

Environmental Review and Land Use Considerations

Introduction

This chapter presents an inventory and analysis of the potentially significant environmental issues that may be of concern with the proposed development recommended in this Master Plan for Aspen/Pitkin County Airport. The impacts are generalized in a non-quantified fashion and the likely environmental processing is also identified.

Alternatives for the future configuration of the Airport have been reviewed in previous chapters. The major improvements being considered for the Airport are:

- The 1,000 feet of runway and parallel taxiway extension to the south (used for aircraft takeoffs to the north only);
- The allocation of additional land area for passenger terminal building redevelopment;
- A location for a future Aircraft Rescue and Fire Fighting Facility (ARFF) west of the runway;
- The construction of an emergency access roadway from the new ARFF facility to the east-side apron system; and,
- The reservation of space for future aviation facilities west of the runway.

Existing Conditions

The Aspen climate is characteristic of high altitudes with low humidity and intense sunshine. Average annual temperature is 40.7° F and the annual average precipitation equals 19.4 inches of rain and 138 inches of snowfall. Average summer temperature is 60° F and the average daily maximum temperature is 77° F. The average winter temperature is 22° F and the average daily minimum temperature is 9° F.

Pitkin County is located in the west-central part of Colorado, within the Southern Rocky Mountain physiographic province. This province features a wide diversity of topography, geologic materials, vegetation, climate, and soils. In general, the area is

characterized by steep mountain slopes, hills, ridges, rolling mesas, canyons, and gently sloping valleys. The Airport study area is principally part of the White River geological uplift, which includes exposures ranging in age from Precambrian to Quaternary. Glacial deposits are widely distributed throughout the area, and alluvium and stream-laid gravel and boulders form a broad belt along the Roaring Fork River.

Soils located within the Airport study area belong in the Jerry-Uracca-Mergel association, which are gently sloping to very steep, well-drained, deep soils, on alluvial fans, terraces, valley sides, and hills. Specific soil series found within the Airport property include Kobar silt clay loams, Morval loam, and Uracca-moist Mergel complex. These soils are typically found on alluvial fans, terraces, benches, and valley slopes.

The primary native vegetation includes spruce, fir, lodgepole pine, aspen, and ponderosa pine in the higher forested elevations of Pitkin County. Pinyon, juniper, oak brush, sagebrush, woody shrubs, and grasses are found at the lower elevations. The valleys are mainly irrigated pastures or used to grow small grain crops.

Elk, pronghorn antelope, mule deer, bighorn sheep, mountain lion, bobcat, and coyotes are the predominant large animal species within the Airport study area. Smaller wildlife species include jackrabbits, cottontail rabbits, ground squirrels, chipmunks, pocket gophers, porcupine, bushytail woodrats, and badgers. Common bird species include the mountain bluebird, chestnut-backed chickadee, red-breasted nuthatch, ruby-crowned kinglet, ruffed grouse, hawks, and owls.

The Roaring Fork River is the major surface water resource within the vicinity of Aspen/Pitkin County Airport. A tributary of the Colorado River, the river flows from southeast to northwest within the Airport study area. Many tributaries flow into this river near the Airport, including Owl Creek, Maroon Creek, and Brush Creek. An irrigation ditch lies along a portion of Owl Creek Road near the Airport fence on the west side of the Airport. This irrigation ditch provides seasonal run-off water for flood irrigation to the pastures and meadows of the Airport Ranch area of the Airport. The location of the irrigation ditch separates it from the potential contaminants (i.e., fuel and deicing fluids) located on the east side of the Airport.

According to the United States Geological Survey (USGS), the western part of Pitkin County is located within the Colorado plateaus aquifers system, but this aquifer system does not underlie the study area. A surficial, mountainous aquifer associated with the Roaring Fork River underlies the area just north of the Airport and the city. However, the alluvium in the valley is too thin, narrow, and discontinuous to be considered a major aquifer.

Currently, the U.S. Environmental Protection Agency (EPA) classifies the geographic area where Aspen/Pitkin County Airport is located as attainment for all air pollution standards (see letter in Appendix from the Air Pollution Control Division, Colorado Department of Public Health and Environment). Attainment areas are defined as regions where air pollution levels have not persistently exceeded the National Ambient Air Quality Standards (NAAQS).

Aspen had a 2000 population of 5,914 and approximately 4,354 housing units (U.S. Census Bureau data). Pitkin County had a population of 14,872 and 10,096 housing units according to the Census data. The average number of persons per household was 2.14 within Pitkin County. Two U.S. Census Bureau tracts are located within the vicinity of the Airport and are roughly divided by Colorado 82/Roaring Fork River. Per capita income for residents living east of the highway equals \$54,200; per capita income for residents living west of the highway is \$33,442.

The major surface transportation corridor within the vicinity of Aspen/Pitkin County Airport is Colorado 82, which is located east of the Airport. This highway provides an important automobile connection between U.S. Highway 24 in southern Lake County to Interstate 70 at Glenwood Springs. There are two Airport entrance roads from Colorado 82, one located directly east of the passenger terminal building, and one located northwest of the general aviation terminal. Access to the west side of the Airport is via Owl Creek Road entering south of Airport property.

Water service to the Airport is provided by the City of Aspen through an 18-inch service line. In 2002, all Airport facilities consumed roughly 1,561,080 gallons of water. An existing well casing is located near the intersection of Old Owl Creek Road and Highway 82. The well is being incorporated into the West Buttermilk Homeowners Association well system to provide water to their subdivision and the lower Owl Creek Road area. Sanitary sewer service, also provided by the City of Aspen, is provided to all Airport buildings with the exception of the Air Traffic Control Tower (ATCT). The ATCT has a below ground septic system.

Aspen/Pitkin County Airport has a Stormwater Management Plan and a Spill Prevention, Control, and Countermeasures Plan. Both plans are administered by a private Consultant for the Airport.

