2. Inventory of Existing Conditions

The initial step in preparation of the Master Plan Update for Logan-Cache Airport is the collection of information pertaining to the airport and the area it serves. Information collected in this section will be used in subsequent analyses in this study. This section summarizes airport topography and existing facilities. By establishing a thorough and accurate inventory, an appropriate forecast and recommendations for airfield and landside facilities can be developed. Information was obtained from several sources, including onsite inspections, airport records, reviews of other planning studies, the Federal Aviation Administration (FAA), various government agencies, and a number of internet sites with statistical information and facts regarding the airport. Interviews with airport staff, planning associations, and airport tenants were conducted. As with any airport planning study, an attempt has been made to use existing data or information provided in existing planning documents to the maximum extent possible.

2.1 Existing Document Summary

The following list describes documentation that existed prior to the creation of this master plan update.

UDOT Aeronautics Pavement Management Report	This web-based pavement reporting system is maintained and updated by the UDOT Division of Aeronautics for each Utah airport. The system provides a Pavement Condition Index (PCI) for each area of runway, taxiway, and apron.
Utah Continuous Airport System Plan 2007	This document provides a detailed summary of state airport facilities, services and roles within the overall state and national airport system. The report assesses the needs of Utah's airports, helps justify funding for needed maintenance and improvements, and provides information regarding the value, use and needs of airports.
Utah Airports Economic Impact Study	This document outlines the economic impacts and benefits from Utah's airport system.
Logan-Cache Airport, Utah MIDT Analysis, January 2007	This document provides analysis of airline use by residents of the Cache Valley region. It further provides statistical estimates of market potential for commuter service to and from the Logan-Cache Airport.
Based Aircraft and Hangar Inventory	This document was compiled by the Airport Manager and provided aircraft counts accurate as of the time of this document's creation, as well as hangar owner and tenant information.
Strategic Business Plan for Logan-Cache County Airport, 2002	This document provides an analysis of the economic impact and benefits of the airport and a business plan for attracting business and commuter airlines to Cache Valley through the Logan-Cache Airport.

1992 Master Plan Update	This document detailed the airport configuration in 1992. It contains descriptions of the airfield layout, infrastructure, wind analysis, land use, airspace and planed improvements based on forecast growth.
Aerial Photography	The latest aerial imagery was obtained and utilized to create the base mapping for the exhibits in this document.
GIS Data	A wealth of GIS data was compiled to develop this Master Plan Update. Data included parcel ownership, land use, zoning, environmental data, infrastructure, and numerous other components obtained from Cache County, Logan City, North Logan City, Hyde Park City, Smithfield City, and others. Non-electronic data that was obtained was integrated into the GIS database whenever possible.

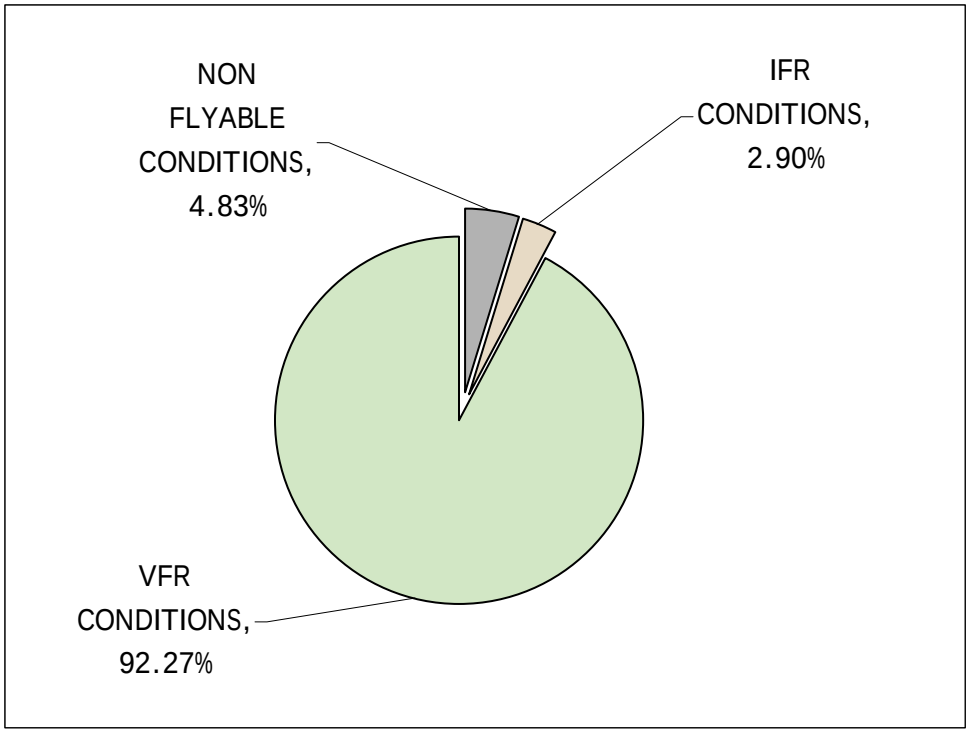
2.2 Area Topography

The airport elevation (highest point on the runways) is 4,457 feet. The surrounding terrain is relatively flat, with farmland to the north, east, and west of the airport. Further to the east, the cities of Hyde Park and North Logan's eastern boundaries give way to the western slopes of the Bear River Mountains, the northernmost branch of the Wasatch Range with hilly to mountainous terrain over 9,000 feet. To the south of the airport is Logan City. US 89 and 91 enter from the southwest into Logan City and separate in downtown Logan. State Highway US 91 heads north to Idaho and US 89 heads northeast into Logan Canyon to Bear Lake.

2.3 Climate

The most recent set of weather data available for the airport was obtained and evaluated. With the exception of a few days annually, the airport is not adversely affected by poor weather conditions. Visual flight rules (VFR) meteorological conditions are experienced an average of approximately 92 percent of the time annually (see Figure 2). The airport experiences a 4-season climate, with the average high temperature during the winter months ranging from 30° F to 45° F and the mean maximum temperature of the hottest month being 88° F. Average annual precipitation including snowfall is approximately 20 inches, and annual snowfall averages approximately 12 inches (source: National Oceanic and Atmospheric Administration; Climatography of the United States No. 81, Utah).

