Airport Plans

Introduction

The plan for the future of Boulder Municipal Airport has evolved from an analysis of many considerations. Among these are: aviation demand forecasts; facility requirements; aircraft operational characteristics; environmental considerations; public input; and, the general direction of the future vision of the Airport, as expressed by the City of Boulder. The two (2) proposed planning alternatives that were presented in the previous chapter provided the public, Working Group and City representatives with options for future facility operation, management, and improvement. Following an assessment of the potential impacts of each alternative, a combination of Alternatives One and Two are recommended for implementation.

Because previous chapters have established and quantified the future needs of the Airport, the various elements of the selected plan are categorically reviewed here in an outline and graphic format. A brief written description of the individual elements, represented in the set of Airport Plans for Boulder Municipal Airport, is accompanied by a graphic description presented in the form of the Airport Layout Plan, the Airspace Plans, the Approach Profiles and Inner Approach Surface Drawings, and the Terminal Area Plan.

It is recognized that future demand for facilities cannot be totally predicted at the Airport, particularly during the latter stages of the twenty-year planning period. Therefore, particular emphasis is placed on the initial portion of the planning period, the first six years. Here, the projections are more definable and the magnitude of program accomplishment is more pronounced. In addition, due to inherent funding constraints for the Airport that are dependent upon revenue generation and grant availability, this Plan must focus on the very highest priority projects, which includes maintenance and improvement of existing facilities. Furthermore, careful management within the initial years of the planning period is essential to promoting land use compatibility within the Airport environs, as well as promoting the continued operational success of this facility.

Airport Sponsor Grant Assurances

In response to numerous comments and questions received from Working Group Members and the general public concerning options to restrict certain operations at the Airport or potentially close the Airport, the following information on airport sponsor grant assurances has been compiled for review.

The Federal Aviation Administration (FAA) administers the Airport Improvement Program (AIP) which provides grants to airport sponsors for airport development, airport planning, and noise compatibility programs. In order to receive a grant from the AIP or an earlier federal program, the airport sponsor must provide a written grant assurance (i.e., a contract) to comply with the current 37 individual grant assurances and all applicable federal statutes, executive orders, federal regulations, and Office of Management and Budget (OMB) circulars. The majority of the grant assurances are tied directly to requirements in Federal law and have been developed to ensure that the investments made with both federal and local funding are able to be utilized by the public and airport users. In general, the assurance specifies that the airport will remain open, be maintained for public use, and reserve the use of airport property and revenues for the benefit of aviation.

In the case of Boulder Municipal Airport, the planning recommendations set forth in this chapter reflect the City of Boulder's (i.e., the Airport Sponsor's) desire to maintain the facility as a general aviation airport that meets the needs of local users, which includes both the business community and recreational users. In accordance with grant assurance #22a, entitled *Economic Nondiscrimination*, the Airport Sponsor will "make the airport available as an airport for public use on reasonable terms and without unjust discrimination to all types, kinds, and classes of aeronautical activities, including commercial aeronautical activities offering services to the public at the airport". However, it should be noted that an airport sponsor "may prohibit or limit any given type, kind or class of aeronautical use of the airport if such action is necessary for the safe operation of the airport or necessary to serve the civil aviation needs of the public" in accordance with grant assurance #22i, also entitled *Economic Nondiscrimination*. This method of restriction is typically employed at airports to restrict the operation of skydiving, ultralight aircraft, and balloon operations where there has been an FAA determination of potential safety and/or compatibility issues with the operation of fixed wing aircraft.

In addition to maintaining and operating Boulder Municipal Airport as a safe general aviation airport, the City of Boulder also desires that the future planning of the Airport address environmental and community concerns. A description of current programs and future strategies is described in the following section.

Airport Layout Plan

The Airport Layout Plan (ALP), which illustrates both airside and landside facilities, is a graphic depiction of the existing and ultimate Airport facilities that will be required to enable the Airport to properly accommodate the existing and forecasted future demand in a safe manner. In addition, the ALP provides detailed information on both Airport and runway design criteria, which is necessary to define relationships with applicable standards. The following illustration, entitled *AIRPORT LAYOUT PLAN*, and the following paragraphs describe the major components of the future Airport Plan.

Runway System

The following development recommendations for Runway 8/26 & Runway 8G/26G are presented in the following text.

Runway 8/26

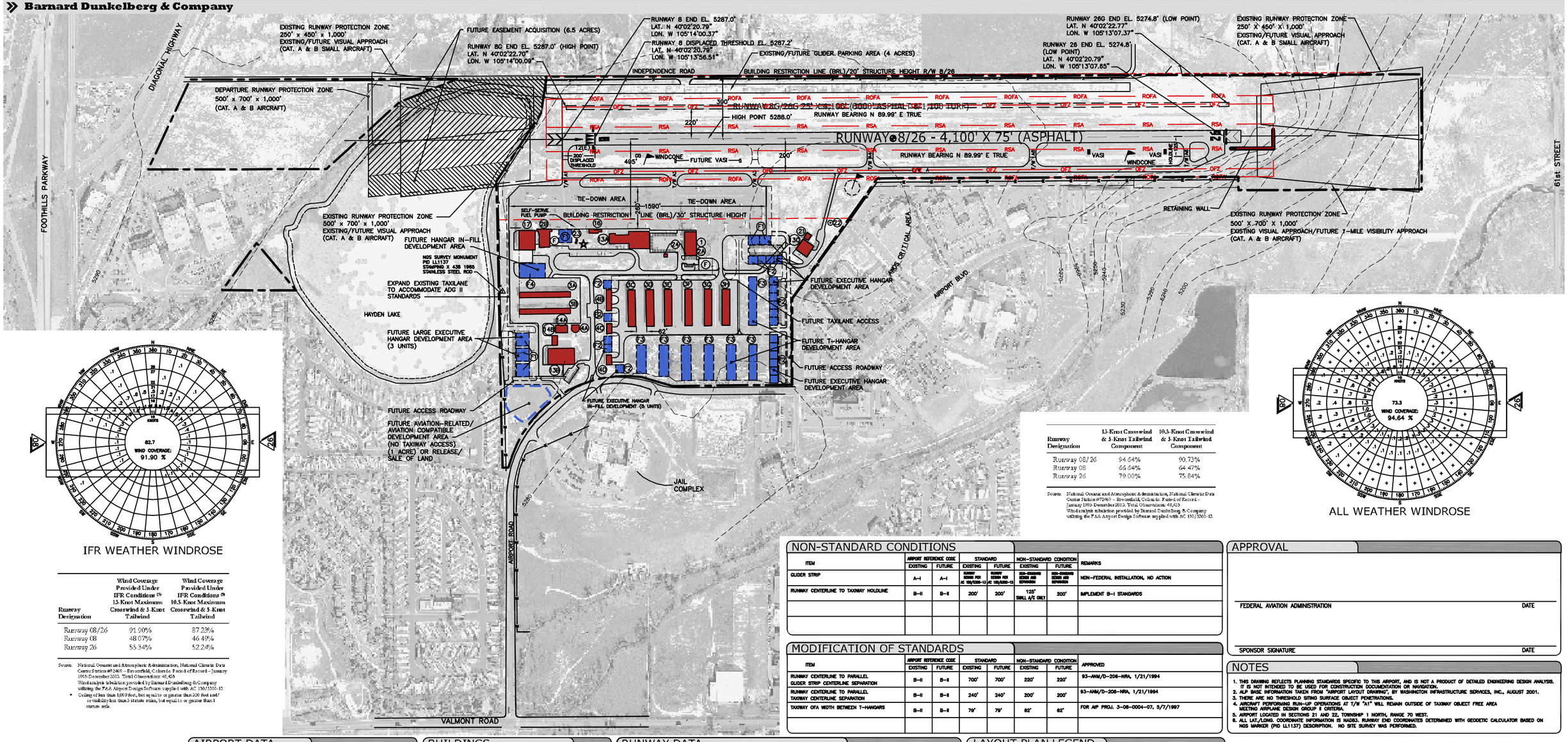
Dimensions. The existing runway length and width are to be maintained at 4,100 feet and 75 feet respectively, with the existing runway centerline location also being retained.

Pavement. The future gross weight bearing capacity of the runway is to be designed to 16,000 pounds single wheel and 30,000 pounds dual-wheel main gear configuration, thus maintaining the runway's existing pavement strength.

As part of the Colorado Division of Aeronautics continuing pavement management activities, the Colorado Division of Aeronautics contracts with pavement engineering consultants to conduct an evaluation of the condition of the pavements at Colorado airports on three year intervals. This report, entitled *Boulder Municipal Airport 2003 Pavement Evaluation and Pavement Management System (PMS) Update*, was completed in November 2003.

The pavement condition rating quantifies the various distresses measured in a pavement using seven classification ratings that range from an "excellent" rating (a maximum pavement condition index (PCI) of 100, typically associated with new pavement construction or new overlay construction), to a "failed" rating (minimum pavement condition index of 0).

The pavement condition index provides a general sense of the pavement condition and the magnitude of work that will be required to rehabilitate the pavement. To put this rating into perspective, it is helpful to consider its relationship in the PMS. In general, a pavement section with a PCI ranging from 0 to 40 is considered to be in such poor condition that reconstruction is usually the only feasible repair alternative. On the other



IFR WEATHER WINDROSE

Runway Designation	Wind Coverage Provided Under IFR Conditions (1) 13-Knot Maximum Crosswind & 3-Knot Tailwind	Wind Coverage Provided Under IFR Conditions (1) 10.5-Knot Maximum Crosswind & 3-Knot Tailwind
Runway 08/26	91.90%	87.23%
Runway 08	48.07%	46.49%
Runway 26	55.34%	52.24%

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center Station #72469 – Broomfield, Colorado Period of Record – January 1993-December 2003. Total Observations: 48,405
Wind analysis tabulation provided by Barnard Dunkelberg & Company utilizing the FAA Airport Design Software supplied with AC 150/5300-13.

(1) Ceiling of less than 1,000 feet, but equal to or greater than 200 feet and/ or visibility less than 3 statute miles, but equal to or greater than 1 statute mile.

ALL WEATHER WINDROSE

Runway Designation	13-Knot Crosswind & 3-Knot Tailwind Component	10.5-Knot Crosswind & 3-Knot Tailwind Component
Runway 08/26	94.64%	90.73%
Runway 08	66.64%	64.47%
Runway 26	79.00%	75.84%

Source: National Oceanic and Atmospheric Administration, National Climatic Data Center Station #72469 – Broomfield, Colorado Period of Record – January 1993-December 2003. Total Observations: 48,405
Wind analysis tabulation provided by Barnard Dunkelberg & Company utilizing the FAA Airport Design Software supplied with AC 150/5300-13.

NON-STANDARD CONDITIONS

ITEM	AIRPORT REFERENCE CODE EXISTING	AIRPORT REFERENCE CODE FUTURE	STANDARD EXISTING	STANDARD FUTURE	NON-STANDARD CONDITION EXISTING	NON-STANDARD CONDITION FUTURE	REMARKS
GLIDER STRIP	A-I	A-I	RUNWAY DESIGN PER AC 150/5300-13 AC	RUNWAY DESIGN PER AC 150/5300-13	NON-STANDARD DESIGN AND SEPARATION	NON-STANDARD DESIGN AND SEPARATION	NON-FEDERAL INSTALLATION, NO ACTION
RUNWAY CENTERLINE TO TAXIWAY HOLDLINE	B-II	B-II	200'	200'	125' SMALL A/C ONLY	200'	IMPLEMENT B-I STANDARDS

MODIFICATION OF STANDARDS

ITEM	AIRPORT REFERENCE CODE EXISTING	AIRPORT REFERENCE CODE FUTURE	STANDARD EXISTING	STANDARD FUTURE	NON-STANDARD CONDITION EXISTING	NON-STANDARD CONDITION FUTURE	APPROVED
RUNWAY CENTERLINE TO PARALLEL GLIDER STRIP CENTERLINE SEPARATION	B-II	B-II	700'	700'	220'	220'	93-ANM/D-206-NRA, 1/21/1994
RUNWAY CENTERLINE TO PARALLEL TAXIWAY CENTERLINE SEPARATION	B-II	B-II	240'	240'	200'	200'	93-ANM/D-206-NRA, 1/21/1994
TAXIWAY OFA WIDTH BETWEEN T-HANGARS	B-II	B-II	79'	79'	62'	62'	FOR AIP PROJ. 3-08-0004-07, 5/7/1997

APPROVAL

FEDERAL AVIATION ADMINISTRATION — DATE

SPONSOR SIGNATURE — DATE

NOTES

1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. ALP BASE INFORMATION TAKEN FROM "AIRPORT LAYOUT DRAWING", BY WASHINGTON INFRASTRUCTURE SERVICES, INC., AUGUST 2001.
3. THERE ARE NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
4. AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
6. ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	5288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	SAME SAME
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	SAME
COMBINED WIND COVERAGE VFR/IFR(5) 13kt.	94.64/91.90	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
TAXIWAY LIGHTING	MITL	SAME
TAXIWAY STRIPING	CENTERLINE	SAME
NPIAS SERVICE LEVEL	GA	SAME

DECLARED DISTANCES

	EXISTING	FUTURE
RUNWAY 8/26		
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/3,900'	SAME
LANDING DISTANCE AVAILABLE	3,900'/3,900'	SAME
RUNWAY 8G/26G	EXISTING	FUTURE
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/4,100'	SAME
LANDING DISTANCE AVAILABLE	4,100'/4,100'	SAME

