terminal complex. The GA area contains 51 aircraft tie-down spaces, 24 T-hangar spaces, 8 conventional hangars, one large FBO hangar and a GA aircraft parking apron measuring 16,000 SY.

PUW currently has one FBO located at midfield. The FBO provides a range of services to support GA operators including aircraft rental and charter, aircraft maintenance and fueling, flight training, catering services for corporate and charter operators, crew rest areas, and hangar space. The FBO has a dedicated parking lot with 34 auto parking spaces available for staff, customer and visitor use located near the northeast corner of the FBO hangar.

An analysis was performed in order to determine a forecast of future GA facility requirements. The analysis used the existing GA facilities and existing fleet mix as a baseline and then extrapolated future facility requirements based on the based aircraft fleet mix forecast in Chapter 2. In addition, the GA facility requirements forecast anticipates the following:

- 50 percent of based piston aircraft will be stored on tie-downs.
- 40 percent of based piston aircraft will be stored in T-hangar spaces.
- 10 percent of based piston aircraft will be stored in conventional hangars.
• 1,250 SF of hangar/tie-down space will be provided for each based piston aircraft.
• All turbojet, turboprop and helicopter aircraft will be stored in conventional hangars.
• 5,000 SF of hangar space will be provided for each based turbojet aircraft.
• 2,500 SF of hangar space will be provided for each based turboprop aircraft.
• 1,250 SF of hangar space will be provided for each based helicopter aircraft.
• Excess capacity of 40 percent will be provided for tie-downs.
• Excess capacity of 20 percent will be provided for T-hangars.
• Excess capacity will not be provided for conventional hangars.

The GA facility requirements forecasts for the intermediate-term and long-term are presented in Table 5-3.

<table>
<thead>
<tr>
<th>Total Aircraft</th>
<th>Tie-downs</th>
<th>T-hangars</th>
<th>Conventional hangars</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Spaces</td>
<td>Area</td>
<td>Spaces</td>
</tr>
<tr>
<td><strong>Baseline (2010)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Engine Piston</td>
<td>57</td>
<td>29</td>
<td>36,250 SF</td>
</tr>
<tr>
<td>Multi Engine Piston</td>
<td>7</td>
<td>3</td>
<td>3,750 SF</td>
</tr>
<tr>
<td>Turbojet</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Turboprop</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helicopter</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Excess Capacity</td>
<td>13</td>
<td>16,250 SF</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>45</td>
<td>56,250 SF</td>
<td>30</td>
</tr>
<tr>
<td><strong>Intermediate-Term (2020)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Engine Piston</td>
<td>60</td>
<td>30</td>
<td>37,500 SF</td>
</tr>
<tr>
<td>Multi Engine Piston</td>
<td>7</td>
<td>3</td>
<td>3,750 SF</td>
</tr>
<tr>
<td>Turbojet</td>
<td>5</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Turboprop</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helicopter</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Excess Capacity</td>
<td>14</td>
<td>17,500 SF</td>
<td>5</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>47</td>
<td>58,750 SF</td>
<td>32</td>
</tr>
<tr>
<td><strong>Long-Term (2030)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single Engine Piston</td>
<td>64</td>
<td>32</td>
<td>40,000 SF</td>
</tr>
<tr>
<td>Multi Engine Piston</td>
<td>7</td>
<td>3</td>
<td>3,750 SF</td>
</tr>
<tr>
<td>Turbojet</td>
<td>8</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Turboprop</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Helicopter</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Excess Capacity</td>
<td>14</td>
<td>17,500 SF</td>
<td>6</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>49</td>
<td>61,250 SF</td>
<td>35</td>
</tr>
</tbody>
</table>
Based on the GA facility requirements forecast in Table 5-3, additional T-hangar and conventional hangar space will be required in both the intermediate- and long-term. The intermediate- and long-term landside development concepts both address this need. It is expected that existing tie-down space will be adequate for both the intermediate- and long-term. However, for planning purposes, the long-term landside development concept will reserve an area for additional tie-downs. If the existing ratio of based aircraft to FBO hangar space is maintained, existing FBO hangar space will be adequate in the intermediate-term but an additional FBO hangar will be required in the long-term.

PUW also accommodates occasional use by transient helicopter aircraft for military and medical evacuation operations. However, the airport does not currently have a designated and dedicated helicopter landing area. The intermediate and long-term landside development concepts should provide for a dedicated helipad location.

**Air Cargo Facilities**

PUW does not currently have regularly scheduled air cargo operations by carriers such as FedEx and UPS. However, air cargo operators may use PUW on a scheduled basis in the future. For planning purposes, the intermediate- and long-term landside development concepts will reserve areas for future air cargo facilities.

