DRAFT
ENVIRONMENTAL ASSESSMENT

PROPOSED SOUTHERN NEVADA REGIONAL HELIPORT
Clark County, Nevada

Prepared for:

CLARK COUNTY DEPARTMENT OF AVIATION

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
As a Cooperating Agency pursuant to 40 CFR 1501.6(a)(1)

Prepared by:

Ricondo and Associates, Inc.

in association with:
Brown-Buntin Associates, Inc.
SWCA Environmental Consultants
The Louis Berger Group, Inc.
ASRC Aerospace Corporation
Granite Environmental, Inc.

April 2008

This environmental assessment becomes a Federal document when evaluated, signed and dated by the Responsible FAA Official.

_____ _____

Responsible FAA Official **Date**

GENERAL INFORMATION ABOUT THIS DOCUMENT

WHAT'S IN THIS DOCUMENT? *This document contains a Draft Environmental Assessment, which examines the potential environmental impacts of construction and operation of the proposed development alternative and the "no action" alternative for the Southern Nevada Regional Heliport.*

WHAT SHOULD YOU DO? *Read the Draft Environmental Assessment and attend the public hearing on this document. If you have important information that has not been considered in this document or comments about the conclusions, please send your written comments to the Clark County Department of Aviation at the address below. Copies of the document are available for review at various libraries in the Las Vegas area, and at the administrative offices of the Department of Aviation at McCarran International Airport, Bureau of Land Management's Las Vegas Office, and at the Federal Aviation Administration's Western-Pacific Regional Office in Hawthorne, California. Addresses for these locations are provided in Appendix K of the document.*

Please send Written Comments to:

Pamela Adams
Principal Planner
Clark County Department of Aviation
P.O. Box 11005
Las Vegas, Nevada 89111-1005

The cut off date is May 9, 2008. These comments must be ***received*** by Clark County, not simply post marked by that date to be considered. Please allow adequate time for mailing.

WHAT HAPPENS AFTER THIS? *After comments are received from the public and other federal, State, and local governmental reviewing agencies, the Clark County Department of Aviation will submit a Final Environmental Assessment to the U.S. Department of Transportation, Federal Aviation Administration. Upon consideration of the information in the issue a Final Environmental Assessment, the FAA may decide to (1) issue a Finding of No Significant Impact and Record of Decision or (2) prepare an Environmental Impact Statement."*

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I. Purpose and Need

1.1 Introduction

This Environmental Assessment (EA) documents the potential environmental effects associated with the construction and operation of the proposed Southern Nevada Regional Heliport (the Heliport) at the South of Sloan site (the Heliport site). The EA was prepared in accordance with federal, State of Nevada, and local laws and regulations, including those specified in Federal Aviation Administration (FAA) Order 1050.1E, *Environmental Impacts: Policies and Procedures* [I-1][1], and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* [I-2], and the U.S. Department of the Interior, Bureau of Land Management (BLM) *NEPA Handbook H-1790-1* [I-3].

1.2 Background

Over the past 10 years, helicopter air tours to the Grand Canyon have increased at a faster rate than air carrier activity in the Las Vegas region. A majority of the helicopter tours originate at McCarran International Airport (McCarran), centrally located within the urbanized area of the Las Vegas region. Helicopter air tour activity at McCarran grew by a compounded annual rate of about 20.7 percent from 2000 to 2004; during the same period, air carrier activity at McCarran increased at a compounded annual rate of 4.3 percent.

The helicopter air tours offer a unique opportunity to experience the Grand Canyon from the Las Vegas Strip in about one-half day. Helicopter air tour passengers are typically tourists who are transported via limousine or bus from hotels on the Las Vegas Strip to the helicopter base where they are briefed about the tour and loaded onto helicopters for the flight to the Grand Canyon area. The helicopter operators fill as many helicopters as it takes to accommodate the passengers and fly them to near the Grand Canyon[2]. After some time afforded for viewing and enjoyment of the Grand Canyon, passengers are flown back to the helicopter base, and then returned via limousine or bus to their point of origin on the Las Vegas Strip. The success of the helicopter air tours of the Grand Canyon relies upon the ability to transport the passengers between the strip and the helicopter base, conduct the round trip flight, and provide a reasonable amount of time at the Grand Canyon, all within a time span of about one-half day. This allows visitors who have limited time in Las Vegas to experience the Grand Canyon. Due to helicopter fuel capacity limitations, time demands, and operating costs, Grand Canyon helicopter air tours typically follow direct routes with limited *ad hoc* deviations to other points of interest.

It was estimated from the results of a helicopter noise study conducted at the end of 2000 that about 100,000 residents (or 7 percent of the regional population) live within one mile of the corridors followed by the helicopters traveling between McCarran and the Grand Canyon. In June 2003, in response to concerns related to noise from helicopter overflights, the Nevada State Legislature amended the Nevada Revised Statutes, Chapter 495 Sections 300-320 (NRS 495) [I-4], to require certain counties, including Clark County, to designate a preferred non-urban heliport site, which met certain criteria, no later than January 1, 2004. A copy of NRS 495 is provided in **Appendix A** as

[1] Numbers in brackets refer to references found in Chapter V of this EA.

[2] The viewing sites are located outside of the administrative boundary of the Grand Canyon National Park. The helicopter air tours that originate and conclude at McCarran do not enter airspace subject to Special Federal Aviation Regulation No. 50-2, Special Flight Rules in the Vicinity of the Grand Canyon National Park, AZ. [I-5]

Attachment A-1. To fulfill the requirements of NRS 495 and in efforts to address community input[3], the Clark County Department of Aviation (CCDOA) completed several planning studies, listed below, establishing siting and facility requirements and identifying a potential location for development of a non-urban heliport. For the purposes of the planning efforts, the CCDOA determined that, at a minimum, the site would need to be (1) located to minimize helicopter overflights of the urban areas of the Las Vegas region, (2) located to provide an alternative base of operations for the Grand Canyon helicopter air tour operators, and (3) sized to accommodate forecast demand for helicopter air tour service to the Grand Canyon from the Las Vegas region.

In Public Law 109-115, Section 180 [I-6], Congress authorized BLM to transfer a 229-acre parcel of land to Clark County exclusively for the construction and operation of a heliport. The legislation further required that helicopter air tour operators (i) pay a $3 per passenger "conservation fee" for helicopter air tours that traverse the Sloan Canyon National Conservation Area (NCA), and (ii) fly along a prescribed corridor and above a prescribed altitude when traversing the Sloan Canyon NCA. **Exhibit I-1** shows the 229-acre parcel referred to as the South of Sloan site and the prescribed corridor over the Sloan Canyon NCA. A copy of Public Law 109-115, Section 180 is provided in Appendix A as **Attachment A-2**.

The various planning studies completed by the CCDOA include:

- *Needs Assessment for a Southern Nevada Regional Heliport* (the Needs Assessment) [I-7] – documented the physical and operational characteristics of commercial helicopter operations, and identified generalized facility requirements for a non-urban heliport.
- *Site Suitability Assessment for a Southern Nevada Regional Heliport* (the Site Suitability Assessment) [I-8] – assessed the suitability of 13 candidate sites to accommodate the helicopter facility requirements identified in the Needs Assessment.
- *Supplemental Site Suitability Assessment of the South of Sloan Site* (the SOS Site Suitability Assessment) [I-9] – assessed the suitability of the South of Sloan site to accommodate commercial helicopter operations following input from stakeholders, including City of Henderson residents and the Anthem community.
- *Project Definition, Development, and Operational Manual, Southern Nevada Regional Heliport* (PDDOM) [I-10] – updated and refined the requirements for the Heliport on the South of Sloan site, including development and operating standards.
- *Conceptual Heliport Layout Plan* [I-11] – provided a graphic depiction of the Heliport, including helicopter landing and takeoff areas, taxiing areas, helicopter parking pads, terminal facilities, ground vehicular access and parking areas, and other ancillary facilities. The Conceptual Heliport Layout Plan was developed in conjunction with the PDDOM to facilitate the FAA's review and approval during the environmental review process to ensure that applicable FAA standards would be met.
- *Forecasts of Grand Canyon Helicopter Air Tour Operations and Passengers* (the Heliport Forecasts) [I-12] – established unconstrained forecasts of helicopter air tour operations and passengers that represent anticipated increases in demand if there were no constraints in terms of facility or operating costs through 2017, the end of the planning period for the Heliport.

[3] See **Appendix B** for a timeline of the planning process for the Heliport, including neighborhood meetings and topics of concern raised by the community, before and after the passage of NRS 495.

Exhibit I-1

Federal Land Transfer and Prescribed Flight Corridor over Sloan Canyon National Conservation Area

Exhibit I-1 shows the 229-acre parcel that would accommodate the proposed heliport facility and the prescribed helicopter flight corridor (per Public Law 109-115, Section 180) from the South of Sloan site across the Sloan Canyon National Conservation Area.

Four operators providing helicopter air tours of the Grand Canyon are based at McCarran. Based on data collected from AirScene,[4] the CCDOA estimates that about 44,700 helicopter air tour departures were accommodated at McCarran in 2004[5], about 33,200 of which were Grand Canyon tours. According to the Heliport Forecasts, growth in the number of Grand Canyon helicopter air tour operations is forecast to continue, at an annual average rate of 4.0 percent through 2017.

The CCDOA completed the *Southern Nevada Regional Airport System Plan* [I-13] (System Plan) in August 2001. The System Plan states that the primary role of McCarran is to accommodate commercial aviation activity for the Las Vegas region, including both passenger and air cargo air carrier operations. Corporate general aviation and military activity is also accommodated at McCarran, but both are of secondary importance to commercial aviation activity. The facility area use plan for McCarran in the System Plan depicts areas preserved for future commercial aviation uses on the west side of the Airport, along with areas for corporate general aviation activity. Currently, Grand Canyon helicopter air tour operators, along with helicopters for television newsgathering, fire fighting, and Las Vegas Strip air tours are based on the west side of McCarran. Considering the forecast increases in Grand Canyon helicopter air tours, additional space will be needed to accommodate future activity. Based upon a review of the facility area use plan for McCarran in the System Plan, no additional space exists to accommodate the helicopter air tour operators without using land needed for McCarran to continue to serve its primary role.

In response to the combination of increasing aviation demand (including that for helicopter air tour operations) and the facility constraints at McCarran, the Grand Canyon helicopter air tour operators based at McCarran may choose to relocate to other facilities. These facilities could include other airports owned and operated by Clark County, airports owned and operated by other public entities, or the expansion or development of private heliports/helipads in the Las Vegas region[6]. Conversely, constructing a new heliport to accommodate Grand Canyon helicopter air tour operators would not necessarily result in the elimination of all such air tour activity at McCarran. There is strong interest from the operators currently based at McCarran to relocate their Grand Canyon tours to the Heliport.

1.3 Proposed Action

The Proposed Action is the transfer of ownership of federally managed public land to Clark County; the construction of the Heliport and associated infrastructure, including utilities. The proposed location for the Heliport is the South of Sloan site, as shown on **Exhibit I-2**. The site is within unincorporated Clark County, is currently administered by the BLM, and is the site authorized by Congress to be transferred to CCDOA for a heliport pursuant to Public Law 109-115. Environmental evaluation of both the transfer of land and the development and operation of the Heliport are the subject of this EA.

[4] AirScene is a proprietary software package developed and licensed by ERA – Beyond Radar Corporation that allows the CCDOA to analyze and produce aircraft operations data from flight information collected by the local FAA Air Traffic Control facility at McCarran. The CCDOA has used the software package since July 2000.

[5] 2004 is the base year for the Heliport Forecasts. Statistics for activity since 2004 are provided in Section 3.3.

[6] Clark County has placed a moratorium on the implementation of new heliports for commercial uses until September 21, 2009; new private heliports cannot be approved in unincorporated Clark County during the moratorium.

Exhibit I-2

Proposed Action

Exhibit I-2 shows the proposed location for the Southern Nevada Regional Heliport, the South of Sloan site, is identified on an exhibit of the Las Vegas region.

Based on the requirements identified in early planning studies and refined in the PDDOM, a plan for the overall development of the Heliport has been established. The preliminary layout of the facility is illustrated in the conceptual Heliport Layout Plan (HLP), as shown on **Exhibit I-3**. The conceptual HLP was prepared following the requirements of FAA Advisory Circular (AC) 150/5390-2B, *Heliport Design* [I-14]. The required utility improvements and extensions are depicted on **Exhibit I-4**.

The Heliport is expected to be developed in two phases. The first of the two construction phases is expected to be completed in 2010, at which time the Heliport is expected to become operational. To accommodate initial demand and anticipated increases in demand over a five-year period, the following actions would be required in the first phase:

- Transfer of ownership of a portion of Clark County's Assessor's parcel number 204-01-000-004 (about 229 acres) from the BLM to Clark County for the Heliport [I-6].
- Construction of 15,800 feet of new 3-phase electrical main line above ground, and going below near the Heliport. The new lines would generally follow the right-of-way of Las Vegas Boulevard South.
- Upgrade of about 24,200 feet of existing power lines, generally between Lake Mead Drive and Sloan
- Construction of a water pump station and associated electrical connections, about 15,000 feet of water main from the Sloan pump station to the Heliport, and two five-million gallon water tanks on the Heliport site.[7] The water main would be constructed generally within the right-of-way of Las Vegas Boulevard South from the Sloan pump station to the Heliport.
- Installation of approximately 52,000 feet of 100-pair underground telecommunications cable from the south to the Heliport. The new communication lines would be constructed generally within the right-of-way of Las Vegas Boulevard South from Jean, Nevada to the Heliport.
- Site preparation, grading, and on-site drainage of the Heliport site
- Paving, marking, and lighting of four final approach and takeoff (FATO) areas and Heliport taxiways
- Construction of up to 100 helicopter parking pads to support Grand Canyon tour operators and some itinerant helicopter operations
- Paving, marking, and lighting of helicopter parking aprons, tiedowns, and hangars
- Construction of passenger terminal facilities and associated automobile parking lots to support Grand Canyon helicopter air tour operators
- Construction of a CCDOA management building
- Construction of helicopter hangar/maintenance facilities
- Construction of a helicopter fueling system and above ground fuel storage facility
- Construction of on-site sewage treatment facilities
- Installation of a Heliport Rotating Beacon and wind indicator

[7] The pump station would be constructed on a right-of-way already granted by the BLM to the Las Vegas Valley Water District.

Exhibit I-3

Conceptual Heliport Layout Plan

Exhibit I-3 shows the preliminary layout of the Heliport facility is illustrated on the Conceptual Heliport Layout Plan.

Exhibit I-4

Proposed Utility Extensions and Improvements (1 of 2)

Exhibit I-4 shows the proposed utility improvements and extensions, including electricity and water, to the Heliport site from the north are depicted. The proposed utility improvements are superimposed on an aerial photograph.

Exhibit I-4

Proposed Utility Extensions and Improvements (2 of 2)

Exhibit I-4 shows the proposed telecommunication cable to the Heliport site from the south. The proposed telecommunication cable, which would originate at the Jean Exchange Service, is superimposed on an aerial photograph.

- Construction of an access road from Las Vegas Boulevard South to the Heliport
- Acquisition of aircraft rescue and fire fighting (ARFF) equipment and construction of facilities, as appropriate

The second phase of construction would enable the Heliport to accommodate forecast activity through 2017. The second phase of construction would include:

- Construction of 11 additional helicopter parking pads
- Construction of additional passenger terminal facilities and associated automobile parking lots
- Construction of a helicopter hangar/maintenance facility

1.4 Purpose and Need

1.4.1 Sponsor's Purpose and Need

The overall purpose of undertaking the Proposed Action is to provide, as soon as practicable, a facility that will satisfy the existing and future needs of the Grand Canyon helicopter air tour operators and their customers in a manner that is compatible with the urbanized development in Clark County as well as with the overall plan for accommodating all aspects of aviation demand in the region. Several specific needs have been identified to meet this purpose.

The State of Nevada, Clark County, and Las Vegas area residents have identified an existing need to reduce, as soon as practicable, helicopter tour overflights and resulting adverse noise impacts over residential areas of Clark County. This need led the State legislature to amend NRS 495 in 2003. Also in recognition of and to address the adverse noise impacts associated with the helicopter air tour overflights from McCarran, balanced with the protection of the federally designated Sloan Canyon NCA, the U.S. Congress enacted Section 180 of Public Law 109-115 in 2005. The amended sections of NRS 495 require and contain criteria for designating a non-urban heliport site, and Section 180 provides for the transfer of land from BLM for a heliport, along with specifying a flight corridor through the Sloan Canyon NCA. While the FAA and the CCDOA have limited control over the movement of helicopters (other than FAA control within "controlled airspace" surrounding public use airports), designating a non-urban heliport site would promote the relocation of Grand Canyon helicopter tour operations out of urbanized areas of Clark County.

There also is a need to maintain consistency with the System Plan and to preserve adequate space at McCarran to ensure that it can continue to serve its primary role to accommodate commercial aviation activity for the Las Vegas region. As described in Section 1.2, there is not sufficient space to expand the Grand Canyon helicopter air tour basing areas without encroaching upon space needed for future development consistent with the primary role of McCarran. Therefore, development of another facility is needed to accommodate future demand for Grand Canyon helicopter air tours, ensuring that adequate space is preserved at McCarran for it to fulfill its role. Further, there is a need to preserve other airports in the region to serve their intended roles for accommodating aviation demand as also described in the System Plan.

Finally, there is a need to provide a facility that has adequate space and is appropriately located to accommodate not only existing demand, but also the increasing demand for helicopter air tours to the Grand Canyon. According to the Heliport Forecasts, demand for Grand Canyon air tours is expected to increase an average of 4.0 percent per year through the planning horizon of 2017. Also, to accommodate this demand, there is a need to provide a facility that is close enough to the customer base for it to be viable for the industry. Part of the overall attraction is the ability to visit the Grand

Canyon from Las Vegas in about one-half day. Therefore, travel between the facility and the customer base must be accomplished within a reasonable time. Finally, the facility must be located and configured to ensure safe and efficient operations, considering other aviation facilities and airspace.

1.4.2 Federal Purpose and Need

The FAA's statutory mission is to ensure the safe and efficient use of navigable airpace in the United States. Further, under the *Aviation Safety and Noise Abatement Act of 1979* [I-15], as amended, FAA is directed to reduce aircraft noise impacts on noise sensitive land uses, where it can be done without derogating safety. Construction of the proposed Southern Nevada Regional Heliport would reduce noise from rotorwing aircraft (helicopters) currently operating at McCarran International Airport. For the proposed project, the purpose of the BLM is to convey a specific 229-acre parcel of land to Clark County for the operation of a heliport facility. BLM action at the sponsor's proposed site is required pursuant to Public Law 109-115, Section 180.

1.5 Requested Federal Actions

Federal actions by two agencies – the FAA and the BLM – are requested.

1.5.1 Federal Aviation Administration

The requested FAA actions include the following:

- Unconditional approval of the Heliport Layout Plan that depicts the proposed airfield pursuant to 49 United States Code (U.S.C.) § 40103(b), 44718, and 47107(a)(16) and 14 Code of Federal Regulations (CFR) Part 77, *Objects Affecting Navigable Airspace* [I-16] and Part 157, *Notice of Construction, Alteration, Activation, and Deactivation of Airports* [I-17].
- Determinations under 49 U.S.C. §§ 47106 and 47107 relating to the eligibility of the proposed project for federal funding under the Airport Improvement Program (AIP) and under 49 U.S.C. § 40117, as implemented by 14 CFR § 158.25, to impose and use passenger facility charges (PFC's) collected at McCarran International Airport for the proposed project to assist with construction of potentially eligible development items shown on the HLP.
- Determination under 49 U.S.C. § 44502(b) that Heliport development is reasonably necessary for use in air commerce or in the interests of national defense.
- Close coordination with Clark County by appropriate FAA program offices, as required, to maintain aviation and airfield safety during construction.

1.5.2 Bureau of Land Management

The requested BLM actions include the following:

- Administrative action to convey to Clark County all right, title, and interest of the Heliport site, pursuant to Section 180 of Public Law 109-115, The Transportation Appropriations Act for Federal Fiscal Year 2006. While the land transfer is an administrative action that in and of itself does not cause direct impacts to the environment, federal law requires that the potential environmental effects of the intended use of the land be considered and disclosed. This land disposal action is consistent with the *Las Vegas Resource Management Plan/Final Environmental Impact Statement* [I-18]. The Proposed Action conforms to land use plan

decision LD-1 [I-19] under the authority of the *Federal Land Policy and Management Act of 1976*, as amended [I-20].

- Issuance of any associated rights-of-way (ROW) is in conformance with decision RW-1 [I-19] which states "meet public demand and reduce impacts to sensitive resources by providing an orderly system of development for transportation, including legal access to private inholdings, communications, flood control, major utility transmission lines, and related facilities.

1.6 Preliminary Construction Schedule

A preliminary development schedule for the Heliport is shown on **Exhibit I-5**. Under the current schedule, the CCDOA would begin on-site construction of the Heliport and in the utility corridors by late 2008 or early 2009. On-site construction, including tenant buildings, is scheduled to be completed by late 2010. It is anticipated that the second phase of construction, if needed, would occur in 2015.

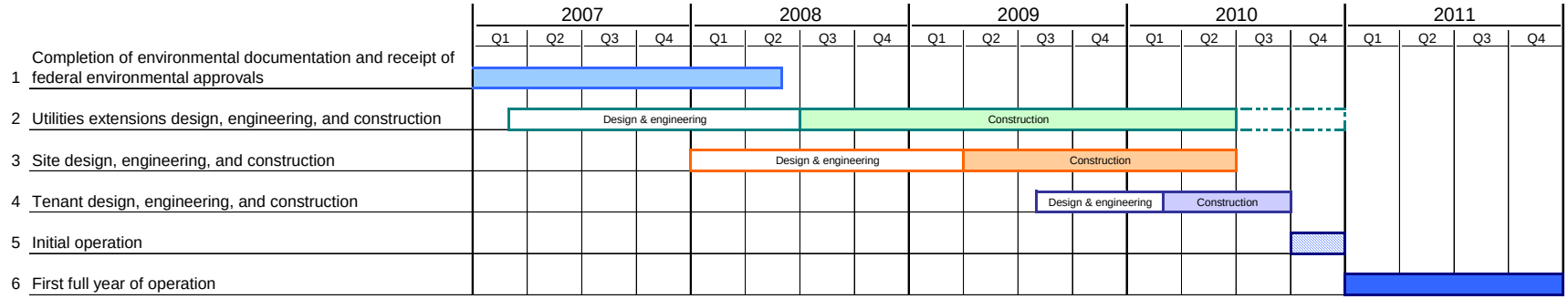
1.7 Organization of this EA

This EA is organized in the following order:

- Chapter I, Purpose and Need
- Chapter II, Alternatives
- Chapter III, Affected Environment
- Chapter IV, Environmental Consequences
- Chapter V, References
- Chapter VI, List of Preparers
- Appendix A, Statutes
- Appendix B, Planning Timeline for a Southern Nevada Regional Heliport
- Appendix C, Supplement to Alternatives Analysis
- Appendix D, Helicopter Noise Analysis
- Appendix E, Land Use Plans and Zoning
- Appendix F, Air Quality Analysis
- Appendix G, Scoping
- Appendix H, Cultural Resources Consultation and Tribal Coordination
- Appendix I, Fish and Wildlife Consultation
- Appendix J, Visual Resources
- Appendix K, Agencies and Persons Consulted

Exhibit I-5

Preliminary Construction Schedule – First Phase



Sources: Ricondo & Associates, Inc.; Clark County Department of Aviation
Prepared by: Ricondo & Associates, Inc., April 2008

II. Alternatives

2.1 Introduction

The Council on Environmental Quality (CEQ) is an entity within the U. S. government that is tasked with, among other responsibilities, overseeing federal agency implementation of NEPA requirements [II-1]. CEQ regulations for implementing NEPA require a thorough and objective assessment of all "reasonable" alternatives to achieve the purpose and need of a proposed action, as well as the assessment of a no action alternative [40 CFR Part 1508.9; 40 CFR Part 1502.14].

As documented in the various planning documents referenced in Section 1.2, the CCDOA has carefully considered a wide range of options for meeting the purpose and need of the Proposed Action: accommodating existing and future demand for Grand Canyon helicopter air tour activity in a manner that is compatible with the urban environment of the Las Vegas region. This chapter describes the process followed to identify the range of initial alternatives for consideration in this EA and the screening process used to determine which of the initial alternatives would reasonably satisfy the purpose and need and therefore be carried forward for analysis of environmental consequences. Alternatives that were considered but were determined to not reasonably meet purpose and need were not carried forward through the analysis of environmental consequences. The chapter concludes with a summary of the potential environmental consequences associated with the alternatives that were carried forward for analysis, as documented in Chapter IV, Environmental Consequences, and lists applicable laws and regulations used for the assessment. The alternatives analysis is consistent with the requirements of FAA Orders 1050.1E and 5050.4B, both of which provide environmental policies and procedures specific to FAA actions.

2.2 Alternatives Identification

In accordance with federal regulations, the following types of alternatives were considered in this EA: construction of a heliport at a site not currently developed for aviation uses, development of heliport facilities at existing aviation facilities in the Las Vegas region, and the use of other modes of transportation. The initial alternatives considered in this EA were identified from (1) the results of the Site Suitability Assessment [I-8], (2) the results of subsequent planning studies and analyses, and (3) a review of other means to potentially satisfy purpose and need, as required by NEPA. The No Action alternative was also considered, as required by federal regulations. The following sections provide a discussion of the identification of initial alternatives that were considered in this EA.

2.2.1 Alternatives Identified from the Site Suitability Assessment

In the Site Suitability Assessment, the CCDOA identified and assessed 13 candidate sites for the location of a heliport in terms of their ability to meet the statutory intent of the amendments to NRS 495 and the goals and objectives and facility requirements documented in the Needs Assessment [I-7]. The sites included in the Site Suitability Assessment represented both sites not currently developed for aviation uses and existing airport facilities (**Exhibit C-1** in **Appendix C)**. **Table C-1** of Appendix C provides a summary of the process and the results of the Site Suitability Assessment. On the basis of that assessment, three sites, including two sites not currently developed for aviation uses (Eldorado Valley/Boulder City and GoKart/Sloan) and one existing airport (Jean Airport), were selected as initial alternatives to be considered in this EA.

2.2.2 Alternatives Identified from Subsequent Planning Studies and Analysis

After the completion of the Site Suitability Assessment, the CCDOA further refined the project goals and objectives and heliport requirements through a series of planning studies (see Section 1.2). An additional site not currently developed for aviation uses, the South of Sloan site, was identified and assessed using the process set forth in the Site Suitability Assessment, as documented in the SOS Site Suitability Assessment [I-9]. The South of Sloan site was subsequently identified as the preferred location for construction of a heliport, and therefore was included as an initial alternative to be considered in this EA.

The Sunrise Landfill site was not recommended for further consideration in the Site Suitability Assessment due to the results of the drive time analysis and lack of accessibility from a major roadway. However, after review of new information obtained subsequent to the Site Suitability Assessment[1], it was determined that the Sunrise Landfill site should be included as an initial alternative to be considered in this EA. The reasons cited in the Site Suitability Assessment for not considering the other identified sites remain valid, and those sites were not included as initial alternatives to be considered in this EA.

2.2.3 Other Alternatives

In addition to Jean Airport and McCarran, four other existing airports[2] are in operation in the Las Vegas region and are included as initial alternatives to be considered in this EA. Those airports include Boulder City Municipal, Henderson Executive, Mesquite Municipal, and North Las Vegas airports.

As required by NEPA, other means to potentially satisfy the purpose and need, including the use of other modes of transportation were included as initial alternatives to be considered in this EA.

Prior to the State legislature amending NRS 495 and completion of subsequent planning studies that led to the proposal to construct the Heliport, the CCDOA, in conjunction with the FAA and helicopter operators, assessed multiple routing options as part of ongoing efforts to reduce overflights of residential areas. At that time, it was determined that no feasible flight corridors could be established that would reduce overflights of and the associated noise concerns in residential areas. Therefore, the modification of helicopter flight corridors was not identified as an initial alternative to be considered in this EA. The results of the assessment are documented in **Table C-2** and on **Exhibit C-3** in Appendix C.

[1] Sunrise Landfill was not a recommended site in the Site Suitability Assessment, because the drive time was over the maximum limit of 33 minutes. However, due to comments received during the EA scoping process, an additional drive-time analysis was performed using surface roads rather than freeways. The revised average drive time of 29 minutes marginally meets the drive time limit; therefore, this site was retained as an initial alternative to be considered in this EA.

[2] McCarran International and Henderson Executive Airports were both considered and eliminated in the Site Suitability Assessment. However, McCarran International and Henderson Executive Airports are considered as initial alternatives in this EA, because, not withstanding the amendments to NRS 495, Grand Canyon helicopter air tour operators may choose to remain at McCarran or relocate to Henderson Executive. Henderson Executive Airport is included as a separate initial alternative and McCarran International Airport is included as part of the No Action alternative.

2.2.4 Summary of Alternatives Considered in this EA

On the basis of the analyses discussed in Sections 2.2.1, 2.2.2, and 2.2.3, a total of 11 initial alternatives, including the No Action alternative, were considered in this EA.

Table II-1 provides a summary of the initial alternatives considered in this EA. All of the initial alternatives were screened for their ability to reasonably satisfy the purpose and need and therefore be carried forward for analysis of environmental consequences. The initial alternatives subjected to this screening process include four sites not currently developed for aviation uses (South of Sloan, Eldorado Valley, GoKart/Sloan, and Sunrise Landfill); five existing facilities (Boulder City Municipal, Henderson Executive, Jean, Mesquite Municipal, and North Las Vegas Airports); the use of other modes of transportation; and the No Action alternative, which includes maintaining McCarran International Airport as the primary base of Grand Canyon helicopter air tour operations.

Table II-1

Initial Alternatives Considered in the Environmental Assessment

Alternatives	Description
Sites not currently developed for aviation uses: 1/ South of Sloan, Eldorado Valley, GoKart/Sloan, and Sunrise Landfill	As a build alternative, a new facility to accommodate Grand Canyon helicopter air tours would be constructed on a site not currently developed for aviation uses. Depending on the location of the potential site, infrastructure may need to be extended to the site to provide essential utilities, including electricity and water. New flight corridors would be in use.
Existing aviation facilities: Boulder City Municipal Airport, Henderson Executive Airport, Jean Airport, Mesquite Municipal Airport, and North Las Vegas Airport	As a partial-build alternative, facilities would be constructed to accommodate Grand Canyon helicopter air tours at an existing aviation facility. Grand Canyon helicopter air tour operators would be able to relocate to an improved existing aviation facility in the Las Vegas region. New flight corridors would be in use.
Use of other modes of transportation	Other modes of transportation would be considered to serve all or portions of the market historically and currently served by the Grand Canyon helicopter air tours. No new heliport facilities would be proposed. 2/
No Action	The proposed Heliport and related utility extensions would not be constructed. Improvements to existing aviation facilities would not be proposed by the CCDOA to accommodate Grand Canyon air tours.

Note:

1/ Brief descriptions of the Eldorado Valley, GoKart/Sloan and Sunrise Landfill sites are found in Appendix C. Further information on these sites is provided in the Site Suitability Assessment [I-8].

2/ Facilities to accommodate Grand Canyon helicopter air tours may be constructed at existing aviation facilities to accommodate forecast growth, provided that there are no facility constraints at such a facility and that development would occur within existing environmental approvals.

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

Exhibit II-1 depicts the locations of the initial alternatives considered in this EA that involve development of heliport facilities at sites not currently developed for aviation uses and existing aviation facilities.

Exhibit II-1

Initial Alternatives Sites Considered for Heliport

The information regarding initial heliport site alternatives considered in the EA is presented on Exhibit II-1. Stars are used to indicate the location of 10 potential heliport sites in the Las Vegas region. Highways, roads, railroads, and other cartographic features are also displayed on the exhibit.

2.3 Alternatives Screening Criteria

The 11 initial EA alternatives were subjected to a three-level screening process to determine their ability to reasonably satisfy the purpose and need. Under the three-level screening process, once an alternative failed to meet a criterion, it was eliminated from further consideration and was not carried forward to the next level. Only those alternatives that were able to meet the criteria for all three levels were carried forward for analysis of environmental consequences in this EA. The screening process and criteria are described in this section.

2.3.1 Level 1: Consistency with Nevada Revised Statutes, Chapter 495 (NRS 495)

The initial alternatives were screened for specific siting requirements set forth in NRS 495, Sections 300-320 [I-4], which were established to address the need to reduce, as soon as practicable, helicopter tour overflights and resulting adverse noise impacts over residential areas of Clark County. Provided for reference in Appendix A, this statute required certain counties, including Clark County, to designate a preferred location for takeoff and landing of commercial helicopters that:

- is not the largest airport located within the County
- is not located within a residential area[3]
- is selected on the basis that the site location would reduce the overall impact of helicopter noise on the residents of the County and would reduce the risk of danger to county residents related to helicopter traffic

Any of the initial alternatives that did not meet each of these criteria were eliminated from further consideration.

2.3.2 Level 2: Consistency with the Airport System Plan

The CCDOA regularly updates its System Plan to provide a guiding framework to accommodate existing and forecast future aviation demand of which Grand Canyon helicopter air tours are just one element. This framework identifies the roles of existing and planned airports within the Southern Nevada Regional Airport System. By aligning the development of each individual facility with its identified role, the CCDOA can develop the System to meet the overall aviation needs of the region. The initial alternatives carried forward from Level 1 were screened for consistency with the goals and objectives and individual facility roles identified in the System Plan, in particular the need to preserve adequate space at McCarran to ensure that it can continue to serve its primary role and to preserve the roles of other airports in the region. Any of the alternatives that were not consistent with the System Plan were eliminated from further consideration.

2.3.3 Level 3: Ability to Accommodate Demand for Grand Canyon Helicopter Air Tours

Given the forecast growth in helicopter tours of the Grand Canyon, the initial alternatives carried forward from Level 1 and Level 2 were screened with regard to physical attributes and whether they would be viable alternatives for current and future Grand Canyon helicopter air tour operations. The specific screening factors included ground transportation (surface accessibility and drive time), layout (available land area and configuration), and operational and airspace considerations.

[3] NRS 495 defines "residential area" as land that is "being used primarily for one- or two-family dwellings or apartments", and land that is "located adjacent to or near other residentially used land."

Surface accessibility and drive time are critical to the viability of Grand Canyon helicopter air tours, and therefore, to the ability to accommodate demand for such tours. Paragraph 1-7 (h) of FAA Order 5090.3C, *Field Formulation of The National Plan of Integrated Airport Systems (NPIAS)*, [II-2], in referring to the nation's airport system, states that the system should provide as many people as possible with convenient access to air transportation, typically not more than 20 miles travel to the nearest NPIAS airport. However, unlike a typical public use airport, the site for basing Grand Canyon helicopter air tours to serve Las Vegas must be located such that operators can provide drive times for limousines and buses providing ground access that are consistently low enough to preserve a viable tour operation. Conversations with the Grand Canyon helicopter air tour operators throughout the planning process resulted in the establishment of drive time criteria that would provide a viable operation. Thirty-three minutes to and from Caesars Palace on the Las Vegas strip was identified as the maximum drive time for purposes of this analysis. Surface access is an important consideration to ensure that the drive times can be kept as consistent as possible, and the CCDOA determined that imposing commercial traffic on residential streets for Grand Canyon helicopter air tour activity would not be acceptable. In addition to the physical attributes (e.g., size, ability to expand, terrain) the ability to establish and maintain air routes between the helicopter air tour basing facility and the Grand Canyon that avoid controlled airspace is also a critical screening criterion.

Any of the remaining alternatives that did not meet all of the aspects of accommodating demand were eliminated from further consideration and therefore not carried forward for an analysis of environmental consequences.

2.4 Alternatives Not Carried Forward for Analysis of Environmental Consequences

The results of the screening are presented in **Table II-2**. The screening results for the alternatives that were not carried forward for analysis of environmental consequences are summarized in this section.

2.4.1 Alternatives Involving Development of Heliport Facilities at a Site not Currently Developed for Aviation Uses

Of the four initial alternatives that involved development of heliport facilities at a site not currently developed for aviation uses, all four satisfied the Level 1 and Level 2 screening criteria. However, three of the alternatives did not meet one or more of the Level 3 criteria and were therefore not carried forward for analysis of environmental consequences.

Table II-2

Alternatives Screening Analysis Results

LEVEL	CATEGORY	CRITERIA	SITES NOT CURRENTLY DEVELOPED FOR AVIATION USES				EXISTING AVIATION FACILITIES					USE OF OTHER MODES OF TRANSPORTATION	NO ACTION ALTERNATIVE [5/]
			South of Sloan	GoKart/Sloan	Eldorado Valley [1/]	Sunrise Landfill [2/]	Boulder City Municipal Airport [3/]	Henderson Executive Airport [4/]	Jean Airport	Mesquite Municipal Airport [3/]	North Las Vegas Airport		
1. CONSISTENCY WITH NEVADA REVISED STATUTE, CHAPTER 495	NRS 495 [6/]	Not the Largest Airport in the County	●	●	●	●	●	●	●	●	●	●	×
		Not Within Residential Land Uses	●	●	●	●	×	×	●	×	×	●	×
		Reduction of Helicopter Noise to Clark County Residents	●	●	●	●	×	×	●	×	×	●	×
		Consistent with Purpose and Need?	**yes**	**yes**	**yes**	**yes**	no	no	**yes**	no	no	yes	
2. CONSISTENCY WITH SYSTEM PLAN	System Plan	System Plan Needs [7/]	●	●	●	●			×			●	×
		Consistent with Purpose and Need?	**yes**	**yes**	**yes**	**yes**			no			yes	
3. ABILITY TO ACCOMMODATE DEMAND FOR GRAND CANYON HELICOPTER AIR TOURS	Ground Transportation	Surface Accessibility [8/]	●	●	●	×						●	●
		Drive Time (minutes) [9/]	● **(20.0)**	● **(17.6)**	○ **(33.0)**	○ **(29.0)**						×	● **(11.0)** [10/]
		Consistent with Purpose and Need?	**yes**	**yes**	**yes**	no						no	
	Layout	Land Area (acres) [11/]	● **(229)**	× **(49)**	× **(54)**							×	× **(9.1)** [12/]
		Construction and Configuration [13/]	●	×	×							×	×
		Consistent with Purpose and Need?	**yes**	no	no	no						no	
	Airspace	Operational and Airspace Considerations [14/]	●									●	×
		RETAIN FOR ENVIRONMENTAL ANALYSIS?	**yes**	no	no	no	no	no	no	no	no	no	**yes**

Notes:

● = Meets or exceeds criterion
○ = Marginally meets criterion (not preferred)
× = Does not meet criterion

1/ The Eldorado Valley site was relocated subsequent to the evaluation of the Eldorado Valley/Boulder City candidate site in the Site Suitability Assessment, due to comments received during the EA scoping process.

2/ The Sunrise Landfill site did not pass the drive time screening criterion in the Site Suitability Assessment; however, in response to comments received during the scoping process, the CCDOA re-evaluated the drive time assessment using a different routing that relied more on surface streets, allowing the drive time to be shorter than the 33-minute maximum drive time criterion.

3/ Airports that are not owned or operated by Clark County.

4/ Henderson Executive Airport was not identified as a suitable site in the Site Suitability Assessment. However, the Airport currently accommodates commercial tour operators and other helicopter operations. The CCDOA has limited authority to restrict helicopter operations at any public-use airports. Therefore, this airport was included in this evaluation.

5/ CEQ regulations [40 CFR 1502.14(d)] require evaluation of a no action alternative. Therefore, the No Action alternative was retained in this screening analysis and carried forward for analysis of environmental consequences. Under the No Action alternative, a non-urban heliport would not be constructed, helicopter air tour operations would continue to grow to meet demand, and helicopter air tour activity would continue to be accommodated at existing facilities, primarily at McCarran.

6/ Nevada Revised Statute, Chapter 495: The new facility (1) is not located at the largest airport in Clark County, (2) is not located within a residential area (e.g., existing residences are not located within one mile of the facility), and (3) reduces overall noise impacts on County residents. A residential area is defined as land that is (a) primarily used for one- or two-family dwelling or apartments, and (b) located adjacent to or near other residentially used land.

7/ System Plan needs: Consistency with the goals and objectives and facility roles established in the Southern Nevada Regional Airport System Plan Update.

8/ Surface accessibility: Ability for air tour operators to access the site within one mile or less from a primary roadway (i.e., interstate freeway or highway) and/or from a secondary roadway with minimal signalized intersections, without the use of surface and residential streets. Imposing regular use of residential streets by commercial traffic (air tour operators driving passengers to and from the heliport) would not be acceptable to the CCDOA.

9/ Drive time from customer base to the site should be up to 22 minutes (meets criterion) and a maximum of 33 minutes (marginally meets criterion). For purposes of this analysis, Caesars Palace was designated as the central location on the Las Vegas Strip.

10/ The drive time of 11 minutes is the travel time between Caesars Palace and McCarran, the facility from which helicopter air tour operators currently conduct Grand Canyon air tours. Under the No Action alternative, operators may relocate to other nondesignated aviation facilities in the Las Vegas region. The No Action drive time to the customer base will vary accordingly, depending on the location of the facility.

11/ Land area: Compared against facility requirements to accommodate forecast growth in operations, to accommodate 111 helicopter parking pads by 2017, and to be designed in accordance with FAA Advisory Circular (AC) 150/5390-2B [I-14]. A minimum of about 100 acres would be required for a new site.

12/ The land area noted refers to one of the existing facilities (McCarran) from which the helicopter air tour operators currently conduct Grand Canyon air tours. Given forecast growth in helicopter air tours and the limited expansion capability in and around McCarran, helicopter operators will likely expand and/or relocate to other facilities.

13/ Construction and configuration: The physical characteristics of a site would not result in constructability issues in the development of the facility, operational inefficiencies in the layout and use of the facility, or limitations on the ability to expand in the future.