BUILDINGS

NO.	DESCRIPTION	ESTIMATED ELEVATION
1	TERMINAL BUILDING "J"	5307'
2A	FIXED BASE OPERATOR (FBO)	5301'
2B	FIXED BASE OPERATOR (FBO) "F"	5306'
3A	T-HANGAR "D"	5300.3'
3B	T-HANGAR "C"	5300.3'
3C	T-HANGAR "O"	5300'
3D	T-HANGAR "P"	5296'
3E	T-HANGAR "Q"	5301'
3F	T-HANGAR "R"	5301'
3G	T-HANGAR "S"	5301'
3H	T-HANGAR "T"	5296'
4A	STORAGE HANGAR "B5"	5295.5'
4B	STORAGE HANGAR	5298.5'
4C	STORAGE HANGAR	5298.5'
4D	STORAGE HANGAR "W"	5298.5'
13A	MAINTENANCE HANGAR "H"	5313'
13B	MAINTENANCE/EXECUTIVE HANGAR "B4"	5306'
13C	MAINTENANCE HANGAR	5304'
14A	PRIVATE HANGAR	5295.5'
14B	PRIVATE HANGAR	5300'
16	AIRPORT MANAGEMENT	5298'
17	LARGE EXECUTIVE HANGAR "E"	5312'
21	AIRCRAFT SALES OFFICE	5301'
22	AUTOMATED WEATHER OBSERVATION STATION (AWOS)	
23	ELECTRICAL VAULT	5293'
24	COMMUNICATIONS EQUIP. BLDG./TOWER	5295'
F1	FUTURE LARGE EXECUTIVE HANGAR	
F2	FUTURE STORAGE HANGAR	
F3	FUTURE T-HANGAR	
F4	FUTURE LARGE EXECUTIVE HANGAR	

ALL BUILDINGS MEET LATERAL CLEARANCE STANDARDS

RUNWAY DATA

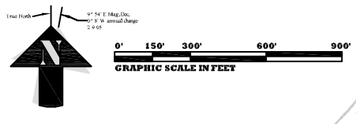
ITEM	RUNWAY 8/26 EXISTING	RUNWAY 8/26 FUTURE	RUNWAY 8G/26G EXISTING	RUNWAY 8G/26G FUTURE
APPROACH VISIBILITY MINIMUMS	VISUAL/VISUAL	VISUAL/NON-PREC.	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	20:1/20:1	20:1/34:1	20:1/20:1	SAME
FAR PART 77 CATEGORY	VISUAL-B	VISUAL-B/NP-C	VISUAL A	SAME
RUNWAY WIDTH AND LENGTH	75' X 4,100'	SAME	25' X 4,100'	SAME
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT & TURF	SAME
PAVEMENT STRENGTH (IN 1000 LBS.)	16-SW, 30-DW	SAME	NA	SAME
RUNWAY LIGHTING	MIRL	SAME	NONE	SAME
RUNWAY MARKING	BASIC/BASIC	NPI/BASIC	NONE	SAME
PERCENT GRADIENT	0.22%	SAME	0.22%	SAME
MAXIMUM GRADE WITHIN R/W LENGTH	0.48%	SAME	0.48%	SAME
LINE-OF-SIGHT REQUIREMENTS	MEETS CRITERIA	SAME	MEETS CRITERIA	SAME
VISUAL APPROACH AIDS (LIGHTING)	VASI	VASI/PAPI	NONE	SAME
INSTRUMENT APPROACH AIDS	NONE	GPS	NONE	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME	A-I	SAME
CRITICAL AIRCRAFT	BEECH SUPER KINGAIR B200	SAME	EIRIAVION PIK-20	SAME
RUNWAY SAFETY AREA WIDTH	150'	SAME	150'	SAME
R/W SAFETY AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBJECT FREE AREA WIDTH	500'	SAME	500'	SAME
R/W OBJECT FREE AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	400'	250'	400'
R/W OBSTACLE FREE ZONE LENGTH BEYOND R/W END	200'/200'	SAME	200'/200'	SAME
RUNWAY END ELEVATIONS	5287.0'/5274.8'	SAME	5287.0'/5274.8'	SAME
RUNWAY END COORDINATES RW 8	N 40°02'20.79" W 105°14'00.37"	SAME	N 40°02'22.70" W 105°14'00.09"	SAME
RUNWAY END COORDINATES RW 26	N 40°02'20.79" W 105°13'07.85"		N 40°02'22.77" W 105°13'07.37"	
DISPLACED THRESHOLD COORDINATES RW 8	N 40°02'20.79" W 105°13'56.51"	SAME	NA	NA
DISPLACED THRESHOLD COORDINATES RW 26	NA	NA		
RUNWAY DISPLACED THRESHOLD ELEVATION	5287.2'/NA	SAME	NA/NA	SAME
RUNWAY TOUCHDOWN ZONE ELEVATION	5288.0'/5287.9'	SAME	5288.0'/5287.9'	SAME
RUNWAY HIGHPOINT	5288.0'	SAME	5288.0'	SAME
RUNWAY LOWPOINT	5274.8'	SAME	5274.8'	SAME

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

REVISIONS

NO.	DESCRIPTION	DATE



Boulder Municipal Airport
Airport Master Plan Update

Figure E1

Airport Layout Drawing

DATE
December 2006

hand, a pavement section with a PCI value ranging from 75 to 90 is a prime candidate for preventative maintenance techniques such as crack sealing and patching.

The pavement condition index and associated pavement rating for Boulder Municipal Airport in 2003 is presented in Appendix One of this document. The generalized findings of the pavement evaluation identified a Recommended Work Plan consisting of asphalt overlay projects for the parallel taxiway system and general aviation ramp.

Airport Reference Code (ARC) Dimensional Criteria. Maintain existing ARC B-II design standards.

Instrument Approach Criteria. The existing Runway 26 visual approach will be shown to be upgraded to a straight-in GPS Area Navigation (RNAV) procedure providing LNAV/VNAV visibility minimums of 1-mile. As identified previously in the *Capacity Analysis and Facility Requirements* chapter, these specified instrument approach minimums could improve access to the Airport by property equipped aircraft by as much as 3.8% of the time annually. If it's later determined that the straight-in GPS RNAV procedure is not feasible, Airport Management has requested that a circling VOR approach be developed to Runway 26. In addition, the existing Runway 8 visual approach is to be maintained.

Runway Protection Zone (RPZ). Both the existing Runway 8 and Runway 26 approach RPZ dimensions (i.e., 500' x 700' x 1,000') are to be maintained. In addition, the existing Runway 26 departure RPZ, which is also dimensioned at 500' x 700' x 1,000', will be maintained due to the continued application of declared distances standards.

Runway Lighting. The runway's existing medium intensity runway lights (MIRLs) are to be maintained, as well as the existing Runway 26 VASI. In addition, a VASI is recommended for installation to Runway 8. As noted in previous chapters, Runway End Identifier Lights (REILs) had been recommended for installation to each runway end, contingent upon the findings of a light emission study to determine compliance with the City of Boulder's existing lighting ordinance. It should be noted that the City of Boulder has elected not to install REILs at the Airport. In addition, an approach lighting system will not be required at the Airport based upon the proposed 1-mile approach visibility minimums for Runway 26).

[12] Current airport leases specify that the ownership of new buildings or hangars constructed on the Airport must transfer to the City of Boulder upon their completion. A more typical arrangement is for private developers to retain ownership of the hangar for the term of the lease (e.g., 20 to 30 years), with the leasehold improvements becoming the property of the Lessor (i.e., the City of Boulder) at the end of the lease term, at the discretion of the Lessor. It should also be noted that to increase the number of years for the term of the lease, the language in the City Charter would need to be changed, which requires voter approval from COB voters.

Runway 8/26 (Glider Runway)

Dimensions. The glider runway is to be maintained at its current dimensions (i.e., 25' x 4,100') and existing centerline separation of 220 feet from Runway 8/26. Based upon initial FAA review, it has been determined that the existing glider runway can be maintained as a non-federal installation, reflecting non-standard FAA design criteria.

Pavement. In conjunction with future maintenance and reconstruction projects, it is recommended that the glider runway's existing chip and seal surface be maintained. There is no specified gross weight bearing capacity for this runway.

Airport Reference Code (ARC) Dimensional Criteria. The runway is defined as a non-federal installation reflecting non-standard design criteria. Therefore, no ARC design standards are specified.

Instrument Approach Criteria. The runway's existing visual approaches to each end are to be maintained.

Runway Protection Zone (RPZ). The size of the existing RPZs are to be maintained at 250' x 450' x 1,000' for each runway end.

Runway Lighting. There are no runway lights or approach lighting systems recommended for installation to this runway facility.

Taxiway System

The recommendations for the taxiway system are presented in the following text.

Taxiway "A", and Connectors

Airplane Design Group (ADG)/Dimensions. The existing ADG II standards for the taxiway are to be maintained through the planning period of this document. These criteria specify maintenance of the existing 35-foot taxiway width. In addition, a modification of standards has been authorized by the FAA for the existing non-standard 200-foot centerline separation from the runway. The specified Airplane Design Group (ADG) II centerline separation dimension is 240 feet.

Pavement. Maintain existing gross weight bearing capacity commensurate with Runway 8/26 (i.e., 16,000 pounds single wheel; 30,000 pounds dual-wheel gear configuration).

Taxiway Lighting. Maintain existing Medium Intensity Taxiway Lights (MITLs) to serve the taxiway system.

Proposed New Taxiway

Due to the location of the existing exit taxiways serving Runway 8/26 at Boulder Municipal Airport, the number of available exit taxiways for use in the capacity calculation was determined to be adequate. However, the current Airport Layout Plan (ALP) identifies the addition of an angled exit taxiway to connect with the Taxiway "A-3" connector. According to the exit taxiway cumulative utilization percentages presented in AC 150/5300-13, approximately 100 percent of the Category A aircraft landings on Runway 26 could utilize a new right or acute angled taxiway at this location during wet pavement conditions. This compares to a taxiway utilization rate of approximately 60 percent for the existing Taxiway "A-4" connector. Therefore, it is recommended that the future Taxiway "A-3" connector continue to be shown on the ALP as a future project to reduce runway occupancy times in consideration of Runway 26 landings.

Proposed New Taxilane

A new 35-foot wide taxilane is proposed to be constructed near the east end of the general aviation ramp to serve an expanded T-hangar and executive hangar area when this development occurs. This taxilane is to be designed in accordance with Airplane Design Group (ADG) II criteria, and the recommended gross weight bearing capacity is to be commensurate with Runway 8/26. There is no future lighting proposed for this taxilane system; however, edge reflectors are to be installed. In addition, the existing taxilane located at the west end of the general aviation ramp is to be repositioned to the west to comply with ADG II criteria. This taxilane modification will necessitate the widening of the taxilane by approximately 17 feet along the western edge of the pavement.

Property/Easement Acquisition

The Airport sponsor (i.e., the City of Boulder) presently owns the property associated with the existing Runway 26 and Runway 26G RPZs. In addition, the City controls a portion of the Runway 8 approach RPZ and Runway 26 departure RPZ with an existing avigation easement. It is recommended that the balance of the Runway 8 and 08G approach RPZs, including the balance of the Runway 26 departure RPZ, also be acquired in easement. Therefore, the following property acquisition recommendations are presented:

Runway 8 Approach RPZ & Runway 26 Departure RPZ (Existing).

- Easement Acquisition: 4.0 acres.

Runway 8G Approach RPZ and Adjacent Approach Surface (Future).

- Easement Acquisition: 1.5 acres.

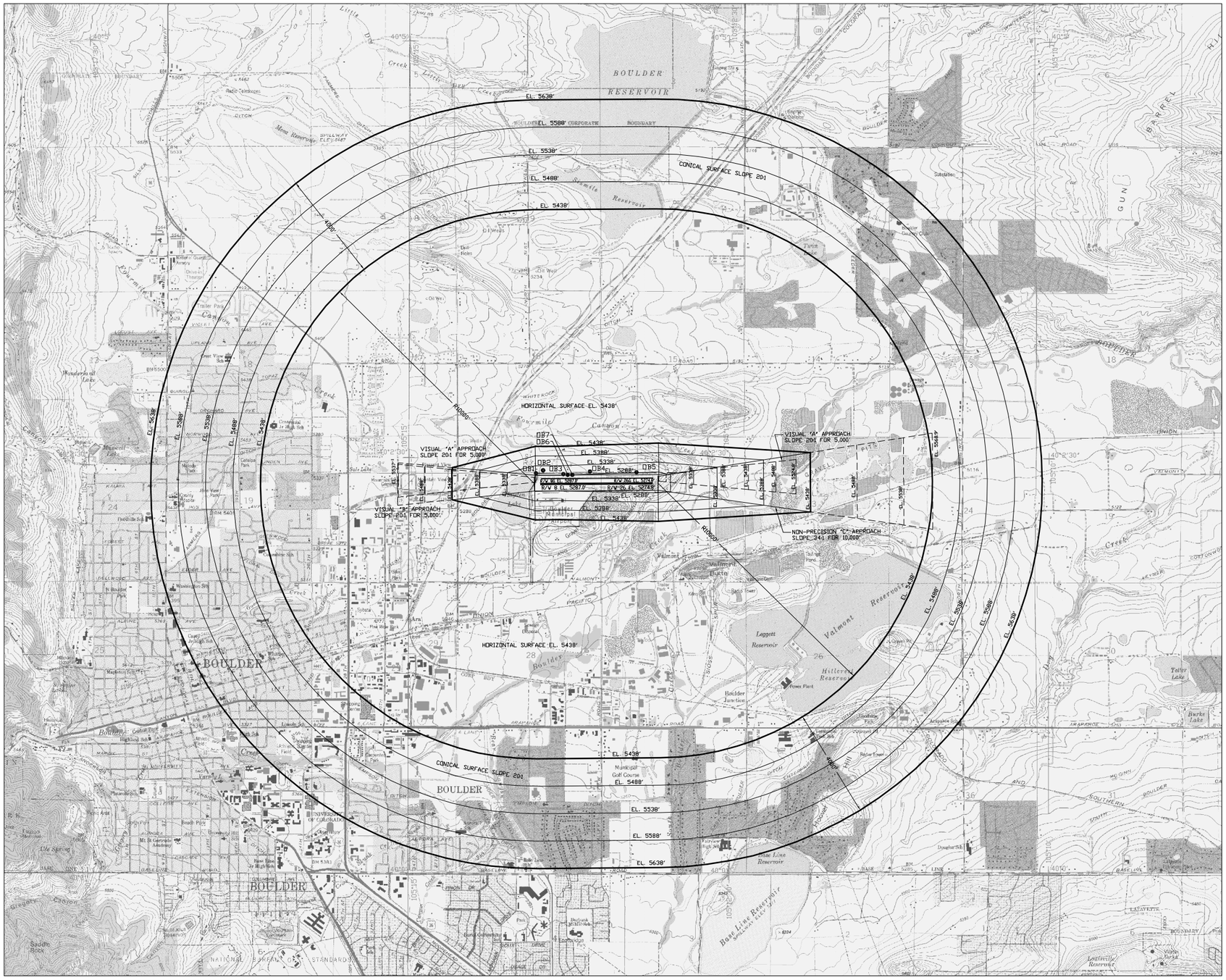
Landside Improvements

The ALP also identifies various areas for landside facilities. It is recognized that the development of these areas will be demand driven; therefore, where appropriate, options have been provided for the type of facilities that is likely to develop within a certain area. Illustrations and accompanying discussion of the proposed landside development are detailed in the *LANDSIDE AREA PLAN* section described in the following pages.