Natural gas usage at the terminal building and the ARFF facility for 2002 was 41,381 cf, which was supplied by Kinder Morgan. Holy Cross Energy supplied the 1,231,493 kW of electricity consumed by Airport facilities during the calendar year 2002. Qwest provides telephone service to all Airport facilities.

Solid waste generated at the Airport is collected by a private company contracted by the County and disposed of in the Pitkin County Landfill that is located roughly four miles north/northwest of the Airport. Pitkin County provides large recycling containers for the collection of cans, bottles, office paper, and newspapers inside the Airport buildings. Airport staff is responsible for the collection of the recyclable materials.

Aspen Base Operation owns and operates the fuel farm at Aspen/Pitkin County Airport. This company has a Fuel Farm Safety and Operation Plan required by Pitkin County to dispense fuel. The Plan conforms to the safety requirements contained in the National Fire Protection Association (NFPA) Standard 407, *Standard for Aircraft Fuel Servicing*. Provisions contained in the Plan include, but are not limited to, standard fueling operation procedures, hazardous waste management practices, spill prevention and management measures, vapor control practices, fire detection and control procedures, employee training provisions, and directions on maintenance procedures for all equipment.

The Pitkin County Sheriff's Office provides police duties to the Airport and surrounding area outside the City Limits of Aspen. The Transportation Security Administration (TSA) is responsible for security within the terminal building. The Airport Aircraft Rescue and Fire Fighting Facility (ARFF) provides fire-fighting and rescue capabilities to on-Airport, aircraft emergencies. Aspen Fire is the primary agency for landside emergencies and off-Airport aircraft accidents, although the Airport has agreements that allow the ARFF personnel to respond to off-Airport aircraft emergencies within a specified distance of the Airport.

Noise Analysis

Noise is generally defined as unwanted sound and, as such, the determination of acceptable levels is subjective. The FAA prescribed Day-Night Noise Level (DNL) methodology is used to determine both the noise levels resulting from existing conditions and the potential noise levels that could be expected to occur with the proposed Airport projects. The DNL methodology is a 24-hour, time-weighted average noise level based on the "A" weighted decibel. It is a measure of the overall noise experienced during an entire day. The time-weighted refers to the fact that noise events occurring during certain sensitive time periods are penalized. With DNL, noise events occurring between the hours of 10 p.m. and 7 a.m. are penalized by 10 dB(A). This penalty is an attempt to account for the higher sensitivity to noise during nighttime hours and the expected further decrease in background noise levels that typically occur at night.

DNL levels usually are depicted as grid cells or noise contours. Grid cells are squares of land of a specific size that are entirely characterized by a noise level. Noise contours are interpolations of noise levels based on the center of a grid cell and drawn to connect all

points of similar level. Noise contours appear similar to topographical contours and form concentric “footprints” about a noise source. These footprints of DNL noise contours drawn around an airport are used to predict community response to the noise from aircraft using the airport.

The main advantage of the DNL methodology is that it provides a common measure for a variety of differing noise environments. The same DNL level can describe both an area with very few high level noise events and an area with many low level events. DNL is thus constructed because it has been found that the total noise energy in an area predicts community response. It must be remembered that the DNL noise contours do not delineated areas that are either free from excessive noise or areas that will be subjected to excessive noise.

The basic unit in the computation of DNL is the Sound Exposure Level (SEL) and generally represents the noise level associated with one aircraft operation (a single event) of a specific single aircraft. An SEL is computed by adding the “A” weighted decibel level [dB(A)] for each second of a noise event above a certain threshold (“A” weighted refers to the sound scale pertaining to the human ear). For example, a noise monitor located in a quiet residential area [40 dB(A)] receives the sound impulses from an approaching aircraft and records the highest dB(A) reading for each second of the event as the aircraft approaches and departs the site. Each of these 1-second readings is then added logarithmically to compute the SEL.

The main difference between the SEL and the DNL is that the SEL represents what an individual “hears”, as it is a single noise event, whereas the DNL represents the annual cumulative noise level, averaged logarithmically, with a nighttime penalty. The DNL can not be “heard” as the SEL can be. It should be noted that the 80 to 85 SEL noise level is where sleep disturbance normally occurs. The 65 DNL noise contour is the threshold level where the FAA recommends no noise sensitive uses (i.e., homes, schools, hospitals, etc) be allowed. The FAA, along with most federal agencies, have identified noise levels lower than the 65 DNL as not being significant in terms of residential or other noise sensitive uses.

Computer Modeling

The SEL and DNL noise contours were generated using a computer program called the Integrated Noise Model (INM) Version 6.1, which was developed by the FAA as a standard specifically for modeling the noise environment at airports. The INM program requires the input of the physical and operational characteristics of the airport. Physical characteristics include runway end coordinates, displaced thresholds, airport altitude, and temperature. Operational characteristics include average daily operations, aircraft mix, runway utilization, and flight tracks. Optional data that can be incorporated in the model includes approach and departure profiles, approach and departure procedures, and aircraft noise curves.

Using the existing and forecast aircraft operation numbers presented earlier, noise contours have been generated for the existing (year 2000) condition and the twenty-year planning period (year 2022) conditions. A description of the potential impacts to the surrounding land uses for each set of noise contours is presented below.

SEL Noise Analysis

The SEL noise contours illustrated in the following figures represent some common aircraft that either currently operate at Aspen/Pitkin County Airport, or that might operate in the future. The BAe 146 and the Gulfstream V are two of the more common Stage 3 jet aircraft that currently operate at the Airport. The Lear 25 is one of the predominate Stage 2 business jets that currently operates at the Airport. Stage numbers refer to the relative “loudness” of aircraft certificated under either 14 CFR Part 36 or ICAO Annex 16. The EMB 145 represents a future regional jet aircraft similar to one that might operate at the Airport in the future.