14/ Operational and airspace considerations near or on the site, including: (1) potential flight corridors avoid controlled airspace; (2) relatively level terrain on and in the immediate vicinity of the site; (3) close-in airspace compatibility and imaginary surface and final approach/take off area siting requirements.

Sources: Clark County Department of Aviation; Ricondo & Associates, Inc., *Site Suitability Assessment for a Southern Nevada Regional Heliport*, December 2003; Ricondo & Associates, Inc., *Southern Nevada Regional Airport System Plan*, August 2001; HNTB Corporation, *Project Definition, Development and Operational Manual*, December 5, 2006.

Prepared by: Ricondo & Associates, Inc., April 2008

The GoKart/Sloan and the Eldorado Valley site alternatives were eliminated in Level 3 screening, because the sites would not provide the available land area to accommodate parking positions for up to 111 helicopters within the 2017 planning horizon and the configuration of the available land area at both sites would limit expansion capability in the future[4,5]. The Sunrise Landfill site alternative was eliminated in Level 3 screening, because surface accessibility to the site is poor and would result in the use of local surface streets, including residential streets, by commercial vehicles transporting tour passengers to the site. Further, it is anticipated, based on preliminary coordination with the FAA, that development on the landfill site would not be considered acceptable to the FAA, because of the potential to encounter solid and hazardous waste commonly associated with landfill sites.

Of the initial alternatives that included development of heliport facilities at a site not currently developed for aviation uses, only the South of Sloan site (the Heliport site) satisfied all of the Level 1, 2, and 3 screening criteria, and was therefore the only such alternative carried forward for evaluation of environmental consequences.

2.4.2 Alternatives Involving Development of Facilities at Existing Aviation Facilities

Of the five alternatives that involved development at existing aviation facilities, four did not meet the Level 1 screening criteria, and the fifth did not meet the Level 2 screening criteria.

The alternatives for development of facilities at Boulder City Municipal, Henderson Executive, Mesquite Municipal, and North Las Vegas Airports were eliminated in Level 1, because there are residential areas within one mile of each of the facilities and therefore, the alternatives would not meet the requirements for identifying a site that is not within a residential area. The alternative for development at Jean Airport met the Level 1 criteria, but was eliminated in Level 2, because the introduction of Grand Canyon helicopter air tour operations would not be consistent with the role of Jean Airport as defined in the System Plan. Jean Airport currently serves the role of accommodating aerobatic aircraft, glider, and ultralight flight operations in the region and would result in a mix of helicopter operations with aerobatic aircraft, glider, and ultralight flight operations within the airspace around the Airport. Even if the Jean Airport alternative satisfied the Level 2 criteria, it would be eliminated in Level 3, because the average drive time to Jean Airport from the Strip exceeds the 33-minute maximum drive time criterion. Therefore, none of the five initial alternatives that involved development at existing aviation facilities satisfied the screening criteria and none were carried forward for analysis of environmental consequences.[6]

2.4.3 Use of Other Modes of Transportation

Other modes of travel to Grand Canyon are already in use. Tours to and from the Grand Canyon from the Las Vegas region are provided via fixed-wing aircraft, bus, helicopter, and a combination of these modes. Visitors can also drive to the Grand Canyon using their own or rental vehicles.

[4] Descriptions of the GoKart/Sloan and Eldorado Valley sites are provided in Appendix C, Section C.3. Further information on these sites is provided in the Site Suitability Assessment.

[5] In the Site Suitability Assessment, a minimum of 40 acres was identified as the land area required for the heliport. However, during subsequent planning associated with the development of the PDDOM, it was determined that a minimum of 100 acres would be required to develop heliport facilities to accommodate up to 111 helicopter parking pads by 2017 in a configuration that would be viable for operation of the heliport facility.

[6] As discussed in Chapter I, Purpose and Need, Clark County has limited authority to restrict helicopter operations at any public-use facilities that it owns and operates.

However, as described in Section 1.1, the Grand Canyon helicopter air tours provide a unique visitor experience unavailable via other modes of transportation.

Helicopters provide a different air tour experience compared to fixed-wing aircraft, which fly at higher altitudes, travel at higher speeds, cannot land safely without a runway, and are subject to restrictions regarding access to the area of the Grand Canyon subject to Special Federal Aviation Regulation No.50-2 [I-5].

According to the Grand Canyon helicopter air tour operators, tourists who choose helicopter tours do not want to devote more than about a half day to visit the Grand Canyon. Ground transportation modes typically require at least a full day of travel and therefore do not provide the Grand Canyon air tour experience in the relative short amount of time that can be provided by the helicopter air tour. Consequently, ground transportation is not considered a reasonable alternative to helicopter air tours.

While the use of other modes of transportation could be considered to satisfy the Level 1 and Level 2 criteria, it would not satisfy the Level 3 alternative as the type of demand that is accommodated by the Grand Canyon helicopter air tours would not be satisfied under the alternative of different modes of transportation for the same reasons that other alternatives did not meet the ground travel time criterion. The CCDOA can neither dictate market demand for the various sightseeing tour options nor cap or otherwise limit the number of Grand Canyon helicopter air tours. Therefore, the alternative of other modes of transportation was not carried forward for analysis of environmental consequences.

2.5 Alternatives Carried Forward for Analysis of Environmental Consequences

Based on the screening of the initial alternatives considered in this EA and described in Table II-2, one alternative could satisfy the purpose and need documented in this EA: construction of a heliport at the South of Sloan site. This alternative (the Proposed Action) and the No Action alternative were carried forward for analysis of environmental consequences.

2.5.1 Construction and Operation of a Heliport at the South of Sloan Site (Proposed Action)

The Proposed Action and associated analysis assumptions are described in the following paragraphs.

2.5.1.1 Description

The South of Sloan site is located east of Interstate 15 (I-15) and Las Vegas Boulevard South, about 5.5 miles south of St. Rose Parkway. As shown on **Exhibit II-2**, the site consists of about 229 acres and is undeveloped and clear of structures. The Heliport would be developed in phases to accommodate up to 111 based helicopters through 2017. The land north, south, and east of the site is currently undeveloped and the closest residence is about 3 miles to the northeast. The site is within unincorporated Clark County on public land managed by the BLM. Congress authorized the BLM to transfer the land to Clark County for the sole purpose of developing the Heliport (Public Law 109-115). The transfer of land ownership of a portion of Clark County's Assessor's parcel number 204-01-000-004 (229 acres) is part of the Proposed Action.

Exhibit II-2

Proposed Action: South of Sloan Site

Exhibit II-2 shows the boundary of the South of Sloan site and highlights the location of the site with respect to Interstate Highway 15 and the City of Henderson.

Project components are described in various planning studies listed in Section 1.2. Off-site components of the Proposed Action include improvements to and extension of utilities to the Heliport site. Based on the recommendations of a utility study commissioned by the CCDOA [II-3], and as described in Section 1.3, the Proposed Action would include development of utility infrastructure for water supply, waste water treatment, electric power, and communications.

2.5.1.2 Analysis Assumptions

A number of operational assumptions are required for analysis of the potential environmental consequences of the Proposed Action. Although Grand Canyon helicopter air tour operators have stated their support for the construction and operation of the heliport at the South of Sloan site, it has been assumed that some number of Grand Canyon helicopter air tour operations would continue at McCarran even after the Heliport is constructed and operational. Continued activity at McCarran is not part of the Proposed Action, but rather a planning assumption reflecting the fact that CCDOA has limited ability to prevent an operator from maintaining its base at McCarran. For analysis purposes, it has been assumed that approximately 22 percent of the annual Grand Canyon tours would originate from McCarran. In addition, it was assumed that 10 percent of Grand Canyon helicopter operations currently or anticipated to originate from McCarran would instead occur at an aviation facility other than McCarran or the proposed Heliport site. Helicopter operations not bound for the Grand Canyon (i.e., news gathering, tours of the Las Vegas Strip, etc.) would not relocate to the Heliport site and would be based at McCarran and other locations in the urbanized portion of the Las Vegas Valley.

In Public Law 109-115, Section 180, Congress required that helicopter air tour operations originating or concluding at the Heliport that traverse the Sloan Canyon NCA must fly within a prescribed 2-mile wide, east-west corridor and fly above certain altitudes. The principal purpose of this provision is to protect sensitive resources within the Sloan Canyon NCA. Congress further authorized the FAA to promulgate rules and regulations as necessary to implement the prescribed corridors. It has been assumed for this EA that helicopter operations to and from the proposed Heliport site passing through the Sloan Canyon NCA would occur within this corridor, although neither the establishment nor implementation of the corridor is a component of the Proposed Action.

Further, the CCDOA consulted with the helicopter operators, the FAA, and other stakeholders to identify potential flight corridors associated with the Heliport site other than the Congressionally described flight corridor through the Sloan Canyon NCA. Grand Canyon tours originating from McCarran would follow established corridors[7]. Existing and potential flight corridors are shown on **Exhibit II-3**.

[7] The helicopter air tour operators based at McCarran International Airport and the FAA have executed Letters of Agreement establishing preferred helicopter flight corridors for Grand Canyon helicopter tour operations originating at McCarran. These Letters of Agreement are intended to ensure safety, minimize noise levels in residential areas, and comply with FAA ATC guidelines while the helicopter operators are in controlled airspace. The potential helicopter flight corridors analyzed in this EA could be a guide for future Letters of Agreement between the helicopter operators and the FAA, although the Letters of Agreement would not be applicable outside of controlled airspace.

Exhibit II-3

Assumed Flight Corridors under the Proposed Action

Exhibit II-3 presents information regarding the location of existing helicopter flight corridors between McCarran International Airport and the Grand Canyon. Exhibit II-3 also shows the potential location of helicopter flight corridors between the proposed heliport facility at the South of Sloan site and the Grand Canyon. National conservation areas, wilderness areas, natural areas, and national recreation areas that are proximate to the existing and potential helicopter flight corridors are displayed on Exhibit II-3. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit II-3.

2.5.2 No Action Alternative

CEQ regulations 40 CFR 1502.14(d) require consideration and evaluation of a no action alternative. The No Action alternative and associated analysis assumptions are described in the following paragraphs.

2.5.2.1 Description

Under the No Action alternative, the Heliport would not be constructed. The No Action alternative is also distinguishable from partial-build alternatives that were eliminated from consideration of environmental consequences in this EA in that CCDOA would not proactively identify an existing facility and undertake a concerted effort to construct facilities to accommodate Grand Canyon helicopter air tours. Given the historical and forecast growth in helicopter tours, and without a designated facility for helicopter operations, Grand Canyon air tour helicopter flights would continue to occur, primarily at McCarran International Airport and would likely increase over urbanized areas. The CCDOA would continue to collaborate with helicopter operators to minimize overflights of residential areas in the region through voluntary measures.

2.5.2.2 Analysis Assumptions

Under the No Action alternative, in response to increasing demand (including that for helicopter air tour operations) and the facility constraints at McCarran, the Grand Canyon helicopter air tour operators based at McCarran may choose to relocate to other facilities. These facilities could include other airports owned and operated by Clark County, airports owned and operated by other public entities, or the expansion or development of private heliports/helipads throughout the Las Vegas region. Because the CCDOA would not proactively develop other facilities to accommodate Grand Canyon helicopter air tours under the No Action alternative, the details of such relocations cannot be predicted at this time. For analysis purposes, it is assumed that 32 percent of Grand Canyon helicopter operations currently or anticipated to originate from McCarran would occur at an aviation facility other than McCarran. Helicopter operations not bound for the Grand Canyon (i.e., news gathering, tours of the Las Vegas Strip, etc) would not relocate to the Heliport site and would be based at McCarran and other locations in the urbanized portion of the Las Vegas Valley.

2.5.3 Summary of Options Considered

As stated, the CCDOA has considered a wide range of options and developed a list of initial alternatives for this EA that were screened for their ability to reasonably satisfy the purpose and need as stated in Section 1.4 of this EA. **Exhibit II-4** provides a summary of the options considered in the various planning stages, the point in the process where the options were introduced, the point where certain options were eliminated, the initial alternatives considered in this EA, and finally those alternatives that meet the stated purpose and need and therefore have been carried forward for evaluation of environmental consequences in this EA.

Exhibit II-4

Summary of Options Considered

Option	Planning Phase during which Options were Introduced and Considered: Site Suitability Assessment	Subsequent Planning Studies	Environmental Assessment Identification and Screening of Initial Alternatives	Environmental Assessment Evaluation of Environmental Consequences
McCarran International Airport [1/]	X			
Henderson Executive Airport [2/]	X		X	
Jean Airport			X	
Blue Diamond/UPRR	X			
Decatur/Interstate 15	X			
Eldorado Valley/Boulder City			X	
GoKart/Sloan			X	
Railroad Pass-Site A	X			
Railroad Pass-Site B	X			
Silverbowl	X			
Silverton	X			
Sunrise Landfill [3/]	X		X	
Three Kids Mine	X			
South of Sloan (Proposed Action)				
Boulder City Municipal Airport [4/]			X	
Mesquite Municipal Airport [4/]			X	
North Las Vegas Airport [4/]			X	
Modification of Existing Corridors [5/]				
Use of other Modes			X	
No Action [1/]				

Notes:

X Indicates that the option was eliminated at the conclusion of the planning phase; some options were reintroduced as initial EA alternatives

1/ McCarran International Airport was eliminated in the Site Suitability Assessment, but reintroduced during the EA alternatives screening as part of the No Action Alternative

2/ Henderson Executive Airport was eliminated in the Site Suitability Assessment, but reintroduced as an initial EA alternative to assess the potential use of existing aviation facilities

3/ The Sunrise Landfill option was eliminated in the Site Suitability Assessment, but reintroduced based upon input during the EA scoping and additional information regarding ground access

4/ Boulder City Municipal, Mesquite Municipal, and North Las Vegas Municipal Airports were introduced as initial EA alternatives to assess the potential use of existing aviation facilities

5/ Prior to the passage of amendments to NRS 495 and the initiation of the Site Suitability Assessment, the CCDOA, the FAA, and Grand Canyon helicopter air tour operators determined that no feasible alternative flight corridors existed that would effectively reduce overflights and the associated noise in residential areas

Sources: Ricondo & Associates, Inc., *Site Suitability Assessment for a Southern Nevada Regional Heliport,* December 2003; *Needs Assessment for a Southern Nevada Regional Heliport,* November 2003; *Supplemental Site Suitability Assessment of the South of Sloan Site,* April 2007.

Prepared by: Ricondo & Associates, Inc., April 2008

2.6 Summary of Environmental Impacts of the Alternatives Carried Forward for Analysis of Environmental Consequences

Table II-3 provides a summary of the potential environmental impacts of the Proposed Action and the No Action alternative. Documentation of the analyses is provided in Chapter IV, Environmental Consequences.

2.7 Permits Required

As required under FAA Order 1050.1E, paragraph 405d(4), a list of permits that would be required for implementation of the Proposed Action is provided in **Table II-4**. The list of applicable permits is preliminary, as this EA precedes detailed construction-related planning.

2.8 Listing of Federal Laws and Regulations Considered

In accordance with FAA Order 1050.1E, paragraph 405d(4), the relevant federal laws and statutes, Executive Orders, and regulations considered during preparation of this EA are listed in **Tables II-5**, **II-6**, and **II-7,** respectively.

Table II-3 (1 of 5)

Summary of the Anticipated Environmental Impacts of the Proposed Action and the No Action Alternative

Environmental Category [1/]	Proposed Action	No Action [2/]
Noise	No significant helicopter noise exposure at the Heliport site or at selected noise-sensitive locations within the Overflight Area. The number of helicopter overflights on existing flight corridors would be lower under the Proposed Action when compared to the No Action alternative.	No significant helicopter noise exposure at existing facilities at McCarran or at selected noise-sensitive locations within the Overflight Area. The number of overflights along the existing flight corridors would likely increase compared to existing conditions.
Compatible land use	The area around the Heliport site is currently vacant and planned as Open Space. Most properties surrounding the site are outside of the BLM disposal area and are publicly managed lands. Land use assurance from the County would prevent development of incompatible land uses. Potential flight corridors to and from the Heliport site would overfly existing residential land uses; however helicopter noise levels would be less than significant. The number of helicopter overflights on existing flight corridors would be lower under the Proposed Action when compared to the No Action alternative.	Existing flight corridors would continue to be used and areas developed with residential land uses and planned for residential land uses would experience helicopter overflights. The number of overflights along the existing flight corridors would not be reduced and would likely increase compared to existing conditions.
Socioeconomic impacts	No condemnation of any residences or other property would be required, as surrounding land is vacant; no disruptions to local employment or communities are anticipated.	No construction of heliport facilities or utilities would occur; no disruptions to local communities.

Table II-3 (2 of 5)

Summary of the Anticipated Environmental Impacts of the Proposed Action and the No Action Alternative

Environmental Category [1/]	Proposed Action	No Action [2/]
Environmental justice	Percentages of minorities and low-income families residing in the area immediately surrounding the Heliport site are lower than in Clark County as a whole. Pursuant to Executive Order 12898, there would be no disproportionately high and adverse human health or environmental effects on minority populations and low-income populations. The number of helicopter overflights on existing flight corridors would be lower under the Proposed Action when compared to the No Action alternative	Percentages of minorities and low-income families are higher around McCarran than in Clark County as a whole. The number of overflights along the existing corridors would not be reduced and would likely increase compared to existing conditions.
Children's environmental health and safety risks	Land immediately surrounding the Heliport site is vacant and undeveloped. There are no residents 17 years of age and younger in the area. No adverse effects are anticipated. Existing flight corridors from McCarran could continue over existing and planned residential land uses, but the number of flights would be reduced.	The percentage of children residing in the vicinity of McCarran is lower than in Clark County as a whole. The number of overflights along the existing corridors would not be reduced and would likely increase.
Air Quality	Differences in construction equipment emissions and operational (helicopter) emissions under the Proposed Action when compared to the No Action alternative would be below applicable *de minimis* thresholds. Dispersion modeling revealed no increases or contributions that would exceed applicable NAAQS. Implementation of construction best management practices would reduce the potential for fugitive dust.	Emissions of ozone precursors (VOC and NO_X), CO, and PM_{10} would be less than significant under the No Action alternative and pollutant concentrations in the vicinity of McCarran would not exceed the applicable NAAQS.
Areas of Critical Environmental Concern [3/]	No ACECs on Heliport site. Southern portion River Mountain and Rainbow Garden ACECs are located beneath potential flight corridors.	No ACECs on existing facilities. Northern portion River Mountain and Rainbow Garden ACECs are located beneath existing flight corridors.
U.S. Department of Transportation, Section 4(f) lands	No Section 4(f) lands on Heliport site; there would be no direct use of Section 4(f) lands. Potential flight corridors overfly recreation areas, parks, and NRHP-listed and eligible sites. However, noise analyses indicated that helicopter noise levels would be below significance thresholds. There would be no constructive use of Section 4(f) lands.	Existing flight corridors overfly recreation areas, parks, and NRHP-listed and eligible sites. The number of overflights along the existing corridors would not be reduced and would likely increase.

Table II-3 (3 of 5)

Summary of the Anticipated Environmental Impacts of the Proposed Action and the No Action Alternative

Environmental Category [1/]	Proposed Action	No Action [2/]
Historical, architectural, archaeological, and cultural resources [4/]	No NRHP-listed or eligible cultural resources were found on the Heliport site. Three NRHP-listed or eligible resources were found within the Area of Disturbance. The FAA has determined the proposed undertaking will not adversely affect any properties listed or eligible for listing on the NRHP. The FAA is consulting with the Nevada SHPO pursuant to Section 106 of the *National Historic Preservation Act of 1966.* Potential and existing flight corridors overfly NRHP-listed or eligible sites.	No NRHP-listed or eligible sites located on west side of McCarran. Existing flight corridors overfly NRHP-listed or eligible sites. The number of overflights along the existing corridors would not be reduced and would likely increase.
Native American religious concerns [3/]	No adverse impacts to Native American religious concerns would be expected with the Proposed Action compared with the No Action alternative.	No Native American religious concerns.
Wilderness [3/]	The Proposed Action would result in the introduction of new helicopter overflights and their associated noise within wilderness areas along the McCullough or Jean corridors. Estimated DNL noise exposure from the helicopter overflights at locations representative of the wilderness areas would be lower than ambient DNL values measured at the those same locations during the noise measurement period. Flights along the McCullough corridor over the North McCullough Wilderness Area would be limited to the two-mile wide corridor with the intent of protecting the most sensitive areas from helicopter overflights and their associated noise.	The number of overflights along the existing flight corridors would not be reduced and would likely increase compared to existing conditions.
Fish, wildlife, and plants	Adverse impacts would result from loss of vegetation and habitat on the Heliport site and within the utility extension corridor. However, such impacts would not be considered significant. Adverse impacts could be mitigated through implementation of construction best management practices. Helicopter overflights are not likely to disturb wildlife within a majority of the habitat areas underneath the existing and potential flight corridors, but may disturb wildlife in specific locations, usually in areas of high terrain; however, no adverse effects are anticipated.	Grand Canyon helicopter air tour operators would continue to adhere to existing regional conservation plans, easements, and permits.

Table II-3 (4 of 5)

Summary of the Anticipated Environmental Impacts of the Proposed Action and the No Action Alternative

Environmental Category [1/]	Proposed Action	No Action [2/]
Federally listed threatened or endangered species [4/]	The desert tortoise, the only federally listed specie that occurs in the proposed project area, would be adversely impacted. Implementation of conservation measures during construction would minimize impacts to the desert tortoise. No other federally listed species or habitats were identified in the proposed project area.	Helicopter air tour operators would continue to adhere to existing regional conservation plans, easements, and permits.
Invasive, nonnative species [3/]	None found on Heliport site and on utility corridors. Potential spread of noxious weeds common to the Las Vegas region during construction activities would be minimized through adherence of federal, State, and local guidance. Adherence to BLM-approved Integrated Weed Management Program during construction could minimize the potential spread of invasive, nonnative species.	No disturbance and associated potential for the spread of noxious weeds.
Floodplains and floodways	Heliport site is not located in a 100-year floodplain. Portions of communication line corridor located within 100-year floodplain but would not adversely impact floodplain.	Existing heliport facilities are not within a 100-year floodplain.
Water quality	No significant impacts are anticipated, but construction of approved waste treatment facilities would be needed.	Helicopter air tour operators would use existing water supply and stormwater drainage systems, as well as wastewater treatment facilities.
Hazardous materials, pollution prevention, and solid waste	Potential lead contamination around informal shooting ranges located on the southern edge of Heliport site; no recognized environmental conditions exist within the utility corridors. Air tour operators would continue to abide by existing permits and facility regulations to handle generated waste.	Air tour operators would continue to abide by existing permits and facility regulations to handle generated waste.
Light emissions	Light emissions would either be localized to the site or would occur at sufficient altitude so as not to cause adverse impacts beneath the helicopter flight corridors. There are no homes or businesses in the vicinity; no adverse impacts to existing land uses or the aesthetics of the area are anticipated.	There would be no installation of additional navigational lighting systems. Light emissions from helicopter operations would be perceived by the community in the same way as they are today.
Visual resources	The proposed heliport would result in a visual contrast that attracts the attention of people traveling along Las Vegas Boulevard South and I-15, but would not dominate the view of the casual observer; impacts would not exceed VRM Class III objectives. indirect impacts to scenic quality would result from the regular presence of vehicles and helicopters.	Visually, the west side of McCarran would be perceived by the community in the same way as they are today.

Table II-3 (5 of 5)

Summary of the Anticipated Environmental Impacts of the Proposed Action and the No Action Alternative

Environmental Category [1/]	Proposed Action	No Action [2/]
Natural resources and energy supply	Helicopter and automobile fuel consumption would increase but would not adversely impact regional supply of natural resources and energy supply.	Energy and natural resource consumption would continue to increase in proportion to future increases in demand.
Secondary (induced) impacts	No substantial shifts in population movement and growth or changes in business and economic activity are anticipated as a result of developing the Heliport; provision of utilities to the Heliport site would not result in development in surround areas as most of the land is managed by BLM.	Helicopter air tour operators would continue to operate at McCarran.
Construction impacts	Potential temporary increases in fugitive dust emissions during construction; potential for hazardous material spills. Potential construction-related impacts could be lessened through implementation of construction best management practices.	No construction related activity or associated impacts.

Notes:

1/ The following resource categories are not present on or near the Heliport site: coastal resources, farmlands, wetlands, and wild and scenic rivers.

2/ Under the No Action alternative, the Heliport and related utility extensions would not be constructed. Grand Canyon helicopter air tour operators would continue to be based primarily at McCarran International Airport. For the purposes of the analysis of environmental consequences in this EA, it was assumed that existing and future demand for Grand Canyon helicopter air tours would continue to be accommodated at McCarran.

3/ Environmental resource category is from the BLM's *NEPA Handbook H-1790-1* [I-3].

4/ Agency consultation is ongoing.

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

Table II-4

Preliminary List of Permits Required for the Proposed Action

Issuing Agency	Permit Name/Type
Clark County, Department of Air Quality and Environmental Management	Authority to Construct Application (ATC)
	Dust control permit
	Gasoline dispensing facility permit
	Emergency generators/underground storage tanks permit
	Soil and groundwater remediation compliance form
Clark County Department of Development Services	Building permit
	Electrical permit, mechanical permit, plumbing permit
	Drainage study approval
	Pad certification for grading and earthwork
	Landscape certification for grading and earthwork
	Grading permit
	Fence permit
	Sign permit
Clark County Department of Comprehensive Planning	Land use application
	Land use presubmittal form (regional significance)
	Overhead utility permit
	Zoning review
Clark County Fire Department	Buried fuel tank storage permit (for emergency generator)
	Above-ground generator permit
Clark County Water Reclamation District	Sewer permit
	Encroachment permit (discharge water)
Federal Aviation Administration	Form 7460-1, “Notice of Proposed Construction or Alteration”
	Form 7580-1 “Activation of new airport”
	Form 7480-1 “Notice of Landing Area Proposal”
Nevada State Permits	Nevada Division of Wildlife scientific collection permit
	NPDES general storm water permit for construction
	Hazardous material permit or roving permit
	Clean Water Act Section 401 water quality certification
	Storm water discharge permit
	NPDES temporary discharge permit
Federal Permits	Bureau of Land Management right-of-way grant
	NPDES general storm water permit for construction
Utility Services Coordination	Nevada Power
	Sprint
	Cox Communications of Nevada
	Southern Nevada Water Authority
	Las Vegas Valley Water District
U.S. Fish and Wildlife Service	Incidental take permit

Note:
NPDES = National Pollutant Discharge Elimination System

Source: Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

Table II-5

List of Considered Federal Laws and Statutes

	Citation
National Environmental Policy Act of 1969	Public Law 91-190, 42 U.S.C. §§ 4321-4370d, effective January 1, 1970, as last amended by Public Law 94-83.
Southern Nevada Public Land Management Act of 1998	Public Law. 105-263, 31 U.S.C. § 6901
Clark County Conservation of Public Land and Natural Resources Act of 2002	Public Law 107-282
Sloan Canyon National Conservation Area	Public Law 107-282 Title IV
Clean Air Act of 1970, as amended	Public Law 91-604, 42 U.S.C. §§ 7401-7671
Transportation, Treasury, Housing and Urban Development, the Judiciary, the District of Columbia, and Independent Agencies Appropriations Act of 2006. Public Law 109-115, Sec. 180. November 30, 2005.	Public Law 109-115; H.R. Rep. No. 108-741 (2004); Cong. Rec. H3716 (May 23, 2005) (introduction in House); Cong. Rec. S1540 (introduction in Senate)
Department of Transportation Act of 1966, Section 4(f)	49 U.S.C. §303(c)
Aviation Safety and Noise Abatement Act of 1979	14 CFR 150
Federal Aviation Act of 1958, as amended	49 U.S.C. § 40101 et seq.
Endangered Species Act of 1973	Public Law 93-205, 16 U.S.C. § 1531 et seq.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the *Community Environmental Response Facilitation Act of 1992*	42 U.S.C. §§ 6901-9675
Resource Conservation and Recovery Act of 1976, as amended by the *Solid Waste Disposal Act of 1980*	42 U.S.C. §§ 6901-6992(k)
National Historic Preservation Act of 1966, as amended	16 U.S.C. § 470
Archaeological and Historic Preservation Act of 1974, as amended	16 U.S.C. § 469 et seq.
Federal Water Pollution Control Act of 1972, as amended by the *Clean Water Act*	33 U.S.C § 1251 et seq.
U.S. EPA. *Air Quality Designations and Classifications for the 8-Hour Ozone National Ambient Air Quality Standards; Las Vegas, NV Nonattainment Area*	96 FR 55956 Number 117
Advisory Council on Historic Preservation. *Protection of Historic and Cultural Properties*	36 CFR 800
U.S. Congress. *Enabling Legislation; Lake Mead National Recreation Area*	Public Law 88-639
Federal Noxious Weed Act	7 U.S.C. §§ 2801-2814
Wilderness Act of 1964	16 U.S.C. §§ 1131-1136
American Indian Religious Freedom Act of 1978	Public Law 103-344
Federal Land Policy and Management Act of 1976	43 U.S.C. § 1701 et seq.
U.S. Fish and Wildlife Service. *Desert Tortoise (Mojave Population) Recovery Plan*. 1994.	

Notes:
CFR = Code of Federal Regulations
FR = Federal Register
U.S.C. = United States Code

Sources: Ricondo & Associates, Inc., based on various federal laws and statutes, as cited above.
Prepared by: Ricondo & Associates, Inc., April 2008

Table II-6

List of Considered Executive Orders

	Citation
EO 11988, *Floodplain Management*	43 FR 6030
EO 13123, *Greening the Government through Efficient Energy Management*	64 FR 30851
EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*	59 FR 7629
EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*	62 FR 19883
EO 13007, *Indian Sacred Sites*	61 FR 26771
EO 13112, *Invasive Species*	64 FR 6183

Notes:
EO = Executive Order
FR = Federal Register

Sources: Ricondo & Associates, Inc., based on various Executive Orders, as cited above.
Prepared by: Ricondo & Associates, Inc., April 2008

Table II-7

List of Considered FAA Orders, Advisory Circulars, Code of Federal Regulations, and Other Guidance

FAA Order 1050.1E: *Environmental Impacts: Policies and Procedures*
FAA Order 5050.4B: *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*
U.S. Department of the Interior. Bureau of Land Management. *National Environmental Policy Act Handbook* H1790-1
U.S. Department of the Interior. Bureau of Land Management. Visual Resource Management (VRM) 8400 series manuals
U.S. DOT Order 5680.1: *Final Order to Address Environmental Justice in Low-Income and Minority Populations*
U.S. DOT. FAA. AC 150/5020-1: *Noise Control and Compatibility Planning for Airports*
U.S. DOT Order 5650.2: *Floodplain Management and Protection*
U.S. DOT. FAA. AC 150/5200-33A: *Hazardous Wildlife Attractants on or near Airports*
U.S. DOT. FAA. AC 150/5020-2*: Noise Assessment Guidelines for New Heliports*
U.S. DOT. FAA. AC 36-3H: *Estimated Airplane Noise Levels in A-Weighted Decibels*
U.S. DOT. FAA 14 CFR Part 91, Special Federal Aviation Regulation (SFAR) No. 50–2—*Special Flight Rules in the Vicinity of the Grand Canyon National Park, AZ*
U.S. DOT. FAA. 14 CFR Part 135: *Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons on Board Such Aircraft*
U.S. DOT. FAA. 14 CFR Part 71: *Designation of Class A, Class B, Class C, Class D, and Class E Airspace Areas; Airways; Routes; and Reporting Points*
U.S. DOT. FAA. 14 CFR Part 135: *Operating Requirements: Commuter and On-Demand Operations and Rules Governing Persons on Board Such Aircraft*
U.S. DOT. FAA. AC 150/5390-2B: *Heliport Design*

Notes:
AC = Advisory Circular
CFR = Code of Federal Regulations

Sources: Ricondo & Associates, Inc., based on various FAA Orders, Advisory Circulars, and Code of Federal Regulations, as cited above.
Prepared by: Ricondo & Associates, Inc., April 2008

III. Affected Environment

3.1 Introduction

This chapter provides a description of the manmade and natural environments on and near the existing helicopter air tour facilities at McCarran International Airport and the proposed Heliport site. The "existing condition" year for this analysis is 2004 to be consistent with the LAS *FAR Part 150 Noise Compatibility Study Update* [III-1]. When available, historical data for 2005 and/or 2006 are also provided in this chapter.

This chapter also describes the existing conditions for environmental resource categories, as described in FAA Order 1050.1E, paragraph 403 and Order 5050.4B, paragraph 706, that are applicable to the study areas. These resource categories include:

- Noise
- Compatible land use
- Demographics and socioeconomic profile
- Air quality
- Department of Transportation, Section 4(f) lands, wilderness, and Areas of critical environmental concern[1]
- Historic, architectural, archaeological, and cultural resources and Native American religious concerns[1]
- Fish, wildlife, and plants and invasive, nonnative species[1]
- Federally listed threatened and endangered species
- Floodplains and floodways
- Water quality
- Hazardous materials, pollution prevention, and solid waste
- Visual resources[2]

The following environmental resources are not present within the study areas (see Section 3.2) and therefore, would not be affected by the Proposed Action or the No Action alternative: wetlands, coastal resources, wild and scenic rivers, farmlands, and wild horses and burros. Chapter IV, Environmental Consequences, describes the potential and specific environmental effects of the alternatives selected for detailed evaluation, as set forth in Chapter II, Alternatives.

3.2 Study Areas

Three study areas were developed for this EA to describe the existing conditions in the Las Vegas region and to consider the potential direct and indirect impacts of the Proposed Action and the No Action alternative: Area of Disturbance, Overflight Area, and the Las Vegas region.

3.2.1 Area of Disturbance

The Area of Disturbance includes land within the Heliport site boundary (about 229 acres of land) and areas that would be affected by the extension of electrical power, water, and communication utilities to the site (see **Exhibit III-1**).

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1 "Critical Elements of the Human Environment", as listed in Appendix 5 of the BLM's *NEPA Handbook H-1790-1*.

2 Visual resources, as detailed in the BLM's Visual Resource Management (VRM) 8400 series manuals. See Section 3.16.

The proposed utility corridor is located south of St Rose Parkway and north of Jean, Nevada, and generally parallels I-15 and Las Vegas Boulevard South. Utilities to be installed or improved within the corridor include above-ground and underground power lines, an underground communication line, and an underground water pipeline. (See Section 1.3 for a description of the Proposed Action.) For purposes of analysis in this EA, a 200-foot wide utility corridor was assumed as part of the Area of Disturbance, except for a portion adjacent to and west of the Heliport site for which a 400 foot wide corridor was assumed. It is noted that the permanent right-of-way, which would be located within the assumed 200-foot wide corridor, would be a maximum of 50 feet in width for each utility line; an additional 50 foot wide temporary right-of-way for construction would also be required.

3.2.2 Overflight Area

The Overflight Area includes (1) a one-mile radius around the proposed Heliport site and the west side of McCarran International Airport where existing helicopter tour facilities are located; (2) the existing Grand Canyon helicopter air tour flight corridors; and (3) the three potential flight corridors[3] analyzed as part of the Proposed Action.

The boundary of the Overflight Area, which is defined by the location of existing helicopter flight corridors and potential helicopter flight corridors, is depicted on **Exhibit III-2**. As shown on Exhibit III-2, the eastern boundary of the Overflight Area is the Rendezvous Point, beyond which the flight corridors to and from the Grand Canyon would remain unchanged.

3.2.3 Las Vegas Region

The Las Vegas region includes Clark County as a whole. The discussions on noise, air quality, demographics and socioeconomic profile include a discussion of the existing condition within Clark County. Department of Transportation, Section 4(f) lands include discussion of the existing condition in the Las Vegas region as a whole.

3.3 Historical and Forecast Helicopter Air Tour Demand

This section provides a summary of the historical and forecast helicopter air tour demand, as documented in the Heliport Forecasts [I-12].

3.3.1 Historical Helicopter Air Tour Demand

The helicopter air tour industry in Southern Nevada has grown over the past several years. According to statistics produced using AirScene data, Grand Canyon helicopter air tour activity at McCarran increased an average of 20.7 percent per year between 2001 and 2004. In comparison,

[3] The CCDOA consulted with the helicopter operators, the FAA, and other stakeholders to identify potential flight corridors associated with the Heliport site. In accordance with Public Law 109-115 the McCullough flight corridor represents the only route that can be used by Grand Canyon helicopter tour operators to cross the Sloan Canyon NCA if the flight is starting from or ending at the Heliport site.

Exhibit III-1

Area of Disturbance

Exhibit III-1 shows the area of disturbance associated with construction of a heliport at the South of Sloan site and construction of the associated utility extensions. Map features are superimposed on an aerial photograph.

Exhibit III-2

Overflight Area

Exhibit III-2 shows the helicopter overflight area associated with the Proposed Action. The Overflight Area includes (1) a one-mile radius around the proposed Heliport site and the west side of McCarran International Airport where existing helicopter tour facilities are located; (2) the existing Grand Canyon helicopter air tour flight corridors; and (3) the three potential flight corridors analyzed as part of the Proposed Action. National conservation areas, wilderness areas, natural areas, and national recreation areas that are proximate to the existing and potential helicopter flight corridors are displayed on Exhibit III-2. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit III-2.

total air carrier aircraft operations at McCarran increased an average of 4.3 percent per year over the same period. Helicopter air tour activity to the Grand Canyon has, therefore, increased at a higher rate than air carrier aircraft operations in the region in recent years.

In 2004, annual helicopter departures totaled 33,190 Grand Canyon tours and 11,501 Las Vegas Strip tours. In 2005, annual helicopter departures totaled 37,595 Grand Canyon tours and 12,775 Las Vegas Strip tours. In 2006, annual helicopter departures totaled 36,865 Grand Canyon tours and 12,045 Las Vegas Strip tours. Assuming a load of 5.5 enplaned passengers per helicopter departure based on the helicopter fleet mix, air tour helicopters carried about 182,550 passengers on tours of the Grand Canyon and about 63,260 passengers on tours of the Las Vegas Strip and in 2004. In 2005, air tour helicopters carried about 206,772 passengers on tours of the Grand Canyon and about 70,262 passengers on tours of the Las Vegas Strip. In 2006, air tour helicopters carried about 202,757 passengers on tours of the Grand Canyon and about 66,247 passengers on tours of the Las Vegas Strip. The actual 2006 Grand Canyon annual tour departures are within about three percent of the number of departures forecasted in 2004 for 2006.

3.3.2 Current Helicopter Tour Operators

As of 2007, four commercial helicopter operators provided helicopter air tours from their base at McCarran. A fifth commercial helicopter operator, offering helicopter training and local tours, is partially based at North Las Vegas Airport. Helicopter tours are also conducted at the Boulder City Municipal Airport by an operator who is also based at McCarran. Multiple sites on the west side of McCarran are currently used as bases for the four helicopter tour operators operating at McCarran. These helicopter facilities are located about two miles south of Caesars Palace, a location that is considered the center of the helicopter air tour customer base. Additional helicopters used for television news gathering, fire fighting, and executive charter flights are also based at McCarran and at other airports and private heliports located throughout the Las Vegas region.

3.3.3 Forecast Helicopter Air Tour Demand

Unconstrained forecasts of helicopter air tour passengers and operations in the Las Vegas region were approved in 2007 and are described in the Heliport Forecasts [I-12]. Helicopter tour activity based at McCarran in 2004 was used as the existing condition in the forecasts. **Table III-1** summarizes the forecast of helicopter air tour departures as derived from the Heliport Forecasts. An unconstrained growth rate of 4.0 percent per year is forecast through the planning period. As shown in Table III-1, based on the forecast growth rate, the number of Grand Canyon air tour departures is forecast to increase from about 33,190 in 2004 to 43,700 in 2011 and 55,200 in 2017. Daily departures for Grand Canyon air tours are forecast to increase from an average of 91 in 2004 to 120 in 2011 and 151 in 2017. The total number of helicopter air tour departures, including Las Vegas Strip tour departures, is forecast to increase from 44,692 in 2004 to 58,900 in 2011 and 74,400 in 2017.

Table III-1

Forecast of Helicopter Air Tour Departures

Year	Las Vegas Strip Tours		Grand Canyon Tours		Total Tour Departures	
	Annual	Daily	Annual	Daily	Annual	Daily
Historical						
2004	11,501	32	33,190	91	44,692	122
2005	12,775	35	37,595	103	50,370	138
2006	12,045	33	36,865	101	48,910	134
Forecast						
2011	15,200	41	43,700	120	58,900	161
2017	19,200	53	55,200	151	74,400	204

Notes:
Columns may not add to totals shown because of rounding.
Forecasts are intended to represent general trends; therefore, some air tour departures reported in this table shows faster historical growth while other years show slower growth.

Sources: Clark County Department of Aviation, using data from AirScene (2004-2006 departures); Ricondo & Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

3.4 Physical Setting and Resources

The natural environment in the Las Vegas region, including the climate, topography and drainage, soils, and mineral resources and mining, is described below.

3.4.1 Climate

The Las Vegas region has a warm climate, with an average annual temperature of 75 degrees Fahrenheit. The four seasons are well defined. In summer, the region experiences daytime maximum temperatures usually averaging about 100 degrees Fahrenheit with extreme summertime temperatures reaching 115 degrees Fahrenheit and higher on some occasions. The proximity of the mountains contributes to relatively cool summer nights with average temperatures in the mid 70s. Winter temperatures are generally mild, with the temperature dropping below freezing about 12 days per year. Daytime winter temperatures average near 60 degrees Fahrenheit with mostly clear skies. The spring and fall seasons are generally considered the most ideal, with average daily temperatures about 80 degrees Fahrenheit, although rather extreme temperature changes can occur during these months.

The Sierra Nevada Mountains of California and the Spring Mountains immediately west of the Las Vegas Valley, the latter rising to elevations over 10,000 feet above the Valley floor, act as effective barriers to moisture moving eastward from the Pacific Ocean. These barriers primarily result in a minimum of overcast and rainy days. The numbers of rainy days during a given month in the region can vary from less than one rainy day in June to three days during the winter months. Humidity is normally low, averaging 30 percent, but moist tropical air from the southwest affects the region from mid- to late summer months.