Figure 2. Weather Conditions Affecting Flight Rules in Effect



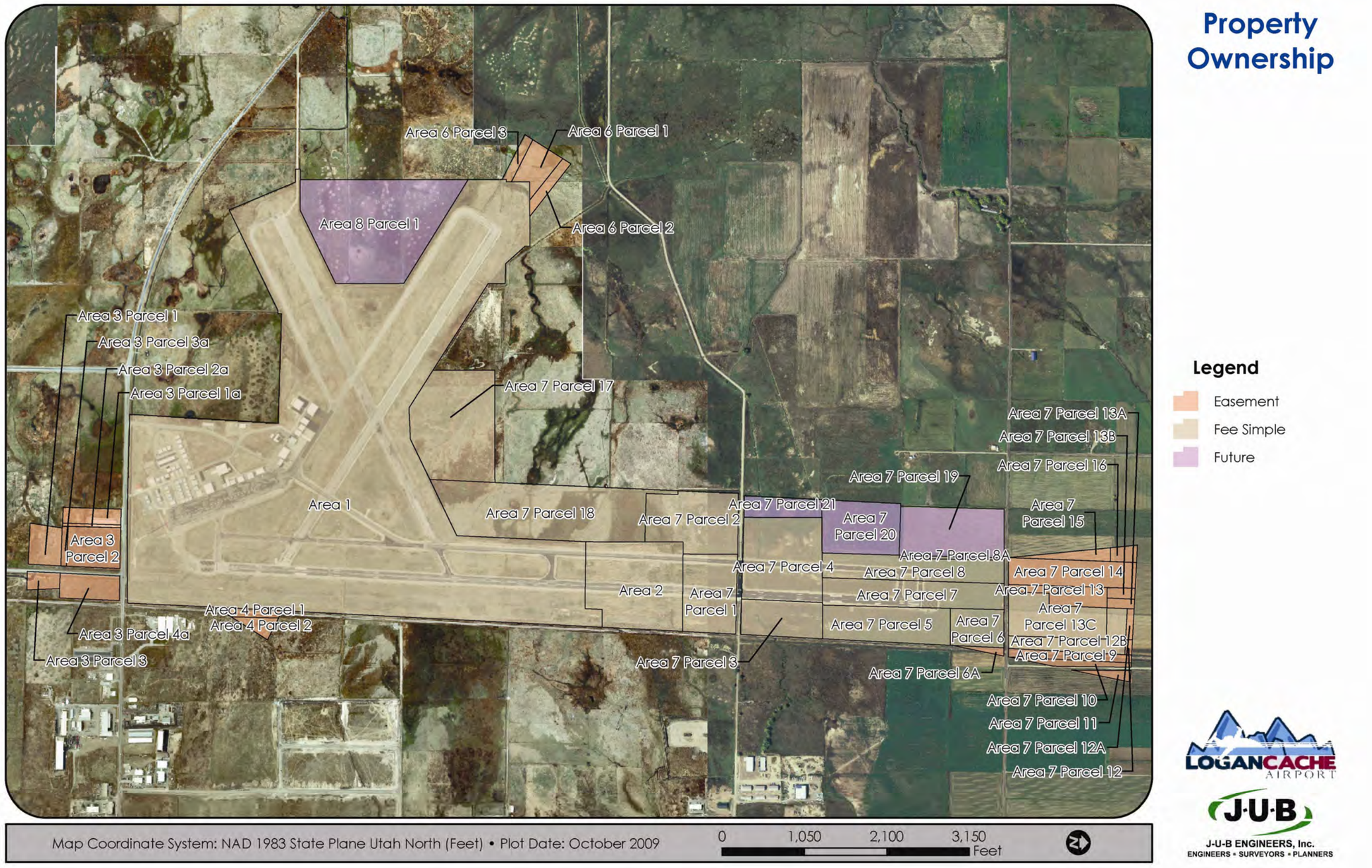
Source: Logan-Cache Airport Runway Wind Analysis and Flyable Weather Statistical Analysis by Tomlinson Consulting Services.

2.4 Land

According to the latest Airport Property Ownership Map (prior to this master plan update), prepared by Armstrong Consultants, Inc, commonly referred to as Exhibit A, the airport encompasses approximately 700 acres of land and holds avigation easements for an additional 116 acres (approximately).

Figure 3 shows property currently owned by the airport as well as properties on which avigation easements are held. Figure 3 also shows property identified on the FAA ownership map as potential future acquisition.

Figure 3. Airport Property Ownership Map



2.5 Airfield Facilities

Airfield facilities consist of all aircraft movement areas such as runways, taxiways, and apron facilities. Existing pavement sections were obtained from record drawings and historical information while pavement conditions described in this report were obtained from the Utah Department of Transportation (UDOT) Pavement Condition Index (PCI) survey conducted in 2006 (see Figure 4). The PCI survey is an inventory of pavement conditions at all State-funded airports. UDOT used visual pavement inspections to develop a rating for each pavement surface. Based on the numbered scale of 0 to 100, with 0 being lowest and 100 being highest, the rating corresponds to a Pavement Condition Rating (PCR) ranging from failed to excellent.

Runways

Logan-Cache Airport has two paved runways. Runway 17-35 is 9,018 feet long with a width of 100 feet. Reconstructed in 1985, it is the primary runway for the airport. Runway 35 was extended and strengthened to accommodate 60,000 pound dual wheel aircraft loading. The runway surface received a seal coating and its PCI rating in 2006 was 74. Visually, the runway is in very good condition. The second runway at Logan-Cache Airport is Runway 10-28, which is 5,005 feet long with a width of 60 feet; this is a crosswind runway. Over the years, this runway has received a seal coat and has been restriped. The threshold for Runway 28 has been relocated for approach slope clearance over the railroad. The 2006 PCI rating of Runway 10-28 was 15, and visually, this runway is in very poor condition with ruts, broken pavement, and weeds growing through the asphalt cracks. The runway's bearing capacity is 12,000 pounds for single-wheel aircraft.

The pavement for what was originally Runway 5-23 is completely failed with a reported PCI of 0. Most of the runway has been closed for many years but the northeast end, between Taxiway B and Runway 17-35, has been reconstructed and is designated as Taxiway B1. Combined wind coverage for Runway 17-35 and Runway 10-28, with a 10.5 knot crosswind component and a 60.0 knot tailwind component, is 97.88%.

Table 1. Runway 17-35 and Runway 10-28 Features

	Runway 17-35	Runway 10-28
Length (feet)	9,018	5,005
Width (feet)	100	60
Surfacing	Asphalt Concrete	Asphalt Concrete
Pavement Strength	60,000 lbs. dual-wheel gross	12,000 lbs. single wheel gross
Shoulders	25 feet Unpaved	25 feet Unpaved
Effective Gradient	0.07%	0.26%
Runway Lighting	MIRL	None
Wind Coverage (all weather) (10.5 Kt. Crosswind Component and 60.0 Kt. Tailwind Component)	92.25%	82.26%

Taxiways and Taxilanes

A full length parallel taxiway (Taxiway B) is located 400 feet west of Runway 17-35, which allows for access to the general aviation development area via Taxiways A and C, as well as provides access to both ends of the runway. The south end of Taxiway C connects to Taxiway A, which provides an aircraft run-up area.

Access to Runway 10-28 is provided by partial parallel taxiways (Taxiways A1 and C) located 525 feet southwest of the runway. These taxiways extend from the approach end of Runway 10 to the west side of Taxiway B. Access to Runway 28 is via either Taxiway A or A1 to Taxiway B, which intersects the runway close to its end.

Taxiways A1, B, B1 through B5, C, and D are 50 feet wide and Taxiway A is 75 feet wide. These taxiways were rated in 2006 with the following PCI values: 56 for Taxiway A; 74 for Taxiways A-1, B, B1 through B5, and D; and 13 for Taxiway C, indicating a need for replacement in the future.

The parallel taxiway pavement for the closed Runway 5-23 is completely failed with a reported PCI of 0. The pavement is not formally designated and is not in use.