**Airport Equipment Maintenance and Storage Facilities**

Airport staff performs a variety of functions to support airport operations. These include maintenance of grass infield areas both on and off the airfield, removal of snow and ice during winter months, collection of parking lot fees, and regular inspections and maintenance of pavements and buildings. Airport maintenance equipment includes large lawn mowers, snow removal equipment, sand application equipment and a pick-up truck for airfield and runway inspections. There is one airport equipment maintenance and storage building located east of the FBO and west of the GA hangars. This building has total floor space of approximately 4,000 SF.

As the airport expands and other airport facilities are added, additional maintenance and storage facilities will be required. A forecast of airport equipment maintenance and storage facility space requirements is presented in Table 5-4. The projected increase in square footage is proportional to the forecasted increases in the size and number of airport facilities. The intermediate- and long-term landside development concepts will identify areas to satisfy the anticipated future space needs.
### Table 5-4: Airport Equipment Maintenance and Storage Facility Space Requirement Forecast

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Maintenance and Storage Facility Space</td>
<td>4,000 SF</td>
<td>6,000 SF</td>
<td>8,000 SF</td>
</tr>
</tbody>
</table>

**Air Traffic Control Tower (ATCT)**

The primary purpose of an air traffic control tower (ATCT) is to ensure that adequate physical separation is maintained between aircraft in the airspace surrounding an airport, and in the aircraft operating area (AOA) on the ground. Air traffic controllers located in an ATCT provide instructions and local weather information to pilots in the air and on the ground.

PUW does not currently have an ATCT. Criteria for determining whether an airport qualifies for an ATCT are described in Federal Aviation Regulations (FAR) Part 170, *Establishment and Discontinuance Criteria for Air Traffic Control Services and Navigational Facilities*. FAR Part 170 requires a detailed benefit cost analysis (BCA) to determine an airport’s eligibility for an ATCT, which has not yet been done at PUW.

However, given the increase in design standards associated with the intermediate- and long-term airside alternatives, PUW may need an ATCT in the future. Siting criteria for ATCTs is contained in FAA Order 6480.4A, *Airport Traffic Control Tower Siting Process*. For planning purposes, the intermediate- and long-term landside scenarios will identify and reserve a site for future construction of an ATCT.

**Automated Surface Observation System (ASOS)**

An ASOS is a weather sensing and reporting system that collects aviation-related weather information and disseminates it via digitized voice broadcasts and printed reports. Information collected by an ASOS includes temperature, humidity, visibility, cloud ceiling and precipitation data. PUW currently has an ASOS located to the west of the overflow parking lot in the passenger terminal complex.

FAA guidance for the siting of ASOS is provided in FAA AC 150-5300-13, *FAA Airport Design*, and Order 6560.20, *Siting Criteria for Automated Weather Observing Systems*. These state that an ASOS should be located 1,000 to 3,000 feet from the runway end, and 750 to 1,000 feet from the runway centerline. Based on this guidance, the ASOS should be relocated as a result of the runway relocation included in the preferred airside alternatives. The intermediate- and long-term concepts will identify a preferred site for the relocated ASOS.
Airport Business Park

Many airports have business parks in which they lease airport-owned land and/or buildings to business tenants. Airports are attractive locations for many commercial and industrial businesses because they provide easy access to air transportation for employees and goods. Commercial and industrial development at an airport is beneficial to the airport as well. First, private development at the airport can increase an airport’s operating revenues through lease payments. Second, it has the potential to increase passenger enplanements and aircraft operations by attracting more corporate users. Private development at the airport, like private development in other locations, also has a positive economic impact on the surrounding community.

PUW does not currently have an airport business park—a dedicated area for private development. For planning purposes, the long-term landside development concept will identify and reserve an area for future airport business park development. This area should have convenient access to Airport Road and should be buffered from aircraft operations in order to provide an attractive location for prospective business tenants.
Landside Facility Requirements Summary

The intermediate- and long-term landside facility requirements are summarized in Table 5-5. These requirements will be used in subsequent sections to develop intermediate- and long-term landside development concepts.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Planning Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Passenger Terminal Building</td>
<td>10,000 SF</td>
</tr>
<tr>
<td>Passenger Terminal Complex Auto Parking</td>
<td>218 spaces</td>
</tr>
<tr>
<td>Commercial Aircraft Parking Apron</td>
<td>13,000 SY</td>
</tr>
<tr>
<td>GA Tie-downs</td>
<td>51 spaces (63,750 SF)</td>
</tr>
<tr>
<td>GA T-hangars</td>
<td>24 spaces (30,000 SF)</td>
</tr>
<tr>
<td>GA Conventional Hangars</td>
<td>8 buildings (38,000 SF)</td>
</tr>
<tr>
<td>FBO Hangars</td>
<td>1</td>
</tr>
<tr>
<td>Airport Equipment Maintenance and Storage</td>
<td>4,000 SF</td>
</tr>
</tbody>
</table>