Airspace Plan

The Airspace Plan for the Airport is based upon Federal Aviation Regulations (FAR) Part 77, Objects Affecting Navigable Airspace. In order to protect the Airport's airspace and approaches from hazards that could affect the safe and efficient operation of aircraft, federal criteria contained in the FAR Part 77 document have been established to provide guidance in controlling the height of objects in the vicinity of the Airport. FAR Part 77 criteria specify a set of imaginary surfaces which, when penetrated, designate an object as being an obstruction.

The Airspace Plan, which is illustrated in the following figures, provides plan and profile views that depict these criteria as they specifically relate to Boulder Municipal Airport. The plan is based on the ultimate planned runway lengths, along with the ultimate planned approaches to each runway end. Therefore, it is based on larger-than-utility Airport criteria with a non-precision instrument approach with vertical guidance (NPV) to Runway 26 and visual approaches to Runways 08, 08G, and 26G. It should also be noted that due to the facility's existing visual approaches, an Airport Obstruction Chart has not been developed for Boulder Municipal Airport. Therefore, the obstruction data that has been documented for this planning effort is only generalized, and does not reflect an official survey evaluation.



OBSTRUCTIONS

NO.	DESCRIPTION	ELEVATION	PENETRATION	SURFACE	DISPOSITION
OB1	ROADWAY	5280'	5'	TRANS.	NONE
OB2	TREE *	5330'	35'	TRANS.	NONE
OB3	POWER POLE *	5305'	35'	TRANS.	LIGHTED
OB4	POWER LINE	5305'	33'	TRANS.	LIGHTED
OB5	ROADWAY	5275'	12'	TRANS.	NONE
OB6	FENCE *	5288'	3'	PRIMARY	NONE
OB7	LIGHT POLE *	5308'	18'	PRIMARY	LIGHTED

NOTE: OBSTRUCTIONS DETERMINED FROM AERIAL PHOTOGRAPHY AND USGS QUADRANGLE MAPS. OBSTRUCTION SURVEY WILL BE REQUIED TO DETERMINE ACCURATE LOCATION, ELEVATION, AND DISPOSITION.

* MULTIPLE LOCATIONS PARALLEL TO RUNWAY 8G/26G

REFER TO INNER APPROACH DRAWINGS FOR CLOSE IN OBSTRUCTIONS

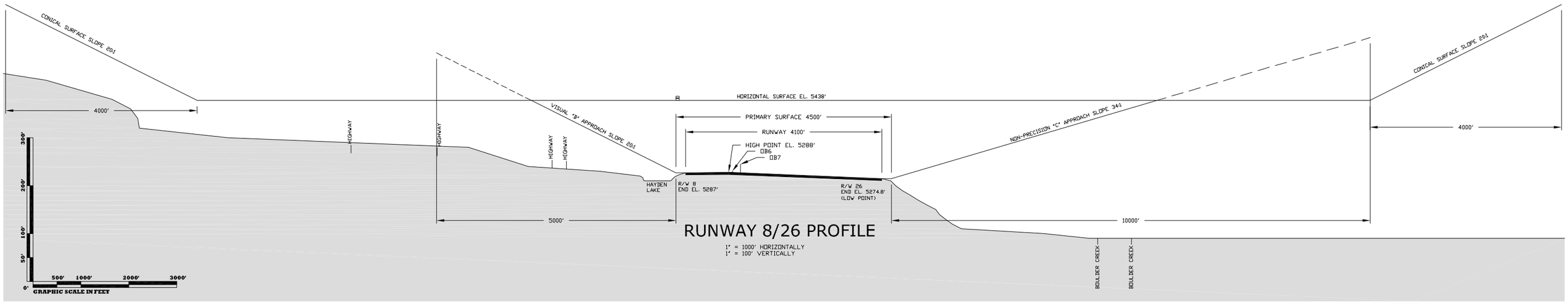
NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. THERE IS NO OBSTRUCTION CHART FOR THIS AIRPORT.
3. TOPOGRAPHIC DATA WAS OBTAINED FROM USGS 7.5 MINUTE SURVEY MAPS, "LAFAYETTE", "LOUISVILLE", "ELDORADO SPRINGS", "ERIE", "NIWOT", AND "BOULDER", COLORADO.
4. THE CITY OF BOULDER HAS ESTABLISHED AN AIRPORT INFLUENCE OVERLAY ZONE AND ASSOCIATED REGULATIONS THAT GOVERN THE TYPES OF DEVELOPMENT WITHIN THE AREA SURROUNDING THE AIRPORT TO ENSURE COMPATIBLE LAND USES IN CLOSE PROXIMITY TO THE AIRPORT.

True North — 9° 54' E Mag. Dec. — 0° 6' W annual change — 2005

0' 1000' 2000' 4000' 6000'

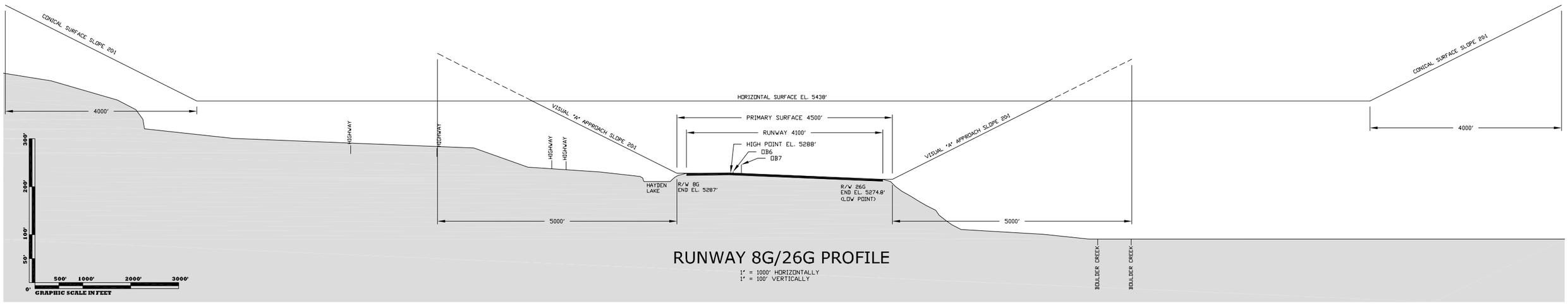
GRAPHIC SCALE IN FEET

Boulder Municipal Airport
Airport Master Plan Update
Figure E2
Airport Airspace Drawing
Plan View Conical Surface



RUNWAY 8/26 PROFILE

1" = 1000' HORIZONTALLY
1" = 100' VERTICALLY



RUNWAY 8G/26G PROFILE

1" = 1000' HORIZONTALLY
1" = 100' VERTICALLY

NOTES:
1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. THERE IS NO OBSTRUCTION CHART FOR THIS AIRPORT.
3. TOPOGRAPHIC DATA WAS OBTAINED FROM USGS 7.5 MINUTE SURVEY MAPS, "LAFAYETTE", "LOUISVILLE", "ELDORADO SPRINGS", "ERIE", "NIWOT", AND "BOULDER", COLORADO.
4. TERRAIN PROFILE REPRESENTS THE HIGHEST POINT ACROSS THE WIDTH AND ALONG THE LENGHT OF THE APPROACH AND PRIMARY SURFACES.

OBSTRUCTIONS

NO.	DESCRIPTION	ELEVATION	PENETRATION	SURFACE	DISPOSITION
OB6	FENCE *	5288'	3'	PRIMARY	NONE
OB7	LIGHT POLE *	5308'	18'	PRIMARY	LIGHTED

NOTE: OBSTRUCTIONS DETERMINED FROM AERIAL PHOTOGRAPHY AND USGS QUADRANGLE MAPS. OBSTRUCTION SURVEY WILL BE REQUIED TO DETERMINE ACCURATE LOCATION, ELEVATION, AND DISPOSITION.

* MULTIPLE LOCATIONS PARALLEL TO RUNWAY 8G/26G

REFER TO INNER APPROACH DRAWINGS FOR CLOSE IN OBSTRUCTIONS

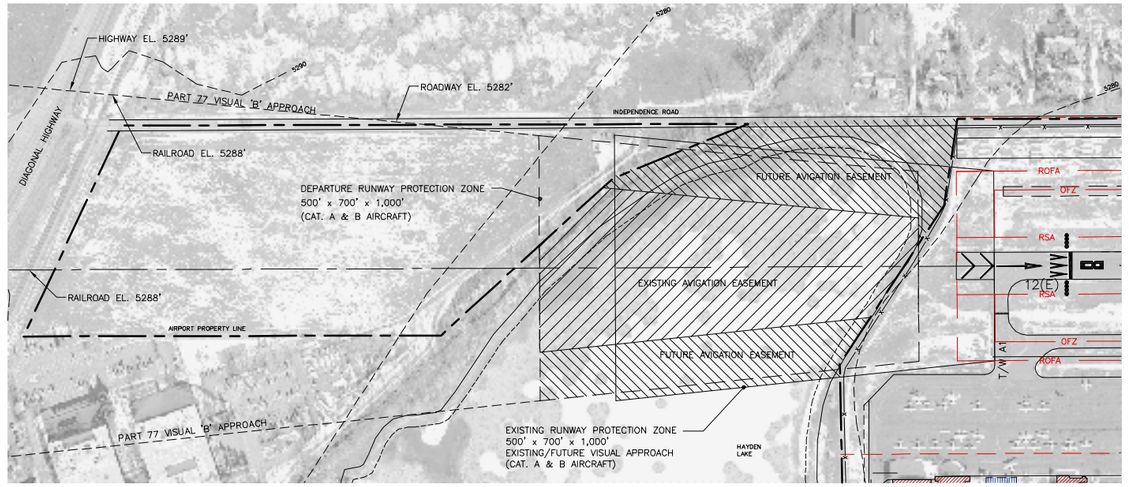
Boulder Municipal Airport
Airport Master Plan Update
Figure E3
Airport Airspace Profiles
Runway Profile Views

Inner Portion of the Approach Surface Plans

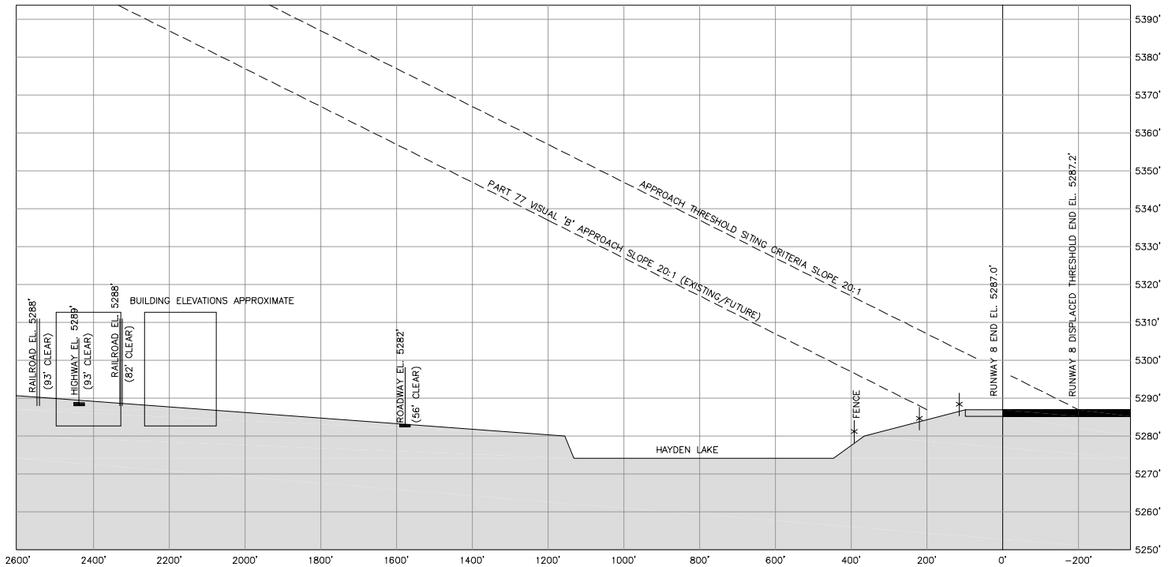
To provide a more detailed view of the inner portions of the Part 77 imaginary approach surfaces and the Runway Protection Zones (RPZs), the following drawings are provided. An RPZ is trapezoidal in shape, centered about the extended runway centerline, and typically begins 200 feet beyond the end of the runway. The RPZs are safety areas within which it is desirable to clear all objects (although some uses are normally acceptable). The size of the RPZ is contingent upon the approach category of the design aircraft and the visibility minimums associated with the type of approach (visual and not lower than one mile, not lower than three-quarters of a mile, and lower than three-quarters of a mile). As noted in previous sections, the existing Runway 8 and Runway 26 approach RPZs and Runway 26 departure RPZ dimensions (i.e., 500' x 700' x 1,000') are to be maintained. In addition, the existing Runway 8G and Runway 26G RPZ dimensions (i.e., 250' x 450' x 1,000') are to be maintained to comply with the specified RPZ design standards for the visual approaches on small aircraft-only runways.

Generally speaking, the Airport sponsor, as either fee-simple acquisition or as an easement, should control the RPZs. If an easement is purchased, it is a purchase of the air rights/right of flight over the actual ground.