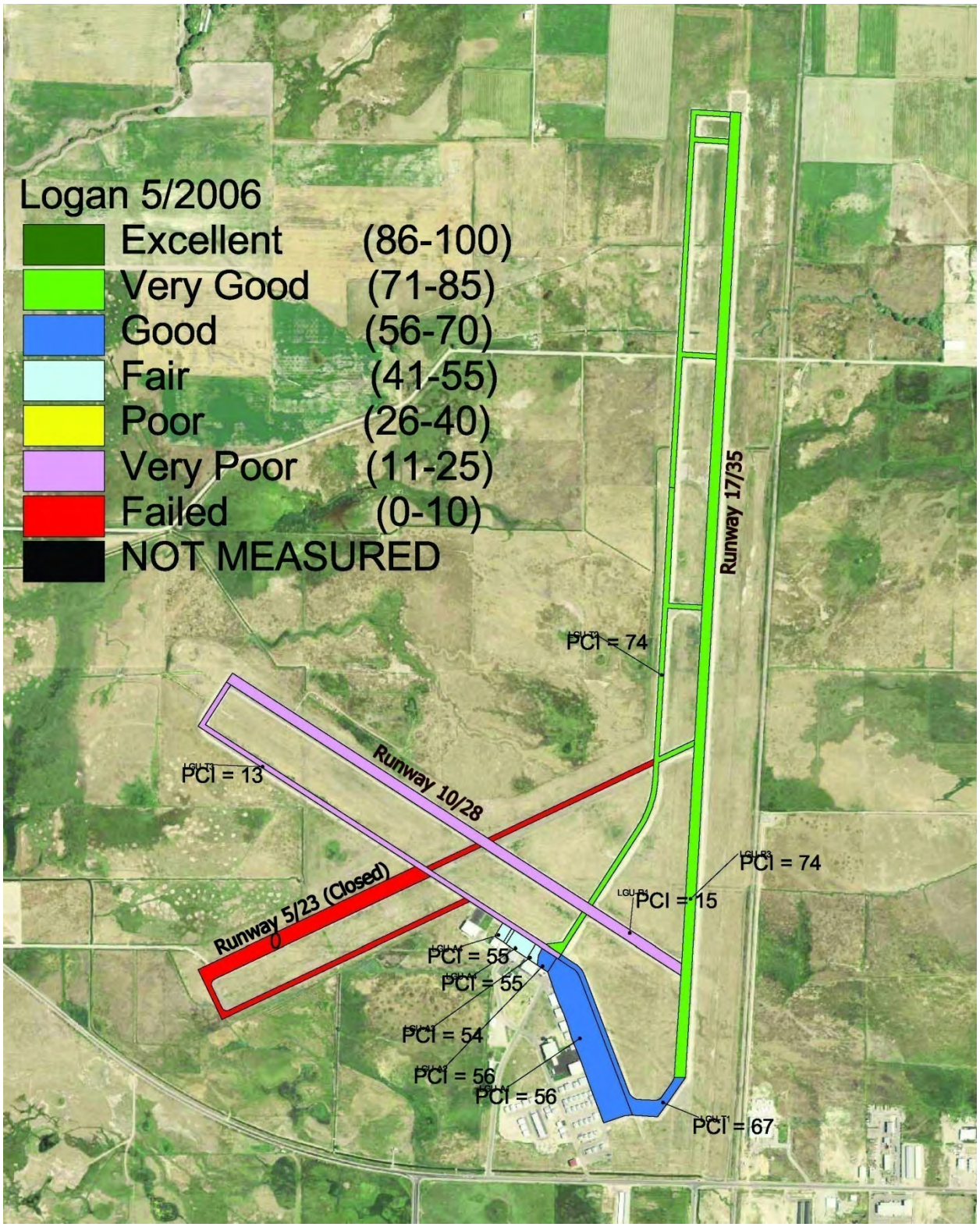
The various hangar areas are serviced by wide aprons with access to Taxiways A and C and will be discussed in more detail in the next section.

Aprons and Aircraft Parking

Logan-Cache Airport has two large continuous aircraft aprons located southwest of Taxiways A and C. One apron is approximately 1,500 feet long and 300 feet wide (60,000 square yards) in size, while the other is 600 feet long and 150 feet wide (10,000 square yards). The southern apron was reconstructed in 2005. The PCI evaluation done by UDOT indicates the northern apron has a 2006 PCI rating range of 54 to 56, while the southern apron has a PCI rating of 56. There are 46 tie-downs with anchors located on the main apron for small aircraft. An additional 8 small aircraft tie-downs are located adjacent to the Utah Jet Center and USU hangars (FL-09A, FL-10, FL-11).

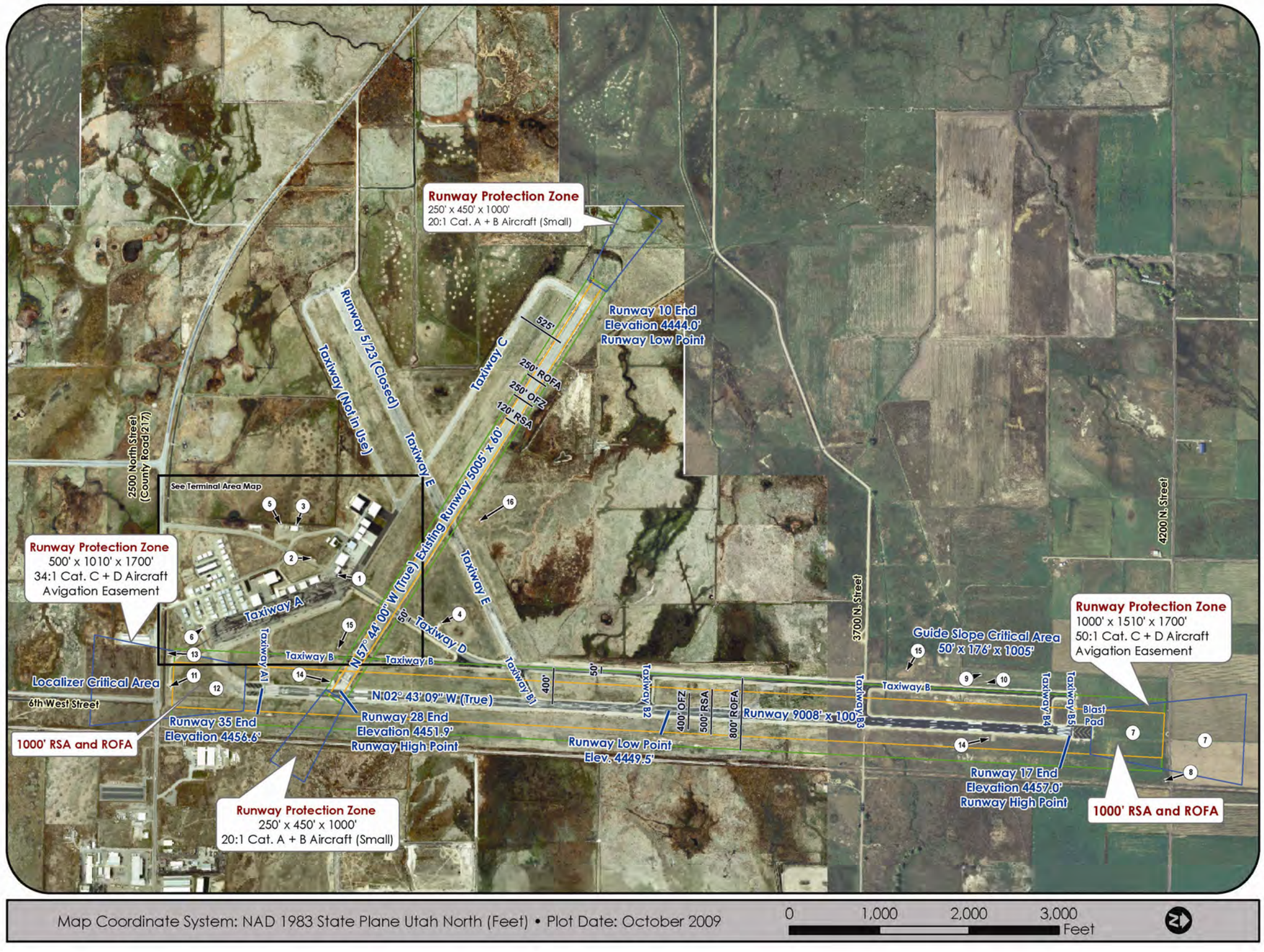
Figure 5, Existing Facilities, shows an overall layout of the airport and its facilities, the location of key airfield equipment, as well as critical and safety areas.

