FINAL ENVIRONMENTAL ASSESSMENT

AIRPORT TRAFFIC CONTROL TOWER (ATCT)
AND BASE BUILDING
CONSTRUCTION AND OPERATION

McCARRAN INTERNATIONAL AIRPORT
LAS VEGAS, NEVADA

June 30, 2009

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This Environmental Assessment becomes a Federal document when evaluated, signed and dated by the responsible FAA official.

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30 Jun 2009
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ACRONYMS

AEOD	Airport Environs Overlay District
AFTIL	Airport Facilities Terminal Integration Laboratory
APE	Area of Potential Effect
AQI	Air Quality Index
ASR	Airport Surveillance Radar
ASTM	American Society for Testing and Materials
ATCT	Airport Traffic Control Tower
ATS	Automated Transit System
CAA	Clean Air Act
CCDOA	Clark County Department of Aviation
CDP	Census Designated Place
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
CNEL	Community Noise Equivalent Level
CNG	Compressed Natural Gas
CUP	Conditional Use Permit
DAQEM	Department of Air Quality & Environmental Management
dB	Decibel
DNL	Day Night Average Sound Levels
DOT	Department of Transportation
EA	Environmental Assessment
EDDA	Environmental Due Diligence Audit
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FAR	Federal Aviation Regulations
FBO	Fixed Base Operator
FEMA	Federal Emergency Management Agency
FTA	Federal Transit Administration
FHWA	Federal Highway Administration

FIRM	Flood Insurance Rate Map
FONSI	Finding Of No Significant Impact
FPPA	Farmland Protection Policy Act
LAS	McCarran International Airport
LVVWD	Las Vegas Valley Water District
MBTA	Migratory Bird Treaty Act
MOA	Memorandum of Agreement
MSA	Metropolitan Statistical Area
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NDOT	Nevada Department of Transportation
NDOW	Nevada Department of Wildlife
NEM	Noise Exposure Map
NESHAP	National Emission Standards for Hazardous Air Pollutants
NHPA	National Historic Preservation Act
NNHP	Nevada Natural Heritage Program
NPL	National Priorities List
NPS	National Park Service
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NRIS	National Register Information System
NVSHPO	Nevada State Historic Preservation Office
PM	Particulate Matter
RCRA	Resource Conservation and Recovery Act
REC	Recognized Environmental Condition
RPZ	Runway Protection Zone
SIP	State Implementation Plan
TERPS	Terminal Instrument Procedures
TSA	Transportation Security Administration
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
WHMP	Wildlife Hazard Management Plan

GLOSSARY

AIRCRAFT OPERATION. An aircraft arrival (landing) or an aircraft departure (takeoff) represents one aircraft operation.

AIRPORT FACILITIES TERMINAL INTEGRATION LABORATORY. An FAA facility that provides a simulation platform to support and evaluate the interior design and layout, control tower site selection and orientation, height determination studies, and transition of equipment into the airport traffic control tower environment.

AIRPORT INFLUENCE AREA. The defined space surrounding an airport that can be affected by airport operations.

AIRPORT OPERATIONS AREA. The AOA includes all areas inside airport fencing designated for landing, takeoff, or surface maneuvering of aircraft.

AIRPORT SURVEILLANCE RADAR. Approach control radar used to detect and display an aircraft's position in the terminal area. Coverage of the ASR can extend up to 60 miles.

AIRPORT TRAFFIC CONTROL TOWER. An airport observation facility that visually and electronically monitors aircraft take-offs and landings and ground traffic within the airport. The purpose of an ATCT is to ensure proper separation of aircraft and enhance the safety of aircraft operations at and in the vicinity of an airport.

AIR TRAFFIC CONTROLLER. People who utilize the air traffic control system to maintain a safe and orderly flow of aircraft traffic both in the air and within the airport environment.

BASE BUILDING. A building located adjacent to an airport traffic control tower (ATCT) that houses electrical, mechanical, and communications equipment and administrative offices associated with the operation of the ATCT.

CAB. The operational area of an ATCT where the air traffic controllers and relevant equipment are located.

CARBON MONOXIDE CLASSIFICATIONS. As defined by the Environmental Protection Agency, areas in non-attainment status of the carbon monoxide standard under the Clean Air Act are classified according to the severity of the pollution. These classifications are defined as follows (from lowest to highest):

Not Classified An area designated as a carbon monoxide non-attainment area as of the date of enactment of the Clean Air Act Amendments of 1990 and did not have sufficient data to determine if it is meeting or is not meeting the carbon monoxide standard.

Moderate Area has a design value of 9.1 up to 16.4 ppm.

Serious Area has a design value of 16.5 ppm and above.

CENSUS DESIGNATED PLACE. A geographic entity that serves as the statistical counterpart of an incorporated place for the purpose of presenting census data for an area with a concentration of population, housing, and commercial structures that is identifiable by name, but is not within an incorporated place.

DAY NIGHT AVERAGE SOUND LEVELS. The 24-hour average sound level obtained after the addition of 10 decibels to sound levels for the periods between 10 p.m. and 7 a.m as averaged over a span of one year. These levels are the FAA standard metric for determining the cumulative exposure of individuals to noise.

ENPLANEMENT. Refers to the act of a passenger boarding an aircraft.

FIXED BASE OPERATOR. An airport service center that may offer many types of services such as aircraft fuel or repair, parking, tie-down, flight training, baggage handling, car rental, food services, etc.

GENERAL AVIATION. All flights other than military and scheduled airline flights, both private and commercial.

HYDROGEOLOGY. The branch of geology that deals with the occurrence, distribution, and effect of ground water.

JURISDICTIONAL WETLAND. A wetland under the jurisdiction of a federal wetland program, such as the permit program administered by the Army Corps of Engineers under Section 404 of the Clean Water Act.

MEDIAN INCOME. This measure represents the middle value (if the total number of entries in the list is odd) or the average of the two middle values (if the total number of entries in the list is even) in an ordered list of income values.

MESIC. An ecological term referring to a type of habitat with a moderate amount of moisture.

METROPOLITAN STATISTICAL AREA. A geographic area defined by the U.S. Office of Management and Budget for use by federal agencies in collecting, tabulating and publishing federal statistics. An MSA contains a core urban area with at least a population of 50,000, and consists of one or more counties (including the one containing the core urban area) as well as any adjacent counties that have a high degree of social and economic integration (as measured by commuting to work) with the urban core.

MISSED APPROACH. An instrument flight approach not completed by a landing. This may be due to visual contact not established at authorized minimums, instructions from air traffic control or other reasons.

NATIONAL PRIORITIES LIST. As defined by the U.S. Environmental Protection Agency, the list of national priorities among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The list is intended primarily to guide the EPA in determining which sites warrant further investigation.

NOISE IMPACT MAP. Also referred to as a noise exposure map, it refers to a scaled, geographic depiction of an airport, its noise contours and the surrounding area, including accompanying descriptions of forecast aircraft operations at that airport, and the ways, if any, those operations will affect the map (including noise contours and the forecast land uses).

NON-ATTAINMENT. As used in reference to National Ambient Air Quality Standards, non-attainment refers to the condition of having higher levels of a particular pollutant than set by the standards.

OPERATION. See Aircraft Operation.

OZONE CLASSIFICATIONS (8-HOUR STANDARD). As defined by the Environmental Protection Agency, areas in non-attainment status of the 8-hour ozone standard under the Clean Air Act are classified according to the severity of the pollution. These classifications are defined as follows (from lowest to highest):

Marginal	Area has a design value of 0.085 up to but not including 0.092 ppm.
Moderate	Area has a design value of 0.092 up to but not including 0.107 ppm.
Serious	Area has a design value of 0.107 up to but not including 0.120 ppm.
Severe 15	Area has a design value of 0.120 up to but not including 0.127 ppm
Severe 17	Area has a design value of 0.127 up to but not including 0.187 ppm
Extreme	Area has a design value of 0.187 ppm and above.

$PM_{2.5.}$ Particulate matter smaller than 2.5 micrometers in size.

$PM_{10.}$ Particulate matter larger than 2.5 and smaller than 10 micrometers in size.

PRIME FARMLAND. Land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion, as determined by the Secretary (of Agriculture). Prime farmland includes land that possesses the above characteristics but is being used currently to produce live stock and timber. It does not include land already in or committed to urban development or water storage (FPPA Section 1540(c)(1)).

RECOGNIZED ENVIRONMENAL CONDITION. As defined by the American Society for Testing and Materials (ASTM), a recognized environmental condition is the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing, past, or a material threat of a release of these substances or products into structures, the ground, ground water or surface water of the property.

RUNWAY PROTECTION ZONE. An area off the runway end used to enhance the protection of people and property on the ground. This is achieved by clearing the area of incompatible objects and activities.

SHADOWING. As used in the context of evaluating a site for an ATCT, shadowing refers to visual obstruction of the aircraft movement area from the air traffic controller's viewpoint in the tower.

STATE IMPLEMENTATION PLAN. Plan required by the Environmental Protection Agency to achieve the National Ambient Air Quality Standards for each pollutant and within the timeframes established by the Clean Air Act.

TERMINAL INSTRUMENT PROCEDURES. Depict specific procedures for a particular type of approach to a given runway, as well as missed approach procedures. They define prescribed altitudes and headings, and identify terrain, obstacles and potentially conflicting airspace for approaching aircraft.

UNIQUE FARMLAND. Unique farmland is land other than prime farmland that is used for production of specific high-value food and fiber crops, as determined by the Secretary (of Agriculture). It has the special combination of soil quality, location, growing season, and moisture supply needed to economically produce sustained high quality or high yields of specific crops when treated and managed according to acceptable farming methods. Examples of such crops include citrus, tree nuts, olives, cranberries, fruits, and vegetables (FPPA Section 1540(c)(1)).

WETLAND. Areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

WILDLIFE HAZARD MANAGEMENT PLAN. A plan developed by an airport to manage wildlife that may be hazardous to the safe operation of aircraft.

1.0 INTRODUCTION

The Federal Aviation Administration (FAA) is proposing to construct and operate a new Airport Traffic Control Tower (ATCT), Base Building and Parking Structure to serve McCarran International Airport (LAS), Las Vegas, Nevada. The proposed federal action is described in detail in Section 2.0 of this document. Implementation of the proposed action is expected to begin by early 2011.

This Environmental Assessment (EA) has been conducted in accordance with the National Environmental Policy Act (NEPA) of 1969, as amended; implementing regulations issued by the Council on Environmental Quality (40 CFR parts 1500-1508); and FAA Order 1050.1E CHG 1, *Environmental Impacts: Policies and Procedures* (FAA 2006a); and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions* (FAA 2006b), to provide sufficient evidence and analysis for determining whether to prepare an Environmental Impact Statement (EIS) or a Finding of No Significant Impact (FONSI).

The National Environmental Policy Act of 1969 (NEPA) requires that a statement of environmental impacts be prepared as part of the development process for projects requiring a federal action such as funding or approval. FAA Order 1050.1E CHG 1 paragraph 401g states that the "establishment or relocation of facilities such as air route traffic control centers (ARTCCs), airport traffic control towers (ATCTs), off airport air route surveillance radars (ARSRs), air traffic control beacons (ATCBs), and next generation radar (NexRad)" are actions that normally require an Environmental Assessment. The purpose of an EA under NEPA is to describe a proposed action's anticipated environmental impacts. The FAA is the lead federal agency for the proposed action.

2.0 PROPOSED FEDERAL ACTION

The FAA is proposing to construct and operate a new Airport Traffic Control Tower, Base Building and Parking Structure to serve McCarran International Airport, Las Vegas, Nevada. The construction phase of the proposed action is expected to begin in early-2011 and proceed until late-2012. The new tower would be commissioned in early-2014 and demolition of the existing ATCT would occur in early-2015. The proposed ATCT would be located at the southwest corner of Flight Path Avenue and Kelly Lane, east of Terminal 1 and southwest of the new Terminal 3 site on the northeast side of the airport. Site access would be from Kelly Lane. The existing ATCT would be vacated and demolished after the new ATCT is constructed and operational. The existing ATCT is located approximately 750 feet southeast of Terminal 1, adjacent to the airport's elevated light rail transit line. Figures 1- 3 and Appendix A show the location of the proposed action and Appendix B contains preliminary elevation drawings for the proposed ATCT.

The proposed action consists of construction and operation of an approximately 372-foot high ATCT, a 40,000 square foot multi-story Administrative Base Building and a multi-story parking structure with approximately 190 parking spaces totaling about 48,750 square feet. The existing ATCT would be demolished (by dismantling) after the new ATCT is operational. This would include removal and proper disposal of the existing buildings and above ground fuel storage tank (for the emergency generator) and repaving the former ATCT site. The existing base building would also be demolished if the Clark County Department of Aviation (CCDOA) did not want to continue to use the building.

The site for the proposed ATCT, Base Building and Parking Structure would encompass an approximately 3.57-acre area. The proposed ATCT would be a 372-foot high concrete and steel octagonal tower with glass cab windows on a concrete pile foundation. The shaft of the ATCT would be unoccupied with two interior access stairways and an elevator. The control cab, electrical and mechanical equipment rooms, and sanitary and rest facilities for attending personnel would be located above the shaft. The control cab would contain communications and surveillance equipment used by air traffic controllers to monitor air traffic at LAS, and would have a glass panel exterior to allow vision of airport runways and taxiways. Exterior walkways with railings would be located at the cab level and on the cab roof.

A short, ground level corridor would connect the proposed ATCT to a multi-story base building which would likely be located west of the tower. The base building would be a rectangular shaped, approximately 40,000 square foot, cast-in-place concrete structure on a concrete footing foundation. It would house electrical, mechanical, and communications equipment and administrative offices associated with the operation of the proposed ATCT. A multi-story parking structure with approximately 190 parking spaces and pedestrian sidewalks would likely be located north of the ATCT and base building. Landscaping may be placed around the parking lot and buildings.

Subsurface water, electrical, fiber optic, telephone and sanitary sewer service lines would be installed from the ATCT and base building to existing lines which lie along Kelly Lane east of the proposed site (See Figure 3). Sections of new subsurface concrete duct bank would be installed where necessary to connect the proposed new ATCT to existing airport equipment.

Two 750 kilowatt (approximately 1000 horse power) emergency diesel engine powered electrical generator would be housed within the base building. Diesel fuel for the generator would be stored in two 100-gallon day tanks within the generator room and two 4,000-gallon above ground storage tanks located outside the base building.

3.0 PURPOSE AND NEED

An ATCT is an airport observation facility that visually and electronically monitors aircraft take-offs and landings and ground traffic within the airport. The purpose of an ATCT is to ensure proper separation of aircraft and enhance the safety of aircraft operations at and in the vicinity of an airport. The proposed ATCT facility would serve to monitor and communicate with aircraft in the vicinity of McCarran International Airport.

The existing ATCT facility at LAS is comprised of a 185-foot tower (cab floor height) and an approximately 16,000 square foot base building. The tower was originally constructed in the early 1980s, and consists of a unoccupied shaft supporting the tower cab. The facility is located approximately 750 feet southeast of Terminal 1 and 1,500 feet north of Taxiway C, adjacent to the airport's elevated light rail transit line.

The purpose and need for a new ATCT at LAS is to improve functional efficiency at the airport by constructing a facility that meets the current and future airport traffic control needs at the airport. The existing ATCT is inadequate for current airport traffic control needs due primarily to the insufficient height of the tower and size of the tower cab. According to the FAA's Siting Study for the proposed new ATCT, visibility of some operational areas from the existing tower has been blocked due to airport construction since the existing ATCT was built. The study also found that planned airport projects will further impair visibility from the existing tower (FAA 2005). Also, as aircraft operations have increased 89% since construction of the existing tower from 297,202 in 1983 to 562,715 in 2004 (FAA 2007), air traffic controller positions in the tower cab have increased from 6 to 14, resulting in extremely crowded working conditions (FAA 2005). The existing small cab also does not allow for a further increase in controllers which will be necessary as aircraft operations at LAS are forecasted to increase to 922,316 by 2025 (CCDOA 2005). In general, the airport has outgrown the existing ATCT as airport facilities have expanded and aircraft operations have increased. The construction and operation of the proposed tower will not cause any increase in operations at the airport.

4.0 ALTERNATIVES

Federal and state regulations concerning the environmental review process require that all reasonable alternatives which might accomplish the objectives of a proposed action be identified and evaluated. The examination of alternatives is of critical importance to the environmental review process, ensuring that all alternatives which address the project's purpose and need, including those which may enhance environmental quality or result in a less detrimental effect, are considered.

The Council on Environmental Quality (CEQ) implementing regulations for the National Environmental Policy Act state that the responsible agency shall "rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated" (§1502.14). In accordance with these regulations, a range of reasonable alternatives has been identified that may accomplish the objectives of the proposed action. A "no action" alternative will also be considered as required by CEQ regulations. As stated in *Chapter 3.0 Purpose and Need*, the proposed action is intended to improve functional efficiency at the airport by constructing a facility that meets the current and future airport traffic control needs at LAS.

The FAA Orders, regulations, and policies used to guide the siting of ATCTs are listed below together with a summary of their relevant siting criteria.

1. **FAA Order 6480.4A, *Airport Traffic Control Tower Siting Process*:** This Order identifies the requirements concerning the site and height selection of ATCTs.

    a. The ATCT shall be constructed at the minimum height required to satisfy all siting criteria.
    b. Visibility from the ATCT cab shall allow an unobstructed view of all controlled movement areas of the airport and of all air traffic in the vicinity of the airport.
    c. ATCT distance from critical airport locations and ATCT height shall support requirements for object visibility and discrimination from the ATCT cab.
    d. ATCT distance from critical airport locations and ATCT height shall support requirements for viewing objects on the airport movement areas, taxiways, and non-movement areas from the ATCT cab.
    e. The ATCT shall be sited such that it does not degrade any current or planned terminal instrument procedures.
    f. Ensure that ATCT location and height enhance visibility performance as much as possible.
    g. Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, must be complied with.
    h. The tower must not be sited where it will have a derogatory effect on the performance of existing or planned electronic facilities.
    i. The tower cab should be oriented to face north or alternatively east, west, or south in order of preference.

j. Visibility should not be impaired by sunlight, indirect external light sources, or thermal distortion.
k. Consideration should be given to local weather phenomena such as fog or ground haze.
l. Site access should not require crossing areas of aircraft operations.
m. Consideration shall be given to economic factors.
n. The recommended ATCT location shall be subject to an Environmental Due Diligence Audit review to identify any environmental conditions, including physical contamination resulting from past or present uses. The site shall also be subject to the NEPA process as outlined in FAA Order 1050.1E CHG 1.

2. **FAA Order 6480.7E*, Airport Traffic Control Tower and Terminal Radar Approach Control Facility Design Guidelines*:** This Order addresses the size, orientation, and design requirements for ATCTs.

3. **Federal Aviation Regulation (FAR) Part 77:** This Regulation specifies an imaginary surface above airports that should not be penetrated in order to maintain optimum aircraft safety. Although a waiver may be obtained to penetrate this surface (and often is for an ATCT), it is still desirable to locate a new ATCT with as little penetration as possible.

4. **FAA Order 1600.69B, *FAA Facility Security Management Program*:** This Order addresses the siting and design of various air traffic control facilities to reduce or mitigate the threat of physical attack. The most important criterion related to siting is the definition of minimum setback distances. In order to avoid any special design restrictions, major activity level facilities must have an interior setback of 100 feet from the building to the parking area and an exterior setback of 300 feet from the building to the nearest street. Setbacks less than these minimum requirements would require the review and approval of FAA Security.

5. **Terminal Instrument Procedures (TERPS):** TERPS depict specific procedures for a particular type of approach to a given runway, as well as missed approach procedures. They define prescribed altitudes and headings, and identify terrain, obstacles and potentially conflicting airspace for approaching aircraft. ATCTs shall be sited such that they do not degrade any current or planned terminal instrument procedures. Particular emphasis shall be made to protect for approaches with vertical guidance according to the current approved Airport Layout Plan. Non-precision approach and circling minimums may only be adjusted to accommodate a proposed ATCT if the impacts of such adjustments are understood and agreed to by all stakeholders.

6. **Miscellaneous:** Other siting factors to consider are site access, utility availability, and access to existing field cabling.

4.1 ATCT ALTERNATIVE SITES CONSIDERED

As required by FAA Orders and Federal Aviation Regulations, the FAA must complete an iterative site selection and screening analysis to identify potential sites and analyze them in accordance with the aforementioned selection criteria. An ATCT Siting Study conducted by the FAA utilizing the Airport Facilities Terminal Integration Laboratory (AFTIL) considered seven sites for the proposed ATCT at McCarran International Airport (FAA 2005). Alternative sites were evaluated at AFTIL during two meetings attended by representatives from the FAA and the Clark County Department of Aviation (CCDOA). The proposed new ATCT site was selected after comparing the attributes of each site against the siting requirements. Each alternative site considered for the proposed action is described below by its location with a brief summary of the results of the site evaluation from the Siting Study Report (FAA 2005). An aerial photograph showing the locations of the sites considered for the proposed new ATCT is included in the Appendices as Figure 4.

4.1.1 Site Discussion

Site A

Location: Site A is located on the current ATCT site approximately 750 feet southeast of Terminal 1 in the northwest corner of the parking lot.

Siting Summary: Site A was eliminated from further consideration due to severe shadowing from the new ATCT of the final approach and touchdown areas of Runways 19R and 19L as viewed from the existing ATCT. While this shadowing would only be an issue after construction of the new tower progressed above the existing cab until the new ATCT was commissioned, the impact to air traffic controllers was deemed too severe even temporarily.

Site B

Location: Site B is located on the current ATCT site approximately 750 feet southeast of Terminal 1 in the center of the parking lot near the Base Building loading dock access drive.

Siting Summary: Site B was eliminated from further consideration due to the same reason as Site A (see above).

Site C

Location: Site C is located on the current ATCT site approximately 750 feet southeast of Terminal 1 in the northeast corner of the parking lot.

Siting Summary: Site C was eliminated from further consideration due to construction site challenges, inability to meet security setbacks and a conflict between seismic and blast construction requirements. The small size of the site would result in extra construction costs resulting from accommodation of equipment, supplies and traffic; meeting security requirements; and protecting the existing ATCT and the elevated passenger tram, which

crosses the site, during construction. A tower of functional height at this site would also penetrate the FAR Part 77 horizontal surface.

Sunset Road Site

Location: The Sunset Road Site is located approximately 2,500 feet south-southeast of the threshold of Runway 7R, south of Sunset Road on private land.

Siting Summary: The Sunset Road Site was eliminated from further consideration due to the landowner's unwillingness to sell the land to the CCDOA or the FAA (Darren Brinker, Civil Engineer, FAA, personal communication 4/15/09).

Terminal B Site

Location: The Terminal B Site is located between Terminal 1 and the B Gates.

Siting Summary: The Terminal B Site was eliminated from further consideration due to its proximity to a Transportation Security Administration (TSA) baggage screening facility which has inherent safety risks, the location of the site within the Aircraft Operations Area (AOA) which would expose the facility to noise and fumes from aircraft as well as limit construction and delivery access to the ATCT, lack of employee parking within the AOA, and buried jet fuel lines around the B Gates which may have to be relocated. The airport also had plans to build a sky bridge between the B and C Concourses at the time of the Siting Study, which would have eliminated this as a viable site. This bridge is currently in place (Darren Brinker, Civil Engineer, FAA, personal communication 4/15/09).

