



Chapter Five

AIRPORT PLANS

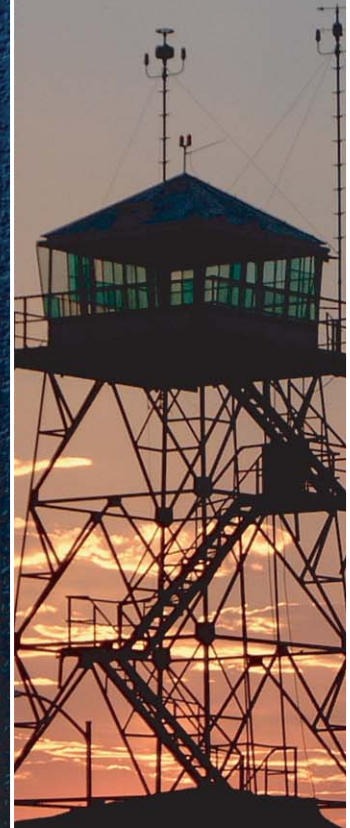
AIRPORT PLANS

The planning process for the Kingman Airport Master Plan has included several analytic efforts in the previous chapters, intended to project potential aviation demand, establish airside and landside facility needs, and evaluate options for improving the airport to meet those airside and landside facility needs. The planning process, thus far, has included the presentation of two draft phase reports (representing the first four chapters of the Master Plan) to the Planning Advisory Committee (PAC) and Kingman Airport Authority (KAA). A plan for the use of Kingman Airport has evolved considering their input. The purpose of this chapter is to describe, in narrative and graphic form, the plan for the future use of Kingman Airport.

AIRFIELD PLAN

The airfield plan for Kingman Airport focuses on meeting Federal Aviation Administration (FAA) design and safety standards, lengthening Runway 3-21 to the northeast, constructing new parallel taxiway access on the east side of the airfield, constructing glider aircraft staging areas, and constructing additional exit taxiways for Runways 3-21 and 17-35. **Exhibit 5A** graphically depicts the proposed airfield improvements. The following text summarizes the elements of the airfield plan.

The FAA has established a variety of design criterion to define the physical dimensions of runways and taxiways,



and the surrounding imaginary surfaces that protect the safe operation of aircraft at the airport. FAA design standards also define the separation criteria for the placement of landside facilities. As discussed previously in Chapter Three, FAA design criteria are a function of the critical design aircraft's (the most demanding aircraft or "family" of aircraft which will conduct 500 or more operations (take-offs and landings) per year at the airport) wingspan and approach speed, and in some cases, the runway approach visibility minimums. The Federal Aviation Administration (FAA) has established the Airport Reference Code (ARC) to relate these factors to airfield design standards.

Kingman Airport is currently used by a wide range of general aviation piston powered and turbine powered aircraft. These aircraft range from ARC A-I to ARC D-I and D-II on occasion. A wide range of transient business aircraft operate at the airport. A review of instrument flight plan data suggests that these business aircraft generally fall within ARC C-II.

The primary aircraft used for commercial service operations at Kingman Airport is the Beechcraft 1900 turboprop aircraft. This aircraft falls within ARC B-II. The stored aircraft at Kingman Airport are the most demanding aircraft to operate at the airport due to their larger wingspans and higher approach speeds, when compared with the remaining types of aircraft operating at the airport. They consist of smaller turboprop aircraft to large transport jet aircraft. These aircraft range from ARC B-II to C-IV.

For the Master Plan, stored aircraft within Approach Category C and ADG III are expected to comprise the critical design aircraft through the planning period. Assigning ARC C-III to the ultimate design of airfield facilities at Kingman Airport provides for the operation of all corporate aircraft up to the Bombardier Global Express and the Boeing Business Jet. The type of aircraft expected to be used in commercial air service is not expected to be larger than ARC B-II. This comprises the 19-seat Beechcraft 1900, which currently operates at the airport.

As the primary runway, Runway 3-21 and its associated taxiways will be designed to ARC C-III. To meet FAA minimum wind coverage requirements, ARC B-II design standards will be applied to the design and construction of Runway 17-35. **Table 5A** summarizes the ultimate ARC C-III and B-II airfield safety and facility dimensions for Kingman Airport.

The airfield plan preserves the ability to extend Runway 3-21 3,169 feet, from 6,851 feet to 10,000 feet. If constructed, the entire extension would be placed behind the Runway 21 end. The previous Master Plan recommended a similar extension be placed behind the Runway 3 end. Members of the PAC, expressed concern over a southwesterly extension, as a southwesterly extension would be directly towards new residential development that is planned along the airport's southern border. While the full 3,169-foot extension could be accommodated on existing airport property to the southwest, extending Runway 3-21 to



the northeast requires the acquisition of approximately 180 acres of land. Some of this land is currently publicly-owned (Arizona State Land

Trust). This extension would require crossing the Frees Wash located along the northern airport border.