Figure 4. 2006 UDOT Pavement Condition Index Survey



Source: Utah Department of Transportation

Figure 5. Existing Facilities



Existing Facilities

Legend

- RSA
- ROFA
- RPZ

Airport Facilities List	
1	Tower (Non-Operating)
2	Rotating Beacon
3	Cache County Search & Rescue
4	ASOS (Weather Station)
5	Fuel Storage Tanks
6	Aircraft Wash Pad
7	MALSR
8	MALSR Equipment Shed
9	Glide Slope and Equipment Shed
10	Glide Slope Critical Area
11	Localizer Antenna
12	Localizer Critical Area
13	Localizer Equipment Shed
14	PAPI-2
15	Lighted Wind Cone
16	Segmented Circle and Wind Cone

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2.6 Airfield Support Facilities

Airfield support facilities are those needed to support the operation of the airport and are described as follows.

Aircraft Rescue and Firefighting (ARFF)

The airport owns a single 1974 year model Walter Aircraft Rescue and Fire Fighting (ARFF) for use during Part 139 charter operations. It is housed in the airport manager's hangar (FL-6A) and staffed by Logan City firefighting personnel when in use. The Part 139 inspection performed on August 8, 2008 strongly recommends "that a new ARFF truck be prioritized within the CIP for acquisition within 2-3 years."

Utilities

Power to the airport is provided by Logan City. Water with adequate fire protection from fire hydrants, and sewer are available at the airport and are provided by Logan City. Telephone services are provided by Qwest.

Common Traffic Advisory Frequency (CTAF)

The Federal Communications Commission has issued the airport a CTAF/Unicom of 122.8. This frequency is used by pilots to communicate their intentions via radio to other pilots who may be in the vicinity of the airport.

Automated Surface Observation System (ASOS)

The ASOS is located on the west side of Taxiway D approximately 500 feet northwest of Runway 10-28. It provides time, wind speed and direction, visibility, ceiling and sky condition, temperature, dew point, altimeter, and density altitude. The information is accessible via telephone and VHF radio.

Airport Navigational Aids (NAVAIDS)

Visual Airport Navigational Aids (NAVAIDs) include ground-based equipment providing visual guidance to pilots landing at the airport. Visual-based NAVAIDs at the Logan-Cache Airport include a Medium-intensity Approach Lighting System with Rails (MALSR) providing visual guidance to Runway 17. Precision Approach Path Indicators (PAPIs) and Runway End Identifier Lights (REILs) are located on Runways 17 and 35. Runway 10-28 has no visual NAVAIDs.

Instrument NAVAIDs include ground-based and satellite-based navigation equipment providing approach and landing guidance to pilots via aircraft instruments. Runways 17 and 35 have published RNAV (GPS) approaches and Runway 17 has a precision ILS approach. Approaches to Runways 10 and 28 are visual only. Other airport and regional navigational and landing aids available for Logan-Cache Airport include the Brigham City VHF Omni directional range distance measuring equipment (VOR/DME) located approximately 8.25 miles west of the airport and the Malad VOR/DME located approximately 10.5 miles west of Malad, Idaho. The Logan VOR/DME, located approximately 4 miles north of the airport, is being decommissioned.

Airport Lighting and Signing

Runway 17-35 is equipped with guidance signing, standard elevated Medium Intensity Runway Lighting (MIRL), and Runway End Indicator Lights (REILs). Runway 17 and Runway 35 both have a two-box Precision Approach Path Indicators (PAPIs) located on the left side of their

respective runways. Runway 10-28 does not have runway lighting. Taxiways B, B1 through B5, and D have MITL lighting with lighted signing. The remaining taxiways are unlighted.

Snow Removal Equipment (SRE) and Airport Maintenance Equipment

The airport owns a single snowplow vehicle housed in the airport manager's hangar (FL-6A). This vehicle sees limited use as snow removal services are provided by Logan City. The airport owns and operates a small mower which is also housed on the airport manager's hangar. The airport contracts with a local business to perform the majority of airfield mowing.

Fueling Facilities and Fixed Base Operators (FBOs)

There are two Fixed Base Operators (FBOs) at the airport, namely Leading Edge Aviation and Utah Jet Center. Bulk storage for Leading Edge Aviation is comprised of a 10,000 gallon 100-LL avgas tank and a 12,000 gallon Jet-A tank, both located south of building WS-01 on the west side of the airport entrance road (see Figure 6). These tanks are owned by the airport. Utah Jet Center owns an 8,000 gallon 100-LL avgas tank and a 10,000 gallon Jet-A tank, both located just south of Hangar FL-03A. Both FBOs provide aircraft fueling services from mobile refueling trucks. Leading Edge Aviation operates a 750 gallon 100-LL avgas truck and a 2,800 gallon Jet-A truck. Utah Jet Center operates a 1,300 gallon 100-LL avgas truck and a 3,000 gallon Jet-A truck, as well as a 100-LL self serve pump located along the flight line between hangars FL-02 and FL-03.

Leading Edge Aviation provides full maintenance for piston-engine aircraft and limited maintenance for turbine-engine aircraft. They also offer some flight training services. Utah Jet Center does not provide aircraft maintenance services or flight training. Utah Jet Center provides ground services for Frontier Airlines charter flights including stairs, fueling and limited deicing services.

Runway Protection Zones (RPZ)

The RPZ has a trapezoidal shape that begins 200 feet beyond each end of the runway, and centers on the runway centerline. The approach category and visibility minimums determine the dimensions for the trapezoid for each end of the runway and are based on Airport Reference Code (ARC) and approach minimum for the associated runway. The RPZs are the same for both ends of Runway 17-35, which is an ARC C-II runway, and are based on a precision approach with greater than ¾-mile visibility for Runway 17. The RPZs on Runway 10-28 are based on visual approaches for small aircraft only. The dimensions are listed in Table 2.

Table 2. RPZ Dimensions for Runways 17-35 and 10-28

	Length (ft.)	Inner Width (ft.)	Outer Width (ft.)
Runway 17	2,500	1,000	1,750
Runway 35	1,700	500	1,010
Runway 10	1,000	250	450
Runway 28	1,000	250	450

Current FAA guidance calls for an RPZ Control Plan to be developed in conjunction with an ALP update. The purpose of this plan is to identify how the airport sponsor plans to ultimately obtain a controlling interest such as an avigation easement, in all properties within the RPZ. They encourage full ownership where practical. The current Exhibit "A" Property

Ownership map indicates that the Airport currently owns or holds an avigation easement for all property within the existing RPZs.

Part 77 Surfaces

At general aviation airports, the airport influence area is defined as the area which underlies the airport's Federal Administration Regulation (FAR) Part 77 Horizontal Surface. The Part 77 Surfaces consist of multiple imaginary surfaces defined by the approach types for each end of the runway. These surfaces designate the three-dimensional protected airspace around the Airport, and are used as guidelines for all development and construction in the airspace. Any penetration into these surfaces is classified as an obstruction.

The five surfaces that define this three-dimensional airspace for the existing conditions are as follows:

1. Primary Surface: A rectangular surface with a width of 1,000 feet for Runway 17-35 and 250 for Runway 10-28 that centers on the respective runway centerline and extends 200 feet beyond each end of the runway. The elevation of the Primary Surface corresponds to the elevation of the nearest point of the runway centerline.
2. Approach Surface: A polygonal surface centered on the extended runway centerline, starting at each end of the primary surface, 200 feet beyond each end of the runway. This surface is at a width of 1,000 feet for Runway 17-35 and 250 feet for Runway 10-28 and at an elevation equal to that of the end of the runway. The surface extends horizontally to a distance of:
    a. 10,000 feet at a slope of 50:1 and 40,000 feet at a slope of 40:1, widening from 1,000 feet to 16,000 feet, for Runway 17;
    b. 10,000 feet, widening from 1,000 feet to 3,500 feet, at a slope of 34:1 for Runway 35; and
    c. 5,000 feet, widening from 250 feet to 1,250 feet, at a slope of 20:1 for Runway 10-28.
3. Transitional Surface: Vertical planes at a right angle to the runway centerline, sloping 7:1 outward and upward from the sides of the primary surface and the approach surfaces.
4. Horizontal Surface: A horizontal plane at an elevation 150 feet above the established Airport elevation, created by swinging an arc with a 10,000-foot radius from the center of each end of the primary surface of each runway. Tangent lines then connect these circles. The existing established airport elevation is 4,457 feet; therefore the Horizontal Surface is a level plane at 4,607 feet.
5. Conical Surface: A surface extending outward and upward from the Horizontal Surface at a slope of 20:1 for a horizontal distance of 4,000 feet.