The Inner Portion of the Approach Surface Drawings, which are depicted in Figures E4 through E6, provides large-scale RUNWAY 8drawings with both plan and profile delineations. They are intended to facilitate identification of the roadways, utility lines, railroads, structures, and other possible obstructions that may lie within the confines of the inner approach surface area associated with each runway end. The illustrations also depict the approach clearance requirements specified by threshold siting criteria. As with the *Airspace Plan*, the *Inner Portion of the Approach Surface Drawings* is based on the ultimate planned runway length, along with the ultimate planned approach to each runway end.



RUNWAY 8 PLAN
1" = 200'



RUNWAY 8 PROFILE
1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

AIRPORT DATA

	EXISTING	*FUTURE*
AIRPORT ELEVATION (AMSL)	5288.0'	*SAME*
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	*SAME* *SAME*
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	*SAME*
COMBINED WIND COVERAGE VFR/IFR(%) 13kt	94.64/91.90	*SAME*
AIRPORT REFERENCE CODE (ARC)	B-II	*SAME*
TAXIWAY LIGHTING	MITL	*SAME*
TAXIWAY STRIPING	CENTERLINE	*SAME*
NPIAS SERVICE LEVEL	GA	*SAME*

DECLARED DISTANCES

	EXISTING	*FUTURE*
RUNWAY 8/26		
TAKE OFF RUN AVAILABLE	4,100'/4,100'	*SAME*
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	*SAME*
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/3,900'	*SAME*
LANDING DISTANCE AVAILABLE	3,900'/3,900'	*SAME*
RUNWAY 8G/26G	EXISTING	*FUTURE*
TAKE OFF RUN AVAILABLE	4,100'/4,100'	*SAME*
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	*SAME*
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/4,100'	*SAME*
LANDING DISTANCE AVAILABLE	4,100'/4,100'	*SAME*

RUNWAY DATA

ITEM	RUNWAY 8/26 EXISTING	*FUTURE*	RUNWAY 8G/26G EXISTING	*FUTURE*
APPROACH VISIBILITY MINIMUMS	VISUAL/VISUAL	*VISUAL/NON-PREC.*	VISUAL/VISUAL	*SAME*
PART 77 APPROACH SURFACES	20:1/20:1	*20:1/34:1*	20:1/20:1	*SAME*
FAR PART 77 CATEGORY	VISUAL-B	*VISUAL-B/NP-C*	VISUAL A	*SAME*
RUNWAY WIDTH AND LENGTH	75' X 4,100'	*SAME*	25' X 4,100'	*SAME*
PAVEMENT TYPE	ASPHALT	*SAME*	ASPHALT & TURF	*SAME*
PAVEMENT STRENGTH (IN 1000 LBS.)	16-SW, 30-DW	*SAME*	NA	*SAME*
RUNWAY LIGHTING	MIRL	*SAME*	NONE	*SAME*
RUNWAY MARKING	BASIC/BASIC	*NPI/BASIC*	NONE	*SAME*
PERCENT GRADIENT	0.22%	*SAME*	0.22%	*SAME*
MAXIMUM GRADE WITHIN R/W LENGTH	0.48%	*SAME*	0.48%	*SAME*
LINE-OF-SIGHT REQUIREMENTS	MEETS CRITERIA	*SAME*	MEETS CRITERIA	*SAME*
VISUAL APPROACH AIDS (LIGHTING)	VASI	*VASI,PAPI*	NONE	*SAME*
INSTRUMENT APPROACH AIDS	NONE	*GPS*	NONE	*SAME*
AIRPORT REFERENCE CODE (ARC)	B-II	*SAME*	A-I	*SAME*
CRITICAL AIRCRAFT	BEECH SUPER KINGAIR B200	*SAME*	EIRIAVION PIK-20	*SAME*
RUNWAY SAFETY AREA WIDTH	150'	*SAME*	150'	*SAME*
R/W SAFETY AREA LENGTH BEYOND R/W END	300'/300'	*SAME*	300'/300'	*SAME*
RUNWAY OBJECT FREE AREA WIDTH	500'	*SAME*	500'	*SAME*
R/W OBJECT FREE AREA LENGTH BEYOND R/W END	300'/300'	*SAME*	300'/300'	*SAME*
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	*400'*	250'	*400'*
R/W OBSTACLE FREE ZONE LENGTH BEYOND R/W END	200'/200'	*SAME*	200'/200'	*SAME*
RUNWAY END ELEVATIONS	5287.0'/5274.8'	*SAME*	5287.0'/5274.8'	*SAME*
RUNWAY END COORDINATES RW 8	N 40°02'20.79" W 105°14'00.37"	*SAME*	N 40°02'22.70" W 105°14'00.09"	*SAME*
RW 26	N 40°02'20.79" W 105°13'07.65"		N 40°02'22.77" W 105°13'07.37"	
DISPLACED THRESHOLD COORDINATES RW 8	N 40°02'20.79" W 105°13'56.51"	*SAME*	NA	NA
RW 26	NA	NA		
RUNWAY DISPLACED THRESHOLD ELEVATION	5287.2'/NA	*SAME*	NA/NA	*SAME*
RUNWAY TOUCHDOWN ZONE ELEVATION	5288.0'/5287.9'	*SAME*	5288.0'/5287.9'	*SAME*
RUNWAY HIGHPOINT	5288.0'	*SAME*	5288.0'	*SAME*
RUNWAY LOWPOINT	5274.8'	*SAME*	5274.8'	*SAME*

LAYOUT PLAN LEGEND

	EXISTING	*FUTURE*
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	*BRL*
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

REVISIONS

NO.	DESCRIPTION	DATE

NOTES

1. THIS DRAWING REFLECTS PLANNING STANDARDS SPECIFIC TO THIS AIRPORT, AND IS NOT A PRODUCT OF DETAILED ENGINEERING DESIGN ANALYSIS. IT IS NOT INTENDED TO BE USED FOR CONSTRUCTION DOCUMENTATION OR NAVIGATION.
2. ALP BASE INFORMATION TAKEN FROM "AIRPORT LAYOUT DRAWING", BY WASHINGTON INFRASTRUCTURE SERVICES, INC., AUGUST 2001.
3. THERE ARE NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
4. AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
6. ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

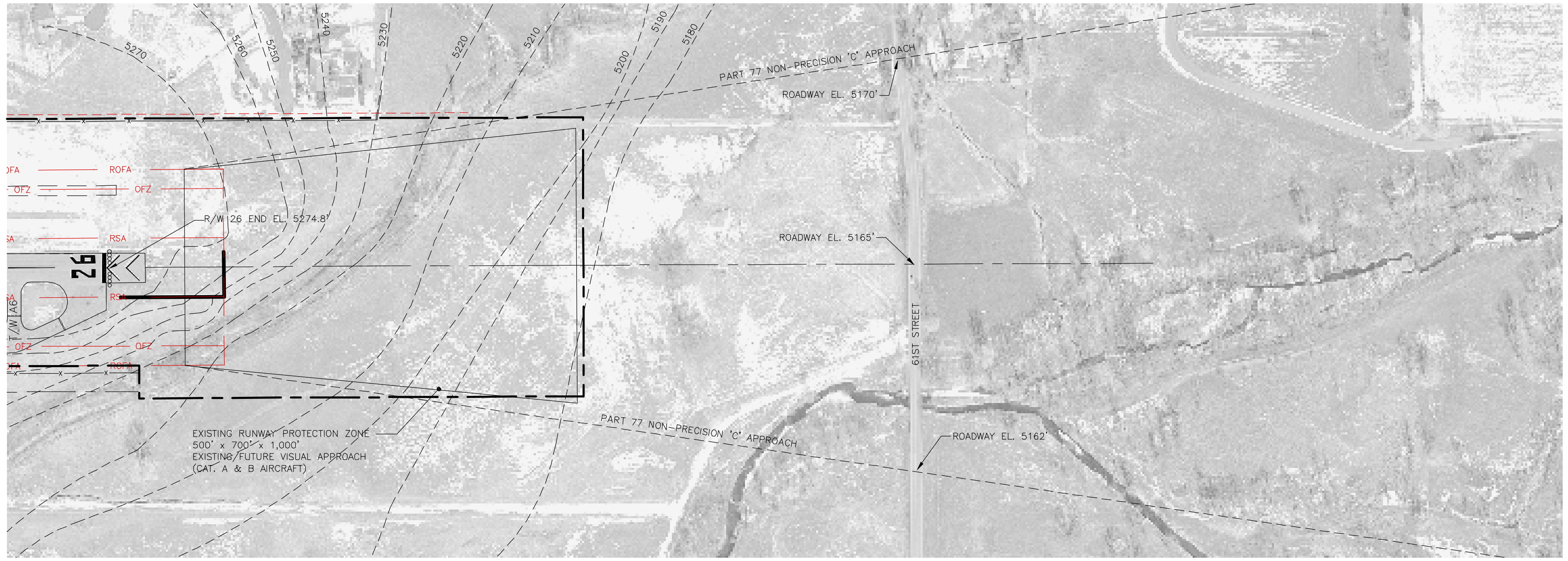
True North — 9° 54' E Mag.Dec. — 0° 8' W annual change — 2-9-05

0' 100' 200' 400' 600'
GRAPHIC SCALE IN FEET

Boulder Municipal Airport
Airport Master Plan Update
Figure E4
Inner Approach Surface Drawing
Runway 8 Plan & Profile

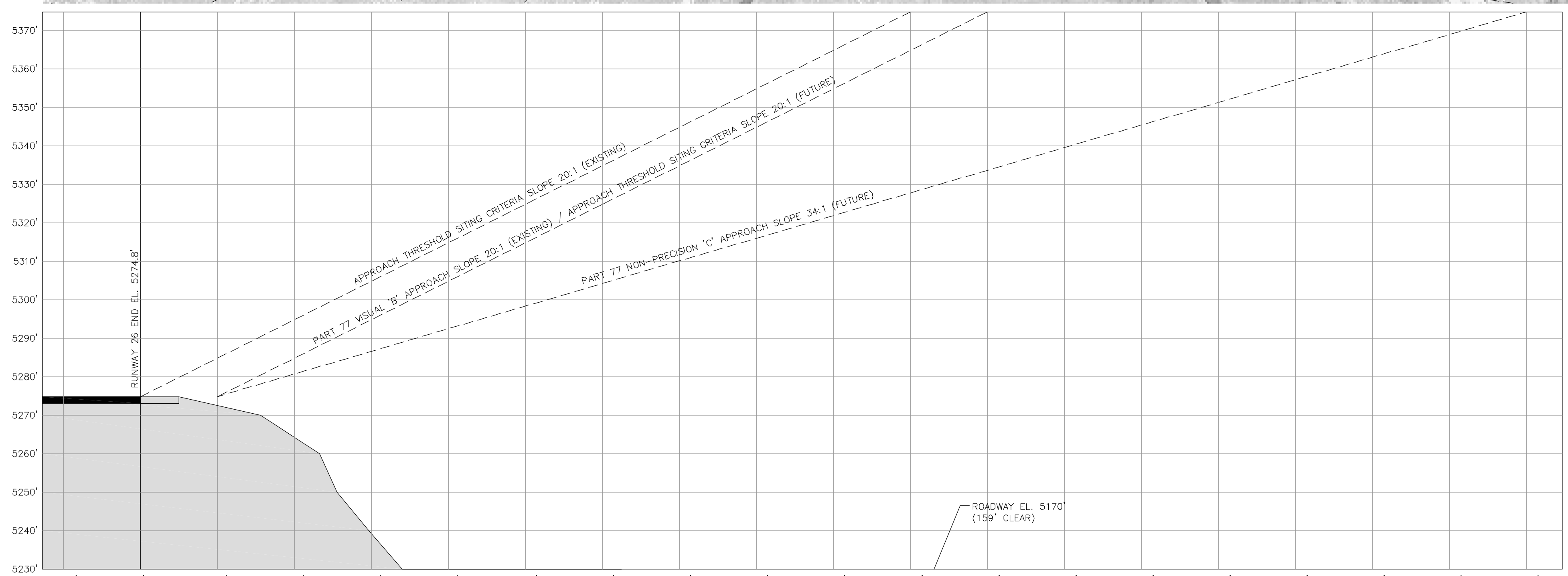
RUNWAY 26 PLAN

1" = 200'



RUNWAY 26 PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY



NOTES

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5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
6. ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	5288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	SAME SAME
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	SAME
COMBINED WIND COVERAGE VFR/IFR(%) 13kt	94.64/91.90	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
TAXIWAY LIGHTING	MITL	SAME
TAXIWAY STRIPING	CENTERLINE	SAME
NPIAS SERVICE LEVEL	GA	SAME

DECLARED DISTANCES

RUNWAY 8/26	EXISTING	FUTURE
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/3,900'	SAME
LANDING DISTANCE AVAILABLE	3,900'/3,900'	SAME
RUNWAY 8G/26G	**EXISTING**	**FUTURE**
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/4,100'	SAME
LANDING DISTANCE AVAILABLE	4,100'/4,100'	SAME