Russell Road Site

Location: The Russell Road Site is located near the intersection of Paradise Road and the relocated Russell Road.

Siting Summary: Based on discussions with CCDOA, FAA eliminated the Russell Road Site from further consideration because they determined that due to the relocation of Russell Road and future construction in the area that no viable parcel of land would be available for an ATCT.

Terminal 3 Site (Preferred Alternative)

Location: The Terminal 3 Site is the preferred new ATCT location. It is located at the southwest corner of Flight Path Avenue and Kelly Lane, approximately 4,000 feet north of the centerline of Runway 7L/25R and 5,500 feet east of the centerline of Runway 1R/19L.

Siting Summary: The Terminal 3 Site was chosen as the preferred new ATCT site from among the alternatives considered based on the results of the FAA airspace and TERPS evaluations, modeling information obtained from AFTIL, and a comparison of the advantages and disadvantages of all of the primary siting options. The following list is a summary of the evaluation of the Terminal 3 Site against the Siting criteria:

1. The site provides an unobstructed line of sight to all runways and taxiways (ramp areas at LAS are controlled from another tower) and full visibility of all airborne traffic patterns.
2. The site is large enough to accommodate the ATCT, support structures and equipment.
3. The site is not located within the airport operations area.
4. The site does not meet minimum exterior setback requirements, but hardening measures would be used to increase blast protection.
5. The tower would extend above the FAR Part 77 horizontal surface, but lighting would be placed on the tower to identify it as an obstruction to aircraft.
6. The tower would not derogate any existing or planned electronic facilities.
7. Utilities are available in the vicinity of the site.
8. Employee access to the site would be from public streets.
9. Site development costs would not be prohibitive.
10. The tower would not impact any terminal instrument procedures.

4.1.2 No Action Alternative

Under the No Action Alternative, a new ATCT facility would not be constructed at McCarran International Airport, and the purpose and need, as set forth in Section 3.0, would not be met for the proposed action. The existing ATCT facility would continue to be used.

Only the *No Action Alternative* and the *Preferred Alternative* are further evaluated in this EA. The *Preferred Alternative* is the construction of the proposed new ATCT approximately 3,000 feet northwest of the Runway 31L threshold (Terminal 3 Site as described in section 4.1). The *Preferred Alternative* best meets the purpose and need of the project.

5.0 AFFECTED ENVIRONMENT

This section of the Environmental Assessment describes the existing environmental conditions of the geographic area that may potentially be affected by the proposed action. The purpose of these descriptions is to provide a baseline from which to analyze the impacts of the proposed action in *Chapter 6, Environmental Consequences*. Therefore the same 18 impact categories specified by FAA Order 1050.1E CHG 1 and guidance from the Council on Environmental Quality are used in both Chapters 5 and 6. A brief description of the general characteristics of the geographic area and the airport environment is provided in the introduction to Chapter 5. The descriptions of each of the affected environment categories begins with a brief synopsis of the federal, state and local laws, regulations, and ordinances which guide the content of the discussions. For more detailed information about these laws, regulations and ordinances please refer to the full text of the appropriate document as cited.

The site of the proposed action is McCarran International Airport (LAS), which is located within unincorporated Clark County, Nevada south of the City of Las Vegas and northwest of the City of Henderson (See Figure 1). LAS is located in the Las Vegas Valley, a northwest trending valley in southern Nevada bounded by the Spring Mountains to the west, Frenchman Mountain to the east, the McCullough Range to the south, and the Las Vegas and Sheep Ranges to the north. The airport is located approximately two and one-half miles south of the City of Las Vegas and one-half mile east of the Las Vegas "Strip." LAS lies adjacent to the local streets South Las Vegas Boulevard to the west, Sunset Road to the south, South Eastern Avenue to the east and West Tropicana Avenue to the north. Paradise Road crosses the airport from north to south. The airport is accessible via Russell Road from the east, from Paradise Road from the north, and from I-215 from the south. The site is located within Section 34, Township 21 South, Range 61 East, Mt. Diablo Baseline and Meridian as shown on the United States Geological Survey (USGS) *Las Vegas SW Quadrangle, Nevada 7.5 Minute Series Topographic* maps, dated 1984 (See Figure 1). The airnav.com internet site lists the airport location as approximately Latitude 36 04' North, Longitude 115 09' West and the airport elevation as 2181 feet above mean sea level (AirNav 2008).

McCarran International Airport comprises approximately 3,000 acres of land (CCDOA 2005) and is owned and operated by the Clark County Department of Aviation (CCDOA). There are several general aviation airports within the vicinity of LAS including North Las Vegas Airport (8.1 nautical miles [nm] N), Henderson Executive Airport (6.5 nm S), and Jean Sport Aviation Center (20.6 nm SW) (AirNav 2008). Nellis Air Force Base is located 11 nm E of LAS. The closest commercial airport is the St. George Municipal Airport located 96.5 nm NE of LAS in St. George, Utah (AirNav 2008). LAS is generally bordered by commercial development to the west (the Las Vegas Strip), commercial development, multi- and single-family residences and the University of Las Vegas to the north, commercial and industrial development with some residential use to the east, and commercial and industrial uses to the south.

As of December 2007, LAS was served by 19 domestic and 29 international scheduled commercial airlines (CCDOA 2008) and had nearly 23 million total enplanements in 2007 (FAA 2007). In 2007, there were 609,472 total operations at LAS, with 90% of flights being

commercial operations (CCDOA 2008). LAS contains four paved bi-directional runways with paved taxiways (See Figure 2). Runway 7L/25R is 14,505 feet long and 150 feet wide and oriented in an east-west direction. Runway 7R/25L is 10,525 feet long and 150 feet wide and oriented in an east-west direction. Runway 1L/19R is 8,985 feet long and 150 feet wide and oriented in a northeast-southwest direction. Runway 1R/19L is 9,770 feet long and 150 feet wide and oriented in a northeast-southwest direction. Most of the airport facilities, including the commercial flight terminals, public parking, air cargo facilities, commercial facilities, and aircraft rescue and fire fighting facilities are located north and east of the runways. General aviation facilities are located to the west of the Runway 1L/19R. There were 115 aircraft based out of LAS in 2007 (FAA 2007). The airport passenger terminal complex includes two passenger terminal buildings containing approximately two million square feet of space. Terminal 1 primarily serves domestic passengers and Terminal 2 primarily serves passengers on charter or international flights. Concourses C and D are connected to Terminal 1 by two separate automated transit systems (ATSs) (CCDOA 2005).

McCarran International Airport is underlain by Quaternary age consolidated sediments and alluvium (Matti and Bachhuber 1985). According to information published by the Natural Resources Conservation Service (NRCS 2008a), soils at the airport and in the surrounding areas consist mostly of fine sands and fine sandy loams (Appendix C). Ground water could be expected at depths of approximately 25 feet below ground surface in the vicinity of the proposed ATCT site, based on ground water data which was obtained for the Environmental Due Diligence Audit for the proposed ATCT site (FAA 2008), and information published by the Southern Nevada Water Authority (SNWA 2008).

According to information obtained from the Western Regional Climate Center (WRCC 2008) temperatures in Las Vegas range from an average minimum January temperature of 34.3˚F to an average maximum July temperature of 104.5˚F. The average annual precipitation is 4.19 inches with an average annual snowfall of 0.9 inch. The annual average wind speed is 9.3 miles per hour at the airport.

Area of Potential Effect (APE)

The term APE is used throughout this document to refer to the area which has been studied for potential direct or indirect effects of the proposed action, where physical disturbance or visual impacts from the project would result. This does not necessarily refer to the APE as it relates to historic properties under Section 106 of the National Historic Preservation Act, except in Sections 5.10 and 6.7.

1. The APE for the construction of the proposed ATCT includes an approximately 3.57-acre area around the proposed ATCT, Base Building, Parking Structure, utility lines and driveways where construction, maintenance, and usage effects may occur (See Figure 3). New utilities would be connected to existing lines located along Kelly Lane from the southeast corner of the site. Existing public access roads would be used for construction and maintenance traffic.
2. The APE for the demolition of the existing ATCT includes an approximately 2.3-acre area around the current structure.
3. The indirect APE used for visual effects of the proposed ATCT includes an approximately 0.75 mile radius around the new tower.

Each aspect of the affected environment that will be analyzed for environmental impacts is described below. These aspects are represented by 18 impact categories, as specified by FAA Order 1050.1E CHG 1. The descriptions are intended to be "baseline" descriptions of the affected environment as it exists prior to the proposed action. Discussions of the possible effects of the proposed action are included in Section 6.0, Environmental Consequences.

5.1 AIR QUALITY

The Clean Air Act (CAA) has established National Ambient Air Quality Standards (NAAQS) for six pollutants, termed "criteria pollutants" (ground-level ozone, particulate matter [equal to or less than 10 microns in size (PM_{10}) and equal to or less than 2.5 microns in size ($PM_{2.5}$)], carbon monoxide, sulfur dioxide, lead, and nitrogen dioxide). The CAA requires each state to adopt a plan to achieve the NAAQS for each pollutant within specific timeframes. These air quality plans, known as State Implementation Plans (SIPs), are subject to Environmental Protection Agency (EPA) approval. In default of an approved SIP, the EPA is required to promulgate a Federal Implementation Plan (FIP).

According to a 2007 Air Quality Index Report produced for the Las Vegas-Paradise Metropolitan Statistical Area (MSA) by the Environmental Protection Agency (EPA), air quality in the MSA for 365 indexed days was defined as good on 142 days, moderate on 194 days, unhealthy for sensitive groups on 26 days and unhealthy on 3 days (USEPA 2008b). The main criteria pollutants measured for the Las Vegas-Paradise MSA during the aforementioned indexed days were ozone (214 days), PM_{10} (96 days), $PM_{2.5}$ (53 days) and carbon monoxide (2 days). The Air Quality Index (AQI) is an index for reporting daily air quality which focuses on health effects that may be experienced within a few hours or days after breathing polluted air. There were a total of 9 reported exceedances of EPA Air Quality Standards for the eight-hour ozone value listed in the 2007 Air Quality Index Report for Clark County from two monitoring stations located within 10 miles of LAS. These stations are located at 545 Lake Mead Drive in Henderson, NV (9.5 miles E/SE of LAS) and 1562 East Katie Avenue, Las Vegas, NV (2.5 miles N/NE of LAS). There were no reported exceedances of the 24-hour average PM_{10} EPA Air Quality Standard from air quality monitors within 10 miles of LAS in 2007. There were no exceedances of EPA air quality standards for carbon monoxide at any of the Clark County monitoring stations in 2007. The Las Vegas Valley, which includes McCarran International Airport, is in non-attainment status for carbon monoxide, ozone and PM_{10} (USEPA 2008a).

The Las Vegas Valley was designated as a moderate non-attainment area for the 8-hour carbon monoxide NAAQS in November 1990 under the CAA Amendments of 1990. Due to non-attainment of the standard by the required date, the Valley was reclassified as a serious non-attainment area on November 3, 1997. A carbon monoxide SIP was submitted to the EPA in August 2000 which demonstrated attainment of the standard by December 31, 2000 (CCDAQEM 2000). The EPA found that the Las Vegas Valley had attained the carbon monoxide NAAQS in a Final Rule published June 1, 2005, but redesignation of the area is subject to CAA criteria, including submittal of a carbon monoxide maintenance plan (USEPA 2005). The Clark County Department of Air Quality & Environmental Management (CCDAQEM) submitted a redesignation request and maintenance plan to the EPA in September 2008 (CCDAQEM 2008b).

The Las Vegas Valley was designated as a basic non-attainment area for the 8-hour ozone NAAQS under Subpart 1 of the CAA on April 30, 2004. As a result of the findings of a U.S. Court of Appeals for the District of Columbia Circuit court case decided on December 22, 2006 (USCOA 2006), the classification determinations under this Subpart were vacated (set aside) and all areas designated under Subpart 1 were not subject to the June 15, 2007 submission date established for attainment demonstration. Consequently, no criteria for preparation of a SIP for ozone for these areas exists, therefore a SIP has not been prepared for the Las Vegas Valley. The CCDAQEM submitted a request for determination of Clark County's attainment of the 8-hour ozone standard to the EPA on June 12, 2007 based on data collected at air quality monitoring stations during the preceding three years (CCDAQEM 2007a). The EPA did not issue a determination and in August 2007 Clark County had an exceedance of the standard at one of their monitoring stations (Dennis Ransel, Planning Manager, Clark County DAQEM, personal communication 10/9/08). Since then, Clark County has submitted an Early Progress Plan to the EPA to establish early transportation conformity budgets which address the ozone standard prior to demonstration of complete attainment of the standard (CCDAQEM 2008a).

The Las Vegas Valley was designated as a moderate non-attainment area for the PM_{10} NAAQS on November 15, 1990 under the CAA Amendments of 1990. This designation required preparation of a SIP by November 15, 1991 and attainment of the standards by December 1994. Because the SIP did not demonstrate attainment of the standards by 1994, the Las Vegas Valley was reclassified as a serious non-attainment area on January 8, 1993. Since then a number of SIPs have been prepared which did not demonstrate attainment of the standards. Modeling for the 2001 SIP showed attainment of the annual standard in 2001 and the 24-hour standard by 2006 (CCDAQEM 2001). In June 2007, Clark County submitted a PM_{10} SIP Milestone Achievement Report which documented the County's attainment of the 24-hour standard and its maintenance of the annual standard (CCDAQEM 2007b). Clark County is currently gathering data and performing research to support preparation of a PM_{10} maintenance plan (Dennis Ransel, Planning Manager, Clark County DAQEM, personal communication 10/9/08).

Greenhouse Gas Emissions

Of growing concern is the impact of proposed projects on climate change. Greenhouse gases trap heat in the earth's atmosphere and include both naturally occurring and anthropogenic (man-made) water vapor (H_2O), carbon dioxide (CO_2),[1] methane (CH4), nitrous oxide (N_2O), and ozone (O_3).[2]

[1] All greenhouse gas inventories measure carbon dioxide emissions, but beyond carbon dioxide different inventories include different greenhouse gases (GHGs).

[2] Several classes of halogenated substances that contain fluorine, chlorine, or bromine are also greenhouse gases, but they are, for the most part, solely a product of industrial activities. For example, chlorofluorocarbons (CFCs) and hydrochlorofluorocarbons (HCFCs) are halocarbons that contain chlorine, while halocarbons that contain bromine are referred to as bromofluorocarbons (i.e., halons) or sulfur (sulfur hexafluoride: SF_6).

Research has shown that there is a direct link between fuel combustion and greenhouse gas emissions. Therefore, sources that generate greenhouse gases at an airport are those that require fuel or power Aircraft jet engines, like many other vehicle engines, produce carbon dioxide (CO_2), water vapor (H_2O), nitrogen oxides (NO_x), carbon monoxide (CO), oxides of sulfur (SO_x), unburned or partially combusted hydrocarbons (also known as volatile organic compounds (VOCs)), particulates, and other trace compounds.

According to most international reviews, aviation emissions comprise a small but potentially important percentage of anthropogenic greenhouse gases and other emissions that contribute to global warming. The Intergovernmental Panel on Climate Change (IPCC) estimates that global aircraft emissions account for about 3.5 percent of the total quantity of greenhouse gas from human activities (USGAO 2000, p.4). In terms of U.S. contribution, the U.S. General Accounting Office (GAO) reports (USGAO 2000, p. 14) that aviation accounts "for about 3 percent of total U.S. greenhouse gas emissions from human sources" compared with other industrial sources, including the remainder of the transportation sector (23 percent) and industry (41 percent).

The scientific community is developing areas of further study to enable them to more precisely estimate aviation's effects on the global atmosphere. The FAA is currently leading or participating in several efforts intended to clarify the role that commercial aviation plays in greenhouse gas emissions and climate change. The most comprehensive multi-year program geared towards quantifying the climate change effects of aviation is the Aviation Climate Change Research Initiative (ACCRI) funded by FAA and NASA. ACCRI will reduce key scientific uncertainties in quantifying aviation-related climate impacts and provide timely scientific input to inform policy-making decisions. FAA also funds Project 12 of the Partnership for Air Transportation Noise & Emissions Reduction Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. Finally, the Transportation Research Board's Airport Cooperative Research Program project 02-06 is preparing a guidebook on preparing airport greenhouse gas emission inventories. The results of this effort are expected to be out in late 2008.

5.2 COASTAL RESOURCES

Federal activities involving or affecting coastal resources are governed by the Coastal Barriers Resources Act (CBRA), the Coastal Zone Management Act (CZMA), and Executive Order 13089, Coral Reef Protection. The CBRA prohibits, with some exceptions, Federal financial assistance for development within the Coastal Barrier Resources System that contains undeveloped coastal barriers along the Atlantic and Gulf coasts and Great Lakes. The CZMA and the National Oceanic and Atmospheric Administration (NOAA) implementation regulations (15 CFR Part 930) provide procedures for ensuring that a proposed action is consistent with approved coastal zone management programs. Executive Order 13089 requires Federal agencies to ensure that any actions that they authorize, fund, or carry out will not degrade the conditions of coral reef ecosystems.

According to maps of coastal resources governed by the Coastal Barrier Resources Act found on the USFWS Coastal Barrier Resource System (USFWS 2008a), there are no coastal barrier resources in Nevada.

According to information published by the National Oceanic and Atmospheric Administration regarding the Coastal Zone Management Act (NOAA 2008), there is no coastal management program for the State of Nevada.

5.3 COMPATIBLE LAND USE

The compatibility of existing and planned land uses in the vicinity of an airport is typically related to the extent of the airport's noise impacts. The Aviation Safety and Noise Abatement Act of 1979 established a noise measuring system, as well as noise standards for air carriers and methods to reduce noise impacts in the vicinity of airports. Under the Act, noise exposure maps may be produced by an airport to show the noise level contours around an airport and the types of land use they overlap. Land uses which may be incompatible with certain noise levels include residential, office, schools, hospitals, day care facilities and other non-industrial uses. Noise level compatibility with specific land uses is usually set by the county or municipal authority and varies by location.

LAS is located within the unincorporated community of Paradise in Clark County, Nevada south of the City of Las Vegas. Surrounding areas for which compatible land use with the airport may be important include the unincorporated communities of Winchester to the north, Spring Valley to the west, Enterprise to the southwest and the City of Henderson to the southeast. The area to the north of the airport is about 90% developed and contains commercial development, multi- and single-family residences and the University of Las Vegas. The area to the east of the airport is about 90% developed and includes commercial and industrial development with some residential use. The area to the south of the airport is about 75% developed with commercial businesses and warehouse/industrial buildings. Interstate-215 is located approximately one-half mile south of the airport. The area west of the airport is about 90% developed primarily with the businesses and hotels associated with the Las Vegas Strip. A privately operated public golf course, the Bali Hai Golf Club, is located on the west side of Las Vegas Boulevard south of Russell Road, on land leased from the CCDOA. Interstate-15 is located approximately one-half mile west of the airport.

The airport is zoned by Clark County. According to the Clark County zoning map, the entire airport is in the Public Facility Zone (P-F). A Land Use Application would need to be filed with the Clark County Department of Comprehensive Planning and design review of the ATCT plans would be required to determine the compatibility of the plans with zoning requirements (See Appendix D; Ron Smith, Planner, Clark County Department of Comprehensive Planning, personal communication 10/14/08).

All of the area surrounding the airport is zoned by the Clark County. The area to the north of the airport is zoned for limited resort and apartment use (H-1) with some single- and multi-family residential use (R-1, R-3, R-4) and commercial use (C-2) along arterial streets. The area to the west of the airport is zoned primarily for limited resort and apartment use (H-1) and light manufacturing (M-1). The area to the south of the airport is zoned for limited resort

and apartment use (H-1), light manufacturing (M-1) and designed manufacturing (M-D), with a small amount of general commercial use (C-1). The area to the east of the airport is zoned for light manufacturing (M-1) and designed manufacturing (M-D), single-family residential (R-1) and rural estates residential (R-E) with some general commercial use (C-1). (Appendix D; CCDIT 2008.)

The Clark County Unified Development Code (Title 30.48) defines an Airport Environs Overlay District (AEOD) with 13 sub-districts around Nellis Air Force Base, Creech Air Force Base, McCarran International Airport, Henderson Executive Airport and North Las Vegas Airport for the purpose of guiding compatible development within the airports' influence areas. Title 30.48 defines development zones within the AEOD based on day/night average sound levels (DNL) and requires noise attenuation construction techniques for sensitive uses permitted within the AEOD. The Title also requires noise disclosure forms to be recorded against any new development within the McCarran, Henderson Executive or North Las Vegas AEODs. (Clark County 2008).

5.4 CONSTRUCTION IMPACTS

Local, State, Tribal, or Federal ordinances and regulations address impacts of construction activities, including dust and noise from heavy equipment traffic, disposal of construction debris, and air and water pollution.

The proposed action includes the construction of an ATCT, base building, parking structure, and placement of new utility lines and subsurface duct bank to connect the ATCT to airport equipment via existing duct banks. The proposed ATCT and base building site is located within the developed airport area at the southwest corner of Flight Path Avenue and Kelly Lane. The existing ATCT would be demolished and disposed of as part of the proposed action. The ATCT was inspected for asbestos containing materials on February 10, 1993 and asbestos was detected in various materials throughout the building. The existing ATCT was also inspected for lead-based paint and other lead-containing coatings on November 4, 1998 and both were detected on various surfaces throughout the building. The total area being impacted by construction and demolition activities would be approximately 5.87-acres, which includes 3.57 acres for construction and 2.3 acres for demolition.

Construction traffic would likely use Flight Path Avenue via Russell Road to access the proposed ATCT site and Wright Brothers Lane via Wayne Newton Blvd. to access the existing ATCT site. The nearest residential neighborhood to the proposed and existing ATCT sites lies north of Russell Road, approximately 1,700 feet from the ATCT site. The nearest non-airport commercial businesses are located on Eastern Avenue more than one mile east of the proposed ATCT site.

5.5 DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(F)

The Federal statute that governs impacts in this category is commonly known as the Department of Transportation (DOT) Act, section 4(f) provisions. Section 4(f) of the DOT Act provides that the Secretary of Transportation will not approve any program or project that requires the use of any publicly owned land from a public park, recreation area, or

wildlife and waterfowl refuge of national, State, or local significance or land from an historic site of national, State or local significance as determined by the officials having jurisdiction thereof, unless there is no feasible and prudent alternative to the use of such land and such program, and the project includes all possible planning to minimize harm resulting from the use.

Based on a review of the United States Geological Survey (USGS) *Las Vegas SW Quadrangle, Nevada 7.5 Minute Series Topographic* maps, dated 1984; information published by Clark County (CCDPR 2008), the Nevada Division of State Parks (Nevada Division of State Parks 2008), and the USFWS (USFWS 2008b); and consultation with the Nevada Department of Conservation and Natural Resources (included in Appendix F) and the Nevada State Historic Preservation Office (Appendix E), there are no publicly owned lands used as public parks, recreation areas, wildlife or waterfowl refuges, or historic sites located within the area of potential effect for the proposed action at LAS. The closest public land to the airport is the Clark County Paradise Vista Park at 5582 Stirrup Street, approximately one mile northeast of the new ATCT site (CCDPR 2008). Bali Hai Golf Club, located on the airport property at 5160 Las Vegas Blvd. South, is a privately run course on land leased from Clark County nearly two miles west of the new ATCT site.