According to the Airport Obstruction Chart as surveyed by the National Oceanic and Atmospheric Administration (NOAA), there are presently no obstructions to the Part 77 surfaces at the Logan-Cache Airport for Runway 10-28. For Runway 35, there was a tree identified that penetrated the 34:1 approach surface by 1.6 feet, but this obstruction has been eliminated. For Runway 17, the 50:1 approach slope for the ILS is penetrated by the railroad track to the east of the runway with a 23-foot object height, for a penetration of 24.2 feet, and by 4200 North Street with a 15-foot object height, for penetrations ranging from 4.3 to 10.2 feet. This road is located northward beyond the extended runway centerline and runs east and west, perpendicular to the runway. The road has been marked by signs

installed on each side of the runway centerline indicating: "Aircraft Approach Area – No Stopping."

2.7 Landside Facilities

The landslide facilities consist of hangars and other airport buildings and access and parking facilities.

Hangars and Airport Buildings

Airport buildings and hangars are currently concentrated in the southwest corner of the airport with direct access to Taxiways A and C. The location of hangars and terminal area facilities are shown on Figure 6 and building descriptions are presented in Table 3. There are a total of 70 buildings and hangars on the airport. The aviation facilities are comprised of 5 large, 9 medium and 49 small clear-span hangars, one 10-unit T-hangar building, and 2 Fixed Base Operator (FBO) facilities for Leading Edge Aviation (FL-08) and Utah Jet Center (FL-09). Non-aviation facilities located on the airport include a classroom facility used by Utah State University (FL-10), a storage facility used by Cache County Search and Rescue (WS-1), and a parts storage building used by a local airport tenant (A-35). The Airport Manager's office is located in building FL-06A. The building also houses a public pilot's lounge, restroom facilities, and airport maintenance equipment.

General Circulation Access and Vehicle Parking

The Logan-Cache Airport has a completely fenced perimeter with both power and manual gates for access. Fencing types include security fencing adjacent to the apron areas and hangars and game-proof fencing elsewhere around the perimeter. All fencing is in good condition. Vehicle access to the airport is by way of Airport Road (2500 North). Airport Road, just south of the entrance to the airport, forms the southern boundary of the airport and runs east and west. Extending to the east, it ties into State Road 91 providing access to the metropolitan area of Logan. The roadway into the airport from Airport Road is an all-weather road.

Internally, the vehicle circulation between gates and among hangars is along a series of all-weather access roads. Parking for vehicles is located next to the Utah State University trailer offices or next to the Utah Jet Center, all of which are paved.

Figure 6. Terminal Area Map

Terminal Area Map

Legend

Buildings

Airport Facilities List	
1	Tower (Non-Operating)
2	Rotating Beacon
3	Cache County Search & Rescue
5	Fuel Storage Tanks
6	Aircraft Wash Pad
13	Localizer Equipment Shed
15	Lighted Wind Cone

Map Coordinate System: NAD 1983 State Plane Utah North (Feet) • Plot Date: October 2009

0 200 400 600 Feet

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Table 3. Terminal Area Map Building Descriptions

Building Location	Building Description	Building Location	Building Description
A-01	Small Clear-Span Hangar	E-01	Small Clear-Span Hangar
A-02	Small Clear-Span Hangar	E-02	Small Clear-Span Hangar
A-03	Small Clear-Span Hangar	E-03	Small Clear-Span Hangar
A-04	Small Clear-Span Hangar	E-05	Small Clear-Span Hangar
A-05	Small Clear-Span Hangar	E-07	Small Clear-Span Hangar
A-06	Small Clear-Span Hangar	E-09	Small Clear-Span Hangar
A-08	Small Clear-Span Hangar	E-11	Small Clear-Span Hangar
A-10	Small Clear-Span Hangar	E-14	Small Clear-Span Hangar
A-12	Small Clear-Span Hangar	E-16	Small Clear-Span Hangar
A-21	Small Clear-Span Hangar	F-02	Small Clear-Span Hangar
A-23	Small Clear-Span Hangar	F-04	Small Clear-Span Hangar
A-25	Small Clear-Span Hangar	F-01, F-03, F-05, F-07, F-09	T-Hangars (5-Units)
A-27	Small Clear-Span Hangar	G-01	Small Clear-Span Hangar
A-29	Small Clear-Span Hangar	G-03	Small Clear-Span Hangar
A-31	Small Clear-Span Hangar	G-05	Small Clear-Span Hangar
A-33	Small Clear-Span Hangar	G-02, G-04, G-06, G-08, G-10	T-Hangars (5-Units)
A-35	Parts Storage Building	FL-01	Small Clear-Span Hangar
B-01	Small Clear-Span Hangar	FL-03	Large Clear-Span Hangar
B-03	Small Clear-Span Hangar	FL-03A	Large Clear-Span Hangar
B-05	Small Clear-Span Hangar	FL-02	Medium Clear-Span Hangar
B-07	Small Clear-Span Hangar	B-09	Small Clear-Span Hangar
B-11	Small Clear-Span Hangar	FL-06	Small Clear-Span Hangar
C-01	Medium Clear-Span Hangar	FL-07	Medium Clear-Span Hangar
C-02	Small Clear-Span Hangar	FL-07A	Medium Clear-Span Hangar
C-03	Small Clear-Span Hangar	FL-07B	Medium Clear-Span Hangar
C-04	Small Clear-Span Hangar	FL-08	FBO/Hangar – Leading Edge Aviation
C-05	Small Clear-Span Hangar	FL-09	FBO – Utah Jet Center
C-06	Small Clear-Span Hangar	FL-09A	Large Clear-Span Hangar
C-07	Small Clear-Span Hangar	FL-10	Medium Clear-Span Hangar
C-08	Small Clear-Span Hangar	FL-10A	Classrooms/Offices – USU
C-09	Small Clear-Span Hangar	FL-11	Medium Clear-Span Hangar
D-01	Small Clear-Span Hangar	FL-12	Medium Clear-Span Hangar
D-03	Small Clear-Span Hangar	FL-13	Medium Clear-Span Hangar
D-04	Small Clear-Span Hangar	FL-14	Large Clear-Span Hangar
		FL-15	Large Clear-Span Hangar
		WS-01	Cache County Search and Rescue

2.8 Land Use Planning and Zoning (Existing)

Sometimes referred to as a Master Plan, Logan City adopted a General Plan in December of 2007, which expresses the City's vision for its current and future management of growth and development. The General Plan contains guidelines for development of land within the City and sets criteria for different types of land uses to be developed. The plan recognizes that the Logan-Cache Airport is a regional asset that will experience future increases in aircraft traffic as the City and surrounding rural areas continue to grow.

The City's Zoning Map shows the current zoning that exists in the vicinity of the airport while the Future Land Use Plan (FLUP) map in the General Plan shows the preferred land use far into the future and is comprised of fifteen (15) different land use categories. The zoning map designates the land use of the airport property as Public (PUB). The land use surrounding the south and west areas of the airport is designated as Airport Park (APP). This Airport Park district is set aside to promote the development and enhancement of the airport. The Airport Park area fosters activities that would support the airport, such as offices, light industrial and commercial, business research and development, university related functions, and other uses that typically require close proximity to an airport. The Airport Park acts as a "gateway" to Logan City, other surrounding cities, and to Utah State University. The land use to the north of the airport is designated as Industrial Park (IP). The Industrial Park area supports employment and production uses related to offices, services, and storage. These developments will typically have large office buildings with attractive landscaping when viewed from the public. The area to the east of the airport is designated as Rural Reserve Area (RRA). The Rural Reserve Area designation is used for land adjacent to Logan City in the unincorporated sections of Cache County, to provide a rural or agricultural separation between the City and other unincorporated communities.