RUNWAY DATA

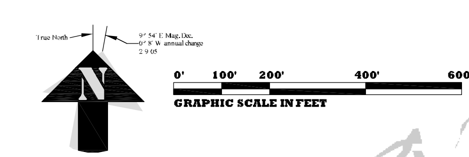
ITEM	RUNWAY 8/26		RUNWAY 8G/26G	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	VISUAL/VISUAL	VISUAL/NON-PREC.	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	20:1/20:1	20:1/34:1	20:1/20:1	SAME
FAR PART 77 CATEGORY	VISUAL-B	VISUAL-B/NP-C	VISUAL A	SAME
RUNWAY WIDTH AND LENGTH	75' X 4,100'	SAME	25' X 4,100'	SAME
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT & TURF	SAME
PAVEMENT STRENGTH (IN 1000 LBS.)	16-SW, 30-DW	SAME	NA	SAME
RUNWAY LIGHTING	MIRL	SAME	NONE	SAME
RUNWAY MARKING	BASIC/BASIC	NPI/BASIC	NONE	SAME
PERCENT GRADIENT	0.22%	SAME	0.22%	SAME
MAXIMUM GRADE WITHIN R/W LENGTH	0.48%	SAME	0.48%	SAME
LINE-OF-SIGHT REQUIREMENTS	MEETS CRITERIA	SAME	MEETS CRITERIA	SAME
VISUAL APPROACH AIDS (LIGHTING)	VASI	VASI,PAPI	NONE	SAME
INSTRUMENT APPROACH AIDS	NONE	GPS	NONE	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME	A-I	SAME
CRITICAL AIRCRAFT	BEECH SUPER KINGAIR B200	SAME	EIRIAVION PIK-20	SAME
RUNWAY SAFETY AREA WIDTH	150'	SAME	150'	SAME
R/W SAFETY AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBJECT FREE AREA WIDTH	500'	SAME	500'	SAME
R/W OBJECT FREE AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	400'	250'	400'
R/W OBSTACLE FREE ZONE LENGTH BEYOND R/W END	200'/200'	SAME	200'/200'	SAME
RUNWAY END ELEVATIONS	5287.0'/5274.8'	SAME	5287.0'/5274.8'	SAME
RUNWAY END COORDINATES RW 8 / RW 26	N 40°02'20.79" W 105°14'00.37" N 40°02'20.79" W 105°13'07.65"	SAME	N 40°02'22.70" W 105°14'00.09" N 40°02'22.77" W 105°13'07.37"	SAME
DISPLACED THRESHOLD COORDINATES RW 8 / RW 26	N 40°02'20.79" W 105°13'56.51" NA	SAME NA	NA	NA
RUNWAY DISPLACED THRESHOLD ELEVATION	5287.2'/NA	SAME	NA/NA	SAME
RUNWAY TOUCHDOWN ZONE ELEVATION	5288.0'/5287.9'	SAME	5288.0'/5287.9'	SAME
RUNWAY HIGHPOINT	5288.0'	SAME	5288.0'	SAME
RUNWAY LOWPOINT	5274.8'	SAME	5274.8'	SAME

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE		X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	F	F
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

REVISIONS

NO.	DESCRIPTION	DATE



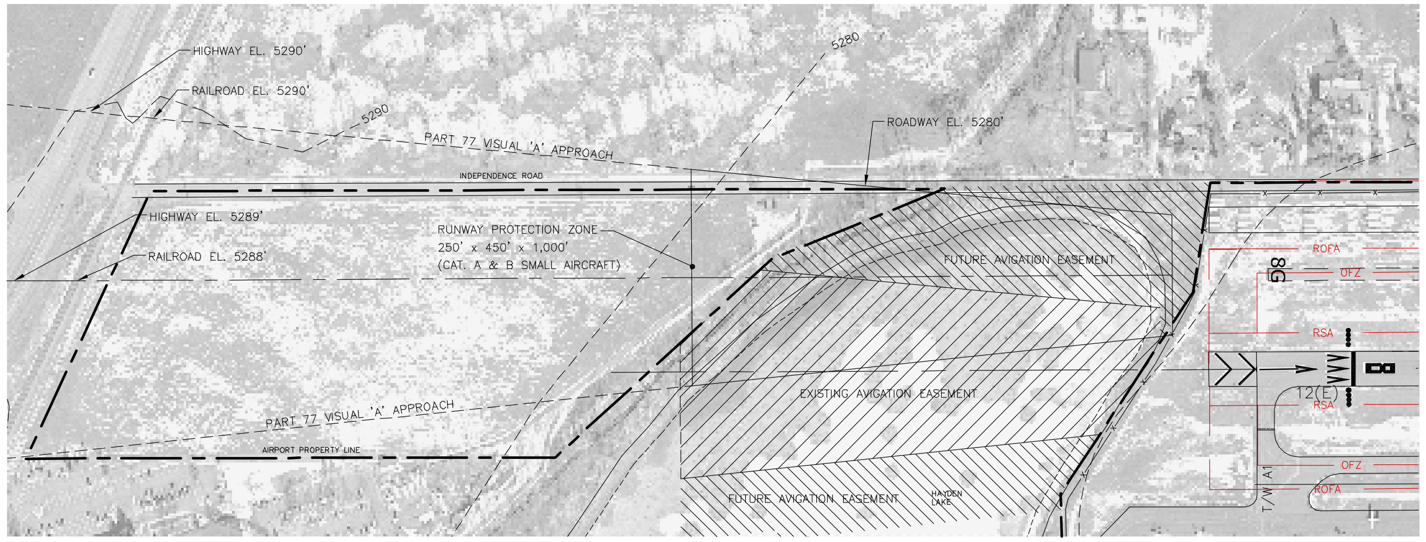
Boulder Municipal Airport

Airport Master Plan Update

Figure E5

Inner Approach Surface Drawing

Runway 26 Plan & Profile

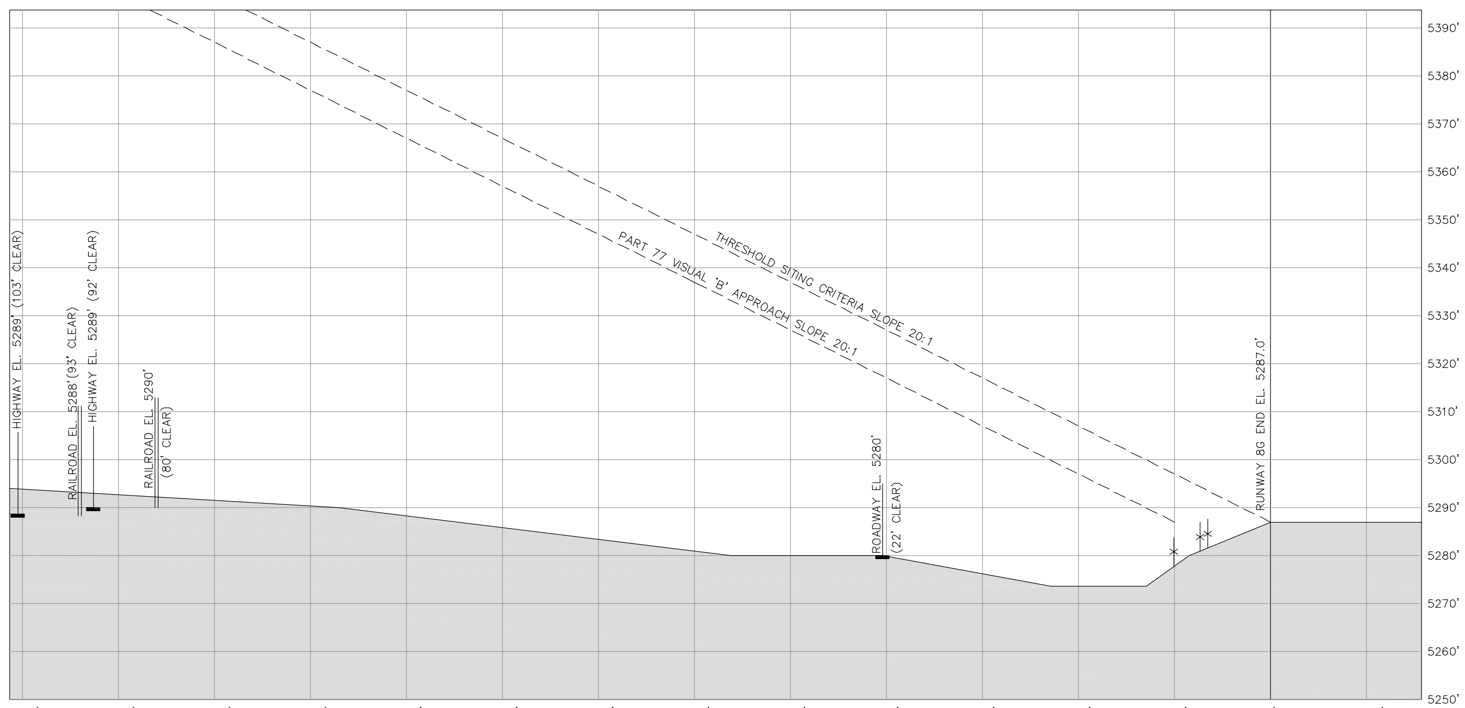


RUNWAY 8G PLAN

1" = 200'

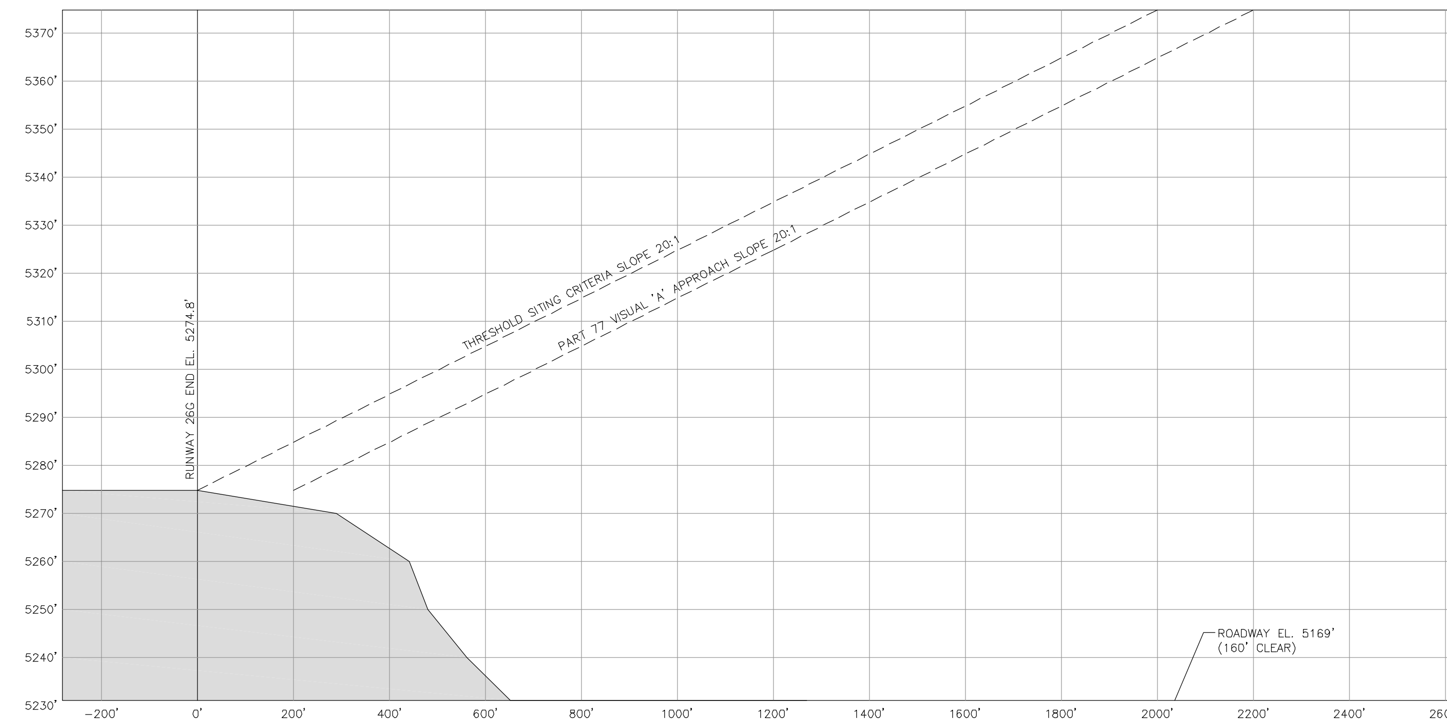
RUNWAY 26G PLAN

1" = 200'



RUNWAY 8G PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY



RUNWAY 26G PROFILE

1" = 200' HORIZONTALLY
1" = 20' VERTICALLY

NOTES

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3. THERE ARE NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
4. AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
6. ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	5288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	SAME SAME
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	SAME
COMBINED WIND COVERAGE VFR/IFR(%) 13kt	94.64/91.90	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
TAXIWAY LIGHTING	MITL	SAME
TAXIWAY STRIPING	CENTERLINE	SAME
NPIAS SERVICE LEVEL	GA	SAME

DECLARED DISTANCES

RUNWAY 8/26	EXISTING	FUTURE
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/3,900'	SAME
LANDING DISTANCE AVAILABLE	3,900'/3,900'	SAME
RUNWAY 8G/26G	**EXISTING**	**FUTURE**
TAKE OFF RUN AVAILABLE	4,100'/4,100'	SAME
TAKE OFF DISTANCE AVAILABLE	4,100'/4,100'	SAME
ACCELERATE STOP DISTANCE AVAILABLE	4,100'/4,100'	SAME
LANDING DISTANCE AVAILABLE	4,100'/4,100'	SAME

RUNWAY DATA

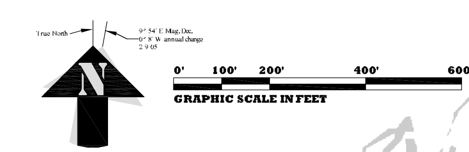
ITEM	RUNWAY 8/26		RUNWAY 8G/26G	
	EXISTING	FUTURE	EXISTING	FUTURE
APPROACH VISIBILITY MINIMUMS	VISUAL/VISUAL	VISUAL/NON-PREC.	VISUAL/VISUAL	SAME
PART 77 APPROACH SURFACES	20:1/20:1	20:1/34:1	20:1/20:1	SAME
FAR PART 77 CATEGORY	VISUAL-B	VISUAL-B/NP-C	VISUAL A	SAME
RUNWAY WIDTH AND LENGTH	75' X 4,100'	SAME	25' X 4,100'	SAME
PAVEMENT TYPE	ASPHALT	SAME	ASPHALT & TURF	SAME
PAVEMENT STRENGTH (IN 1000 LBS.)	16-SW, 30-DW	SAME	NA	SAME
RUNWAY LIGHTING	MIRL	SAME	NONE	SAME
RUNWAY MARKING	BASIC/BASIC	NPI/BASIC	NONE	SAME
PERCENT GRADIENT	0.22%	SAME	0.22%	SAME
MAXIMUM GRADE WITHIN R/W LENGTH	0.48%	SAME	0.48%	SAME
LINE-OF-SIGHT REQUIREMENTS	MEETS CRITERIA	SAME	MEETS CRITERIA	SAME
VISUAL APPROACH AIDS (LIGHTING)	VASI	VASI,PAPI	NONE	SAME
INSTRUMENT APPROACH AIDS	NONE	GPS	NONE	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME	A-I	SAME
CRITICAL AIRCRAFT	BEECH SUPER KINGAIR B200	SAME	EIRIAVION PIK-20	SAME
RUNWAY SAFETY AREA WIDTH	150'	SAME	150'	SAME
R/W SAFETY AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBJECT FREE AREA WIDTH	500'	SAME	500'	SAME
R/W OBJECT FREE AREA LENGTH BEYOND R/W END	300'/300'	SAME	300'/300'	SAME
RUNWAY OBSTACLE FREE ZONE WIDTH	250'	400'	250'	400'
R/W OBSTACLE FREE ZONE LENGTH BEYOND R/W END	200'/200'	SAME	200'/200'	SAME
RUNWAY END ELEVATIONS	5287.0'/5274.8'	SAME	5287.0'/5274.8'	SAME
RUNWAY END COORDINATES RW 8 RW 26	N 40°02'20.79" W 105°14'00.37" N 40°02'20.79" W 105°13'07.65"	SAME	N 40°02'22.70" W 105°14'00.09" N 40°02'22.77" W 105°13'07.37"	SAME
DISPLACED THRESHOLD COORDINATES RW 8 RW 26	N 40°02'20.79" W 105°13'56.51" NA	SAME NA	NA	NA
RUNWAY DISPLACED THRESHOLD ELEVATION	5287.2'/NA	SAME	NA/NA	SAME
RUNWAY TOUCHDOWN ZONE ELEVATION	5288.0'/5287.9'	SAME	5288.0'/5287.9'	SAME
RUNWAY HIGHPOINT	5288.0'	SAME	5288.0'	SAME
RUNWAY LOWPOINT	5274.8'	SAME	5274.8'	SAME