**Potential New and/or Relocated Facilities**

- Airport Road Relocation
- ARFF Building Relocation
- Air Cargo Facilities
- Air Traffic Control Tower
- Airport Business Park
- ASOS Relocation
- Dedicated Helipad
- Parking Lot Lighting
- Recommended Property Acquisitions and Easements
- Fuel Tank and Fertilizer Building Relocations
- Rental Car Wash Facility Relocation

5.2 Potential Landside Development and Redevelopment Areas

The following sections identify areas on Airport property that may become available for landside development or redevelopment as a result of the preferred airside alternatives and other future actions. They also identify areas where future landside development or redevelopment may no longer be possible. These areas were determined based on standard safety and clearance setbacks associated with the new runway and taxiway configuration, the proposed route for long-term relocation of Airport Road, and discussions with Airport staff and the Master Plan Technical Advisory Committee.
Intermediate Landside Development and Redevelopment Areas Gained

This section identifies development and redevelopment areas that may be gained as a result of the new runway and taxiway configuration. These areas are shown in Exhibit 5-2.

An area of approximately 14 acres on the west side of the existing Airport property is not currently developed due to constraints from airfield safety areas, airspace surfaces and rolling topography. This area extends from the overflow parking lot west of the terminal to the western edge of the existing Airport property. The west landside area will expand and may become available for future landside development and use in the intermediate-term as a result of the preferred airside alternatives, which will rotate the current runway and raise the elevation.

The feasibility and possible configuration of facilities in the intermediate-term, west landside development area will be determined, in large part, by the relocation of Airport Creek. The preferred airside alternatives will require that either the exposed portion of Airport Creek be piped underground along its existing course, or that the course of the creek be altered. While the relocation of Airport Creek through the development area has some design benefits, it will limit land uses and space because of long-term maintenance concerns associated with an underground pipe. To maximize developable land and potential uses, the intermediate-term landside development concept anticipates Airport Creek will not be routed through the west landside development area.

The preferred airside alternatives will also provide new flexibility for future build-out and redevelopment of the existing passenger terminal complex. The Airport’s ability to expand and improve the configuration of facilities in the passenger terminal complex is constrained due to airfield safety areas, airspace surfaces and topography associated with the existing runway location. The preferred airside alternatives will remove many of these constraints and present new opportunities for expanding the passenger terminal complex in order to meet the needs of Airport staff, passengers and operators more efficiently and effectively. An intermediate landside redevelopment area of approximately 15 acres will be designated for future reconfiguration and expansion of facilities in the passenger terminal complex.

Intermediate Landside Development and Redevelopment Areas Lost

This section identifies potential development and redevelopment areas that may be lost as a result of the new runway and taxiway configuration. These areas are shown in Exhibit 5-2 and are described below.
With the exception of the FBO hangar, all existing GA hangars at PUW are within the BRL associated with the preferred airside alternatives. There are two reasons that it is not considered feasible by this Master Plan to remove all existing GA facilities located within the BRL. One is the anticipated cost of relocating the GA hangars, taxiways and aprons. The other is the lack of available space for replacing these facilities while also accommodating future growth in landside facility needs. Although the GA hangars are within the BRL, analysis of the FAR Part 77 surfaces with relation to the actual GA hangar heights indicates that the FAR Part 77 surfaces clear all but one of the existing hangars. That hangar is the easternmost conventional hangar.

An area approximately 3.5 acres in size immediately east of the GA hangars is currently undeveloped. Site preparation for future GA use has already been completed in this area, including construction of taxi lanes for future based aircraft hangars. However, this area will become undevelopable with the runway relocation due to required airfield safety areas and airspace surfaces.

The area containing GA hangars that do not penetrate the FAR Part 77 surfaces is approximately 15 acres in size. Discussion with the FAA will be required to determine whether the existing GA hangars will be permitted to remain in their current locations once the runway has been relocated. It is expected that the hangars will be allowed to remain in their current locations, but that redevelopment of the area will not be permitted once the hangars have outlived their useful lives. The Airport should consider developing a long-term plan for relocating all GA hangars in this area to an alternate area outside of the BRL.
Long-Term Landside Development and Redevelopment Areas

Long-term build out of the preferred airside alternatives to an ultimate 8,000-foot runway length is not expected to result in additional developable land for landside facilities. However, the proposed relocation of Airport Road would eliminate many constraining forces on future landside facilities. The relocation of Airport Road along the proposed route shown in Exhibit 5-3 will create an additional 50 acres of land adjacent to the Airport that could be acquired for landside development. It is recommended that the Airport acquire this land in the event of Airport Road relocation.