Both the Federal Aviation Administration (FAA) and the Utah Department of Transportation (UDOT) Division of Aeronautics stress the importance of compatible land use around airports. Compatibility means that both existing and future land use development should create an environment that is not detrimental to airport activities. A compatibility plan supports land uses that protect the airport as a transportation facility and economic resource for the community. Such a plan should prevent development of incompatible land uses that would expose the general public to noise and risk. This is accomplished through ordinance by restricting residential development, schools, hospitals, and other medical facilities adjacent to an airport. Areas close to the airport should be low-density, low-intensity, with little residential development, such as commercial and light industrial land use.

Existing Land Use Regulations

The City of Logan, North Logan, and Cache County have adopted a Compatible Land Use and Height Restriction Zoning ordinance for the areas within their jurisdictions in the vicinity of the airport. These ordinances establish restrictions and conditions for development in the vicinity of the airport, and are comprised of such items as disclosure statements and avigation easements, regulations to enhance safety for persons on the ground, and regulations to minimize noise impacts. These ordinances also protect pilots from hazardous objects that may penetrate the Federal Administration Regulation Part 77 navigable airspace. The City of Logan has requested that the surrounding incorporated cities of Hyde Park and Smithfield also adopt similar ordinances.

Comprehensive Plan Considerations

A Comprehensive Plan, also called a general plan, master plan, development plan, etc. is a document used to create regulations, such as zoning ordinances, in order to implement a

city's vision for development within the community. The Comprehensive Plan determines where growth will occur and where infrastructure will be built. In regards to airports, it is critical to consider airport land use compatibility when developing the plan. The Compatible Land Use Guide for Utah Airports dated December 2000, provides Utah airport sponsors with a quick reference source that provides a useful list of federal and state statutes and FAA regulations and publications dealing with airport land use issues. Airport sponsors that receive federal and state grants are required to ensure compatible land use adjacent to or in the vicinity of an airport. Implicit in this assurance is that each airport receiving grant funds have a compatible land use plan in effect. In order for a plan to be enforced, it must be tied to local zoning ordinances and procedures for the area around the airport.

Zoning Ordinance Considerations

The City of Logan has a zoning ordinance in effect that protects the airport from any incompatible land use adjacent to the airport that may be permitted in an agricultural zone. This is accomplished by discouraging land use patterns that would increase population densities in the vicinity of the airport or promote facilities that would attract wildlife (especially birds) or generate distracting lights or glare, dust, smoke, or electronic signals. The majority of the surrounding land use around the airport is agricultural, particularly pasture land. This type of land use is considered compatible with existing and future airport operations as long as the type of agriculture does not attract birds to the area. It is difficult to totally prevent the presence of birds, particularly during the planting and harvesting seasons. A Wildlife Hazard Assessment should be conducted to evaluate any impacts to operations.

Airport Overlay Zone

Airport protection from incompatible development begins with the preparation of an up-to-date effective overlay zone. This is usually incorporated into the city or county code, giving it the authority it needs for enforcement. The overlay zone ordinance prevents incompatible development within the airport's influence area. At general aviation airports, the airport influence area is defined as the area which underlies the airport's Federal Administration Regulation (FAR) Part 77 Horizontal Surface. For an airport with a precision instrument approach, it is also advisable to extend the overlay zone to include the area under the FAR Part 77 Outer Approach Surface. By ordinance, the Airport Influence Area (AIA) for Logan-Cache airport is the area within the unincorporated portions of the county, proximate to the airport, which is recognized by the county as containing lands which might be affected by noise and/or safety hazards associated with aircraft operations. The AIA extends from the airport to the outer edge of the conical surface.

The Airport Layout Plan (ALP) drawings, including a current zoning map for the area surrounding the airport, are all required for the preparation of an overlay zone map. The overlay zone should do the following:

- Prevent any vertical development which will penetrate the FAR Part 77 surfaces
- Prevent any development which would preclude the airport from meeting FAA airport design standards in the future according to FAA Advisory Circular 150/5300-13, latest change
- Establish zones in the airport influence area that call for no, limited, or controlled development

The current airport overlay zoning and land use language for Cache County, last updated and passed September 23, 2008, comprises Chapter 17.17 of the code, starting at 17.17.010 through 17.17.110. These regulations reinforce specific provisions in the Logan-Cache airport

master plan dated August 11, 1992 and the Cache countywide comprehensive plan dated January 27, 1998, as amended, and as such, require no modifications. The boundary of any officially recognized "airport limitation overlay zones" shall be as it appears on a map and/or other documents approved by the county council per City ordinance. All uses and regulations pertaining to the airport limitation overlay zone shall be in compliance with and subject to the provisions of the airport master plan, airport layout plan, and noise contour map as adopted by the Logan-Cache airport or as amended as it pertains to airport land uses. Table 4 indicates the uses and conditions required within the five (5) designated zones for the airport.

Table 4. Schedule of Uses

	Airport Influence Area (AIA)	Traffic Pattern Zone (TPZ)	Approach Zone (AZ)	Inner Approach Zone (IAZ)	65 Ldn Noise Area (NA)
Residential:					
Single-family, accessory apartments, residential facilities for elderly/handicapped	C[6]	C[4]	C[3,4]	X	X
Public:					
Schools, libraries, churches	C[6]	C[4]	C[3,4]	X	X
Parking, cemeteries	P	P	P	C[5]	C[2,5]
Commercial and industrial:					
Offices, retail trade, service commercial, wholesale trade, warehousing, light industrial, general manufacturing, utilities, extractive industry	P	C[6]	C[4]	C[1]	C[1]
Agricultural and recreational:					
Cropland	P	P	P	P	P
Livestock breeding, parks, playgrounds, zoos, golf courses, riding stables, water recreation	P	P	P	P	C[2]
Outdoor spectator sports	P	C[3]	C[3,4]	X	X
Amphitheaters	C	C[3]	X	X	X
Open space	P	P	P	P	P

Notes:

1. *If allowed, aviation easement and disclosure must be required as a condition of development.*
2. *Any structure associated with uses allowed in the 65 Ldn noise contour must be located outside the 65 Ldn noise contour.*
3. *If no reasonable alternative exists, use should be located as far from extended centerline as possible.*
4. *If allowed, disclosure of airport proximity must be required as a condition of development. An aviation easement should be considered based on proximity to runway centerline.*
5. *Transportation facilities in the 65 Ldn noise contour (i.e., roads, railroads, waterways) must comply with Part 77 requirements.*
6. *Disclosure of airport proximity should be required as a condition of development.*