TABLE 5A Planned Airfield Safety and Facility Dimensions (in feet) Kingman Airport			
	Runway 3-21		Runway 17-35
Airport Reference Code (ARC)	C-III		B-II
Runway	150		75
Width	10,000		6,725
Length			
Runway Safety Area (RSA)	500		150
Width	1,000		300
Length Beyond Runway End			
Object Free Area (OFA)	800		500
Width	1,000		300
Length Beyond Runway End			
Obstacle Free Zone (OFZ)	400		400
Width	200		200
Length Beyond Runway End			
Runway Centerline To:	250		200
Hold Line	400		240
Parallel Taxiway Centerline	500		250
Edge of Aircraft Parking			
Approach Visibility Minimums	Runway 3 One-Mile	Runway 21 ½ Mile	Each End One-Mile
Runway Protection Zone (RPZ)			5
Inner Width	1,000	1,000	00
Outer Width	1,510	1,750	700
Length	1,700	2,500	1,000
Approach Obstacle Clearance	34:1	50:1	20:1
Precision Obstacle Free Zone (POFZ)			
Width	N/A	800	N/A
Length Beyond Runway End	N/A	200	N/A
Taxiways			
Width	50		35
Safety Area Width	118		79
Object Free Area Width	186		131
Taxiway Centerline To:			
Parallel Taxiway/Taxilane	152		105
Fixed or Moveable Object	93		65.5
Taxilanes			
Taxilane Centerline To:			
Parallel Taxilane Centerline	140		97
Fixed or Moveable Object	81		57.5
Taxilane Object Free Area	162		115
Source:	FAA Advisory Circular 150/5300-13, <i>Airport Design</i> , Change 9, 14 CFR Part 77, <i>Objects Affecting Navigable Airspace</i> , FAA Advisory Circular 150/5340-1h, <i>Marking Of Paved Areas On Airports</i>		

It should be noted that this extension is included in the Master Plan for planning purposes only. This is to aid in local land use planning to ensure that appropriate land use measures are put into place to allow for this extension in the future if it is needed. By planning for a 10,000-foot runway, the City and County can take appropriate measures to ensure that there are not hazards or obstacle penetrations to the 14 Code of Federal Regulations (CFR) Part 77 airspace, and compatible land use is planned in the extended runway approach/departure area. The Airport Disclosure Map as also be developed around this ultimate condition to ensure adequate notification of the potential for this extension at the airport in the future.

As noted in Chapter Three, the mix of aircraft currently using, or expected to use the airport in the future may only require a 7,000-foot long runway. Changes in the type of commercial airline service, cargo services, or new aviation maintenance and repair businesses are examples of the type of activity changes that may require a longer runway that cannot be adequately determined at this time. Changes in the tenants of the adjacent Kingman Airport Industrial Park may also impact the type of aircraft using the airport and could require a longer runway. Extending the runway beyond 7,000 feet would require separate justification that is not included in this Master Plan.

Several taxiway improvements are included in the airfield plan. A new exit taxiway is planned between Taxiway D3 and D4 along Runway 3-21. This taxiway would allow aircraft landing

Runway 21 to exit the runway before reaching the runway end should they not be able to exit at Taxiway D3. This taxiway benefits larger business aircraft.

Two new exit taxiways are planned for Runway 17-35. The first is planned midway between the Runway 17 end and the Runway 17-35/Runway 3-21 intersection. Presently, aircraft landing Runway 17 cannot exit the runway until reaching the runway intersection via Taxiway D2. This new exit taxiway would extend directly to the main apron area. A second exit taxiway is planned midway between the Runway 17-35/Runway 3-21 and Runway 35 end. This taxiway would allow aircraft landing Runway 17 to exit the runway before reaching the runway intersection should they not be able to exit at Taxiway D2.

Parallel taxiway access is planned on the east side of the runways to support future aviation-related development on the east side of the airport. This includes a full-length parallel taxiway 400 feet east of the Runway 17-35 centerline. A partial parallel taxiway extending between the Runway 17-35 easterly parallel taxiway and the extended Runway 21 end would provide access to the primary runway from the east side of the airport.

While the alternatives analysis considered extending Taxiway C to the Runway 17 end, it was determined that there is not a significant number of aircraft that would use this taxiway as landside development is limited near the Runway 35 end and all existing tenants primarily use Taxiway D. The alternatives analysis also consid-

ered relocating Taxiways C and D closer to the Runway 17-35 and Runway 3-21 centerlines at the minimum distance provided by FAA standards. These alternatives were eliminated as the gain in developable property did not equal the potential reconstruction costs of the taxiways and lighting infrastructure.

A new taxiway is planned on the southern end of the runways to connect the Runway 3 and Runway 17 ends with the southern apron area. This taxiway would be constructed along the former runway alignment. This taxiway could be extended to the west to support future landside development needs.

An aircraft storage area is planned south Taxiway E west of the Runway 3 end. This storage area is planned to consolidate the long term storage of aircraft in a single area of the airport, away from the main apron areas which may ultimately be needed to support future landside development such as commercial general aviation operations, based aircraft, or transient aircraft needs. The configuration as shown on **Exhibit 5A** is in use at other airports with a large number of stored aircraft. In this concept, the aircraft are parked nose-to-tail along the taxiways. Depending upon aircraft size, 175 or more aircraft could be stored along these taxiways. These taxiways do not necessarily need to be paved with asphalt or concrete. Engineering solutions are available which can stabilize the soil sufficiently to support a parked aircraft.

Airfield lighting plans include adding medium intensity taxiway lights

(MITL) to Taxiway B and all new taxiways. Runway end identifier lights (REILs) are planned for each end of Runway 17-35. REILs provide pilots the ability to identify the runway ends and distinguish the runway end lighting from other lighting on the airport.