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	F	F
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

REVISIONS

NO.	DESCRIPTION	DATE



Boulder Municipal Airport
Airport Master Plan Update

Figure E6

Inner Approach Surface Drawing
Runway 8G/26G Plan & Profile

Landside Area Plan

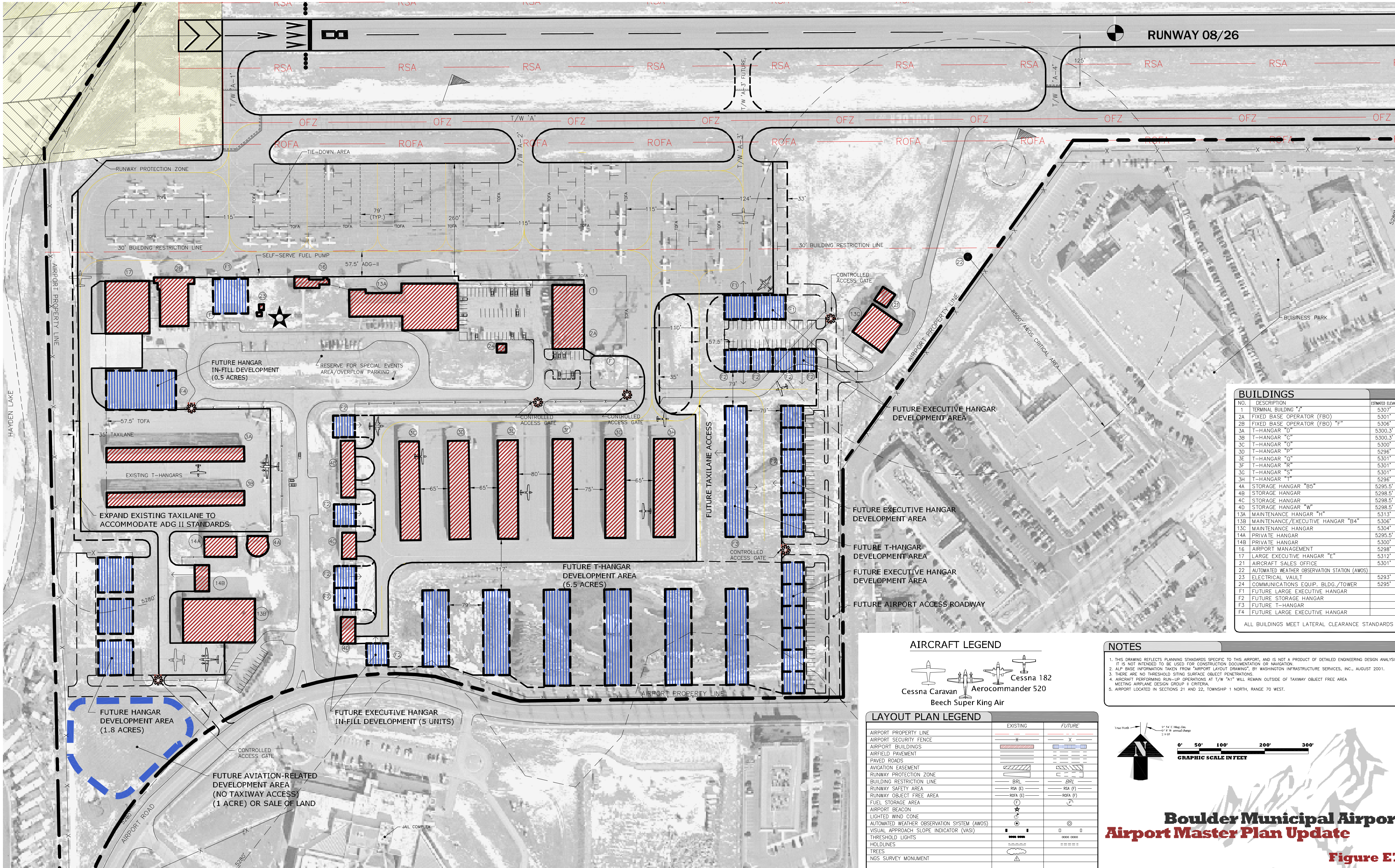
Introduction

With the framework of the Airport's ultimate airside plan and improvements identified, the placement of needed landside facilities can now be analyzed. In general, landside facilities consist of terminal area improvements, aircraft parking aprons, support facilities, hangar areas, and Airport access. The overall objective of landside planning at the Airport is the provision of facilities, which are conveniently located and accessible to the community, and which accommodate the specific requirements of airport users.

Based on the forecast aviation activity levels and resultant facility requirements determination, it is projected that there will be demand for additional general aviation itinerant aircraft apron, aircraft storage facilities, interior taxilanes, and Airport access roadway development. Therefore, various undeveloped parcels of Airport property, including potential reuse development areas, will be evaluated with respect to aviation and aviation-related development capability. These potential areas are presented in the following text. Figure E7, entitled *TERMINAL AREA* PLAN, presents a detailed view of the existing landside development area along the south side of the Airport. This development area was also depicted on the previously presented *AIRPORT LAYOUT PLAN*. It should also be noted that with respect to the construction of new aircraft storage facilities, the actual number, size, and location of these hangars will ultimately depend on specific user needs and financial feasibility.

General Aviation Facilities

The recommended plan for the Airport identifies those areas suitable for the construction of future aircraft storage hangars and related structures intended for general aviation use (e.g., T-hangars, small executive hangars, larger executive/corporate hangar facilities, general aviation apron, and tiedown positions). Again, the identification of these existing and proposed facilities on the Airport Layout Plan is a requirement of the Airport Sponsor grant assurances (i.e., grant assurance #29 entitled *Airport Layout Plan).* In addition, the construction of the proposed taxilane at the east end of the general RUNWAY 8RUNWAY 8aviation ramp will necessitate the relocation or removal of existing tiedown positions on the apron, and it is recommended that each of the Airport's apron tiedown areas be re-evaluated for compliance with the appropriate airplane design group (ADG) criteria. It should also be noted that the actual development of new aircraft storage facilities or access taxiways will be demand driven and follow a detailed market analysis to be conducted be the City of Boulder or a private developer to quantify and document the actual demand and financial feasibility of the project. A brief description of these potential landside planning areas is presented in the following text.



BUILDINGS

NO.	DESCRIPTION	ESTIMATED ELEVATION
1	TERMINAL BUILDING "J"	5307'
2A	FIXED BASE OPERATOR (FBO)	5301'
2B	FIXED BASE OPERATOR (FBO) "F"	5306'
3A	T-HANGAR "D"	5300.3'
3B	T-HANGAR "C"	5300.3'
3C	T-HANGAR "O"	5300'
3D	T-HANGAR "P"	5296'
3E	T-HANGAR "Q"	5301'
3F	T-HANGAR "R"	5301'
3G	T-HANGAR "S"	5301'
3H	T-HANGAR "T"	5296'
4A	STORAGE HANGAR "B5"	5295.5'
4B	STORAGE HANGAR	5298.5'
4C	STORAGE HANGAR	5298.5'
4D	STORAGE HANGAR "W"	5298.5'
13A	MAINTENANCE HANGAR "H"	5313'
13B	MAINTENANCE/EXECUTIVE HANGAR "B4"	5306'
13C	MAINTENANCE HANGAR	5304'
14A	PRIVATE HANGAR	5295.5'
14B	PRIVATE HANGAR	5300'
16	AIRPORT MANAGEMENT	5298'
17	LARGE EXECUTIVE HANGAR "E"	5312'
21	AIRCRAFT SALES OFFICE	5301'
22	AUTOMATED WEATHER OBSERVATION STATION (AWOS)	
23	ELECTRICAL VAULT	5293'
24	COMMUNICATIONS EQUIP. BLDG./TOWER	5295'
F1	FUTURE LARGE EXECUTIVE HANGAR	
F2	FUTURE STORAGE HANGAR	
F3	FUTURE T-HANGAR	
F4	FUTURE LARGE EXECUTIVE HANGAR	

ALL BUILDINGS MEET LATERAL CLEARANCE STANDARDS

AIRCRAFT LEGEND

Cessna Caravan
Beech Super King Air
Aerocommander 520
Cessna 182

LAYOUT PLAN LEGEND

	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	F	F
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

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3. THERE ARE NO THRESHOLD SITING SURFACE OBJECT PENETRATIONS.
4. AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.

Boulder Municipal Airport
Airport Master Plan Update

Figure E7
Terminal Area Plan

Southwest Planning Area.
- Corporate/Executive Hangar Infill Development with Auto Parking (3 hangar units)
- Executive Hangar Infill Development with Auto Parking (10 hangar units)
- Aviation Service Hangar along flightline (1 hangar unit)
- Vehicular Access Roadway Development
- Existing Taxilane Modification
- Existing Aircraft Tiedown Position Modifications

Southeast Planning Area.
- Large Executive Hangar Development with Auto Parking along flightline (6 hangar units)
- T-hangar/Executive Hangar Development with Auto Parking (80 hangar units)
- Vehicular Access Roadway Development
- Future Taxilane Development
- General Aviation Apron Expansion/Tiedown Modifications (12,550 square yards)
- Existing Aircraft Tiedown Position Modifications

North Planning Area.
- Maintenance of Existing Glider Tiedown and Trailer Storage Area

Aviation-Related/Non-Aviation Planning Area

In addition to general aviation aircraft storage facilities, there is one site that has been designated for the development of aviation-related or non-aviation facilities at the Airport. A brief description of this development area, which cannot be feasibly served with taxiway access, is presented in the following text.

Southwest Development Area (1 Acre).
- Aviation Compatible Commercial/Office Development Area with Auto Parking
- Vehicular Access/Roadway Development
- No Taxiway/Apron Development
- Will likely request release from FAA for future sale of property

Airport Vehicular Access

The Airport's recommended plan includes the modification of the existing access roadway system to restrict airfield access by unauthorized vehicles. This will require the installation of a gated barrier, located southeast of the existing Terminal/FBO building, to restrict the movement of vehicles across the existing taxilane and onto the aircraft apron area. The closure of this roadway to public access would also require the development of a new Airport access road, extending northward from Airport Boulevard along the existing airport boundary. This proposed roadway would provide public

access to the existing commercial hangar at the east end of the flightline, as well as provide landside access to the expanded executive hangar and T-hangar development area within the southeast quadrant of the Airport. The City of Boulder has also expressed interest in adding a sidewalk along the north side of Airport Boulevard and along one or both sides of Airport Road to improve pedestrian access to future landside planning areas, as well as adjacent property owners and businesses.

Additional Airport access roadway development is also recommended to serve the future general aviation expansion area and aviation-related development area located within the southwest quadrant of the Airport. This proposed roadway would extend northwest from Airport Road. This proposed improvement would occur if and when additional demand for west end development occurs.

Airport Traffic Pattern

Based upon the Airport traffic pattern analysis that was completed in the previous chapter, it has been determined that the existing traffic pattern layout, which was depicted in the *CAPACITY ANALYSIS AND FACILITY REQUIREMENTS* chapter, should be maintained. This recommendation is premised upon a combination of several factors that include prevailing winds/predominant runway use configuration, surrounding terrain, and adjacent noise sensitive land uses. Given the recommendation to preserve the existing airfield layout configuration, in conjunction with the specified guidance criteria, opportunities to modify or refine the existing traffic patterns are limited to minor variations of the glider tow plane patterns. It is also recognized that the precise track of the flights is not always feasible due to local weather conditions, and minor variations are to be expected. In addition, it's acknowledged that some pilots do overfly noise sensitive areas within the Airport environs, but it is likely that a majority of these are transient operators who are unfamiliar with the published noise abatement procedures for the Airport. Both the new noise reporting systems and the increased awareness of the Airport's noise abatement procedures will assist the Airport in determining the person(s) to inform on this issue.

Glider Facilities Planning and Operational Evaluation

As an element of this master planning process, the FAA has reviewed the existing glider operating procedures at Boulder Municipal Airport, which are conducted from a designated glider runway (Runway 8G/26G), that is located north of Runway 8/26. From this review, the FAA has determined that the Airport's existing glider operation can be maintained at the facility. It is also recommended that the existing glider clubs and commercial glider operators maintain current operational rules and regulations on file with the Airport Manager/City of Boulder. In addition, these tow plane operators should continue to monitor compliance with the specified flight tracks, as well as

minimize repeated overflights of noise sensitive land uses within the defined soaring areas.