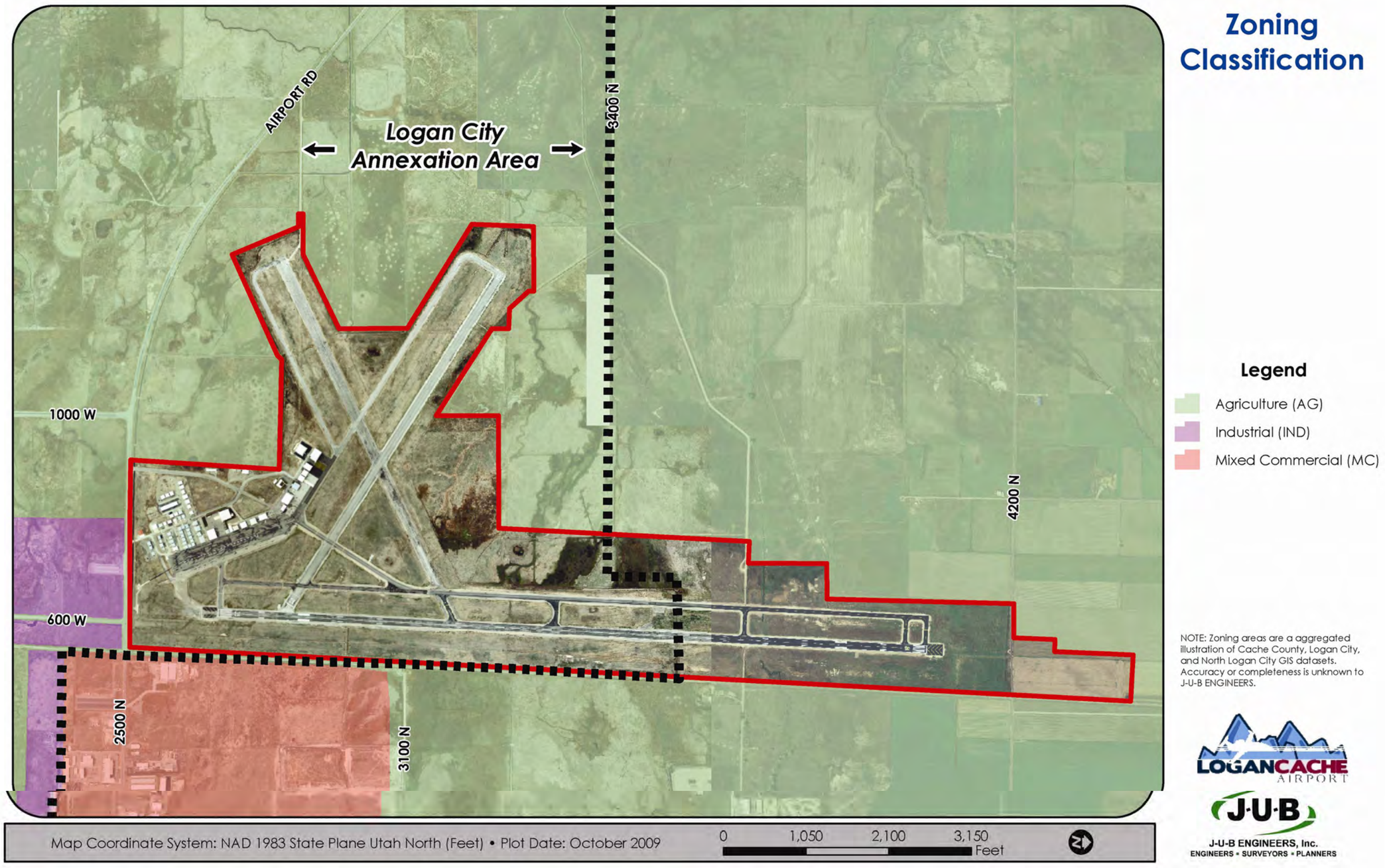
All uses in the airport limitation overlay zones shall be subject to the regulations and prescribed development standards within the airport master plan as amended. No variance,

permit or use shall be allowed in the airport hazard area that would create or enhance an airport hazard. Within the airport limitation overlay zones, no use shall be permitted which:

- Creates or tends to create electrical interference to navigational devices and communication between aircraft and the airport
- Creates or tends to create gas, smoke, dust, glare, or other visual hazards in the atmosphere around the airport or in the airport hazard area
- Creates or tends to create structures that interfere with aircraft safety
- Creates or tends to create any type of hazard for the airport that would inhibit or constrain safe and acceptable airport operations

Furthermore, no structure shall be erected, altered or maintained, and no tree shall be allowed to grow, in any zone to a height in excess of the applicable height limits established for such a zone. Exemptions to the height limitation are any object that would be shielded by existing structures of a permanent and substantial character or by natural terrain or topographic features of equal or greater height, and would be located in the congested area of the city where it is beyond all reasonable doubt that the structure so shielded will not adversely affect safety in air navigation.

Figure 7. Zoning Classification



2.9 Environmental Overview

An environmental overview was conducted in an attempt to identify issues which may affect the future operation or development of the airport, such as potential or known wetland locations, special habitat considerations, flood plain levels, and storm water runoff concerns. The FAA Categorical Exclusion Form, served as a guide to review potential environmental constraints on airport development associated with the master plan update. Determination of environmental constraints did not include destructive or nondestructive testing, mapping, surveying, measuring, or other detailed fieldwork, except as described herein. Baseline environmental conditions were primarily determined by literature search and aerial map interpretation. No wetlands delineation or extensive field observation of habitat was completed.

The Logan-Cache Airport is located within Sections 8, 9, 16, and 17, Township 12 North, Range 1 East, Cache County, Utah.

The following table discusses certain attributes specific to the master plan update and is derived from the FAA Categorized Exclusion Form. A detailed memo regarding environmental topics is included in the appendix.

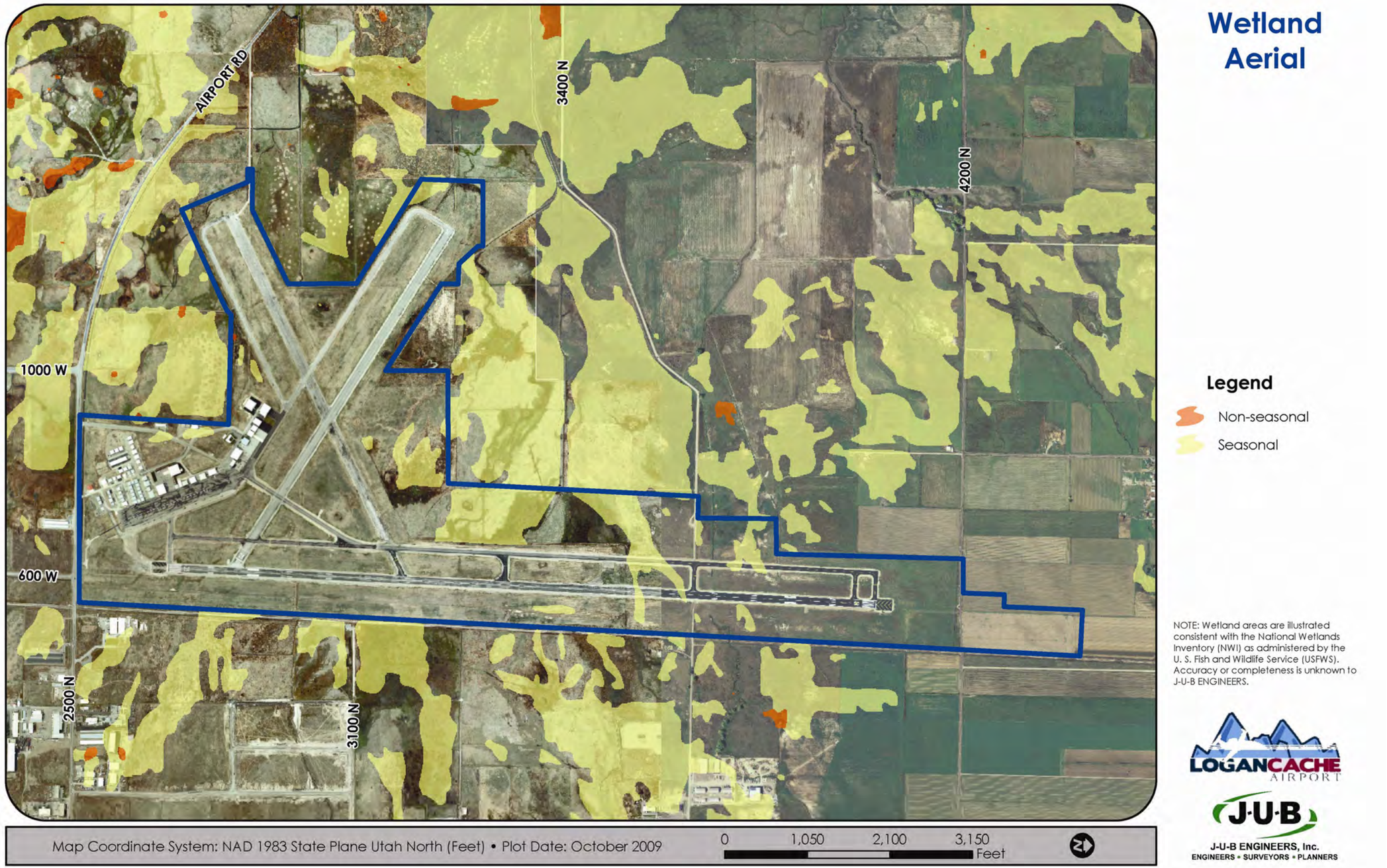
Table 5. Environmental Attributes at the Airport