A precision instrument approach with Category I (CAT I) minimums (one-half-mile visibility and 200-foot cloud ceiling minimum) is planned for Runway 21. The capability is currently only provided with an instrument landing system (ILS). While the FAA is implementing the Wide Area Augmentation System (WAAS) to enhance the standard GPS signal for both vertical and lateral navigational approach capabilities, the current capabilities of the WAAS do not allow for CAT I approach minimums. GPS approaches with CAT I standards are not envisioned until after 2015. The installation of a medium intensity approach lighting system with runway alignment indicator lights (MALSR) will be required to achieve CAT I standards. A MALSR is located at the Runway 21 end. Precision markings are planned for Runway 21, to support the precision approach.

Runways 3, 17, and 35 are planned for approach procedures with vertical guidance (APV). The APV provides both vertical descent and course guidance information, with capabilities for approach minimums as low as one-mile visibility and cloud ceilings of 250 feet above the ground. To support an APV, the Runway 17 and 35 markings are planned to be upgraded to nonprecision markings.

Areas for glider operations have been planned along Runway 3-21. Gliders have special ground handling requirements. Before departure, the glider needs to be attached to the tow plane. After landing, the glider needs to be attached to a tow vehicle which will take the glider to the apron area. A taxiway is planned at the Runway 3 end to allow the staging of the glider and tow aircraft prior to departure. A taxiway is planned northeast of Taxiway D3 to accommodate the removal of the glider from the airfield. Both of these taxiways allow for this handling off the taxiway, which improves capacity and safety.

A perimeter service road is planned. This road will allow airport maintenance vehicles and security patrols to easily move around the airfield without needing to cross any runways or taxiways. This reduces the potential for runway incursions.

Shown in green shading on **Exhibit 5A** are areas of airport property that are in excess of the aviation needs of the airport over the next 20 years. Furthermore, much of the land is located too far from the runway to allow for airfield access. Consideration may be given to incorporating these portions of the airport into the existing Kingman Airport Industrial Park. The existing industrial park has been developed quite successfully over the past several years. The industrial park has limited multi-acre parcels available for development. Therefore, the expansion of the industrial park may ultimately be warranted.

To use the portions of the airport shown in green for nonaviation uses,

the KAA would need to pursue the release of this land from federal obligations. This would be similar to the release of federal obligations that was granted by the FAA in 1979 to allow for the development of the existing Kingman Airport Industrial Park.

Areas along each runway are reserved for future aviation-related development. Aviation-related development is designated for the area up to 1,500 feet on each side of Runway 3-21 and Runway 17-35. Up to 1,500 feet is typically needed from the runway centerline for apron, hangar, automobile parking, and access road development.

LANDSIDE PLAN

The landside plan for Kingman Airport has been devised to safely, securely, and efficiently accommodate potential aviation demand. Landside improvements are shown in detail on **Exhibit 5B**.

A replacement commercial airline terminal building is planned. The current terminal building is undersized and does not provide all the necessary functional elements for airline service in the same building. There is neither a baggage claim area nor a secure departure lounge in the existing terminal building. The secure departure lounge is located in a trailer on the apron away from the terminal building. Passengers must walk outside uncovered to the trailer for security screening and holding prior to boarding a flight. The ticket counter area is limited as well as the queuing area. Compounding the current limitations, the current terminal building is not



properly sized to serve future growth in enplanements. Given the age of the building, this plan considers developing a new terminal building which will provide sufficient area to accommodate the required functional elements described above.

The alternatives analysis concluded that the terminal building should initially remain near its existing location. This is the ideal location for public vehicle access to Andy Devine Boulevard, and access to the primary runway for aircraft. This area also provides the existing paved automobile parking area.

To ensure an operational terminal while the replacement terminal is being constructed, the existing terminal should remain in place until the replacement terminal is constructed. This also provides the opportunity to integrate the existing terminal building into the new terminal structure after completion. Retaining the existing terminal structure would avoid the costs of replacing the existing restaurant facilities.

Ultimately, the replacement terminal building could be constructed on either the north or south side of the existing terminal building. **Exhibit 5B** depicts the terminal being located on the north side of the building, as this area is readily available for development and would not require the relocation of the historic airport traffic control tower (ATCT) located on the south side of the terminal building. An ultimate terminal location is reserved along Taxiway E between the Runway 3 and Runway 17 ends. This location would provide a segregated, secure lo-

cation. This location would be needed if enplanements grow more than projected in this Master Plan.

The landside plan depicts the development of an airport rescue and firefighting (ARFF) facility northeast of the new commercial terminal, near the existing KAA administration building. This location is ideally suited to meet minimum 14 CFR Part 139 response times to the primary runway.

An airport maintenance facility is planned along Flightline Drive north of the new commercial terminal building. An airport maintenance structure can be constructed off the apron area, as direct access to the apron is not needed. Airport maintenance vehicles only need paved roadway access through a secure gate, which is available east of the proposed airport maintenance building site along the main apron.

Three helicopter hardstands are planned on the main apron near Taxiway D. There is presently no dedicated helicopter parking positions on the main apron. These hardstands will replace the existing asphalt pavement which has been damaged by the helicopter skids. This area is segregated from fixed wing aircraft tie-down locations.