The SEL noise contours provide a clear illustration of the difference between the Stage 2 and Stage 3 business jets in terms of loudness. It should be noted that Stage 2 aircraft represented an estimated 14% of business jet operations in the 12 month period used as the base year when the data was assembled for the Part 161 Study (i.e., May 1, 1999 to April 30, 2000). The number of operations conducted by these aircraft is decreasing as older aircraft are retired from the fleet, as evidenced by the fact that the aircraft operational data for calendar year 2002 indicates that the number of Stage 2 aircraft operations has decreased to approximately 6% of the business jet operations conducted at the Airport. Additionally, there are no Stage 2 business jets based at Aspen/Pitkin County Airport.

As can be seen from the previous SEL noise contour illustrations, the noise patterns shift somewhat if a 1,000-foot take-off only runway extension is constructed on the south end of the runway. The noise pattern shift, and the effect on significant facilities near the southern portion of the Airport, is best shown on the larger scale contour map drawings that graphically depict MAA Housing, the bike trail, and the Buttermilk Ski Area base facilities. Three of the four 85 SEL noise contours (i.e., the BAe 146, the Gulfstream V, and the EMB 145) do not include the MAA Housing without the runway extension, but with the runway extension, all or portions of the MAA Housing are affected. The 85 SEL noise contour associated with the Lear 25 is shown to include the MAA Housing with or without the runway extension.

Existing (2000) DNL Noise Analysis

The existing DNL noise contours and the association with the surrounding land uses are illustrated in the figure entitled *EXISTING (2000) DNL NOISE CONTOURS WITH GENERALIZED EXISTING LAND USE*. The 75, 70, 65, 60, and 55 DNL noise contours are

illustrated. The noise contours extend primarily to the north of the Airport, reflecting the predominant contra-flow of aircraft operations at the Airport (i.e., departures utilize Runway 33 approximately 99% of the time and arrivals use Runway 15 about 98% of the time). As with the SEL noise contour illustrations, a large scale drawing is also provided that graphically depicts the relationship of the DNL noise contours on MAA Housing, the bike trail, and the Buttermilk Ski Area base facilities, which is entitled *EXISTING (2000) DNL NOISE CONTOURS – SOUTH AREA DETAIL*.

The existing 75 DNL noise contour, which contains roughly 114 acres, does not extend beyond Airport property. Therefore, this noise contour does not include noise sensitive land uses.

The existing 70 DNL noise contour, containing approximately 232 acres, extends beyond Airport property to the southwest, just beyond Owl Creek Road, into land that is classified as public/quasi-public. No noise sensitive land uses are included within the existing 70 DNL noise contour.

The existing 65 DNL noise contour, encompassing roughly 456 acres, extends beyond Airport property to the north, east of Colorado 82, and to the south, west of Owl Creek Road and slightly east of Colorado 82. The non-Airport property to the north encompassed by the noise contour is predominantly agricultural/vacant lands or public/quasi-public. The land south of the Airport and west of Owl Creek Road is classified as public/quasi-public. The land east of Colorado 82 is currently vacant. This noise contour does not include any noise sensitive land uses.

The existing 60 DNL noise contour, which contains some 978 acres, extends beyond Airport property to the north, east, and south. Agricultural/vacant land and public/quasi-public are the dominate land uses north of the Airport, but some residential, commercial/office, and open space/recreational land uses east of Colorado 82 are encompassed within this noise contour also.

Containing approximately 2,481 acres, the existing 55 DNL noise contour extends beyond Airport property in all directions. Many and varied land uses are effected by this noise contour, including residential development. The other predominant land uses encompassed by this noise contour include agricultural/vacant lands, public/quasi-public, commercial/office development adjacent to Colorado 82, the Buttermilk Ski Area base facilities, the Maroon Creek Club Employee Housing, and open space/recreational development.

Future (2022) DNL Noise Analysis Without Runway Extension

The potential impact of the 2022 DNL noise contours to the surrounding land uses without implementing the proposed runway extension is presented in the following figure entitled *FUTURE (2022) DNL NOISE CONTOURS WITHOUT RUNWAY EXTENSION, WITH GENERALIZED EXISTING LAND USE*. A large scale drawing illustrating the DNL noise contours in relation to the MAA Housing, the bike trail, and the Buttermilk Ski Area base facilities is provided in the illustration entitled *FUTURE (2022) DNL NOISE CONTOURS WITHOUT RUNWAY EXTENSION – SOUTH AREA DETAIL*.

The future 75 DNL noise contour, consisting of approximately 83 acres, does not extend beyond Airport property, so no noise sensitive land uses are included in the noise contour.

The future 70 DNL noise contour contains roughly 164 acres, with virtually all being Airport property. However, this noise contour does extend slightly beyond Airport property to the southwest of Owl Creek Road into public/quasi-public land. There are no noise sensitive land uses contained within this noise contour.

The future 65 DNL noise contour, encompassing about 335 acres, extends beyond Airport property to the southwest of the Airport. This area, beyond Owl Creek Road, includes public/quasi-public land.

Extending beyond Airport property to the north, east, southeast, and southwest, the future 60 DNL noise contour comprises some 711 acres. Public/quasi-public classified properties are the predominant land use within the future 60 DNL noise contour, although agricultural/vacant, residential, and commercial/office properties are also encompassed.

The future 55 DNL noise contour contains approximately 1,957 acres and extends beyond Airport property in all directions, and includes numerous land use classifications. Agricultural/vacant land, public/quasi-public, and residential are the dominant land uses north of the Airport. Commercial/office, residential, and agricultural/vacant land uses are encompassed by the noise contour east of Colorado 82. The noise contour extends into agricultural/vacant and public/quasi-public land uses to the south of the Airport.

Future (2022) DNL Noise Analysis With Runway Extension

The potential impact of the 2022 DNL noise contours to the surrounding land uses is presented in the figure entitled *FUTURE (2022) DNL NOISE CONTOURS WITH RUNWAY EXTENSION, WITH GENERALIZED EXISTING LAND USE*. Again, a large scale drawing depicting the DNL noise contours in relation to the MAA Housing, the bike trail, and the Buttermilk Ski Area base facilities is provided in the illustration entitled *FUTURE (2022) DNL NOISE CONTOURS WITH RUNWAY EXTENSION – SOUTH AREA DETAIL*.