Attribute	Description
Controversy	At this point, no expected controversy on environmental grounds has been identified. Two open houses will be held to help identify potential community conflicts from the improvements and development included in this master plan.
Noise	Noise contours will be developed as a later part of the plan, as specific master plan alternatives are developed and designed.
Compatible Land Use	The compatibility of recommended future improvements is documented elsewhere in this master plan update.
Social Impact	The airport layout plan does not yield any social impacts, the degradation of any level of services, or the need to relocate any residents or businesses.
Induced Socio-Economic Impacts	The future improvements recommended in the master plan update are intended to stimulate economic activity and development of the airport.
Environmental Justice	Populations of any income level or minority background will not be affected by the recommended future improvements.
Air Quality	The Logan-Cache Airport that lies west of the City of Logan, UT is considered to be an "attainment" area. In the near future, the Logan-Cache Airport will be considered a "non-attainment' area, due to new legislation that has been recently signed by the U.S. Environmental Protection Agency (EPA) administrator. The "non-attainment" designation is likely associated with exceeding the threshold for particulate matter (PM), which is correlated to 2.5 µm (Personal communication, Bill Reiss, Environmental Engineer, Utah Department of Environmental Quality, 10/20/09). Bill Reiss was contacted at (801) 536-4077. Currently, the new EPA legislation has not been formally published in the federal register, nor has an effective date, linked to this new legislation, been released. At this point, it is reasonable to assume that the Airport should be designated within a "non-attainment" area by the end of 2010.

Attribute	Description
Water Quality	Surface drainage from the recommended future improvements and any roadway relocations will likely be collected in designed ditches and conveyed to detention basins where it will evaporate or percolate into the subsurface. No storm water drainage is expected to discharge into any waters of the U.S.
Section 4 (f) [49 U.S.C. 303 (c)] Impacts	N/A - None within the airport property.
Cultural Resources	None are known to exist within the airport property.
Biotic Communities and Endangered and Threatened Species	Based on the most current USFWS Countywide Species Listing (dated November-07), two (2) threatened ESA species are listed for Cache County. They include: Canada Lynx (Lynx Canadensis) and Maguire Primrose (Primula maguirei); the Yellow-billed cuckoo (Coccyzus americanus) is also listed as a "candidate" species. If there is a proposed future project that has a federal nexus, which most airport projects do, then a biological assessment will need to be developed to address these aforementioned ESA species.
State Sensitive Species	This section discusses State sensitive species that have the potential of occurring within the project area or nearby vicinity. This section takes into account Utah Department of Wildlife Resources (UDWR) Administrative Rule R657-48 (Utah Sensitive Species List). A UDWR response letter dated, October 27, 2008, details a recent record of occurrence of four potential sensitive species within the airport vicinity.
Essential Fish Habitat (EFH)	N/A – No EFH exists within the airport property.
Migratory Bird Act	Airports operations discourage bird flyways and habitat (e.g. standing water or large deciduous tree stands) since they promote a higher likelihood of wildlife strikes.
Wetlands / Streams	The National Wetlands Inventory (NWI) Map (Clearfield, Utah) does illustrate numerous wetlands within the airport property. The NWI Map depicts a series of "PEMC" areas or polygons around the developed airport infrastructure. Figure 8, Wetland Aerial, shows the locations of seasonal and non-seasonal wetlands per the NWI map. Based on a review of the Smithfield USGS Quad map and the Cache County Soil Survey Maps the airport is surrounded by a mosaic of wetlands. The topography onsite seems to be fairly flat, between 4430 and 4450 feet above sea level. All the 5 mapped soils (i.e. Ak, Am, Lr, Pn and Se) are also listed as "hydric soils." Hydric soils are typically wetland soils. To determine the limits of any wetland or stream features on the airport property, a formal wetland delineation, with a subsequent survey, should be completed.
Floodplains	The referenced Flood Insurance Rate Map (FIRM) (4900120005B) illustrates no floodplains within the airport boundaries.
Coastal Zone Management Program	N/A – None within the airport property.
Wild and Scenic Rivers	N/A - None within the airport property.
Farmlands	The area within and surrounding the Logan-Cache Airport is not characterized as prime farmland. (Reference source: www.maps.utah.gov - North Logan Prime and Statewide Important Farmland Map).

Attribute	Description
Energy Supply and Natural Resources	N/A – None within the airport property.
Light Emissions	Total light emissions may increase as a result of the recommended future improvements.
Solid Waste Impact	No land fills or solid waste disposal areas are known to be present onsite.
Construction Impacts	Construction impacts will be mitigated through FAA guidelines. The following three Construction best management practices will likely be employed: Hydro-seed disturbed areas at the completion of the project. The hydro-seed should consist of native seed, which is conducive to growth in dry climates. Design should contour grading for drainage to retention (containment) areas onsite. If suspected cultural resources or burials are inadvertently encountered by construction activities, all work in the immediate vicinity of the discovery shall cease, and the local Tribe(s) and the Utah Department of Archaeology and Historic Preservation (DAHP) shall be contacted immediately.
Hazardous Materials	A Phase One Environmental Assessment may be needed for future projects contained within the airport property to help determine potential environmental hazards. A Phase One Environmental Assessment could be triggered to understand the environmental condition of a parcel of commercial real estate, to understand the risk to human health and the environment, and associated financial risk that environmental liability and/or property devaluation may represent on a site. Liability and devaluation usually arise as a result of environmental conditions that threaten or have adversely affected human health and/or the environment on a site or on an adjoining or nearby property.

Figure 8. Wetland Aerial



Wetland Aerial

Legend

- Non-seasonal
- Seasonal

NOTE: Wetland areas are illustrated consistent with the National Wetlands Inventory (NWI) as administered by the U. S. Fish and Wildlife Service (USFWS). Accuracy or completeness is unknown to J-U-B ENGINEERS.

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Conclusion

Based on a review of the reference maps, the airport property contains numerous seasonal wetland and/or drainage features in close proximity to its boundaries. A formal wetland delineation is warranted to determine the extent of wetland or stream features.

These wetland and stream features have the potential to provide a suitable habitat for Yellow-Billed Cuckoos (an ESA-listed candidate species). Based on habitat considerations, the other two ESA-listed species for Cache County (both listed as threatened species) are not likely to occur on the airport property. In addition, there are four state-listed sensitive species that should be considered, since they all have a documented occurrence in the vicinity of the airport.

Based on a review of the pertinent reference maps, no floodplains or prime farm lands occur within the airport property. Note that this preliminary scan was completed without any field site visits or ground-truthing, and should only be utilized to flush out potential impacts. Further research and assessments are warranted prior to specific improvement projects that affect the wetlands, streams, and sensitive species identified by this preliminary scan.