3.4.2 Topography and Drainage

Clark County is within the Basin and Range Physiographic Province. The topography of this Province is one of marked relief, with low-lying valley floors surrounded by steeply rising mountain ranges. Topography divides Nevada into a number of generally closed drainage basins. Both the

Heliport site and McCarran lie in the Las Vegas Valley hydrographic basin. (See Section 3.8.2 for a discussion of Hydrographic Basin 212, the Las Vegas Valley hydrographic basin.)

Portions of the Heliport site and areas to the east are hilly. The elevation of the Heliport site ranges from a low of about 3,000 feet above mean sea level (MSL) on the western side of the site to a high of about 3,340 feet above MSL in the southeastern corner of the site. Drainage on the site flows northwesterly. Major washes cross the southern third of the site and the southwestern tip of the site.

3.4.3 Mineral Resources and Mining

According to a database of mining claims[4] maintained by the BLM, there are 12 mill site claims ("Apple Rose 6" through "Apple Rose 17" inclusive) that are on or partially on the Heliport site. No development or work has occurred on any of these mill site claims and no plans of operations have been submitted to or approved by BLM for any of them. Each of the 12 mill site claims is partially or totally within the proposed Transportation and Utility Corridor that was withdrawn from location and entry under the mining laws by the action of the BLM dated July 2, 2007, pursuant to section 501(b) of P.L. 107-282, the *Clark County Conservation of Public Land and Natural Resources Act of 2002* [III-2].

There are no active mining claims within the Heliport site. Two mining claims of approximately 20 acres each ("QU #15" and "QU #29") in the same section as the Heliport site have been closed.

Just north of the Heliport site, the BLM database shows four active mining claims. Just south of the Heliport site, the BLM database shows two active mining claims. No other mining claims were found in the BLM database. The Clark County Assessor's Office database of land ownership records does not show private holdings (or patented mining claims) near the Heliport site.

Gravel was once mined from small pits to the south of the Heliport site and just west of the southern half of the site in the small wash that drains west-northwest; however no potentially significant mining material was found near the site.

Part of the southwest corner of Heliport site (less than 10 acres) is utilized by the Nevada Department of Transportation (NDOT) as a material site[5] to extract gravel for regional transportation projects.

3.5 Noise

In accordance with FAA Orders 5050.4B and 1050.1E, aircraft noise exposure in the vicinity of McCarran International Airport and the Heliport site was analyzed for existing (2004) and future (2011 and 2017) conditions. Total aircraft noise exposure contours and helicopter noise exposure contours for existing (2004) conditions at McCarran are discussed in Section 3.5.1 below. Existing noise levels at the Heliport site and at other locations of interest within the Overflight Area are described in Section 3.5.2. A discussion of the noise analysis techniques, methodology, and assumptions used for the existing and future year noise analysis is provided in **Appendix D**.

[4] The BLM maintains an online database of mining claims, listed by quarter section. The claims in the database are unpatented mining claims; that is, no private land ownership is associated with the claims.

[5] NDOT site NEV044285 is used to extract gravel for regional transportation projects.

The primary metric used in the noise analysis is the day-night average sound level (DNL), which is the average sound pressure level in A-weighted decibels (dBA) for an average day of the year.[6] (See Appendix D for further details.) DNL is calculated using the sound energy generated by individual aircraft operations (arrivals or departures), the number of operations occurring during a theoretical average 24-hour period, and the times of day the operations occur. A 10-decibel (dB) weighting penalty is added for aircraft operations occurring during nighttime hours (between 10:00 p.m. and 6:59 a.m.). The 10-dB penalty represents the added intrusiveness of sounds that occur during sleeping hours, both because of the increased sensitivity to noise during sleep, and because ambient sound levels during nighttime hours are typically about 10 dB lower than during daytime hours. With the penalty, each operation during nighttime hours is considered to be equivalent to 10 operations of the same aircraft type during daytime hours (between 7:00 a.m. and 9:59 p.m.).

The FAA's Integrated Noise Model (INM), Version 6.1, was used to evaluate total aircraft noise exposure at McCarran International Airport.[7] INM Version 7.0, the most current version of the INM at the time this EA was prepared, was used for the helicopter noise exposure analysis documented in this EA.

The INM produces noise exposure contours, which are computer-generated drawings that depict areas of equal noise exposure resulting from aircraft overflights. Four specific ranges of noise exposure were estimated in the total aircraft noise analysis: (1) DNL 75 and higher, (2) DNL 70 to 75, (3) DNL 65 to 70, and (4) DNL 60 to 65.

Two specific ranges of noise exposure were estimated in the helicopter noise analysis: (1) DNL 65 and higher and (2) DNL 60 to 65. Clark County agencies use information regarding noise exposure between DNL 60 and DNL 65 for local planning purposes; therefore DNL 60 noise contours are depicted on exhibits in this EA.

3.5.1 McCarran International Airport

Noise exposure contours representing total aircraft operations, including helicopter operations, at McCarran in 2004 are presented on **Exhibit III-3** and are reproduced from the *Noise Exposure Map Report, FAR Part 150 Noise Compatibility Study Update*. As shown on Exhibit III-3, although noise-sensitive land uses throughout the vicinity of McCarran are exposed to aircraft noise of DNL 65 and higher, the highest levels of aircraft noise exposure occur in areas west/southwest of McCarran. The primary contributors to aircraft noise in these areas are overflights by aircraft departing McCarran on Runways 25L and 25R. In 2004, about 54 percent of daytime air carrier aircraft departures and 82 percent of nighttime air carrier aircraft departures from McCarran occurred on Runways 25L and 25R. Departures on Runways 19L and 19R (accounting for about 25 percent of daytime departures and 9 percent of nighttime departures from McCarran in 2004) also contribute to aircraft noise in areas south/southwest of McCarran.

[6] A-weighted sound pressure level is a frequency-weighted sound level that correlates with the way sound is perceived by the human ear.

[7] The total aircraft noise exposure contours were derived from the *Noise Exposure Map Report*, *FAR Part 150 Noise Compatibility Study Update,* which was completed in November 2006. The FAA accepted the 2004 and 2011 noise exposure maps for McCarran International Airport in July 2007.

Exhibit III-3

Existing (2004) Aircraft Noise Exposure Contours and Generalized Existing Land Uses — McCarran International Airport

Exhibit III-3 shows calendar year 2004 aircraft noise exposure contours for McCarran International Airport superimposed on a map of generalized existing land uses.

Exhibit III-4 depicts 2004 noise exposure contours associated solely with helicopter operations at McCarran International Airport superimposed on a map of generalized existing land uses. The 2004 helicopter noise exposure contours were developed by Brown-Buntin Associates, Inc. (BBA), using INM Version 7.0. As shown on Exhibit III-4, noise exposure levels of DNL 65 generated by helicopter tour operations in 2004 did not extend beyond McCarran's property boundary. As can be seen by comparing Exhibits III-3 and III-4, the relative contribution of helicopter operations to the 2004 DNL 65 noise exposure contour at McCarran was very minimal. Noise generated by helicopter operations at McCarran in 2004 was, relatively, overwhelmed by noise generated by fixed-wing aircraft operations.

3.5.2 2004 Noise Monitoring Program

As part of the preparation for this EA, the existing (2004) noise environment in the vicinity of the Heliport site, and at other locations near and beneath the Overflight Area, was evaluated using a noise-monitoring program. Continuous noise monitoring for a minimum of 24 hours was conducted at the 10 locations depicted on **Exhibit III-5**. Two of the noise-monitoring locations represent alternative heliport sites and eight of the locations are beneath the Overflight Area.

Noise monitoring locations were selected by BBA with input from the CCDOA and the BLM. The noise monitoring locations were selected to provide reference locations for assessing project-related noise impacts, which are discussed in Section 4.1. Noise level measurements were recorded during July and October 2004. Noise monitoring equipment consisted of Larson-Davis Laboratories (LDL) Model 820 sound level analyzers equipped with Bruel & Kjaer (B&K) Type 4176 0.5-inch microphones (See Appendix D for more details).

As previously mentioned, DNL is the average sound pressure level in A-weighted decibels for an average day of the year. Other statistical descriptors that are useful in describing the ambient noise characteristics of a specific location include L_{max}, L_{eq}, and L_{90}. Such descriptors are typically calculated for each one-hour interval of the overall sample period. L_{max} represents the highest noise level measured during a sample period and L_{eq} represents the energy average noise level during the sample period. L_{90} describes the noise level exceeded 90 percent of the time during the sample period. L_{90} is useful for describing the background (or residual) noise in the absence of any easily defined noise events, such as those caused by occasional traffic, barking dogs, or aircraft overflights.

The ambient noise monitoring results are summarized in **Table III-2**, which shows the locations and dates of the noise measurements, along with the range of hourly L_{max}, L_{eq}, and L_{90} values for the 24-hour sampling periods. Table III-2 also shows the measured DNL for the sample period at each noise monitoring location and the sources of ambient noise that were noted while an observer was present. The measured DNLs for the sample period at each location are also presented on Exhibit III-5.

The ambient acoustical environment at each of the noise monitoring locations is described below. Appendix D provides exhibits summarizing the hourly noise levels measured at each location, along with the measured DNL for the 24-hour noise-monitoring period. A photograph of each noise monitoring location and the noise monitoring equipment setup is included with each exhibit. The exhibits demonstrate that ambient noise levels vary during the day and night, with the lowest noise levels generally occurring during the late night and early morning hours.

Exhibit III-4

Existing (2004) Helicopter Noise Exposure Contours and Generalized Existing Land Uses — McCarran International Airport

Exhibit III-4 shows calendar year 2004 noise exposure contours for McCarran International Airport generated by helicopter operations superimposed on a map of generalized existing land uses.

Exhibit III-5

Ambient Noise Monitor Locations

Exhibit III-5 shows the locations where noise measurement data was collected. The ten noise measurement sites are located within the overflight area shown on Exhibit III-2. National conservation areas, wilderness areas, natural areas, and national recreation areas that are proximate to the existing and potential helicopter flight corridors are displayed on Exhibit III-5. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit III-5.

Table III-2

Summary of Noise Level Measurements – All Ambient Sources

Location Name	Date	Hourly Noise Levels (dBA) [1/] L_{max}	L_{eq}	L_{90}	DNL	Source of Noise
South of Sloan	07/01/04	61-79	51-65	46-57	69.2	Roadway traffic, railroad, and wind
McCarran International Airport	08/03/04	63-83	50-62	48-55	62.2	Fixed-wing aircraft, helicopters, and roadway traffic
R1	10/13/04	40-73	23-59	18-45	50.6	Fixed-wing aircraft and helicopters
R2	10/13/04	52-83	35-67	28-52	59.7	Fixed-wing aircraft, helicopters, and roadway traffic
R3	10/13/04	49-75	38-56	34-49	55.1	Fixed-wing aircraft and wind
R4	10/28/04	58-75	43-54	31-45	56.2	Construction activities and wind [2/]
R5	10/28/04	29-77	19-55	18-30	50.2	Fixed-wing aircraft and wind
R6	10/28/04	41-75	26-54	19-34	49.4	Fixed-wing aircraft and wind
R7	10/28/04	38-72	23-52	19-39	46.8	Fixed-wing aircraft and wind
R8	10/28/04	42-77	31-53	22-37	45.1	Commercial activities and wind [3/]

Notes:
dBA = A-weighted decibel
DNL = Day-night average sound level
1/ The range of hourly noise levels measured over a 24-hour period.
2/ Construction-related noise is expected to be temporary.
3/ Commercial activities include the Jean Sport Aviation Center and casino hotel.

Source: Brown-Buntin Associates, Inc., January 2005
Prepared by: Ricondo & Associates, Inc., April 2008

3.5.2.1 Proposed Heliport Site

The Heliport site is located in an undeveloped area on the east side of I-15 and the Union Pacific Railroad corridor. Primary noise sources affecting the environs around the Heliport site are freeway traffic and railroad operations, although small fixed-wing aircraft and helicopters occasionally fly along the interstate corridor. Noise measurements were recorded on July 1, 2004. Measured hourly background noise levels, as defined by L_{90}, ranged from 46 to 57 and the measured DNL for the 24-hour sample period was 69.2. This measurement primarily reflected roadway traffic and wind. Appendix D presents a summary of hourly noise levels at the Heliport site for the noise-monitoring period.

3.5.2.2 McCarran International Airport

The primary noise sources at McCarran International Airport are fixed-wing jet aircraft. As the site is located close to existing major roadways, roadway traffic is also a primary noise source affecting the area. Noise measurements were recorded on August 3, 2004, at a location near the University of Nevada, Las Vegas, just north of McCarran. This location is affected by noise from fixed-wing aircraft, roadway traffic, and existing helicopter air tour operations along the Tropicana flight corridor. Measured hourly background noise levels, as defined by L_{90}, ranged from 48 to 55 and the measured DNL for the 24-hour sample period was 62.2. Maximum noise levels from individual aircraft operations ranged from 75 to 85. Appendix D provides an exhibit that summarizes hourly noise levels for the noise-monitoring period at McCarran.

According to the LAS *FAR Part 150 Noise Compatibility Study Update*, the number of households and people estimated to have been exposed to all sources of aircraft noise of DNL 65 and higher in 2004 were 2,189 and 4,286, respectively.

3.5.2.3 Ambient Noise Levels at Other Locations in the Overflight Area

Noise monitoring locations R1 through R8, as shown on Exhibit III-5, represent areas that currently experience helicopter overflights or that could experience helicopter overflights if a heliport were constructed at the Heliport site. Locations R1 and R2 are in areas that currently experience by helicopter air tour flights originating at McCarran. Locations R3 through R8 are in areas not currently affected by such flights. Location R1 is just outside the western boundary of the Lake Mead National Recreation Area (LMNRA) and locations R4 through R6 are within the Sloan Canyon National Conservation Area (NCA) or North McCullough Wilderness Area. Noise sources affecting the noise monitoring locations included wind over the ground and in the sparse vegetation of the area and, in most cases, aircraft overflights. Most of the locations were affected by overflights of air carrier jet aircraft associated with operations at McCarran. Smaller fixed-wing aircraft operating at McCarran, the Henderson Executive Airport, and the Boulder City Municipal Airport were also observed to overfly locations R5, R6, and R7. Noise measurements were recorded on October 13 and 28, 2004, at these eight locations. Measured hourly background noise levels, as defined by L_{90}, ranged from a low of 18 at locations R1 and R5 to a high of 52 at location R2. The measured DNLs for the 24-hour sample periods ranged from 45.1 at location R8 to 59.7 at location R2. Exhibits in Appendix D summarize hourly noise levels during the noise monitoring periods for the representative noise monitoring locations.

3.6 Compatible Land Use

Federal agencies have adopted guidelines for compatible land uses and environmental noise levels. On the basis of extensive research on the effects of noise on people, it has been determined that noise levels that are incompatible with residential land uses may be compatible with commercial and industrial land uses, including stores and factories [III-3]. The FAA has developed land use compatibility guidelines relating types of land uses to aircraft noise levels. 14 CFR Part 150, *Airport Noise Compatibility Planning* [III-4], sets forth compatibility guidelines for residential, public, commercial, manufacturing, and recreational land uses, as presented in **Table III-3**.

3.6.1 Existing Land Uses

Generalized existing land uses on and in the vicinity of the Heliport site and in the vicinity of the west side of McCarran are described below. The exhibits in this section depict existing land uses and not land ownership. The source of the existing land use data is the Clark County Tax Assessor's Office; however the land use classifications have been simplified/generalized to be more consistent with land use classifications in 14 CFR Part 150.

3.6.1.1 Proposed Heliport Site

Exhibit III-6 presents generalized existing land uses on and in the vicinity of the Heliport site. The site is vacant and undeveloped. A vacant 20-acre NDOT materials site is located on the southwestern portion of the site. Vacant and undeveloped BLM-managed land surrounds the Heliport site. The nearest developments are more than one mile from the site and are public land uses. The boundary of the Sloan Canyon NCA is about 2.3 miles east of the Heliport site.

3.6.1.2 McCarran International Airport

Exhibit III-7 depicts the generalized existing land uses in the vicinity of McCarran International Airport. As shown, McCarran is just south of an extensively developed area. The Las Vegas Strip, with a wide array of casinos and hotels, begins northwest of McCarran and extends southward to and along McCarran's west side. Recent trends have included expansion of the Strip further south as the demand for new resorts and hotel facilities has increased. The areas north and east of McCarran are primarily occupied by high-density residential developments and some religious facilities, schools, and neighborhood shopping centers. The University of Nevada, Las Vegas is less than one mile northeast of McCarran. The land south, southeast, and southwest of McCarran are developed with low-density single-family residential, high-density residential, and commercial and industrial developments have been constructed in those areas. Industrial developments are located southwest of McCarran near the interchange of I-15 and Blue Diamond Road. New industrial uses west of I-15 extend almost to Valley View Boulevard.

Table III-3

Suggested Land Use Compatibility Guidelines in Aircraft Noise Exposure Areas

Land Use	DNL 65 to 70	DNL 70 to 75	DNL 75+
Residential			
Residential other than mobile homes and transient lodgings	NLR required [1/]	NLR required [1/]	Incompatible
Mobile homes	Incompatible	Incompatible	Incompatible
Transient lodgings	NLR required [1/]	NLR required [1/]	Incompatible
Public Use			
Schools, hospitals, and nursing homes	NLR required [1/]	NLR required [1/]	Incompatible
Churches, auditoriums, and concert halls	NLR required [1/]	NLR required [1/]	Incompatible
Governmental services	Compatible	NLR required	NLR required
Transportation	Compatible	Compatible [2/]	Compatible [2/]
Parking	Compatible	Compatible [2/]	Compatible [2/]
Commercial Use			
Offices, business, and professional	NLR required	NLR required	NLR required [2/]
Wholesale and retail—building materials, hardware, and farm equipment	Compatible	Compatible [2/]	Compatible [2/]
Retail trade—general	NLR required	NLR required	NLR required
Utilities	Compatible	Compatible [2/]	Compatible [2/]
Communication	NLR required	NLR required	NLR required
Manufacturing and Production			
Manufacturing—general	Compatible	Compatible [2/]	Compatible [2/]
Photographic and optical	Compatible	NLR required	NLR required
Agriculture (except livestock) and forestry	Compatible	Compatible	Compatible
Livestock farming and breeding	Compatible	Compatible	Incompatible
Mining and fishing resources production and extraction	Compatible	Compatible	Compatible
Recreational			
Outdoor sports arenas and spectator sports	Compatible [3/]	Compatible [3/]	Incompatible
Outdoor music shells, amphitheaters	Incompatible	Incompatible	Incompatible
Nature exhibits and zoos	Compatible	Incompatible	Incompatible
Amusements, parks, resorts, and camps	Compatible	Compatible	Incompatible
Golf courses, riding stables, and water recreation	Compatible	Compatible	Incompatible

DNL = Day-night average sound level, in A-weighted decibels.

Compatible = Generally, no special noise attenuating materials are required to achieve an interior noise level of DNL 45 in habitable spaces, or the activity (whether indoors or outdoors) would not be subject to a significant adverse effect by the outdoor noise level.

Incompatible = Generally, the land use, whether in a structure or an outdoor activity, is considered to be incompatible with the outdoor noise level even if special attenuating materials were to be used in the construction of the building.

NLR = Noise Level Reduction. NLR is used to denote the total amount of noise transmission loss in decibels required to reduce an exterior noise level in habitable interior spaces to DNL 45. In most places, typical building construction automatically provides an NLR of 20 decibels. Therefore, if a structure is located in an area exposed to aircraft noise of DNL 65, the interior noise level would be about DNL 45. If the structure is located in an area exposed to aircraft noise of DNL 70, the interior noise level would be about DNL 50, so an additional NLR of 5 decibels would be required if not afforded by the normal construction. This NLR can be achieved through the use of noise attenuating materials in the construction of the structure.

Notes:

1/ The land use is generally incompatible with aircraft noise and should only be permitted in areas of infill in existing neighborhoods or where the community determines that the use must be allowed.

2/ NLR required in offices or other areas with noise-sensitive activities.

3/ Provided that special sound reinforcement systems are installed.

Source: U.S. Department of Transportation, Federal Aviation Administration, Federal Aviation Regulations Part 150*, Airport Noise Compatibility Planning*, Code of Federal Regulations, Title 14, Chapter I, Subchapter I, Part 150, Table 1, January 18, 1985, as amended.

Prepared by: Ricondo & Associates, Inc., April 2008

Exhibit III-6

Generalized Existing Land Uses in the Vicinity of the Area of Disturbance

Exhibit III-6 presents information regarding existing land uses in the vicinity of the proposed South of Sloan heliport site. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-6 also shows the location of noise sensitive facilities in the vicinity of the proposed Heliport site. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

Exhibit III-7

Generalized Existing Land Uses in the Vicinity of McCarran International Airport

Exhibit III-7 presents information regarding existing land uses in the vicinity of McCarran International Airport. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-7 also shows the location of noise sensitive facilities in the vicinity of McCarran International Airport. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

3.6.1.3 Existing Land uses beneath Overflight Area

Generalized existing land uses beneath the Overflight Area are shown on **Exhibit III-8**. Much of the Overflight Area is undeveloped open space administered by the BLM. The Lake Mead National Recreation Area is administered by the National Park Service and is classified as park/recreation on Exhibit III-8.

3.6.2 Planned Land Uses

Clark County is divided into numerous planning areas covering incorporated jurisdictions and unincorporated areas. **Exhibit III-9** depicts planning areas in the Las Vegas region, including Clark County and incorporated cities. Planned land use recommendations for incorporated cities (Henderson, Boulder City, and Las Vegas) are addressed in comprehensive plans/land use plans developed by various city departments. Planned land use recommendations for unincorporated portions of Clark County are addressed in land use plans developed by the Clark County Department of Comprehensive Planning and adopted by the Clark County Board of County Commissioners. The Clark County Board of County Commissioners has adopted development plans and guides for the unincorporated towns of Enterprise, Goodsprings (the South County Planning Area), Whitney, and Winchester and Paradise and for unincorporated areas south of the Las Vegas Valley (the South County Planning Area).

The exhibits in this section depict planned land uses and not land ownership. The sources of the planned land use data are listed above; however the land use classifications used by Clark County and the incorporated cities have been simplified/generalized to be more consistent with land use classifications in 14 CFR Part 150.

The following sections describe generalized existing land uses in the vicinity of the Heliport site and in the vicinity of the west side of McCarran.

3.6.2.1 Proposed Heliport Site

Generalized planned land uses in the vicinity of the Heliport site are depicted on **Exhibit III-10**. The site is located in unincorporated Clark County within the area covered by the *South County Land Use and Development Guide* [III-5]. Clark County is currently updating portions of this plan, which was adopted in 1994 and amended in 2005. In 2007, the City of Henderson annexed about 3,455 acres of land, which expanded the city boundary southwestward and created the West Henderson Planning Area. The southern boundary of the West Henderson Planning Area is located adjacent to the northern boundary of the Heliport site. Planned land use designations contained in Clark County's *South County Land Use and Development Guide* apply to the portion of the West Henderson Planning Area south of Sloan Road. Land parcels in the immediate surroundings of the Heliport site are anticipated to remain vacant in the future based on adopted land use plans and current land ownership status. About one mile northeast of the Heliport site within the West Henderson Planning Area, there is a parcel that is planned for single-family residential land uses; however, no specific development projects have been proposed for the parcel.

Exhibit III-8

Generalized Existing Land Uses in the Overflight Area

Exhibit III-8 presents information regarding existing land uses within the Overflight Area. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-8 also shows the location of noise sensitive facilities within the Overflight Area. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

Exhibit III-9

Clark County Planning Areas

Clark County and the incorporated cities of Henderson, Las Vegas, and North Las Vegas have adopted land use plans to guide future development in the Las Vegas region. Exhibit III-9 depicts the boundaries for planning areas located in unincorporated Clark County and the planning area boundaries for the incorporated cities of Henderson, Las Vegas, and North Las Vegas.

Exhibit III-10

Generalized Planned Land Uses in the Vicinity of the Area of Disturbance

Exhibit III-10 presents information regarding planned land uses in the vicinity of the proposed South of Sloan heliport site. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-10 also shows the location of noise sensitive facilities in the vicinity of the proposed Heliport site. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

As shown on Exhibit III-10, the Heliport site is located outside the BLM disposal boundary. Development outside the BLM disposal boundary is limited because the land is publicly managed. BLM policies on lands under BLM administration include a variety of public use, conservation, and resource management actions. Certain lands administered by the BLM fall under the classification of general management, while other areas are special designation management areas where specific policies apply. The BLM has developed resource management plans for the special designation management areas in Clark County, including the Sloan Canyon NCA. BLM lands immediately south of the Heliport site fall under the classification of general management. The boundary of the Sloan Canyon NCA is about 2.3 miles east of the site and no change is anticipated to the boundary of the Sloan Canyon NCA in the future.

3.6.2.2 McCarran International Airport

Exhibit III-11 depicts the generalized planned land uses in the vicinity of McCarran. McCarran is located in the Paradise Planning Area and is adjacent to the Enterprise (to the south and southwest), Spring Valley (to the west), and Winchester (to the north) planning areas. Planned land uses in the vicinity of McCarran generally represent a continuation of existing land use patterns with infill of mixed-use, commercial, industrial, and single- and multi-family residential uses in vacant areas to the west and southwest, with a shift in use from industrial to commercial adjacent to the airport to the south and east, and a focus on mixed use along the I-15 corridor. The University of Nevada, Las Vegas is located northeast of McCarran. On the west side of McCarran, land uses are planned to be predominantly mixed use, public, and industrial, with small pockets of recreational uses and residential uses.

3.6.2.3 Planned Land Uses beneath Overflight Area

Generalized planned land uses in the Overflight Area are shown on **Exhibit III-12**.

3.6.3 Zoning

Zoning is the traditional mechanism used by local governments to control land use and implement the goals and policies of their general plans or community master plans. Zoning controls the location, type, and intensity of new land uses, and is an important tool for preventing incompatible land uses from being developed in the vicinity of airports. The legal basis for zoning powers is to protect the health, safety, and welfare of the public. Since the establishment of zoning powers in the early 1900s, the courts have been consistent in confirming broad discretion to local governments in carrying out their zoning powers, provided that zoning designations are based on a sound land use policy and plan. Zoning authority for unincorporated portions of Clark County, including public lands, rests with the Clark County Zoning Administrator. Each of the incorporated cities in Clark County has zoning authority within the limits of their jurisdiction. Summaries of the zoning ordinances and zoning designations applicable to the Overflight Area and Area of Disturbance, along with associated exhibits, are provided in **Appendix E**.

Exhibit III-11

Generalized Planned Land Uses in the Vicinity of McCarran International Airport

Exhibit III-11 presents information regarding planned land uses in the vicinity of McCarran International Airport. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-11 also shows the location of noise sensitive facilities in the vicinity of McCarran International Airport. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

Exhibit III-12

Generalized Planned Land Uses in the Overflight Area

Exhibit III-12 presents information regarding planned land uses within the Overflight Area. Land uses are color coded – for instance residential single-family land uses are displayed in yellow. Exhibit III-12 also shows the location of noise sensitive facilities within the Overflight Area. Noise sensitive facilities are displayed with symbols and include schools, religious facilities, hospitals, historic structures, and day care facilities.

3.7 Demographics and Socioeconomic Profile

According to the U.S. Department of Commerce, Bureau of the Census, Clark County was the fourth fastest growing county in the nation between 2000 and 2005, with an addition of over 300,000 new residents [III-6].

Clark County is expected to experience continued economic growth over the next decade. Population and employment in Clark County increased faster than the national averages between 1990 and 2004, and the trend is expected to continue through at least 2020. Key indicators of economic growth in the region include gaming revenues, convention attendance, hotel/motel room demand, and construction activity. Most of the economic growth in recent years has resulted from expansion of the gaming and tourist industries in Las Vegas. In the future, these industries are expected to continue to produce substantial economic growth in the Las Vegas region, although some economic diversification is also expected to occur.

According to the 2000 U.S. Decennial Census, about 1.4 million people live in Clark County [III-6]. By 2006, the number of Clark County residents increased to an estimated 1.9 million residents, according to the Nevada State Demographer's Office [III-7]. The median age of Clark County residents is 34.4 years.

Table III-4 summarizes the household income for Clark County and the United States, as reported in the 2000 U.S. Decennial Census and 2006 Bureau of the Census estimates [III-6, III-8]. The reported median household income for Clark County in 1999 was $44,616 compared to the national median household income of $41,994. According to the Las Vegas Valley Chamber of Commerce, the median household income in Clark County was $47,320 in 2006 [III-9].

Table III-4

Household Income in Clark County and the United States

	Clark County		United States	
Household Income	2000 Census	2006 Census Estimate	2000 Census	2006 Census Estimate
Less than $10,000	7.1%	5.8%	9.5%	8.0%
$10,000 to $14,999	5.1	3.7	6.3	6.0%
$15,000 to $24,999	12.4	9.8	12.8	11.4%
$25,000 to $34,999	13.1	11.0	12.8	11.2%
$35,000 to $49,999	18.1	15.6	16.5	14.8%
$50,000 to $74,999	21.5	22.2	19.5	19.0%
$75,000 to $99,999	11.1	13.6	10.2	11.8%
$100,000 to $149,999	7.5	11.1	7.7	10.9%
$150,000 to $199,999	1.9	3.9	2.2	3.7%
$200,000 or more	2.1	3.2	2.4	3.4%
Total	100.0%	100.0%	100.0%	100.0%

Note: Columns may not add to totals shown because of rounding.

Source: U.S. Department of Commerce, Bureau of the Census, actual data from 2000 Decennial Census, and 2006 estimates from 2006 American Community Survey, 2007

Prepared by: Ricondo & Associates, Inc., April 2008

The ethnicity of Clark County residents and the United States, as reported in the 2000 U.S. Decennial Census and 2006 Bureau of the Census estimates, is presented in **Table III-5** [III-6, III-8]. As shown in Table III-5, about 28.4 percent of people living in the County identified themselves as a minority. The percentage of minorities in Clark County decreased to about 21.5 percent in 2006, based on Bureau of Census estimates.

Table III-5

Ethnicity of Residents in Clark County and the United States

Ethnicity	Clark County		United States	
	2000 Census	2006 Census Estimate	2000 Census	2006 Census Estimate
White	71.6%	78.5%	75.1%	80.1%
Minority:				
Black or African American	9.1%	10.2%	12.3%	12.8%
American Indian and Alaska Native	0.8	0.9	0.9	1.0
Asian	5.3	7.1	3.6	4.4
Native Hawaiian and other Pacific Islander	0.5	0.5	0.1	0.2
Some other race [1/]	8.6	n.a.	5.5	n.a.
Two or more races	4.2	2.8	2.4	1.6%
Subtotal: minority	28.4%	21.5%	24.9%	19.9%
Total	100.0%	100.0%	100.0%	100.0%

Notes: Columns may not add to total shown because of rounding.
n.a. = Not available
1/ The 2006 Population Estimates dataset does not include data for this category.

Sources: U.S. Department of Commerce, Bureau of the Census, actual data from 2000 Decennial Census, and 2006 estimates from the Population Estimates Program.
Prepared by: Ricondo & Associates, Inc., April 2008

3.8 Air Quality

The federal *Clean Air Act of 1970* (CAA) [III-10], as amended, requires that states identify those areas where the National Ambient Air Quality Standards (NAAQS) are not met for specific air pollutants. The U.S. Environmental Protection Agency (U.S. EPA) has designated such areas as nonattainment areas. A state with a nonattainment area must prepare a State Implementation Plan (SIP) that details the programs and requirements the state will use to meet the NAAQS by the deadlines specified in the *Clean Air Act Amendments of 1990* [III-11].

The U.S. EPA, under mandates of the CAA, as amended, has established primary and secondary NAAQS for seven air contaminants or criteria pollutants [III-12]. These contaminants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), suspended particulate matter (PM_{10}), lead (Pb), sulfur dioxide (SO_2), and fine particulates ($PM_{2.5}$). The primary standards were established at levels sufficient to protect public health with a satisfactory margin of safety. The secondary standards were established to protect public welfare from other adverse effects of air pollution.

3.8.1 Air Quality Standards

Federal and Clark County ambient air quality standards are summarized in **Table III-6**. The Clark County Board of County Commissioners has adopted ambient air quality standards in Clark County that are identical to the federal standards.

Table III-6

Federal and Clark County Ambient Air Quality Standards

Pollutant	Averaging Time	Primary Standard	Secondary Standard
Ozone (O_3)	1-hour [1/]	0.12 ppm	Same as primary
	8-hour	0.08 ppm	Same as primary
Carbon Monoxide (CO)	8-hour	9.0 ppm	None
	1-hour	35.0 ppm	None
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm	Same as primary
Sulfur Dioxide (SO_2)	Annual	0.03 ppm	--
	24-hour	0.14 ppm	--
	3-hour	--	0.50 ppm
Particulate Matter (PM_{10})	AAM	Revoked [2/]	Revoked [2/]
	24-hour	150 $\mu g/m^3$	Same as primary
Fine Particulate Matter ($PM_{2.5}$)	AAM	15 $\mu g/m^3$	Same as primary
	24-hour	35 $\mu g/m^3$	Same as primary
Lead (Pb)	Quarter mean	1.5 $\mu g/m^3$	Same as primary

Notes:
AAM = Average annual mean
$\mu g/m^3$ = Micrograms per cubic meter
ppm = Parts per million
1/ The 1-hour ozone standard was revoked by the U.S. EPA on June 15, 2005, for all areas except 8-hour ozone nonattainment areas where the responsible governmental agency entered into an Early Action Compact (EAC). Clark County is not an EAC area.
2/ Because of the lack of evidence linking health problems to long-term exposure to coarse particulate pollution, the U.S. EPA revoked the annual PM_{10} standard in 2006 (effective December 17, 2006).

Sources: Clark County Board of County Commissioners, *Air Quality Regulations*, Section 11, "Ambient Air Quality Standards", July 1, 2004, and U.S. Congress, *Clear Air Act of 1970* (Public Law 91-604, Sections 109 and 110).
Prepared by: Ricondo & Associates, Inc., April 2008

3.8.2 Attainment Status

Clark County is divided into 13 airsheds that are roughly defined by hydrographic basins determined by the State Engineer's Office. A portion of Clark County is currently designated as a serious nonattainment area for both CO and PM_{10}. The nonattainment areas for CO and PM_{10} roughly coincide with the boundaries of Hydrographic Basin 212, which encompass the Las Vegas Valley and within which the proposed Heliport site is located. Hydrologic Basin 212 is also designated as a basic nonattainment area for the 8-hour ozone standard. In addition to Hydrographic Basin 212, the 8-hour ozone nonattainment area includes Hydrographic Basins 164A, 164B, 165, 166, 167, 213, 214, 216, 217, and 218, as promulgated by the U.S. EPA in a final rule that became effective September 13, 2004 [III-13].

Exhibit III-13 depicts the locations of the CO and PM_{10} nonattainment areas in relation to the Heliport site and McCarran. **Exhibit III-14** depicts the location of the 8-hour ozone nonattainment area in relation to the Heliport site and McCarran. As shown, both the Heliport site and McCarran are located within the CO, PM_{10}, and 8-hour ozone nonattainment areas. Clark County has been designated by the U.S. EPA as in attainment for the following pollutants: NO_2, SO_2, Pb, and $PM_{2.5}$.

Exhibit III-13

Carbon Monoxide and Particulate Matter Nonattainment Areas

Exhibit III-13 depicts the locations of the carbon monoxide and particulate matter nonattainment areas in relation to the proposed South of Sloan heliport site and McCarran International Airport.

Exhibit III-14

8-Hour Ozone Nonattainment Areas

Exhibit III-14 depicts the location of the 8-hour ozone nonattainment area in relation to the proposed South of Sloan heliport site and McCarran International Airport.

3.8.3 State Implementation Plans

In 1990, the Las Vegas Valley airshed was designated as a moderate nonattainment area for CO. In 1992, the Clark County Board of County Commissioners adopted the Carbon Monoxide State Implementation Plan (CO SIP) in response to the U.S. EPA designating the Las Vegas Valley airshed as a moderate nonattainment area for CO. The CO SIP was revised in 1995 when the region was designated a serious nonattainment area for CO, and in August 2000, the most recent CO SIP was submitted to the U.S. EPA [III-14]. The U.S. EPA approved the current CO SIP on September 21, 2004.

In 1990, the Las Vegas Valley airshed was designated as a moderate nonattainment area for PM_{10}. In 1991, the Clark County Department of Comprehensive Planning prepared a *Moderate Area PM_{10} State Implementation Plan* (PM_{10} SIP) [III-15]. In 1993, the Las Vegas Valley was redesignated as a serious nonattainment area for PM_{10}; in response, the Clark County Board of County Commissioners submitted a new PM_{10} SIP to the U.S. EPA in 1994. In 1997, the Board adopted the *Particulate Matter Attainment Demonstration Plan* [III-16] for the Las Vegas Valley, which was later submitted to the U.S. EPA for review and approval. The Clark County Department of Comprehensive Planning finalized another update to the PM_{10} SIP in June 2001. The current PM_{10} SIP [III-17], approved by the U.S. EPA on June 9, 2004, demonstrates that the County can attain and maintain air quality standards at budgeted emissions levels with the adoption and implementation of control measures.

The CCDOA participated in the most recent updates to the County's CO and PM_{10} SIPs. Emissions budgets contained in the U.S. EPA approved CO SIP and PM_{10} SIP account for existing airport-related emissions and address forecast growth in activity at Clark County controlled airports.

Hydrographic Basin 212, encompassing the Heliport site and McCarran, was designated as a nonattainment area for the 8-hour ozone standard on April 15, 2004. The designation took effect on June 15, 2004 and Clark County must demonstrate attainment of the 8-hour ozone standard by 2009. In June 2007, as a result of three years of monitoring data showing compliance with the 8-hour ozone standard, the Clark County Department of Air Quality and Environmental Management (DAQEM) submitted a *Request for Ozone Clean Data Finding* [III-18] to the U.S. EPA.

3.8.4 Ambient Air Quality Monitoring

The Monitoring Division of the Clark County DAQEM, using monitoring equipment, measures ambient concentrations of pollutants in the County. **Exhibit III-15** depicts the ambient air quality monitoring locations in relation to the Heliport site and McCarran. The monitoring locations are based on such factors as population exposure and highest likely air pollution concentrations. **Table III-7** presents the 2004 (the existing condition year for this EA) ambient air quality conditions reported at each of the monitoring locations shown on Exhibit III-16. The reported averaging periods are consistent with the NAAQS.

The existing ambient air quality conditions at the Heliport site and McCarran, determined by data from the air quality monitoring locations nearest each site for each criteria pollutant, are discussed below. Ambient air quality concentrations of the criteria pollutants reported at these monitoring locations are considered to be background concentrations, representing existing air quality conditions. Lead concentrations are not measured by the ambient air quality monitors. Aircraft

Exhibit III-15

Ambient Air Quality Monitor Locations

The Monitoring Division of the Clark County Department of Air Quality and Environmental Management uses air quality monitoring equipment to measure ambient concentrations of pollutants at various sites in Clark County. Exhibit III15 depicts the location of the ambient air quality monitoring equipment in relation to the South of Sloan heliport site and McCarran International Airport.

Table III-7

Ambient Air Quality Monitoring Locations Summary – 2004 Criteria

		Pollutant Concentrations and Averaging Periods								
		Ozone (ppm)	Carbon Monoxide (ppm)	Nitrogen Dioxide (ppm)	Sulfur Dioxide (ppm)		PM_{10} ($\mu g/m^3$)		$PM_{2.5}$ ($\mu g/m^3$)	
Location Name	AQS Code [1/]	8-Hour Average	8-Hour Average	AAM	24-Hour Average	AAM	24-Hour Average	AAM [2/]	24-Hour Average	AAM
Boulder City	320030601	0.083	1.4	n.a.	n.a.	n.a.	74	15.3	n.a.	n.a.
City Center	320030016	0.068	4.0	n.a.	n.a.	n.a.	84	35.1	n.a.	n.a.
Craig Road	320030020	0.075	1.8	n.a.	n.a.	n.a.	151	40.5	n.a.	n.a.
East Sahara	320030539	n.a.	4.9	0.0194	0.007	0.0	89	31.5	n.a.	n.a.
Freedom Park	320030563	n.a.	5.2	0.019	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Green Valley	320030298	n.a.	1.4	n.a.	n.a.	n.a.	84	25.2	10.7	5.59
J. D. Smith School	320032002	0.079	4.7	0.0201	n.a.	n.a.	122	39.1	20.1	8.66
Jean	320031019	0.083	n.a.	0.0035	n.a.	n.a.	71	15.9	6.9	3.44
Joe Neal School	320030075	0.088	n.a.	n.a.	n.a.	n.a.	135	29.9	n.a.	n.a.
Lone Mountain	320030072	0.079	n.a.	n.a.	n.a.	n.a.	58	20.5	n.a.	n.a.
Microscale	320030560	n.a.	n.a.	n.a.	n.a.	n.a.	114	35.7	29.6	8.83
Orr School	320031021	n.a.	4.0	n.a.	n.a.	n.a.	88	28.8	n.a.	n.a.
Palo Verde School	320030073	0.083	n.a.	0.0098	n.a.	n.a.	65	15.3	n.a.	n.a.
Paul Meyer Park	320030043	0.081	1.9	n.a.	n.a.	n.a.	86	24.1	n.a.	n.a.
South Las Vegas Blvd.	320031023	n.a.	3.0	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Southeast Valley	320030007	0.082	1.4	n.a.	n.a.	n.a.	119	30.7	n.a.	n.a.
Sunrise Acres School	320030561	n.a.	6.6	n.a.	n.a.	n.a.	72	29.9	25.8	8.91
Walter Johnson School	320030071	0.08	n.a.	n.a.	n.a.	n.a.	64	18.3	n.a.	n.a.
Winterwood	320030538	0.079	3.6	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Air Quality Standards		0.08	9.0	0.053	0.14	0.03	150	Revoked	35	15

AAM = Annual arithmetic mean
$\mu g/m^3$ = Micrograms per cubic meter
PM_{10} = Suspended particulate matter
$PM_{2.5}$ = Fine particulate matter
ppm = Parts per million
n.a. = Not available. Not all monitoring locations report concentrations of all criteria pollutants.
1/ The Air Quality System (AQS) code is an arbitrary code that identifies a particular monitoring location within a county and a database that provides ambient concentrations of criteria air pollutants at monitoring locations, primarily in cities and towns.