As with the future noise contours without the runway extension, the future 75 DNL noise contour associated with the runway extension, consisting of approximately 84 acres, does not extend beyond Airport property, so no noise sensitive land uses are included.

The future 70 DNL noise contour connected to the runway extension extends beyond Airport property to the southwest of Owl Creek Road into property classified as public/quasi-public, and to the southeast of Colorado 82 into agricultural/vacant properties. This future noise contour roughly 168 acres.

Encompassing about 341 acres, the future 65 DNL noise contour related to the runway extension extends beyond Airport property to the southeast and southwest of the Airport. The area beyond Colorado 82 includes agricultural/vacant property, and the land southwest of the Airport, southwest of Owl Creek Road, includes land classified as public/quasi-public.

Extending beyond Airport property to the north, east, southeast, and southwest, the future 60 DNL noise contour associated with the runway extension comprises some 711 acres. Public/quasi-public classified properties are the predominant land use within this future noise contour, although agricultural/vacant, residential, and commercial/office properties are also encompassed, including the MAA Housing southeast of Colorado 82.

The future 55 DNL noise contour linked with the runway extension contains approximately 1,947 acres and extends beyond Airport property in all directions, and includes numerous land use classifications. Agricultural/vacant land, public/quasi-public, residential, and open space/recreational are the dominant land uses north of the Airport. Commercial/office, residential, and agricultural/vacant land uses are encompassed by the noise contour east of Colorado 82. The noise contour extends into the Buttermilk Ski Area base facilities, MAA Housing, the Maroon Creek Club Employee Housing, and open space/recreational land uses to the south of the Airport.

Conclusion

A comparison of the DNL noise contour illustrations indicates that there is not an appreciable change anticipated for neighborhoods on either end of the runway with regard to aircraft noise and the possible runway extension. A more detailed discussion on the relative impacts to specific issues areas is presented in the *Environs Land Use Plan* section of this chapter.

Future Conditions

Compatible Land Use

Establishing land use compatibility within the Airport environs is the responsibility of local authorities, but should be based on a recognized standard. The Federal Aviation Regulations (FAR) Part 150 land use compatibility guidelines are the acknowledged standards by the federal government regarding aircraft generated noise at airports. Figure G15, entitled *FAR PART 150 LAND USE COMPATIBILITY GUIDELINES*, indicates those land uses that are compatible within certain DNL noise contours. It identifies land uses as being compatible, incompatible, or compatible if sound attenuated. These guidelines indicate that the 65 DNL noise contour is the threshold noise level for defining incompatible land uses.

Air Quality

The EPA has established National Ambient Air Quality Standards (NAAQS) for six criteria air pollutants: carbon monoxide (CO), ozone (O₃), particulate matter (PM₁₀), sulfur dioxide (SO₂), oxides of nitrogen (NO_x), and lead (Pb). As stated previously, the Air Pollution Control Division comments that the projects being considered are located in a geographic area considered to be in attainment for all Federal and State air quality standards (see letter in Appendix). The Division further states that construction permits are required for projects where ground disturbances exceed more than 25 acres of contiguous acres or last longer than six months.

Water Quality

Any airport improvement projects requiring earthwork will result in erosion and sedimentation. However, the final construction plans and specifications will require the contractor to follow the procedures outlined in AC 150/5370-10A, *Standards for Specifying Construction of Airports*, which is the FAA guidance to airport sponsors concerning protection of the environment during construction projects. These procedures include the following measures to minimize impact due to erosion or sanitary waste when necessary: sediment ponds, diversion ditches, seeding, sodding, watering, and mulching.

The Colorado Department of Public Health and Environment, Water Quality Control Division, has provided comments regarding water quality (see letter in Appendix). The Division states that a construction dewatering permit is required if dewatering is to occur. A stormwater construction permit is required for construction activity and should be applied for at least 10 days prior to breaking ground. Updating the Stormwater Management Plan is required when changes to the facility occur that affect stormwater quality.

LAND USE	YEARLY DAY-NIGHT NOISE LEVEL (DNL) IN DECIBELS					
	BELOW 65	65-70	70-75	75-80	80-85	OVER 85
RESIDENTIAL						
Residential, other than mobile homes and transient lodgings	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums and concert halls	Y	25	30	N	N	N
Governmental services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale and retail-building materials, hardware and farm equipment	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade-general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Numbers in parentheses refer to NOTES.

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

TABLE KEY

SLUCM	Standard Land Use Coding Manual.
Y(Yes)	Land Use and related structures compatible without restrictions.
N(No)	Land Use and related structures are not compatible and should be prohibited.
NLR	Noise Level Reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.
25, 30 or 35	Land Use and related structures generally compatible; measures to achieve NLR of 25, 30 or 35 dB must be incorporated into design and construction of structure.

NOTES

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| <p>(1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) of at least 25 dB to 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10 or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.</p> <p>(2) Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.</p> <p>(3) Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.</p> | <p>(4) Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.</p> <p>(5) Land use compatible provided that special sound reinforcement systems are installed.</p> <p>(6) Residential buildings require an NLR of 25.</p> <p>(7) Residential buildings require an NLR of 30.</p> <p>(8) Residential buildings not permitted.</p> |
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► FIGURE G15
FAR Part 150 Land Use Compatibility Guidelines

Wetlands

Wetlands are basically defined as areas inundated by surface or groundwater with a frequency sufficient to support vegetation or aquatic life requiring saturated or seasonally saturated soil conditions for growth and reproduction. The U.S. Army Corps of Engineers has been contacted for the presence of jurisdictional wetlands and waterways potentially impacted by the projects being considered within this Master Plan. The Corps indicates that a Department of the Army permit is required for any discharge of dredged or fill material in waters of the United States (see letter in Appendix). Prior to any construction projects, it is recommended that a qualified biologist perform a wetlands delineation and permit application on the area of potential effect to determine the potential impacts at that time.