A series of parcels for the development of fixed base operator (FBO) facilities has been reserved along the western edge of main apron area. These parcels could be used for providing a wide variety of commercial aviation services such as aircraft maintenance, flight training, or aircraft charter. The area designated for these parcels is presently undeveloped and is located along

the primary apron area. A large apron area with good visibility and access to the primary runway is typically needed to support many types of FBO activities.

The local completion of the aircraft storage hangar area south of the terminal building is included in the landside plan. This area can accommodate an additional 10 T-hangar units and 10 2,500-square-foot conventional hangars.

An aircraft wash rack is planned for the southwest corner of the main apron. An aircraft wash rack would provide an area for aircraft cleaning, and the proper collection of the aircraft cleaning solvents and contaminants removed from the aircraft hull during cleaning.

Long term T-hangar development is planned at the southern edge of the southwest apron area. A total of 52 T-hangar units are planned to meet projected long term storage needs.

The southwest apron development concept plans for several parcels of land that would be used for aircraft storage or general aviation services. The majority of these parcels are located south of Taxiway B. A taxiway would be constructed where the closed runway is currently located to allow these parcels to have airport access. Taxiway B would also be extended to the west for the same purpose. Automobile access to these parcels would be via a new access road branching off of Flightline Drive. Four more aircraft storage/general aviation parcels would be located at the north end of the southwest apron.

A campground is designated for an undeveloped area near the Kingman Army Airfield Museum. This campground would be for the exclusive use of aircraft owners.

Access to the adjacent Kingman Airport Industrial Park is included in the landside plan. This includes the development of a taxiway extending west across Flightline Drive from the main apron, as shown on **Exhibit 5B**. A variety of parcel sizes are shown to accommodate different market conditions, although it is likely that the size and configuration of the parcels could change in the future as demand dictates. The taxiway is designed for Airplane Design Group II aircraft (aircraft with wingspans less than 79 feet). This is to serve the smaller parcels located along Flightline Drive. The width of the taxiway is restricted by existing leaseholds and building locations. Flightline Drive is currently designated to allow for taxiway access to the Kingman Airport. Several businesses that are currently located in the industrial park, taxi to the runways via Flightline Drive.

NOISE EXPOSURE ANALYSIS

Aircraft sound emissions are often the most noticeable environmental effect an airport will produce on the surrounding community. If the sound is sufficiently loud or frequent in occurrence, it may interfere with various activities or otherwise be considered objectionable.

To determine the noise-related impacts that the proposed development could have on the environment surrounding Kingman Airport, noise exposure patterns were analyzed for both existing airport activity conditions and projected long term activity conditions.

The basic methodology employed to define aircraft noise levels involves the use of a mathematical model for aircraft noise predication. The Yearly Day Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the FAA, Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three federal agencies have each identified the 65 DNL noise contour as the threshold of incompatibility, meaning that noise levels below 65 DNL are considered compatible with underlying land uses. Most federally-funded airport noise studies use DNL as the primary metric for evaluating noise.

DNL is defined as the average A-weighted sound level as measured in decibels (dB), during a 24-hour period. A 10-dB penalty applies to noise events occurring at night (10:00 p.m. to 7:00 a.m.). DNL is a summation metric which allows objective analysis and can describe noise exposure comprehensively over a large area. The 65 DNL contour has been established as the threshold of incompatibility, meaning that noise levels below 65 DNL are considered compatible with underlying land uses.

Since noise decreases at a constant rate in all directions from a source, points of equal DNL noise levels are routinely indicated by means of a contour line. The various contour lines are then superimposed on a map of the airport and its environs. It is important to recognize that a line drawn on a map does not imply that a particular noise condition exists on one side of the line and not on the other. DNL calculations do not precisely define noise impacts. Nevertheless, DNL contours can be used to: (1) highlight existing or potential incompatibilities between an airport and any surrounding development; (2) assess relative exposure levels; (3) assist in the preparation of airport environs land use plans; and (4) provide guidance in the development of land use control devices, such as zoning ordinances, subdivision regulations and building codes.

The noise contours for Kingman Airport have been developed from the Integrated Noise Model (INM), Version 6.1. The INM was developed by the Transportation Systems Center of the U.S. Department of Transportation at Cambridge, Massachusetts, and has been specified by the FAA as one of the two models acceptable for federally-funded noise analysis.

The INM is a computer model which accounts for each aircraft along flight tracks during an average 24-hour period. These flight tracks are coupled with separate tables contained in the database of the INM, which relate to noise, distances, and engine thrust for each make and model of aircraft type selected.

Computer input files for the noise analysis contain operational data, runway utilization, aircraft flight tracks, and fleet mix as projected in the plan. The operational data and

aircraft fleet mix are summarized in **Table 5B**. These estimates were derived after review of instrument flight plans maintained by the FAA and existing airport records.