Source: Clark County Department of Air Quality and Environmental Management, 2005 (ozone, carbon monoxide, nitrogen dioxide, sulfur dioxide, PM_{10}) and 2007 ($PM_{2.5}$)
Prepared by: Ricondo & Associates, Inc., April 2008

operations are one of the few remaining sources of lead emissions, which result from the use of aviation gasoline (avgas), the only remaining leaded fuel that may be commercially sold or used in the United States. The tour helicopters considered in this EA use Jet-A fuel, which does not contain lead.

3.8.4.1 Proposed Heliport Site

The ambient air quality monitor in Green Valley is the nearest monitor to the Heliport site (about 14 miles) that records CO concentrations. The Jean ambient air quality monitor is the nearest monitor (about 11 miles) that records NO_2, PM_{10} and $PM_{2.5}$ and ozone concentrations. The monitor in East Sahara (about 19 miles from the Heliport site) is the only monitor that recorded SO_2 concentrations in 2004. Ambient air quality concentrations for all pollutants recorded at these monitoring locations are below applicable NAAQS, with the exception of ozone, where the monitored concentration is 0.003 ppm above the federal and County standard of 0.08 ppm. However, it should be noted that an exceedance of the NAAQS requires more than a one-year comparison to the standard in order to trigger a nonattainment designation. While reported concentrations at a monitoring location may be above the NAAQS for a single year, reported concentrations for previous years show that the area is currently in attainment of the NAAQS. It should also be noted that ozone exceedances reported in the west and northwest part of the Las Vegas valley (at the Jean monitoring location, for example) are largely attributed to weather patterns which transport pollutants into the valley from Southern California [III-18].

3.8.4.2 McCarran International Airport

The nearest ambient air quality monitoring location to McCarran is at Las Vegas Boulevard South, about one mile north of McCarran. This monitor records CO concentrations. The Paul Meyer Park ambient air quality monitor is the monitoring location nearest McCarran that records ozone concentrations. The East Sahara ambient air quality monitor is the monitoring location nearest McCarran that records concentrations of NO_2, SO_2, and PM_{10}. The Microscale ambient air quality monitor is the monitoring location nearest McCarran that records concentrations of $PM_{2.5}$. Ambient air quality concentrations for all pollutants recorded at these monitoring locations are below applicable NAAQS.

3.8.5 Existing Helicopter Emissions Inventory, McCarran International Airport

An existing (2004) helicopter emissions inventory was developed for McCarran, which currently accommodates air tour helicopter operations. Only air tour helicopter operations were included in the emissions inventory, which was produced using the FAA's Emissions and Dispersion Modeling System (EDMS), version 4.3. The methodology used to estimate criteria pollutant emissions was consistent with the methodology described in the U.S. Department of Transportation (DOT's) *Air Quality Procedures for Civilian Airports and Air Force Bases* [III-19]. Four primary sources of emissions are directly related to heliport activity: aircraft/helicopters, ground support equipment (GSE), on-road vehicles, and stationary sources. GSE for helicopters includes fuel trucks and ground power units. On-road vehicles (automobiles) are used by passengers, employees, and others for trips on airport roadways and in airport parking areas. Stationary sources of emissions include both combustion and non-combustion sources, such as power plants and fuel tanks. Additional information regarding the modeling assumptions used to prepare the existing emissions inventory is provided in **Appendix F**.

Table III-8 presents the emissions inventory for helicopter operations at McCarran in 2004.

Table III-8

McCarran International Airport – Existing Helicopter Emissions Summary (2004)

Source	Pollutant Emissions (tons/year)					
	Carbon Monoxide (CO)	Volatile Organic Compound (VOC)	Oxides of Nitrogen (NO_X)	Oxides of sulfur (SO_X)	Suspended particulate matter (PM_{10})	Fine particulate matter ($PM_{2.5}$)
Aircraft	31.072	4.880	4.399	0.531	3.839	3.839
GSE	2.240	0.829	11.333	1.712	0.623	0.604
On-Road Vehicles 1/	1.535	0.173	0.159	0.004	0.356	0.003
Parking Lots	0.854	0.180	0.049	0.000	0.000	0.000

Notes:
GSE = Ground support equipment
1/ PM_{10} emissions for on-road vehicles include entrained road dust.

Source: Ricondo & Associates, Inc., 2007, based on output from the Emissions and Dispersion Modeling System, Version 4.3, and information obtained from the Clark County Department of Aviation and HNTB Corporation
Prepared by: Ricondo & Associates, Inc., April 2008

3.9 Department of Transportation, Section 4(f) Lands

Section 4(f) of the *U.S. Department of Transportation Act of 1966*, recodified as 49 U.S.C. 303 [III-20], provides that the U.S. Department of Transportation "may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination" is made that there is no feasible and prudent alternative to the use of such land, and that such a program or project includes all possible planning to minimize any adverse effects resulting from use of the land. Pursuant to DOT Act Section 4(f), it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites. The Secretary of Transportation shall cooperate and consult with the Secretaries of the Interior, Housing and Urban Development, and Agriculture, and with the States, in developing transportation plans and programs that include measures to maintain or enhance the natural beauty of lands crossed by transportation activities or facilities. Section 4(f) applies to public parks; recreation areas; wildlife and waterfowl refuges of national, state, or local significance; or land of a historic site of national, state, or local significance, as determined by the officials having jurisdiction.

The applicability of Section 4(f) to historic and archaeological resources includes all properties listed on or eligible for listing on the National Register of Historic Places (NRHP) and archaeological sites that may be discovered during construction.

Table III-9 provides a list of national recreation areas, conservation areas, wilderness areas, and areas of critical environmental concern beneath the Overflight Area. The types of resources include wilderness areas, conservation areas, and archaeological and cultural resources whose value lies mainly in their preservation. **Table III-10** provides a list of existing and proposed public parks and recreation areas that occur beneath the Overflight Area.

Table III-9 (1 of 2)

Recreation, Conservation, Wilderness, Area of Critical Environmental Concern, and Resource Areas beneath the Overflight Area

Name	Jurisdictional Agency	Flight Corridor	Description
Lake Mead National Recreation Area (LMNRA)	National Park Service	Charleston, Tropicana, Henderson, and Jean	Established in 1964, the LMNRA encompasses about 1.5 million acres of land at the border of northwestern Arizona and southeastern Nevada. The LMNRA was established to provide public recreation and preserve the "scenic, historic, scientific, and other important features of the area" [III-21]. The LMNRA is a popular tourist attraction, with 9 to 10 million annual visitors. Recreational activities within the LMNRA include hiking and camping. The LMNRA also contains important archaeological, biological, and scenic resources [III-22].
Sloan Canyon National Conservation Area (NCA)	Bureau of Land Management	Henderson and McCullough	Title VI of the *Clark County Conservation of Public Land and Natural Resources Act of 2002* [III-2] established the Sloan Canyon NCA. Located south of the City of Henderson, the Sloan Canyon NCA encompasses about 48,500 acres of steep, rugged canyons and dry washes. The area provides habitat for several sensitive species including the desert bighorn sheep, chuckwalla, and desert tortoise. The area also contains numerous pictographs and rock art panels [III-23]. Recreational activities allowed at the Sloan Canyon NCA include hiking, biking, horseback riding, and camping at designated areas.
Sloan Canyon Petroglyphs	Bureau of Land Management	McCullough	The Sloan Canyon Petroglyphs is contained entirely within the boundary of the Sloan Canyon NCA. Over 300 rock art panels of cultural significance dates back to the Archaic to historic era [III-24]. Recreational activities are limited due to the terrain and prohibition of off-road vehicles; hiking is allowed.
North McCullough Wilderness Area	Bureau of Land Management	Henderson and McCullough	Established under Title II of the *Clark County Conservation of Public Land and Natural Resources Act of 2002* [III-2], the North McCullough Wilderness Area consists of about 14,763 acres of wilderness area on the northwest side of the Northern McCullough Mountain Range. This wilderness area is entirely contained within the Sloan Canyon NCA. The North McCullough Wilderness Area contains scenic, cultural, archaeological, and biological resources. Plant species in the area includes the Mojave Desert community vegetation (e.g., Joshua trees and creosote bush). Wildlife species that inhabit the wilderness area includes desert bighorn sheep, mule deer, quail, Gila monster, and desert tortoise. Recreational activities are limited due to the rocky terrain and prohibition of off-road vehicles [III-25].
Black Canyon Wilderness Area	National Park Service	Jean and McCullough	The Black Canyon Wilderness Area was also established under Title II of the *Clark County Conservation of Public Land and Natural Resources Act of 2002*. This 17,220-acre wilderness is located entirely within the boundary of the Lake Mead National Recreation Area between the Colorado River and Boulder City south of Highway 93. The area provides habitat for various wildlife including the desert tortoise and the desert bighorn sheep. The terrain of this wilderness area range from 600 to 3,000 feet. The area is generally vegated with the Mojave Desert scrub, including creosote bush and other low desert shrubs. [III-26]
Rainbow Gardens Area of Critical Environmental Concern	Bureau of Land Management	Charleston and Tropicana	Rainbow Gardens is located in the eastern Las Vegas region between the City of Las Vegas and the LMNRA, and encompasses the Sunrise Mountain Natural Area. This 37,620-acre area was designated as an Area of Critical Environmental Concern (ACEC) by the BLM in 1998, and received federally protected status in 1998 due to the “geological, scientific, scenic, cultural, and sensitive plant values” [III-27].

Table III-9 (2 of 2)

Recreation, Conservation, Wilderness, Area of Critical Environmental Concern, and Resource Areas beneath the Overflight Area

Name	Jurisdictional Agency	Flight Corridor	Description
River Mountains Area of Critical Environmental Concern	Bureau of Land Management	Tropicana and Henderson	The River Mountains, designated as an ACEC by the BLM, is located north of the City of Boulder City, between the City of Henderson and the LMNRA. This 5,600-acre area provides for many recreational activities as well as habitat for various species, including bighorn sheep [III-27].
Bootleg Canyon Recreation Area	City of Boulder City	Henderson	The Recreation Area was formally established to provide for management of recreational activities and the preservation of natural resources, which was being used by visitors for recreational purposes (e.g., hiking and shooting). Trails and other recreational facilities have been planned as part of a recent master plan completed by the City of Boulder City. The FAA also maintains navigational radars atop the Red Mountains within the Bootleg Canyon Recreation Area. [III-28]
Boulder City Conservation Easement Area	City of Boulder City	Jean	The City of Boulder City granted a conservation easement to Clark County in 1995, for the conservation and recovery of the desert tortoise. The conservation easement was granted on about 86,000 acres of land within the jurisdictional boundary of Boulder City in the Eldorado Valley [III-29].
Wetlands Park	Clark County, Nevada	Tropicana	The Clark County Wetlands Park, located south of the Rainbow Gardens ACEC and at the end of East Tropicana Avenue, is a 2,900-acre nature preserve that flows past the Frenchman's Mountain and into Lake Mead [III-29]. The Wetlands Park serves multiple functions, including public education and conservation of environmentally sensitive lands, and habitat for endangered and threatened species, recreation (e.g., bird watching and hiking), and mitigation in partnership with participating federal agencies under the Clark County Multiple Species Habitat Conservation Plan.

Sources: Various sources, as noted above.
Prepared by: Ricondo & Associates, Inc., April 2008

Table III-10

Local Parks and Recreation Centers beneath the Overflight Area

Corridor Name	Local Parks and Recreation Centers Beneath Overflight Area
Charleston	Rafael Rivera Park
	Stewart Place Park
	Joe Shoong Park
Tropicana	Paradise Park and Community Center
	Whitney Park and Community Center
Henderson	Sonata Park
	Vivaldi Park
	Puccini Park
	Allegro Park
	Arroyo Santa Rosa Park (proposed)
	Coronado Heights Park (proposed)
	Sunridge Park
	Mission View Park
	Cactus Wren Park (proposed)
	South Fork Trailhead (proposed)
	Paseo Vista Park
	Promenade at Liberty Point
	Discovery Park
	Amador Vista Park (proposed)
	Paseo Verde Park
	Dos Escuelas Park
	Mountain View Park
	Cornerstone Lake Community Park (proposed)
	Reunion Trails Community Park (proposed)
	Acacia Park Demonstration Garden
	Black Mountain Vista Trailhead (proposed)
	Burkholder Baseball Field and Park
	Titanium Ballfield
	Downtown Rec Center and Pool
	Morrell Park
	Cinnamon Ridge Park
	El Centro (proposed)
	Roadrunner Park
	Downs Linear Park
	Saguaro Park (proposed)
	Equestrian Park
	Boulder Creek Park (proposed)
McCullough	None
Jean	None
Strip Railroad	Chester S. Stupak Park

Sources: Clark County Department of Parks and Recreation, City of Las Vegas Department of Leisure Services, City of Henderson Parks and Recreation Department, Boulder City Parks and Recreation Department, August 2005
Prepared by: Ricondo & Associates, Inc., April 2008

3.10 Historic, Architectural, Archaeological, and Cultural Resources

The *National Historic Preservation Act of 1966* [III-30], as amended, establishes the National Historic Preservation Program within the National Park Service (NPS), and includes directives for the identification, assistance, and protection of historic properties. The *National Historic Preservation Act* also establishes the Advisory Council on Historic Preservation to advise the President and Congress on historic preservation matters, recommend measures to coordinate federal historic preservation activities, and comment on federal actions affecting properties included in or eligible for inclusion in the National Register of Historic Properties (NRHP).

Properties listed in the NRHP must be at least 50 years old unless the historical and cultural property is deemed to be of exceptional significance. Properties listed or eligible for inclusion in the NRHP are those that:

- Are associated with events that have made a significant contribution to the broad patterns of our history; or
- Are associated with the lives of persons significant in our past; or
- Embody the distinctive characteristics of a type, period, or method of construction, or represent the work of a master, or possess high artistic values, or represent a significant and distinguishable entity whose components may lack individual distinction; or
- Have yielded, or may be likely to yield, information important in prehistory or history.

Properties eligible for inclusion in the NRHP must be afforded the same considerations as historic properties listed, as mandated under Section 106 of the National Historic Preservation Act, which requires coordination with the State Historic Preservation Officer (SHPO) and/or the Tribal Historic Preservation Officer, as appropriate.

The *Archaeological and Historic Preservation Act of 1974* [III-31], as amended, requires the survey, recovery, and preservation of significant and prehistoric data that may be destroyed or irreparably lost as a result of a federal, federally funded, or federally licensed project. The *Archaeological Resources Protection Act of 1979* [III-32], as amended, requires federal agencies to identify potential archaeological sites on federal lands and prohibits unauthorized excavation of archaeological resources on federal or tribal lands. Certain historical properties are also considered under Section 4(f) of the Department of Transportation Act as discussed in Section 3.9.

3.10.1 Proposed Heliport Site

A combination of Class I literature reviews and Class III pedestrian surveys of historic, architectural, archaeological, and cultural resources were completed on the proposed Heliport site; a one mile radius around the Heliport site was conducted in 2004 [III-33]; the utility corridors, as described as the Area of Disturbance in Section 3.2.1, was surveyed in 2007 [III-34]. Exhibit III-1 shows the surveyed areas for the heliport and utility corridor.

The 2004 literature review of historic sites and pedestrian survey of the Heliport site, including a one-mile radius around the site, revealed two NRHP-eligible and three-ineligible sites within a one-mile radius of the site; however, no cultural resource sites were identified within the boundary of the 229-acre Heliport site.

A similar literature search and pedestrian survey in 2007 of the utility corridor revealed three NRHP-eligible historic sites, including a railroad and construction camp (Sutor site), historic

highway (Arrowhead Highway), and a dugout. These recorded cultural sites are all historic and appear to be associated with construction of the transportation corridor.

3.11 Fish, Wildlife, and Plants

The *Sikes Act of 1960*, as amended in 1974 [III-35], authorizes states to prepare statewide wildlife conservation and rehabilitation programs. The *Migratory Bird Treaty Act of 1918*, as amended, [III-36] protects all migratory birds. Under Nevada's Department of Conservation and Natural Resources, the Nevada Natural Heritage Program (NNHP) staff collect and maintain a comprehensive inventory of Nevada's endangered and threatened species and the habitats of species and biological communities. The BLM sensitive species designation is applied to species that are not already federally listed. Generally, this designation is applied to those species that occur on BLM managed land or is State-listed but can be better conserved through BLM designation. According to the BLM Manual 6840.06 C [III-37], the BLM policy is to provide the same level of protection as the U.S. Fish and Wildlife Service (USFWS) designation of "candidate species".

3.11.1 Environmental Setting

3.11.1.1 Wildlife

Desert wildlife species observed during field surveys include small reptiles, birds, and mammal species suited for the dry creosote bush community, common to the Area of Disturbance, such as: (1) reptiles – Mojave green rattlesnake (*Crotalus scutulatus*) and the side-blotched lizard (*Uta stansburiana*); (2) birds – mourning dove (*Zenaida macroura*), sage sparrow (*Amphispiza belli*), common raven (*Corvus corax*), horned lark (*Eremophila alpestris*), and the lesser nighthawk (*Chordeiles acutipennis*); and (3) mammals – western cottontail (*Sylvilagus auduboni*), black tailed jackrabbit (*Lepus californicus*), white-tailed antelope ground squirrel (*Amnospermophillus leucurus*), and coyote (*Canis latrans*).

3.11.1.2 Vegetation

Vegetative cover on the Area of Disturbance consists primarily of the Mojave Desert shrubland [III-38]. Biological field surveys revealed creosote-bursage and blackbrush communities at the eastern portion of the Heliport site, both of which are commonly in the Mojave Desert and in the Las Vegas region. Dominant plants in the area include creosote bush (*Larrea tridentata*), which is the most characteristic plant in the Mojave Desert, white bursage (*Ambrosia dumos*a), Mojave yucca (*Yucca schidigera*), desert trumpet (*Eriogonum inflatum*), and Mormon tea (*Ephedra nevadensis*).

3.11.1.3 Special Status Species

A variety of other sensitive biotic species are also present in Clark County and potentially at the Area of Disturbance. These species are considered special status or sensitive species by the BLM or are included on the sensitive species list for Nevada, which is maintained by the NNHP. These species, their current status with the State of Nevada and the BLM, and their potential to occur at the Area of Disturbance is provided in **Table III-11**.

Signs of desert bighorn sheep were observed along the eastern edge of the Heliport site, adjacent to the far western boundary of the Sloan Canyon NCA. The eastern boundary of the Heliport site also provides limited potential habitat for desert bighorn sheep, a BLM-sensitive specie. No bighorn sheep were observed and it is unlikely that sheep would travel onto the Heliport site. Construction of the Heliport would discourage desert bighorn sheep from using this area of limited potential habitat.

No State-listed or BLM-sensitive reptiles were found within the Area of Disturbance during the biological field survey. However, potentially suitable habitat for the chuckwalla, a BLM-sensitive specie, was found within the Area of Disturbance.

Two State-listed and BLM-sensitive birds were observed during the biological field survey: the loggerhead shrike and the western burrowing owl.

No State-listed or BLM-sensitive plant species were found on the Heliport site during the biological field survey. However, potential habitat for three BLM-special status plant species was observed within the Area of Disturbance for the *Penstemon* plant including the rosy two-tone beardtongue, white-margined beardtongue, and yellow two-tone beardtongue.

Table III-11

Nevada State and BLM Sensitive Plant and Wildlife Species within Clark County, Nevada

Common Name	Scientific Name	Status		Potential Habitat within Area of Disturbance
		Nevada [1/]	BLM [2/]	
Bird				
Loggerhead shrike	*Lanius ludovicianus*	YES	N	Area of Disturbance
Western burrowing owl	*Athene cunicularia hypugaea*	YES	N	Area of Disturbance
Mammal				
Bighorn sheep	*Ovis canadensis*	n.a.	N	Area of Disturbance
Plant				
Las Vegas Bearpoppy	*Arctomecon californica*	CE	S	None
Mojave Milkvetch	*Astragalus mohavensis* var. *mohavensis*	n.a.	S	None
Rosy two-tone beardtongue	*Penstemon bicolor* ssp. *roseus*	n.a.	N	Area of Disturbance
Sheep fleabane	*Erigeron ovinus*	n.a.	N	None
Spring Mountains milkvetch	*Astragalus remotus*	n.a.	N	None
White-margined beardtongue	*Penstemon albomarginatus*	n.a.	N	Area of Disturbance
Yellow two-tone beardtongue	*Penstemon bicolor* ssp. *bicolor*	n.a.	N	Area of Disturbance
Reptile				
Desert tortoise [3/]	*Gopherus agassizii*	YES	S	Area of Disturbance
Chuckwalla	*Sauromalus ater*	n.a.	N	Area of Disturbance
Banded gila monster	*Heloderma suspectum cinctum*	YES	N	None

Notes:
n.a. = Not applicable
1/ Nevada status: YES = Species protected under NRS 501; CE = Critically Endangered (NRS 527.260-.300)
2/ BLM status: S = Nevada Special Status Species; N = Nevada Special Status Species – designated Sensitive by State Office
3/ The desert tortoise is also a federally listed reptile. See Section 3.12 for discussion of this specie.

Sources: SWCA Environmental Consultants, based on data obtained from the Nevada Natural Heritage Program, 2006 [III-39] and 2007 [III-40]
Prepared by: Ricondo & Associates, Inc., April 2008

3.12 Federally Listed Threatened and Endangered Species

Endangered and threatened species are identified and protected by the *Endangered Species Act of 1973* [III-41], as amended. Section 7 of the Endangered Species Act requires all federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) about any federal action that may affect a federally protected species. The requirement applies to all federal land management decisions and actions. Such consultations require preparation of a biological evaluation or assessment by the federal agency responsible for implementing or approving the action.

The term "endangered species" refers to any member of the animal kingdom (e.g., mammal, fish, or bird) or plant kingdom (seeds, roots, etc.) that is in danger of extinction throughout all or any portion of its range. The term "threatened species" refers to those members of the animal or plant kingdom that are likely to become endangered within the foreseeable future. "Candidate species" are plants and animals on which the USFWS has sufficient information regarding biological status and threats to propose them as endangered under the Endangered Species Act, but development of a proposed listing regulation is precluded by other, higher priority listings. Candidate species do not receive statutory protection under the Endangered Species Act. The potential for long-term loss of wildlife is addressed by the *Fish and Wildlife Coordination Act* [III-42]. Coordination with appropriate agencies is required if a proposed action has the potential to affect or eliminate potential wildlife habitat.

3.12.1 Environmental Setting

A biological field survey of the Heliport site was conducted between August 27-29, 2004 [III-43]; pedestrian surveys of the utility corridors was completed between and October 25-November 9, 2006 [III-38]. An overview of wildlife, plants, and special status species in the Area of Disturbance is provided below. Information presented in this section was collected from available documentation, aerial photography, and field surveys.

3.12.1.1 Proposed Heliport Site

The USFWS lists 17 species within Clark County as threatened, endangered, or candidate species, as presented in **Table III-12**. Of these listed species, the threatened desert tortoise (*Gopherus agassizii*) is the only specie observed within the Area of Disturbance. Biological surveys of the Area of Disturbance and additional areas revealed over 400 signs of the desert tortoise, including live desert tortoises, on the site and in the vicinity of the utility corridors. Friable soils conducive to burrowing for the federally listed desert tortoise were also observed throughout the central and western portions of the Heliport site.

Table III-12

U.S. Fish and Wildlife Service Listed Endangered, Threatened, and Candidate Species within Clark County, Nevada

Common Name	Scientific Name	Status	Potential Habitat within Area of Disturbance
Amphibian			
Relict leopard frog	*Rana onca*	Candidate	None
Bird			
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	None
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	Candidate	None
Yuma clapper rail	*Rallus longirostris yumanensis*	Endangered	None
Fish			
Bonytail chub	*Gila elegans*	Endangered	None
Humpback chub	*Gila cypha*	Endangered	None
Lahontan cutthroat trout	*Oncorhynchus clarki henshawi*	Threatened	None
Moapa dace	*Moapa coriacea*	Endangered	None
Pahrump poolfish	*Empetrichthys latos*	Endangered	None
Razorback sucker	*Xyrauchen texanus*	Endangered	None
Virgin River chub	*Gila seminude*	Endangered	None
Woundfin	*Plagopterus argentissimus*	Endangered	None
Plant			
Slender moonwort	*Botrychium lineare*	Candidate	None
Las Vegas buckwheat	*Eriogonum corymbosum var. nilesii*	Candidate	None
Reptile			
Desert tortoise	*Gopherus agassizii*	Threatened	Area of Disturbance

Source: SWCA Environmental Consultants, based on data obtained from the Nevada Natural Heritage Program, 2007
Prepared by: Ricondo & Associates, Inc., April 2008

3.13 Floodplains and Floodways

In Executive Order 11988, *Floodplain Management* [III-44], floodplains are defined as the lowland and relatively flat areas adjoining inland and coastal waters. At a minimum, floodplains include any area subject to a one percent or greater chance of a flood in any given year (e.g., the area that would be inundated by a 100-year flood). The Executive Order further directs federal agencies to take action to reduce the risk of flood loss; to minimize the impacts of floods on human safety, health, and welfare; and to restore and preserve the natural and beneficial values served by floodplains.

The location of the Heliport site and McCarran relative to flood zones, as defined by the Federal Emergency Management Agency (FEMA), is discussed below.

3.13.1 Proposed Heliport Site

Surface water occurs on the Heliport site only as a result of runoff during rainstorms.. As shown on **Exhibit III-16**, no part of the Heliport site is within or immediately adjacent to a 100-year flood zone. The 100-year flood zone nearest the Heliport site is approximately 4.3 miles to the northwest in the City of Henderson. Portions of the Area of Disturbance (communications utility extension) north of Jean Airport are within Flood Zone A. Flood Zone A is defined as an area inundated by 100-year flooding, for which no base flood elevations have been determined [III-45].

3.13.2 McCarran International Airport

Surface water occurs on McCarran only as a result of runoff during rainstorms. As shown on **Exhibit III-17**, no part of airport property is within or immediately adjacent to a 100-year flood zone. The 100-year flood zone nearest McCarran is approximately 0.7 mile northwest of Runway 1L-19R.

3.14 Water Quality

The *Federal Water Pollution Control Act of 1972* [III-46], as amended (the Clean Water Act), requires airport sponsors to establish water quality standards and to control discharges into surface and subsurface waters. Particular concerns include the preservation of existing drainage, the protection of aquifers from fuel spills and aircraft washing runoff, and airport construction activities. The *Safe Drinking Water Act of 1974* [III-47] regulates the quality of drinking water and establishes public drinking water health standards.

Industrial plants, including airports, are required to obtain stormwater permits under the 1987 amendments to the Clean Water Act [III-48]. The National Pollutant Discharge Elimination System (NPDES) permit requires: (1) submission of information regarding existing programs to control pollutants and (2) field screening of major outfalls to detect improper discharges. All discharges of stormwater runoff must be identified and characterized, including those containing deicing fluids, liquid fuels, and chemicals used for maintenance.

3.14.1 Groundwater

In Clark County, groundwater is found in basin fill sediments, carbonate rocks, and noncarbonate rocks. These general categories are known as hydrogeologic units. Groundwater is typically withdrawn from basin fill and carbonate rocks because such formations are permeable, while noncarbonate rocks are generally less permeable. Consequently, noncarbonate rocks generally transmit less water and are, therefore, not major sources of groundwater in Southern Nevada other than for small community systems or individual domestic supplies.

The Nevada Division of Water Resources regulates water well drilling in Nevada and maintains a database of wells drilled in Nevada [III-49]. There are no records of wells drilled near or adjacent to the Heliport site. The closest well drilled in the vicinity of the Heliport site is located north in Sloan, Unincorporated Clark County. This well was drilled on February 1999 to a depth of 604 feet by the Las Vegas Karting Center [III-50]. Clark County drilled a well on June 10, 1998, in the vicinity of McCarran; approximate depths to water recorded in the drilled well ranged from 27 to 33 feet.

Exhibit III-16

Floodplain District Map – Area of Disturbance

Exhibit III-16 depicts the location of 100-year flood zones in the vicinity of the proposed heliport site. No part of the heliport site is within or immediately adjacent to a 100-year flood zone. The flood zones are defined by the Federal Emergency Management Agency.

Exhibit III-17

Floodplain District Map – McCarran International Airport

Exhibit III-17 depicts the location of 100-year flood zones in the vicinity of McCarran International Airport. No part of McCarran International Airport is within or immediately adjacent to a 100-year flood zone. The flood zones are defined by the Federal Emergency Management Agency.

3.14.2 Water Supply

Water from the Colorado River stored in Lake Mead supplies 90 percent of the potable water to the Las Vegas Valley and participating surrounding communities via a municipal water system owned and operated by the Las Vegas Valley Water District [III-50]. District-owned wells drawing from underground aquifers provide supplemental water to meet peak summer demands.

3.14.2.1 Proposed Heliport Site

The Las Vegas Valley Water District potable water system currently does not extend to the Heliport site. Potential sources of water supply are discussed in Section 4.14.

3.14.2.1 McCarran International Airport

The Las Vegas Valley Water District provides water service to McCarran.

3.15 Hazardous Materials, Pollution Prevention, and Solid Waste

According to FAA Orders 1050.1E and 5050.4B, two primary statutes regarding hazardous materials and/or solid waste must be considered when construction and operation of new facilities are proposed: (1) the *Resource Conservation and Recovery Act of 1976* (RCRA) [III-51], as amended by the *Federal Facilities Compliance Act of 1992* [III-52], and (2) the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* (CERCLA) [III-53], as amended by the *Superfund Amendments and Reauthorization Act of 1986* (referred to as Superfund) [III-54]. The purpose of the RCRA is to regulate active and future facilities that may generate, transport, treat, store, or dispose of hazardous materials. CERCLA regulates abandoned and historical waste sites.

Information presented in this section represents existing conditions at the Area of Disturbance for the Heliport site based on the Phase I Environmental Site Assessments (ESAs) completed in September 2005 [III-55]. Utility extensions were subsequently investigated in December 2007 [III-56]. As specified in the national standard[8] [III-57], Phase I ESAs include reviews of historical and current records, visual inspections of the site, interviews with property managers, and reviews of surrounding geology (e.g., soil type and groundwater flow).

3.15.1 Proposed Heliport Site

A Phase I ESA was conducted for the Area of Disturbance [III-55] was completed to assess the potential presence of environmental hazards. Review of historical and current federal, State, and local records revealed no sites of environmental concern on the Area of Disturbance. Field reconnaissance revealed no contamination, solid waste, or sources of environmental concern, with the exception of the south edge of the Heliport site, which has been utilized as an informal shooting range and for off-road vehicle sports. Due to the lead from the spent shotgun shells, it was determined that a recognized environmental condition (REC) was likely to exist on the site. The Phase I ESA recommended further studies before construction begins to determine the degree of potential surface lead contamination.

[8] The American Society for Testing and Materials (ASTM) Standard E-1527-00, which defines the national standard for conducting Environmental Site Assessments, was applicable at the time the ESA was conducted in September 2005. ASTME 1527-05 is applicable for ESAs conducted after November of 2006.

Review of historical and current records maintained by federal[9] and State[10] agencies revealed no sites of environmental concern present on the site. Field reconnaissance of the Area of Disturbance showed: no transformers, no radon hazard, no asbestos nor lead-based paint, and no signs of hazardous substance containers (e.g., drums).

There is no solid waste collection and no wastewater (e.g., sewage) service at the Heliport site because the land is currently undeveloped. According to the Nevada Office of Solid Waste, there are no landfills or solid waste disposal sites within a 0.5-mile of the Area of Disturbance.

3.15.2 McCarran International Airport

Generally, the west side of McCarran is developed with airport-related facilities, such as hangars and helipads. Some aircraft maintenance is conducted on site, which includes the use of engine fluids and oils.

Republic Services of Southern Nevada, a private company, collects solid waste generated at McCarran and transports it to the Apex Regional Landfill, located about 18 miles northwest of the City of Las Vegas. The landfill, which opened in October 1993, consists of 1,202 acres and has a refuse capacity of 784 million cubic yards. Currently, 6,940 tons per day of solid waste can be processed at the facility, which has an expected useful life of more than 40 years.

The Clark County Water Reclamation District provides sanitary sewage service to unincorporated areas of Clark County, including McCarran.

3.16 Visual Resources

The BLM uses a Visual Resource Management (VRM) system to inventory and manage visual resources on public lands. The primary objective of the VRM system is to maintain the existing visual quality of BLM-managed public lands and to protect unique visual resources. The VRM system uses four classes to describe different degrees of modification allowed to the landscape. VRM class assignments are based on the area's visual sensitivity and are a result of a combination of factors, including the degree of visitor interest in and public concern for the area's visual resources, the area's public visibility, the level of use by the public, and the type of visitor use the area receives [III-58]. Per the BLM Manual Handbook H-8410-1, *Visual Resource Inventory* [III-59], descriptions and the objective of the four classes are as follows:

- Class I – The management objective is to "preserve the existing character of the landscape." The level of change to the landscape should be minimal and must not attract attention. Class I provides for natural ecological change to the landscape and very limited management activity. Examples of Class I areas include wilderness and areas of critical environmental concern.

[9] Federal records reviewed include: National Priorities List/CERCLA Site Listing for Nevada; Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS) Site and Event Listing for Nevada; the U.S. EPA Resource Conservation and Recovery Information System (RCRIS) Master Facility List for Nevada; Toxic Release Information System; the Emergency Response Notification System; and the Department of Environmental Quality Hazardous Spills Database.

[10] State records reviewed include: Nevada Office of Solid Waste, List of Solid Waste Land Disposal Sites; and the Nevada Division of Environmental Protection List of Registered Underground Storage Tanks and Leaking Underground Storage Tanks.

- Class II – The management objective is to "retain the existing character of the landscape." The level of change to the landscape should be low by repeating the basic elements of form, line, color, and texture found in the predominant natural features of the landscape. Management activities in a Class II designated area may be seen but not attract attention to the casual observer.
- Class III – The management objective of this class is to "partially retain the existing character of the landscape." Management activities may attract attention but should not dominate the landscape. Moderate changes to the landscape are allowed. However, changes to the landscape should repeat the basic elements found in the predominant natural features, such as the form, line, color, and texture.
- Class IV – The management objective is to provide for activities which require "major modification of the existing character of the landscape." The level of change to the landscape can be high. Such management activities may dominate the landscape and be the major focus of attention to the casual viewer.

Once an area has been assigned a VRM class, the management objectives of that class can be used to analyze and determine visual impacts of proposed activities and to gauge the amount of disturbance an area can tolerate before it exceeds the visual management objectives [III-60]. The *Las Vegas Resource Management Plan/Environmental Impact Statement* [I-18] has assigned lands in the project area as VRM Class III. The VRM Class III management objective allows actions that may attract attention, but do not dominate the view of the casual observer.

3.16.1 Proposed Heliport Site

The dominant landscape characteristic within and surrounding the proposed project area is the steep rocky hillside and wide alluvial fans extending from the hillside to the valley floor. Vegetation typical of the Mojave Desert environment occurs throughout the Area of Disturbance. Mojave yucca is interspersed with creosote bush, white bursage and other shrubs and grasses that contribute to the scenic quality of the area. Naturally exposed buff and tan-colored soils also add scenic contrasts and scenic quality to the area.

The Area of Disturbance is mostly undeveloped, with the exception of I-15 and Las Vegas Boulevard South. No developments are visible south of the Heliport site. Billboards and industrial development are visible north of the Heliport site along I-15 as well as the extensive development of Las Vegas region, including the community of Sloan, Nevada.

3.16.2 Key Observation Points and Contrast Rating

The BLM uses a contrast rating system that evaluates effects of proposed projects on visual resources to determine whether proposed projects conform to VRM class objectives. Contrast rating is evaluated from critical viewpoints, known as Key Observation Points (KOPs), which are usually selected along commonly traveled routes, such as highways, access roads, or hiking trails. A KOP can either be a single point of view that an observer/evaluator uses to rate an area or panorama, or a linear view along a roadway, trail, or river corridor. Factors considered in selecting KOPs include:

- Angle of observation or slope of the Heliport site
- Spatial qualities of the landscape
- Number of potential viewers of the Area of Disturbance
- Length of time that the project would be in view
- Relative size of the proposed project

- Light conditions

The primary public views of the proposed project would be from two travel routes, I-15 and Las Vegas Boulevard South. KOPs were selected to represent effects of the project as seen from public areas that permit a high degree of visibility of the project area. The degree of visual contrasts was rated at each KOP, based on the form, line, color, and texture changes between the existing landscapes and how the landscape would look after construction of the Heliport site and associated utilities. The contrast ratings were recorded on a BLM Contrast Rating Form [III-61]. Two KOPs were selected for the proposed project.[11]

3.16.2.1 KOP 1 – Las Vegas Boulevard South

This view was chosen because it is similar to the view that vehicle passengers might see of the project area while traveling south along Las Vegas Boulevard South. Foreground views are of the rolling, sparsely vegetated, and gravelly road shoulder bordered by low growing desert vegetation. Tan to buff-colored desert soil is visible, and provides color and texture contrasts with the shrubby creosote bush and dry, brown grasses. Middleground views are of the rolling topography and alluvial fans extending down from the steep, rocky hillside. The low-growing, shrubby desert vegetation is interspersed with Mojave yucca that breaks up the uniformity of desert vegetation. Background views are not visible from this KOP because the rocky and rugged topography of the middleground screens the distant mountain ranges of the background to the south and east of the project area.

3.16.2.2 KOP 2 – Interstate 15

This view was chosen because it is similar to the view that vehicle passengers might see of the project area while traveling north along I-15. Foreground views are of the Interstate, Las Vegas Boulevard South, and the sparsely vegetated and gravelly road shoulder and fence line bordered by low growing desert vegetation. Tan to buff-colored desert soil is visible, and provides color and texture contrasts with the shrubby green creosote bush and tan grasses. Middleground views are similar to the foreground views; the reflective surface of the I-15 extends to the north and large reflective signboards are visible along the road shoulder of I-15. Gently rolling topography and alluvial fans with uniformly spaced, low-growing desert vegetation are visible to the east. Background views are of the dense development common throughout the Las Vegas region to the north.

3.17 Past, Present, and Reasonably Foreseeable Future Actions

Per FAA Order 1050.1E paragraph 405e, past, present, and reasonably foreseeable future actions should be considered in the evaluation of the cumulative effects (40 CFR 1508.7) of these actions on the affected environment. The Council on Environmental Quality regulations for implementing NEPA requires evaluation of cumulative effects of a proposed project and the no action alternative. **Table III-13** provides a summary of projects that have been completed, currently ongoing, and projects that are anticipated to be completed in the foreseeable future within 1 mile of the Heliport site or along or adjacent to the proposed utility corridors, along with other notable known projects near the Heliport site that could have the potential to result in cumulative effects with construction and operation of the Heliport. The assessment of cumulative effects is presented in Section 4.22. As described in that section, the period considered for past actions is 1995-2006, the period considered for currently ongoing actions is 2007-2008, and the period considered for reasonably foreseeable future actions is 2009-2020. As can be seen on Exhibit I-4, although Clark County as a whole has

[11] See Exhibit IV-13 in Section 4.17, Visual Resources.

experienced rapid growth and associated development, there has not been significant development near the proposed Heliport site nor along the proposed right-of-way for the utility corridors. A critical element of site selection was to move helicopter operations away from existing residential development.

Table III-13 (1 of 2)

Summary of Past, Present, and Reasonably Foreseeable Future Actions

Project Name and Location	Description	Current Status
Past (1995 - 2006)		
Annex of land by the City of Henderson, City of Henderson, Nevada	The City of Henderson annexed about 3,500 acres to the west of the City, creating West Henderson Planning Area. South County zoning and planned land use designations currently apply to this area.	Annexed in 2007.
GoKart Facility	The 49-acre site was originally developed in approximately 1994 or 1995 for recreational uses. Development on the site includes a go-kart track and facilities, several structures, and billboards. This site had originally been identified as the preferred site for the Heliport.	The Clark County Department of Aviation acquired the site in July 2003. No activity occurs on the site as of September 4, 2006.
Vehicle Storage and Billboard Site	A 4.5-acre, fenced area used for vehicle storage and a billboard.	Unknown.
Present (2007 - 2008)		
Bermuda 2745 Zone Pumping Station Discharge Pipeline Phase II and Sloan 2745 Zone Reservoir Site, Sloan, Unincorporated Clark County	The Las Vegas Valley Water District will construct approximately 18,400 linear feet of 48-inch diameter pipeline and a 10 million gallon below grade concrete reservoir to provide water services to areas in South Clark County.	Construction is approved and anticipated to begin in 2008.[1/]
Reasonably Foreseeable Future (2009 - 2020)		
I-15 South Project	Nevada Department of Transportation would expand the existing 6-lane freeway, between Sloan Road to Tropicana Avenue interchanges, to a 10-lane freeway.	Construction is estimated to begin in 2009.[1/]
Southern Nevada Supplemental Airport [2/]	A Southern Nevada Supplemental Airport in the Ivanpah Valley.	FAA is currently in the process of preparing an Environmental Impact Statement.[1/]
Rinker Materials West, LLC and Service Rock Products Corp. [2/]	Proposed project, located about 3 miles north of Heliport site, would involve construction and operation of open pit quarries, development facilities such as asphalt hot plant, water supply well, access roads, and support facilities to provide aggregate materials for ongoing construction in Clark County. Mining and associated facilities would operate for about 30 years, removing approximately 100 million tons of materials from an approximately 800-acre site.	BLM published a Notice of intent to prepare an Environmental Impact Statement in the Federal Register on June 11, 2007 and environmental analysis is ongoing.[1/] Based upon scoping materials, the project could begin in 2010.