Historical, Architectural, Archaeological, and Cultural Resources

Section 106 of the National Historic Preservation Act requires Federal agencies, or their designated representatives, to take into account the effects of their undertakings on historic properties, which include archaeological sites, buildings, structures, objects, or districts. The National Register of Historic Places, maintained by the National Park Service, indicates there are 36 historically significant places within Pitkin County. Twenty-nine of the sites are located within, or near, the City of Aspen proper. The nearest site to the Airport, located approximately one mile to the southeast, is the Maroon Creek Bridge, a Colorado 82 historic bridge spanning Maroon Creek. None of the listed historic places will be negatively affected by the projects being considered within this Master Plan.

The Colorado Historical Society indicates that one resource site could be impacted with the development of the aviation facilities on the west side of the Airport, north of the future ARFF site (see letter in Appendix). This resource is a ranch that was determined to be eligible for listing on the National Register of Historic Places on July 29, 1988. As more detailed plans are prepared for the development of this side of the Airport, the reevaluation of the impact to the ranch, and a determination of effect, will be prepared and submitted to the Colorado Historical Society.

Before implementation of any airport projects involving the acquisition, remodeling, or demolition of buildings older than 50 years of age, it is recommended that a determination of the historic significance and potential for listing on the National Register of Historic Place of the affected buildings be performed. For projects requiring earthwork, it is recommended that a professional archaeologist conduct a cultural resources survey for the determination of effect on significant resources. Additionally, should construction activities expose buried archaeological material, work will stop in that area, and both the FAA and the Colorado Historical Society will be contacted.

Biotic Communities

The Colorado Division of Wildlife (CDOW) indicates that Airport development on the west side of the Airport is in close proximity to and adjacent to important big game winter range (see letter in the Appendix). The Division suggests the placement of aviation facilities within the existing meadows and hay fields to help minimize wildlife impacts. The Division has also offered suggestions for improvement to the existing 8' tall wildlife fences excluding big game from Colorado 82 and the Airport at the north end of the Airport. This suggestion will be investigated.

The U.S. Fish and Wildlife Service (USFW) provided information on developing an Avian Protection Plan to avoid the direct or indirect "take" of any species protected under the Migratory Bird Treaty Act or the Bald and Golden Eagle Act (see letter in the Appendix). The suggestions relate primarily to the design and construction of electrical powerlines that are not applicable to any proposed projects contained in this Master Plan.

Threatened and Endangered Species

The Endangered Species Act as Amended requires each Federal agency to insure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of any endangered or threatened species, or result in the destruction or adverse modification of habitat of such species. The USFW provided a list of federally threatened, endangered, or candidate species that may be affected by the proposed projects. These include the Bald eagle (*Haliaeetus leucocephalus*), the Canada lynx (*Lynx canadensis*), the Gunnison sage-grouse (*Centrocercus minimus*), the Yellow-billed cuckoo (*Coccyzus americanus*), the Boreal toad (*Bufo boreas boreas*), the Colorado pikeminnow (*Ptychocheilus lucius*), the Razorback sucker (*Xyrauchen texanus*), and the Bonytail (*Gila elegans*).

The CDOW indicates there are no anticipated impacts to any threatened or endangered species since most of the projects being considered are within the existing Airport property line and fenced area (see letter in Appendix). While there are no anticipated impacts to federally listed threatened, endangered, or candidate species resulting from the implementation of any projects considered in this Master Plan, additional consultation with the CDOW and USFW is recommended prior to actual construction. If required, a biological assessment will be conducted by a qualified biologist to determine the potential impacts and a determination of effect at that time.

Section 4(f) Property

Section 4(f) of the Department of Transportation Act (recodified at 49 USC, Subtitle I, Section 303) provides that no publicly owned park, recreation area, wildlife or waterfowl refuge, or land of a historic site that is of national, state, or local significance will be used,

acquired, or affected by programs or projects requiring Federal assistance for implementation. The Colorado Department of Natural Resources, Division of Parks and Outdoor Recreation has been contacted regarding the impacts to recreation properties within the Airport study area. This agency has not yet responded. However, since all the projects being considered are within the existing Airport boundary, the only recreational land use that may be a consideration is the bike trail located on the south end of Airport property. If the runway extension project is deemed an appropriate recommendation of this Master Plan, the impacts and potential remediation strategies related to the bike trail will be an important component of the environmental documentation that would be prepared before construction.

Need for additional Environmental Documentation

According to the FAA Order 5050.4A, *Airport Environmental Handbook*, an Environmental Assessment will likely be required for the runway extension and the passenger terminal building redevelopment. The construction of the ARFF facility, the development of future aviation facilities on the west side of the Airport, and the emergency access roadway will likely not require an environmental assessment, but a “coordinated categorical exclusion” will be pursued with the appropriate Federal, State, and local governmental agencies.

Environs Land Use Plan

Land Use Plan

In accordance with FAA criteria for airport master planning, land use compatibility in the vicinity of the Aspen/Pitkin County Airport has been evaluated. As part of this effort, the existing land uses within an area extending one half mile either side of the Airport runway and one mile off both ends of the runway were documented. In addition, the existing zoning for the lands within this same area was evaluated to determine the potential for future developments that would be incompatible with the Airport and the recommended improvements. The inventory of existing land uses and existing zoning are contained in the inventory section of this Master Plan. (Figures A22 and A23). In general, past planning and development in the area surrounding the Airport has resulted in very few incompatible uses. This is in part due to the fact that the Airport was in place prior to the growth spurt that occurred in and around Aspen the 1980s and 1990's. Both the City of Aspen and Pitkin County also have a long history of staunchly defending their zoning regulations. These factors have been reasonably effective in slowing the spread of development along the Colorado 82 corridor where the Airport is located. The current planning and zoning policies and processes, when combined with the physical limitations, ownership patterns, and existing land uses in the area surrounding the Airport, provide a significant level of influence and predictability regarding future development.