5.6 FARMLANDS

The Farmland Protection Policy Act (FPPA) requires that federal agencies identify and consider the adverse effects of their programs on the preservation of farmlands. The FPPA applies to farmland defined as "prime" or "unique" in Section 1540(c)(1) of the Act, or to farmland of statewide or local importance as defined by the appropriate state or local agency.

The proposed action would affect land within the existing airport property. This land has been used as an airport since 1941 and the existing ATCT was commissioned in 1983. The proposed site for the replacement ATCT and Base Building would be located at the southwest corner of Flight Path Avenue and Kelly Lane. Based on information published by the United States Department of Agriculture's Natural Resources Conservation Service (NRCS), the soils where the ATCT, base building, parking structure and utility lines would be placed are all rated as "not prime farmland" as defined by the Farmland Protection Policy Act (Appendix C; NRCS 2008a).

5.7 FISH, WILDLIFE AND PLANTS

Federal agencies are required to assess potential impacts from agency actions to fish, wildlife and plants and their habitats under several federal and state laws, Executive Orders and regulations. These include the Endangered Species Act (ESA), the Sikes Act, the Fish and Wildlife Coordination Act, the Fish and Wildlife Conservation Act, the Migratory Bird Treaty Act, and Executive Order 13112 (Invasive Species). Definitions of the requirements under these Acts and Executive Order are provided in Section 6.7 of this document.

The proposed action APEs were inspected by Plant/Wetland Ecologist Cindy Johnson and Botanist/Biologist Frank Smith on August 1, 2008. Information from the Nevada Natural Heritage Program (NNHP), the U.S. Fish and Wildlife Service (USFWS) and other sources

was evaluated for information relevant to the habitat quality for fish and wildlife characteristic of the proposed action APEs.

The APE for the existing ATCT consists of parking lots, associated buildings, and a segment of the airport monorail (see Appendix A). A few ornamental trees and palm trees growing in concrete planters in close proximity to the ATCT may be within the area to be directly affected by demolition of the ATCT. Other planters and roadside strips in the vicinity of the APE for the existing ATCT that support landscape plantings of oleanders, cacti, yucca, and flowering forbs are likely outside of the area to be directly affected by ATCT demolition.

The APE for the proposed ATCT is currently being used as a staging area, concrete batch plant, and contractor yard for other construction projects in the vicinity. Except for a few weedy grasses and forbs along the perimeter of the site, the APE is bare of vegetation. Plant species observed along the perimeter of the site include sixweeks (*Festuca octoflora*), foxtail brome (*Bromus rubens*), flatcrown buckwheat (*Eriogonum deflexum*), sweetbush (*Bebbia juncea*), globemallow (*Sphaeralcea* spp.), and ceanothus (*Ceanothus* spp.). Across Flight Path Avenue to the north of the APE, mature landscape plantings occur between the sidewalk and the parking lot. These plantings include palm trees and ornamental shrubs surrounded by a gravel surface with no herbaceous vegetation.

The APEs for the proposed and existing ATCTs do not include any perennial or seasonal surface waters that support fish populations or other aquatic species. The nearest perennial surface water consists of water hazards on Bali Hai golf course, located on the west side of the airport more than 1.5 miles from either APE. The proposed APEs were also inspected for areas qualifying as wetlands or waters of the United States according to criteria specified in the Corps of Engineers Wetland Delineation Manual (USACE 1987). None were identified.

Wildlife species observed within the proposed ATCT APE during the site visit include one rock dove (*Columba livia*). In addition, McCarran Airport personnel report that Mexican free-tailed bats (*Tadarida brasiliensis*) roost in the parking garage at the airport, located 0.21 mile from the APE for the existing ATCT and 0.33 mile from the APE for the proposed ATCT (Sydney Nitschke, Environmental Quality Specialist, McCarran International Airport, personal communication 2008).

The NNHP has identified sixteen endangered, threatened, candidate, and/or at risk plant and animal taxa that have been recorded within a five mile radius of the proposed action APEs or for which habitat may be available within that area (see Appendix F). Each of the species of concern and their conservation status is indicated in Table 5.7-1 below.

Table 5.7-1. Conservation status of At Risk Taxa Recorded Near the McCarran Airport Project Area.

Species	Scientific Name	USFWS Category	NV Classification	NNHP State Rank
Peregrine falcon	*Falco peregrinus*		YES	S2

Species	Scientific Name	USFWS Category	NV Classification	NNHP State Rank
Western yellow-billed cuckoo	*Coccyzus americanus occidentalis*	C	YES	S1B
Mexican long-tongued bat	*Choeronycteris mexicanus*			SNA
Spotted bat	*Euderma maculatum*	xC2	YES	S2
Silver-haired bat	*Lasionycteris noctivagans*			S3
Hoary bat	*Lasiurus cinereus*			S3
Mexican free-tailed bat	*Tadarida brasiliensis*		YES	S3S4
Western mastiff bat	*Eumops perotis*	xC2	YES	S1
Banded Gila monster	*Heloderma suspectum cinctum*	xC2NL	YES	S2
Desert tortoise	*Gopherus agassizii*	T	YES	S2
Mojave gypsum bee	*Anderna balsamorhizae*			S2
Las Vegas bearpoppy	*Arctomecon californica*	xC2	CE	S3
Las Vegas buckwheat	*Eriogonum corymbosum nilesii*	C		S1S2
Yellow two-tone beardtongue	*Penstemon bicolor bicolor*			S2
Parish phacelia	*Phacelia parishii*			S2S3
Littlefield milkvetch	*Astragalus preussii laxiflorus*			S1

USFWS Categories for Listing under the Endangered Species Act:

T = Threatened
C = Candidate
xC2 = Former Category 2 Candidate; now species of concern
NL = Not Listed (no status) in a portion of the species' range

Nevada State Protected Species Classification:

YES = fauna protected under NRS 501
CE = critically endangered plant species whose survival requires assistance because of overexploitation, disease, or other factors, or because their habitat is threatened with destruction, drastic modification, or severe curtailment

Nevada Natural Heritage Program Global and State Ranks for Threats and/or Vulnerability:

S = State rank indicator, based on distribution within Nevada at the lowest taxonomic level
1 = critically imperiled and especially vulnerable to extinction or extirpation due to extreme rarity, imminent threats, or other factors
2 = imperiled due to rarity or other demonstrable factors
3 = vulnerable to decline because rare and local throughout its range, or with very restricted range
4 = long-term concern, though now apparently secure, usually rare in parts of its range, especially at its periphery
5 = demonstrably secure, widespread, and abundant
A = accidental within Nevada
N = non-breeding status within Nevada (excludes resident taxa)

Peregrine falcons are known to nest on various man-made structures in the Las Vegas Valley (CCDAQEM 2008c). According to the Nevada Department of Wildlife, peregrine falcons inhabit tall buildings in the Las Vegas urbanized area, including some of the casinos along the Strip within two miles of LAS (Christy Klinger, Diversity Biologist, Las Vegas Office, Nevada Department of Wildlife, personal communication 11/17/2008). The one occurrence of peregrine falcons recorded by the NNHP in the vicinity of LAS was in 1990 in the vicinity of the Las Vegas Hilton, located within 4 miles of the proposed action APEs. Although peregrine falcons are naturally a cliff-nesting species, their nests are being discovered with increasing frequency on manmade structures (Defenders of Wildlife 2008; NDOW 2008). It is possible that manmade structures in the vicinity of the APEs, including the existing ATCT, could provide nesting and perching habitat for peregrine falcons, although none have been reported by airport personnel. The prey base for the species in and around the APEs is likely to be minimal since the occurrence of pigeons and other birds in the vicinity of the airport is uncommon enough that there is no need for a Wildlife Hazard Management Plan to reduce the potential hazard of bird strikes by aircraft (Darren Then, Senior Civil Engineer, McCarran International Airport, personal communication 2008). In addition, the history of disturbance of the project area, continuing until the present, further reduces the potential for the site to provide foraging opportunities for the species. A large number of tall buildings less than two miles from the APEs provides abundant similar habitat for peregrine falcons, with more extensive vegetated areas to support a prey base for the birds than exists in the vicinity of the existing ATCT or the site for the proposed ATCT. No peregrine falcons were observed during the site inspection in August 2008.

In the western United States, the western yellow-billed cuckoo occurs primarily in desert riparian habitat in mature cottonwood and willow stands close to moving water (CCDAQEM 2008c). Western yellow-billed cuckoos are rarely observed as transients in xeric desert or urban settings (AZGFD 2002), which are unsuitably dry environments for the species. Most of the cuckoo habitat in Nevada occurs in low-lying river forest below 4,500 feet in elevation (NDOW, *et al.* 2008). Within Clark County, Nevada, cuckoos have been observed along the Virgin, Muddy, and Colorado Rivers, and in the Las Vegas Wash (CCDAQEM 2008c). The APEs for the proposed action do not include any suitable habitat for western yellow-billed cuckoos. The NNHP list of At Risk Taxa Near the McCarran Airport Project Area includes only one observation of the species from the general vicinity of the APEs in 1984 (see Appendix F).

In the United States, the Mexican long-tongued bat occurs primarily in southern California, southern Arizona, southwestern New Mexico, and the southern tip of Texas, although this species has been recorded in the Las Vegas area. The NNHP list of At Risk Taxa Near the McCarran Airport Project Area includes only one observation of the species from the general vicinity of the airport in 1983 (see Appendix F). Within its normal range, this bat species occurs in a variety of habitats, including thorn scrub, Palo Verde-saguaro desert, semi-desert grassland, oak woodland, and tropical deciduous forests, with oak-conifer woodlands and semi-desert grasslands being the most common habitats for the bat in the southwestern U.S. (WBWG 2008). None of the habitat types or food resources that support the Mexican long-tongued bat occurs in the vicinity of the APEs for the proposed action. The extent of human activity in the vicinity of the APEs also greatly decreases the potential for the bats to use any

buildings in the area for roosting. No individuals were observed during the site inspection in early August 2008.

In Nevada, the spotted bat is primarily found over mesquite shrubland habitat, secondarily over riparian marsh habitat, infrequently over riparian shrubland habitat, and the species avoids palm grove habitat. Observations of spotted bats in Nevada are highly associated with prominent rock features and the species is considered to be dependent on the availability of rock-faced cliff roosting habitat. Secondary roosting habitat for spotted bats includes caves or abandoned mines, and the species has been observed using buildings and other man-made structures in other States, primarily during winter hibernation (Bradley, et al. 2006). The NNHP list of At Risk Taxa Recorded Near the McCarran Airport Project Area (see Appendix F) includes four observations of spotted bats, all of which occurred more than 15 years ago and more than a mile from the airport. None of the habitat types with which spotted bats have been found to be associated in Nevada are characteristic of the project area or its vicinity. In addition, the history of disturbance of the project area further reduces the potential for the site to provide even foraging opportunities for the species and greatly reduces the potential value of the existing ATCT as a roosting site. No spotted bats were observed during the site inspection in early August 2008.

Both the silver-haired bat and the hoary bat are associated with coniferous or mixed coniferous and deciduous forest habitats at higher elevations and they rely on desert riparian corridors at lower elevations and during migration (Bradley, et al. 2006). They roost almost exclusively in tree canopies during the summer (Bradley, et al. 2006; NatureServe 2008; BCI 2008), but silver-haired bats have been documented using alternative roosting habitat, including caves, mines, cliffs, talus, and rarely houses during winter hibernation (Bradley, et al. 2006). Hoary bats are not attracted to structures, but may use parks and garden settings for roosting in urban areas (Bradley, et al. 2006; BCI 2008; UMMZ 2008). The NNHP list of At Risk Taxa Recorded Near the McCarran Airport Project Area includes one occurrence each for these two species (see Appendix F). Both occurrences were recorded in the mid-1960s less than two miles from the proposed action APEs, with no sightings since then. No individuals of these species were observed during the site visit. The lack of forested habitat, history of disturbance of the project area and the ongoing level of human activity greatly reduces the potential value of the APEs for foraging opportunities and the existing ATCT as a roosting site for these species.

Mexican or Brazilian free-tailed bats occupy a wide variety of habitats, including urban areas. They roost in caves, crevices, hollow trees, abandoned mines, buildings, culverts, and under bridges in colonies that are segregated by sex and may number in the millions (Bradley, et al. 2006; BCI 2008; NatureServe 2008). They feed on insects and may travel considerable distances to productive feeding areas (NatureServe 2008). Six occurrences of Mexican free-tailed bats were recorded in the vicinity of the airport between 1959 and 1969 and airport personnel report that a colony of this species roosts in the airport parking garage at the present time (Sydney Nitszche, Environmental Quality Specialist, McCarran International Airport, personal communication 2008). The parking garage is located less than 0.25 mile from both APEs for the proposed action. No Mexican free-tailed bats are known to roost in the existing ATCT but such use of the structure is possible. No roosting opportunities are available within the APE for the proposed ATCT. It is reasonable to

assume that Mexican free-tailed bats occasionally fly over both of the APEs during foraging flights, but the paved and disturbed condition of these areas make it unlikely that insect prey concentrations are abundant in these locations. No Mexican free-tailed bats were observed within or in the vicinity of either APE during the site visit in early August 2008.

Western mastiff bats live in arid and semiarid, rocky canyons in the southwestern U.S. They roost in cracks in boulders and crevices or shallow caves on cliffs and rock walls, but may also use similar crevices in buildings (Bradley, et al. 2006; National Museum of Natural History 2008; NatureServe 2008c). The bats are most frequently encountered in open areas and they use a variety of habitats, including dry desert washes, floodplains, chaparral, oak woodland, open ponderosa pine forest, grassland, montane meadows, and agricultural areas. Until recently, the only recorded occurrence of western mastiff bats near the proposed action project area was in 1966 and almost six miles away. Since 2001, the species has been recorded acoustically in other locations in southern Nevada, including the Las Vegas Wash (Bradley, et al. 2006). Western mastiff bats are generally only present in areas where there are significant rock features that provide suitable roosting habitat and large open-water drinking sites are a necessary habitat feature for the species (Texas Parks and Wildlife 2008). Although buildings in the vicinity of the proposed action APEs represent potential roosting habitat for western mastiff bats, including the existing ATCT, none of the habitat types in which the species is generally found occur within or near the APEs. Most of the area within and in the vicinity of the APEs is either paved or subject to frequent disturbance and the amount of vegetation present is not adequate to support the large insects that comprise most of their diet (NSRL 2008). The poor quality of habitat for western mastiff bats within the proposed action APEs minimizes the probability that these bats are using the existing ATCT for roosting.

The Gila monster occurs in the Mojave, Sonoran, and Chihuahuan deserts of the southwestern U.S., including in southern Nevada (DesertUSA 1997). Gila monsters prefer rocky areas in desert scrub, semi-desert grassland, oak or juniper woodlands, and desert riparian habitat, and are often found on lower mountain slopes, rocky alluvial fans, canyon bottoms, washes, and mesic flats vegetated with grasses and succulents (CCDCP 2008b). They spend most of their life underground (over 96% of the time) in mammal burrows, under rocks, in crevices, packrat nests, thickets, and other natural cavities (Californiaherps 2008). One occurrence of this species was recorded in 1965 in the general vicinity of LAS (see Appendix F). Neither of the APEs for the proposed action qualify as suitable habitat for Gila monsters, however, due to their paved and disturbed condition. Burrowing would be impossible at either site, and prey for Gila monsters, in the form of small mammals, reptiles and their eggs, insects, bird eggs and nestlings, is not available.

The desert tortoise lives in a variety of habitats, from sandy flats to rocky foothills, including alluvial fans, washes, rocky hills, and canyons where suitable soils for den construction may be found. They depend on shrub cover for shade and protection from predators (CCDAQEM 2008c; USFWS 2008d). Shrub species that distinguish tortoise habitat include creosote bush, burrobush, Mojave yucca, blackbrush, and Joshua trees (USGS 2004). The presence of soil suitable for burrowing is a limiting factor to desert tortoise distribution (DesertUSA 1996). The current level of disturbance in the project area for the proposed ATCT and its vicinity is such that it does not include any suitable habitat for the desert tortoise. No individuals of the

species were observed in the vicinity of the existing ATCT and the NNHP list of At Risk Taxa Recorded Near the McCarran Airport Project Area includes no occurrences of the desert tortoise (see Appendix F).

Little information is available regarding the habitat preferences and requirements of the Mojave gypsum bee. In general, bees in this family nest on the ground or in natural cavities (CCDAQEM 2008c). Mojave gypsum bees collect pollen from a single plant species, the sunray (*Enceliopsis argophylla*), and are restricted to the habitat of this host plant. Although sunray habitat requires gypsum soils (CCDAQEM 2008c) and the McCarran Series on which the airport is located qualifies as gypsiferous (NRCS 2008b), no individuals or populations of this host plant were observed within the proposed action APEs or in their vicinity during a site inspection on August 1, 2008. Additionally, the current level of disturbance in the project area for the proposed ATCT and its vicinity is such that it likely does not include any suitable habitat for the Mojave gypsum bee. The NNHP list of At Risk Taxa Recorded Near the McCarran Airport Project Area includes no occurrences of the Mojave gypsum bee (see Appendix F).

In Nevada, the Las Vegas bearpoppy grows in open areas characterized by dry, spongy or powdery, often dissected or hummocky soils with high gypsum content. It occurs in areas of generally low relief on all aspects and slopes, often with a well-developed soil crust. The Las Vegas buckwheat also grows on gypsiferous soils and outcrops in areas of low relief and often occurs in washes and drainages (NNHP 2004a). The range of Las Vegas buckwheat is extremely limited within Clark and Lincoln Counties, Nevada (CBD 2008; USFWS 2007). The NNHP list of At Risk Taxa Recorded Near the McCarran Airport Project Area includes several observations of Las Vegas bearpoppy, only one of which occurred within the last decade (see Appendix F). This most recent observation of the bearpoppy occurred more than five miles from LAS, but earlier occurrences were as little as 0.4 mile from the APE for the proposed ATCT. Seven occurrences of Las Vegas buckwheat have been recorded within five miles of the proposed action APEs between 1974 and 2006, with two of those occurrences less than two miles from the APEs and one approximately 0.5 mile from both APEs. The project area for the proposed ATCT at LAS is located on gypsiferous soils of the McCarran Series (see Appendix C); however, the soils are described as sandy loams (NRCS 2008b) rather than the clay and shale-derived soils that are usually characteristic of suitable Las Vegas bearpoppy habitat (Flora of North America 2008). In addition, the current level of disturbance in the proposed action APEs and their vicinity is such that it does not include any suitable habitat for the either species. No Las Vegas bearpoppy or Las Vegas buckwheat plants were observed in the vicinity of the APEs during a field visit in August 2008.

In Nevada, yellow two-tone beardtongue is generally restricted to naturally or artificially disturbed calcareous or carbonate soils in washes, roadsides, rock crevices, outcrops, talus, and similar places receiving enhanced runoff. The occurrences within 5 miles of LAS have all been located at elevations between 2500 and 5480 feet (see Appendix F). The APEs for the proposed and existing ATCTs are located on the valley floor, relatively distant from the foothills and slopes where yellow two-tone beardtongue is likely to occur. No individuals of yellow two-tone beardtongue were observed within or in the vicinity of either APE during a field visit in early August, 2008. The current level of disturbance within the APE for the

proposed ATCT and the current level of urbanization characteristic of the APE for the existing ATCT do not constitute suitable habitat for yellow two-tone beardtongue.

In the Mojave Desert, Parish phacelia occurs on alkaline flats, playas, lakebeds and margins, and valley floors. To provide suitable habitat for this species, these areas are typically sparsely vegetated, generally dry, and they fill with water as seasonal pools in years of high rainfall (TNC 2007). Parish phacelia often occurs near seepage areas and sometimes on gypsum deposits, surrounded by greasewood or saltbush scrub vegetation. This species is considered to be restricted to wetland areas in Nevada (NNHP 2001c). The two known populations of Parish phacelia in Clark County, Nevada, are located in Indian Spring Valley and Three Lakes Valley on the Nellis Air Force Base northwest of Las Vegas (TNC 2007). Little information is available regarding the habitat requirements for Littlefield milkvetch, but the Nevada Natural Heritage Program considers this species to be dependent upon dune or deep sand habitats (NNHP 2004b). Neither of the APEs for the proposed action includes either wetland/playa habitat or dune/deep sand habitat, required for these two species. No Parish phacelia or Littlefield milkvetch plants were observed within or in the vicinity of the proposed action APEs during the site inspection in early August 2008.

5.8 FLOODPLAINS

Executive Order 11988, *Floodplain Management,* directs federal agencies to take action to reduce the risk of flood loss, to minimize the impact of floods on human safety, health and welfare, and to restore and preserve the natural and beneficial values served by floodplains in any of its actions. DOT Order 5650.2 implements Executive Order 11988 by requiring agencies to evaluate the potential effects of any actions they may take in a 100-year floodplain.

Based on a review of the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program, Flood Insurance Rate Maps (FIRM) 32003C2556E, 32003C2557E, 32003C2560E and 32003C2580E, for Clark County, Nevada and Unincorporated Areas, dated September 27, 2002, the proposed action would occur in areas that are designated as Zone X, which is defined as "areas determined to be outside the 0.2% annual chance of flooding" (See Appendix G).

McCarran International Airport lies in an area of relatively flat topography in the Las Vegas Valley, a 50 mile long valley which slopes gradually to the southeast. The valley is drained by numerous washes all of which are tributary to Lake Mead via Las Vegas Wash which runs along the east side of the valley, more than five miles east of LAS. Storm water at LAS is drained by a series of detention ponds and storm water culverts to three major outlets: the Bermuda Flood Control Channel; the Rawhide Flood Channel; and the Hacienda Avenue Storm Drain. The general flow of the system is from west to east.

5.9 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Executive Order 12088, as amended, directs federal agencies to: comply with "applicable pollution control standards," in the prevention, control, and abatement of environmental pollution; and consult with the EPA, State, interstate, and local agencies concerning the best

techniques and methods available for the prevention, control, and abatement of environmental pollution. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund) and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

The proposed action would involve the construction of an ATCT, base building and parking structure and demolition of the existing ATCT on land located within the current airport property. The McCarran International Airport site was originally established as Alamo Airport in 1941 on North Las Vegas Boulevard and was subsequently purchased by Clark County in 1948 and renamed McCarran Field. The existing ATCT was commissioned in 1983. A Phase 1 Environmental Due Diligence Audit (EDDA; FAA 2009) performed for the proposed ATCT site stated that the site was undeveloped in the mid-1950s, graded sometime before the early-1970s and used for materials storage until the late-1990s when a compressed natural gas (CNG) fueling station was established on the site by Clark County. This station was removed in 2007 and the site was used briefly as a concrete batch plant for an airport construction project in 2008. The proposed site currently contains no permanent development.