Aviation Support Facilities

Fuel Storage/Distribution System. It was determined that the Airport's projected fuel storage requirements can be accommodated through the year 2023 utilizing existing storage facilities. In addition, in response to input received from Airport tenants, the City of Boulder has installed a self-serve fuel facility on the Airport, which is located along the flightline near the west end of the general aviation ramp. It is also recommended that a Spill Prevention Control and Countermeasures (SPCC) plan be maintained and updated as necessary for the Airport's fueling operation, and that the future construction and operation of all fuel storage facilities maintain compliance with specified Airport rules and regulations, applicable uniform Building Code Standards, fire codes, and recommendations of the National Fire Protection Association.

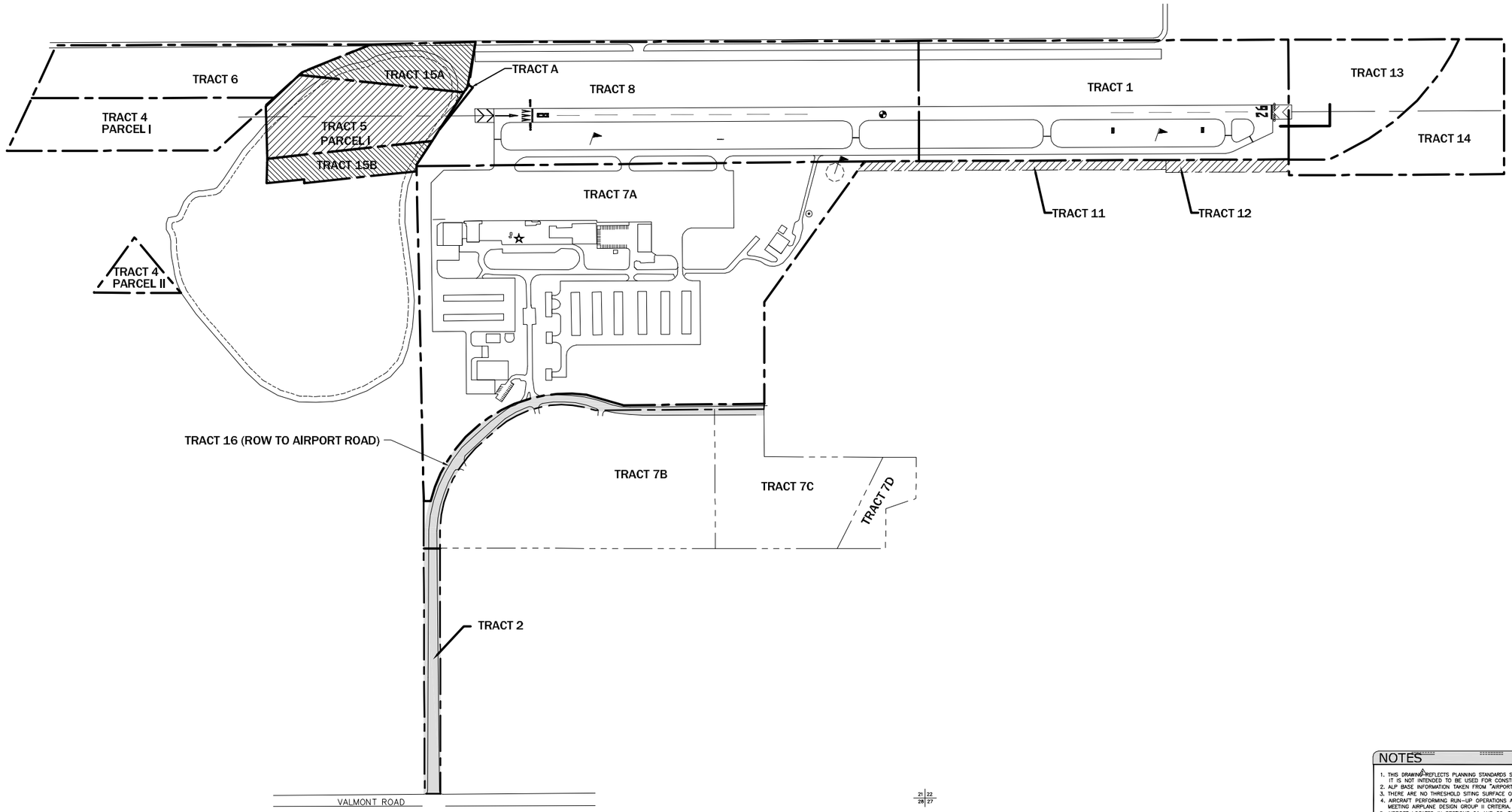
Americans with Disabilities Act (ADA). In response to several inquiries from the public regarding the Airport's design considerations associated with the Americans with Disabilities Act (ADA), additional needed improvements have been identified to complement the Airport's existing ADA enclosure, ADA lift, two ADA accessible restrooms, and handrail improvements to the existing stairwells. These recommended improvements include:

- Restriping of the existing handicap tiedown parking position on the apron.
- Improving ADA landside/airside access between the automobile parking area and the aircraft parking area (e.g., parking lot, sidewalk, ramp, and access gate improvements).
- Conduct annual meeting with the Boulder Disabilities Task Force to determine any new project specific needs.

Miscellaneous Airport Support Facilities. The Airport's capital improvement program will also continue to include general maintenance improvements for City owned hangars and facilities that include painting and repair. In addition, future fencing projects and the installation of control access gates are to be constructed in phases throughout the planning period of the project.

Airport Property Map

The *AIRPORT PROPERTY MAP*, which is presented in the following illustration (Figure E8), indicates how various tracts of land within the Airport boundaries were acquired (e.g., federal funds, surplus property, local funds, etc.). The purpose of the drawing is to



PARCEL DATA

TRACT NO.	OWNER	TYPE	ACRES	PROJECT #	RECORDING INFO	RECEPTION #	DATE
1	CITY OF BOULDER	FEE	29.43	FAAP-01	PART N1/2 OF S1/2 NW1/4 SECTION 22	626856	2-3-59
2	CITY OF BOULDER	FEE	3.1	N/A	PART SW1/4 OF SE1/4 SECTION 21	625808	6-13-60
4 PARCEL I	CITY OF BOULDER	FEE	8.5	ADAP 5-08-0004-01	PART N1/2 OF S1/2 OF NW1/4 SECTION 21	214697	2-14-77
4 PARCEL II	CITY OF BOULDER	FEE	1.5	N/A	PART S1/2 OF S1/2 OF NW1/4 SECTION 21	214697	9-29-77
5 PARCEL I	CITY OF BOULDER	EASEMENT	8.2	FAAP-01	PART N1/2 OF SE1/4 OF NW1/4 SECTION 21	724045	4-16-63
6	CITY OF BOULDER	FEE	8.18	N/A	PART N1/2 OF S1/2 SECTION 21	625808	3-15-77
7A	CITY OF BOULDER	FEE	73.94	N/A	PART SW1/4 OF NE1/4 OF N1/2 OF SE1/4 SECTION 21		8-8-58
7B	CITY OF BOULDER	RELEASED	22	N/A	PART N 1/2 OF SE 1/4 SECTION 21	791028	7-18-90
7C	CITY OF BOULDER	RELEASED	9.7	N/A	PART N 1/2 OF SE 1/4 SECTION 21		10-25-90
7D	CITY OF BOULDER	RELEASED	2.4	N/A	PART N 1/2 OF SE 1/4 SECTION 21	1064282	
8	CITY OF BOULDER	FEE	36.2	N/A	PART N 1/2 OF SE 1/4 OF NE 1/4 SECTION 21		6-1-43
A	PART OF TRACT 5, PARCEL I AND TRACT 8 (OVERLAPPING BOUNDARY)						
11	CITY OF BOULDER	EASEMENT	1.86	N/A	PART SW1/4 OF NW1/4 SEC. 22 & SE1/4 OF NE1/4 SEC.21	1074089	11-2-89
12	CITY OF BOULDER	EASEMENT	0.97	N/A	PART SW1/4 OF NW1/4 SEC. 22 & SE1/4 OF NE1/4 SEC.21	1074089	9-13-91
13	CITY OF BOULDER	FEE	9.0	N/A	PART NW1/2 OF SE1/4 OF NW1/4 SECTION 21	1064282	10-25-90
14	CITY OF BOULDER	FEE	9.1	N/A	PART NW1/2 OF SE1/4 OF NW1/4 SECTION 21		
15A		EASEMENT	3.8		FUTURE ACQUISITION		
15B		EASEMENT	2.7		FUTURE ACQUISITION		
16	CITY OF BOULDER	RELEASE	6.2		FUTURE RELEASE TRACT 2 & PORTIONS OF TRACT 7A		

N/A-NOT APPLICABLE

	ACRES			ACRES
TOTAL FEE	178.95		TOTAL EASEMENT	11.03
FAA	47.61		FAA	2.83
CITY	131.45		CITY	8.2

PORTIONS OF SECTION 21 AND 22, T1N, R70W.

AIRPORT DATA

	EXISTING	*FUTURE*
AIRPORT ELEVATION (AMSL)	5288.0'	*SAME*
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	*SAME* *SAME*
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	*SAME*
AIRPORT REFERENCE CODE (ARC)	B-II	*SAME*
TAXIWAY LIGHTING	MITL	*SAME*
TAXIWAY STRIPING	CENTERLINE	*SAME*
NPIAS SERVICE LEVEL	GA	*SAME*

REVISIONS

NO.	DESCRIPTION	DATE

LAYOUT PLAN LEGEND

	EXISTING	*FUTURE*
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	*BRL*
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	(F)	(F)
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT		

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4. AIRCRAFT PERFORMING RUN-UP OPERATIONS AT T/W "A1" WILL REMAIN OUTSIDE OF TAXIWAY OBJECT FREE AREA MEETING AIRPLANE DESIGN GROUP II CRITERIA.
5. AIRPORT LOCATED IN SECTIONS 21 AND 22, TOWNSHIP 1 NORTH, RANGE 70 WEST.
6. ALL LAT./LONG. COORDINATE INFORMATION IS NAD83. RUNWAY END COORDINATES DETERMINED WITH GEODETIC CALCULATOR BASED ON NGS MARKER (PID LL1137) DESCRIPTION. NO SITE SURVEY WAS PERFORMED.

True North
9° 54' E Mag.Dec.
0° 9' W annual change
2 0 05

0' 150' 300' 600' 900'
GRAPHIC SCALE IN FEET

Boulder Municipal Airport
Airport Master Plan Update
Figure E8
Airport Property Map

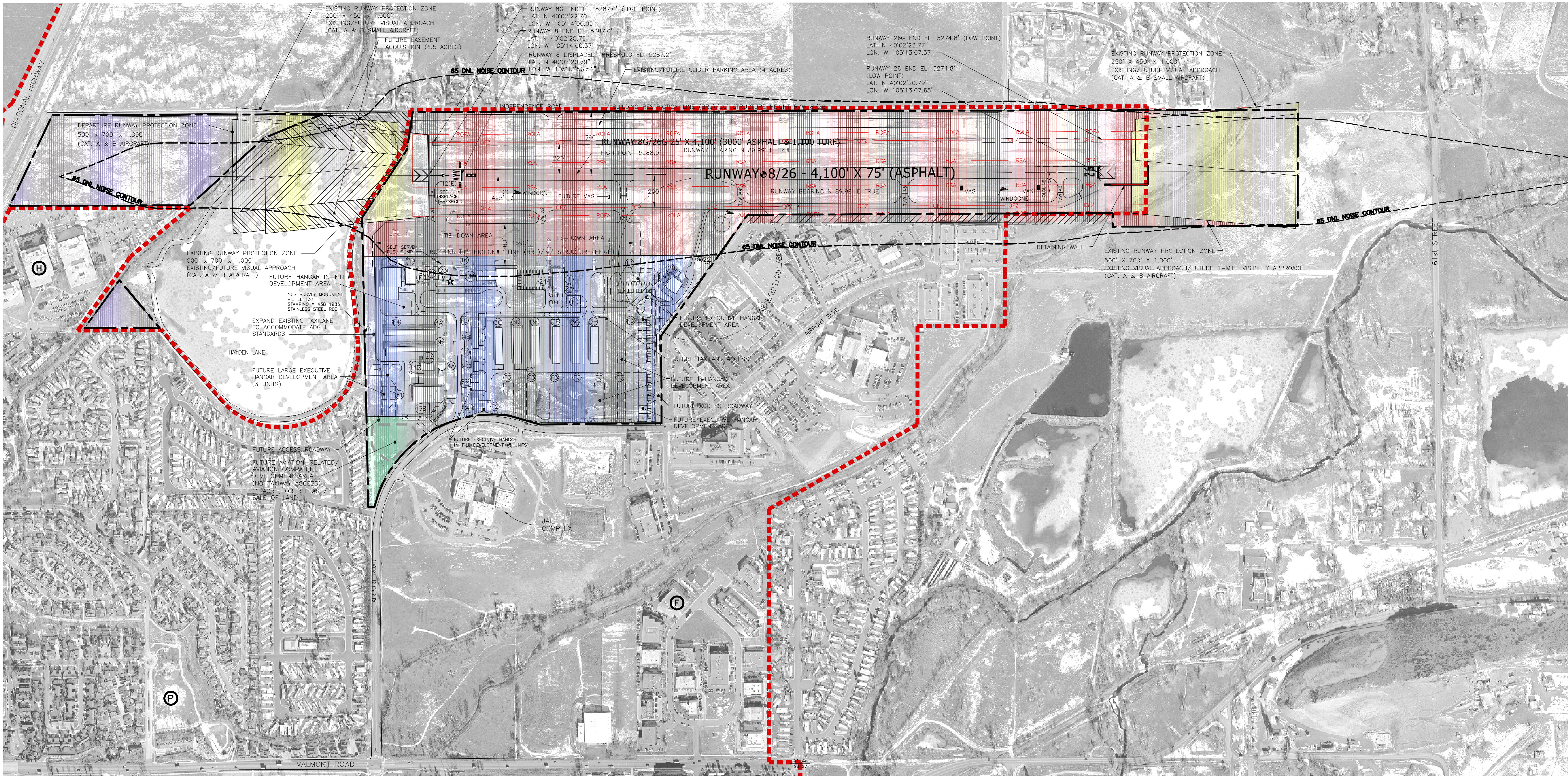
provide documentation of the current and future aeronautical use of land acquired with federal funds. According to existing City of Boulder property records, there are a total of 178.95 acres of fee simple property and 11.03 acres of avigation easements that is owned/controlled by the City of Boulder. Of these totals, approximately 136 acres is represented by the airport operations area, with 47.61 acres of the fee property and 2.83 acres of the easements being encumbered by FAA funding participation.