The following figure, entitled *ENVIRONS LAND USE PLAN*, illustrates the land uses within the vicinity of the Airport and identifies specific issues areas to be considered in association with the improvements recommended for the Airport in this Master Plan. Some of the parcels discussed in this section and highlighted on the *ENVIRONS LAND USE PLAN* are located in the City of Aspen and are not in the control of Pitkin County, the jurisdiction within which the Airport is located. Therefore, some of the issues addressed in this section will need to be implemented through dialog and agreements with the City; to the extent action is required. The following is a description of the parcels identified on the *ENVIRONS LAND USE PLAN* and the issues associated with each parcel. The numbers on the illustration correspond with the numbered paragraphs below.

1) Burlingame Seasonal Housing/MAA Affordable Housing Project. This project is located within the City of Aspen and was approved by the City in 1999. This subdivision is the closest residential area to the south end of the runway. When this project was approved, the City required that these units be constructed to maintain an interior sound level of 40 dB(A) and that proof of this sound level be provided prior to issuance of a certificate of occupancy for any of the structures. In September of 2000, several of the units were tested for sound attenuation. The tests found the interior noise levels to be below the required 40 dB(A). This test was based on single event noise that was assumed to be in the 75 dB(A) range. The noise analysis conducted in association with this Master Plan indicates that this project is currently outside of the 55 DNL noise contour and would remain outside the 55 DNL noise contour projected for the year 2022, given the projected increase in aircraft operations and assuming no runway extension. With the potential runway extension the DNL noise contours expand so that this project is located partially within the 55 DNL noise contour and partially within the 60 DNL noise contour.

In August of 1999 the City of Aspen approved a Grant of Avigation Easement Agreement, which addresses Airport impacts over the Burlingame Seasonal Housing site. This agreement was formally accepted by the Pitkin County Board of County Commissioners (BOCC) via Ordinance No. 99-43. The Avigation Easement Agreement addresses impacts generated at the Airport including noise, fumes and vibrations that may be created by any aircraft using the Airport facility, including any future aircraft that may subsequently be permitted to be used on the Airport. The Avigation Easement Agreement includes a provision that precludes the City of Aspen and the Music Associates of Aspen, Inc. from opposing any future improvements or expansion at the Airport based on the adverse affect therefrom on the development and operation of the Burlingame Seasonal Housing Project.

The City of Aspen should be made aware of the potential change in conditions with respect to noise associated with takeoffs in the area of the Burlingame Season Housing Project.

2) Burlingame Parcel D/Lot 3 Affordable Housing Project. This property is also located within the City of Aspen directly across Highway 82 from the old Intercept lot, southeast

of the Main Terminal building. The property had recently been approved for 40 affordable housing units when this Master Plan was being written. While the location of this property is to the side of the runway, it will be subject to similar noise levels experienced by residents of the North 40 project with the exception that run-up and idling noise will be much less in this location than in the North 40 subdivision. The noise analysis shows this property to be located within the 55 DNL contour under the existing (Year 2000) condition. The property remains within the 55 DNL contour in the year 2002 condition, even with the potential runway extension. This project was under construction at the time this Master Plan was prepared. The City should be encouraged to require similar noise attenuation measures in the construction of these units as was required for the Burlingame Seasonal Housing/MAA Housing project. Further, it is recommended that the County pursue an aviation easement agreement with the City over this property to address potential noise, dust and vibration issues while the City is still the property owner and prior to any lots being conveyed to future owners. The most important issues for this development will be the noise associated with takeoffs and to a lesser extent idle noise from aircraft on the taxiways and deicing area.

3) Maroon Creek Club Employee Housing Project: This project was originally approved under the Pitkin County Land Use Code, but was annexed into the City of Aspen in the mid 1990's. The property is located just south of the Burlingame Seasonal Housing project discussed in the previous paragraphs. The noise analysis conducted in association with this Master Plan indicates that this project is partially within the 55 DNL noise contour. Based on the project noise contours for the year 2022 the units in this project would be entirely outside the 55 DNL contour given the projected increase in aircraft operations and assuming no runway extension. With the potential runway extension the DNL contours expand so that this project is located partially within the 55 DNL contour and partially within the 60 DNL contour.

A Grant of Aviation Easement, which addresses airport impacts over the Maroon Creek Club property, was executed in September of 1993 and recorded in November of that same year. The Aviation Easement Agreement addresses impacts generated at the Airport including noise, fumes and vibrations that may be created by any aircraft using the Airport facility, including any future aircraft that may subsequently be permitted to be used on the Airport. The Aviation Easement Agreement includes a provision that precludes the Pearce Equities Group II, LLC, the entity that owned and developed the Maroon Creek Club project, from bringing any suit against the County related to any matters covered by the aviation easement including noise, fumes vibrations, discomfort, inconvenience, etc.

4) Burlingame Village Affordable Housing Proposal. This property is currently vacant and has been the subject of discussion for affordable housing and other residential development for several years. The Burlingame property represents the greatest potential for significant residential development within the vicinity of the Airport. The property is located

southeast of the runway and is partially within the City of Aspen. The property would most likely be annexed and developed under the City's development regulations making it difficult for the County to adequately monitor and participate in the critical development decisions related to this site. The City is contemplating between 225 and 330 residential units including a mix of single-family and multi-family units with some rental units. The project is in the discussion stage at this point and, if approved, would be several years out. While this land is relatively close to the Airport, Deer Hill provides a significant buffer from the Airport. Nevertheless, the County should seek close participation in the development discussions regarding this property to ensure that the issues related to the long-term development and operation of the Airport are carefully considered in any development plan for the property.