Table III-13 (2 of 2)

Summary of Past, Present, and Reasonably Foreseeable Future Actions

Project Name and Location	Description	Current Status
Reasonably Foreseeable Future (2009 - 2020) cont.		
Development within the West Henderson Planning Area, City of Henderson, Nevada	It is anticipated that development of residential and supporting commercial facilities and infrastructure will occur within the area annexed by the City of Henderson, as described under Past Actions, above.	Land annexed as of 2007 – no specific plans known at this time.

Notes:

1/ Project is subject to separate NEPA review and approval.

2/ Notable project that is not located within the specific spatial boundary identified as the area within one-mile of the proposed Heliport site or along or adjacent to the utility corridor, but identified as having the potential for consideration of cumulative effects for this EA.

Sources: Clark County Department of Aviation; Ricondo & Associates, Inc., based on information from the *Airport Capital Improvement Program (ACIP) — 2004-2009*, 2004, *2006-2010*, 2007, and *2008-2012*, 2007.

Prepared by: Ricondo & Associates, Inc., April 2008

IV. Environmental Consequences

The potential environmental consequences associated with the Proposed Action and the No Action alternative are discussed in this chapter. The environmental categories evaluated, as specified in FAA Orders 1050.1E [I-1], 5050.4B [I-2], and BLM's *NEPA Handbook H-1790-1, Appendix 5* [I-3], are as follows:

- Noise
- Compatible land use
- Socioeconomic impacts, environmental justice, and children's environmental health and safety risks
- Air quality
- Areas of critical environmental concern[1]
- Department of Transportation Section 4(f) lands
- Historic, architectural, archaeological, and cultural resources
- Native American religious concerns[1]
- Wilderness[1]
- Fish, wildlife, and plants
- Federally-listed threatened or endangered species
- Invasive, nonnative species[1]
- Floodplains and floodways
- Water quality
- Hazardous materials, pollution prevention, and solid waste
- Light emissions
- Visual resources[1,2]
- Natural resources and energy supply
- Secondary (induced) impacts
- Construction impacts
- Consistency with plans, goals, and policies
- Cumulative impacts

The following environmental resources are not present within the project area and, therefore, would not be affected by the Proposed Action or the No Action alternative: wetlands, coastal resources, wild and scenic rivers, farmlands, and wild horses and borros[1].

4.1 Noise

Potential noise effects associated with the Proposed Action and the No Action within the Overflight Area. The FAA's INM, Version 7.0[3] was used to quantify helicopter noise exposure in close proximity to the Heliport site, at McCarran and along existing or potential flight corridors to determine the potential for adverse noise exposure impacts associated with the Proposed Action. Noise modeling assumptions included:

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1 "Critical Elements of the Human Environment", as listed in Appendix 5 of the BLM's *NEPA Handbook H-1790-1*. In accordance with BLM Instruction Memorandum No. NV-2005-028, determination of significance for these environmental categories will be provided in the agency decision document. All other environmental categories will include the determination of significance in this EA, as required under FAA guidance [I-1, I-2].

2 Visual resources, as detailed in the BLM's Visual Resource Management (VRM) 8400 series manuals.

3 See Section 3.5 and Appendix D for a description of the INM.

- forecasts and distribution[4] of helicopter activity
- the types of helicopters (the AS350 and the EC130) anticipated to be used at the Heliport
- the configuration of the Heliport and helicopter landing and takeoff locations at McCarran
- potential local flight patterns in the immediate vicinity of the Heliport and McCarran
- the locations of existing and potential helicopter flight corridors
- potential flight altitudes
- helicopter performance data provided by local helicopter operators

Details regarding the noise analysis techniques, methodology, and assumptions used in the helicopter noise analysis are provided in Appendix D. A description of existing helicopter noise exposure in the vicinity of McCarran is provided in Section 3.5.1 and a description of the existing noise exposure at the Heliport site is provided in Section 3.5.2.1.

Calculated noise exposure in the vicinity of the Heliport site and of McCarran is presented in the form of contour maps. For the helicopter noise analysis, two ranges of noise exposure were considered: DNL[5] 60 to 65[6] and DNL 65. FAA Orders 1050.1E and 5050.4B state that the threshold of significance for noise impacts for most areas is when an action, compared to the no action alternative, would cause noise-sensitive areas exposed to DNL 65 and higher under the proposed action to experience an increase in DNL of 1.5 or more [I-1, I-2]. The Orders also state that when such impacts would occur, increases in DNL of 3.0 or more in noise-sensitive areas exposed to noise exposure between DNL 60 and 65 under the Proposed Action, should also be disclosed, although such increases are not considered to constitute a significant impact. FAA Orders 1050.1E and 5050.4B further state that FAA must give special consideration to national parks, national wildlife refuges, and tribal traditional cultural properties.

4.1.1 Summary of Findings

No residences, households, or noise-sensitive land uses would be exposed to helicopter noise of DNL 65 or higher in 2011 or 2017 under the Proposed Action. Noise levels at various locations of interest in the Overflight Area are also predicted to be below DNL 65 under both the Proposed Action and the No Action alternative. In addition, at eight locations where noise exposure was evaluated, the predicted noise levels for 2011 and 2017 helicopter operations alone would be lower than existing ambient noise levels from all sources as measured at the same locations in 2004. Implementation of the Proposed Action would not result in significant noise impacts compared to the No Action alternative; therefore, no mitigation measures would be required. Helicopter noise levels in established residential communities beneath the Tropicana and Charleston helicopter flight corridors associated with Grand Canyon helicopter tour overflights would be lower under the Proposed Action than the No Action alternative, because there would be fewer overflights.

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[4] As described in the following sections and in Appendix D, it has been assumed that some Grand Canyon helicopter air tour activity would remain at McCarran International Airport and that some would occur at a different location under both the Proposed Action and the No Action alternative. However, it is noted that the proposed Heliport could accommodate all the Grand Canyon helicopter air tour activity that may remain at McCarran and other airport locations in the Las Vegas region.

[5] DNL = day-night average sound level. See Section 3.5 and Appendix D for the definition and description of DNL.

[6] The FAA does not require analysis of DNL 60 to 65 noise exposure when no significant noise impacts are expected within the area exposed to DNL 65 and higher under the Proposed Action when compared with the No Action alternative. However, Clark County agencies uses information regarding noise exposure between DNL 60 and DNL 65 for local planning purposes and therefore DNL 60 noise contours are depicted on exhibits in this EA.

Section 4.6 summarizes the results of a supplementary noise analysis conducted for parks and cultural properties.

4.1.2 Environmental Consequences

The potential for significant noise impacts related to the Proposed Action was determined by considering the following:

- Cumulative helicopter noise exposure at and near the Heliport site and McCarran International Airport
- Cumulative helicopter noise exposure at noise-sensitive locations beneath or near existing helicopter flight corridors and potential helicopter flight corridors associated with the Heliport site

As discussed in Sections 2.5.1 and 2.5.2, some helicopter operations are anticipated to occur at a facility other than McCarran or the proposed Heliport site under the Proposed Action and No Action alternative. The specific effects of those helicopter operations (i.e., the helicopter operations not at McCarran or the proposed Heliport Site) on people, households, and noise sensitive land uses in the Overflight Area were not evaluated in this EA. Appendix D provides additional information regarding the distribution of helicopter operations in 2011 and 2017 under the Proposed Action and No Action alternative.

4.1.2.1 Proposed Action

Noise exposure contours were developed for the two locations expected to accommodate Grand Canyon helicopter air tour operations under the Proposed Action: the Heliport site and McCarran International Airport. Although Grand Canyon helicopter air tour operators have stated their support for the construction and operation of the heliport at the South of Sloan site, it has been assumed that some number of Grand Canyon helicopter air tour operations would continue at McCarran even after the Heliport is constructed and operational. Continued activity at McCarran is not part of the Proposed Action, but rather a planning assumption reflecting the fact that CCDOA has limited ability to prevent an operator from maintaining its base at McCarran.

The CCDOA consulted with the helicopter operators, the FAA, and other stakeholders to identify potential flight corridors associated with the Heliport site. Existing[7] and potential flight corridors are shown on **Exhibit IV-1**. Three flight corridor scenarios are evaluated in this EA for the Heliport site. Each scenario consists of one primary corridor to and from the Heliport site and a sunset return corridor to the Heliport site. Under Scenario A, the Henderson flight corridor would be the primary flight corridor for helicopter operations to and from the Heliport site. Under Scenario B, the McCullough flight corridor would be the primary flight corridor. In accordance with Public Law 109-115 [I-6] the McCullough flight corridor represents the only route that can be used by Grand Canyon helicopter tour operators to cross the Sloan Canyon NCA if the flight is starting from

[7] The helicopter air tour operators based at McCarran International Airport and the FAA have executed Letters of Agreement establishing preferred helicopter flight corridors for Grand Canyon helicopter tour operations originating at McCarran. These Letters of Agreement are intended to ensure safety, minimize noise levels in residential areas, and comply with FAA ATC guidelines while the helicopter operators are in controlled airspace. The potential helicopter flight corridors analyzed in this EA could be a guide for future Letters of Agreement between the helicopter operators and the FAA, although the Letters of Agreement would not be applicable outside of controlled airspace.

Exhibit IV-1

Existing and Potential Helicopter Flight Corridors to and from the Grand Canyon

Exhibit IV-1 presents information regarding the location of existing helicopter flight corridors between McCarran International Airport and the Grand Canyon. Exhibit IV-1 also shows the potential location of helicopter flight corridors between the proposed heliport facility at the South of Sloan site and the Grand Canyon. National conservation areas, wilderness areas, natural areas, and national recreation areas that are proximate to the existing and potential helicopter flight corridors are displayed on Exhibit IV-1. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit IV-1.

or ending at the Heliport site. Under Scenario C, the Jean flight corridor would be the primary flight corridor. All three scenarios under the Proposed Action include a secondary flight corridor, Strip Railroad, for sunset and evening arrivals only. Flights on the Strip Railroad corridor would follow the existing Charleston corridor past the western side of McCarran, along the railroad tracks and I-15. Noise along the flight corridors is discussed in more detail in Section 4.1.2.3.

Noise exposure was analyzed for the anticipated first year of operations at the Heliport site (2011), and for conditions in a future year (2017). Noise exposure contours for the Proposed Action (Scenarios A, B, and C) for 2011 and 2017 superimposed onto maps of generalized existing land uses are presented on **Exhibits IV-2** and **IV-3**, respectively. The noise exposure contours for each flight corridor scenario differ slightly because of differences in flight paths between the takeoff/landing areas at the Heliport site and the helicopter flight corridors. For example, helicopter traffic on the Henderson flight corridor to and from the Heliport site would follow a different path when departing or arriving to the site, and therefore result in a different noise exposure pattern near the Heliport site than traffic to and from the McCullough flight corridor. Differences in noise contours are minimized by the fact that most differences in potential flight paths would occur outside the 60 and 65 DNL contours.

No residences, or noise-sensitive land uses would be exposed to helicopter noise of DNL 65 and higher in either 2011 or 2017 under the Proposed Action under any of the three scenarios for potential flight corridors. As no existing noise-sensitive land uses would be exposed to DNL 65 and higher in 2011 or 2017, no significant changes in helicopter noise (i.e., an increase or decrease of 1.5 or more in noise-sensitive areas exposed to helicopter noise of DNL 65 or higher) would occur as a result of the Proposed Action. As discussed in Section 4.1.2.3, the Proposed Action would result in a reduction in the number of overflights of residences along the existing Grand Canyon helicopter air tour flight corridors. However, helicopter noise exposure would be less under the Proposed Action than under the No Action alternative along the existing Tropicana and Charleston flight corridors due to a reduction in the number of helicopter over-flights along those corridors.

4.1.2.2 No Action Alternative

Noise exposure contours for 2011 and 2017 superimposed onto a map of generalized land uses for the No Action alternative are presented on **Exhibit IV-4**.

One flight corridor scenario was used for the analysis associated with the No Action alternative based on the continued use of the existing Charleston and Tropicana corridors to and from McCarran. No residences, households, or noise-sensitive land uses would be exposed to helicopter noise of DNL 65 or higher in either 2011 or 2017 under the No Action alternative. However, noise related to helicopter operations along existing helicopter flight corridors would not be reduced under the No Action alternative, and residents along those flight corridors would continue to experience helicopter overflights and their associated noise exposure. In addition, it is anticipated that some helicopter operations might move from McCarran to other facilities in Clark County under the No Action alternative and additional routes could be established from other facilities over residential areas.

Exhibit IV-2

2011 Helicopter Noise Exposure Contours over Generalized Existing Land Uses — Proposed Action

Exhibit IV-2 shows calendar year 2011 helicopter noise exposure contours for the Proposed Action. Helicopter noise exposure contours for McCarran International Airport and the South of Sloan Heliport site are superimposed on a map of generalized existing land uses.

Exhibit IV-3

2017 Helicopter Noise Exposure Contours over Generalized Existing Land Uses — Proposed Action

Exhibit IV-3 shows calendar year 2017 helicopter noise exposure contours for the Proposed Action. Helicopter noise exposure contours for McCarran International Airport and the South of Sloan Heliport site are superimposed on a map of generalized existing land uses.

Exhibit IV-4

2011 and 2017 Helicopter Noise Exposure Contours over Generalized Existing Land Uses — No Action Alternative

Exhibit IV-4 shows calendar year 2011 and 2017 helicopter noise exposure contours for the No Action alternative. Helicopter noise exposure contours for McCarran International Airport are superimposed on a map of generalized existing land uses.

4.1.2.3 Overflight Area

Noise exposure within the Overflight Area associated with the potential helicopter flight corridors for the proposed Heliport is dependent on a number of factors including the altitude at which the helicopters are flown. For the purposes of the noise analysis, the lowest altitude analyzed for helicopter flight corridors was 300 feet AGL. This is the minimum altitude above the ground required by 14 CFR Part 135, *Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons on Board Such Aircraft* [IV-1], for helicopters carrying a passenger for fare. However, according to the air tour operators, the minimum expected vertical distance betweenthe helicopters and the terrain along the routes during Grand Canyon helicopter air tours would be 500 feet, or higher in some areas, when feasible. This would be a voluntary action on the part of the air tour operators, unless otherwise required by the Act.[8]

Helicopter noise exposure near existing and potential helicopter flight corridors was evaluated for the 15 locations described in Section 3.5.2. Eight of the sites were used for ambient noise monitoring and seven of the sites were identified to represent typical noise-sensitive locations in the Las Vegas region, such as residential areas, schools, recreation areas, and wildlife habitat. These locations are shown on **Exhibit IV-5**. **Table IV-1** indicates the land use or receptor represented by the grid points, and summarizes the ranges of predicted helicopter noise exposure for each grid point under the Proposed Action and the No Action alternative.

Based on the INM grid point analysis, the highest helicopter noise levels would occur at grid points R1 (recreation area/trail), G2 (recreation area/campsite) and G7 (residential area). The lowest helicopter noise levels (less than 25 dBA) would occur at grid points R4 (undeveloped land) and G4 (recreation area/trail). At all grid points, calculated helicopter noise levels are predicted to be below DNL 65 and differences in calculated noise levels between the Proposed Action and the No Action alternative would be less than significant. In addition, at Sites R1 through R8, predicted noise levels from helicopter operations alone under the Proposed Action for 2011 and 2017 are anticipated to be less than existing DNL values as measured during the ambient noise level monitoring at the same locations in 2004.

[8] 14 CFR Part 135, *Operating Requirements: Commuter and On Demand Operations and Rules Governing Persons on Board Such Aircraft*, requires a minimum altitude of 300 feet AGL for helicopter operations when over congested areas; however, the Grand Canyon helicopter tour operators currently attempt to achieve a minimum altitude of 500 feet AGL.

Exhibit IV-5

Noise Sensitive Areas in the Vicinity of the Overflight Area

Helicopter noise exposure levels near existing and potential helicopter flight corridors were evaluated at 15 locations within the Overflight Area. The 15 locations where noise calculations were performed are depicted on Exhibit IV-5.

Table IV-1

Summary of Helicopter Noise Levels at Locations of Interest

Grid Point [1/]	Representative Land Use	Nearest Helicopter Flight Corridor(s) [2/]	Distance to Nearest Flight Corridor(s) (feet)	Ambient Noise Level (DNL) [3/]	Predicted Helicopter Noise Levels (DNL) No Action Alternative		Predicted Helicopter Noise Levels (DNL) Proposed Action	
					2011	2017	2011	2017
R1	Recreation area (trail)	Charleston	0	50.6	44-53	45-55	39-49	40-50
R2	Abandoned mine	Tropicana	3,310	59.7	34-37	34-38	29-32	30-33
R3	Undeveloped land	Henderson (Inbound/Outbound)	7,600/2,340	55.1	n.a.	n.a.	39-43	40-43
R4	Undeveloped land	Henderson (Inbound/Outbound)	21,580/16,330	56.2	n.a.	n.a.	<25	<25
R5	Sloan Canyon petroglyphs	McCullough (Inbound/Outbound)	8,110/13,520	50.2	n.a.	n.a.	26-28	26-29
R6	Wilderness area with hiking trails	McCullough (Inbound/Outbound)	2,580/2,580	49.4	n.a.	n.a.	40-43	40-44
R7	Wilderness area with hiking trails	Jean (Inbound/Outbound)	3,170/2,090	46.8	n.a.	n.a.	42-44	42-44
R8	Electric power substation	Jean (Inbound/Outbound)	1,810/3,410	45.1	n.a.	n.a.	42-43	43-45
G1	Residential/school area	Charleston	5,300	n.a.	27-33	28-34	22-28	22-28
G2	Recreation area (campsite)	Tropicana	1,430	n.a.	43-47	44-48	38-43	39-43
G3	Residential area	Henderson (Inbound/Outbound)	8,080/2,880	n.a.	n.a.	n.a.	36-40	36-40
G4	Recreation area (trail)	Henderson (Inbound/Outbound)	22,420/17,110	n.a.	n.a.	n.a.	<25	<25
G5	Wilderness/habitat area	McCullough (Inbound/Outbound)	3,320/8,730	n.a.	n.a.	n.a.	33-37	33-37
G6	Wilderness/habitat area	Jean (Inbound/Outbound)	8,200/13,580	n.a.	n.a.	n.a.	26-28	26-29
G7	Residential area	Strip Railroad	0	n.a.	n.a.	n.a.	37-47	38-48

Notes:
n.a. = Not applicable
DNL = Day-night average sound level, expressed in A-weighted decibels
1/ Grid point locations are shown on Exhibit IV-5. Noise measurements were conducted at Sites R1 through R8 in 2004.
2/ Existing and potential helicopter flight corridors are shown on Exhibit IV-5.
3/ Ambient noise level data are from Table III-2. Ambient noise levels were not measured at Sites G1-G7.

Source: Brown-Buntin Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

4.2 Compatible Land Use

According to Appendix A of 14 CFR Part 150 [III-4] and FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports* [IV-2], a proposed action is considered to have a significant impact on land use compatibility if it causes significant increases in noise exposure over residential or other noise-sensitive land uses, such as schools, parks, and historic buildings, within areas exposed to aircraft noise of DNL 65 and higher. In addition to the consideration of aircraft noise impacts, other types of land use impacts to be considered in environmental assessments include disruption of communities, relocation of businesses, and induced socioeconomic impacts.

Potential disruptions to communities, effects on businesses, and induced socioeconomic impacts associated with the implementation of the Proposed Action are discussed in Section 4.3. Potential impacts to floodplains and floodways are discussed in Section 4.13. Potential impacts to fish, wildlife, and plants are discussed in Section 4.10; federally listed threatened and endangered species, including potential impacts to critical habitat are discussed in Section 4.11. As discussed in FAA Order 1050.1E, the compatible land use section of EAs for airport actions must include documentation to support the required airport sponsor's assurance under 49 USC 47107(a)(10) that appropriate action, including the adoption of zoning laws, has been or will be taken, to the extent reasonable, to promote airport/community land use compatibility.[9] The Clark County Board of County Commissioners has included a land use compatibility assurance letter in this EA, as provided in **Appendix E**.

4.2.1 Summary of Findings

Under both the Proposed Action and the No Action alternative, residents beneath and near existing helicopter flight corridors would continue to experience helicopter overflights and noise. The number of Grand Canyon helicopter tour overflights of established residential communities along the Tropicana and Charleston helicopter flight corridors would be lower under the Proposed Action when compared to the No Action alternative and helicopter noise levels would also be lower in those communities. Implementation of the Proposed Action would affect helicopter flight patterns in the Overflight Area; however, helicopter noise exposure is anticipated to be less than the FAA's land use compatibility threshold of DNL 65 and is not expected to adversely affect community land use compatibility within the Area of Disturbance or the Overflight Area.

4.2.2 Environmental Consequences

4.2.2.1 Proposed Action

The Heliport site is located on BLM managed public land in unincorporated Clark County within the South County Planning Area. The Clark County Department of Comprehensive Planning adopted a land use plan for the South County Planning Area in 1994 [III-5] and updated the land use plan map in 2005. The Heliport site is within the County land use designation Open Land.[10] While the Open Land designation allows for some limited uses (e.g., grazing), it is anticipated that future development outside the BLM disposal area (generally around the Heliport site) would be limited as land is not available for disposal.

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[9] The land use compatibility category is an evaluation of effects on the manmade environment based on a review of 14 CFR Part 150 land use categories; see other sections of this EA for discussions of noise relative to wildlife and DOT Section 4(f) lands.

[10] The land use category is called open space on Exhibits IV-6 and IV-7. See Appendix E for detailed description of land use designations under the South County Planning Area.

In 2007 the City of Henderson annexed about 3,455 acres of land located within the BLM disposal area north/northeast of the Heliport site. The City of Henderson has not prepared a land use plan for the annexed land, which is located in the West Henderson Planning Area. The land use plan for the South County Planning Area, prepared by the Clark County Department of Comprehensive Planning, would continue to apply until the City of Henderson updates the land use designation applicable to this area.

Two ranges of noise exposure were considered: DNL 60 to 65 and DNL 65 and higher. The noise contours were superimposed onto maps of generalized planned land uses to determine if projected noise levels would be incompatible with land use designations included in adopted land use plans encompassing the Area of Disturbance and McCarran.

Helicopter noise exposure contours for the Proposed Action in 2011 and 2017 are presented over generalized planned land uses on **Exhibits IV-6** and **IV-7**, respectively. As shown on the exhibits, helicopter noise of DNL 65 and higher would not extend beyond the property boundaries of the Heliport site or McCarran International Airport in 2011 or 2017. No planned noise-sensitive land uses would be exposed to helicopter noise of DNL 65 and higher in either 2011 or 2017 as a result of the Proposed Action.

4.2.2.2 No Action Alternative

Noise exposure contours for the No Action alternative in 2011 and 2017 are presented over generalized planned land uses on **Exhibit IV-8**. As shown, the areas that would be exposed to DNL 65 and higher from helicopter operations would be contained within the McCarran boundaries. No existing or planned noise-sensitive land uses in the vicinity of McCarran would be exposed to helicopter noise of DNL 65 and higher in either 2011 or 2017.

4.2.2.3 Overflight Area

Between the Heliport site and the Rendezvous Point[11], planned land uses beneath the Henderson flight corridor generally represent a continuation of existing land use patterns, with single- and multi-family residential, commercial, industrial, recreation, public, and open space uses. The planned land uses also include new areas of industrial, mixed use, and low-density residential uses occupying a portion of what is currently vacant land. (See Exhibit III-12.) Most areas depicted as vacant lands on the existing land use exhibits are planned as open space. However, these lands are outside the BLM disposal area and are unavailable for community development. Flights on the McCullough flight corridor would pass primarily over land designated as open space or vacant land. Flights on the Jean flight corridor would pass over open space, vacant land, and a small area of planned industrial land use, which is currently vacant, and a small area of public land use. Almost all Open Land is federal land, except for areas within Boulder City, where the flight corridors pass over the Boulder City conservation easement[12] and a recreation area. Flights on the Strip Railroad corridor would pass over single- and multi-family residential, commercial,

[11] As described in Section 3.2.1, the existing and potential helicopter flight corridors are the same between the Rendezvous Point and the Grand Canyon and no changes would occur as a result of the Proposed Action beyond the Rendezvous Point. See Exhibit III-8.

[12] Clark County purchased a conservation easement on about 85,000 acres of desert tortoise habitat in the Eldorado Valley.

Exhibit IV-6

2011 Helicopter Noise Exposure Contours over Generalized Planned Land Uses — Proposed Action

Exhibit IV-6 shows calendar year 2011 helicopter noise exposure contours for the Proposed Action. Helicopter noise exposure contours for McCarran International Airport and the South of Sloan Heliport site are superimposed on a map of generalized planned land uses.

Exhibit IV-7

2017 Helicopter Noise Exposure Contours over Generalized Planned Land Uses — Proposed Action

Exhibit IV-7 shows calendar year 2017 helicopter noise exposure contours for the Proposed Action. Helicopter noise exposure contours for McCarran International Airport and the South of Sloan Heliport site are superimposed on a map of generalized planned land uses.

Exhibit IV-8

2011 and 2017 Helicopter Noise Exposure Contours over Generalized Planned Land Uses — No Action Alternative

Exhibit IV-8 shows calendar year 2011 and 2017 helicopter noise exposure contours for the No Action alternative. Helicopter noise exposure contours for McCarran International Airport are superimposed on a map of generalized planned land uses.

mixed use, industrial, park/recreational and public land uses, open space, and vacant land. In addition, flights on the Strip Railroad corridor would continue west of McCarran, follow the railroad tracks and I-15, and pass over single- and multi-family residential, commercial, and industrial land uses, open space, park/recreational areas, vacant land, and an area of public land use.

Implementation of the Proposed Action would affect helicopter flight patterns in the Overflight Area and potentially result in helicopters overflying areas that are currently developed with noise-sensitive land uses or that may be developed with noise-sensitive land uses in the future. Nevertheless, as discussed in Section 4.1, helicopter noise exposure beneath and near the Overflight Area is anticipated to be less than the FAA's land use compatibility threshold of DNL 65. As a result, helicopter noise on the ground beneath the Overflight Area is not expected to adversely affect community land use compatibility.

Between McCarran and the Rendezvous Point, planned land uses beneath the Tropicana flight corridor generally represent a continuation of existing land use patterns and include single- and multi-family residential, commercial, industrial, mixed use, public, and open space land uses. Planned land uses beneath the Charleston flight corridor generally represent a continuation of existing land use patterns and include single- and multi-family residential, commercial, mixed use, industrial, park/recreational, public land uses, open space, and vacant land. Under both the Proposed Action and the No Action alternative, the Tropicana and Charleston flight corridors would continue to be utilized; however, the number of overflights of established residential communities along both corridors would be lower under the Proposed Action.

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

In accordance with FAA Orders 1050.1E and 5050.4B, the three primary social impact categories to be considered in an EA are: (1) socioeconomic impacts, (2) environmental justice, and (3) children's environmental health and safety risks.

Factors to be considered when determining whether a proposed project would result in significant socioeconomic impacts include: (1) if extensive relocation of residents would be required, but insufficient replacement housing is available, and this results in a high degree of controversy; (2) if Section 206(a) of the *Uniform Relocation Assistance and Real Property Acquisition Policies Act*, as amended, [IV-3] is used as provision for housing of last resort; (3) if relocation of businesses, including farms, creates severe economic hardship on the community; (4) if significant disruption of employment and communities occurs; and (5) if a noticeable increase in traffic congestion or access time to community facilities cannot be prevented or minimized.

Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations* [IV-4] provides guidance to federal agencies for identifying and addressing disproportionately high environmental effects of federal programs and activities on minority and low-income populations. Projects are considered to have a significant environmental justice impact when disproportionately high segments of low-income and minority populations are affected, or when the impacts are appreciably more severe or of greater magnitude than adverse effects experienced by non-minority and/or non-low-income populations.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* [IV-5], directs federal agencies to ensure that potential environmental health risks and safety risks

that may disproportionately affect children are identified and assessed in all federal policies, programs, and actions. Potential impacts to children's environmental health and safety risks are considered significant if a proposed action disproportionately impacts children's health and safety, considering all impact categories set forth in FAA Orders 1050.1E and 5050.4B.

4.3.1 Summary of Findings

No residential or commercial development is located within one mile of the Heliport site; the nearest developments are 3.5 miles north of the site. Construction of the Proposed Action would not require relocation of residents or businesses. The Proposed Action would not result in any adverse impacts associated with socioeconomic factors, environmental justice, or children's environmental health and safety risks compared with the No Action alternative. In addition, under the Proposed Action, socioeconomic factors, environmental justice, or children's environmental health and safety risks could be reduced with the relocation of flights over non-developed areas.

4.3.2 Environmental Consequences

4.3.2.1 Socioeconomic Impacts

Proposed Action

The Heliport site is surrounded by vacant land to the north (City of Henderson) and BLM-administered land to the east, west, and south of the site. There is no residential development within one mile of the Heliport site. No acquisition and/or relocation of residents or businesses would be required to allow the implementation of the Proposed Action. No adverse disruptions to communities or local employment would occur.

Implementation of the Proposed Action would increase the number of motor vehicle movements on roadways in the vicinity of the Heliport site and vehicle miles traveled in the region compared to the No Action alternative, however the effect on local and regional traffic patterns would be negligible. According to the Regional Transportation Commission of Southern Nevada's *Regional Transportation Plan 2004 – 2025* [IV-6], all of the major arterial streets and freeways in the urbanized areas of the Las Vegas Valley are expected to become congested during the planning period (through 2017) and intersections near the Las Vegas Strip and McCarran that would be used by limousines and buses transporting Grand Canyon helicopter air tour passengers under either the Proposed Action or the No Action alternative will be operating at a poor level of service (E or F). Intersections in the vicinity of the Heliport site, are anticipated to operate at an adequate level of service (A, B, or C) through 2017. In 2011, it is estimated that 0.003 percent [IV-7] of the vehicle miles traveled in the region would be attributable to vehicle trips between the Heliport site and the Las Vegas Strip under the Proposed Action. Consequently, the Proposed Action is anticipated to have a less than significant impact on traffic patterns and traffic congestion in the region compared with the No Action alternative.

Construction-related traffic would occur along I-15, a major freeway connecting the Las Vegas region to other parts of Southern California. The incremental addition of construction related vehicles on I-15 is not anticipated to adversely impact traffic flow to and from the Las Vegas region. Further, construction related traffic would be scheduled during off-peak travel periods to the extent possible. No adverse impacts related to construction surface traffic are anticipated under the Proposed Action.

No Action Alternative

Acquisition or displacement of existing residences and businesses would not be required under the No Action alternative. No disruptions to local or regional traffic patterns are anticipated under the No Action alternative; however, limousines and buses carrying Grand Canyon helicopter air tour passengers would continue to use congested roadways between McCarran and the Las Vegas Strip.

4.3.2.2 Environmental Justice

Table IV-2 shows the ethnicity of residents in Clark County as a whole and in the vicinity of the Heliport site and McCarran[13]. According to the U.S. Decennial Census [III-6], about 72 percent of Clark County residents are white, with the remaining 28 percent being of a minority ethnicity.

Table IV-3 shows household incomes for Clark County as a whole and for households in the vicinity of the Heliport site and McCarran. According to the 2000 Census, the average size of a family in Clark County is 3.19 people. According to the U.S. Department of Health and Human Services, a family of three with an annual income of $14,150 is considered to be living at the poverty level. About 12 percent of Clark County households have an annual income less than $14,999, which is just above the poverty level.

Table IV-2

Ethnicity of Residents in the Las Vegas Region

Race [1/]	Total Clark County	Heliport Site Area	McCarran International Airport Area
White	71.6 %	92.1 %	63.8 %
Minority [2/]:			
Black or African American	9.1 %	1.4 %	8.6 %
American Indian and Alaska Native	0.8	0.5	0.8
Asian	5.3	2.0	8.0
Native Hawaiian and Other Pacific Islander	0.5	0.2	0.7
Some other race	8.6	1.9	12.5
Two or more races	4.2	2.0	5.7
Minority Subtotal	28.4 %	7.9 %	36.2 %
Total	100.0 %	100.0 %	100.0 %

Notes:
Columns may not add to totals shown because of rounding.
1/ Race is the subject category for ethnicity, as reported by the U.S. Census Bureau.
2/ The U.S. Census Bureau reports "Hispanic or Latino" category separately because it is not a "race" category. Source: U.S. Department of Commerce, Bureau of the Census, 2000 Census
Prepared by: Ricondo & Associates, Inc., April 2008

[13] As discussed previously, no people live within one mile of the Heliport site. For the environmental justice and children's environmental health and safety risk analyses, the Heliport site area was defined as Census Tracts 57.10 and 58.16. The McCarran site area was defined as Census Tracts 27.02, 29.62, 26.01, 26.02, 26.03, and 29.56.

Table IV-3

Annual Household Income in the Las Vegas Region

Income	Total Clark County	Heliport site Area	McCarran International Airport Area
Less than $10,000	7.1 %	6.5 %	12.2 %
$10,000 to $14,999	5.1	3.4	7.7
$15,000 to $24,999	12.4	5.4	22.0
$25,000 to $34,999	13.1	8.7	16.2
$35,000 to $49,999	18.1	15.5	19.7
$50,000 to $74,999	21.5	20.7	13.5
$75,000 to $99,999	11.1	13.8	5.4
$100,000 to $149,999	7.5	13.4	2.6
$150,000 to $199,999	1.9	7.0	0.4
$200,000 or more	2.1	5.4	0.3
Total	100.0%	100.0 %	100.0 %

Note: Columns may not add to totals shown because of rounding.

Source: U.S. Department of Commerce, Bureau of the Census, 2000 Census
Prepared by: Ricondo & Associates, Inc., April 2008

Proposed Action

The population of the Heliport site area is about 92 percent white; the remaining eight percent are of a minority ethnicity [III-6]. The percentage of people within the Heliport site area classified in the 2000 U.S. Census as minorities is lower than the percentage of minorities within the McCarran site area and in Clark County as a whole. Approximately 11 percent of the households in the vicinity of the Heliport site have incomes less than $14,999 per year, which is lower than in the vicinity of McCarran and in Clark County as a whole. The percentage of individuals classified as minorities and households classified as low-income within the Heliport site area is not disproportionately higher than the percentage of minorities and low-income households in Clark County as a whole. As no significant impacts are anticipated within the Area of Disturbance under the Proposed Action, the Proposed Action would not have a disproportionately high and adverse human health or environmental effects on minority populations and low-income populations.

No Action Alternative

The population in the vicinity of McCarran is about 64 percent white; the remaining 36 percent are of a minority ethnicity. The percentage of people classified in the 2000 U.S. Census as minorities in the vicinity of McCarran is higher than in Clark County as a whole as well as in the vicinity of the proposed Heliport site. About 20 percent of the households in the vicinity of McCarran have an annual income less than $14,999. This is a higher percentage than in Clark County as a whole. Under the No Action alternative, these populations would continue to be affected by an increasing number of Grand Canyon helicopter overflights along the existing corridors.

Overflight Area

As shown on **Exhibit IV-9**, the percentage of persons listed as minorities by the U.S. Census and residing beneath or near the Overflight Area associated with the potential helicopter flight corridors for the proposed Heliport is lower than the percentage of minorities residing beneath or near the existing flight corridors. Based on a review of U.S. Census data and land use data, it is also noted that population densities are lower beneath the potential flight corridors and large areas beneath the Jean and McCullough flight corridors are undeveloped.

As shown on **Exhibit IV-10**, the percentage of low-income households beneath or near the potential helicopter flight corridors is not disproportionately higher than the percentage of low-income households in the County as a whole or along the existing helicopter flight corridors.

Calculated helicopter noise levels are predicted to be below DNL 65 beneath or near the Overflight Area associated with the potential helicopter flight corridors for the proposed Heliport. As no adverse impacts from other environmental resource categories (e.g., air quality, noise, and water quality) are anticipated, no adverse impacts on minorities or low-income households are anticipated within the Overflight Area under the Proposed Action. Under the both the Proposed Action and No Action alternative, minority and low-income residents beneath and near the existing flight corridors would continue to experience helicopter overflights; however, helicopter noise levels in established residential communities beneath the Tropicana and Charleston helicopter flight corridors associated with Grand Canyon helicopter tour overflights would be lower under the Proposed Action than the No Action alternative since there would be fewer overflights.

4.3.2.3 Children's Environmental Health and Safety Risks

Table IV-4 shows the age distribution of Clark County residents in comparison to the age distribution for the areas surrounding the Heliport site and McCarran. About 24 percent of Clark County residents are 17 years old and younger (i.e., children).

Table IV-4

Age of Residents in the Las Vegas Region

Age Group (years)	Total Clark County	Heliport site Area	McCarran International Airport Area
Children			
Under 5	6.0 %	5.2 %	6.3 %
5 to 17	18.1	14.1	12.5
Children Subtotal	24.1 %	19.3 %	18.8 %
Adult [1/]	75.9	80.7	81.2
Total [2/]	100.0 %	100.0 %	100.0 %

Notes:
1/ Adult category includes persons 18 years old and over.
2/ Columns may not add to totals shown because of rounding.

Source: U.S. Department of Commerce, Bureau of the Census, 2000 Census
Prepared by: Ricondo & Associates, Inc., April 2008

Exhibit IV-9

Ethnicity of Residents in the Las Vegas Region

Exhibit IV-9 presents information regarding the location of white and non-white residents in the Las Vegas region, as derived from the 2000 U.S. Census. Existing and potential helicopter flight corridors are superimposed on the census demographic map. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit IV-9.

Exhibit IV-10

Income of Residents in the Las Vegas Region

Exhibit IV-10 presents information regarding the location of low-income households in the Las Vegas region, as derived from the 2000 U.S. Census. Existing and potential helicopter flight corridors are superimposed on the census demographic map. Highways, roads, railroads, jurisdictional boundaries and other cartographic features are also displayed on Exhibit IV-10.

Proposed Action

According to the 2000 U.S. Census, about 19 percent of the people in the vicinity of the Heliport site are 17 years old or younger, which is a lower percentage than in the County as a whole and less than one percentage point higher than in the vicinity of McCarran. The percentage of individuals classified as children within the Heliport Site area is not disproportionately higher than the percentage of children in Clark County as a whole. As no significant impacts are anticipated within the Area of Disturbance under the Proposed Action, it is anticipated that the Proposed Action would not significantly affect children residing within the Heliport site area.

No Action Alternative

About 19 percent of the residents in the McCarran site area are 17 years of age or younger. This percentage is lower than in Clark County as a whole. Under the No Action alternative, these populations would continue to be affected by an increasing number of Grand Canyon helicopter overflights along the existing corridors.

Overflight Area

The percentage of people defined in the 2000 Census as children and living beneath or near the Overflight Area associated with the potential helicopter flight corridors for the proposed Heliport is comparable to the percentage of children living beneath or near the existing helicopter flight corridors. As no adverse impacts in other environmental resource categories are anticipated, no adverse impacts to children within the Overflight Area are anticipated under the Proposed Action. Under both the Proposed Action and the No Action alternative, children living in neighborhoods beneath and near the existing flight corridors would continue to experience helicopter overflights; however helicopter noise levels in established residential communities beneath the Tropicana and Charleston helicopter flight corridors associated with Grand Canyon helicopter tour overflights would be lower under the Proposed Action than the No Action alternative since there would be fewer overflights.

4.4 Air Quality

The air quality assessment performed for this EA is intended to show the potential impacts that may result from construction and operation of the Heliport. Potential effects on air quality associated with the Proposed Action must be analyzed for compliance with the National Environmental Policy Act and the Clean Air Act, as amended by the Clean Air Act Amendments of 1990.

NEPA requires consideration of the relationship of any proposed FAA action to air quality. The primary sources of guidance for NEPA compliance are FAA Orders 5050.4B and 1050.1E and the *Air Quality Procedures for Civilian Airports and Air Force Bases* (Airport Air Quality Handbook) [III-19]. Typically an emissions inventory is prepared for the Proposed Action and each reasonable alternative, including the No Action alternative. Additional analyses, including dispersion modeling or roadway intersection hot spot analyses are not normally required if the estimated emissions of each criteria pollutant (see Section 3.8) do not exceed thresholds listed in the general conformity regulations. As part of a NEPA air quality analysis, a NAAQS assessment (including dispersion modeling) is sometimes conducted for the Proposed Action and reasonable alternatives. A formula[14]

[14] The formula considers the level of general aviation and air taxi operations at a facility and the number of airport passengers. If the level of activity at an airport is below a certain threshold, a NAAQS assessment is usually not required.

presented in the Airport Air Quality Handbook can be used as a guide to determine whether a NAAQS assessment should be performed for a Proposed Action; however the nature of the project should also be considered in consultation with state or regional air quality regulatory staff.

The Clean Air Act Amendments of 1990 require federal agencies to ensure that their actions conform to the appropriate SIP. Conformity is defined as demonstrating that a project or action conforms to the SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of such standards. Federally funded and approved actions at airports are subject to the EPA's "General Conformity" regulations. The EPA has published a final rule regarding general conformity determinations [IV-8]. The final rule includes annual emissions thresholds for nonattainment areas and maintenance areas that trigger the need for a general conformity determination and defines projects that are generally excluded from general conformity.[15] A conformity determination is required if one of the following occurs: (1) the total direct and indirect pollutant emissions[16] resulting from a project are above *de minimis*[17] emissions threshold levels specified in the conformity regulations, and/or (2) pollutant emissions from the project would be regionally significant (i.e., the project would contribute 10 percent or more of the region's total emissions for a criteria pollutant).

Two models were used to perform the required air quality assessments: the EDMS and MOBILE6.2. EDMS Version 4.3 was used to calculate emissions of criteria pollutants generated by helicopters, auxiliary power units (APUs), GSE, ground access vehicles, training fires, and stationary sources. MOBILE6.2 was used to determine emissions of carbon monoxide (CO), nitrogen oxides (NO_X), volatile organic compounds (VOC), oxides of sulfur (SO_X), particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) from ground access vehicles and on-road construction vehicles. Specific local characteristics were used in the MOBILE6.2 model to increase the accuracy of the output. The Clark County Department of Air Quality and Environmental Management developed the MOBILE6.2 emission factors for all analysis years.