There are no National Priorities List (NPL) or candidate NPL sites or other active CERCLA sites at or adjacent to the APE for the proposed action (USEPA 2008d).

According to information published by the EPA (USEPA 2008c) McCarran International Airport is listed as an active Resource Conservation and Recovery Act (RCRA) Small Quantity Waste generator (SQG), Large Quantity Waste generator (LQG) and Universal Waste Handler. SQGs are defined as hazardous waste generators that generate between 100 kg and 1,000 kg of hazardous waste per month. LQGs are defined as hazardous waste generators that generate 1,000 kilograms per month or more of hazardous waste, more than 1 kilogram per month of acutely hazardous waste, or more than 100 kilograms per month of acute spill residue or soil. Universal wastes include batteries, pesticides, mercury-containing equipment and lamps. The Phase I EDDA conducted for the proposed ATCT site identified one Conditionally Exempt Small Quantity Generator (CESQG) within a 0.375 mile radius of the proposed site, American West Ground Support (FAA 2008). CESQGs generate 100 kilograms or less per month of hazardous waste, or 1 kilogram or less per month of acutely hazardous waste, or less than 100 kilograms per month of acute spill residue or soil. The Phase I EDDA did not find any reported or listed RCRA violations for American West Ground Support. A search of the EPA's RCRAInfo database did not find any additional RCRA waste generators in the vicinity of the existing ATCT site (USEPA 2008c).

The Phase 1 EDDA (FAA 2009) identified numerous pipeline-related jet fuel releases in the vicinity of the main terminal located upgradient of and approximately 1,500 to 2,000 feet west and southwest of the proposed ATCT site. The extent of these releases has not yet

been investigated and hydrogeologic conditions in the airport vicinity appear to be consistent with significant ground water plume migration. Therefore, these releases were collectively interpreted as a recognized environmental condition (REC) for the proposed ATCT site, representing a low to moderate potential to degrade shallow ground water at a depth of approximately 20 to 30 feet below grade.

The existing ATCT was inspected for asbestos containing materials on February 10, 1993 and asbestos was detected in various materials throughout the building. The existing ATCT was also inspected for lead-based paint and other lead-containing coatings on November 4, 1998 and both were detected on various surfaces throughout the building.

5.10 HISTORICAL, ARCHITECTURAL, ARCHEOLOGICAL, AND CULTURAL RESOURCES

Section 106 of the National Historic Preservation Act (NHPA) requires federal agencies to consider the effects of their actions on properties included, or eligible for inclusion, in the National Register of Historic Places. Compliance requires consultation with the Advisory Council on Historic Preservation, the State Historic Preservation Officer, and/or the Tribal Historic Preservation Officer.

According to information published on historic properties for Clark County on the National Park Service's (NPS) National Register Information System (NRIS) and from the Nevada State Historic Preservation Office's (SHPO) Register of Historic Places (NPS 2008a, Nevada SHPO, Appendix E), there are no historic properties listed in or determined eligible for the National Register of Historic Places (NRHP) located within the area of potential effect of the proposed action. The closest registered national historic place to the proposed ATCT site is the Little Church of the West, located at 3960 Las Vegas Boulevard South. The church is adjacent to the airport on the west side and is located more than one mile from both the construction and demolition APEs for the proposed action. All of the sites listed on the Nevada State Register of Historic Places in the Las Vegas area are located at least six miles north of McCarran International Airport.

The existing ATCT, which was built in the early 1980s, is not eligible for the NRHP because it is less than 50 years old, is not within a historic district and has no architectural or exceptional historic significance.

The FAA delineated an area of indirect effect to determine the possibility for visual impacts to potential historic properties in the surrounding neighborhoods. The FAA used a 0.75 mile radius around the tower to define this indirect APE. The Federal Communications Commission uses this distance for their evaluation of visual impacts from communication towers that are 200-400 feet tall (FCC 2004). The indirect APE consists largely of areas within the airport, but also includes some residential neighborhoods to the north and northeast of the proposed ATCT site (see Figure 5). According to the Clark County Assessor's Office, the earliest construction date for any of the homes within these neighborhoods is 1962 (see Appendix E).

According to information published by the NPS on the Native American Graves Protection and Repatriation Act (NAGPRA) database (NPS 2008b) seven federally recognized Indian

Tribes are identified as having interests in Clark County, Nevada. Tribes with interests in Clark County include the Colorado River Indian Tribes of the Colorado River Indian Reservation, Arizona and California; Fort Mojave Indian Tribe of Arizona, California & Nevada; Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona; Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona; Las Vegas Tribe of Paiute Indians of the Las Vegas Indian Colony, Nevada; Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada; and the Paiute Indian Tribe of Utah (See Appendix E).

5.11 LIGHT EMISSIONS AND VISUAL IMPACTS

Order 1050.1E CHG 1 directs the FAA to consider the extent to which lighting associated with a proposed action creates an annoyance or interferes with normal activities among people in the vicinity. The Order also directs FAA to consider the extent to which the proposed development contrasts with the existing environment and whether the agency considers this contrast objectionable, based on public input.

McCarran International Airport is located approximately two and one-half miles south of the City of Las Vegas and one-half mile east of the Las Vegas "Strip." LAS lies adjacent to the arterial roads South Las Vegas Boulevard to the west, Sunset Road to the south, South Eastern Avenue to the east and West Tropicana Avenue to the north. Paradise Road crosses the airport from north to south. Interstate-215 is located approximately one-half mile south of the airport and Interstate-15 is approximately one-half mile west of the airport. The area to the northeast of the airport is largely residential with a small amount of commercial development, and the University of Las Vegas. The area to the northwest of the airport and east of I-15 is densely developed with the hotels and gaming establishments on the Las Vegas Strip. The area to the west of the airport and east of I-15 includes resorts associated with the Strip, a golf course and a small amount of manufacturing use. The area to the south of the airport is comprised of a mix of development including commercial resorts associated with the Strip, light manufacturing and other commercial businesses. The area to the east of the airport consists primarily of light manufacturing and residential development with some commercial use.

Lighting in the area includes existing airport lights, street lighting for the surrounding roads, lights from local businesses and residences, and general ambient light from the Las Vegas Strip and the cities of Las Vegas and Henderson.

5.12 NATURAL RESOURCES AND ENERGY SUPPLY

Executive Order 13123, Greening the Government Through Efficiency Management (64 FR 30851, June 8, 1999) encourages federal agencies to expand the use of renewable energy within their facilities and activities and requires a reduction of petroleum use, total energy use, air emissions, and water consumption by federal agencies in their facilities. It is also the policy of the FAA to encourage the development of facilities that exemplify the highest standards of design including principles of sustainability.

The energy supply for LAS consists of electricity supplied by Nevada Energy and natural gas by the Southwest Gas Corporation (CCDOA 2005, p. III-59). Jet fuel is used for aircraft

taxiing and operations, while gasoline, other fuels and small batteries are used for vehicles, on-site combustion engines, and other various equipment used for routine airport facility operations and maintenance. Potable water at LAS is supplied by the Las Vegas Valley Water District.

5.13 NOISE

Noise in the vicinity of airports and its impacts on people and communities has been addressed by several federal laws including the Aviation and Noise Abatement Act, the Federal Aviation Act, the Control and Abatement of Aircraft Noise and Sonic Boom Act, the Airport and Airway Improvement Act, the Airport Noise and Capacity Act and the Noise Control Act. Aviation-related noise impacts are regulated by the FAA under 14 CFR Part 150 and Advisory Circular 150/5020, *Noise Control and Compatibility Planning for Airports.* As stated in FAA Order 1050.1E CHG 1, "For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly day/night average sound level (DNL) as FAA's primary metric."

As part of the 2006 FAR Part 150 Noise Compatibility Study Update for McCarran International Airport, Noise Exposure Maps (NEM) were produced showing existing (2004) and forecast 2011 noise exposure levels due to aircraft operations at LAS as required by Part 150. Although not required, a NEM was also produced for 2017 forecast noise exposure levels to facilitate long-term land use compatibility planning in the vicinity of the airport. In 2004 total annual operations at the airport were 544,679, forecast 2011 annual operations were estimated at 643,947 and 2017 annual operations were estimated at 746,641 (CCDOA 2006a). Total aircraft operations for the year ending December 31, 2007 were 609,472 (CCDOA 2008).

NEMs produced for the 2006 Noise Compatibility Study Update depict noise exposure level contours in five decibel increments including the 75, 70, 65 and 60 DNLs. The existing (2004) 75 decibel DNL contour is contained almost entirely within the airport property, but includes a small amount of commercial and industrial land use to the east of the airport and a small amount of recreational land use (the Sport Center of Las Vegas) at the southwest corner of the airport. The 2004 70 decibel DNL contour includes a small amount of vacant land at the southwest corner of the airport; commercial and industrial land use east of the airport; commercial, industrial, vacant, recreational (the Sport Center of Las Vegas) and a small amount of multi-family residential land use south of the airport; and commercial, industrial, vacant and the Bali Hai Golf Course (a privately managed course located on CCDOA land) west of the airport. The 2004 65 decibel DNL contour includes commercial, multi-family residential, vacant and public (University of Las Vegas) land use to the north of the airport; commercial, industrial, multi-family residential, vacant and recreational land use to the east of the airport; commercial, industrial, multi-family residential, vacant and park land use south of the airport; and commercial, industrial, vacant, public and single-family residential land use to the west of the airport. The 2004 60 decibel DNL contour includes commercial, multi-family residential, public (University of Las Vegas) and vacant land use north of the airport; single- and multi-family residential, commercial, industrial, recreational and vacant land use east of the airport; single- and multi-family residential, public, park/open

space, commercial, industrial, public and vacant land south of the airport; and commercial, industrial, public, single- and multi-family residential and vacant land use west of the airport. Both the 65 and 60 DNL contours include land within the City of Henderson. Table 5.13-1 includes details of the noise exposure in the vicinity of the airport, including estimates of the total area affected by each exposure level, and the total number of households, schools, religious centers, hospitals, and other sensitive land uses within each exposure level. The proposed action is not expected to change airport operations, and hence noise exposure levels. (CCDOA 2006a, pp. V-2 and V-9).

Table 5-13-1. Noise Exposure in the LAS Vicinity

	DNL Exposure	Area (Mile^2)	Households	Schools	Religious Centers	Hospitals	Other[1]
2004	DNL 75+	2.2	0	0	0	0	0
	DNL 70-75	4.28	93	0	1	0	0
	DNL 65-70	5.27	2,096	0	2	0	3
	DNL 60-65	11.02	13,993	8	8	0	7
2011	DNL 75+	2.11	0	0	0	0	0
	DNL 70-75	4.11	81	0	2	0	0
	DNL 65-70	5.3	2,331	2	0	0	3
	DNL 60-65	11.15	14,834	9	9	3	10
2017	DNL 75+	2.15	0	0	0	0	0
	DNL 70-75	4.24	136	0	2	0	0
	DNL 65-70	5.66	2,747	3	0	0	3
	DNL 60-65	12.25	16,642	8	10	3	11

[1] Includes day care centers and structures listed on the NRHP.
Source: CCDOA 2006a.

FAA regulations and local planning documents provide guidance for compatible development surrounding the airport with regard to noise levels. FAA Advisory Circular 150/5020-1, *Noise Control and Compatibility Planning for Airports* states that, "(a)lthough all land uses may be considered as normally compatible with noise levels less than 65 (DNL), local needs and values may dictate further delineation based on specific local requirements or determinations as well as low ambient levels." (FAA 1983) The Clark County Unified Development Code (Title 30.48) defines an Airport Environs Overlay District (AEOD) which includes McCarran International Airport for the purpose of guiding compatible development within the airport's influence area (Clark County 2008). Title 30.48 allows incompatible uses within the AEOD that were present at the time of the establishment of the District, but requires noise attenuation construction techniques for any new construction of habitable buildings within the AEOD. Title 30.48 requires a 25 dB noise reduction for any permanent residential development within the DNL 60 or 65 zones and only allows low-density residential use within the 70 DNL zone with a 30 dB noise reduction. The Title also requires noise reductions of 25 and 30 dB within DNL 65 and 70 zones respectively for new construction of medical, educational or religious facilities. The Title also requires noise disclosure forms to be recorded against any new development within the McCarran AEOD. The City of Henderson Comprehensive Plan does not address noise from McCarran International Airport (City of Henderson 2006).

5.14 SECONDARY (INDUCED) IMPACTS

FAA Order 1050.1E CHG 1 requires the FAA to identify any induced impacts to surrounding communities which may result from a proposed action. Examples of induced impacts as defined by the Order include, "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."

LAS is owned and operated by the Clark County Department of Aviation. It serves as primarily a commercial airport with some general aviation and military usage. As of December 2007, LAS was served by 19 domestic and 29 international scheduled commercial airlines (CCDOA 2008) and had nearly 23 million total enplanements in 2007 (FAA 2007). There were 609,472 total operations at LAS in 2007, with 90% of flights being commercial operations (CCDOA 2008).

The airport property includes a limited amount of commercial businesses and non-airport related facilities including two fixed-base flight services operators, a retail/office center, day care center, Nevada Energy substation and a golf course which is privately run on land leased from the CCDOA west of Las Vegas Boulevard. Both terminal buildings include various concessions including restaurants, retail stores and electronic gambling machines. The Howard Cannon Aviation Museum, which focuses on the history of aviation in southern Nevada, is also located in Terminal 1. Most of the airport facilities, including the commercial flight terminals, public parking, air cargo facilities, commercial facilities, and aircraft rescue and fire fighting facilities are located between the runways, north of Runway 7L/25R and east of Runway 1R/19L. General aviation facilities are located to the west of Runway 1L/19R. Runways and passenger services facilities occupy the remaining airport property (CCDOA 2006b; Philip Detmer, Business/Facilities Mgmt. CCDOA, personal communication 10/27/08).

LAS is generally bordered by commercial development to the west (the Las Vegas Strip); commercial development, multi- and single-family residences and the University of Las Vegas to the north; commercial and industrial development with some residential use to the east; and commercial and industrial uses to the south. Construction of the new ATCT and Base Building and demolition of the existing ATCT would occur within the developed airport property at the southwest corner of Flight Path Avenue and Kelly Lane.

5.15 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

FAA Order 5100.37B implementing the Uniform Relocation Assistance and Real Property Acquisition Policies Act requires fair, consistent and equitable treatment of owners of real property to be acquired for federal and federally-assisted projects, and persons displaced as a direct result of federal projects. Executive Orders 12898 and 13045 require federal agencies to identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on children, minority and low-income populations.

McCarran International Airport is located within unincorporated Clark County, Nevada in the community of Paradise. Paradise is bordered by the other unincorporated communities of Winchester (north), Spring Valley (west), Enterprise (south), and Sunrise Manor and Whitney (east). The airport is located approximately two and one-half miles south of the City of Las Vegas, one-half mile east of the Las Vegas "Strip," and about two miles west of the City of Henderson. All of these communities are located in the Las Vegas Valley, the only major population center in Clark County. The airport is owned and operated by the Clark County Department of Aviation.

As indicated in Table 5.15-1 below, the population of the unincorporated community of Paradise in 2007 was estimated at 189,958, compared to 603,093 in the City of Las Vegas and 1,996,542 in Clark County (CCDCP 2008). According to Clark County, in 2007 Paradise ranked as the fifth largest population center in the County after the Cities of Las Vegas, Henderson and North Las Vegas and the unincorporated community of Sunrise Manor (CCDCP 2008). Population growth rates in Paradise are well below rates for other communities in the Las Vegas Valley.

Table 5.15-1. Area Population Comparisons 2000-2007

Area	2000	2007	% Change
Paradise	172,656	189,958	10.0%
City of Las Vegas	484,454	603,093	24.5%
Las Vegas Valley	1,366,916	1,925,261	40.8%
Clark County	1,428,916	1,996,542	39.7%
Nevada	1,998,257	2,495,529	24.9%

Source: CCDCP 2008; U.S. Census Bureau 2008

The largest employment sector in the Las Vegas-Paradise Metropolitan Statistical Area (MSA) is leisure and hospitality (22.02%), followed by casino hotels and gaming (14.46%), trade, transportation and utilities (12.77%), professional and business services (9.43%), construction (9.33%), retail (8.05%), government (7.64%), with the remaining 16.28% in education, health services, financial, manufacturing, wholesale and other services (CCDCP 2008). The Las Vegas-Paradise MSA includes all of Clark County. Major employers in Clark County include the Clark County School District, Clark County Government, Venetian Hotel & Resorts, Bellagio Hotel & Casino, MGM Grand Hotel, Inc., Wynn Las Vegas, Mandalay Bay Resort & Casino, Caesars Palace Hotel & Casino, Mirage Hotel & Casino and the Las Vegas Metropolitan Police (CCDCP 2008).

Employment in the Las Vegas-Paradise MSA is projected to remain stable with a predicted 3.3% annual growth rate through 2016, slightly more than the Nevada predicted annual growth rate of 2.9%. Comparatively, the national employment annual growth rate over the same period is expected to be around 1% (Nevada DETR 2008; U.S. Bureau of Labor Statistics 2008).

The 2006 median household income in the Paradise census designated place (CDP) ($44,563) was significantly lower than the City of Las Vegas ($53,000), Clark County ($53,536) and State of Nevada ($52,998) median incomes during the same period. The percentage of persons below the federal poverty level in 2000 in the Paradise CDP was

11.8%, as compared to 11.9% in Las Vegas, 10.8% in Clark County and 10.5% in Nevada. According to U.S. Census Bureau (2008) information, in 2006 70.2% of the Paradise CDP was White, 28.6% Hispanic (which may also be included in other races), 8.2% Black, 7.7% Asian, 1.2% American Indian, 0.4% Native Hawaiian or other Pacific Islander and 9.6% other. These numbers correspond very closely to those from Clark County. (U.S. Census Bureau 2008).

5.16 WATER QUALITY

Federal agencies are required to comply with provisions of the Clean Water Act in any action that may affect water quality, including the control of any discharge into surface or ground water and the prevention or minimization of loss of wetlands. Agencies must also comply with the Fish and Wildlife Coordination Act if the proposed action impounds, diverts, drains, controls, or otherwise modifies the waters of any stream or other water body. Section 1424(e) of the Safe Drinking Water Act requires consultation with the EPA if a proposed action has the potential to contaminate an aquifer designated by the EPA as a sole or principal source of drinking water for the area.

No perennial surface water drainages exist within the airport property. LAS lies in an area of relatively flat topography in the Las Vegas Valley, a 50 mile long valley which slopes gradually to the southeast. The valley is drained by numerous washes all of which are tributary to Lake Mead via Las Vegas Wash which runs along the east side of the valley, more than five miles east of the airport. Storm water at LAS is drained by a series of detention ponds and storm water culverts to three major outlets: the Bermuda Flood Control Channel; the Rawhide Flood Channel; and the Hacienda Avenue Storm Drain. The general flow of the system is from west to east.

Ground water could be expected at depths of approximately 25 feet below ground surface in the vicinity of the proposed ATCT site, based on ground water data which was obtained for the EDDA for the proposed ATCT site (FAA 2008), and information published by the Southern Nevada Water Authority (SNWA 2008).

A large underground water reservoir is located immediately south of the new ATCT site. The reservoir was constructed in the late 1980s and its surface has been paved for use as a parking lot. The reservoir is supplied with water from Lake Mead and is maintained as a potable public water supply by the Las Vegas Valley Water District (LVVWD). According to LVVWD personnel, the reservoir is approximately 20 feet deep with no reported leaks which could influence local ground water gradients. Storm water drains, valves, vent pipes and a 54 inch water line associated with the reservoir are located on the adjacent property immediately to the west of the new ATCT site.

5.17 WETLANDS

Executive Order 11990 requires Federal agencies to ensure their actions minimize the destruction, loss, or degradation of wetlands. Executive Order 11990 also assures the protection, preservation, and enhancement of the Nation's wetlands to the fullest extent practicable during the planning, construction, funding, and operation of transportation

facilities and projects. Order DOT 5660.1A sets forth DOT policy that transportation facilities should be planned, constructed, and operated to assure protection and enhancement of wetlands. The Rivers and Harbors Act of 1899, and the Clean Water Act also address wetlands issues. Section 404 of the Clean Water Act requires a permit from the U.S. Army Corps of Engineers to authorize the discharge of dredged or fill material into wetlands.

The United States Fish and Wildlife Service's Mapper showed no wetlands within the APE for the proposed action (See Appendix H) (USFWS 2008c). The APE for the project was inspected for the presence of areas qualifying as wetlands in August 2008 by Wetland Scientist Cynthia Johnson in accordance with the Wetlands Delineation Manual issued by the U.S. Army Corps of Engineers (USACE 1987). No wetland areas were identified.

According to the National Wetlands Inventory (USFWS 2008c), the nearest wetland areas to LAS include two unnamed seasonal drainages located approximately one-half mile to the south and one mile to the north of the APE (See Appendix H).

5.18 WILD AND SCENIC RIVERS

Section 7 of the Wild and Scenic Rivers Act requires all federal agencies to consult with the appropriate land management agency if a proposed action may affect a designated or study river in the Wild and Scenic Rivers System. CEQ guidance also requires federal agencies to consult with the NPS when a proposed action may affect a river included in the Nationwide Rivers Inventory. This inventory identifies rivers which have the potential for designation under the Wild and Scenic Rivers Act.

According to information published by the NPS (NPS 2008c), there are no Wild and Scenic River segments currently designated in the State of Nevada. A 30 mile segment of the Virgin River from the Arizona-Nevada state border to Lake Mead in Clark County is included in the Nationwide Rivers Inventory (NPS 2008d). This segment of the Virgin River is more than 50 miles from LAS.

6.0 ENVIRONMENTAL CONSEQUENCES

This section of the Environmental Assessment examines the possible impacts to the environment, as described in Section 5.0, for both the preferred and the no action alternatives. The analysis is divided into 18 impact categories. All impacts of the proposed action are examined for each resource category as specified by FAA Order 1050.1E CHG 1, FAA Order 5050.4B and guidance from the Council on Environmental Quality. Additionally, cumulative impacts of the proposed action and any past, present, and reasonably foreseeable future actions (as listed below) are evaluated for each of the impact categories following the Preferred and No Action analyses. The analysis of impacts to individual resources takes into account compliance with relevant federal, state, and local laws, regulations, and ordinances, where applicable. Brief descriptions of the applicable sections of these directives are provided. For more detailed information, please refer to the full text of the appropriate document as cited.

CUMULATIVE IMPACTS

Cumulative impacts, as defined by 40 CFR 1508.7 are "…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 (Federal or non-Federal) or person undertakes such other actions."

Past Actions

The McCarran International Airport site was originally established as Alamo Airport in 1941 on North Las Vegas Boulevard and was subsequently purchased by Clark County in 1948 and renamed McCarran Field. Airport improvements in the ensuing years have improved safety and the airport's capacity to serve its community. Major airport development highlights in the last 20 years are included in Table 6.1.