5) Airport Ranch Affordable Housing Site. This property is located immediately adjacent to the west side of the Airport property and is owned by Pitkin County. The property has been identified in the Aspen Area Community Plan (AACP) as a potential affordable housing site. The County sought proposals from consultants to evaluate the feasibility of locating approximately 31 housing units on this property. The most readily developable portion of this site is located within the 55 DNL noise contour (year 2022 projected noise level) and is very near the 60 DNL noise contour (both with and without the runway extension). In addition, the west side of the Airport is identified as being reserved for future aviation uses. In the event the west side was developed for general aviation use, this property would be further impacted by aircraft noise and activity. The traffic impacts on Owl Creek Road would also be increased with both affordable housing and aviation uses on this side of the Airport. Traffic is of particular concern along this segment of Owl Creek Road due to the sharp switchback that occurs in the area where the affordable housing site would be located. Given these factors, the County should carefully consider the future use of this property and should evaluate the site assuming that the west side may be developed for aviation uses.

6) Aspen Mass Affordable Housing Site. This site is located approximately 1.5 miles off the north end of the Airport runway and is currently vacant. This site has also been identified as a proposed affordable housing site in the 2000 AACP Update. This site is located within the 55 DNL noise contour (year 2022 projected noise level) and is located almost directly along the main approach and departure path for the Airport. While this property has been contemplated for affordable housing in the past, recent discussions have shifted away from housing and toward expanding the Brush Creek Intercept lot on this site. The future use of this property should be analyzed in the context of its location along the primary flight path for the Airport.

7) W/J Affordable Housing Project. This residential subdivision is located approximately 1.1 miles off the north end of the runway and just beyond the 60 DNL contour. The property has been approved for approximately 60 affordable housing units many of which

have been built. However, there is additional land area within the subdivision and over the past several years, a number of development alternatives for this land have been discussed with the County. As recently as 2002, the County had received an application for a project that included 40 more housing units, including 12 free-market units and 28 affordable housing units. However, after an unfavorable recommendation from the Planning Commission, this application was withdrawn. On September 1, 2003 a new land use application was submitted to the Pitkin County Community Development Department for additional development on this property. The current project proposes 5 new free-market lots and a deed restricted duplex containing 6 bedrooms. This unit is proposed as employee mitigation for the free-market units. The project also involves relocating three Resident Occupied lots, which were approved for another area of the property. All of the proposed housing units are located outside of the 60 DNL noise contour (Existing 2000 contour as well as Future 2022 contour, both with and without the runway extension) according to the noise analysis maps prepared for this Master Plan. This land use application includes a request for growth management system allotments, subject to the growth management competition process. The application does not address aircraft noise or compatibility with airport operations. This proposal should be carefully reviewed for compliance with Section 3-100 of the Pitkin County Land Use Code and an aviation easement should be obtained through the County's development review process.

8) North 40 Affordable Housing Subdivision. The North 40 subdivision is located directly east of the Airport's passenger terminal area and is within the jurisdiction of Pitkin County. The project includes approximately 72 affordable housing units as well as a remote classroom building for Colorado Mountain College. Currently, a majority of this site is located within the 55 DNL noise contour. According to the noise analysis for the year 2022, the noise levels on this site would diminish in the future. The greatest reduction in noise for this site occurs under the scenario with the runway extension. In this case, nearly all of the housing units would be located outside of 55 DNL noise contour. In addition to the noise associated with aircraft arrivals and departures, the North 40 site is impacted by aircraft run up and idling. When contemplating improvements to the Airport, especially the passenger terminal area, consideration should be given to ways of reducing ground level noise for this subdivision. Changes in operation techniques that would reduce the amount of time spent warming up and idling aircraft would also benefit residents of the North 40 subdivision.

9) Buttermilk Ski Area Base Village. The Buttermilk Ski area base village is located directly off the south end of the runway. The Buttermilk Base Area is located within Pitkin County and is included within the AF-Ski zone. New development within the AF-Ski zone district is subject to the policies and limitations contained in the Master Plan for the Ski Area. Amendments to the Master Plan are subject to a land use review process with public hearings. The current Buttermilk Master Plan was adopted in 1986 and there has been no major update since that time though there have been a few minor amendments to

accommodate changes in parking and the addition of one structure. There has also been a number of master plan updates submitted in draft form for discussion in recent years. The most recent version showed significant improvements in the Base Village area including new structures providing additional office space and skier services space as well as a small number of affordable housing units. At this point, the master plan update process is on hold and little can be said about what may occur in the Base Village in the future.

The noise analysis prepared for the Airport Master Plan shows that the future noise exposure for the Base Area remains approximately the same as in the base year (2000), with nearly all of the Base Village within the 55 DNL noise contour. The 2022 projected noise exposure, without the runway extension, actually results in a slight reduction in noise levels in the Base Area, taking it out of the 55 DNL noise contour. Therefore, there will probably not be enough of a change in the noise exposure levels on the property to influence or suggest a change in the County's policies with respect to future development in the Base Village Area. However, should the Skiing Company seek to accommodate housing on this site, the issue of whether to require noise attenuation should be thoroughly analyzed.

10) Stapleton Parcel. Another parcel linked to the Buttermilk Ski Area, and in close proximity to the Airport, is the Stapleton Property. This is the large area located just north of the Buttermilk Ski Area parking lot and approximately 2100 feet from the end of the existing runway or 1100 feet from the end of the potential runway extension. Under current conditions, a portion of the Stapleton property is located within the 55 DNL noise contour and the remainder is within the 60 DNL noise contour. The projected noise exposure for this property is actually reduced both under the scenario with the runway extension and without the extension. According to the noise analysis done for this Master Plan, a portion of the Stapleton property would be located within the 55 DNL noise contour and the remainder of the property would be outside the 55 DNL noise contour. No part of the property would be within the 60 DNL noise contour. This is true whether the runway is extended or not, though the area of the property contained within the 55 DNL noise contour varied depending on whether the runway extension is constructed or not.