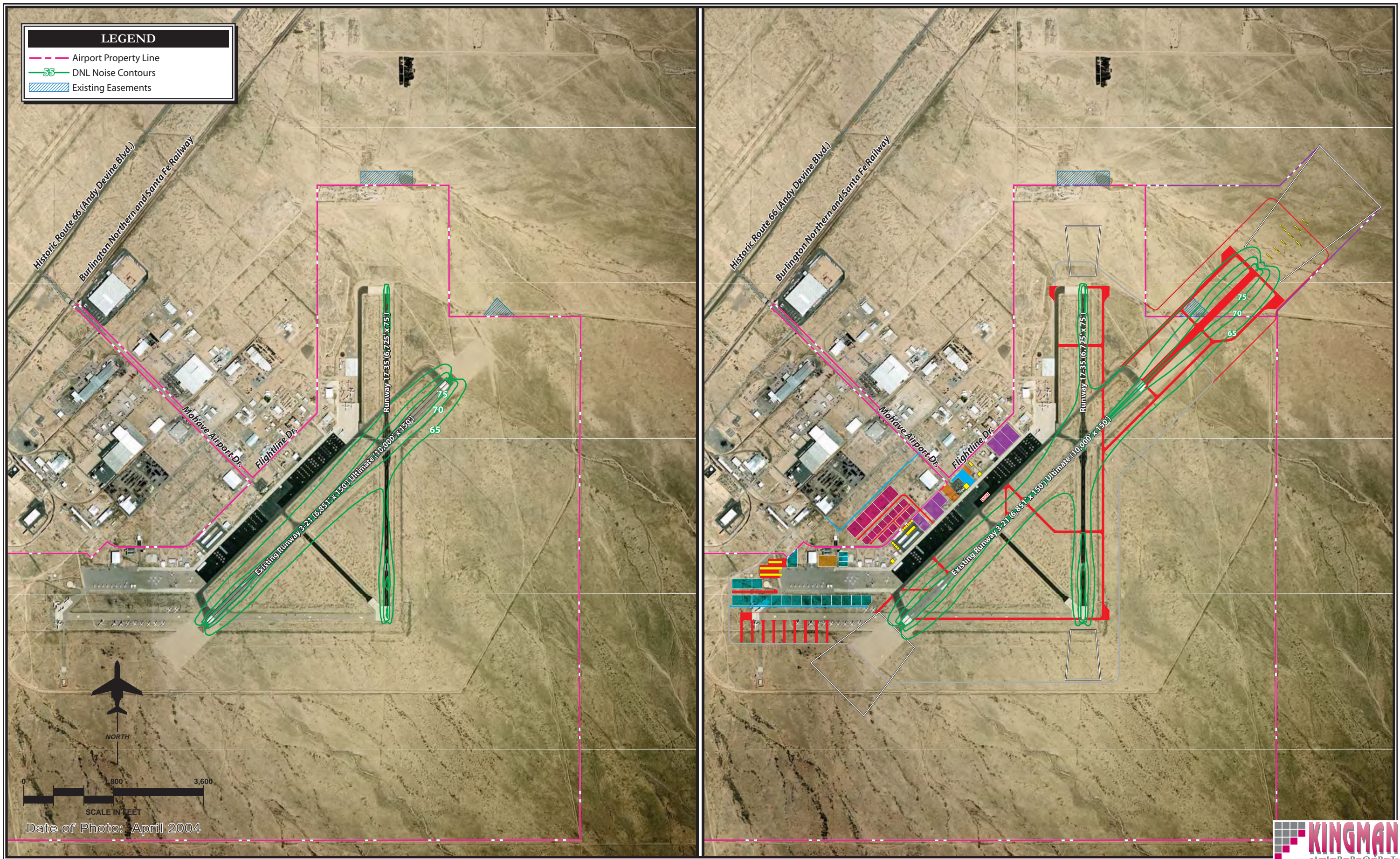
TABLE 5B Noise Model Input: Aircraft Operations Kingman Airport						
Operations By Type	Single Engine	Multi-Engine	Turboprop	Turbojet	Helicopter	Totals
Existing Conditions						
Local	24,061	3,721	0	0	0	27,782
Itinerant	14,739	2,279	1,800	300	1,000	20,118
Total	38,800	6,000	1,800	300	1,000	47,900
Long Term						
Local	38,627	4,909	0	0	0	43,536
Itinerant	32,973	4,191	5,400	2,700	1,800	47,064
Total	71,600	9,100	5,400	2,700	1,800	90,600
Source: Coffman Associates Analysis						

The runway use percentages are summarized in **Table 5C**.

TABLE 5C Noise Model Input: Runway Use Percentages Kingman Airport				
Aircraft	3	21	17	35
Existing				
Single Engine Piston	25%	65%	2%	8%
Multi-Engine Piston	25%	65%	2%	8%
Turboprop	25%	65%	2%	8%
Business Aircraft	25%	65%	2%	8%
Source: Coffman Associates analysis				

The aircraft noise contours generated using the aforementioned data for Kingman Airport are depicted on **Ex-**

hibit 5C. For both the existing and projected activity levels, the 65 DNL



noise contour remains entirely within the existing airport property line.