Table 6-1. LAS Airport Development Timeline

Year Completed	Airport Improvement
1985	• new Terminal 1 ticketing and baggage claim buildings
1987	• Concourse C construction – 16 gates
1991	• Terminal 2 rehabilitation
1994	• Concourse C expansion – 4 gates
1996	• construction of long-term parking garage – 6,000 spaces
1998	• Terminal 1 ticketing building expansion • Terminal 1 baggage claim expansion • Concourse D construction – 26 gates
2004	• acquisition of 243 dwellings for Terminal 3 construction
2005	• northeast extension of Concourse D – 10 gates • demolition of dwellings for Terminal 3 construction
2007	• Russell Road relocation
2008	• northwest extension of Concourse D – 7 gates • new economy parking lot – Kittyhawk & Paradise • wall and bridge repair, Terminal 1 access road • jet bridges repair, Terminal 1 CB2 gates

Table 6-1. LAS Airport Development Timeline

Year Completed	Airport Improvement
	• jet bridges installation, NW Wing D Gates • sky bridge connecting A,B,C Gates

(CCDOA 2005; Larry Silver, Project Coordinator Clark County Department of Aviation, personal communication 1/23/09)

Historical Las Vegas Area Development

The name Las Vegas, which means "The Meadows" in Spanish, was given to the area where the city now lies in 1829 by a young scout named Rafael Rivera due to the abundant grasses he found in the valley supplied with plentiful spring water. In 1844 John Fremont noted the name in his journal describing the springs he found there during expeditions on the Old Spanish Trail. Mormons were the first white settlers in the valley, building a fort in 1855 but abandoning it two years later. The railway linking southern California and Salt Lake City was completed in the early 1900s establishing Las Vegas as a railroad town. Las Vegas was founded as a city in 1905 and incorporated in 1911. In 1931 gambling was legalized in Nevada, divorce laws were liberalized in the State, and construction of Hoover Dam also began that year, bringing an influx of people and money to the area. The Las Vegas Army Airfield (now Nellis Air Force Base) was built in 1941 and construction of the Basic Magnesium plant began to supply raw materials for WWII; the town of Henderson was founded to house plant workers. After the war, lavish hotel and gambling resorts with big name entertainers proliferated and tourism and entertainment emerged as the largest employers in the area. A 1960s State law allowed public corporations to acquire gambling licenses, which further facilitated the now legitimized gaming industry to flourish. With its feet firmly planted in the desert sands, between 1985-95 the population of Las Vegas and Clark County nearly doubled while the area experienced a nearly 7% annual growth rate. Las Vegas and Clark County continue to grow with 3% and 5% annual growth rates respectively from 2000-2007 (CCDCP 2008; U.S. Census Bureau 2008). Famous as the "Entertainment Capitol of the World," Las Vegas celebrated its centennial on May 15, 2005. (Las Vegas Centennial 2008; City of Las Vegas 2008).

Present and Reasonably Foreseeable Future Actions

In addition to the proposed installation of a new ATCT and Base Building and the demolition of the existing ATCT (the proposed action), Table 6-2 includes the currently planned improvement projects at LAS with their expected completion dates for the foreseeable future. Many of the planned developments at LAS would occur in the same general area of the airport and during the same timeframe as the proposed action, including the new Terminal 3 building which will be located less than 1,000 feet east of the proposed new ATCT site.

Table 6-2. LAS Current and Planned Airport Development

Expected Completion	Airport Improvement
2009	• rehab Runway 7R/25L (asphalt to concrete) • relocation of Clark County Fire Station No. 19
2010	• construction of 20-acre Siegfried & Roy Park north of Russell Road between Swenson Street and Maryland Parkway • replace Terminal 1 roof

Table 6-2. LAS Current and Planned Airport Development

Expected Completion	Airport Improvement
	• install noise barrier walls north side of Russell Road between Maryland Parkway and Swenson Street
2011	• construct Terminal 3 central utility plant (heating and cooling facility) • rehab airport center tunnel access from I-215 to Terminal 3 • airspace changes to include some modified routes and expanded terminal airspace to accommodate forecasted increased traffic at LAS.
2012	• construct Terminal 3 4-level parking garage, taxicab, limousine and bus staging • construction of Terminal 3 access roadways • construct Terminal 3 terminal building, 14 aircraft gates and associated apron, and ATS station for existing tunnel to Concourse D • installation of ATS guideways, controls and cars within existing tunnel to Concourse D, and completion of Concourse D ATS station • construction of detention basins east of Terminal 3 building and parking area

LAS Vicinity Present and Reasonably Foreseeable Actions

Plans for current and future development in the vicinity of McCarran International Airport consist primarily of various casino remodel projects on the Las Vegas Strip, an addition to the Las Vegas Convention Center and highway improvements to I-15, I-215 and SR 160 (Blue Diamond Road)(CCDS 2008). Given the amount of development in the area, it is impossible to predict which private projects may proceed concurrently with the proposed action. Renovations at the Las Vegas Convention Center (located three miles north of LAS) commenced in September 2008 and are expected to take approximately two years to complete. Two additions to the Center and other renovations are also planned, but have not been scheduled yet (personal communication, Jeremy Handel, Public Affairs, Las Vegas Convention Center, 11/26/08). Highway projects in the vicinity of LAS include the addition of one lane in each direction and widening of bridges of the Bruce Woodbury Beltway between Decatur Blvd. and I-15. This project is expected to be complete in January 2009 (personal communication, Bobby Shelton, Public Information Coordinator, Clark County Dept. of Public Works 11/26/08). Clark County will also be improving the I-215/Airport Connector interchange located south of Sunset Road. A firm schedule for this project has not been established, but the environmental documentation is complete and it may proceed in early 2009 and is expected to take about three years to complete (personal communication, Harold Elliot, Principal Civil Engineer, Clark County Public Works, 11/26/08). Major Nevada Department of Transportation (NDOT) projects include I-15 capacity improvements, new ramps and collector/distributor roads from SR 160 (Blue Diamond Road) to Tropicana Avenue (construction is planned to begin Summer 2009 and continue for two years); and I-15 express lane construction between Russell Road and Sahara Avenue (expected completion of Fall 2009).

IMPACT ANALYSIS

Analysis of the impacts of the No Action and Preferred Alternatives, as well as the cumulative impacts of the proposed action and any past, present, and reasonably foreseeable

future actions (as listed above) are evaluated below for each of the impact categories except Coastal Resources, Farmlands, Floodplains, Wetlands and Wild and Scenic Rivers. The alternatives would have no impact on five resource categories for the reasons stated below and will not be discussed in detail in this chapter. Please see *Chapter 5.0, Affected Environment*, for details regarding these resources.

- **Coastal Resources** – There are no coastal resources, as defined by the Coastal Barriers Resources Act and Coastal Zone Management Act, in Nevada.
- **Farmlands** – Land within the APE is defined as "not prime farmland" by the Farmland Protection Policy Act, therefore farmland would not be affected.
- **Floodplains** – The proposed actions occur in areas defined in FEMA Flood Insurance Rate Maps as Zone X, "areas determined to be outside the 0.2% chance of flooding" which are outside of the 100-year floodplain, therefore the proposed actions would not impact base floodplains.
- **Wetlands** – No areas qualifying as wetlands were identified within the APE for the project.
- **Wild and Scenic Rivers** – There are no designated, eligible or study Wild and Scenic River segments or rivers included in the Nationwide Rivers Inventory within or near the project area.

6.1 AIR QUALITY

The air quality assessment conducted for this EA is intended to show the potential impacts that may result from construction and operation of the ATCT. Potential effects on air quality associated with the proposed action must be analyzed for compliance with the National Environmental Policy Act (NEPA) and the Clean Air Act (CAA), as amended.

The Clean Air Act (CAA) has established National Ambient Air Quality Standards (NAAQS) for six pollutants, termed "criteria pollutants" (ground-level ozone, particulate matter [equal to or less than 10 microns in size (PM10) and equal to or less than 2.5 microns in size (PM2.5)], carbon monoxide, sulfur dioxide, lead, and nitrogen dioxide). The CAA requires each state to adopt a plan to achieve the NAAQS for each pollutant within specific timeframes. These air quality plans, known as State Implementation Plans (SIPs), are subject to Environmental Protection Agency (EPA) approval. In default of an approved SIP, EPA is required to promulgate a Federal Implementation Plan (FIP).

In addition, the General Conformity Rule establishes the procedures and criteria for determining whether certain federal actions conform to State or Federal (EPA) air quality implementation plans. The General Conformity Rule only applies in areas where the EPA has designated non-attainment or maintenance status and where project emissions would exceed the *de minimis* threshold levels established in 40 CFR 93.153(b)(1) and (2). Furthermore, even if a federal action does not exceed the threshold levels, it may still be subject to a general conformity determination if it has regional significance. Regional significance is defined as when the total direct and indirect emissions of any pollutant from a federal action represents 10% or more of a maintenance or non-attainment area's total emissions of that pollutant (40 CFR 93.153(i)).

6.1.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 2.3) defines significant air quality impacts as those where the agency project or action would result in exceedance of one or more of the NAAQS or any State or local standards for any of the time periods analyzed. Table 6.1-1 below presents the Federal and Nevada ambient air quality standards.

Table 6.1-1 Ambient Air Quality Standards

Pollutant	Averaging Time	Federal Standard[1]	Nevada Standard
O_3	1 Hour	0.12 ppm (235 μg/m^3)	0.12 ppm (235 μg/m^3)
	8 Hour	0.075 ppm (147 μg/m^3)	0.075 ppm (147 μg/m^3)
PM_{10}	24 Hour	150 μg/m^3	150 μg/m^3
	Annual Arithmetic Mean	–	50 μg/m^3
$PM_{2.5}$	24 Hour	35 μg/m^3	–
	Annual Arithmetic Mean	15.0 μg/m^3	–
CO	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 mg/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 mg/m^3)
NO_2	Annual Arithmetic Mean	0.053 ppm (100 μg/m^3)	0.053 ppm (100 μg/m^3)
SO_2	Annual Arithmetic Mean	0.030 ppm (80 μg/m^3)	0.030 ppm (80 μg/m^3)
	24 Hour	0.04 ppm (105 μg/m^3)	0.04 ppm (105 μg/m^3)
	3 Hour	–	0.5 ppm (1,300 μg/m^3)
Pb	30 Day Average	–	–
	Calendar Quarter	1.5 μg/m^3	1.5 μg/m^3
	Rolling 3-Month Average	0.15 μg/m^3	–

1 Only the Federal Primary Standards, set to protect public health, are included.
Note: Units of measure for the standards are parts per million (ppm) by volume, milligrams per cubic meter of air (mg/m^3), and micrograms per cubic meter of air (μg/m^3).
Source: Nevada Department of Environmental Protection, Bureau of Air Quality Planning website http://ndep.nv.gov/BAQP/monitoring/aaqstd.html and Environmental Protection Agency website http://www.epa.gov/air/criteria.html. For more information regarding attainment criteria for the standards, please visit these websites.

Preferred Alternative

The proposed action would result in impacts to air quality from construction of the new ATCT, demolition (by dismantling) of the existing ATCT and from subsequent operation of the new ATCT. The construction phase of the proposed action would disturb approximately 3.57-acres of land. Construction would include clearing and grading the site, building the ATCT, Base Building and parking area and trenching to connect new facilities to utilities and fiber optic lines. The demolition phase of the proposed action would affect approximately 2.3-acres of land and would include the destruction and disposal of the existing ATCT.

Construction would begin in 2011 and take approximately 18 months to complete and demolition would occur during three months in 2015.

Minor impacts to air quality that would result from the proposed action during construction and demolition activities would include temporary emissions of PM_{10}, CO, volatile organic compounds (VOC) and nitrogen oxides (NOx) (ozone precursors) from dust, construction vehicle exhaust and materials off-gassing. Demolition of the existing ATCT is also a potential source for airborne asbestos fibers due to the presence of asbestos in various materials throughout the building. Pre-demolition asbestos inspection and abatement would be performed in order to minimize the potential for release of asbestos fibers. The CCDAQEM has adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40CFR Part 63 to regulate asbestos in Clark County. NESHAP and all permit stipulations would be complied with in regard to proper survey, abatement, containment and disposal of all asbestos containing materials prior to and during the demolition of the ATCT.

Following transfer of ATCT operations, the principal sources of emissions at the new facility would be from the vehicles used by ATCT personnel to commute to and from work and the occasional operation of two 750 kilowatt (approximately 1000 horse power) emergency diesel engine powered electrical generators. Emissions from the generators would be only occasional, during primary power supply failure or for maintenance purposes. The generators would operate less than 100 hours per year unless required to be used in an emergency situation to ensure aviation safety.

Pollutant emissions from the proposed action (including construction, demolition and operation) were estimated using the air emissions modeling software URBEMIS 2007 v9.2.4. URBEMIS ("Urban Emissions Model") was originally developed by the California Air Resources Board (CARB) as a modeling tool to assist local public agencies with estimating air quality impacts from land use projects. The model estimates construction, area source, and operational air pollution emissions from a wide variety of land use development projects such as residential neighborhoods, shopping centers, office buildings, etc. The model also identifies mitigation measures and associated emission reductions. While URBEMIS was designed for use in California, the model is appropriate for estimating emissions from the proposed action because the construction equipment emissions factors are the same for California and Nevada, and the magnitude of the on-road mobile equipment emissions is such that the California-Nevada differences are not significant. The URBEMIS modeling for the proposed action utilized emissions factors data from Kern County, California which was the closest area to the proposed action for which this data was available.

Project specific information for the proposed action (for use in URBEMIS) was obtained from engineering estimations. Emissions data was generated for both summer and winter months. The emissions were also calculated and presented for comparison as annual emission rates (see Appendix K for complete URBEMIS emissions data). Annual emissions data from URBEMIS is summarized in Table 6.1-2 for comparison to applicable regional and federal thresholds.

The Las Vegas Valley, which includes McCarran International Airport, is designated by the EPA as a serious non-attainment area for both the PM_{10} and 8-hour carbon monoxide

NAAQS and as a basic non-attainment area for the 8-hour ozone; it is in attainment for all of the other criteria pollutants (USEPA 2008a). The federal general conformity *de minimis* thresholds for $PM_{10,}$ carbon monoxide and ozone precursors (VOCs and NOx) are included in Table 6.1-2 in order to determine whether the proposed action conforms to the SIP as defined by 40 CFR 93.153. As stated above, federal actions are exempt from conformity determination if the projected emission rates would be less than the *de minimis* levels, and are not regionally significant. Total pollutant levels used for the regional significance determination were obtained for Clark County from the 2008 Clark County Ozone Early Progress Plan, Consolidated Emissions Inventory (CCDAQEM 2008a, Appendix A).

Table 6.1-2 Air Emissions Inventory and Regulatory Significance Thresholds for LAS ATCT Construction and Operation

	Estimated Emissions and Thresholds of Significance (tons per year)					
URBEMIS Estimated Emissions for the Proposed Action	***Carbon Monoxide (CO)***	***Volatile Organic Compounds (VOC)***	***Oxides of Nitrogen (NO_X)***	***Particulate Matter less than 2.5 microns ($PM_{2.5}$)***	***Particulate Matter less than 10 micron (PM_{10})***	***Oxides of Sulfur (SO_X)***
Annual Unmitigated Construction 2010	**0.48**	**0.10**	**0.85**	**0.08**	**0.24**	**0.00**
(mitigated)	*(0.48)*	*(0.10)*	*(0.85)*	*(0.03)*	*(0.10)*	*(0.00)*
Annual Unmitigated Construction 2011	**2.85**	**0.54**	**4.06**	**0.22**	**0.25**	**0.00**
(mitigated)	*(2.85)*	*(0.54)*	*(4.06)*	*(0.18)*	*(0.20)*	*(0.00)*
Annual Unmitigated Construction 2012	**1.38**	**1.33**	**1.85**	**0.10**	**0.11**	**0.00**
(mitigated)	*(1.38)*	*(1.22)*	*(1.85)*	*(0.08)*	*(0.09)*	*(0.00)*
Annual Unmitigated Construction 2015	**0.33**	**0.06**	**0.46**	**0.02**	**0.02**	**0.00**
(mitigated)	*(0.33)*	*(0.06)*	*(0.46)*	*(0.01)*	*(0.01)*	*(0.00)*
Annual Unmitigated Facility Operation	**23.31**	**2.04**	**4.85**	**0.40**	**1.50**	**0.02**
Regulatory Emissions Thresholds[1]						
Federal General Conformity Threshold[2]	*100*	*100*	*100*	*N/A*	*70*	*N/A*
Exceed Threshold?	N	N	N	*N/A*	N	*N/A*
2003 Clark County Total Emissions (regional emissions inventory)[3]	382,489	54,774	89,148	N/A[4]	79,680[5]	41,803
Regionally Significant? (≥ 10% of regional emissions inventory)	N	N	N	*N/A*	N	*N/A*

[1] Rounded to the nearest integer.
[2] Source: 40 CFR 93.153(b)(1)
[3] Source: Clark County Ozone Early Progress Plan, Consolidated Emissions Inventory (CCDAQEM 2008a, Appendix A)
[4] Data not available.
[5] 2006 emissions from Clark County PM_{10} State Implementation Plan Milestone Achievement Report (CCDAQEM 2007b, Table 4-27).

Permits and Control Measures

While the proposed action would impact air quality due to dust, vehicle and emergency generator exhaust and materials off-gassing, the FAA would adhere to permit stipulations required by the CCDAQEM and implement control measures in order to minimize air emissions. The following permits would be filed and control measures employed for the proposed action (see Appendix I for permit examples):

Permits

- Application for Dust Control Permit for Construction Activities
- Application for an Authority to Construct Certificate
- Supplemental Information Sheet with Emission Unit Information
- Demolition Notification Form
- Notification of Asbestos Abatement

Control Measures

- Diesel particulate filters would be used on all construction equipment (dozers, tractors, loaders, backhoes, water trucks) to reduce PM emissions.
- Exposed soils would be watered three times daily to control dust and reduce PM emissions.
- Low VOC interior and exterior architectural coatings would be used.

Greenhouse Gas Emissions

Based on FAA data, operations activity at McCarran International Airport represents less than 2.4% of U.S. aviation activity. Therefore, assuming that greenhouse gases occur in proportion to the level of activity, greenhouse gas emissions associated with existing and future aviation activity at McCarran International Airport would be expected to represent less than .072% of U.S.-based greenhouse gases. Therefore, we would not expect the emissions of greenhouse gases from this project to be significant.

Conclusions

Based on the estimated emissions calculated using URBEMIS, the proposed action would not equal or exceed the federal *de minimis* levels for any of the criteria pollutants in the Las Vegas Valley non-attainment area and would not equal or exceed 10% of regional emissions. The analysis also demonstrates that emissions from the proposed action are below the presumed to conform limits established by the FAA for airport projects (72 FR 41565). Therefore the proposed action is presumed to conform with the SIP and a conformity determination is not required. Consequently, the construction and operation of the proposed ATCT and base building at LAS would not significantly affect air quality.

No Action Alternative

Under this alternative the ATCT and base building would not be installed, the existing ATCT would remain in service, and air quality conditions would not be affected beyond those described in Section 5.1 of the Affected Environment.

Cumulative Impacts

The planned improvements within the airport would produce some occasional extra dust in the air and vehicle equipment emissions during construction phases. Planned construction projects in the LAS vicinity would also produce similar effects to air quality from dust and vehicle emissions. The cumulative effects of all construction in the vicinity of LAS would depend on the timing of the various projects. All construction projects would be required to obtain required permits from the CCDAQEM and adhere to any permit stipulations intended to minimize effects to air quality.

Development both within the airport and in the LAS vicinity may facilitate increased ground traffic and air traffic around the airport and subsequently increase emissions. Increased traffic and emissions are likely to occur due to the general trend of growth and development in the area. However, the incremental increase in emissions from the proposed action, when added to the emission sources in the vicinity, would not produce a significant cumulative impact on air quality.

Because aviation activity at McCarran International Airport represents such as small amount of U.S. and global emissions, and the related uncertainties involving the assessment of such emissions regionally and globally, the incremental contribution of this proposed action cannot be adequately assessed given the current state of the science and assessment methodology.[3]

6.2 COMPATIBLE LAND USE

Order 1050.1E CHG 1 states that "the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts." It goes on to say that if the noise analysis "concludes that there is no significant impact, a similar conclusion usually may be drawn with respect to compatible land use. However, if the proposal would result in other impacts exceeding thresholds of significance which have land use ramifications, for example, disruption of communities, relocation, and induced socioeconomic impacts, the effects on land use shall be analyzed in this context and described accordingly under the appropriate impact category with any necessary cross references to the Compatible Land Use section to avoid duplication."

6.2.1 Significant Impact Threshold

The FAA has not established specific impact thresholds for compatible land use. However, FAA Order 1050.1E, CHG 1 (Appendix A, Section 4.3) states that if the noise analysis indicates a significant noise impact will occur over noise sensitive areas within the day night average sound level (DNL) 65dB contour, that these impacts should be discussed. Therefore the significant impact threshold for compatible land use would be the same as for the noise category. That threshold is defined in FAA Order 1050.1E, CHG 1 (Appendix A, Section 14.3) as when the proposed action will cause noise sensitive areas to experience an increase

[3] NEPA Regulations, Council on Environmental Quality, 40 CFR 1502.22.

in noise of DNL1.5dB or more at or above DNL 65dB noise exposure when compared to the no action alternative for the same timeframe.

Preferred Alternative

LAS is located within the unincorporated community of Paradise in Clark County, Nevada south of the City of Las Vegas. The Clark County Unified Development Code (Title 30.48) defines an Airport Environs Overlay District (AEOD) including McCarran International Airport for the purpose of guiding compatible development within the airport's influence areas (Clark County 2008; See Appendix D for the McCarran AEOD Map). Title 30.48 defines development zones within the AEOD based on day/night average sound levels (DNL) and requires noise attenuation construction techniques for sensitive uses permitted within the AEOD. Noise reduction amounts required within the AEOD depend on the specific zoned use and noise contour that the use falls within. In general, most residential use is allowed within the DNL 60 and 65dB contours with a 25dB noise reduction and some low density single family residential use is allowed within the DNL 70dB contour with a 30dB reduction. The Title also requires noise disclosure forms to be recorded against any new development within the McCarran AEOD. The Title also provides for review of the McCarran AEOD maps by the CCDOA every five years to evaluate the need for updates to reflect current noise contours.

The Land Use Plans of the unincorporated communities of Winchester, Spring Valley and Enterprise, which are affected by noise from LAS, incorporate the AEOD and encourage compatible new development in the vicinity of the airport (CCDCP 2205 p. 51, 99; CCDCP 2004a p. 28; CCDCP 2004b p. 40, 80). The City of Henderson Comprehensive Plan does not include any compatible land use policies relative to LAS (City of Henderson 2006). General planned land uses within the AEOD for the affected communities are described below.

Planned land uses within the AEOD in the Spring Valley planning area are primarily business and design research park, commercial, rural neighborhood preservation (up to 2 dwelling units per acre), open space and professional office, with small amounts of public facilities and residential suburban use (up to 8 dwelling units per acre) (CCDCP 2004a). Planned land uses within the AEOD in the Enterprise planning area are primarily commercial tourist, business and design research park, rural neighborhood preservation (up to 2 dwelling units per acre) and industrial with smaller amounts of public facility, professional office and other residential uses (CCDCP 2004b). Planned land uses within the AEOD in the Winchester/Paradise planning area consist of primarily public facility (including the airport), commercial tourist, industrial, commercial, business and design research park, with small amounts of residential use (CCDCP 2005). Planned land uses within the AEOD in the City of Henderson includes commercial, industrial, and medium and low density residential uses (City of Henderson 2006).