In the past, the Aspen Skiing Company had leased a portion of this property for overflow parking. The relocation of Owl Creek Road divided the property and the portion of the property south of the realigned Owl Creek Road has been developed for parking use. There have also been discussions of building affordable housing, intercept parking and other transit facilities on this parcel. In fact, the County and the Colorado Department of Transportation (CDOT) have been attempting to condemn the property for use as an intercept parking lot when this Master Plan was being prepared. The most recent information was that the condemnation petition had been approved by the District Court, but that the Court of Appeals had reversed the trial court, on a finding that neither the Colorado Department of Transportation (CDOT) or the County could condemn property

for transit or open space/recreation parking. At the preparation of this document, the County and CDOT had filed a request for review of the Appeals Court decision by the State Supreme Court and were awaiting word as to whether the Supreme Court would consider the case.

Given the proximity of this property to the end of the potential runway extension, its future use could have significant impacts on operations at the Airport. Under the current zoning (AF-2), the property could theoretically be developed with up to nine residential dwelling units. This scenario would be undesirable for the Airport and for the residents of these housing units. Therefore, the County should closely monitor the status of the Stapleton property and actively pursue measures to prevent incompatible uses from being developed on this site.

11) Cozy Point. This site is located approximately 1.2 miles from the north end of the runway, on the west side of Highway 82. Currently, a majority of the property is located within the 55 DNL contour. However, there is a narrow strip adjacent to Highway 82 and north of Brush Creek Road located within the 60 DNL contour. The property is currently located within the County and is zoned AFR-10. Single-family dwelling units are an allowed use in this zone district, while multi-family units are prohibited. This property is also located outside of the Urban Growth Boundary (UGB) delineated in the 2000 Aspen Area Community Plan (AACP). The AACP discourages development, especially large scale or higher density development, outside of the UGB. The Cozy Point Ranch was purchased by the City of Aspen with a combination of Open Space and Housing funds. Since its purchase, the property has been used as an equestrian facility and has been considered for affordable housing. The current City Council does not favor the idea of using the site for affordable housing and there are presently no plans for any development on the property. In fact, a conservation easement has been placed on the property, which limits its future development potential. The easement covers the entire property but allows the construction and maintenance of agricultural buildings and use of the east end of the property for special events parking for the next five years. No additional residential development is allowed on the property under the terms of the Deed of Conservation Easement.

12) Corner of Brush Creek Road and Colorado 82. The south side of Brush Creek Road abuts several large privately owned vacant parcels that are zoned AFR-10. The 55 and 60 DNL noise contours for the existing condition (year 2000) traverse the portion of the property near the intersection of Colorado 82 and Brush Creek Road. This includes some of the property's more developable land (outside steep slopes, etc.). The projected noise exposure for the year 2022 eliminates shifts the property out of the 60 DNL noise contour, and slightly narrows the portion of the property contained within the 55 DNL noise contour. Recently, there had been discussions of developing the parcel closest to Colorado 82 with a structure or structures to accommodate the Aspen County Day School. Such a

project would require a “special use permit” from the County. At this point, no application has been submitted to the County for this project.

13) City of Aspen Parcel. This property is located between the Stapleton Parcel and the existing Airport property boundary and was created as a result of the realignment of Owl Creek Road. Portions of this property are located within the 65, 60, and 55 DNL noise contours as they are mapped for the current condition. This is one of a very few parcels, not contained within the Airport boundary, that includes an area within the 65 DNL noise contour. The future noise exposure maps show little change in the 65, 60, and 55 DNL noise contours as they relate to this property under the scenario without the potential runway extension. However, the 2022 noise contours with the potential runway extension show a significant expansion of the 65 and 60 DNL noise contours with the 65 DNL noise contour covering nearly half of this parcel.

The property is currently owned by the City of Aspen who has no plans for any development on the site other than the continued use of the pedestrian/bicycle trail, which traverses the site. The reality is that this site has little practical development potential due to its size, configuration and proximity to the Airport runway. The City had been working with a local land trust to encumber the property with a conservation easement. This could be an acceptable solution for preventing incompatible development on this site depending on the exact limitations and provisions contained in the deed of conservation easement. However, given this property’s proximity to the runway and the fact that portions of it are located within the 65 DNL noise contour, the Airport should take aggressive measures to control its future use. Toward this end, the County is currently in the process of pursuing a friendly condemnation as part of a strategy to acquire the land from the City of Aspen. Additionally, the Airport is pursuing the acquisition of this parcel because the perimeter road is programmed to traverse it. The County should place a high priority on completing this process and acquiring, or otherwise sterilizing, this property against any development other than compatible Airport uses and/or the existing public trail.

Other Future Planning Issues

The land uses within the vicinity of the Airport have been evaluated for several factors to determine compatibility. The most important of these is noise. The issue of Airport noise and compatibility with the surrounding land uses is discussed in detail under the “Noise Analysis” portion of this chapter. In addition to noise, the Pitkin County Land Use Code (Section 3-100) includes several other criteria for analyzing the compatibility of proposed projects in the vicinity of the Airport. These criteria should continue to be considered and enforced in the review of development proposals in the vicinity of the Airport in order to minimize the potential for the development of incompatible uses. The criteria could also be applied in reverse to evaluate the compatibility of a potential improvement at the

Airport with the existing uses in the surrounding area. The criteria contained in Section 3-100 of the Pitkin County Land Use Code are listed as follows:

- Sensitivity to aircraft noise
- Whether the use results in more people being exposed to danger should there be an aircraft accident on approach or take-off
- Potential for generating electrical interference with navigational signals or radio communication
- Potential for creating ground lighting making it difficult for pilots to distinguish the Airport runway lighting
- Potential for creating glare in the eyes of pilots
- Potential for otherwise impairing visibility in the vicinity of the Airport
- Potential for creating a hazard or endangering aircraft landing or take-off operations