Land Use Drawing

Figure E9, entitled *LAND USE DRAWING*, depicts existing and recommended use of all land within the ultimate Airport property line. The purpose of the *Land Use Drawing* is to provide Airport management a plan for leasing revenue-producing areas on the Airport. All future development within the bounds of the property owned by the City of Boulder will be compatible with the primary purpose and function of the Airport and will generate lease revenue to support the operation of the Airport. Some areas of the facility are not likely to be provided with taxiway access and are identified for aviation-related use or aviation support activities that do not require airside access. The revenue generation potential of these areas will vary based upon local traffic patterns and vehicular access. Specific proposals for aviation-related uses will be subject to additional review and approval by the Federal Aviation Administration.

The Land Use Drawing also provides guidance to local authorities for establishing appropriate land use zoning in the vicinity of the Airport. As specified by the FAA, Grant assurance #21, entitled *Compatible Land Use,* states that the Airport Sponsor "will take appropriate action, to the extent reasonable, including the adoption of zoning laws, to restrict the use of land adjacent to or in the immediate vicinity of the airport to activities and purposes compatible with normal airport operations, including landing and takeoff of aircraft". As Airport Sponsor, the City of Boulder has been proactive in the establishment of Ordinance No. 5200, which defines a series of overlay zoning designations (i.e., four separate zones) that make up an "Airport Influence Zone". These zones, which were presented in the *INVENTORY OF EXISTING CONDITIONS* chapter, were designed to promote land use compatibility in the vicinity of the Airport.

Based upon the Airport's current traffic pattern and existing/future noise contours, it is recommended that the existing overlay zoning boundaries be maintained as is, with no new boundary or development restrictions being proposed. These current overlay zoning boundaries are presented on Figure E10, entitled *AIRPORT INFLUENCE OVERLAY ZONE MAP WITH FLIGHT TRACKS*.



LAND USE ORDINACES

BOULDER REVISED CODE, 1981, CHAPTER 11-4 AIRPORT
BOULDER REVISED CODE, 1981, CHAPTER 9-3 OVERLAY DISTRICTS
BOULDER REVISED CODE, 1981, CHAPTER 9-3-10 AIRPORT INFLUENCE ZONE

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LAND USE LEGEND

ON AIRPORT PROPERTY

- RUNWAY/TAXIWAY/AIRCRAFT OPERATIONS AREA
- RUNWAY PROTECTION ZONE
- AVIATION/AVIATION-RELATED DEVELOPMENT AREA
- AVIATION-RELATED/AVIATION COMPATIBLE DEVELOPMENT AREA
- OPEN SPACE

OFF AIRPORT PROPERTY

Ⓕ FIRE STATION Ⓗ HOSPITAL Ⓟ PARK — CITY OF BOULDER CORPORATE LIMITS

AIRPORT DATA

	EXISTING	FUTURE
AIRPORT ELEVATION (AMSL)	5288.0'	SAME
AIRPORT REFERENCE POINT (ARP)	LAT.40°02'21"N LON.105°13'35"W	SAME SAME
MEAN MAX. TEMP. HOTTEST MONTH	87.5°F	SAME
AIRPORT REFERENCE CODE (ARC)	B-II	SAME
TAXIWAY LIGHTING	MITL	SAME
TAXIWAY STRIPING	CENTERLINE	SAME
NPIAS SERVICE LEVEL	GA	SAME

REVISIONS

NO.	DESCRIPTION	DATE

LAYOUT PLAN LEGEND

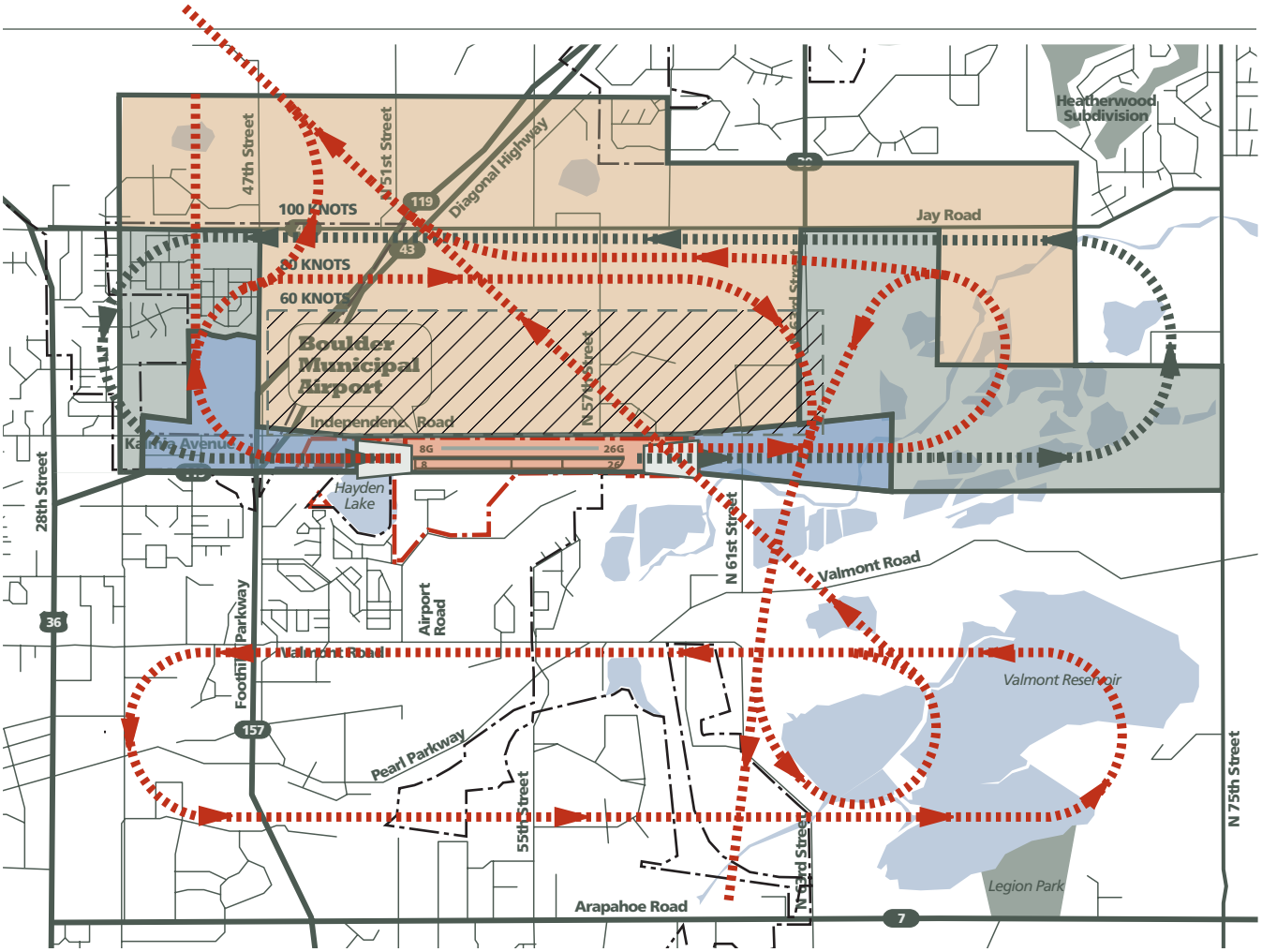
	EXISTING	FUTURE
AIRPORT PROPERTY LINE		
AIRPORT SECURITY FENCE	X	X
AIRPORT BUILDINGS		
AIRFIELD PAVEMENT		
PAVED ROADS		
AVIGATION EASEMENT		
RUNWAY PROTECTION ZONE		
BUILDING RESTRICTION LINE	BRL	BRL
RUNWAY SAFETY AREA	RSA (E)	RSA (F)
RUNWAY OBJECT FREE AREA	ROFA (E)	ROFA (F)
FUEL STORAGE AREA	F	F
AIRPORT BEACON		
LIGHTED WIND CONE		
AUTOMATED WEATHER OBSERVATION SYSTEM (AWOS)		
VISUAL APPROACH SLOPE INDICATOR (VASI)		
THRESHOLD LIGHTS		
HOLDLINES		
TREES		
NGS SURVEY MONUMENT	1	

0' 150' 300' 600' 900'
GRAPHIC SCALE IN FEET

Boulder Municipal Airport
Airport Master Plan Update

Figure E9

Land Use Drawing



Approximate Scale: 1"=3,600'

Figure E10 Airport Influence Overlay Zone Map with Flight Tracks

- Zoning Area 1
- Zoning Area 2
- Zoning Area 3
- Zoning Area 4
- City Boundary
- Gliders
- Powered Aircraft Flight Track
- Glider/Tow Plane Flight Track
- Helicopter Traffic
- Runway Protection Zone

Source: *Base Map*: Microsoft Street & Trips 2006. *Influence Area*: City of Boulder Airport Influence Overlay Zoning Map.

General Aviation Security

In December of 2003, the Transportation Security Administration (TSA) published a report on general aviation airports security that identified a series of non-regulatory "best practices" guidelines. This listing of recommended guidelines were designed to establish non-regulatory standards for general aviation airport security, and provide assistance to airport sponsors in the preparation of a flexible security plan that can be tailored to each airport's available resources, level of alert, and potential threat characteristics.

The specific guidelines of the report were focused on the following major categories:

- Personnel
- Aircraft
- Airports/Facilities
- Surveillance
- Security Plans & Communications

From the standpoint of airport master planning, the guidelines associated with "Airports/Facilities" have been referenced for their physical planning considerations.

Airport Vehicular Access. Consider reasonable vehicle access control to facilities and ramps, which may include signage, fencing, gates or positive control techniques. This may include restricting access to the airside to as few locations as possible, balancing the need for authorized access with access control.

Lighting. Consider installing effective outdoor area lighting to help improve the security of (a) aircraft parking and hangar areas; (b) fuel storage areas, (c) airport access points; and other appropriate areas. Proximity sensors should be considered.

Hangars. Secure hangar/personnel doors when unattended.

Signage. It is recommended that airports post appropriate signage. Wording may include, but is not limited to warnings against trespassing, unauthorized use of aircraft and tampering with aircraft, as well as reporting of suspicious activity. Signage should include phone numbers of the nearest responding law enforcement agency, 9-1-1, or TSA's 1-866-GASECURE, whichever is appropriate.

Boulder Municipal Airport already incorporates many, if not most of these security guidelines into their daily operational procedures; however, some of these recommendations will be reflected as future project proposals for the Airport and have been included as projects in the *PLANNING PROGRAM* chapter of this document.

Airport Management Plan

This section of the Master Plan has been developed to address the Airport's operational and facility management issues that have been identified through the course of this planning effort. Response to these issues will be accomplished in accordance with the City of Boulder's desire to fulfill the "vision" of Boulder Municipal Airport. The vision of Boulder Municipal Airport is to provide the City of Boulder and Boulder County a safe, self-sufficient, and community oriented general aviation airport, serving the needs of both business and recreational aviation users.

In addition, the Airport will continue to operate in a safe, well-maintained, and financially self-supporting manner, addressing concerns and possible impacts on the community, aviation users, and environment. The specific operations and management improvement recommendations for each Airport category are presented in the following text.

Airport Improvements.

- Maintain an aesthetically appealing appearance of the Airport through the development of a standard of quality and good condition for all city-owned buildings, and bringing all buildings and structures, both city-owned and non city-owned, up to this standard of condition.
- Promote fair and equitable leasing practices at the Airport for business development and retention. Methods to accomplish these goals include:
    1) Establish a formal bidding process for the leasing of Airport facilities
    2) Change property reversion clause and the number of years in the lease term (i.e., 30 years)[2]
    3) Establish a City of Boulder staff team to review proposals and leases
    4) Develop a marketing program for available space and businesses at the Airport
    5) Provide incentives for businesses to grow and generate quality jobs and income
    6) Ensure airport leasing practices promote the best interests of the City
- Work to attain the environmental goals and objectives of the City when performing new construction, reconstruction or major/minor maintenance repair. Also, seek to utilize the city's environmentally sustainable techniques such as integrated pest management, Leadership in Energy and Environmental Design (LEED), wildlife management policies, etc.
- Coordinate with other City agencies and adjacent property owners to address noxious weed areas on or near Airport property.

Airport Operations.

- Improve data collection and information gathering on aircraft operational activity and aircraft noise impact observations to better inform city staff and the public of the type of aircraft operations that are impacting residents in the vicinity of the Airport.
- Periodically review and revise the Airport's noise abatement procedures as needed.
- Increase the promotion of the Airport's existing Voluntary Noise Abatement Program through an updated and comprehensive pilot education program that includes distribution of updated "Fly Friendly" brochures, the display of "Fly Friendly" posters, and the installation of noise abatement Airport signage.
- Develop an incentive program to promote adherence to the Voluntary Noise Abatement Program for aircraft operators based at the Airport.
- Promote the scheduling of bi-annual pilot meetings that could include a Fly Friendly educational program.
- Research and promote proven technologies to improve land use compatibility within the Airport environs (e.g., retrofit aircraft propellers or engines to provide quieter operations and investigate alternative glider launch mechanisms, etc.).
- Communicate with commercial glider operators and glider clubs to review and coordinate minor modifications to existing tow plane patterns. In addition, tow plane operators should continue to monitor compliance with the specified flight tracks, as well as minimize repeated overflights of noise sensitive land within the defined soaring areas. It is also recommended that the existing glider clubs and commercial glider operators maintain current operational rules and regulations on file with the Airport Manager/City of Boulder.

Airport Environs Community Outreach.

- Generate quarterly and annual reports on Airport activity levels and aircraft noise impact observations. These reports could also include general information on Airport events and construction projects.
- Conduct periodic check-ins through public discussions regarding noise and community impacts.
- Evaluate options to establish an Airport Noise Measurement Program.
- Continue to promote overflight protection of Raptor Nesting Areas.
- Coordinate the promotion of the Airport's existing Voluntary Noise Abatement Program with a dual tract Airport environs information campaign for Airport neighbors.