LAS had 544,679 total operations in 2004 (CCDOA 2005, p. III-14). Based on a 2.6% predicted annual growth rate between 2004 and 2025, total operations at LAS are expected to increase to 922,316 by 2025 (CCDOA 2005, p. III-14). Total enplanements are expected to grow at a similar annual rate of 2.7% from 18,443,481 enplaned passengers in 2000 to 35,927,981 in 2025 (CCDOA 2005, p. III-13). Based on the predicted growth rates, the

airport plans to upgrade existing and provide appropriate new facilities and services in order to safely meet aviation needs while ensuring the compatibility of the airport with the surrounding communities.

As stated above, the communities of Paradise, Winchester, Spring Valley and Enterprise have planned for compatible development within the airport influence area based on the most recent DNLs provided by the CCDOA. Since the proposed action is not expected to change predicted airport operations, and hence noise exposure levels, and due to compatible land use planning in most areas surrounding the airport, significant impacts related to compatible land usage are not expected.

No Action Alternative

There would be no effect on compatible land use under the No Action Alternative in the foreseeable future, as current local government policies regarding land usage at and around LAS prevent land use which is incompatible with the airport.

Cumulative Impacts

Current local government policies regarding land usage at and around LAS prevent land use which is incompatible with the airport and include policies which protect existing and potential future developments from excessive noise. Planned developments within the airport influence area are subject to local zoning laws which require sound-reducing construction techniques, deed restrictions and notifications to prospective buyers of noise levels from airport activities. Since the proposed action is not expected to change airport operations, and hence noise exposure levels as stated above, there is not expected to be a significant cumulative impact on compatible land use from the proposed action.

6.3 CONSTRUCTION IMPACTS

Airport construction may cause various environmental effects, primarily due to dust, heavy equipment emissions and noise, disposal of construction debris, or storm water runoff containing sediment and/or spilled or leaking petroleum products. In most cases, these potential effects are subject to Local, State, Tribal, or Federal ordinances and/or regulations. While the long-term impacts of the proposed action are usually greater than construction impacts, construction can cause significant short-term impacts.

6.3.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 does not establish specific impact thresholds for construction impacts. However, the Order offers guidance to refer to the impacts for other resource categories such as air quality, water quality, fish, wildlife and plants to assess the significance of construction impacts. Therefore the significant impact threshold is defined by a significant impact to another resource category from construction activities.

Preferred Alternative

The proposed action includes the construction of an ATCT, base building, parking structure, and placement of new utility lines and subsurface duct banks to connect the ATCT to airport equipment via existing duct banks. Excavations would be required for the ATCT, base building and parking structure concrete foundations, as well as utility line trenches. Much of the area around the buildings would be paved with asphalt and concrete. The existing ATCT would also be demolished (by dismantling) and disposed of as part of the proposed action. Impacts would be restricted to the area immediately around the tower and base building construction area, including the site access road and utility trenches, and around the existing ATCT. These impacts would include minor impacts to air quality during construction (primarily dust from earth moving and demolition and engine exhaust) and minor noise impacts from construction activities but would not be expected to significantly impact these resources. Any potential traffic impacts on public access roads would be reduced by scheduling construction activities for low traffic times.

The existing ATCT was inspected for asbestos containing materials on February 10, 1993 and asbestos was detected in various materials throughout the building. The existing ATCT was also inspected for lead-based paint and other lead-containing coatings on November 4, 1998 and both were detected on various surfaces throughout the building. A Demolition Notification Form, Notification of Asbestos Abatement and a Dust Control Permit for Construction Activities would be filed with the CCDAQEM prior to commencement of demolition of the ATCT (See Appendix I). The CCDAQEM has adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40CFR Part 63 to regulate asbestos in Clark County. NESHAP and all permit stipulations would be complied with in regard to proper survey, abatement, containment and disposal of all asbestos containing materials prior to and during the demolition of the ATCT. According to the Solid Waste Branch of the Nevada Department of Environmental Protection, if construction waste containing lead-containing coatings is disposed of as a single waste stream, then the ratio of lead paint to total waste mass would not likely exceed the lead toxicity standard and would not be considered hazardous waste (NDEP 2004). All other construction debris would be disposed of according to State and local regulations.

Two 750 kilowatt (approximately 1000 horse power) emergency diesel engine powered electrical generators would be housed within the base building for the proposed ATCT. Emissions from the generators would be small and only occasional, during primary power supply failure or for maintenance purposes, and would not be expected to significantly impact air quality. The generators would operate less than 100 hours per year unless required to be used in an emergency situation to ensure aviation safety. An Application for an Authority to Construct Certificate and Supplemental Information Sheet with Emission Unit Information would be filed with the CCDAQEM as required by the County for stationary emission sources (See Appendix I).

Provisions of Advisory Circular 150/5370-10B, *Standards for Specifying Construction of Airports*, would also be incorporated into the project specifications to ensure construction impacts would be insignificant. The following standard "best management practices" (BMPs) would be followed to reduce potential construction impacts:

- Runoff flow directions would be determined and open waters monitored during construction. If signs of erosion are observed, erosion control efforts would be revised and/or increased.
- Drains, culverts, and storm sewer grates adjacent to the construction zone and staging areas would be flagged and measures such as the use of straw bales, silt fences and other appropriate sediment controls, implemented to prevent the entry of sediment and other contaminants into waters downstream.
- Following project construction, all sediment controls would be removed (along with any accumulated sediment) and disposed of in an off-site location.
- The storage of petroleum based fuels and other hazardous materials and the refueling of construction machinery would not occur in the project area outside of approved designated staging/batching areas.
- Construction waste materials would be disposed of off-site. Waste material disposal sites would be identified by the contractor and approved by the appropriate authority.
- Water trucks would be used to control fugitive dust during construction operations.

A Notice of Intent for Stormwater Discharge Permit Application would be filed online with the Nevada Division of Environmental Protection (NDEP) Bureau of Water Pollution Control at http://ndep.nv.gov/bwpc/storm_cont03.htm along with a Storm Water Pollution Prevention Plan (See Appendix I). A Temporary Groundwater Discharge Permit Application would also be filed with the NDEP Bureau of Water Pollution Control to regulate discharge of any ground water encountered during construction activities (See Appendix I).

The use of best management practices and adherence to permit stipulations would help reduce construction impacts. Because the construction of the ATCT, base building and parking structure would not have significant impacts to other resources (air quality, water quality, fish, wildlife and plants, etc.), there would be no significant impacts from construction activities associated with the proposed action

No Action Alternative

There would be no construction impacts under the No Action Alternative.

Cumulative Impacts

There are a number of planned developments and facility expansions at LAS, each of which will cause construction impacts of varying degrees including temporary minor increases in dust and construction equipment exhaust emissions, increase in storm water sediment load, road closures or traffic restrictions. Other planned construction activities in the LAS vicinity would result in similar impacts. The general trend of growth and development in the LAS vicinity would potentially impact air quality, water quality, fish, wildlife and plants, light emissions and visual impacts, and may result in secondary or socioeconomic impacts. However, adherence to permit stipulations and Federal, State and local regulations, and the use of best management practices should ensure that the incremental impacts would be relatively small and would therefore not be cumulatively significant.

6.4 DEPARTMENT OF TRANSPORTATION ACT: SECTION 4(F)

Section 4(f) of the Department of Transportation (DOT) Act prohibits the approval of any program or project that requires the use of any publicly owned land from a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance or land from a historic site of national, state, or local significance, unless there is no feasible and prudent alternative to the use of such land and such program and the project includes all possible planning to minimize harm resulting from the use (49USC 303(c)).

6.4.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 6.3) defines significant impacts to Section 4(f) lands as when a proposed action either involves more than a minimal physical use of a 4(f) property or results in a "constructive use" that substantially impairs the property, and for which mitigation measures do not eliminate or reduce the effects of the use below the threshold of significance (e.g., by replacement in kind of a neighborhood park). Substantial impairment is defined as sufficiently serious impact to a 4(f) property where the value of the site in terms of its prior significance or enjoyment would be substantially reduced or lost.

Preferred Alternative

Based on a review of the United States Geological Survey (USGS) *Las Vegas SW Quadrangle, Nevada 7.5 Minute Series Topographic* maps, dated 1984; information published by Clark County (CCDPR 2008), the Nevada Division of State Parks (Nevada Division of State Parks 2008), and the USFWS (USFWS 2008b); and consultation with the Nevada Department of Conservation and Natural Resources (included in Appendix F) and the Nevada State Historic Preservation Office (Appendix E), there are no publicly owned lands used as public parks, recreation areas, wildlife or waterfowl refuges, or historic sites located within the area of potential effect for the proposed action at LAS.

The closest public land outside the airport boundary is the Clark County Paradise Vista Park at 5582 Stirrup Street, near the corner of Russell Road and Eastern Avenue, approximately one mile northeast of the new ATCT site (CCDPR 2008). This park is a neighborhood facility with a playground, picnic areas and tennis courts. There are two facilities used as public parks or recreation areas located on Clark County land within the airport boundaries: 1) McCarran Marketplace Park, a small playground associated with a retail center located at 1845 East Russell Road, approximately three-quarters of a mile east of the new ATCT site; and 2) Bali Hai Golf Club, a privately run course located at 5160 Las Vegas Blvd. South, nearly two miles west of the new ATCT site. Neither of these parks would be affected by the proposed action. Therefore, there would be no significant impact to Section 4(f) lands from the proposed action.

No Action Alternative

There would be no effect on Section 4(f) lands under this alternative.

Cumulative Impacts

As stated above, there would be no significant impact to Section 4(f) lands from the proposed action. Other planned development at the airport would occur within the airport property and would not likely affect Section 4(f) lands. Planned development projects in the LAS vicinity would be subject to local zoning laws and comprehensive planning document direction regarding the use of publicly owned lands used as open space and historic sites. The Clark County zoning ordinance includes an open space designation which includes environmentally sensitive lands and areas used for recreational use (CCDCP 2007). The Clark County Comprehensive Plan also includes both open space and historic preservation elements which promote the conservation of open space and historical and cultural resources within the County (CCDCP 2006). The Winchester/Paradise Land Use Plan provides for the integration of urban and suburban open space planning with regional planning in order to protect and promote the enjoyment of open space by its citizens (DDCDP 2005). Based on the County's policies to protect open space and historic resources and the finding of no significant impact to Section 4(f) properties from the proposed action, there is not expected to be a significant cumulative impact to Section 4(f) properties.

6.5 FISH, WILDLIFE, AND PLANTS

Section 7 of the Endangered Species Act requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS) in order to ensure that any action authorized, funded, or carried out by such agency is not likely to jeopardize the continued existence of an endangered or threatened species or result in the destruction or adverse modification of such species' designated critical habitat. Informal consultation is designed to determine whether formal consultation under Section 7 is required for the proposed action. Formal consultation is required for all actions that are likely to adversely affect a listed species or its designated critical habitat.

FAA Order 1050.1E CHG 1 requires that FAA proposed actions be checked for consistency with State Wildlife Conservation Plans and Department of Defense plans as authorized by the *Sikes Act*.

FAA Advisory Circular 150/5200-33, *Hazardous Wildlife Attractants on or Near Airports,* describes common hazardous wildlife species and wildlife attractants. It also provides guidance on locating specific land uses that may attract wildlife to or in the vicinity of airports and provides guidance regarding the placement of new airport development pertaining to aircraft movement in the vicinity of hazardous wildlife attractants. A *National Memorandum of Agreement (MOA)* was signed in 2003 between the FAA, the U.S. Air Force, U.S. Army, U.S. Environmental Protection Agency, U.S. Fish & Wildlife Service and the U.S. Department of Agriculture to address aircraft-wildlife strikes. This MOA established procedures to coordinate the agencies' missions to address environmental conditions contributing to aircraft-wildlife strikes in order to minimize threats to aviation and human safety while protecting environmental resources. The MOA includes an agreement to cooperate with airport operators to develop a location-specific wildlife hazard management plan when a potential wildlife hazard is identified.

The Fish and Wildlife Coordination Act requires that federal agencies consult with State wildlife agencies and USFWS concerning the conservation of wildlife resources where the water of any stream or other water body is proposed to be controlled or modified by a Federal agency or any entity operating under a Federal permit (50CFR10.21).

The Fish and Wildlife Conservation Act encourages Federal departments and agencies to utilize their statutory and administrative authority to conserve and to promote conservation of non-game fish and wildlife and their habitats.

Federal agencies must also comply with the *Migratory Bird Treaty Act* (MBTA) which prohibits the intentional "take" of any migratory bird, their eggs, or nests without a permit pursuant to 50CFR21. Take is defined by the MBTA as "pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50CFR10.21).

Pursuant to *Executive Order 13112*, Federal agencies whose actions may affect the status of invasive species are directed to relevant programs and authorities to prevent the introduction of invasive species and provide for restoration of native species and habitat conditions in ecosystems that have been invaded when practicable, unless the benefits of the actions clearly outweigh the potential harm. The *Presidential Memorandum on Economically and Environmentally Beneficial Landscaping* encourages the use of native plants at Federal facilities and in federally funded landscaping projects.

6.5.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 8.3) defines significant impacts to federally-listed species as when the USFWS or NMFS determines that the proposed action would be likely to jeopardize the continued existence of a listed species or would result in the destruction or adverse modification of its designated critical habitat. Impacts to non-listed species could also constitute a significant impact where they affect reproductive success rates, natural mortality rates, non-natural mortality or population dynamics and sustainability of the affected species. Significant impacts for non-federally-listed species should be determined in consultation with the appropriate State and local wildlife management agencies.

Preferred Alternative

The APE for the existing ATCT consists of parking lots, associated buildings, and a segment of the airport monorail (see Figure 3). A few ornamental trees and palm trees growing in concrete planters in close proximity to the ATCT may be within the area to be directly affected by demolition of the ATCT. Other planters and roadside strips in the vicinity of the APE for the existing ATCT that support landscape plantings of oleanders, cacti, yucca, and flowering forbs are likely outside of the area to be directly affected by ATCT demolition.

The APE for the proposed replacement ATCT was being used as a staging area, concrete batch plant, and contractor yard for other airport construction projects at the time of a site visit on August 1, 2008. Except for a few weedy grasses and forbs along the perimeter of the site, the APE was bare of vegetation. Plant species observed along the perimeter of the site

included primarily weedy annual grasses and forbs. Across Flight Path Avenue to the north of the APE, mature landscape plantings occurred between the sidewalk and the parking lot. These plantings included palm trees and ornamental shrubs surrounded by a gravel surface with no herbaceous vegetation.

Endangered Species Act

Section 7 consultation with the USFWS occurred in September 2008. As discussed in Section 5.7, no suitable habitat for the threatened reptile species desert tortoise (*Gopherus agassizii*); the candidate bird species western yellow-billed cuckoo (*Coccyzus americanus occidentalis*); and the candidate plant species Las Vegas buckwheat (*Eriogonum corymbosum* var. *nilesii*) occurs within either of the APEs or their vicinities nor do any individuals of these species occur within the APEs. Based on these findings, in a letter from the FAA to the USFWS dated September 4, 2008, the FAA recommended a finding of no Threatened, Endangered, or Candidate species affected for the proposed action (included in Appendix F). The USFWS concurred with this finding in a letter dated October 27, 2008 (included in Appendix F).

Sikes Act – State Conservation Plans and Department of Defense Plans

The Nevada Natural Heritage Program (NNHP) has identified sixteen endangered, threatened, candidate, and/or at risk plant and animal taxa that have been recorded within a 5 mile radius of the proposed action APEs or for which habitat may be available within that area (see Appendix F). The species of concern include the peregrine falcon (*Falco peregrinus*), western yellow-billed cuckoo, Mexican long-tongued bat (*Choeronycteris mexicanus*), spotted bat (*Euderma maculatum*), silver-haired bat (*Lasionycteris noctivagans*), hoary bat (*Lasiurus cinereus*), Mexican or Brazilian free-tailed bat (*Tadarida brasiliensis*), western mastiff bat (*Eumops perotis*), banded Gila monster (*Heloderma suspectum cinctum*), desert tortoise, Mojave gypsum bee (*Anderna balsamorhizae*), Las Vegas bearpoppy (*Arctomecon californica)*, Las Vegas buckwheat, yellow twotone beardtongue (*Penstemon bicolor* ssp. *bicolor*), Parish phacelia (*Phacelia parishii*), and the Littlefield milkvetch (*Astragalus preussii* var. *laxiflorus*).

As stated above, no suitable habitat is available within the APE or its vicinity for any of the Federally listed species, including the desert tortoise, the western yellow-billed cuckoo, or the Las Vegas buckwheat (see Appendix F).

Three of the species of concern have been observed within LAS: Las Vegas buckwheat, Las Vegas bearpoppy and Mexican or Brazilian free-tailed bats. Historic records of the Las Vegas buckwheat and the Las Vegas bearpoppy indicate that individuals of these two plant species were observed on the airport property to the east of the existing and proposed ATCTs on sites that have since been developed into airport facilities. The current level of disturbance in the project area for the proposed ATCT and its vicinity, as described in Section 5.7, is such that it does not include any suitable habitat for either of these species. The APE for the existing ATCT is entirely covered with asphalt, concrete, buildings, and landscaped gardens which also do not constitute suitable habitat for either species. No Las Vegas bearpoppy or Las Vegas buckwheat plants were observed in the vicinity of either APE

during a site inspection on August 1, 2008. As a result, no effects on these species from implementation of the proposed action would be anticipated.

Mexican or Brazilian free-tailed bats are known to roost in the parking garage at LAS, which is located 0.21 mile from the APE for the existing ATCT and 0.33 mile from the APE for the proposed ATCT. Although Mexican free-tailed bats are not known to roost in the existing ATCT and no roosting opportunities are available within the APE for the proposed ATCT, it is likely that individuals of this species fly over both of the proposed action APEs during foraging flights and possible that they opportunistically use the existing ATCT for roosting. Due to low habitat quality and level of disturbance, no significant adverse effects to this species would be anticipated from construction of the proposed ATCT. It is recommended, however, that the existing ATCT be surveyed prior to demolition to determine whether it is being used for roosting by this or other species of bats and if so, what type of roosting activity is occurring (Christy Klinger, Diversity Biologist, Las Vegas Office, Nevada Department of Wildlife, personal communication 11/17/2008; Jennifer Newmark, Administrator, Nevada Natural Heritage Program, personal communication 11/22/2008). Results of pre-demolition surveys would be evaluated to determine the effects of implementation of the proposed demolition of the existing ATCT on this species. Any requirements for mitigation would be developed in consultation with the Nevada Department of Wildlife (NDOW) and the NNHP.

Other species of bats for which records exist within foraging distance of LAS include the Mexican long-tongued bat, spotted bat, silver-haired bat, hoary bat, and western mastiff bat. Similar to the Mexican or Brazilian free-tailed bat, habitat quality for all of these species is very low within the proposed action APEs and in their vicinities, but it is possible that they use the APEs for foraging or opportunistically roost in the existing ATCT. No significant adverse effects to bat species would be anticipated from the construction of the proposed ATCT. As described for the Mexican or Brazilian free-tailed bat, it is recommended that the existing ATCT be surveyed prior to demolition to determine whether it is being used for roosting by any species of bats.

The same recommendations for pre-demolition surveys of the existing ATCT should be implemented to minimize effects of the proposed action on peregrine falcons. No peregrine falcons have been reported hunting, roosting, or nesting within LAS, but the proximity of nests recorded on casinos within two miles of the APEs suggests that it is possible that this species hunts in the vicinity of the APEs and may use the existing ATCT as at least a temporary perch or roost. If demolition of the existing ATCT were to be scheduled for the time period between March and July inclusive, the structure should be surveyed for nesting activity by peregrine falcons in order to avoid adversely impacting the species. If an active nest were to be found within the APE or its immediate vicinity prior to demolition, impacts to nesting activity would be avoided through modification of the construction schedule or alternative mitigative measures, in consultation with the NDOW and the USFWS. No significant adverse effects on peregrine falcons from construction activities within the APE for the proposed ATCT would be anticipated due to the very low quality of habitat represented by the site and the availability of higher quality hunting opportunities elsewhere in the vicinity.

No suitable habitat occurs within the proposed action APEs or in their vicinities for the yellow two-tone beardtongue, Parish phacelia or the Littlefield milkvetch. The level of disturbance that is characteristic of both of the APEs and their vicinities has eliminated any potential suitable habitat for the rest of the species of concern, including the Gila monster, the desert tortoise, the Mojave gypsum bee, the Las Vegas bearpoppy, and the Las Vegas buckwheat. None of these species is mobile enough to be present opportunistically within the vicinity of either APE. As a result, no adverse effect from implementation of the proposed action on any of the remaining species of concern would be anticipated.

No Department of Defense plans were identified for the proposed action APEs.

Fish and Wildlife Coordination Act – streams or other bodies of water

The APEs for the proposed action does not include any perennial or seasonal surface waters or wetland habitats. No such waters or wetland habitat would be affected by the implementation of the proposed action.

Fish and Wildlife Conservation Act

No high value wildlife habitat exists within the APEs for the proposed action. The APE for the existing ATCT consists of parking lots, associated buildings, and a segment of the airport monorail. A few ornamental trees and palm trees growing in concrete planters in close proximity to the ATCT may be within the area to be directly affected by demolition of the ATCT. The APE for the proposed replacement ATCT has been used recently as a staging area, concrete batch plant, and contractor yard for other airport construction projects. Except for a few weedy grasses and forbs along the perimeter of the site, the APE is bare of vegetation. As a result of past and present levels of disturbance, the value of the habitat loss due to implementation of the proposed action would be negligible.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) prohibits the intentional "take" of any migratory bird, their eggs, or nests without a permit pursuant to 50CFR21. Take is defined by the MBTA as "pursue, hunt, shoot, wound, kill, trap, capture, or collect" (50CFR10.21). Disturbance during the breeding season, resulting in abandonment by these birds of an active nest containing eggs or baby birds, would be considered a "take". No nests for raptors or other migratory birds have been observed or are known to be on or within a one-half mile spatial buffer around the APEs. It is recommended, however, that the existing ATCT be surveyed for nesting activity by peregrine falcons or other migratory birds if demolition were to be scheduled for the time period between March and July, inclusive. If an active nest were to be found within the APE or its immediate vicinity prior to construction, impacts to nesting activity would be avoided through modification of the construction schedule or alternative mitigative measures, in consultation with the NDOW and USFWS.

Invasive Species and Landscaping

The vegetation within the APE for the proposed ATCT is minimal and currently dominated by introduced and weedy plant species. Construction of the proposed ATCT would result in the conversion of all of the disturbed upland vegetation that occurs on the perimeter of the APE to buildings, parking lot, roadways, and sidewalk. A minimal amount of landscaping may be included on the new ATCT site. The vegetation in the vicinity of the APE for the existing ATCT consists of landscaping in concrete planters. If this vegetation were to be disturbed by demolition activities, it would probably be replaced with similar ornamental plant species that would be unlikely to attract birds or other wildlife that could represent a hazard to air traffic. Post-construction maintenance of landscaping in the vicinity of the proposed action APEs would be expected to eliminate any invasive species from those locations.