Criteria pollutants would also be emitted during the construction of the Heliport. Construction activities would be expected to begin during the third quarter of 2008 and be completed in 2010. Construction-related emissions were analyzed using standard industry methodologies and techniques. The specific techniques used to estimate operational and construction-related emissions for the Proposed Action and the No Action alternative are described in Appendix F.

4.4.1 Summary of Findings

Criteria pollutant emissions, including CO, SO_X, PM_{10}, $PM_{2.5}$, and the ozone precursor pollutants (NO_X and VOC) would be higher under the Proposed Action than under the No Action alternative; however emissions levels would be less than significant. Neither the Proposed Action nor the No Action alternative would be expected to cause or contribute to exceedances of the NAAQS. Neither construction emissions under the Proposed Action, nor differences in heliport operational emissions under the Proposed Action compared with the No Action alternative would exceed the

[15] Projects that are excluded from General Conformity are listed at 40 CFR §93.153(c)(2).

[16] Total direct and indirect emissions are the sum of the emissions increases and decreases associated with a proposed project, or the "net" change in emissions anticipated to occur as a result of the proposed project (40 CFR §93.152).

[17] Emissions are so small as to be negligible or insignificant. If a project/action has *de minimis* emissions, a conformity determination/NAAQS assessment pursuant to the *Clean Air Act Amendments of 1990* is not required (40 CFR §93.153c).

applicable *de minimis* thresholds nor would emissions or differences in emissions be regionally significant. Therefore, in accordance with the general conformity regulations, a general conformity determination is not required for the Proposed Action. While mitigation measures are not required, various techniques would be used to minimize criteria pollutant emissions associated with construction of the Heliport. (See Section 4.20.3.)

4.4.2 Environmental Consequences

4.4.2.1 NEPA Emissions Analysis

Inventories of construction related emissions under the Proposed Action and operational emissions under the Proposed Action and the No Action alternative were prepared. The results of the emissions inventory analysis are summarized in **Table IV-5**. Emissions of CO, SO_X, PM_{10}, $PM_{2.5}$, and the ozone precursor pollutants (NO_X and VOC) would be less than significant under both the Proposed Action and No Action alternative.

Table IV-5

Emissions Inventories – Proposed Action and No Action Alternative (tons per year)

	Carbon Monoxide (CO)	Volatile Organic Compounds (VOC)	Oxides of Nitrogen (NO_X)	Oxides of Sulfur (SO_X)	Suspended Particulate Matter (PM_{10})	Fine Particulate Matter ($PM_{2.5}$)
Proposed Action						
Construction Emissions						
2008	1.911	0.345	2.457	0.072	28.258	0.488
2009	16.486	2.229	12.466	0.398	57.716	4.715
2010	14.981	33.958	13.678	0.237	47.200	4.305
Operational Emissions						
2011[1/]	38.946	6.306	12.150	2.359	6.321	4.865
2017[1/]	46.651	7.354	12.642	2.858	8.026	6.193
No Action Alternative						
Construction Emissions						
2008	--	--	--	--	--	--
2009	--	--	--	--	--	--
2010	--	--	--	--	--	--
Operational Emissions						
2011	28.920	4.761	9.469	1.873	4.149	3.861
2017	34.922	5.610	9.853	2.252	5.236	4.882

Note:
1/ Operational emissions were calculated for the two locations expected to accommodate helicopter air tour operations under the Proposed Action: the Heliport site and McCarran International Airport. Operational emissions listed under the Proposed Action include emissions generated at both the Heliport site and McCarran.

Sources: Ricondo & Associates, Inc., 2007, based on output from the Emissions and Dispersion Modeling System, Version 4.3, and information obtained from the Clark County Department of Aviation and HNTB Corporation
Prepared by: Ricondo & Associates, Inc., April 2008

Proposed Action

Construction emissions at the Heliport site were calculated for each construction year (2008, 2009, and 2010). Operational emissions at the Heliport site and McCarran were calculated for the expected first full year of operations of the Heliport (2011), as well as a future conditions year (2017). Under the Proposed Action, some helicopter air tour operations would remain at McCarran although the Heliport would be constructed. Therefore, total operational emissions under the Proposed Action include emissions generated by activity at both the Heliport site and McCarran.

No Action Alternative

No construction activities are anticipated to occur under the No Action alternative; therefore no construction emissions are anticipated. Operational emissions under the No Action alternative were calculated at McCarran for the analysis years 2011 and 2017.

4.4.2.2 Dispersion Analysis/NAAQS Assessment

A NAAQS assessment for the Proposed Action is not needed to satisfy NEPA requirements, because projected operations and passenger levels are below thresholds set by the FAA in the Airport Air Quality Handbook. Nevertheless, dispersion modeling was conducted for the Proposed Action and the No Action alternative in response to scoping comments received from the U.S. EPA requesting an assessment of the potential for the Proposed Action to cause or contribute to exceedances of the CO and PM_{10}[18,19] NAAQS. (See **Appendix G** for scoping comments.) Under the Proposed Action, it is assumed that helicopter air tour operations would be performed at multiple facilities; however, dispersion modeling was conducted only for the Heliport. Under the No Action alternative, dispersion modeling was conducted for McCarran. Therefore, dispersion modeling was conducted at the facility that would accommodate the highest level of forecast helicopter operations under each alternative.

EDMS dispersion modeling was conducted for 2017, the year with the highest CO and PM_{10} operational emissions under the Proposed Action and the No Action alternative. In preparing for the dispersion analyses, data regarding helicopter operations and facilities layouts were assembled and documented. 8-hour average CO concentrations and 24-hour average PM_{10} concentrations under the Proposed Action were calculated at 100 receptor locations in a 10 by 10 grid centered over the Heliport site and spaced 1,000 feet apart. 8-hour average CO concentrations and 24-hour average PM_{10} concentrations under the No Action alternative were calculated at 100 receptor locations centered over McCarran International Airport and spaced 1,000 feet apart. EDMS modeled concentrations were added to background concentrations and compared with the relevant CO and PM_{10} NAAQS. Background concentrations of CO and PM_{10} for each site were obtained from the Clark County Department of Air Quality and Environmental Management (see Section 3.8.4). The methodology followed and key assumptions used for the dispersion modeling (including the location of dispersion receptors) are described in Appendix F.

The following paragraphs present the results of the dispersion analysis.

[18] As described in Section 3.8.2, the nonattainment areas for CO and PM_{10} roughly coincide with Hydrographic Basin 212, which encompasses the Las Vegas region. Hydrographic Basin 212 is designated as nonattainment for the 8-hour CO NAAQS and the 24-hour PM_{10} NAAQS.

[19] Because ozone is a regional pollutant and ambient concentrations can only be predicted using regional photochemical models that account for all sources of precursors, the EA dispersion modeling analysis did not include ozone.

Proposed Action

The 10 highest 8-hour average CO concentrations and 24-hour average PM_{10} concentrations estimated by the EDMS for receptors in the vicinity of the Heliport site are presented in **Table IV-6**. As shown in the table, the calculated 8-hour average CO concentrations and 24-hour average PM_{10} concentrations associated with the Proposed Action are below the applicable NAAQS.

Table IV-6

Pollutant Concentrations – Proposed Action

	8-Hour Average CO Concentrations (parts per million)			24-Hour Average PM_{10} Concentrations (micrograms per cubic meter)		
Receptor	Concentration	Background	Total Concentration	Concentration	Background	Total Concentration
56	0.003502489	1.4	1.403502489	1.008084027	71.0	72.008084027
46	0.003243162	1.4	1.403243162	0.402081644	71.0	71.402081644
57	0.002824234	1.4	1.402824234	0.930213507	71.0	71.930213507
45	0.002233081	1.4	1.402233081	0.873512658	71.0	71.873512658
47	0.001121664	1.4	1.401121664	0.190193671	71.0	71.190193671
55	0.000978323	1.4	1.400978323	0.227963123	71.0	71.227963123
67	0.000762130	1.4	1.400762130	0.158166164	71.0	71.158166164
66	0.000639725	1.4	1.400639725	0.150179507	71.0	71.150179507
58	0.000613425	1.4	1.400613425	0.140032110	71.0	71.140032110
36	0.000583730	1.4	1.400583730	--	--	--
35	--	--	--	0.140847452	71.0	71.140847452
NAAQS			9.0			150.0

Notes:
CO = Carbon monoxide
PM_{10} = Particulate matter of 10 micrometers or less
NAAQS = National Ambient Air Quality Standards

Source: Ricondo & Associates, Inc., 2007, based on output from the Emissions and Dispersion Modeling System, Version 4.3
Prepared by: Ricondo & Associates, Inc., April 2008

No Action Alternative

The 10 highest 8-hour average CO and 24-hour average PM_{10} concentrations estimated by the EDMS for receptors in the vicinity of McCarran are presented in **Table IV-7**. As shown in the table, these estimated concentrations associated with the No Action alternative are below the applicable NAAQS.

Table IV-7

Pollutant Concentrations – No Action Alternative

	8-Hour Average CO Concentrations (parts per million)			24-Hour Average PM_{10} Concentrations (micrograms per cubic meter)		
Receptor	Concentration	Background	Total Concentration	Concentration	Background	Total Concentration
68	0.008681272	3.0	3.008681272	0.656575178	89.0	89.656575178
56	0.004413844	3.0	3.004413844	0.333956575	89.0	89.333956575
67	0.003968661	3.0	3.003968661	0.306113781	89.0	89.306113781
69	0.003668028	3.0	3.003668028	1.436921151	89.0	90.436921151
55	0.002654148	3.0	3.002654148	0.314925753	89.0	89.314925753
79	0.002430348	3.0	3.002430348	0.384886959	89.0	89.384886959
66	0.002050523	3.0	3.002050523	0.184838466	89.0	89.184838466
57	0.002038843	3.0	3.002038843	--	--	--
78	0.002027246	3.0	3.002027246	--	--	--
77	0.001544366	3.0	3.001544366	--	--	--
70	--	--	--	0.248751781	89.0	89.248751781
32	--	--	--	0.210919205	89.0	89.210919205
80	--	--	--	0.181061205	89.0	89.181061205
NAAQS			9.0			150.0

Notes:
CO = Carbon monoxide
PM_{10} = Particulate matter of 10 micrometers or less
NAAQS = National Ambient Air Quality Standards

Source: Ricondo & Associates, Inc., 2007, based on output from the Emissions and Dispersion Modeling System, Version 4.3.
Prepared by: Ricondo & Associates, Inc., April 2008

4.4.2.3 General Conformity Applicability Analysis

As described in Section 3.8 of this EA, both the Heliport site and McCarran are located within Hydrographic Basin 212. Hydrographic Basin 212 is designated a serious nonattainment area for PM_{10} and CO, and the applicable general conformity *de minimis* threshold levels are 70 tons per year of PM_{10} and 100 tons per year of CO. Hydrographic Basin 212 is designated attainment for $PM_{2.5}$, NO_2, SO_2, and lead, and therefore general conformity is not applicable to these pollutants. In addition, the two sites are located in a basic nonattainment area for the 8-hour ozone standard. Therefore, the applicable *de minimis* thresholds are 100 tons per year of VOC and 100 tons per year of NO_X[20].

To determine whether a general conformity determination would be required for the Proposed Action, an applicability analysis was conducted. Operational and construction emissions inventories were prepared for the Proposed Action and the No Action alternative as part of the NEPA emissions analysis (see Section 4.4.2.1). The difference in CO, VOC, NO_X, and PM_{10} emissions under the Proposed Action and the No Action alternative, by year, were computed and compared against applicable *de minimis* threshold levels.

Table IV-8 presents the net change in emissions with the Proposed Action compared to the No

[20] Following standard industry practice, the evaluation of ozone was conducted by evaluating emissions of VOC and NO_X, which are precursors in the formation of ozone.

Table IV-8

General Conformity Applicability Analysis

	Relevant Criteria Pollutant Emissions (tons per year)			
	CO	VOC	NO_X	PM_{10}
Proposed Action				
Construction Emissions				
2008	1.911	0.345	2.457	28.258
2009	16.486	2.229	12.466	57.716
2010	14.981	33.958	13.678	47.200
Operational Emissions [1/]				
2011	38.946	6.306	12.150	6.321
2017	46.651	7.354	12.642	8.026
No Action Alternative				
Construction Emissions				
2008	--	--	--	--
2009	--	--	--	--
2010	--	--	--	--
Operational Emissions				
2011	28.920	4.761	9.469	4.149
2017	34.922	5.610	9.853	5.236
Net Change				
2008	1.911	0.345	2.457	28.258
2009	16.486	2.229	12.466	57.716
2010	14.981	33.958	13.678	47.200
2011	10.026	1.545	2.681	2.172
2017	11.729	1.744	2.789	2.790
***De minimis* threshold**	100.0	100.0	100.0	70.0
Difference (under)/over *de minimis* threshold				
2008	(98.098)	(99.655)	(97.543)	(41.742)
2009	(83.514)	(97.771)	(87.534)	(12.284)
2010	(85.019)	(66.042)	(86.322)	(22.800)
2011	(89.974)	(98.455)	(97.319)	(67.828)
2017	(88.271)	(98.256)	(97.211)	(67.210)

Regional Emissions	CO [2/]	Ozone Precursors [3/]	PM_{10} [4/]
Las Vegas Metropolitan Area emissions (tons per year)	174,882	n.a.	31,600

Notes:

1/ Operational emissions were calculated for the two locations expected to accommodate helicopter air tour operations under the Proposed Action: the Heliport site and McCarran International Airport. Therefore, operational emissions under the Proposed Action include emissions generated from helicopter operations at both the Heliport site and McCarran.

2/ Total emissions are for 1996 based on average tons per day data, as presented in the Carbon Monoxide State Implementation Plan [III-14].

3/ Clark County has until 2009 to develop an 8-hour ozone State Implementation Plan.

4/ Total emissions are for 1998, as reported in the PM_{10} State Implementation Plan [III-15].

Sources: Ricondo & Associates, Inc., 2007, based on output from the Emissions and Dispersion Modeling System, Version 4.3, and information obtained from the Clark County Department of Aviation, The Louis Berger Group, Inc., and HNTB Corporation

Prepared by: Ricondo & Associates, Inc., April 2008

Action alternative. As shown, differences in construction-related emissions (2008, 2009, and 2010) and operational emissions (2011 and 2017) under the Proposed Action compared to the No Action alternative would be below established *de minimis* thresholds. In addition, the emissions generated by implementation of the Proposed Action would not be regionally significant. Therefore, a general conformity determination is not required for the Proposed Action. No adverse air quality impacts are expected to result from implementation of the Proposed Action and the Proposed Action is presumed to conform with the SIPs for the Las Vegas region.

4.5 Areas of Critical Environmental Concern

Areas of Critical Environmental Concern (ACEC) are BLM-managed public lands, designated through administrative action by the Secretary of the Interior, that require special management attention to prevent irreparable damage to important historic, cultural, or scenic values; fish and wildlife resources; or other natural systems; or to protect life and safety from natural hazards.

While there are several ACECs designated in the Las Vegas region, two ACECs are beneath the Overflight Area: the River Mountains ACEC and Rainbow Gardens (Frenchman Mountain) ACEC; there are no ACECs in the Area of Disturbance. The River Mountains ACEC is located immediately west of the LMNRA and is generally located north of Boulder City and south of the Clark County Wetlands Park. This area provides hiking and biking trails, such as the River Mountains Loop Trail. The Rainbow Gardens area was designated as an ACEC to protect and manage known Las Vegas Bearpoppy habitat (from illegal dumpings and unauthorized off-road vehicle activity in the area).

Overflights of these two ACECs, as shown on **Exhibit IV-11**, are discussed in Section 4.6, Department of Transportation, Section 4(f) Lands.

4.6 Department of Transportation, Section 4(f) Lands

Section 4(f) of the U.S. Department of Transportation (DOT) Act provides that the U.S. DOT "may not approve the use of land from a significant publicly owned public park, recreation area, or wildlife and waterfowl refuge, or any significant historic site unless a determination is made that:" (1) no feasible and prudent alternative to the use of such land, and (2) such a program or project shall include all possible planning to minimize any adverse effects resulting from use of the land. A description of recreation, conservation, wilderness, Area of Critical Environmental Concern, resource areas and local parks is provided in Section 3.9.

The use of Section 4(f) lands occurs when there is either a permanent commitment of a Section 4(f) site for a project (direct use), or where the proximity of a project to the Section 4(f) site, without acquisition of the land, substantially impairs the value and utility of the land (indirect use, constructive use). As defined in the FAA guidance, constructive use occurs when a proposed project substantially impairs the features, attributes, or activities of the resource that contribute to the significance of the resource.

Constructive use does not occur when the requirements of Section 106 of the *National Historic Preservation Act of 1974*, as amended [III-30] and related regulations in the *Protection of Historic Properties* [IV-9] result in an agreement of "no effect" or "no adverse effect".

Exhibit IV-11

National conservation and Recreation Areas, Natural Areas, Local Parks, and Areas of Critical Environmental Concern

National Conservation and Recreation Areas, Natural Areas, Local Parks, and Areas of Critical Environmental Concern within the Overflight Area or proximate to the Overflight Area are depicted on Exhibit IV-11.

4.6.1 Summary of Findings

No significant direct or indirect impacts to, or constructive use of, Section 4(f) lands would occur under the Proposed Action. Several parks and recreational facilities, one wilderness area, two ACECs, three major conservation and recreation areas, and several cultural resources are located beneath the Overflight Area associated with the potential helicopter flight corridors under the Proposed Action. However, no significant helicopter noise impacts would occur as a result of implementing the Proposed Action compared with the No Action alternative. In addition, at Sites R1 through R8, predicted noise levels from helicopter operations alone under the Proposed Action for 2011 and 2017 are anticipated to be less than existing DNL values as measured during the ambient noise level monitoring at the same locations in 2004.

4.6.2 Environmental Consequences

4.6.2.1 Proposed Action

Exhibit IV-11 shows the location of DOT Section 4(f) lands within the Las Vegas region; the types of resources include wilderness areas, conservation areas, and archaeological and ethnographic resources whose value lies mainly in their preservation. As shown on Exhibit IV-11, there are no Section 4(f) lands on the Heliport site; therefore, there would be no direct use of Section 4(f) lands under the Proposed Action.

4.6.2.2 No Action Alternative

Under the No Action alternative, Grand Canyon helicopter air tours would continue to operate from McCarran. No new facilities would be constructed at McCarran under the No Action alternative and there would be no direct use of Section 4(f) lands.

4.6.2.3 Overflight Area

The potential for indirect effects on, or constructive use of, Section 4(f) lands was considered with regard to helicopter noise near the Heliport site and McCarran, and beneath the Overflight Area.

Proposed Action

As shown on Exhibit IV-11, helicopters using the potential helicopter flight corridors associated with the Proposed Action would overfly *publicly owned* recreation areas, wildlife areas, and Clark County and city parks, and would possibly overfly NRHP-listed or NRHP-eligible sites.

- **Heliport site:**
  - The Henderson corridor, as defined, overflies the western areas of the LMNRA[21], portions of the River Mountains ACEC, Boulder City Recreation Area, and city parks, two NRHP-listed sites;
  - The McCullough corridor, as defined, overflies western areas of LMNRA, portions of the North McCullough Wilderness Area and the Sloan Canyon NCA, as designated by Public Law 109-115 [I-6], one NRHP-listed site, one known NRHP-eligible site, Black Canyon Wilderness Area, and the Boulder City conservation easement area in the Eldorado Valley;

[21] Recreational activities in the LMNRA are discussed in Section 3.9.

- The Jean corridor, as defined, overflies western areas of the LMNRA, 1 NRHP-listed site, Black Canyon Wilderness Area, and the Boulder City conservation easement area in the Eldorado Valley;
- The Strip Railroad corridor, as defined, overflies portions of the LMNRA, portions of the Rainbow Gardens ACEC, portions of the Sunrise Mountain Natural Area, County and city parks, and 8 to 10 NRHP-listed sites. More than two-thirds of the length of the Strip Railroad corridor would follow an existing helicopter flight corridor (Charleston).

- **McCarran International Airport:**
  - The existing Tropicana and Charleston corridors, as defined, overfly portions of the LMNRA, portions of the Rainbow Gardens ACEC, portions of the River Mountains ACEC, Clark County Wetlands Park, the Sunrise Mountain Natural Area, County and city parks, and 9 to 11 NRHP-listed sites.

Sites R4, R5 (Sloan Canyon petroglyphs) and R6 were selected to document existing ambient noise levels within the Sloan Canyon NCA and the North McCullough Wilderness Area. Noise measurement data for Sites R4, R5 and R6 are presented in Appendix D. The hourly maximum noise levels (L_{max}) measured at Site R4 on October 28, 2004 ranged between 58 dBA and 75 dBA. The measured DNL at Site R4 on that day was 56.2. The hourly maximum noise levels (L_{max}) measured at Site R5 (Sloan Canyon petroglyphs) on October 28, 2004 ranged between 29 dBA and 77 dBA. The measured DNL at Site R5 on that day was 50.2. The hourly L_{max} values measured at Site R6 on October 28, 2004 ranged between 41 dBA and 75 dBA. The measured DNL at Site R6 on that day was 49.4.

Sites within the Sloan Canyon NCA and beneath the McCullough flight corridor would be exposed to helicopter noise of DNL 45 to DNL 49 in 2017 if the helicopters fly at an altitude between 900 and 1,500 feet AGL. Helicopters returning via the Las Vegas Strip would use the Charleston/Strip Railroad flight corridor; sites beneath this flight corridor would be exposed to helicopter noise between DNL 38 and DNL 50 in 2017, depending on the altitude of the helicopter above the ground.

The Congressionally legislated McCullough corridor for Grand Canyon helicopter air tours would overfly portions of the Sloan Canyon NCA and the North McCullough Wilderness Area [I-6]. Some sites within the Sloan Canyon NCA are eligible for listing in the NRHP, including the Sloan Canyon Petroglyphs site. The rock art located within the Sloan Canyon NCA and the North McCullough Wilderness Area is of religious and cultural importance to Native Americans and is one of the principal significant attributes of the conservation and wilderness area.

As previously mentioned in Section 1.4, the specific provision prohibits overflights of the Sloan Canyon NCA by helicopter air tours originating or concluding at the heliport site except within the two-mile corridor that is between 3 and 5 miles north of the southern boundary[22], and further requires that operations exceed 1,000 feet in altitude over the eastern segments and 500 feet over the western segments [I-6]. Recognizing that noise from aircraft overflights is an existing condition in the North McCullough Wilderness Area (Section 204 of the Act), Congress mandated the McCullough flight corridor to "ensure that such flights steer clear of the most sensitive and special cultural resources and minimized the impact on the majestic bighorn sheep and other wildlife that live in the McCullough Mountains."[23]

[22] Exhibit I-1 shows the Congressionally prescribed McCullough flight corridor.
[23] Cong. Rec. s1540-41

Further, as presented in Table IV-1, helicopter noise exposure would be lower than DNL 30 at the NRHP-listed Sloan Canyon Petroglyphs. Calculated helicopter noise levels for grid points beneath and near the McCullough corridor within the Sloan Canyon NCA and the North McCullough Wilderness Area are predicted to be lower than ambient noise levels measured at the same grid point locations in 2004.

Congress imposed the flight corridor for helicopter air tour operations within the Sloan Canyon NCA specifically to protect the petroglyphs and bighorn sheep, two of the primary resources Congress sought to protect in establishing the Sloan Canyon NCA and the North McCullough Wilderness Area. With these protections in place and considering the calculated noise levels, the Proposed Action would not substantially impair the features and attributes that contribute to the Sloan Canyon NCA's significance.

As discussed in Chapter II, both existing flight corridors, Tropicana and Charleston (see grid points R1 and R2, respectively, on Exhibit IV-5) directly overfly areas of the LMNRA enroute to the Rendezvous Point. As shown on Table IV-1, predicted noise levels under the Proposed Action along grid points R1 and R2 would be DNL 50 or below at grid point R1 and below DNL 35 at grid point R2, both of which are lower noise exposure values than would occur under the No Action alternative at those same locations. Since grid points R1 and R2 are representative of all areas along the Tropicana and Charleston corridors, it may be concluded that helicopter noise exposure and the corresponding number of helicopter over-flights would be less under the Proposed Action than under the No Action Alternative along those routes.

The Henderson corridor overflies a number of existing and proposed park and recreational facilities within Clark County and the City of Henderson. (See Table III-10.) The parks are located within an urban environment and are predominantly used for recreational and sporting activities. Potential noise levels along the Henderson corridor associated with the Proposed Action would not be significant and the types of activities accommodated at the parks are not of a nature that would be affected by helicopter overflights.

It is anticipated that there would be no substantial interference with the use or enjoyment of Section 4(f) lands or other park and recreational facilities, no substantial impairment of the attributes of Section 4(f) lands, and no substantial diminishment of the access to, the utility of, or the value of Section 4(f) lands under the Proposed Action.

No Action Alternative

As discussed in Section 4.1, no noise-sensitive land uses would be exposed to helicopter noise of DNL 65 and higher under the No Action alternative and helicopter noise of DNL 65 and higher would be contained within the McCarran site boundary in 2011 and 2017. As shown on Exhibit IV-11, the existing flight corridors for the No Action alternative currently overfly Section 4(f) lands including *publicly owned* recreation areas, wildlife areas, and parks. Sites beneath the Charleston and Tropicana flight corridors would be exposed to helicopter noise between DNL 45 and DNL 55 in 2017, depending on the altitude of the helicopter above the ground. It is anticipated that there would be no substantial interference with the use or enjoyment of Section 4(f) lands, no substantial impairment of the attributes of Section 4(f) lands, and no substantial diminishment of access to, the utility of, or the value of Section 4(f) lands under the No Action alternative. Therefore, it is anticipated that there would be no significant indirect or constructive use of DOT Section 4(f) lands near McCarran or along the helicopter flight corridors associated with the No Action alternative.

4.7 Historic, Architectural, Archaeological, and Cultural Resources

In accordance with FAA Orders 1050.1E and 5050.4B, a proposed project would adversely affect historic, architectural, archaeological, and/or cultural resources on, or eligible for listing on, the NRHP if the proposed project: (1) physically destroys the property, (2) severely alters the property such that it would no longer meet the requirements of the standards for treatment of historic properties [36 CFR Part 68], (3) physically removes the property from its historic location, or (4) substantially impairs the historical integrity of the resource by, for example, increasing air emissions and noise.

4.7.1 Summary of Findings

Literature reviews and pedestrian field surveys were conducted for the Heliport site and associated utility corridors. No historic, architectural, archaeological, or cultural properties eligible for or included in the NRHP are present at the Heliport site. Three NRHP eligible sites were located within the Area of Disturbance. The Arrowhead Highway (also known as Nevada State Route 604 and Las Vegas Boulevard South) is used and maintained regularly. No adverse impacts to this site are anticipated as a result of the construction of the underground communication utility. The two remaining sites are also located within the communication utility corridor; these sites may potentially become impacted. While Clark County proposes to mitigate potential adverse impacts through design and modification of the utility ROWs to avoid adverse impacts or, if avoidance is not prudent or feasible, by other mitigation, such as data recovery, determined in consultation with SHPO. Regardless of the type of mitigation employed, a qualified archaeologist will monitor construction activities within the potentially eligible sites to prevent inadvertent destruction of known archaeological resources.

The FAA has determined the proposed undertaking will not adversely affect any properties listed or eligible for listing on the National Register of Historic Places. The FAA is consulting with the Nevada SHPO on this proposed undertaking pursuant to Section 106 of the *National Historic Preservation Act of 1966* [III-30]. Results of this consultation effort will be included in the Final EA.

4.7.2 Environmental Consequences

4.7.2.1 Proposed Action

Cultural resources surveys were completed for the Heliport site in 2004, including Class I literature reviews, field checks, and Class III pedestrian surveys; subsequent resource surveys of the utility corridors for extension of utilities were completed in December 2007 [III-34]. As described in Section 3.10.2, no NRHP-eligible sites were found on the Heliport site; three NRHP-eligible cultural resources were recorded within the Area of Disturbance.

The Arrowhead Highway, also known as Las Vegas Boulevard South and Nevada State Road 604, is currently used. The segment between Jean and Henderson is well maintained and appears to have been repaved. Due to the existing and planned ongoing use of this site, it is not anticipated that construction of the underground communications utility would adversely impact the Arrowhead Highway.

The Sutor site is a railroad and road construction site located within the Area of Disturbance associated with the utility corridor. Several features, artifacts, and an additional possible privy depression were observed during the field survey. The macadam road, which runs to the southeast out of the site, has recently been fenced. The dugout is a historic site with can scatters and a privy on

a valley floor. Existing site impacts include modern trash, off road activity, and erosion; the site is also bisected by Interstate 15 and Las Vegas Boulevard South. Both sites are located within the proposed alignment of the communication utility corridor. Clark County proposes to mitigate potential adverse impacts through design and modification of the utility alignment and ROWs to avoid adverse impacts or, if avoidance is not prudent or feasible, by other mitigation, such as data recovery, determined in consultation with SHPO. Regardless of the type of mitigation employed, a qualified archaeologist would monitor construction activities within the potentially eligible sites to prevent inadvertent destruction of known archaeological resources. The FAA has determined the proposed undertaking will not adversely affect any properties listed or eligible for listing on the NRHP. The FAA is consulting with the Nevada SHPO on the Proposed Action pursuant to Section 106 of the *National Historic Preservation Act of 1966* [III-30]. Results of this consultation effort will be included in the Final EA.

The FAA also contacted the Nevada State Historic Preservation Office, the U.S. Department of the Interior, Bureau of Indian Affairs, and 15 federally recognized Native American tribes and bands in the Las Vegas region during preparation of this EA. In June 7, 2004 a Notice of Intent to prepare the EA was sent to various regulatory agencies and other stakeholders, including Native American tribes and bands. The Notice included a description of the Proposed Action, and requested comments and input. The FAA subsequently submitted a letter **Appendix H** further details the SHPO and tribal consultation process and results.

4.7.2.2 No Action Alternative

Given that no new facilities would be constructed at McCarran and considering that there are no NRHP listed or eligible sites in the vicinity of McCarran, no cultural, archaeological, nor historic properties would be adversely affected under the No Action alternative.

4.7.2.3 Overflight Area

As discussed in Section 4.6, the rock art found within the Sloan Canyon NCA is of cultural importance to Native Americans [IV-10]. The Sloan Canyon Petroglyphs site, located within the Sloan Canyon NCA, is listed in the NRHP. The McCullough corridor through the Sloan Canyon NCA was specifically established by Congress in the Act to avoid direct overflight of the Sloan Canyon Petroglyphs by helicopter air tours originating or terminating at the proposed Heliport site and passing through the NCA. As a result, none of the potential helicopter flight corridors associated with the proposed Heliport would overfly the Petroglyphs site. According to the helicopter noise analyses presented in Section 4.1 and Table IV-1, helicopter noise exposure would be lower than DNL 30 at the NRHP-listed Sloan Canyon Petroglyphs site because of the horizontal distance between the site and the McCullough flight corridor.

Table IV-9 provides a list of four sites[24] within the Sloan Canyon NCA that were identified by the Nevada SHPO as noise-sensitive sites to be considered in this EA. Information regarding the four sites was compiled from a survey of cultural resources within the Sloan Canyon NCA for the BLM [IV-10].

[24] In order to ensure the preservation the cultural resources, the precise locations of the four sites, as identified for consideration in this EA by the Nevada SHPO, cannot be made public. Discussion of potential helicopter noise levels is framed so as not to reveal their locations.

As shown in Table IV-9, the McCullough corridor would either overfly or be in the vicinity of the four cultural sites. Predicted helicopter noise levels at all four sites are anticipated to be below DNL 65. As discussed in Section 3.5.2, ambient noise levels measured at sites within the Sloan Canyon NCA ranged between DNL 49.4 and DNL 56.2, which is higher than the predicted helicopter noise levels at the cultural sites. Therefore, no adverse effects on these four cultural resources would be anticipated as a result of the Proposed Action and no mitigation measures would be required.

Table IV-9

Predicted Noise Levels for Properties Recommended for Consideration within the Sloan Canyon National Conservation Area

Site Number	Site Type	Cultural Affiliation/Date	NRHP Status	Nearest Potential Helicopter Flight Corridor	Predicted Helicopter Noise Level (DNL) 1/
26CK6975	Rock art	Unknown	Eligible	McCullough	26-29
26CK3151	Rock art and milling site	Prehistoric and historic	Eligible	McCullough	40-44
26CK6978	Rock art	Unknown	Not eligible	McCullough	40-44
26CK6973	Rock art	Unknown	Eligible	McCullough	33-37

Notes:
NRHP = National Register of Historic Places
DNL = Day-night average sound level, expressed in A-weighted decibels
1/ Helicopter noise levels were modeled for 2011 and 2017 conditions. The maximum modeled flight altitude of 1,500 feet AGL is lower and more conservative than that anticipated to be flown in the vicinity of the cultural sites. Therefore, helicopter noise levels are expected to be lower than those reported here.

Sources: Far Western Anthropological Research Group. *Cultural Resources Survey (Random and Non-random) of the Sloan Canyon NCA, Clark County, Nevada*. 2003; Ricondo & Associates, Inc.; predicted helicopter noise level—Brown-Buntin Associates, Inc.
Prepared by: Ricondo & Associates, Inc., April 2008

4.8 Native American Religious Concerns

The *American Indian Religious Freedom Act of 1978* [IV-11] establishes national policy to protect and preserve the inherent rights of Native Americans to exercise their traditional religion and ceremonies, including rights to access religious and sacred places and to use and possess sacred objects. Executive Order 13007, *Indian Sacred Sites* [IV-12], requires that federal agencies respect and protect the rights of Native Americans to free exercise of their traditional religions and protect sites considered sacred to them.

No adverse impacts to Native American religious concerns would be expected with the Proposed Action compared with the No Action alternative and no mitigation measures would be required. See Section 4.6, Department of Transportation, Section 4(f) Lands, for discussion of Native American religious concerns, as they pertain to management of religious resources within the Sloan Canyon NCA. Section 4.7, Historic, Architectural, Archaeological, and Cultural Resources provides a discussion of the potential Native American concerns received through consultation with the federally recognized tribes and bands in the Las Vegas region.

4.9 Wilderness

The *Wilderness Act of 1964* [IV-13] establishes the National Wilderness Preservation System to preserve federal land designated by the U.S. Congress as a wilderness area to preserve unimpaired enjoyment for future use as a pristine wilderness area. The Secretary of the Interior reviews all

federally owned land consisting of 5,000 acres or more and every roadless island within the national wildlife refuge and national park systems for possible inclusion into the National Wilderness Preservation System. Activities within the wilderness area must be compatible with the preservation of such lands. The *Clark County Conservation of Public Land and Natural Resources Act of 2002* [III-2] established 17 wilderness areas in the Las Vegas region in order to promote conservation and preserve wilderness areas in Clark County. Wilderness areas beneath the Overflight Area associated with the potential flight corridors for the proposed Heliport include the North McCullough, Eldorado, Black Canyon, and Rainbow Mountain. These lands are managed by the BLM and/or in party by the National Park Service or U.S. Forest Service.

The impacts to wilderness areas are related to helicopter overflights and the associated noise from those overflights. (See Section 4.1, Noise, for discussion of helicopter noise; and Section 4.6, Department of Transportation, Section 4(f) Lands, and Section 4.9, Wilderness, for additional information regarding the effects of the alternatives on wilderness areas.) As described in those sections, the Proposed Action would result in the introduction of new helicopter overflights and their associated noise within wilderness areas along the McCullough or Jean corridors. As described, estimated DNL noise exposure from the helicopter overflights at locations representative of the wilderness areas would be lower than ambient DNL values measured at the those same locations during the noise measurement period. In addition, flights along the McCullough corridor over the North McCullough Wilderness Area would specifically be limited to the two-mile wide corridor with the intent of protecting the most sensitive areas from helicopter overflights and their associated noise.

4.10 Fish, Wildlife, and Plants

The potential effects on fish, wildlife, and plants, including those that are considered State of Nevada or BLM-sensitive species are discussed in this section. Potential effects on federally listed threatened and endangered species that are protected under the Endangered Species Act are presented separately in Section 4.11. According to the BLM Manual 6840.06 C [III-37], the BLM policy is to provide BLM special status species the same level of protection as the U.S. Fish and Wildlife Service (USFWS) designation of "candidate species" to "ensure that actions authorized, funded, or carried out do not contribute to the need for the species to become listed".

4.10.1 Summary of Findings

As described in Section 3.11.1.3, biological surveys of the Area of Disturbance revealed no State-listed or BLM-sensitive species on the Heliport site with the exception of the bighorn sheep. Special status species and potential habitat was also found within the utility corridor. Construction of the Proposed Action could result in direct loss of plants and wildlife and the permanent loss of general wildlife and plant habitat. Such impacts would be minimized through implementation of conservation measures, as detailed in the Biological Assessment and other prescribed measures from the USFWS.

Based on limited existing research on wildlife sensitivities to overflights, estimated overflight altitudes and the nature of the overflights (e.g., hovering activities are not likely to occur), minor indirect impacts to wildlife beneath the Overflight Area would be expected as a result of the Proposed Action. While helicopter overflights have the potential to disturb wildlife in specific locations, helicopter overflights are not expected to have a significant impact on wildlife under the Proposed Action or No Action alternative.

4.10.2 Environmental Consequences

4.10.2.1 Proposed Action

In the short-term, construction activities and increased vehicular traffic throughout the Area of Disturbance could result in direct mortality of individual animals and crushing of animal burrows in the Area of Disturbance. Construction[25] of the Heliport and the utility corridor would include the temporary removal of about 331 acres of vegetation would be disturbed from construction activities; of those acres, 236 acres would be permanently removed for operation of the Heliport. Wildlife species that would typically be affected by these actions include small, less mobile ground dwelling mammals and reptiles. Larger, more mobile animals such as coyotes would be temporarily displaced as a result of construction activities and noise. Individual birds would also be temporarily displaced because of construction activity, human presence, and construction noise.

Site preparation and landscape grading under the Proposed Action would cause the long-term irretrievable loss of site soil and vegetation productivity as the result of the clearing of vegetation, removal and redistribution of soil, and removal of rocks and debris, followed by concrete and/or asphalt surfacing within the Heliport site area boundary. Grading activities would also be required in the short-term for construction staging areas, construction materials storage, fuel tanks, and vehicle and construction equipment parking areas, which would result in short-term adverse impacts on vegetation and soil productivity from disturbance of these natural resources. Construction activities would also increase the short-term potential for disturbance and/or death of wildlife from construction noise, human presence, and/or vehicle-wildlife collisions within the construction area. Short-term/construction impacts to fish, wildlife, and plants would be minimized through implementation of conservation measures detailed in the Biological Assessment[26] (see **Appendix I**). See Section 4.12 for discussion of invasive, nonnative species.

As discussed in Section 3.11.1.3, several special status species and/or potential habitat were observed during biological field surveys of the Area of Disturbance. Construction of the Proposed Action would remove potentially suitable habitat and could result in the direct loss of wildlife. Potential impacts would be minimized through implementation of conservation measures, as detailed in the Biological Assessment.

4.10.2.2 No Action Alternative

Under the No Action alternative, a heliport would not be constructed and there would be no adverse impacts to wildlife or plants.

4.10.2.3 Overflight Area

Potential adverse effects to wildlife associated with helicopter flight corridors and associated noise from overflights are discussed below. It should be noted that (1) the altitudes at which the helicopters might be flown cannot be enforced through the process of, or as a result of, this EA; and (2) regulations do not provide a noise threshold against which potential impacts on animals can be evaluated. Measures to minimize potential adverse effects from helicopter overflights on wildlife are presented in Section 4.11.3 and are focused on potential helicopter flight altitudes above the ground. The distance between the helicopter and the ground can be referred to as height above ground level (AGL) or ground clearance.

[25] Construction-related activities were assumed to include grading and cut and fill activities.
[26] The Biological Opinion from the USFWS will be provided in the Final EA.

The potential effect of low-flying aircraft on noise-sensitive land uses and wildlife is acknowledged in FAA AC 91-36D, *Visual Flight Rules (VFR) near Noise-Sensitive Areas* [IV-14]. The stated purpose of the AC is to encourage pilots to fly higher than the minimum altitude permitted by regulation when flying over noise-sensitive areas or near sites where a quiet setting is a recognized feature or attribute. The AC recommends voluntary measures for pilots to reduce potential interference with wildlife and to reduce complaints related to low-flying aircraft. These voluntary measures include (1) avoid noise-sensitive areas when possible, (2) fly at 2,000 feet AGL over noise-sensitive areas, and (3) climb upon departure and descend upon arrival, when at the takeoff and landing site, to minimize low altitude flight near noise-sensitive areas. The AC does not apply where it would conflict with FARs, air traffic control clearances or instructions, or safety.

A small body of research exists on the physical and behavioral responses of animals to aircraft and helicopters; however, little research is specific to the effects of helicopter operations on wildlife. A literature review documented in the article "Chop Chop – The Impacts of Helicopter Recreation on Wildlife" [IV-15, IV-16] indicates that "flight altitude, noise output, speed, and approach pattern are the most important factors in determining an animal's reaction to an overflight". Minimum horizontal and vertical clearance recommendations in the literature vary by species, and even vary within an individual species:

- 1,500-foot to 6,560-foot (2-kilometer) clearance above ground level to completely avoid harassment of wildlife [IV-15, IV-16, IV-17, IV-18, IV-19]
- 1,320-foot (402-meter, 0.25-mile) clearance from eagles' nests [IV-15, IV-16, IV-20]
- 330-foot to 984-foot (100-meter to 300-meter) clearance from bighorn sheep habitat [IV-15, IV-16, IV-19]
- 1,476-foot (450-meter) clearance from waterbird habitat [IV-21]

Additionally, the authors of studies on helicopter noise and wildlife recommend that flight paths should be established to minimize interaction with animals, avoid sudden or surprising flight activities near wildlife, and avoid flying directly at animals [IV-15, IV-16]. Flight maneuvering should not include hovering, circling, or pursuing wildlife in any way [IV-20].