Although there is additional landside development area available in the long-term, its topography is likely to make landside development expensive. Earthwork and improvements including extensive grading, off-site fill material disposal, retaining wall structures and stabilized slopes will be needed to make the land in this area suitable for landside development. These alterations will add to the development cost and will also significantly reduce the buildable land area. Due to uncertainties associated with Airport Road relocation and the cost and feasibility of landside facility site preparation, the long-term landside development concept will not present specific recommendations regarding facility locations in this area.

Relocation of existing airport equipment maintenance/storage and rental car wash facilities will open up an area of approximately one acre for future redevelopment. This area is located adjacent to the GA apron and to the immediate northwest of the existing T-hangar buildings.
Exhibit 5-3
PUW
Long-term Landside Development & Redevelopment Areas

Legend:
N
600 Feet

0
1200
5.3 Landside Development Concepts

The following sections present intermediate- and long-term development concepts for accommodating projected landside facility requirements within the previously identified landside development and redevelopment areas. As noted earlier in the chapter, these concepts are schematic in nature. It is anticipated that a more detailed study of landside facility development and reconfiguration will be completed once runway relocation is underway.

Intermediate-Term Development Concept

The intermediate-term (10-year) landside development concept is based on the landside facility requirements and development/redevelopment areas presented in the previous sections. The intermediate-term concept is presented in Exhibit 5-4, and includes the following components.

**Passenger Terminal Building Expansion** - The intermediate-term concept expands the existing passenger terminal building by 5,050 SF to accommodate expected growth in passenger enplanements. The expansion will occur to the west of the existing terminal, within the existing parking lots designated for rental car and employee parking.

**Commercial Aircraft Parking Apron Expansion** - The intermediate-term concept expands the existing commercial aircraft parking apron by 15,000 SY to simultaneously accommodate two Bombardier Q400 aircraft and two Boeing 737 aircraft. The expansion will occur to the west, south and east of the existing commercial aircraft parking apron.

**ARFF Building Relocation** - The intermediate-term concept relocates the ARFF building to the area between the commercial aircraft parking apron and the GA parking apron. This location is ideal for an ARFF facility because it is located close to the midpoint of the proposed runway, allowing for the fastest possible emergency response times to both ends of the runway. This location will also provide dedicated ARFF vehicle access to the parallel taxiway, which is not possible at the current location. The concept includes a new parking lot for ARFF employees and potential ATCT employees.

**Airport Equipment Maintenance and Storage** - The intermediate-term concept co-locates new airport equipment maintenance and storage space with the relocated ARFF building. Co-location with ARFF will allow for lower operational costs and provide better operational efficiency.

**Existing ARFF Building Conversion for Air Cargo Use** - The intermediate-term concept converts the existing ARFF building for use as an air cargo facility. The building’s location on the existing commercial aircraft parking apron will allow for parking and unloading of air cargo aircraft, and its proximity to
Airport Road will allow easy vehicle access. Converting this building to air cargo use in the intermediate-term will maximize its utility and useful life once ARFF operations have been relocated.

**Future ATCT Facility Site** - The intermediate-term concept reserves a site for a future ATCT facility immediately to the east of the relocated ARFF building. It is expected that this site’s location near the center of the airfield will provide adequate controller line-of-sight for all aircraft movement areas. However, a site selection study will be required to comply with FAA Order 6480.4A and determine if this site is the best option for a future ATCT.

**ASOS Relocation** - Two potential ASOS relocation sites were analyzed for the intermediate-term concept. One potential site is located north of the relocated runway, while the other potential site is located south of the relocated runway. Of these two sites, only the north side ASOS relocation site met FAA siting criteria. However, the north side relocation site would significantly reduce the developable area for other landside facilities. The intermediate-term concept anticipates that the south side ASOS relocation site will best meet weather observation needs while also allowing for future growth in landside facilities. Discussion with the FAA will be needed for confirmation of this ASOS relocation site.