ENVIRONMENTAL EVALUATION

A review of the potential environmental impacts associated with proposed airport improvements is an important consideration in the Airport Master Plan process. Prior to the FAA's approval of development projects at an airport, some form of environmental review must be undertaken. The *National Environmental Policy Act (NEPA) of 1969*, as amended, outlines the general format of this review. The FAA has established airport-specific NEPA environmental review processes which are detailed in FAA Order 1050.1E, *Environmental Impacts: Policies and Procedures*. The NEPA process for a project typically takes one of three forms. The simplest and least time-consuming form of review is the categorical exclusion, often referred to as a Cat-Ex. Historically, the FAA has completed many of the Cat-Ex documents internally; however, as the number of Cat-Ex documentation requirements has increased, the FAA is now requesting project sponsors complete the needed documentation and then submit it to the FAA for review. A detailed list of projects which can often be categorically excluded, pending no extraordinary circumstances, is found in paragraphs 307 through 312 of FAA Order 1050.1E. Extraordinary circumstances exist if the project could have an adverse effect within any of the resource categories discussed in the following sections of this evalua-

tion (i.e., cultural or biological resources, wetlands, or floodplains).

The second level of NEPA documentation is an Environmental Assessment (EA). Environmental assessments are typically prepared when a project is not categorically excluded; is normally categorically excluded but, in this instance, involves at least one extraordinary circumstance that may significantly affect the human environment; or, when the action is not one known to require a higher level of environmental review. Actions which typically require an EA are listed in paragraph 401 of FAA Order 1050.1E and include projects such as the acquisition of more than three acres of property, runway extensions, new runways, and runway strengthening projects which have the potential to increase off-airport noise by 1.5 decibels within the 65 DNL noise contour.

The third level of NEPA documentation is an Environmental Impact Statement (EIS). This form of documentation is fairly rare when compared to the number of categorical exclusion and EA documents which are prepared. EISs are required when the impacts of the proposed action are significant, even with the incorporation of mitigation.

The purpose of this environmental evaluation is to provide a preliminary review of environmental issues that would need to be analyzed in further detail during the NEPA process. As a result, this analysis does not address mitigation or resolution of any identified environmental impacts.

EVALUATION OF POTENTIAL IMPACTS

A brief description of the existing environmental condition surrounding Kingman Airport was provided within Chapter One of the Master Plan. This evaluation will identify potential impacts to these resources identified in Chapter One. Guidance contained within Appendix A of FAA Order 1050.1E, as well as FAA Order 5050.4A, *Airport Environmental Handbook*, was utilized for the preparation of this evaluation. Discussion regarding each of the 18 impact categories contained within the FAA guidance is provided.

Noise/Compatible Land Use

The Yearly Day-Night Average Sound Level (DNL) is used in this study to assess aircraft noise. DNL is the metric currently accepted by the Federal Aviation Administration (FAA), Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD) as an appropriate measure of cumulative noise exposure. These three agencies have each identified the 65 DNL noise contour as the threshold of incompatibility.

The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. Typically, significant impacts will occur over noise-sensitive areas within the 65 DNL noise contour.

Land use within the airport environs primarily consists of industrial and

commercial to the northwest. The remaining land surrounding the airport is undeveloped. As depicted in **Exhibit 5C**, the existing and project long-term 65 DNL noise contours remain on airport property. Therefore, no significant noise impacts are anticipated in the future.

Socioeconomic Impacts, Environmental Justice, and Children's Environmental Health and Safety Risks

Socioeconomic impacts known to result from airport improvements are often associated with relocation activities or other community disruptions, including alterations to surface transportation patterns, division or disruption of existing communities, interferences with orderly planned development, or an appreciable change in employment related to the project. Social impacts are generally evaluated based on areas of acquisition and/or areas of significant project impact, such as areas encompassed by noise levels in excess of 65 DNL.

As part of the planned airport development, land to the northeast of the airport will be acquired for the runway extension and associated runway protection zone. Presently, this land is undeveloped. According to the *Mo-have County General Plan*, this area is planned for light-industrial land uses. It is not anticipated that off-airport businesses will need to be relocated.

Executive Order (EO) 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-Income Populations*, and the accompa-

nying Presidential Memorandum, and Department of Transportation (DOT) Order 5610.2, *Environmental Justice*, require the FAA to provide meaningful public involvement by minority and low-income populations, as well as analysis that identifies and addresses potential impacts on these populations that may be disproportionately high and adverse.

Regarding EO 12898, Kingman Airport is not located in an area which exhibits a higher than average percentage of minorities or low-income persons when compared with county and state levels.

Pursuant to Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, federal agencies are directed to identify and assess environmental health and safety risks that may disproportionately affect children. These risks include those that are attributable to products or substances that a child is likely to come in contact with or ingest, such as air, food, drinking water, recreational waters, soil, or products they may be exposed to.

It is not anticipated that the proposed airport projects will pose health and safety risks to children, as the airport will continue to operate in the same manner as it does today. The acquisition of the runway protection zones will further increase the safety of area residents, including children.

Secondary (Induced) Impacts

Secondary impacts are those that include shifts in patterns of population

growth, public service demands, and changes in business and economic activity to the extent influenced by airport development.

Significant shifts in patterns of population movement or growth, or an increase in public service demands are not anticipated as a result of the proposed development. The proposed development is being undertaken to meet the needs of existing and anticipated future users, as well as to gain control of the safety areas.