Based upon the information summarized above, the following assumptions were made for the evaluation of helicopter overflights at potential effects on species: (1) helicopters flown from 1,500 feet AGL and higher would not adversely affect wildlife; (2) helicopters flown 1,320 feet AGL or higher are not likely to affect any wildlife potentially inhabiting the region; (3) helicopters flown between approximately 984 feet and 1,320 feet AGL are not likely to affect bighorn sheep, but could cause disturbance to raptors and other birds inhabiting the land beneath the helicopter flight corridor; (4) helicopters flown between 300 and 984 feet AGL are more likely to cause disturbance to wildlife potentially inhabiting the land beneath the helicopter flight corridor.

The altitudes at which helicopters would be flown were estimated based on discussions with the helicopter operators, standard operations and procedures for flying in the Las Vegas region, safety, clearance of terrain and obstructions, and discussions with the FAA Flight Standards District Office. Certain procedures can be assumed, such as trying to achieve a 500-foot vertical separation between the helicopter and the highest terrain or obstruction (300-foot minimum when necessary), maintaining a 500-foot vertical separation between helicopters going in opposite directions within the same corridor, and remaining outside of and at least 100 feet below controlled airspace whenever possible. Additionally, it can be assumed that helicopter pilots would aim to achieve an altitude to clear the highest obstruction, and would prefer to maintain level flight whenever possible, rather than flying down into valleys and back up over ridges. The minimum altitudes at which helicopters would

most likely fly along the potential flight corridors are shown on **Exhibit IV-12**. The height above ground level at which the helicopters might be flown in a given area can be determined by subtracting the elevation of the existing terrain or obstruction from the potential flight altitude, in feet above MSL. The Class B airspace often restricts how high helicopter pilots can fly. The different altitudes for the floor, or bottom, of Class B airspace and its boundaries are indicated on Exhibit IV-12.

For chartered helicopter flights to and from the Heliport site that pass over the Sloan Canyon NCA, the Congressional legislation that includes the provision for the transfer of the land to Clark County also establishes the minimum ground clearance (or minimum height AGL), and the location of the potential flight corridor, with exceptions for safety. Such flights would be required to be within the designated 2-mile-wide flight corridor, to be flown at a minimum altitude of 500 feet AGL and 1,000 feet AGL when crossing the western and eastern border of the Sloan Canyon NCA, respectively. The altitudes indicated on Exhibit IV-12 would exceed the requirements in the Congressional legislation[27] for paid flights originating from or returning to the Heliport and passing over the Sloan Canyon NCA.

The following paragraphs provide information related to potential ground clearances for flights passing over the desert bighorn sheep, desert tortoise, bird species, and general wildlife within the Sloan Canyon NCA, the LMNRA, and undeveloped lands outside these two areas, including the Boulder City Conservation Easement area in the Eldorado Valley. Exhibit IV-12 depicts the corridor locations and potential flight altitudes and terrain elevations in the Las Vegas region.

Desert Bighorn Sheep

The Jean, Henderson, and McCullough flight corridors would pass directly over potential habitats for desert bighorn sheep.

- Sloan Canyon NCA:
  - Outbound flights on the McCullough corridor would likely overfly lower terrain with a ground clearance between 1,500 and 2,800 feet AGL, and higher terrain with a ground clearance of approximately 1,000 feet AGL.
  - Inbound flights on the McCullough corridor would likely overfly lower terrain with a ground clearance between 1,800 and 3,300 feet AGL, and higher terrain with a ground clearance of approximately 1,000 feet AGL.

[27] Outbound flights on the McCullough corridor would likely overfly the western boundary of the Sloan Canyon NCA with a ground clearance between 1,200 and 1,500 feet AGL, and the eastern boundary of the Sloan Canyon NCA with a ground clearance between 2,300 and 2,800 feet AGL. Inbound flights on the McCullough corridor would likely overfly the eastern boundary of the Sloan Canyon NCA with a ground clearance between 2,800 and 3,300 feet AGL, and would likely overfly the western boundary of the Sloan Canyon NCA with a ground clearance between 1,700 and 2,000 feet AGL.

Exhibit IV-12

Approximate Helicopter Flight Altitudes and Terrain Elevations Beneath the Overflight Area

Minimum flight altitudes for helicopters traveling along the existing and potential helicopter flight corridors are shown on Exhibit IV-12. Exhibit IV-12 also depicts approximate ground elevations/terrain elevations for areas within the Overflight Area or proximate to the Overflight Area.

- Lake Mead National Recreation Area:
  - Outbound flights on the Henderson corridor[28] would likely cross lower terrain with a ground clearance between 1,800 and 3,000 feet AGL, and higher terrain with a ground clearance of approximately 560 feet AGL (at the ridgeline near the Rendezvous Point).
  - Outbound flights on the McCullough corridor would likely cross lower terrain with a ground clearance between 900 and 3,000 feet, and higher terrain with a ground clearance of approximately 560 feet (when crossing the ridgeline near the Rendezvous Point).[27]
  - Inbound flights on the Henderson corridor would likely overfly lower terrain with a ground clearance between 1,500 and 3,500 feet AGL, and higher terrain with a ground clearance of approximately 870 feet AGL (at the ridgeline northwest of Boulder City) and 1,060 feet AGL (at the ridgeline near the Rendezvous Point).
  - Inbound flights on the McCullough corridor would likely cross lower terrain with a ground clearance between 1,300 and 3,000 feet, and higher terrain with a ground clearance of approximately 1,060 feet (when crossing the ridgeline near the Rendezvous Point).[27]
  - Flights on the inbound-only Strip Railroad and the existing inbound-only Charleston corridors would likely have a ground clearance of approximately 1,500 feet AGL at the ridgeline near the Rendezvous Point, between 2,200 and 3,500 feet AGL above Lake Mead,[29] and approximately 1,150 feet AGL at the western edge of the LMNRA.[27]
  - Flights on the existing outbound-only Tropicana corridor would likely have a ground clearance between 1,000 and 2,000 feet AGL when west and south of Lake Mead, with a ground clearance between 1,300 and 2,800 feet AGL when east of Lake Mead, and with a ground clearance of approximately 560 feet AGL when crossing the ridgeline near the Rendezvous Point.
  - Helicopter overflights of the LMNRA could potentially cause the temporary displacement of wildlife in several locations, although a significant majority of the habitat areas beneath the helicopter flight corridors would not be affected. In particular, three areas within the LMNRA would experience overflights between 500 and 1,300 feet AGL, which may cause the desert bighorn sheep to be startled and move away for a short period of time. These locations are along the ridgeline near the Rendezvous Point where the existing helicopter flight corridors currently crosses, near the higher terrain northwest of Boulder City, and along the western border of the LMNRA.

Bird Species

Helicopter overflights could potentially cause the temporary displacement of some bird species in several locations.

- Sloan Canyon NCA: Three locations at the top of ridgelines beneath the McCullough flight corridor would experience overflights between 1,000 and 1,300 feet AGL, which may cause the temporary displacement of some bird species. Similar to the desert bighorn sheep, bird

[28] Between the western edge of the LMNRA and the Rendezvous point, including over the ridgeline, the Henderson, Jean, and McCullough corridors would mostly follow existing Grand Canyon helicopter flight corridors at the existing flight altitudes.

[29] Based on an approximate elevation of 1,140 above MSL for Lake Mead National Recreation Area per the Lake Mead NRA News Release dated August 19, 2005, http://www.nps.gov.lame/05-046.html.

species would be temporarily displaced during overflights and would move away from overflown areas for a short period of time and would likely return to areas when flights are not overhead.

- Lake Mead National Recreation Area: The McCullough and Jean flight corridors may fly over habitat for several bird species, including the American peregrine falcon and the Southwestern willow flycatcher. Those species are all residents or visitors in the LMNRA and are federally listed species.
  - Outbound flights on the McCullough corridor would likely cross lower terrain with a ground clearance between 900 and 3,000 feet, and higher terrain with a ground clearance of approximately 560 feet (when crossing the ridgeline near the Rendezvous Point).
  - Inbound flights on the McCullough corridor would likely cross lower terrain with a ground clearance between 1,300 and 3,000 feet, and higher terrain with a ground clearance of approximately 1,060 feet (when crossing the ridgeline near the Rendezvous Point).
  - Outbound flights on the Henderson corridor would likely cross lower terrain with a ground clearance between 1,800 and 3,000 feet AGL, and higher terrain with a ground clearance of approximately 560 feet AGL (at the ridgeline near the Rendezvous Point).
  - Inbound flights on the Henderson corridor would likely overfly lower terrain with a ground clearance between 1,500 and 3,500 feet AGL, and higher terrain with a ground clearance of approximately 870 feet AGL (at the ridgeline northwest of Boulder City) and 1,060 feet AGL (at the ridgeline near the Rendezvous Point).[23]
- Flights on the inbound-only Strip Railroad and the existing Charleston corridors would likely have a ground clearance of approximately 1,500 feet AGL at the ridgeline near the Rendezvous Point, between 2,200 and 3,500 feet AGL above Lake Mead,[30] and about 1,150 feet AGL at the western edge of the LMNRA. For these inbound-only corridors, the entire distance between the edge of the LMNRA and the Rendezvous Point would follow the existing Charleston flight corridor at the existing flight altitudes.
- Flights on the existing outbound-only Tropicana corridor would likely have a ground clearance between 1,000 and 2,000 feet AGL when west and south of Lake Mead, with a ground clearance between 1,300 and 2,800 feet AGL when east of Lake Mead, and with a ground clearance of approximately 560 feet AGL when crossing the ridgeline near the Rendezvous Point.

General Wildlife

Considering the potential flight altitudes and terrain elevations depicted on Exhibit IV-12, ground clearances for flights over undeveloped areas outside the Sloan Canyon NCA and the LMNRA are approximated below.

- Although the helicopter flight altitudes would be above 1,300 feet AGL most of the time, wildlife located in higher terrain may be disturbed by helicopters flights below 1,300 feet AGL.

[30] Based on an approximate elevation of 1,140 above MSL for Lake Mead per the Lake Mead NRA News Release dated August 19, 2005, http://www.nps.gov.lame/05-046.html.

- Henderson corridor between the Heliport site and Henderson Executive Airport:
  - Outbound flights would likely be flown with a ground clearance between 1,000 and 1,600 feet AGL for flights over undeveloped areas.
  - Inbound flights would likely be flown with a ground clearance between 1,000 and 2,100 feet AGL.
- McCullough corridor west of the Sloan Canyon NCA:
  - Outbound flights would likely be flown with a ground clearance between 400 and 1,500 feet AGL for flights over undeveloped areas
  - Inbound flights would likely be flown with a ground clearance between 500 and 2,000 feet AGL.
- McCullough corridor between the Sloan Canyon NCA and the LMNRA:
  - Outbound flights would likely be flown with a ground clearance between 900 and 2,800 feet AGL
  - Inbound flights would likely be flown with a ground clearance between 1,200 and 3,300 feet AGL.
- Jean corridor (between the Heliport site and the LMNRA):
  - Outbound flights would likely be flown with a ground clearance between 600 and 1,300 feet AGL
  - Inbound flights would likely be flown with a ground clearance between 1,100 and 1,600 feet AGL.
- Between the undeveloped areas outside the Sloan Canyon NCA and the LMNRA, helicopter overflights would be between 400 and 1,300 feet AGL at some point along the flight corridor.

The degree of wildlife disturbance would depend on several factors, including actual flight altitude, type of helicopter, flight frequency, habitat conditions, weather conditions that affect how sound is propagated, and the species' tolerance for disturbance. As the areas of potential disturbance are concentrated in areas of high terrain, species that are more dependent on high terrain during their life cycle have a greater potential of being disturbed by helicopter overflights.

Helicopter overflights are not likely to disturb wildlife if a minimum of 1,500 feet vertical distance is maintained. Based on assumptions and the preceeding discussion it is noted that helicopter operations on the existing and potential helicopter flight corridors have the potential to temporarily displace wildlife in specific locations under the Proposed Action and No Action alternative. In locations near the Rendezvous Point, where the terrain would cause ground clearances to be less than 1,000 feet AGL, helicopter flight altitudes under the Proposed Action would be the same as existing helicopter flight altitudes and helicopter flight altitudes under the No Action alternative. Helicopter operations would be voluntarily confined to narrow corridors (including the two-mile wide congressionally mandated flight corridor over Sloan Canyon NCA and the North McCullough Wilderness Area) through habitat areas under both alternatives; therefore, the potential areas of disturbance would be limited. Since no hovering activities are likely to occur along existing helicopter flight corridors or would likely occur along potential helicopter flight corridors, the potential duration of any disturbances to wildlife would be brief. While helicopter overflights have the potential to disturb wildlife in specific locations, helicopter overflights are not expected to have a significant impact on wildlife under the Proposed Action or No Action alternative.

4.10.3 Conservation/Mitigation Measures

Where impacts to wildlife and plants are possible as a result of construction, operation, or maintenance of the Proposed Action, measures to reduce or eliminate potential impacts to such resources have been identified. These measures are provided in the Biological Assessment in **Appendix I**.

The CCDOA would encourage helicopter operators to maintain the following clearances (horizontal and vertical), when operationally feasible and safe, to minimize potential effects of helicopter activity on wildlife:

- A minimum distance of 980 feet (300 meters) AGL from desert bighorn sheep habitat. The Sloan Canyon NCA and the River Mountains ACEC contains habitat for the desert bighorn sheep.
- A minimum distance of 1,320 feet (400 meters) from bird habitat. The LMNRA contains multiple BLM-sensitive species, including the Southwestern willow flycatcher.
- A minimum distance of 1,480 feet (450 meters) from waterbird habitat. It is assumed that waterbird habitats exist at Lake Mead and the Clark County Wetlands Park.

4.11 Federally-Listed Threatened or Endangered Species

A project is considered to significantly impact biotic communities, including flora and fauna, if the project: (1) affects water resources, and correspondence received from the USFWS and the jurisdictional state agency indicates substantial damage to wildlife; (2) removes relatively small areas that are sensitive tracts occupying a strategic position in the vicinity, support rare species, or constitute a large percentage of the remaining habitat of a particular kind; or (3) results in permanent loss of habitat of plant communities or wildlife where the remaining habitat is of insufficient size and quantity to support the affected species.

4.11.1 Summary of Findings

The FAA Western-Pacific Region Airports Division notified the USFWS of the preparation of the EA. FAA has initiated formal Section 7 consultation with the USFWS. The FAA has determined the proposed project is likely to adversely affect the federally listed desert tortoise. FAA based this determination on the information in the BA that indicates the project site and the utility corridor is occupied by the desert tortoise.

Biological surveys of the Area of Disturbance and additional survey areas[31] confirmed the presence of the federally listed (threatened) desert tortoise (*Gopherus agassizii*). Construction of the Proposed Action may lead to an incidental taking of the species. Short-term/construction and long-term impacts to the desert tortoise and potential loss of habitat would be mitigated through implementation of conservation measures are provided in the Biological Assessment (see Appendix I).

4.11.2 Environmental Consequences

4.11.2.1 Proposed Action

The temporary and permanent removal of habitat of the federally listed desert tortoise would result from construction of the Proposed Action. 331 acres of habitat removal would be temporary, of

[31] Biologists surveyed intervals of 100, 300, 600, 1200, and 2400 feet around the Area of Disturbance.

which 236 acres of habitat removal would be permanent under the Proposed Action. The permanent reduction of potential habitat would be limited to the construction of the Heliport and the utility corridor right-of-way within the boundary of the Area of Disturbance. Construction activities and increased vehicular traffic throughout the Area of Disturbance could result in direct mortality of individual tortoises and crushing of burrows. Therefore, completion of this project is likely to have some impact to the desert tortoise, but would not jeopardize the continued existence of the species. Further, if the desert tortoise is found onsite, relocation of individuals would be conducted in adherance to federal, State, and/or local regulations and requirements of existing permits, programs (e.g., the Multiple Species Habitat Conservation Plan), and conservation measures, as detailed in the Biological Assessment.[32] Appendix I provides a copy of the Biological Assessment and details consultation conducted with the USFWS during the preparation of this EA.

4.11.2.2 No Action Alternative

Under the No Action alternative, a heliport would not be constructed. Helicopter air tour operators would continue to adhere to the Permit TE 034927-0 for the Clark County Multiple Species Habitat Conservation Plan, issued by the USFWS under Section 10 (s)1(B) of the *Endangered Species Act*.

4.11.2.3 Overflight Area

Potential adverse effects to the desert tortoise associated with helicopter flight corridors are discussed below. Helicopter air tours along the Jean and McCullough flight corridors would overfly locations with known habitat for the desert tortoise within the Sloan Canyon NCA [IV-22] and the Boulder City conservation easement area in the Eldorado Valley.

- Sloan Canyon NCA:
  - Outbound flights on the McCullough flight corridor would likely overfly lower terrain with a ground clearance between 1,500 and 2,800 feet AGL,[33] and higher terrain with a ground clearance of approximately 1,000 feet AGL.
  - Inbound flights on the McCullough flight corridor would likely overfly lower terrain with a ground clearance between 1,800 and 3,300 feet AGL,[34] and higher terrain with a ground clearance of approximately 1,000 feet AGL.
- Boulder City Conservation Easement Area:
  - Inbound and outbound flights on the Jean and McCullough flight corridors would likely overfly lower terrain between 1,535 and 1,600 and feet AGL.

As discussed in Section 4.6.2.3, the specific provision prohibits overflights of the Sloan Canyon NCA by helicopter air tours originating or concluding at the heliport site except within the two-mile

[32] Permit TE 034927-0 for the Clark County *Multiple Species Habitat Conservation Plan* [IV-22] was issued under Section 10 (s)1(B) of the *Endangered Species Act* and became effective on February 1, 2001.

[33] Outbound flights on the McCullough corridor would likely overfly the western boundary of the Sloan Canyon NCA with a ground clearance between 1,200 and 1,500 feet AGL, and the eastern boundary with a ground clearance between 2,300 and 2,800 feet AGL. These ground clearances exceed legislated minimums for flights to and from the Heliport site that overfly the Sloan Canyon NCA.

[34] Inbound flights on the McCullough corridor would likely overfly the eastern boundary of the Sloan Canyon NCA with a ground clearance between 2,800 and 3,300 feet AGL, and the western boundary of the Sloan Canyon NCA with a ground clearance between 1,700 and 2,000 feet AGL. These ground clearances exceed legislated minimums for flights to and from the Heliport site that overfly the Sloan Canyon NCA.

corridor that is between 3 and 5 miles north of the southern boundary[35], and further requires that operations exceed 1,000 feet in altitude over the eastern segments and 500 feet over the western segments [I-6]. Recognizing that noise from aircraft overflights is an existing condition in the North McCullough Wilderness Area (Section 204 of the Act), Congress mandated the McCullough flight corridor to "ensure that such flights steer clear of the most sensitive and special cultural resources and minimized the impact on the majestic bighorn sheep and other wildlife that live in the McCullough Mountains."[36]

Further, given that the desert tortoise does not live in the higher terrains and inbound/outbound flights would be overflown at a minimum of 1,500 feet AGL, no adverse impacts to the desert tortoise in the Sloan Canyon NCA would be expected as a result of the Proposed Action.

As mentioned in Section 4.10.2.3, about 1,500-foot to 6,560-foot (2-kilometer) clearance above ground level is needed to completely avoid harassment of wildlife. Given that Grand Canyon helicopter air tour operators would overflight the Boulder City Conservation Easement Area at altitudes between 1,535 and 1,600 feet AGL, no adverse impacts to the desert tortoise is expected.

4.11.3 Conservation/Mitigation Measures

As mentioned in Section 4.11.2.1, the Proposed Action is likely to adversely affect the desert tortoise, but would not jeopardize the continued existence of the species. Mitigation measures are required per consultation with the USFWS. Measures to minimize or eliminate potential effects to the desert tortoise where potential impacts are possible as a result of construction, operation, or maintenance of the Proposed Action are provided in the Biological Assessment (see Appendix I).

4.12 Invasive, Nonnative Species

According to the BLM's *NEPA Handbook H-1970-1*, invasive, nonnative species are regulated through the *Federal Noxious Weed Act of 1974* [IV-23] and Executive Order 13112, *Invasive Species* [IV-24], which provide for the control and management of invasive, nonnative weeds that injure, or have the potential to injure, local agriculture and wildlife resources, and to interfere with the growth of useful plants. Integrated Weed Management Programs are implemented on BLM-administered land to prevent the spread of invasive nonnative species.

According to Title 30 of the Clark County Unified Development Code, Appendix C, "Plant List", Part 8, Noxious Weeds, common noxious weeds of concern in Clark County include the African rue (*Peganum harmala*), perennial pepperwood (*Lepidium latifolium*), and the salt cedar (*Tamarix spp.*), a noxious weed [IV-25]. Invasive, nonnative species typically spread in disturbed areas, such as trails and mining activities, where there is no competition from other vegetation [III-25].

The Area of Disturbance is either highly disturbed and does not support any vegetation, or is vegetated primarily with native plant species; no noxious weeds were found on the Area of Disturbance. Documented invasive species common in the Las Vegas region include the annual grass red brome (*Bromus rubens*). This invasive species is widespread and occurs throughout much of the Mohave Desert in developed or disturbed areas. Although no noxious weeds were found on

[35] Exhibit I-1 shows the congressionally prescribed corridor over the Sloan Canyon NCA and the North McCullough Wilderness Area.

[36] Cong. Rec. s1540-41

the Area of Disturbance, construction activities are likely to lead to the minor spread of red brome via construction vehicles, construction equipment, and/or construction materials.

See the Biological Assessment provided in Appendix I for measures that would be used to reduce the potential spread of invasive, nonnative species, in the event any such species are encountered during construction. The CCDOA would also prepare and adhere to a BLM approved noxious weed plan.

4.13 Floodplains and Floodways

FAA Orders 1050.1E and 5050.4B state that, if the only practicable alternative would result in a floodplain encroachment, further analysis is required. The analysis should include consideration of ways to minimize potential harm and a determination of whether or not the encroachment is significant. A significant encroachment would cause: (1) a high probability of the loss of human life; (2) substantial cost or damage, including an interruption of aircraft service or loss of a vital transportation facility; or (3) adverse impacts on natural and beneficial values of a floodplain.

As shown on Exhibit III-17, no part of the Heliport site is within a 100–year floodplain. About one-sixth of the proposed communication line from the Jean Exchange Service to the Heliport site would be constructed within a 100-year floodplain. However, installation of the underground communication line would not result in significant encroachment of the floodplain based on the criteria described above.

No adverse impacts in terms of floodplains and floodways would be expected with the Proposed Action compared with the No Action alternative and no mitigation measures would be required.

4.14 Water Quality

According to FAA Orders 5050.4B and 1050.1E, a proposed project would potentially have significant impacts if: (1) water quality standards or permit conditions were violated or could not be satisfactorily mitigated, or (2) critical aquatic habitat sustaining endangered or threatened species would be degraded.

4.14.1 Summary of Findings

Under the Proposed Action, the construction of a (1) septic sewage system or (2) a package treatment plant at the Heliport site would be required and all treatment would be conducted on-site.

Generally, surface paving and construction of impervious surfaces reduces the surface water infiltration area. However, as discussed in Section 4.13, the Heliport site is not located within a floodplain. There are no jurisdictional waters within the Area of Disturbance. Further, construction of Heliport would incorporate stormwater controls and detention basins, as necessary, such that surrounding water quality (e.g., groundwater quality) would be adversely impacted or would cause flooding in the vicinity.

No adverse impacts on water quality, water supply, or stormwater control are expected with the Proposed Action. All necessary precautions would be incorporated in the construction procedures to prevent any potential long-term effects of site development.

4.14.2 Environmental Consequences

4.14.2.1 Groundwater

Proposed Action

The depth of the principal aquifer near the Heliport site is unknown, as no wells have been drilled on this site; the closest drilled well is located about three miles north of the site. The construction of impervious surfaces would likely affect groundwater recharge to the shallow aquifer in a localized area. Construction activities can also affect groundwater when flows are near the surface. Roads, berms, ditches, and the weight of infrastructure have the potential to block, divert, and constrict water movement in the soil. Given the size of the site, any direct impact, such as ponding, would be localized. Alteration of groundwater flow could result in indirect impacts to habitat if water were directed toward or away from the surface, resulting in drier conditions. These effects can potentially be beneficial or adverse as more or less water is available for plants and wildlife, which, in the long-term, could change the species that make up these communities.

The construction of impervious surfaces, fuel tanks, and septic systems or package treatment facility has the potential to affect the quality of groundwater. Impervious surfaces allow for the accumulation of contaminants (e.g., oil and other hydrocarbons) that, when carried by runoff, may infiltrate into the groundwater on- or off-site. About 146 acres of the total 229 acre site were identified as potentially disturbed during construction. Appropriate measures would be incorporated into the design and construction of the Heliport to minimize adverse effects on groundwater.

On the Heliport site, a hydrant fueling system would consist of above-ground storage tanks and underground distribution lines. Proper installation and maintenance of the system would minimize the potential for leakages from the fueling system.

No Action Alternative

Under the No Action alternative, a heliport would not be constructed and no new effects to groundwater quality would be anticipated.

4.14.2.2 Wastewater

Proposed Action

Septic tanks or a package treatment facility would provide wastewater treatment needs at the Heliport site. It is estimated that the total wastewater design flow rate for the Heliport will be about 10,290 gpd in 2017, based on the expected use by 400 County and operator employees and 828 passengers per day [II-3]. A distribution box and the connection/drain piping would be associated with each building. Earthwork-related items for wastewater treatment would include excavation for tanks and installation of special backfill around the drain piping. Proper installation and maintenance of the wastewater system would be ensured to reduce potential for leakage into the surrounding environment. No adverse wastewater impacts are anticipated as a result of the Proposed Action compared with the No Action alternative and no mitigation measures would be required.

No Action Alternative

Under the No Action alternative, although no new facilities would be constructed, wastewater generation to accommodate passengers at McCarran would be at the same or similar levels to those anticipated under the Proposed Action. No increases in wastewater generation would occur beyond what would occur as the number of Grand Canyon helicopter air tour passengers increases over time.

4.14.2.3 Stormwater and Surface Water

Proposed Action

About 45 percent of the Heliport site within the Area of Disturbance would be developed under the Proposed Action. Site development and construction of impervious surfaces (e.g., pavement) generally reduce the surface water infiltration area, which could lead to increased stormwater runoff and quicker flood peaks.

The topography of the Heliport site slopes east to west down a six percent grade with a stream channel flowing northwest across the site. Because the eastern portions of the site are steeply sloped, opportunities for higher velocity runoff would exist, which could result in an increased potential for adverse impacts related to soil erosion and pollutant transport.

Several ephemeral (i.e., temporary) channels traverse the Heliport site. These channels support little vegetation and are isolated from other waters. There are no perennial watercourses within the Heliport site and ephemeral channels do not constitute jurisdictional waters because they are isolated from downstream waters [III-38]. Several ephemeral channels also traverse the northern end of the right-of-way (from east to west) and the southern end of the right-of-way (from west to east). There are no perennial watercourses within the right-of-way; the channels do not constitute jurisdictional waters because they are within and enclosed hydrographic basin with no outlet [III-38].

During construction, the exposure of site soils could create greater potential for mobilization of pollutants and sediments in stormwater runoff in the short-term. Construction-related effects on stormwater volume and quality would be temporary and would be minimized through adherence to federal, State, and local laws and regulations. Construction best management practices that would be implemented to minimize potential construction-related effects are provided in Section 4.20.

Measures to address and accommodate stormwater runoff in the long-term operation of the heliport would be included in the design consistent with federal, State, and local standards. No adverse impacts would be anticipated as a result of the Proposed Action compared with the No Action alternative and no mitigation measures beyond best management practices would be required.

No Action Alternative

Under the No Action alternative, a heliport would not be constructed and there would be no new impacts on water quality beyond what would occur as the number of Grand Canyon helicopter air tour passengers and operations increases over time.

4.15 Hazardous Materials, Pollution Prevention, and Solid Waste

Pursuant to FAA Orders 1050.1E and 5050.4B, statutes that control the handling and disposal of hazardous materials and waste must be considered in analyzing all proposed actions to construct and operate new aviation facilities.

Solid waste associated with a proposed aviation facility may result in significant impacts if there is a potential to exceed the capacity of available disposal facilities. Construction and operation of a proposed project would be determined to have significant impacts if: (1) no compatible waste disposal site exists; (2) the waste disposal site is located within 1.5 km or 3.0 km of the runway/liftoff area (depending on the type of aircraft operated at the heliport/airport); and (3) any waste disposal site that attracts hazardous bird movements into airspace is located within a five mile

radius of a runway/liftoff area [IV-26]. Use of any site listed or potentially listed on the National Priorities List (NPL)[37] would result in a significant impact if hazardous materials and waste were produced or released as a result of project construction. The EPA maintains a list of national sites where releases of hazardous materials and pollutants are known to occur. Sites on the NPL are determined to pose the highest level of human and environmental threat.

4.15.1 Summary of Findings

Recognized environmental conditions[38] could be present at the south edge of the Heliport site and the associated Area of Disturbance in connection with the informal shooting ranges; however, the site is not listed on the NPL as the EPA does not consider spent gun shells as hazardous waste. A Phase I Environmental Site Assessment (ESA) [III-55] recommended environmental studies (e.g., soil testing) to determine the degree of potential lead contamination. In the event that lead contamination is discovered at the site, the soil or soil contaminant would be removed in accordance with federal, State, and County regulations. No RECs were found along the utility corridors.

Given that the forecast number of passengers would be the same under the Proposed Action and the No Action alternative, the amount of waste generated would be the same under both alternatives. Further, generation of hazardous materials and waste from construction of the Proposed Action would not exceed the capacity of available waste disposal facilities. Therefore, no adverse impacts would result from solid waste and wastewater as a result of construction and operation of the Proposed Action compared with the No Action alternative and no mitigation measures would be required.

4.15.2 Environmental Consequences

4.15.2.1 Proposed Action

A Phase I ESA of the Heliport site was completed in August 2005 [IV-27] to assess the potential presence of environmental hazards. A subsequent Phase I ESA of the utility corridors (remaining Area of Disturbance) was completed in December 2007 [III-56]. Review of historical and current federal, State, and local records revealed no sites of environmental concern on the Area of Disturbance. Field reconnaissance revealed no contamination, solid waste, or sources of environmental concern, with the exception of the south edge of the Heliport site, which has been utilized as an informal shooting range and for off-road vehicle sports. Due to the lead from the spent shotgun shells, it was determined that a REC[39] was likely to exist on the Heliport site. The Phase I ESA recommended further environmental studies to determine the degree of potential lead contamination. In the event that lead contamination is discovered at the site, the soil or soil contaminant would be removed in accordance with federal, State, and County regulations. A Phase I ESA of the utility corridors revealed no RECs within the Area of Disturbance.

All residential and commercially generated solid waste in Clark County is collected and disposed of by Republic Services of Southern Nevada into the Apex Regional Landfill, which is located about

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[37] The EPA maintains a list of national sites where releases of hazardous materials and pollutants are known to occur. Superfund sites on the NPL are determined to pose the highest level of human and environmental threat.

[38] According to the Standard E-1527-00, a recognized environmental condition is defined as "the presence or likely presence of hazardous substances as defined by CERCLA, and petroleum products on a property under conditions that indicate an existing release, a past release or a material threat of a release into the ground, groundwater or surface water" [III-49].

[39] See Section 3.15.1 for discussion of a Recognized Environmental Concern (REC).

38 miles northwest of the Heliport site. There would be no difference in the number of helicopter passengers accommodated under the Proposed Action and the No Action alternative. Because the generation of solid waste is directly related to the number of passengers accommodated at a facility, no increase in the amount of solid waste would be expected within the region with implementation of the Proposed Action compared to the No Action alternative.

No landfills are located within a five-mile radius of the Heliport site. Therefore, the Proposed Action is consistent with the recommended guidance in FAA AC 150/5200-33B, *Hazardous Wildlife Attractants on or near Airports* [IV-26]. Solid waste generated from construction of the Proposed Action would be temporary and long-term impacts to local landfill facilities would be negligible compared to waste generated in the Las Vegas region as a whole.

Hazardous materials would be used within the site construction areas, with the potential for direct short-term adverse impacts on soil from spills. The most common substances that may be spilled during project construction include diesel fuel, gasoline, and lubricating oils. Preventative measures, also referred to as best management practices, would be implemented to minimize potential construction-related effects as detailed in Section 4.20.

No adverse impacts would be expected with implementation of the Proposed Action compared with the No Action alternative and no mitigation measures would be required.

4.15.2.2 No Action Alternative

Under the No Action alternative, a heliport would not be constructed and there would be no new impacts in terms of hazardous materials, pollution prevention or solid waste beyond what would occur as the number of Grand Canyon helicopter air tour passengers increases over time.

4.16 Light Emissions

According to FAA Orders 1050.1E and 5050.4B, consideration should be given to potential impacts related to light emissions or visual impacts associated with a federal action. Visual resources are discussed in Section 4.17.

Light emissions are considered significant if a proposed project would create annoyance to people or interferes with their normal activities within the airport or heliport vicinity. Light emissions associated with airports and heliports are typically related to navigational aids, obstruction clearance, and lighting required for security.

4.16.1 Summary of Findings

The Heliport site is located in an area with no adjacent residential or commercial development; light emissions related to the Proposed Action would not result in adverse impacts compared with the No Action and no mitigation measures would be required.

4.16.2 Environmental Consequences

4.16.2.1 Proposed Action

The Proposed Action includes construction of lighting for the terminal and parking facilities as well as a navigational lighting system that would contribute new light emissions to the existing environment of the Heliport site. The Heliport would be located on otherwise undeveloped land that

is closely bordered by Las Vegas Boulevard South and I-15 to the west of the site. Potential sources of light emissions include [I-10]:

- heliport rotating beacon
- ground-level TLOF and FATO area perimeter lights
- TLOF area lights
- taxiway and taxiing route lighting
- lighting at the terminal facilities
- floodlights at parking lots
- security and street lighting

Light emissions from helicopter operations would either be localized to the Heliport site or would occur at sufficient altitude so as not to cause adverse impacts in the Overflight Area. Light emissions from a navigational lighting system, such as the heliport rotating beacon,[40] would not adversely affect existing land uses or the aesthetics of the area.

4.16.2.2 No Action Alternative

The west side of McCarran, where current helicopter operations are based, is surrounded by commercial development, including the Las Vegas Strip, a source of large amount of light emissions from various hotels, casinos, and other development. Major sources of light emissions at McCarran include the terminal complexes and runway lighting. Light also emanates from street lighting in the surrounding areas. Under the No Action alternative, the Heliport would not be constructed and light emissions from helicopter operations at McCarran would not change beyond what would occur as a result of increasing numbers of Grand Canyon helicopter air tour operations.

4.17 Visual Resources

As described in Section 3.16, Visual Resources, the BLM uses the Visual Resource Management (VRM) system to manage visual resources on public lands, analyze and determine visual impacts of proposed activities, and gauge the amount of disturbance of the project area before it exceeds the visual objectives of its VRM class.

VRM objectives for the Heliport site, which is classified as VRM Class III, are, "to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape" [III-59].

4.17.1 Summary of Findings

The proposed heliport would result in a visual contrast that attracts the attention of people traveling along Las Vegas Boulevard South and I-15, but would not dominate the view of the casual observer. Visual analysis indicates there would be moderate landform and vegetation contrasts with the natural landscape, created by form, line and color changes resulting from vegetation and soil disturbances associated with construction activities such as grading. There would also be structurally-related form and line contrasts, produced from the addition of terminal facilities, maintenance facilities, office space, paved roadways, paved parking areas, paved helicopter touchdown, and lift-off areas. Indirect impacts to scenic quality would result from the regular presence of vehicles and helicopters.

[40] Heliport rotating beacons send out a light beam out and up at an angle with three distinct colors to indicate it is a heliport facility (white, aviation yellow and green colored 175 Watt bulbs).

4.17.2 Environmental Consequences

4.17.2.1 Proposed Action

The contrast ratings were recorded on a BLM Contrast Rating Form and used to determine whether or not the level of disturbance associated with the Proposed Action would exceed the VRM objectives for the area. (See **Appendix J** for the Visual Resources Contrast Rating Forms.) The Proposed Action has the potential to moderately impact visual quality in the Area of Disturbance. Pursuant to Section 180 of Public Law 109-115 [I-6], the Secretary of the Interior was directed to convey to Clark County all right, title, and interest of the 229-acre Heliport site. The transfer of land ownership would not result in impacts to scenic quality. However, subsequent development of the proposed Heliport would result in direct and indirect impacts to scenic quality in the short and long term. Visual analysis indicates there would be moderate landform and vegetation contrasts with the natural landscape, created by form, line and color changes resulting from vegetation and soil disturbances associated with construction activities such as grading. There would also be structurally-related form and line contrasts, produced from the addition of terminal facilities, maintenance facilities, office space, paved roadways, paved parking areas, paved helicopter touchdown, and lift-off areas. In addition, indirect impacts to scenic quality would result from the regular presence of vehicles and helicopters.

Although portions of the Proposed Action would be visible to observers from Las Vegas Boulevard South (KOP 1) and I-15 (KOP 2), impacts would not exceed VRM Class III objectives, which allow a moderate degree of change to the natural landscape. **Exhibit IV-13** shows the locations of the two KOPs selected for this analysis. The proposed heliport would result in a visual contrast that attracts the attention of people traveling along Las Vegas Boulevard South and I-15, but would not dominate the view of the casual observer. Several factors were considered in determining the degree of contrast and consistency with Class III objectives: the relationship of the proposed heliport to the surrounding landscape, the length of time the heliport would be in view, and the presence of other dominant features the landscape.

Visual contrasts resulting from the proposed Heliport would be viewed against the backdrop of a steep hillside from both KOPs. Landscape modifications set against solid backdrops are less prominent than those viewed against open backdrops such as the sky. In addition, the Heliport site would be partially screened by low rising hills to the south. Because both KOPs are along travel routes allowing high speeds (55-70 mph), potential viewers would only have brief views of the Heliport site of about one to two minutes. Given the limited viewing time, the visual contrast is of less concern then it would be from a static KOP, such as an overlook or trailhead. Finally, the development present in the Las Vegas region is the dominant feature on the landscape from KOP 2. The converging lines of the mountain ridges, roads and fence lead the viewer's eye north toward that development and away from the proposed Heliport.

Although BLM VRM class objectives would not apply to lands once transferred, the moderate changes to the landscape that would result from construction of the Heliport would be consistent with VRM Class III objectives.

4.17.2.2 No Action

Under the no-action alternative, the proposed heliport would not be constructed and there would be no impacts to scenic quality in the Area of Disturbance.

Exhibit IV-13

Key Observation Points

Exhibit IV-13 depicts the location of the key observation points that were used in the visual resources assessment. Photographs showing views from the key observation points are included on Exhibit IV-13. Highways, roads, and other cartographic features are also displayed on Exhibit IV-13.

4.18 Natural Resources and Energy Supply

According to FAA Orders 1050.1E and 5050.4B, a proposed project would have significant impacts on natural resources and energy supply if the project would: (1) substantially increase the use of natural resources that are in short supply; (2) significantly increase fuel consumption due to changes in aircraft or ground vehicle use; and, (3) substantially change stationary facilities where demand exceeds local supplies of natural resources and energy.

The effects of airport/heliport development on energy and natural resources are generally related to the amount of energy required for stationary systems, such as terminal building heating and cooling systems, airfield lighting systems, and the movement of aircraft and ground vehicles. The effects on natural resources typically relate to basic materials used for construction, such as gravel and fill dirt. For most actions, changes in energy or consumption of other natural resources would not result in adverse impacts unless demand were to exceed supply.

4.18.1 Summary of Findings

As the numbers of enplaned passengers and helicopter operations are anticipated to increase in the future under the Proposed Action or No Action alternative, implementation of the Proposed Action would not result in a substantial increase in the use of fuel as a result of the number of operations or ground trips, but the use of aircraft fuel would increase as a result of longer flight distances and the use of automotive fuel would result because of the longer distances required to transport passengers between the Heliport and the Las Vegas Strip. These increases would not be considered significant. Construction of the Heliport site would also require the use of natural resources; however, these resources are not unique or in short supply in the Las Vegas region.

The Proposed Action would not adversely impact supplies of natural gas, electricity, or fuel compared with the No Action alternative, because consumption rates would not adversely impact regional supply of natural resources and energy supply.

4.18.2 Environmental Consequences

4.18.2.1 Proposed Action

Implementation of the Proposed Action would require the use of natural resources for construction, including the use of common building materials, such as asphalt, concrete, steel, and base/sub-base materials, none of which is of a unique resource or in short supply in the Las Vegas region. Energy used during construction would primarily be limited to fossil fuels for associated equipment.

The nearest Nevada Power Company utility is located in Sloan along Las Vegas Boulevard South. Although the capacity of some existing power lines would need to be increased, the power supply source for the region would not change or be adversely affected due to implementation of the Proposed Action.

The total number of helicopter operations is expected to be the same for the Proposed Action and the No Action alternative. Grand Canyon air tour operators would also continue to use Jet-A fuel for their helicopters; only Jet-A fuel will be made available at the Heliport. However, helicopters would consume more fuel operating to and from the Heliport site and the Rendezvous Point than to and from McCarran and the Rendezvous Point, because of the longer flight distances. Increases in Jet-A fuel consumption under the Proposed Action would be negligible considering the quantity of Jet-A

fuel dispensed at McCarran. Demand for Jet-A fuel under the Proposed Action would not exceed the available supply.