Biodiversity and Ecosystem Management

Minimal, low-quality habitat for foraging or hunting by raptors and bats would be eliminated due to implementation of the proposed action. In addition, a few potential roosting opportunities for bat species may be eliminated due to the demolition of the existing ATCT. No other impacts to wildlife species, habitat, or biodiversity would be anticipated. No ecosystem management efforts were found for the APE.

Conclusion

Due to the minimal vegetated area and the absence of suitable habitat for most wildlife species within the APE, the implementation of the proposed action is expected to have no impact on fish and minimal impact, at most, on wildlife and vegetation.

No Action Alternative

Under the No Action Alternative, vegetation and wildlife habitat conditions characteristic of the APEs would remain in their current conditions. The limited foraging, hunting, and nesting or roosting opportunities provided by the vegetated portions of the APEs and the existing ATCT would remain.

Cumulative Impacts

Over the past several decades much of the habitat for native and rare species in Clark County, including the area within and around LAS, has been converted to buildings, roadways, and other disturbed or paved surfaces. Except for parks, golf courses and landscaped areas along roadways, most of the airport property and its vicinity are occupied by buildings or pavement. Those areas that remain open and unpaved have been disturbed by other urban and industrial uses. As described for the proposed action APEs, little or no suitable habitat for rare species remains available except for possible hunting and roosting opportunities for bats and raptors.

Planned development at LAS and in the vicinity would result in the conversion of already disturbed areas into buildings and paved areas including the Terminal 3 building and supporting facilities, parking garages, aircraft aprons, detention basins, etc. The impacts of this conversion on the species of concern would not be significantly adverse, since little or no habitat for most of the species currently remains available to be lost. The impacts of the conversion could be somewhat favorable to bats and raptors by providing more potential hunting and roosting opportunities similar to those currently available. The construction of the 20-acre Siegfried & Roy Park, which will replace an area formerly occupied by residences as well as previously undeveloped but disturbed land, may also provide more potential hunting and roosting opportunities for bats and raptors.

Overall, essentially all of the potential significant adverse impacts to most of the species of concern and their habitat have already occurred due to rapid development and urbanization at LAS and its vicinity. With the implementation of surveys for roosting bats and raptors prior to demolition of the existing ATCT, the proposed action is anticipated to result in minimal, if any, adverse effects to the species of concern. As a result, the proposed action is not anticipated to contribute to cumulative impacts to the species of concern.

6.6 HAZARDOUS MATERIALS, POLLUTION PREVENTION, AND SOLID WASTE

Executive Order 12088, as amended, directs federal agencies to: comply with "applicable pollution control standards," in the prevention, control, and abatement of environmental pollution; and consult with the EPA, State, interstate, and local agencies concerning the best techniques and methods available for the prevention, control, and abatement of environmental pollution. The two statutes of most importance to the FAA in proposing actions to construct and operate facilities and navigational aids are the Resource Conservation and Recovery Act (RCRA) (as amended by the Federal Facilities Compliance Act of 1992) and the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA or Superfund) and the Community Environmental Response Facilitation Act of 1992. RCRA governs the generation, treatment, storage, and disposal of hazardous wastes. CERCLA provides for consultation with natural resources trustees and cleanup of any release of a hazardous substance (excluding petroleum) into the environment.

6.6.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 10.3b) defines significant impacts for hazardous materials, pollution prevention and solid waste as those actions which involve property listed (or potentially listed) on the National Priorities List (NPL). The Order also states that actions occurring on mitigated ("clean") areas within a NPL site may not be considered significant. Actions that would have difficulty meeting applicable local, state or federal laws and regulations on hazardous materials or actions affecting sites known or suspected to be contaminated would also constitute a significant impact.

Preferred Alternative

The proposed action includes the construction, operation, and maintenance of an airport traffic control tower and associated base building and demolition (by dismantling) of the existing ATCT. Hazardous waste will not be generated or handled on the new ATCT site. Hazardous materials such as diesel fuel and other automotive fluids for construction equipment will be handled on the site during construction activities. Best management practices including secondary containment of any fuels or hazardous materials would allow the construction and demolition to occur without significant impact from these materials.

The proposed construction of the ATCT base building and associated ancillary features would affect the ground surface and shallow soils within the defined APE due to construction excavation (See Figures 2 and 3). The proposed action may affect ground water depending on the excavation depth for the proposed structures' foundations. Ground water could be expected at depths of approximately 25 feet below ground surface in the vicinity of the proposed ATCT site, based on ground water data which was obtained for a Phase I Environmental Due Diligence Audit (EDDA) prepared for the proposed ATCT site (FAA 2009), and information published by the Southern Nevada Water Authority (SNWA 2008).

The EDDA conducted for the proposed ATCT site identified a recognized environmental condition (REC) for the site based on up-gradient releases of jet fuel from pipelines that were recently reported to the Nevada Division of Environmental Protection (NDEP). These releases are located approximately 1,500 feet to 2,000 feet west and southwest of the proposed ATCT site and represent a low to moderate potential to degrade shallow ground water at a depth of approximately 20 to 30 feet below grade. The extent of these releases has not yet been investigated and hydrogeologic conditions in the airport vicinity appear to be consistent with significant ground water plume migration. However, if during excavation, in the unlikely event that contamination is discovered, or a spill occurs during construction, work would stop until the appropriate agencies are notified.

Two diesel fuel day tanks not exceeding 100 gallons each would be located within the generator room of the proposed base building and two diesel above ground storage tanks (AST) not exceeding 4,000 gallons each would be located outside the base building. These tanks would be used to store fuel for the emergency electrical generators located in the proposed base building. Spill prevention and control safeguards including secondary containment and double walled tanks would be installed with these tanks to prevent any potential releases from entering the subsurface at the site. A Spill Prevention Control and Countermeasures (SPCC) Plan would be required for any combination of fuel storage tanks greater than 1,320 gallons in accordance with the EPA's Oil Pollution Prevention Rule.

No other storage or usage of hazardous substances or petroleum products, other than small amounts of materials used for routine building and equipment maintenance (such as cleaning materials) is expected at the proposed site.

The existing ATCT is known to contain asbestos and lead-based coatings in various materials throughout the building. A Demolition Notification Form, Notification of Asbestos Abatement and a Dust Control Permit for Construction Activities would be filed with the

CCDAQEM prior to commencement of demolition of the ATCT (See Appendix I). The CCDAQEM has adopted the National Emission Standards for Hazardous Air Pollutants (NESHAP) at 40CFR Part 63 to regulate asbestos in Clark County. NESHAP and all permit stipulations would be complied with in regard to proper survey, abatement, containment and disposal of all asbestos containing materials prior to and during the demolition of the ATCT. According to the Solid Waste Branch of the Nevada Department of Environmental Protection, if construction waste containing lead-containing coatings is disposed of as a single waste stream, then the ratio of lead paint to total waste mass would not likely exceed the lead toxicity standard and would not be considered hazardous waste (NDEP 2004). All other construction debris would be disposed of according to State and local regulations.

Because there are no National Priorities List (NPL) or candidate NPL sites or other active CERCLA sites at or adjacent to the proposed ATCT site, the proposed action will not significantly impact NPL sites (FAA 2008).

Spill prevention and control techniques for hazardous substances and petroleum products and appropriate containment and disposal techniques for asbestos, as well as commitments to monitor for and remediate any potential soil contamination would help to ensure no significant impacts from hazardous materials or hazardous or solid wastes would result from the proposed action.

No Action Alternative

There would be no impact under the No Action Alternative from hazardous materials, pollution, or solid waste other than that already posed by the existing airport.

Cumulative Impacts

As stated above, hazardous materials associated with the proposed action would be limited to those required for construction and maintenance of the proposed ATCT facility, the storage of petroleum fuel for emergency power generation and the abatement and disposal of asbestos containing materials from the demolition of the existing ATCT. LAS contains many above ground and underground tanks containing fuel and vehicle maintenance fluids and areas where various hazardous materials are handled. There have been past releases from underground tanks at LAS (FAA 2009). Expansion of the airport facilities will likely result in more petroleum products and hazardous materials handled and more potential for releases of these materials. Planned development in the vicinity of LAS would also introduce hazardous materials associated with construction activities to the area, but adherence to Federal and State waste regulations coupled with best management practices would be expected to prevent any significant impacts from these projects. Therefore, based on the adherence to relevant hazardous waste regulations and use of best management practices, there would likely be no significant cumulative impacts resulting from the proposed action.

6.7 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

The National Historic Preservation Act (NHPA) of 1966, as amended, establishes the Advisory Council on Historic Preservation (ACHP) and the National Register of Historic

Places (NRHP) within the National Park Service (NPS). Section 110 of the NHPA governs Federal agencies responsibilities to preserve and use historic buildings; designate an agency Federal Preservation Officer; and identify, evaluate, and nominate eligible properties under the control or jurisdiction of the agency to the National Register. Section 106 of the NHPA requires federal agencies to consider the effects of their actions on properties included, or eligible for inclusion, in the National Register of Historic Places. Compliance requires consultation with the Advisory Council on Historic Preservation, the State Historic Preservation Officer (SHPO), and/or the Tribal Historic Preservation Officer (THPO). Other applicable statutes include:

- The Archaeological and Historic Preservation Act of 1974
- The Archeological Resources Protection Act
- The Native American Graves Protection and Repatriation Act (NAGPRA)
- The Antiquities Act of 1906
- The Historic Sites Act of 1935
- The American Indian Religious Freedom Act of 1978
- The Public Buildings Cooperative Use Act of 1976
- Executive Order 13006, Locating Federal Facilities on Historic Properties in Our Nation's Central Cities
- Executive Order 13007, Indian Sacred Sites

6.7.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 11.3) states that based on regulations at 36 CFR 800.8(a), a finding of adverse effect to historic, architectural, archaeological or cultural resources does not necessarily constitute a significant impact. The Section 106 process includes consideration of alternatives to avoid adverse impacts, consideration of mitigation measures and acceptance of adverse effects in some cases. In all cases, the FAA makes the final determination on level of effect in consultation with the ACHP, SHPO or THPO.

Preferred Alternative

As stated in Section 5.10, there are no historic properties listed as or determined eligible for the National Register of Historic Places (NRHP) located within the area of potential effect of the proposed action or in the airport area. The closest registered national historic place to the proposed ATCT site is the Little Church of the West, located at 3960 Las Vegas Boulevard South. The church is adjacent to the airport's western boundary, more than one mile from both the construction and demolition APEs for the proposed action. All of the sites listed on the Nevada State Register of Historic Places in the Las Vegas area are located at least six miles north of LAS (SHPO 2008; Appendix E).

The Nevada SHPO requested the FAA to delineate an area of indirect effect to determine the possibility for visual impacts to potential historic properties in the surrounding neighborhoods. The FAA used a 0.75 mile radius around the tower to define this indirect APE. The Federal Communications Commission uses this distance for their evaluation of

visual impacts from communication towers that are 200-400 feet tall (FCC 2004). The indirect APE consists largely of areas within the airport, but also includes some residential neighborhoods to the north and northeast of the proposed ATCT site (see Figure 5). According to the Clark County Assessor's Office, the earliest construction date for any of the homes within these neighborhoods is 1962 (see Appendix E).

In order to qualify for the NRHP, a property must be associated with an important historic context and retain the historic integrity of those features necessary to convey its significance. Historic context may be established by significance in American history, architecture, archeology, engineering, or culture when evaluated within the historic context of a relevant geographic area. Typically properties must also be at least 50 years old to be considered for placement on the NRHP (NPS 2002). The homes with the earliest construction dates within the indirect APE would be 49 years old at the projected construction start date of 2011. The setting of these homes has included the existing airport viewscape, where passenger terminals, large hangars, auxiliary buildings, and control towers are necessary and expected features. FAA determined that even if any of these homes were eligible for the NRHP with an architectural historic context, that due to their location adjacent to LAS, which has been operating at its current location since the 1940s, the proposed action would not significantly change the setting of the homes and therefore their eligibility for the NRHP, should they qualify. A finding of "no historic properties affected" for the proposed action was made by the FAA and concurred with by the NVSHPO (Appendix E).

The Native American Consultation Database (NACD) maintained by the National Park Service identifies seven federally recognized Indian Tribes as having interests in Clark County, Nevada (NPS 2008b; Appendix E). Section 106 consultation regarding the proposed action was conducted between the FAA and the seven Tribes identified by the NACD as well as the Nevada State Historic Preservation Office (NVSHPO) on September 4, 2008 (Appendix E).

The Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Nevada and the Kaibab Band of Paiute Indians of the Kaibab Indian Reservation, Arizona responded to the FAA in letters dated September 25, 2008 and February 9, 2009, respectively (Appendix E). The Tribal Representatives indicated that they do not object to the proposed action, but would like to be notified if any cultural items are discovered during construction and all work halted until they can be identified (Appendix E). A representative for the Hualapai Indian Tribe of the Hualapai Indian Reservation, Arizona gave the FAA a verbal determination of no adverse effect (Dawn Hubs, Hualapai Tribe, personal communication 1/7/09). As of March 20, 2009, none of the other Tribes had responded to the FAA's consultation request dated September 4, 2008. In accordance with 36 CFR 800.5(c)(1), which states that the agency may proceed after 30 days of notification if the SHPO or Tribes have either agreed with the finding or have not responded, FAA has assumed that the unresponsive Tribes agreed with the "no adverse effect" finding.

Discovery Clause

If potential historical, archaeological, or culturally important materials are discovered during construction, work would stop, the area would be secured, and the NVSHPO and the seven

Tribes (as appropriate) would be notified within 48 hours of discovery to determine appropriate actions.

Based on the above findings, it is not expected that any significant impact would occur to historical, architectural, archaeological, or cultural resources due to the proposed action.

No Action Alternative

There would be no impact to historical, architectural, archaeological, or cultural resources under the No Action Alternative other than that already posed by the existing airport.

Cumulative Impacts

As part of the realignment of Russell Road necessitated by the proposed construction of Terminal 3, the CCDOA prepared and began implementation of a Land Acquisition and Relocation Plan in 2000. This Plan included the acquisition of 233 parcels of land including 362 dwelling units located on East Russell Road and Gold Dust Avenue between Swenson Street and Surrey Street, the demolition of the dwelling units, and the relocation of affected residents (CCDOA 2005). The NVSHPO concurred with the FAA's determination that the properties affected by the Clark County Land Acquisition and Relocation Plan were not eligible for the National Register. Consultation with the NVSHPO for the Terminal 3 construction also resulted in a "no historic properties affected" determination (CCDOA 2005).

There are no historic properties listed in or determined eligible for the NRHP or the Nevada State Register of Historic Places located less than one mile from the proposed action APEs. As stated above, the NVSHPO concurred with the FAA's finding of "no historic properties affected" from the proposed action and only the Moapa Band of Paiute Indians, the Kaibab Band of Paiute Indians and the Hualapai Indian Tribe responded to requests for consultation. Although the presence of archaeological or cultural resources within the entire airport may not have been determined, it is likely that the planned development within the airport will consider and protect such resources if they are found. Planned development projects in the vicinity of LAS would be subject to the local zoning laws and comprehensive planning document direction regarding historic, archaeological and cultural sites. The Clark County Comprehensive Plan contains a Historic planning element which promotes the conservation of historical and cultural resources within the County in compliance with local, state and federal laws and regulations (CCDCP 2006). Based on the County's policies to preserve important historic and cultural resources it is likely that plans for private development would be required to consider and protect any historic, cultural or archaeological resources that may be present.

Based on the lack of historic properties within the airport property and the commitment of the FAA to consult with the NVSHPO and Tribes should any historic, cultural or archaeological resources be discovered, it is unlikely that significant cumulative impacts to historical, architectural, archaeological, or cultural resources would occur due to the proposed action.

6.8 LIGHT EMISSIONS AND VISUAL IMPACTS

The following discussion is a consideration of potential impacts to people and properties due to light emissions or visual impacts. Order 1050.1E CHG 1 directs the FAA to consider the extent to which lighting associated with a proposed action creates an annoyance or interferes with normal activities among people in the vicinity. The Order also directs FAA to consider the extent to which the proposed development contrasts with the existing environment and whether the agency considers this contrast objectionable, based on public input.

6.8.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 does not establish specific impact thresholds for light emissions and visual impacts. FAA Order 5050.4B includes the following factors to consider as significant impacts to light emissions and visual resources: 1) the light emissions from the proposed action would create annoyance to or interfere with normal activities; and 2) consultation with federal, state or local agencies, tribes or the public shows that the visual effects from the proposed action contrast with existing environments and are objectionable.

Preferred Alternative

The proposed ATCT and base building would have surface mounted security lighting around the buildings and parking lot. The ATCT would also have obstruction lighting on the cab roof. The lighting associated with the new ATCT would be essentially the same as that on the existing ATCT. The impact of light emissions from the ATCT facility on the surrounding community is expected to be insignificant due to its presence within the existing airport environment and its distance of approximately one-third of a mile from any existing residential or other sensitive public areas.

The proposed new ATCT would be approximately 372 feet high, twice as tall as the existing 185 foot tower. The proposed ATCT would be the tallest structure in the immediate vicinity, and would be visible from a large portion of the surrounding area. The closest residential areas to the proposed ATCT site are located approximately one-third mile north of the site, north of Russell Road. The homes in these neighborhoods which face south without anything blocking their view of the tower could be expected to incur some visual effect from the new tower. However, given that their current view to the south is of the airport, and likely includes the current tower, the placement of the new tower is not likely to produce a significant visual effect. CCDOA is planning to construct a park (Siegfried and Roy Park) on the north side of Russell Road between Maryland Parkway and Swenson Road (see Table 6-2) which may provide some screening of the airport and tower for these homes. Due to screening or distance from the proposed tower, it is unlikely that there would be significant visual effects to other residential neighborhoods in the vicinity of the airport.

The design intention for the proposed ATCT and base building is to create an efficient, low maintenance facility which meets the operational requirements of the airport, harmonizes with the surrounding environment, and is consistent in character with the existing and proposed airport facilities. Special attention will be given to the aesthetic appearance of the ATCT to provide a dynamic contemporary image that clearly expresses its functional role,

and yet establishes a progressive architectural direction. Although there will be a visual impact on the surrounding area, it is the intention of the FAA to design the building in a way that will be considered positive by the community.

No Action Alternative

There would be no impact from light emissions and no visual impact under the No Action Alternative.

Cumulative Impacts

Light sources at the airport and in the vicinity have increased with time along with the growth of area. Many of the foreseeable future developments at LAS involve rehabilitation of current facilities and would not increase light or visual impacts. The replacement of residences with landscaping north of Russell Road would likely reduce the amount of lighting in that area and provide a buffer between the remaining residences and the lighting from Terminal 3. The installation of a noise barrier on the north side of Russell Road would also likely provide visual screening of the airport for the homes between Maryland Parkway and Swenson Street. Construction of the Terminal 3 building and associated parking areas, aircraft ramps, and roadways would replace an existing airport parking lot, residential area and undeveloped land. This development would likely increase lighting in the area, but placement of the six story parking garage north of the terminal building was designed to block the light from Terminal 3 from the residential areas north of the Russell Road (CCDOA 2005). New roadways associated with Terminal 3 have also been designed to minimize light intrusion into the surrounding residential communities (CCDOA 2005). Based on these efforts to minimize the effects to the adjacent residential neighborhoods, planned developments at LAS are unlikely to result in significant light or visual effects.

The foreseeable future non-airport development in the vicinity of LAS primarily involves remodel projects on the Las Vegas Strip, an addition to the Las Vegas Convention Center, and various highway improvements. These projects are unlikely to introduce a significant amount of increased lighting or visual impact to the area, given that they would not significantly alter existing conditions and would occur in urbanized areas. All planned development would also be subject to the County's zoning ordinance and requires approval from the Planning Commission to assure its compatibility with the appropriate Clark County Land Use Plan. While visual impacts would be expected to increase under the proposed action, and visual impacts and light emissions would increase due to other projects at the airport and surrounding area, the cumulative impacts of these increases to the surrounding communities would not be expected to significantly impact residences or other sensitive public areas based on the above discussion.

6.9 NATURAL RESOURCES AND ENERGY SUPPLY

Executive Order 13123 encourages each federal agency to expand the use of renewable energy within its facilities and in its activities and requires each federal agency to reduce petroleum use, total energy use and associated air emissions, and water consumption in its

facilities. It is also the policy of the FAA to encourage the development of facilities that exemplify the highest standards of design including principles of sustainability.

6.9.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 13.2b) defines specific impact thresholds for natural resources and energy supply as those actions in which demand would exceed the available supply of these resources. Factors to consider are: when the action would cause a substantial demand on available energy or natural resource supplies; when compared to future no impact conditions, changes in aircraft movement or ground vehicle use would cause a statistically significant increase in fuel consumption; when consumable natural resources for construction are rare; and when the action would not be consistent with smart growth requirements of the agency having jurisdiction over the area where the airport is located.

Preferred Alternative

Construction materials for the proposed new ATCT facility would consist primarily of concrete, sand and gravel, steel, asphalt, and glass. None of these materials are unusual or in short supply and all are available locally. The proposed ATCT facility would utilize commercial electricity. Electricity consumption may increase incrementally under the Preferred Alternative, but not significantly relative to total airport consumption. In the case of commercial electrical power supply failure, diesel burning backup generators will be used as a power supply. These generators would be used intermittently and temporarily for short durations and would not likely significantly impact natural resources or energy supply.

No large volume of water is expected to be used during construction and the electrical power and fuel that will be consumed for construction will be insignificant in comparison to electricity and fuel already used at the airport. There would be no effect on the current aircraft fuel consumption.

Pollution prevention principles would be included as part of construction BMPs; minimal waste will be produced during the construction of the ATCT and base building; and no significant amounts or unusual natural resources will be used for the proposed action. Approximately 4,000 tons of concrete and demolition rubble would be generated from the demolition of the existing ATCT; about 10-15 tons of that would be recyclable steel components. If the base building is demolished (if CCDOA doesn't want to continue use of the building), approximately 3,000-3,500 tons of concrete and other rubble would be generated with about 3-5 tons of recyclable steel components. Other materials which may be recycled would include approximately 3 tons of copper wire and piping and approximately 5 tons of metal studs and roof decking. Construction waste would likely be disposed of at multiple sites with adequate capacity within close proximity to the airport. All waste would be disposed of according to State and local regulations. Recycling would be taken to the most convenient site in proximity to the airport.

The proposed action would incorporate the following construction materials and design aspects which would minimize energy and water use in many areas of the ATCT and base building. High efficiency mechanical equipment would be used to heat and cool the

buildings. Day-lighting would be used to reduce the need for electrical lighting where practicable and the use of LED lighting would reduce electricity usage. Solar power generation would be considered as an alternate source of power for some lighting loads. Low-emissivity (low-E) coatings would be used on windows to reduce solar heat gain. Building roofs would be insulated to R30+ and walls would be insulated to R15+.[4] Roofs would also have a white membrane to reduce heat gain. Low water usage plumbing fixtures would be used throughout the facility.