Air Quality

The U.S. Environmental Protection Agency (EPA) has adopted air quality standards that specify the maximum permissible short-term and long-term concentrations of various air contaminants. The National Ambient Air Quality Standards (NAAQS) consist of primary and secondary standards for six criteria pollutants which include: Ozone (O₃), Carbon Monoxide (CO), Sulfur Dioxide (SO₂), Nitrogen Oxides (NO_x), Particulate Matter (PM₁₀ and PM_{2.5}), and Lead (Pb). Potentially significant air quality impacts, associated with an FAA project or action, would be demonstrated by the project or action exceeding one or more of the NAAQS for any of the time periods analyzed.

As discussed in Chapter One, Kingman Airport is located in Mohave County, which is in attainment for all pollutants. As the projects are proposed for development, thereby requiring FAA environmental approval, air quality analyses will be required. It is not anticipated that any of the pro-

posed development projects would result in significant air quality impacts.

Water Quality

Water quality concerns associated with airport expansion most often relate to domestic sewage disposal, increased surface runoff and soil erosion, and the storage and handling of fuel, petroleum, solvents, etc. Chapter One outlines the existing water supply and drainage patterns for the airport and its environs.

Construction of the taxiway improvements, runway extension, and land-side development will result in a slight increase of impermeable surfaces and, thereby, result in an increase in surface runoff. Additionally, during the construction phase of the proposed projects, short-term impacts on water quality may be experienced; however, temporary measures to control water pollution, soil erosion, and siltation through the use of best management practices should minimize these impacts.

Wetlands and Waters of the U.S.

Wetlands are defined by Executive Order 11990, *Protection of Wetlands*, as those areas that are inundated by surface or groundwater with a frequency sufficient to support, and under normal circumstances does or would support, a prevalence of vegetation or aquatic life that requires satu-

rated or seasonally-saturated soil conditions for growth and reproduction.

Coordination undertaken during previous NEPA analyses indicates that wetlands are not present on airport property; however, due to the lapse in time since this determination, a wetlands delineation should be performed prior to runway and taxiway projects.

Specifically, the proposed runway extension to the north would require a wetlands delineation to determine the presence of wetlands in that area and the extent of the impacts that may occur as a result of the proposed development. Analysis of USGS maps indicates that the proposed runway extension would involve filling two intermittent streams (Frees Wash) located north of the airport. Section 404 of the *Clean Water Act* requires a permit when jurisdictional waters are dredged or filled. Coordination with the U.S. Army Corps of Engineers should be undertaken prior to runway development to determine permitting requirements.

Floodplains

Significant impacts to floodplains occur when the proposed actions increase the risk of flood loss, increasing the impact of flooding on human safety, health and welfare. Additionally, impacts can occur if the proposed action destroys the natural and beneficial values that are inherent in floodplain areas. As indicated in Chapter One, Kingman Airport is not located in a 100-year floodplain.

Historical, Architectural, Archaeological and Cultural Resources

Determination of a project's environmental impact to historic and cultural resources is made under guidance in the *National Historic Preservation Act (NHPA) of 1966*, as amended, the *Archaeological and Historic Preservation Act (AHPA) of 1974*, the *Archaeological Resources Protection Act (ARPA)*, and the *Native American Graves Protection and Repatriation Act (NAGPRA) of 1990*. In addition, the *Antiquities Act of 1906*, the *Historic Sites Act of 1935*, and the *American Indian Religious Freedom Act of 1978* also protect historical, architectural, archaeological, and cultural resources.

As discussed in Chapter One, a survey was conducted as part of the 1993 Environmental Assessment. It was determined that 24 cultural resource features exist at the airport. All these features are considered to be part of a National Register of Historic Places eligible historic site. Prior to development, additional coordination with the Arizona State Historic Preservation Office may be required to determine the possible impacts.

Department of Transportation Act: Section 4(f)

Section 4(f) of the DOT Act, which was re-codified as section 303(c) of 49 USC, provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly-owned land from a historic site, public parks, recreation areas, or waterfowl and wildlife refuges

of national, state, regional, or local importance, unless there is no feasible and prudent alternative to the use of such land, and the project includes all possible planning to minimize harm resulting from the use.

If the National Register of Historic Places eligible features discussed in the previous section are disturbed or removed, Section 4(f) impacts will likely result. Coordination with the Arizona State Historic Preservation Office may be required.

Fish, Wildlife, and Plants

Section 7 of the Endangered Species Act (ESA), as amended, applies to federal agency actions and sets forth requirements for consultation to determine if the proposed action “may affect” a federally-endangered or threatened species. If an agency determines that an action “may affect” a federally-protected species, then Section 7(a)(2) requires each agency to consult with the U.S. Fish and Wildlife Service (FWS) or the National Marine Fisheries Service (NMFS), as appropriate, to ensure that any action the agency authorizes, funds, or carries out is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species, or result in the destruction or adverse modification of critical habitat. If a species has been listed as a candidate species, Sec. 7 (a)(4) states that each agency must confer with the FWS and/or NMFS.

The existing biotic environment was discussed in Chapter One. The U.S. Fish and Wildlife Service lists 17 endangered or threatened species in Mo-

have County. A field survey would be required to determine the presence of these species within the project area. Additionally, the endangered species list is constantly being updated and would need to be consulted prior to any development projects.

Coastal Resources

Federal activities involving or affecting coastal resources are governed by the *Coastal Barriers Resource Act (CBRA)*, the *Coastal Zone Management Act (CZMA)*, and EO 13089, *Coral Reef Protection*. The airport is not located near any coastal resources.