Diesel fuel and gasoline would be consumed by limousines and buses and ground service equipment used on the Heliport. Fuel consumption would be higher under the Proposed Action than the No Action alternative, because the distance from the Heliport site to Caesars Palace[41] is about 15 miles longer than the distance from McCarran to Caesars Palace. Also, people would not have access to public transit under the Proposed Action, because the Heliport site does not have bus service and none is planned. Visitors of the Heliport are normally transported to the site via company vans, limousines, shuttle buses, or other modes of transportation provided by each operator, as provided to and from McCarran and the Las Vegas Strip. Increases in diesel and gasoline consumption under the Proposed Action would be negligible considering the quantity of fuel dispensed in the Las Vegas region. Demand for automotive diesel and gasoline fuel under the Proposed Action would not exceed the available supply.

4.18.2.2 No Action Alternative

Under the No Action alternative, a heliport would not be constructed and Grand Canyon helicopter air tours would continue to primarily operate from facilities on the west side of McCarran. There would be no change to existing helicopter facilities at McCarran under the No Action alternative. The Nevada Power Company would continue to supply electricity and the Southwest Gas Corporation would continue to supply natural gas to McCarran and surrounding areas. The capacity of existing utility companies who supply electricity and gas to McCarran is adequate to accommodate forecast levels of Grand Canyon helicopter operations and passengers under the No Action alternative.

4.19 Secondary (Induced) Impacts

FAA Orders 1050.1E and 5050.4B define secondary or induced impacts as "shifts in patterns of population movement and growth, public service demands, and changes in business and economic activity to the extent influenced by the airport development." Secondary impacts are generally not considered significant unless significant impacts are identified in other impact categories, especially noise, land use, or direct social impacts. Specifically, secondary or induced impacts are considered significant if a proposed project influences a substantial shift in population traffic patterns and growth, public service demands (e.g., water or power services), or business and economic activity. Typically, secondary impacts are a byproduct of impacts to other resource impact categories, such as air emissions and increased noise.

4.19.1 Summary of Findings

No adverse secondary or induced impacts are expected with the Proposed Action compared to the No Action alternative and no mitigation measures would be required.

[41] As discussed in Section 2.4.1, Caesars Palace, located at the intersection of Las Vegas Boulevard South and Flamingo Road, was designated as the central location on the Las Vegas Strip from which passengers are picked up to existing Grand Canyon air tour operator facilities at McCarran.

4.19.2 Environmental Consequences

4.19.2.1 Proposed Action

As discussed in Sections 4.1 and 4.4, there would be no significant changes in aircraft noise exposure and no adverse impacts to local or regional air quality as a result of implementing the Proposed Action. Implementation of the Proposed Action would address concerns related to noise from helicopter overflights along the existing flight corridors followed by Grand Canyon helicopter air tours.

As described in Section 4.2, much of the land in the vicinity of the Heliport is managed by the BLM and is outside the BLM disposal area; and land recently annexed by the City of Henderson north of the Heliport site boundary is mostly undeveloped (e.g., a GoKart facility, billboards). No major residential or commercial developments are planned at this time. Further, as the Heliport would specifically serve tourists visiting the Las Vegas region (and the Grand Canyon via helicopter air tours), no new commercial or residential development in the vicinity of the Heliport is anticipated as a result of the Proposed Action.

No substantial shifts in population movement and growth or changes in business and economic activity are anticipated as a result of developing the Heliport; no adverse secondary impacts are anticipated.

Utilities to the site would be constructed in a manner consistent with standard practices of the utility providers. However, it is not anticipated that provision of utilities to the Heliport site would result in development beyond what would already occur.

4.19.2.2 No Action Alternative

Under the No Action alternative, a heliport would not be constructed and no adverse secondary impacts would be anticipated.

4.20 Construction Impacts

In accordance with FAA Orders 5050.4B and 1050.1E, specific construction impacts that could generate adverse environmental impacts must be addressed in an EA, including: (1) noise from construction equipment on site and while delivering materials; (2) air pollutant emissions from construction equipment and materials delivery (see Section 4.4); and (3) water pollution from soil erosion and stormwater runoff (see Section 4.14). According to FAA Order 5050.4B, construction impacts are considered temporary and of lesser magnitude than long-term impacts of the operation of a proposed action.

4.20.1 Summary of Findings

Construction of the Heliport and utility corridors would be conducted in accordance with federal, State, and local laws and regulations, including FAA guidance contained in AC 150/5370-10. Construction-related effects are anticipated; however most would be temporary and could be minimized through construction best management practices (BMPs) and other preventative measures documented in Section 4.20.3. No significant construction-related effects are expected with the Proposed Action and no specific mitigation measures are required.

4.20.2 Environmental Consequences

4.20.2.1 Proposed Action

Construction of the Heliport and installation of the utilities (including power, communications, and water) would include above and below-ground drilling, boring, and/or trenching for cables, pipelines, power poles, and concrete berms, ditches, and culverts on about 331 acres of land would be temporarily used for construction of the Proposed Action.

- **Electricity**:
  - About 15,800 feet of new 3-phase main line above-ground, going below near the Heliport. The new lines would generally follow the ROW of Las Vegas Boulevard South.
  - Upgrade of about 24,200 feet of existing power lines, generally between Lake Mead Drive and Sloan
- **Communication**: About 52,000 feet of 100-pair underground telecommunication cables would connect the Heliport site to the Jean Exchange service area. The new communication lines would be constructed generally within the right-of-way of Las Vegas Boulevard South from Jean to the Heliport.
- **Water**: A water pumping station would be constructed near Sloan to pump water from a reservoir to water tank on the Heliport site; about 15,000 feet of water main from the Sloan pump station to the Heliport site. The water main would be constructed generally within the right-of-way of Las Vegas Boulevard South from the Sloan pump station to the Heliport.

Operators of construction vehicles and equipment and construction workers working nearby may be exposed to high levels of noise from various types of construction equipment. Appropriate measures according to federal, State, and local regulations would be taken to protect these operators and workers from excessive noise exposure. Areas surrounding the Heliport site are undeveloped; therefore, no residential areas would be exposed to significant levels of construction noise.

Construction activities would increase the short-term potential for impacts to wildlife within the construction area. Short-term/construction fish, wildlife, and plants and federally listed threatened and endangered species would be mitigated through implementation of conservation measures discussed in Section 4.10 and Section 4.11, respectively. Construction activities would also increase the potential for the spread of Nevada-designated exotic and/or noxious weeds outside of the Area of Disturbance. Considerations to minimize the potential spread of weeds during construction are detailed in the Biological Assessment provided in Appendix I; invasive nonnative species are also discussed in Section 4.12.

Hazardous materials would be used within the site construction areas, with the potential for direct short-term adverse impacts on soil from spills. Preventative measures, also referred to as best management practices, would be implemented to minimize potential construction-related effects as detailed in Section 4.20.3.

Site construction activities, including grading, trenching, boring, and drilling, could also increase the potential for indirect short-term adverse impacts from soil erosion, stormwater runoff, and subsequent sedimentation in those areas where construction would disturb surface soils.

Construction related impacts from wind-borne fugitive dust are discussed in Section 4.4. It is noted that air emissions from construction activities would be below *de minimis* thresholds.

4.20.2.2 No Action Alternative

Under the No Action alternative, the Heliport would not be constructed; accordingly, there would be no construction-related impacts.

4.20.3 Construction Best Management Practices

Construction BMPs would be implemented to minimize potential construction-related effects. Construction-related effects are considered temporary and can be minimized through consideration and adherence to federal, State, and local laws and regulations, including guidance in FAA AC 150/5370-10, *Standards for Specifying Construction of Airports*. BMPs that would be implemented include:

- **Spill Prevention, Control, and Countermeasures Plan** – The potential for hazardous material spills within the construction site could be minimized through implementation of a spill prevention, control, and countermeasures plan. The plan would restrict the location of fuel and other hazardous materials storage, and would restrict the locations for construction vehicle maintenance within the construction area. The plan would also provide procedures and recommended materials to contain and clean up hazardous on-site spills, should they occur.
- **Stormwater Pollution Prevention Plan** – The potential for stormwater runoff and subsequent soil erosion and sedimentation could be minimized through implementation of a stormwater pollution prevention plan. The plan should be able to be modified, if needed, to incorporate BMPs to meet the requirements for permit coverage under the NPDES. The measures described in the plan would be designed to reduce or minimize the adverse impacts from runoff-caused soil mobilization and sedimentation.
- **Dust Control Plan** – Specific procedures for the control of dust generated by construction activity are described in Section 94 of the *Air Quality Regulations* [IV-28] adopted by the Clark County Department of Air Quality and Environmental Management. Some examples of these best management practices to reduce fugitive dust from construction activity are:
  - Apply dust suppressant (water) throughout the construction site to stabilize soil
  - Establish traffic control in the construction area
  - Use tarps or other suitable enclosures on haul trucks
  - Implement a site-specific dust reduction plan – required for projects of 10 acres or more
- **Exotic/Noxious Weed Plan** – The potential spread of weeds during construction-related activities can be minimized as described in Section 4.12.
- **Wildlife Protection** – Construction activities that could adversely affect wildlife that inhabit and/or stray into the Area of Disturbance can be minimized, as described in Section 4.10.
- **Wildfire Prevention** – Measures to reduce wildfire potential during construction of the Heliport would include:
  - Restricting construction during conditions of extreme fire danger
  - Storing hazardous and flammable materials in accordance with the manufacturer's recommendations
  - Collecting and storing combustible trash in containers with lids

- Maintaining basic fire-fighting equipment on-site

4.21 Consistency with Plans, Goals, and Policies

The Heliport site is located in unincorporated Clark County within the South County Planning Area. Construction of the Heliport and associated utility extensions would be compatible with the County's South County Planning Area land use designation for the site.

The Heliport site is located on federal land managed by the BLM; however the land would be transferred to Clark County ownership as part of the Proposed Action. Construction of the Proposed Action would be consistent with the *Southern Nevada Public Land Management Act of 1998* (SNPLMA), as amended by the *Clark County Conservation of Public Land and Natural Resources Act of 2002* [III-2]. Construction of the utilities within the proposed utility corridors would be consistent with BLM's *Las Vegas Resource Management Plan and Final Environmental Impact Statement* (Las Vegas RMP/EIS) [I-18].

As described in Section 4.11, desert tortoises found on-site during construction and long term operation would be removed and relocated from the area and placed with the Desert Tortoise Conservation Center; such actions would adhere to the USFWS's *Desert Tortoise (Mojave Population) Recovery Plan* and the Multiple Species Habitat Conservation Plan.

Additional surface vehicle miles traveled attributable to Heliport operations along the I-15 south corridor, as described in Section 4.3, would be negligible compared with forecast surface vehicle miles traveled in the region. Further, construction of a heliport at the Heliport site and utility extensions would conform with the Regional Transportation Commission's Regional Transportation Plan/Transportation Implementation Plan.

As discussed in Section 4.4, construction of the Heliport would conform with applicable SIPs.

There are no known conflicts between construction of the Proposed Action and the objectives of federal, State, regional, local and Tribal land use plans, policies, or controls for the study areas.

4.22 Cumulative Effects

The CEQ regulations for implementing NEPA define a cumulative effect as "the impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency or person undertakes such other actions." The regulations further state that "cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" [IV-29]. CEQ regulations require an analysis of cumulative effects because environmental conditions are generally the result of an amalgamation of varying factors. While effects on resources resulting from single actions are considered on their own, it is also necessary to examine effects from a variety of sources that may, in combination, result in amplified effects to the surrounding environment. Because each resource category has different attributes, data used to assess cumulative effects may vary, covering different periods of time and geographical areas of study.

4.22.1 Projects Considered in Cumulative Effects Analysis

According to FAA Order 5050.4B, paragraph 26, in preparing an EA for a proposed federal action, it is necessary to consider the cumulative effects of the Proposed Action and those of subsequent related actions. These actions are generally of three types: (1) connected actions, meaning actions

that may be closely related or interdependent; (2) incremental actions, which, when viewed in conjunction with other proposed actions, may result in cumulative effects; and (3) similar actions, which, when viewed with other reasonable foreseeable or proposed agency actions, have similarities such as common timing or geography.

4.22.1.1 Temporal and Spatial Boundaries

Temporal and spatial boundaries were delineated to ascertain appropriate parameters for analysis of cumulative effects. The spatial boundary used for the identification of projects to be considered under cumulative effects is described in Section 3.17 as the area within one mile of the Heliport site or along or adjacent to the proposed utility corridors. Other notable known projects outside of this boundary, but near the Heliport site or utility corridors that could have the potential to result in cumulative effects with construction and operation of the Heliport were also identified. The three investigative boundaries discussed in Section 3.2 were used for the actual assessment of cumulative effects, as appropriate, for the various impact categories. The Overflight Area includes portions of Clark County and the LMNRA that currently experience helicopter and fixed wing aircraft overflights and that could experience helicopter overflights under the Proposed Action, as defined by the existing and potential helicopter flight corridors. The Area of Disturbance for the proposed Heliport includes land within the Heliport site property boundary and utilities to the Heliport site. As appropriate and as the information is available, the potential areas of disturbance for other projects are identified. The Proposed Action, along with past, present, and reasonably foreseeable future projects, were analyzed for cumulative impacts generally within the context of these investigative boundaries, depending on the resource category being considered.

The temporal scope for purposes of the cumulative effects analysis reflects different time periods relevant to conditions for past, current, and reasonably foreseeable future projects. The Las Vegas region has experienced significant growth in the past, and continues to experience growth, transforming the overall area from primarily rural to a more urbanized environment. Past actions are reflected in existing environmental conditions as described in Section 3.17, including actions that occurred between 1995 and 2006. Present conditions reflect actions that are occurring or will occur in 2007 and 2008. Reasonably foreseeable future actions are those actions expected to occur between 2009 and 2020.

4.22.1.2 Past Actions (1995 – 2006)

CEQ regulations state that: "The availability of data often determines how far back past impacts are examined. Although certain types of data may be available for extensive periods in the past, other data may be available only for much shorter periods. Because the data describing past conditions are usually scarce, the analysis of past effects is often qualitative." For purposes of this analysis, conditions within the Las Vegas region are generally described qualitatively as they relate to past projects. The temporal boundary for assessment of past actions is 1995 through 2006.

Clark County encompasses nearly 8,000 square miles and five incorporated cities, including Henderson, North Las Vegas, Las Vegas, Mesquite, and Boulder City. The population of Clark County increased more than 80 percent between 1990 and 2006, from approximately 770,000 to an estimated 1.9 million. While most of this growth has been centered on Las Vegas, other areas of Clark County have also experienced population increases, particularly the City of Henderson. Most of the economic growth in recent years has resulted from expansion of the gaming and tourist industries in Las Vegas. As the population of the County has grown, housing, hotel, hospital, school, and associated infrastructure developments have also increased. The local and regional

transportation systems have also been expanded, with the construction of more roads and larger and/or reconfigured commercial and general reliever airports. As stated in Section 3.17, there has not been significant development near the proposed Heliport site, even in recent years. The most recent development was the GoKart/Sloan site along the east side of I-15 near the Sloan Interchange that was completed in approximately 1995. Interstate 15, Las Vegas Boulevard South, and the Union Pacific Railroad tracks that pass near the site have been in place for some time and their construction is not likely to have present impacts. Therefore, the period from 1995 to 2006 is considered appropriate for the consideration of cumulative effects of past actions for this EA.

4.22.1.3 Current/Present Actions (2007 – 2008)

For purposes of this cumulative effects analysis, "current" refers to projects that were initiated or will be under construction in 2007 and 2008. These projects would occur independently of the Southern Nevada Regional Heliport. As identified, projects relevant to the Area of Disturbance are listed in Table III-13.

4.22.1.4 Reasonably Foreseeable Future Actions (2009-2020)

Based on key indicators of economic growth in the region, including gaming revenues, convention attendance, hotel/motel room demand, and construction activity, further development of infrastructure within the region is anticipated. In the future, these industries are expected to continue to generate substantial economic growth in the Las Vegas region, although some economic diversification is also expected. It is anticipated that numerous projects will be undertaken in Clark County as the County continues to grow. Development of additional infrastructure, including housing, hotels, hospitals, schools, and roads, will be required. These improvements would occur independent of the Heliport. Specific projects for which development is known or anticipated to begin within the 2009 through 2020 timeframe are presented in Table III-13. Considering the recent annexation of land within the BLM disposal area by the City of Henderson and other potential projects within southern Clark County, including the construction of the supplement commercial service airport in the Ivanpah Valley, which would be completed in 2017 as currently proposed, the period from 2009 through 2020 was considered a reasonable timeframe to ensure that the potential cumulative effects of known projects are considered.

4.22.2 Analysis of Cumulative Effects

The scope identified for cumulative effects consideration can vary by resource, just as geographic study areas for different resource categories may vary. In general, those projects that are thought to affect a resource are considered, and are influenced by such factors as jurisdictional limitations, unique characteristics pertaining to particular resources, importance of the resource in a local and regional setting, and the distance that impacts within that resource can travel. It is important to note that the effects of future projects are often difficult to estimate or predict until detailed plans are developed and any requisite analyses are conducted. Therefore, only anticipated effects that are known at this time were included in this analysis.

4.22.2.1 Noise

The investigative boundary for the consideration of adverse noise impacts is the Overflight Area that includes a 1-mile buffer around the Heliport site and the flight corridors to and from the Rendezvous Point. As discussed in Section 4.1, there would be no significant noise effects from helicopter operations at the Heliport site or beneath the related flight corridors. All of the projects that are currently being completed or are planned to be completed in the foreseeable future are anticipated to

produce temporary construction-related noise. Due to the distance between the location of these projects and the Heliport site and the distance from the Heliport site to the nearest noise-sensitive development, no short or long-term effects are anticipated. As none of the past, current, or reasonably foreseeable future actions are related to helicopter operations, they are not anticipated to contribute to an increase in helicopter noise or operations at the Heliport site.

Much of the Overflight Area experiences overflights from existing aircraft operations from McCarran International Airport, Henderson Executive Airport, Jean Airport, Boulder City Municipal Airport, and other aviation facilities in the region. Ambient noise levels were measured at certain locations within the Overflight Area, as described in Section 3.5.2.3. Measured noise levels included noise from aircraft overflights. As described in Section 4.1.2.3, anticipated noise exposure from helicopter operations along the potential flight corridors associated with the proposed Heliport would be less than the measured ambient noise levels. Consequently, the cumulative effects of the addition of noise from helicopters operating on the potential flight corridors would not be significant.

The CCDOA has proposed the construction of a supplemental air carrier airport in the Ivanpah Valley, about 15 miles south of the proposed Heliport site. The FAA and the BLM are joint lead agencies preparing an Environmental Impact Statement (EIS) for the proposed Southern Nevada Supplemental Airport, under the *Ivanpah Valley Airport Public Lands Transfer Act of 2000* [IV-30] and the *National Environmental Policy Act of 1969*. Although final flight corridors to and from the proposed supplemental airport have not been established, a preliminary review indicated that flight corridors would typically not overlap directly with the potential helicopter flight corridors, with the possible exception of the Jean corridor. This lack of overlap is largely due to the need to separate aircraft operations at the proposed airport from operations at McCarran International Airport and other airports in the region. Although information is not available to assess the potential cumulative noise effects from helicopter operations at the Heliport combined with operations at the proposed supplemental airport as part of this EA, the EIS will include an assessment of cumulative impacts.

Based upon available information, when the effects of the Proposed Action are combined with the effects of other past, current, or reasonably foreseeable future actions, significant cumulative noise effects are not anticipated.

4.22.2.2 Air Quality

As described in Section 3.8.2, Clark County is divided into 13 airsheds. Past, present, and reasonably foreseeable future actions may result in effects on air quality. The projects listed in Section 3.16 may result in increased pollutant emissions, thereby affecting air quality. Projects that may affect air quality include the construction of improvements proposed by the Las Vegas Valley Water District, the I-15 South project between the Sloan Road and Tropicana Avenue interchanges, the proposed Southern Nevada Supplemental Airport, the proposed aggregate mining operation located east of Sloan and south of the City of Henderson, and anticipated development within land annexed to the City of Henderson north of the proposed Heliport site.

As discussed previously, portions of Clark County are currently designated as being nonattainment for three federally regulated pollutants: CO, PM_{10}, and ozone. There has been a downward trend in CO emissions in Clark County in the past ten years due to several factors, including increased federal standards for automobile emissions and implementation of control measures included in the CO SIP[42]. It is expected that this trend will continue into the future. PM_{10} emissions in Clark County

[42] The CO SIP is also developed to account for growth and construction activities in the Las Vegas region.

were static for most of the 1990s but recently there has been a downward trend in PM_{10} emissions. It is expected that, in the future, the County will be required to limit emissions of NO_X and VOC, the precursors to ozone formation. Aviation activity is a source of NO_X. Therefore, it is assumed that, in the future, actions to reduce such emissions will be required. However, the steps that will be necessary to reduce emissions have not yet been identified.

Past actions identified on Table III-13 occurred well in the past and no further construction activities are anticipated on those sites. The GoKart/Sloan site is no longer in operation and activity at the vehicular storage and billboard site is unknown, but likely to be minimal. Construction activities related to other known projects in Clark County would be a source of CO, $PM_{10,}$ and NO_X emissions, but construction-related emissions would be temporary. Construction of the water pipeline and Sloan 2745 Zone Reservoir to be undertaken by the LVVWD and potentially the widening of I-15, the latter of which is subject to a separate review under NEPA, would potentially overlap with the construction of water and electrical utilities associated with the Proposed Action. The construction of the Reservoir and associated pipeline and the widening of I-15 would occur regardless of whether the Proposed Action is undertaken. Construction of utilities and other infrastructure to accommodate growth within the County are accounted for in the preparation of SIPs for the various pollutants. As stated in Section 4.4, construction and operational emissions associated with the Proposed Action including the construction of the utility extensions for the Proposed Action, would not exceed established *de minimis* thresholds for criteria pollutants of concern. Emissions associated with both the mining operations and the proposed development of the supplemental commercial service airport will be considered and disclosed as part of separate ongoing environmental reviews under NEPA, which will account for construction and operational emissions associated with those facilities. The extent and timing of development within the land annexed to the City of Henderson is unknown at this time. Regardless, each of those actions will be subject to the applicable Clark County Department of Air Quality and Environmental Management regarding construction activities within the County.

Based on the information provided in the previous paragraph, along with steps that the Clark County Department of Air Quality and Environmental Management has taken through implementation of plans and enforcement of guidelines, it is not anticipated that the Proposed Action, in combination with other foreseeable projects, would result in adverse cumulative effects to regional air quality.

4.22.2.3 Compatible Land Use

As discussed in Section 4.2, the Proposed Action would not have any significant effects on compatible land use within the Area of Disturbance or the Overflight Area investigative boundaries. All of the land exposed to DNL 65 would be confined to the Heliport site or McCarran for both future analysis years (2011 and 2017). The construction of utility corridors would not result in adverse effects on compatible land use along or adjacent to the utility corridors.

Based on the information provided in the earlier sections referenced above, and the foreseeable projects listed in Table III-13, construction and operation of the Heliport would have no effect on any noise sensitive land uses. The Heliport site is located outside of the BLM disposal area. Future development around the Heliport site would be limited in the future as the surrounding land is publicly managed by the BLM. Potential development may occur in the future in the West Henderson Planning Area. Because the West Henderson Planning Area was recently annexed by the City of Henderson, there are no updates to the land use plans; future land use plans prepared by the City of Henderson should reflect the Heliport site. As described in Section 4.22.2.1, although

information is not available to assess the potential cumulative noise effects from helicopter operations at the Heliport combined with operations at the proposed supplemental airport in the Ivanpah Valley as part of this EA, the EIS for the proposed supplemental airport will include an assessment of cumulative impacts and the potential for compatible land use impacts. As described, it is not anticipated that aircraft flight tracks to and from the proposed airport would directly overlap with the flight corridors associated with the proposed Heliport with the possible exception of the Jean flight corridor. None of the other projects listed in Table III-13 are of a nature that would be likely to result in cumulative effects on compatible land use in conjunction with the construction and operation of the proposed Heliport.

4.22.2.4 Construction Impacts

Construction activities from past projects within and adjacent to the Area of Disturbance have occurred and no further construction related impacts would be anticipated. Several projects are scheduled for construction in the area presently or in the reasonably foreseeable future, including the LVVWD Sloan 2745 Zone Reservoir and associated water lines, the mining operation, the widening of Interstate 15, and the proposed supplemental airport in the Ivanpah Valley. With the exception of the LVVWD projects, which have received approval, these projects are in the planning or environmental evaluation stages and until final construction documents are completed, it is not possible to quantify the specific cumulative effects that may arise from construction activities. However, it is believed that, with implementation of appropriate best management practices, it is unlikely that adverse construction-related cumulative effects would result from construction of these other projects.

4.22.2.5 Department of Transportation, Section 4(f) Lands

As discussed in Section 4.6, no significant effects to DOT Section 4(f) lands are anticipated under the Proposed Action within either the Area of Disturbance or the Overflight Area. Predicted noise exposure levels resulting from helicopter operations would not exceed the FAA criterion of significance of DNL 65 either from noise at the Heliport or beneath the Overflight Area and noise levels from Grand Canyon helicopter air tours on the potential flight corridors would not otherwise be anticipated to affect the use of DOT Section 4(f) properties. Given the nature of the past and present projects considered and listed in Table III-13, no cumulative effects from those actions and the Proposed Action on DOT Section 4(f) lands would be anticipated. As described in Section 4.22.2.1, although final flight tracks to and from the proposed supplemental commercial service airport in the Ivanpah Valley have yet to be determined, an initial review determined that only the flight Jean corridor would have the potential for overlap with preliminary flight tracks to and from the proposed supplemental airport. The effects of the construction and operation of the proposed mining operation are unknown at this time; however, any such effects on DOT Section 4(f) properties would require mitigation as part of obtaining environmental approval for that project. Therefore, it is not anticipated that the effects of construction and operation of the Heliport, once combined with the effects of past projects, current projects, or reasonably foreseeable future actions, would result in adverse cumulative effects to DOT Section 4(f) lands.

4.22.2.6 Fish, Wildlife, and Plants

Implementation of the Proposed Action would result in permanent loss of vegetation and potential wildlife habitat from grading and other construction activities associated with site and utility preparation within the Area of Disturbance. There may be some disturbance to animals in specific locations beneath the Overflight Areas, but these effects are considered to be less than significant.

As stated in Section 4.10, minor impacts to wildlife and plants are anticipated on the Area of Disturbance. Potential effects could be minimized, as outlined in Section 4.10.3.

Past actions listed in Table III-13 have also resulted in the loss of vegetation and potential wildlife habitat. As described in Table III-13, the GoKart/Sloan facility occupies a 49-acre site, although the actual area of the site that is disturbed is unknown. Similarly, the vehicle storage and billboard site occupies about 4.5 acres, although the actual area of the site that is disturbed is unknown. Notwithstanding, due to the limited nature of those actions and the distance from the actual Heliport site, it is not anticipated that there would be an adverse cumulative effect on these resources from the Proposed Action, considered in combination with these past actions. Any loss of vegetation and potential wildlife habitat associated with the proposed LVVWD reservoir and associated water lines have been addressed and will be addressed as appropriate as part of that action. Three future projects – the proposed mining operation, the proposed supplemental airport in the Ivanpah Valley, and the anticipated development within land annexed by the City of Henderson – have the potential and would likely result in the permanent loss of vegetation and potential wildlife habitat, although the actual effects are unknown at this time and will be assessed and disclosed as part of ongoing or future environmental approval processes. As part of those processes, the potential for cumulative effects of those and other projects will be considered, as appropriate. However, it is anticipated that with implementation of conservation measures for the Proposed Action, as described in Section 4.10.3, and similar conservation measures that would be applied to the other future actions, there would not be significant cumulative effects in terms of permanent loss of vegetation and wildlife habitat.

Within the Overflight Area, overflights from aircraft operating at other facilities in and around Clark County already occur, as described in Section 4.22.2.1. Of the actions listed in Table III-13, only the proposed commercial service airport in the Ivanpah Valley would have the potential to introduce additional overflights over portions of the Overflight Area. The actual effects of these overflights will be addressed in the ongoing EIS for that airport. As described in Section 4.10, the potential effects of helicopter overflights on fish, wildlife, and plants associated with the Proposed Action are considered to be less than significant and the activity associated with the proposed airport would result in similar types of overflights and effects that already result from existing aircraft operations. Therefore, it is not anticipated that cumulative effects within the Overflight Area would be, considering the Proposed Action in conjunction with the construction and operation of the proposed airport.

4.22.2.7 Federally Listed Threatened and Endangered Species

According to the BA, the federally listed desert tortoise occupies the Area of Disturbance related to the proposed Heliport site and the utility corridors. Based on this information, the FAA has determined that the Proposed Action is likely to adversely affect the federally listed desert tortoise. As growth and development in the region continues and associated recreation, and other land uses continue to rise, the available habitat for biotic resources is reduced and indirect impacts from noise, pollution, and general ecosystem alteration increase.

However, Clark County has implemented conservation measures and would continue to attempt to minimize potential effects arising from current and reasonably foreseeable future actions through various means, including desert tortoise relocation programs, the incidental take permit process, and the Multiple Species Habitat Conservation Plan. In addition, developers are required to conduct site surveys to catalog species and to pay species relocation fees to the County in the event that such action is required. The Conservation Plan has applied to past projects and will continue to apply to

current and reasonably foreseeable future actions. Therefore, the effects of construction of the Heliport, combined with the effects of past projects, current projects, or reasonably foreseeable future actions, once minimized, are not anticipated to result in adverse cumulative effects to federally listed threatened and endangered species.

4.22.2.8 Floodplains and Floodways

As discussed in Section 4.13, the Area of Disturbance associated with the underground communication lines near the Jean Exchange would be constructed on a 100-year floodplain and would be located in the same drainage basin as the proposed Southern Nevada supplemental airport in the Ivanpah Valley.[43] However, because the communication lines would be installed near an existing roadway and other underground utilities, no significant impacts to floodplains and floodways are anticipated to occur under the Proposed Action. None of the other past, present, or reasonably foreseeable future actions are known to have or affect floodplains. Therefore, when the effects of the Proposed Action are combined with the effects of past projects, current projects, or reasonably foreseeable future actions, no adverse cumulative effects to floodplains and floodways are anticipated.

4.22.2.9 Hazardous Materials, Pollution Prevention, and Solid Waste

As discussed in Section 4.15, a recognized environmental condition associated with informal shooting ranges could exist near the proposed Heliport site. If contamination from lead is encountered during construction, it would be removed and disposed of in accordance with applicable standards and regulations. Therefore, it is not anticipated that construction of the proposed Heliport would result in any cumulative effect in terms of hazardous materials when combined with any effects of the construction of past, present or foreseeable future actions within or adjacent to the Area of Disturbance. The operation of the Heliport would not generate hazardous materials or solid waste that would exceed the capacity of available waste disposal facilities. When the effects of construction and heliport operation are combined with the effects of past projects, current projects, or reasonably foreseeable future actions, it is unlikely that adverse cumulative effects to hazardous materials, pollution prevention, and solid waste would occur at the Heliport site.

4.22.2.10 Historic, Architectural, Archaeological, and Cultural Resources

As discussed in Section 4.7, no sites eligible for listing in the NRHP were found within the Heliport site; three eligible sites were found within the Area of Disturbance associated with the utility corridor. However, given existing disturbance of one of the sites and proposed mitigation measures for the remaining two sites, no adverse impacts to these cultural resources are expected under the Proposed Action.

Past actions in Clark County and the Overflight Area have had impacts on cultural resources. The specific impacts on such resources associated with the past actions listed in Table III-13 are unknown, however it can be reasonably expected that any such impacts were considered and addressed at that time. Additional effects on cultural resources may result from other current or reasonably foreseeable future actions and have been or will be assessed as part of obtaining environmental approvals for those actions. Actions are mitigated on a project by project basis in consultation with the SHPO and it is assumed that effects of construction and operation of the

[43] The proposed Southern Nevada Supplemental Airport is the subject of a separate federal EIS being prepared by both the FAA and BLM. As of February 2007, the FAA and BLM have published the Draft Purpose and Need Working Paper for the EIS. The remaining portions of the Draft EIS have not yet been completed or published.

Heliport combined with the effects of other past, present, and reasonably foreseeable future actions within or adjacent to the Area of Disturbance or within the Overflight Area are unlikely to result in adverse cumulative effects to historic, architectural, archaeological, and cultural resources.

4.22.2.11 Light Emissions

The Proposed Action would result in new light emissions at the Heliport site. Reasonably foreseeable future actions combined with operation of the Heliport may result in increased light emissions within or adjacent to the Area of Disturbance. These projects include the proposed commercial service airport in the Ivanpah Valley and the proposed mining operation about three miles northeast of the Heliport site. Changes in light emissions may be noticeable to motorists on I-15 but are not likely to have an effect on the nearest existing residential communities. It is unlikely that the effects of construction and heliport operation combined with the effects of other past, current, or reasonably foreseeable future actions would result in adverse cumulative impacts in terms of light emissions.

4.22.2.12 Visual Resources

Development of the proposed heliport would result in direct and indirect impacts to visual resources in the long term. Reasonably foreseeable future actions in proximity to the potential heliport include the proposed Southern Nevada Supplemental Airport in the Ivanpah Valley, a proposed mining operation about three miles north of the Heliport site, and the continued land disposal and development within the Las Vegas region. The BLM disposal boundary is north and adjacent to the Heliport site. Once lands change title, BLM VRM class objectives no longer apply to those properties [IV-31]. Because of the potential disposal and development of BLM lands directly north of the Heliport site, the effects of constructing the heliport when considered with the anticipated effects of other actions would not result in cumulative impacts that exceed VRM class III objectives.

4.22.2.13 Natural Resources and Energy Supply

As discussed in Section 4.18, implementation of the Proposed Action would not result in a substantial increase in the use of Jet-A or automotive fuel (diesel and gasoline), and would not adversely affect supplies of natural gas, electricity, or fuel. Clark County has experienced and continues to experience growth at higher rates than the national average, and the use of natural resources and dependence on energy supplies (e.g., natural gas and electricity) has increased commensurate with that growth. Further, there is adequate supply of natural resources (e.g., gravel and sand) available in the region for the construction of the Heliport, as is evidenced by the ongoing construction of hotels, resorts and casinos in the Las Vegas region. The addition of construction and heliport operation to past, current and reasonably foreseeable future actions is not expected to have a substantial impact on natural resources or energy supply beyond that occurring as a natural result of growth. Therefore, it is unlikely that adverse cumulative effects to natural resources and energy supply would occur as a result of the Proposed Action.

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

As discussed in Section 4.3, the nearest existing residential or business development is about three miles north of the Heliport site. Acquisition or relocation of residential or business properties would not be required to construct or operate the Heliport.

No adverse impacts to minority or low-income populations are anticipated and the Proposed Action is not anticipated to have an adverse effect on children's health.

Adverse socioeconomic, environmental justice, and children's environmental health and safety risk impacts are not anticipated to arise at the Heliport site. The Proposed Action would not result in disproportionately high and adverse human health or environmental effects on minority populations and low-income populations, or create an adverse effect on children's health.

It is not anticipated that the Proposed Action would result in any cumulative effects combined with past or present actions discussed in Table III-13, as those actions would also not have had significant socioeconomic impacts, adverse environmental justice impacts, or adverse effects on children's environmental health or safety. The potential for such impacts from future actions will be the subject of ongoing environmental approval processes and the potential for cumulative effects from those actions will be disclosed and addressed, as appropriate.

4.22.2.15 Water Quality

As discussed in Section 4.14, and wastewater treatment facilities would be constructed at the Heliport site.[44] Construction activities would include re-grading the existing ground surface, constructing drainage, installing pavement and buildings, and handling construction materials. While there may be direct and indirect effects to water quality under the Proposed Action, the effects would be less than significant.

In addition to the effects associated with construction and operation of the Heliport, consideration was given to the potential for cumulative effects on water quality of past, present, and reasonably foreseeable future actions within or adjacent to the Area of Disturbance. When the effects of construction and heliport operation are added to the effects of other past, current, or reasonably foreseeable future actions, it is unlikely that adverse cumulative impacts to water quality would occur on the Area of Disturbance due to the distance between the location of other projects and the Heliport and associated utility corridors.

4.22.3 Summary and Conclusions

As discussed in this section, no significant cumulative effects are anticipated in any of the resource categories. As the Las Vegas region is expected to grow, it is anticipated that additional development will take place north of the Heliport site within the BLM disposal area boundary. However, based on the information presented in this section and given the scope of this project, it is not anticipated that construction and operation of the Heliport would adversely impact any environmental resources in the Las Vegas region.

[44] Pending finalization of wastewater treatment options.

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VI. List of Preparers

Overall preparation of the Draft Environmental Assessment was by the following:

6.1 Clark County Department of Aviation

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Pamela Adams, Principal Planner
Qualifications – Principal Planner with 25-years experience in natural resource evaluations, mainly in the Southwest USA. Significant experience in managing and preparing NEPA documents, impact analyses, public outreach, and local, state, and federal agency coordination.
Responsibilities – Overall review, management, and coordination with FAA Western-Pacific Region Airports Division, CCDOA, Clark County Board of County Commissioners, and consultant team.

Jeffery Jacquart, Airport Program Administrator
Qualifications – Over 18 years of experience in airport, environmental, and land use planning experience, with significant experience air quality analysis and planning, public relations, airspace planning, airport noise compatibility, administration of mitigation programs, land use planning, and helicopter noise impacts.
Responsibilities – Review of noise analysis and coordination with CCDOA, consultant team, and Grand Canyon helicopter air tour operators.

6.2 Principal Federal Government Reviewers

6.2.1 U.S. Department of Transportation

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B.A., Physical Geography (Geology Minor), M.A. Physical Geography. 26 years experience. Principal FAA Planner/Environmental Protection Specialist responsible for detailed FAA evaluation of the Environmental Assessments and Environmental Impact Statements as well as coordination of comments from various federal and state agencies in the FAA's Western-Pacific Region. Performed the required consultations with the U.S. Fish and Wildlife Service and Nevada State Historic Preservation Officer. Project Manager for the Southern Nevada Supplemental Airport Environmental Impact Statement.

6.2.2 U.S. Department of Interior

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Cheryl Cote, Realty Specialist, Bureau of Land Management, Las Vegas Field Office
20+ years realty experience. Extensive experience in real estate, title, and land development. Primarily oversees and issues Rights-of-Way, Recreation and Public Purposes Leases and provides information to the public on present and future uses of public lands managed by the BLM. BLM

Specialist responsible for review and coordination of the Environmental Assessment as a cooperating agency.

6.3 Consultants

6.3.1 Ricondo & Associates, Inc.

John C. Williams, Senior Vice President
Qualifications – Over 20 years of experience in airport environmental and physical planning, with significant experience in preparing and managing environmental assessments and environmental impact statements, airport noise compatibility planning projects, airport master planning projects, and airfield and airspace projects.
Responsibilities – Overall quality control, NEPA guidance, project management, management of subconsultants, purpose and need, alternatives, affected environment, and environmental consequences.

Adrian M. Jones, Director
Qualifications – 13 years of airport and environmental planning experience, with significant expertise in air quality modeling, airport noise compatibility, and airport master planning projects.
Responsibilities – Helicopter noise analysis, compatible land use, quality control of air quality and noise analysis, affected environment, and environmental consequences.

Lynne W. Madera, Managing Consultant
Qualifications – 13 years of experience in airport physical and environmental planning, with notable experience in physical planning and project management in both landside and airside planning projects. Experiences include environmental assessments, airport layout plans, architectural modifications to terminals, and project definition.
Responsibilities – Flight corridor analysis, purpose and need, alternatives, affected environment, and environmental consequences.

Audrey Y. Park, Senior Consultant
Qualifications – 6 years of airport and environmental planning experience, with specific experience in various disciplines, including compatible land use analysis and simulation and modeling.
Responsibilities – Purpose and need, alternatives, affected environment, environmental consequences, references, and documentation.

Jason M. Apt, Senior Consultant
Qualifications – 6 years of airport and environmental planning experience with experience in air quality, compatible land use analysis, and geographic information systems (GIS).
Responsibilities – Air quality analysis and generation of GIS exhibits.

6.3.2 Brown-Buntin Associates, Inc.

Robert Brown, President
Qualifications – 28 years of experience in community noise assessment and regulation with an emphasis on aviation noise assessment, including on-site noise measurements and computer modeling.
Responsibilities – Helicopter noise analysis.

6.3.3 SWCA Environmental Consultants

David Harris, NEPA Specialist/Environmental Compliance Manager
Qualifications – 11 years of experience in permitting and compliance, NEPA, GIS/GPS data.
Responsibilities – Management and quality control of SWCA deliverables.

Eric Koster, Environmental Specialist/Project Manager
Qualifications – Over 7 years of experience in wildlife monitoring and surveying, and environmental assessment and environmental impact and mitigation studies.
Responsibilities – Biological Surveys and Assessment; technical input for affected environment and environmental consequences of fish, wildlife, and plants.

Scott Whitesides, Cultural Resources Specialist
Qualifications – Over 16 years of experience in cultural resource surveys and impact assessment.
Responsibilities – Cultural resource survey lead and technical input for cultural resources affected environment and environmental consequences sections.

Brian Nicholson, Wetlands Specialist
Qualifications – Over 7 years of experience and expertise in wetland and riparian functional assessment, chemical and biological water quality monitoring, watershed management, ecological surveys and research, social data collection and analysis.
Responsibilities – Technical input for water supply environmental consequences chapter.

6.3.4 ASRC Aerospace Corporation

Robert Varani, Manager of Aviation Services
Qualifications – Over 16 years of aviation project experience at major airports throughout the United States and Central America.
Responsibilities – Evaluation of potential flight corridors and approach design analysis to and from heliport site.

6.3.5 Granite Environmental, Inc.

Jack A. Elder, Ph.D., President
Qualifications – Over 30 years environmental consulting experience. Personally prepared several hundred Phase I ESAs and supervised the preparation of several thousand more. Nevada Certified Environmental Manager EM-143.
Responsibilities – Preparation of Phase I Environmental Site Assessment (hazardous materials).