**Parking Lot Expansion** - The intermediate-term concept expands the existing auto parking areas within the passenger terminal complex to accommodate growth in passenger enplanements. The intermediate-term expansion will occur adjacent to the existing overflow lot west of the terminal. This expansion will provide for future growth in parking space requirements while also replacing parking spaces lost as a result of the terminal building expansion. An expansion area of approximately 1.5 acres is proposed to meet these needs.

**Covered Motor Coach/Bus Parking Area** - The intermediate-term concept includes a new covered, curbside shelter for motor coach passengers in the area between the existing parking lot and the future, relocated ARFF building.

**New GA Hangar Area** - The intermediate-term concept reserves an area of approximately eleven acres on the far west end of the existing Airport property for new GA hangar facilities. The concept anticipates the construction of four new conventional hangars and one new 12-unit T-hangar in the intermediate-term. This includes space for the associated aprons, taxilanes and ground vehicle access and parking. The new GA hangar area includes additional developable land for long-term build out of GA facilities.

**Dedicated Helipad** - The intermediate-term concept identifies a dedicated helipad area on the GA apron next to the existing FBO hangar.
**Long-Term Development Concept**

The long-term (20-year) landside development concept builds on the intermediate-term concept and takes into account build out of the preferred airside alternatives to an ultimate 8,000-foot runway length. Although the concept considers potential relocation of Airport Road, it does not specifically depict any new landside facilities in this area. The long-term concept is presented in Exhibit 5-5, and includes the following components.

**Passenger Terminal Building Replacement** - The long-term concept anticipates that the existing passenger terminal building will reach the end of its useful life and require demolition and reconstruction. It is expected that the replacement terminal building will be located on or near the site of the existing terminal building.

**Parking Lot Reconstruction, Reconfiguration and Expansion** - The long-term concept includes additional expansion of existing auto parking areas to accommodate growth in passenger enplanements. The concept anticipates that the parking lot pavement will reach the end of its useful life and will need to be replaced. When the parking lot is reconstructed, it should be reconfigured to accommodate ground vehicle movement and passenger loading/unloading as efficiently and effectively as possible. It is expected that an additional expansion area of approximately one acre will be needed to meet long-term parking requirements.

**Rental Car Wash Facility** - The long-term concept relocates the existing rental car wash facilities to new facilities located closer to the rental car parking area. The new rental car wash facility will be located near the existing overflow parking lot west of the existing commercial airline terminal building.

**Tie-down Expansion Area** - Relocation of the airport equipment maintenance/storage and rental car wash facilities will result in an acre of land becoming available for redevelopment adjacent to the existing GA apron. The long-term concept redevelops this area as a GA aircraft tie-down expansion area.

**New Air Cargo Building** - The long-term concept relocates air cargo operations from the existing ARFF building to a new facility with a dedicated cargo aircraft parking apron. The new air cargo facility will be located to the immediate west of the expanded commercial aircraft parking apron.

**Additional GA/FBO Hangars** - The long-term concept anticipates construction of additional hangars at the west end GA hangar development area identified as part of the intermediate concept. The concept assumes construction of four additional conventional hangars and one additional 12-unit T-hangar along with associated aprons, taxilanes and ground vehicle access and parking. The long-term concept also takes into consideration the potential need for a new or expanded FBO hangar near the existing FBO facilities.
Airport Business Park - The long-term concept takes into consideration future development of an airport business park. There will be limited areas suitable for development on existing Airport property for the foreseeable future. These areas are located in close proximity to the runway and, as such, should be reserved for aviation-related uses. However, the proposed relocation of Airport Road may allow for a dedicated business park area north of the existing Airport Road. A business park located in this area will have convenient access to Airport Road and will be located such that it provides an attractive location for prospective business tenants. The Airport should consider the benefits of making the area “development ready” by providing utilities to the site and offering a build to suit development option.
5.4 Summary

The proposed airfield changes, including the runway relocation, will reshape the landside facilities at PUW. In the intermediate-term and long-term scenarios at PUW, there will be additional landside development area on the northwest side of the relocated runway. This area is proposed for a variety of new and expanded uses including a business park, GA hangars and air cargo facilities. Future plans also include expansions of the terminal building, apron area and auto parking areas and new combined ARFF and Maintenance Building and a new helipad area. Some of the development at the east end of the Airport that currently sits in front of the BRL is expected to transition to the west end over time.

The concepts presented in this chapter are a first step towards planning for a new system of landside facilities. The exhibits demonstrate an intermediate- and long-term future that looks very different than the PUW of today. In addition to providing a description of the intermediate- and long-term future at PUW, Chapter 7 presents a Capital Improvement Program to prioritize the intermediate-term landside facility requirements into specific planning years. Potential funding sources for these facilities are also identified in Chapter 7.
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