Wild and Scenic Rivers

Wild and scenic rivers (WSR) are designated by the Wild and Scenic Rivers Act. A National Rivers Inventory (NRI) is maintained to identify those river segments which are protected under this Act. There are no designated wild or scenic rivers within the immediate vicinity of the airport.

Farmland

Under the *Farmland Protection Policy Act (FPPA)*, federal agencies are directed to identify and take into account the adverse effects of federal programs on the preservation of farmland, to consider appropriate alternative actions which could lessen adverse effects, and to assure that such federal programs are, to the extent practicable, compatible with state or local government programs and policies to protect farmland. The FPPA

guidelines apply to farmland classified as prime or unique, or of state or local importance as determined by the appropriate government agency, with concurrence by the Secretary of Agriculture.

Generally, lands that are used as irrigated farmland are considered prime or unique within the State of Arizona. The lands proposed for acquisition are not used as irrigated farmland; therefore, no impacts are anticipated.

Natural Resources and Energy Supply

Energy requirements associated with the proposed action alternative generally fall into two categories: (1) those which relate to changed demands for stationary facilities (i.e., airfield lighting and terminal building heating); and (2) those which involve the movement of air and ground vehicles (i.e., fuel consumption). In addition to fuel, the use of natural resources includes construction materials, water, and manpower.

The implementation of the proposed alternative will not likely increase significantly the consumption of natural resources and energy at the airport. Any impacts would be the result of increased operations and upgraded facilities.

Light Emissions and Visual Impacts

Light emission impacts occur when lighting associated with an action will create an annoyance among people in

the vicinity or interfere with their normal activities. Aesthetic impacts relate to the extent that the development contrasts with the existing environment and whether this contrast is objectionable.

It is unlikely that the proposed alternative will result in less-than-significant lighting or visual impacts to the area surrounding the airport. The proposed development does include the extension of runway lighting; however, no residential land uses are located in close proximity to the airport. The proposed development projects will be consistent with the existing features on the property; therefore, it is anticipated that they will blend-in with the existing facilities.

Hazardous Materials, Pollution Prevention and Solid Waste

Four primary laws have been passed governing the handling and disposal of hazardous materials, chemicals, substances, and wastes. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the *Resource Conservation Recovery Act (RCRA)* (as amended by the *Federal Facilities Compliance Act of 1992*) and the *Comprehensive Environmental Response, Compensation, Liability Act (CERCLA)*, as amended (also known as Superfund). RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

Consideration should be given regarding the hazardous nature of any materials or wastes to be used, generated, or disturbed by the proposed action, as well as the control measures to be taken.

As mentioned previously in this section, the airport will need to continue to comply with current NPDES operations permit requirements. With regard to construction activities, the airport and all applicable contractors will need to obtain and comply with the requirements and procedures of the construction-related NPDES General Permit, including the preparation of a *Notice of Intent* and a *Stormwater Pollution Prevention Plan*, prior to the initiation of project construction activities.

Construction Impacts

Construction impacts typically relate to the effects on specific impact categories, such as air quality or noise, during construction. To minimize construction-related impacts, the use of best management practices is recommended. All applicable permits and certifications will need to be obtained prior to any construction.

PUBLIC AIRPORT DISCLOSURE MAP

Arizona Revised Statutes (ARS) 28-8486, *Public Airport Disclosure*, provides for a public airport owner to publish a map depicting the "territory in the vicinity of the airport." The ter-

ritory in the vicinity of the airport is defined as the traffic pattern airspace and the property that experiences 60 DNL or higher in counties with a population of more than 500,000, and 65 DNL or higher in counties with less than 500,000 residents. The DNL is calculated for the 20-year forecast condition. ARS 28-8486 provides for the State Real Estate Office to prepare a disclosure map in conjunction with the airport owner. The Disclosure Map is recorded with the County Recorder.

Exhibit 5D depicts the recommended Disclosure Map for Kingman Airport, considering the requirements of the statute above. Traffic pattern airspace is defined in FAA Order 7400.2D, *Procedures for Handling Airspace Matters*. Traffic pattern airspace is a function of the approach category for the runway. Approach category C is planned for Runway 6-24, while approach category B is planned for Runway 18-36.

According to FAA Order 7400.2D, the traffic pattern airspace for approach category C extends 2.25 miles beyond each runway end, 2.25 miles laterally from the runway centerline to encompass the traffic pattern. For approach category B, the traffic pattern airspace extends 1.5 miles beyond each runway

end, 1.5 miles laterally from the runway centerline to encompass the traffic pattern, and 0.25 miles on the side opposite the traffic pattern when the traffic pattern is maintained on one side of the runway.

The Disclosure Map for Kingman Airport has been developed assuming left traffic for all runways. The 65 DNL contour is shown as required by the statute.

SUMMARY

The Master Plan for Kingman Airport has been developed in cooperation with the PAC, interested citizens, and KAA. It is designed to assist the KAA in making decisions relative to the future use of Kingman Airport as it is maintained to meet the air transportation needs for the region.

Flexibility will be a key to the plan, since activity may not occur exactly as forecast. The Master Plan provides the KAA with options to pursue in marketing the assets of the airport for community development. Following the general recommendations of the plan, the airport can maintain its viability and continue to provide air transportation services to the region.