Based on the above analysis, the proposed action would not significantly impact natural resources and energy supply.

No Action Alternative

There would be no impact to natural resources and energy supply under the No Action Alternative.

Cumulative Impacts

Cumulatively the planned facility expansion and new development, including the proposed action, at LAS will increase airport facilities and energy consumption at the airport. Planned developments in the LAS vicinity would increase the cumulative impacts to energy and natural resource consumption such as asphalt, concrete, steel, wood, gravel and rock fill materials and petroleum fuels in the area. However, the cumulative impact from the proposed action and past, present and reasonably foreseeable actions in the vicinity of the airport are not likely to exceed the available supply of natural resources or energy supply and so would not significantly impact natural resources or energy supply.

6.10 NOISE

Noise in the vicinity of airports and its impacts on people and communities is addressed by several federal laws including the Aviation and Noise Abatement Act, the Federal Aviation Act, the Control and Abatement of Aircraft Noise and Sonic Boom Act, the Airport and Airway Improvement Act, the Airport Noise and Capacity Act and the Noise Control Act. Aviation-related noise impacts are regulated by the FAA under 14 CFR Part 150 and Advisory Circular 150/5020, Noise Control and Compatibility Planning for Airports. As stated in FAA Order 1050.1E CHG 1, "For aviation noise analysis, the FAA has determined that the cumulative noise energy exposure of individuals to noise resulting from aviation activities must be established in terms of yearly day/night average sound level (DNL) as FAA's primary metric."

[4] The "R" value of a material refers to its ability to resist heat flow. R-values are defined per inch of material. For example, the R-value of an inch of fiberglass batting insulation is about R-3 to R-4. The use of multiple inches of a material increases its R-value by that multiplier.

6.10.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 14.3) defines significant impacts to noise as when the analysis shows that the proposed action will cause noise sensitive areas to experience an increase in noise of DNL 1.5dB or more at or above the DNL 65dB noise exposure when compared to the no action alternative for the same timeframe. Special consideration needs to be given to evaluation of noise in sensitive areas such as national parks, national wildlife refuges and historic sites, including traditional cultural properties. In areas where ambient noise is very low and a quiet setting is a generally recognized purpose and attribute, the DNL 65dB threshold does not adequately address noise effects and a supplemental noise analysis may be appropriate.

Preferred Alternative

Title 30.48 of the Clark County Unified Development Code provides primary guidance for compatible development within the McCarran International Airport AEOD (Clark County 2008; See Appendix D for the McCarran AEOD Map). Title 30.48 defines development zones within the AEOD based on day/night average sound levels (DNL) and requires noise attenuation construction techniques for sensitive uses permitted within the AEOD. Noise reduction amounts required within the AEOD depend on the specific zoned use and noise contour that the use falls within. In general, most residential use is allowed within the DNL 60 and 65dB contours with a 25dB noise reduction and some low density single family residential use is allowed within the DNL 70dB contour with a 30dB reduction. The Land Use Plans of the unincorporated communities of Winchester, Spring Valley and Enterprise, which are affected by noise from LAS, incorporate the AEOD and encourage compatible new development in the vicinity of the airport (CCDCP 2205 p. 51, 99; CCDCP 2004a p. 28; CCDCP 2004b p. 40, 80). The City of Henderson Comprehensive Plan does not include any compatible land use policies relative to LAS (City of Henderson 2006).

The construction and operation of the new ATCT would not affect the arrival/departure paths, runway use, fleet mix, or number of aircraft operations currently using or forecast to use the airport in the future. The new ATCT, therefore, would not alter the current or predicted noise contours at LAS.

As stated above, the communities of Winchester, Spring Valley and Enterprise have planned for compatible development within the airport influence area based on DNLs that reflect the airport's predicted growth rate. Since the proposed action is not expected to change airport operations, and hence noise exposure levels, as predicted in the 2006 FAR Part 150 Noise Compatibility Study Update (CCDOA 2006a), and due to compatible land use planning surrounding the airport, significant impacts related to compatible land use and noise are not expected.

Construction Noise

Based on the noise exposure maps from the Noise Compatibility Study (CCDOA 2006a), the existing ATCT is within the 65 DNL contour line and the proposed ATCT site is within the 60 DNL contour line. Noise associated with the proposed action would be generated

primarily during construction and demolition activities. Construction would be expected to occur over about an 18-month period starting in early-2011 and proceeding until late-2012. Demolition of the existing ATCT would occur over an approximately 2-month period in early-2015.

Construction noise would be generated by internal combustion engines and other equipment. Table 6.10-1 shows construction equipment noise ranges in dB(A) at 50 feet from the source. Impact equipment (pile drivers, jack hammers, etc.) have the highest noise levels, which range from the low 80s to more than 100 dB(A). Noise from equipment powered by internal combustion engines (backhoes, tractors, graders, etc.) ranged from below 70 to the mid 90s dB(A). As shown in Table 6.10-2, doubling the distance from the noise source reduces the noise level by 6 dB.

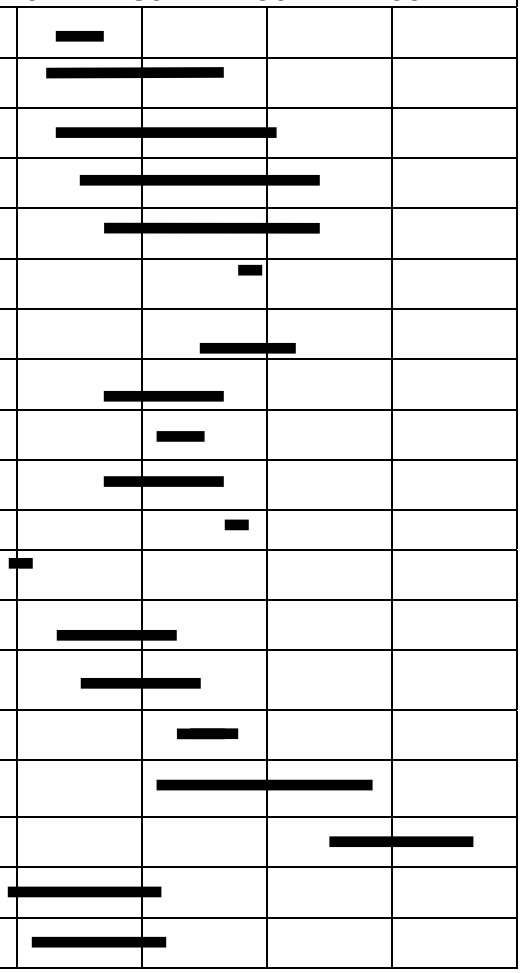
The proposed action APE does not include any sensitive noise receptors (schools, churches, residences, parks, etc.). LAS is bordered by commercial and residential development as well as the University of Las Vegas to the north; commercial and industrial development with some residential use to the east; commercial and warehouse/industrial development to the south; and commercial development associated with the Las Vegas Strip to the west. Interstate-215 is located approximately one-half mile south of the airport and Interstate-15 is located approximately one-half mile west of the airport. The closest public park to the APE is the Clark County Paradise Vista Park at 5582 Stirrup Street, near the corner of Russell Road and Eastern Avenue, approximately one mile northeast of the new ATCT site (CCDPR 2008). The closest residential area to the proposed ATCT site is located approximately one-third mile north of the site, north of Russell Road between Swenson Street and South Maryland Parkway. The closest schools are Handprints Learning Center and Gene Ward Elementary School, both located approximately 4,000 feet northeast of the APE on Hacienda Avenue. The nearest church is the Family Church of God at 5006 South Maryland Parkway, approximately one mile northeast of the APE. Given the distance from the APE to any sensitive noise receptors, no significant impacts from construction noise are expected.

Operational Noise

Normal operational noise from the ATCT facility would be similar to a commercial or light industrial site. The loudest potential operational noise source would be the emergency generator. The FAA conducted noise exposure monitoring at a number of FAA facilities in the Alaskan region which consisted of sound level surveys of various equipment and work areas (FAA 2004). Measurements from a number of generator models with outputs varying from 20-675 kilowatt (27-905 horsepower) produced noise levels from 85-107dBA. These measurements were taken inside the emergency generator building. Exterior noise levels would be reduced by the building walls, as well as distance from the source (see Table 6.10-2). The emergency generator at LAS would typically be used for a few hours each month for testing but could be used for a longer duration in the event of a commercial power outage. Based on the distance from the emergency generator to any sensitive noise receptors (see discussion above under *Construction Noise*), there would be no significant impacts from operational noise.

Table 6.10-1. Noise Levels of Construction Equipment

Equipment			Noise Level [dB(A)] at 50 feet (60 70 80 90 100)
Equipment Powered by Internal Combustion Engines	Earth Moving	Compacters (Rollers)	
		Front Loaders	
		Backhoes	
		Tractors	
		Scrapers, Graders	
		Pavers	
		Trucks	
	Materials Handling	Concrete Mixers	
		Concrete Pumps	
		Cranes (Movable)	
		Cranes (Derrick)	
	Stationary	Pumps	
		Generators	
		Compressors	
Impact Equipment		Pneumatic Wrenches	
		Jack Hammers & Rock Drills	
		Pile Drivers (Peaks)	
Other		Vibrator	
		Saws	



Note: Based on limited available data samples.
Source: EPA 1971

Table 6.10-2. Noise Levels at Distance from Source

Decibel level at noise source (dB)	Distance from noise receiver to noise source (ft)	Decibel level at noise receiver (dB)
105	5	102
105	10	96
105	20	90
105	40	84

Source: sengpielaudio.com 2008

No Action Alternative

There would be no effect on compatible land use and noise in the foreseeable future, as current local government policies regarding land usage at and around McCarran International

Airport (including the APEs for the proposed actions) prevent land use which is incompatible with the airport.

Cumulative Impacts

Current local government policies regarding land usage at and around LAS prevent land use which is incompatible with the airport and include policies which protect existing and potential future developments from excessive noise. Planned developments within the airport influence area are subject to local zoning laws which require sound-reducing construction techniques, deed restrictions and notifications to prospective buyers of noise levels from airport activities. There are no sensitive noise receptors in the immediate vicinity of the APE. The planned expansion of terminal airspace and modified routes at LAS is not projected to significantly change DNLs in the airport vicinity. An EA is being prepared by the FAA to evaluate the impacts of this proposal. Since the proposed action is not expected to change airport operations, and hence noise exposure levels as stated above, and no sensitive noise receptors would be affected by construction or operational noise, there is not expected to be a significant cumulative impact from noise.

6.11 SECONDARY (INDUCED) IMPACTS

FAA Order 1050.1E CHG 1 requires the FAA to identify any induced impacts to surrounding communities which may result from a proposed action. Examples of induced impacts as defined by the Order include, "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."

6.11.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 15) defines impact thresholds for secondary (induced) impacts as those actions which would cause significant impacts in other categories such as noise, compatible land use or direct socioeconomic impacts.

Preferred Alternative

Construction of the proposed ATCT and Base Building and demolition of the existing ATCT would occur within the currently developed area of LAS. No commercial businesses, residences, or other developed properties would likely be directly impacted by the proposed actions except for a small positive impact to those business services and suppliers employed for construction of the ATCT, Base Building and parking structure and demolition of the existing ATCT. The proposed action is not expected to increase the demand for aviation services at the airport and therefore no secondary impacts are expected. Based on the above analysis, the proposed action would not produce significant secondary (induced) impacts.

No Action Alternative

There would be no noise or secondary impacts under the No Action Alternative.

Cumulative Impacts

As part of the realignment of Russell Road necessitated by the proposed construction of Terminal 3, the CCDOA prepared and began implementation of a Land Acquisition and Relocation Plan in 2000. This Plan included the acquisition of 233 parcels of land including 362 dwelling units located on East Russell Road and Gold Dust Avenue between Swenson Street and Surrey Street, the demolition of the dwelling units, and the relocation of affected residents (CCDOA 2005). The relocation of families and small businesses located within the land acquisition area was completed in accordance with appropriate mandates, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act and resulted in no significant secondary impacts. The present and foreseeable future development and facility expansion at LAS have been planned to avoid compatible land use and noise issues and appears to be in conformance with local government planning. No dislocation of commercial or industrial facilities or residential populations is expected due to planned development at LAS. Planned development in the vicinity of LAS would support the area's tourist industry and predicted population growth and is not expected to result in any significant shifts in population movement, public service demands or changes in economic activity. Therefore, no significant cumulative secondary impacts are expected.

6.12 SOCIOECONOMIC IMPACTS, ENVIRONMENTAL JUSTICE, AND CHILDREN'S ENVIRONMENTAL HEALTH AND SAFETY RISKS

FAA Order 5100.37B provides guidance to comply with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Uniform Act). The Uniform Act ensures that owners of real property to be acquired for federal and federally-assisted projects are treated fairly and consistently, and that persons displaced as a direct result of federal or federally-assisted projects are treated fairly, consistently, and equitably.

Executive Order 12898 requires federal agencies to make achieving environmental justice part of their missions, "by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations."

Executive Order 13045 requires that "each federal agency make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks."

6.12.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 16.3) defines significant impacts to environmental justice as disproportionately high and adverse human health or environmental effects on minority or low income populations and significant impacts to children's environmental health as disproportionate health and safety risks to children resulting from the proposed action.

The Order provides examples of significant socioeconomic impacts that include but are not limited to: 1) extensive relocation of residents is required, but sufficient replacement housing is unavailable; 2) extensive relocation of community business that would create severe economic hardship for the affected communities; 3) disruptions of local traffic patterns that substantially reduce the service levels of roads serving the airport and surrounding communities; and 4) a substantial loss in community tax base.

Preferred Alternative

Since no significant human health or environmental effects would result from implementation of the proposed action, none will occur disproportionately to minority or low-income populations, or children. Title 30.48 of the Clark County Development Code and the land use plans of the surrounding communities include policies which protect noise sensitive properties and ensure compatible land use within the airport influence area. No real property would be acquired and no persons would be displaced as a result of the proposed action, as defined in Section 4601 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act. No relocation of commercial businesses would occur as a result of the proposed action. Also, there would not be a substantial disruption of local traffic patterns that would reduce the levels of service of roads serving the airport or its surrounding communities.

The proposed action is not likely to have any significant impacts to socioeconomics, environmental justice, or children's environmental health and safety risks.

No Action Alternative

There would be no impacts to socioeconomics, environmental justice, or children's environmental health and safety risks under the No Action Alternative.

Cumulative Impacts

As stated above, the proposed action would not produce any significant socioeconomic, environmental justice, or children's environmental health and safety risks. As part of the realignment of Russell Road necessitated by the proposed construction of Terminal 3, the CCDOA prepared and began implementation of a Land Acquisition and Relocation Plan in 2000. This Plan included the acquisition of 233 parcels of land including 362 dwelling units located on East Russell Road and Gold Dust Avenue between Swenson Street and Surrey Street, the demolition of the dwelling units, and the relocation of affected residents (CCDOA 2005). The relocation of families and small businesses located within the land acquisition area was completed in accordance with appropriate mandates, including the Uniform Relocation Assistance and Real Property Acquisition Policies Act, the Uniform Relocation Assistance and Real Property Acquisition for Federal and Federally Assisted Projects, and FAA Advisory Circular 150/5100-17 and resulted in no significant socioeconomic or environmental justice, or children's environmental health and safety risks impacts. The ongoing facility expansion and new development at LAS has been planned to avoid compatible land use and noise issues in conformance with local jurisdiction land use planning. No dislocation of commercial or industrial facilities or residential population is

expected due to planned development and expansion at LAS. Planned development in the vicinity of LAS would be subject to approval under the County's zoning ordinance and appropriate Land Use Plan and would be expected to be compatible with existing and future land uses. Therefore, no significant cumulative socioeconomic, environmental justice, or children's environmental health and safety risks impacts are expected.

6.13 WATER QUALITY

Federal agencies are required to comply with provisions of the Clean Water Act in any action that may affect water quality, including the control of any discharge into surface or ground water and the prevention or minimization of loss of wetlands. Agencies must also comply with the Fish and Wildlife Coordination Act if the proposed action impounds, diverts, drains, controls, or otherwise modifies the waters of any stream or other water body. Section 1424(e) of the Safe Drinking Water Act requires consultation with the EPA if a proposed action has the potential to contaminate an aquifer designated by the EPA as a sole or principal source of drinking water for the area.

6.13.1 Significant Impact Threshold

FAA Order 1050.1E, CHG 1 (Appendix A, Section 17.3) defines significant impacts to water quality as those which would result in exceedance of water quality standards or violate water quality regulations. Water quality regulations and issuance of permits will normally identify any deficiencies in the proposed action with regard to water quality.

Preferred Alternative

The proposed action will not affect any streams or surface water bodies, and there will be no impoundment or diversion of water, therefore the Fish and Wildlife Coordination Act does not apply to the proposed action. The proposed action would not affect any sole source aquifers, therefore consultation with the EPA does not apply to the proposed action (USEPA 2008e). Construction of the proposed ATCT would not affect the integrity or operation of the underground water reservoir located immediately south of the new ATCT site. The presence of the ATCT facility adjacent to the reservoir may provide increased security for this water supply. Post-construction surface drainage across the proposed site would be directed via a system of culverts and detention basins to three major outlets: the Bermuda Flood Control Channel; the Rawhide Flood Channel; and the Hacienda Avenue Storm Drain. A Notice of Intent for Stormwater Discharge Permit Application would be filed online with the Nevada Division of Environmental Protection (NDEP) Bureau of Water Pollution Control at http://ndep.nv.gov/bwpc/storm_cont03.htm along with a Storm Water Pollution Prevention Plan (See Appendix I).

Ground water could be expected at depths of approximately 25 feet below ground surface in the vicinity of the proposed ATCT site, based on ground water data which was obtained for a Phase I EDDA prepared for the proposed ATCT site (FAA 2008), and information published by the Southern Nevada Water Authority (SNWA 2008). A Temporary Groundwater Discharge Permit Application would be filed with the NDEP Bureau of Water Pollution Control to regulate discharge of any ground water encountered during construction activities.

This permit includes requirements for water quality lab analysis to determine appropriate discharge method (See Appendix I for permit and analysis requirements). Construction BMPs to protect water quality would be implemented (see Section 6.3). In addition, no impacts to wetlands from the proposed action are expected because none were identified within the proposed action APE or its vicinity as discussed in Section 5.17.

No Action Alternative

There would be no impacts to water quality under the No Action Alternative other than those already posed by the existing airport.

Cumulative Impacts

As stated above, the proposed action would not produce any significant impacts to water quality. No perennial surface water drainages exist within the airport property or within the immediate vicinity of LAS. Planned development in the vicinity of LAS could potentially affect water quality in the area due to erosion or contaminant exposure from construction areas. However, storm water pollution prevention practices and best management practices implemented during construction would likely prevent any significant impacts to surface or ground water quality. Therefore, no significant cumulative impacts to water quality are expected.

6.14 SUMMARY OF ENVIRONMENTAL IMPACTS, COMMITMENTS AND REQUIRED PERMITS

The following table (Table 6.14-1) summarizes environmental consequences of the Preferred and No Action Alternatives and commitments and environmental permits required for the Preferred Alternative.

Table 6.14-1. Summary of Environmental Impacts, Commitments and Permits Required for the Preferred Alternative and Environmental Impacts for the No Action Alternative

Category	Environmental Impacts of the Preferred Alternative	Cumulative Impacts of the Preferred Alternative	Commitments and Permits Required for the Preferred Alternative	Environmental Impacts of the No Action Alternative
Air Quality	No significant impact	No significant impact	• Application for an Authority to Construct Certificate and Supplemental Information Sheet with Emission Unit Information as required by CCDAQEM to permit the ATCT's emergency generators. • Application for Dust Control Permit for Construction Activities as required by CCDAQEM).	No impact
Coastal Resources	No impact, no coastal resources near the project	No impact	None	No impact
Compatible Land Use	No significant impact	No significant impact	None	No impact
Construction Impacts	No significant impact	No significant impact	• Implementation of construction BMPs, scheduling of construction for low-traffic times. • Demolition Notification Form, Notification of Asbestos Abatement and a Dust Control Permit for Construction Activities as required by CCDAQEM for demolition activities.	No impact
Department of Transportation Act: Section 4(f)	No significant impact	No significant impact	None	No impact
Farmlands	No impact, soils within project area are considered "not prime farmland"	No impact	None	No impact
Fish, Wildlife, and Plants	No significant impact	No significant impact	None	No impact

Category	Environmental Impacts of the Preferred Alternative	Cumulative Impacts of the Preferred Alternative	Commitments and Permits Required for the Preferred Alternative	Environmental Impacts of the No Action Alternative
Floodplains	No impact, the APEs are within FEMA FIRMs Zone X, "areas determined to be outside the 0.2% chance of flooding" which are outside of the 100-year floodplain	No impact	None	No impact
Hazardous Materials, Pollution Prevention, and Solid Waste	No significant impact	No significant impact	• Construction BMPs will be implemented. • If contaminants are discovered or a spill occurs during construction, work will stop until the appropriate agencies are notified. • A SPCC Plan would be required for any combination of fuel storage tanks greater than 1,320 gallons in accordance with the EPA's Oil Pollution Prevention Rule. • Construction waste containing lead-containing coatings would be disposed of as a single waste stream to prevent exceedance of the State lead toxicity standard.	No impact
Historical, Architectural, Archaeological, and Cultural Resources	No significant impact	No significant impact	Work will be stopped and NVSHPO and Tribes will be notified if resources are discovered during construction.	No impact
Light Emissions and Visual Impacts	No significant impact	No significant impact	None	No impact
Natural Resources and Energy Supply	No significant impact	No significant impact	None	No impact
Noise	No significant impact	No significant impact	None	No impact
Secondary (Induced) Impacts	No significant impact	No significant impact	None	No impact

Category	Environmental Impacts of the Preferred Alternative	Cumulative Impacts of the Preferred Alternative	Commitments and Permits Required for the Preferred Alternative	Environmental Impacts of the No Action Alternative
Socioeconomics and Environmental Justice	No significant impact	No significant impact	None	No impact
Water Quality	No significant impact	No significant impact	• Construction BMPs will be implemented. • Notice of Intent for Stormwater Discharge Permit Application with Storm Water Pollution Prevention Plan as required by NDEP at http://ndep.nv.gov/bwpc/storm_cont03.htm. • Temporary Groundwater Discharge Permit Application as required by NDEP Bureau of Water Pollution Control.	No impact
Wetlands	No impact, no wetlands in the project area	No impact	None	No impact
Wild and Scenic Rivers	No impact, no wild and scenic rivers in the project area	No impact	None	No impact

7.0 PUBLIC PARTICIPATION

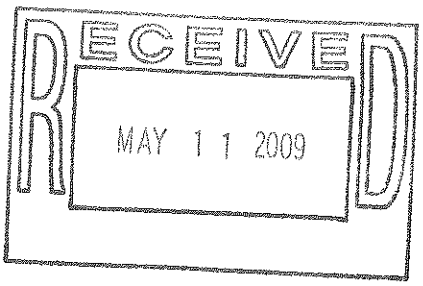
Scoping is an early process wherein the affected Federal, State and local agencies, Indian Tribes, the proponent of the action (if different from the lead agency), and other interested persons are invited to participate in the identification of the significant issues of a proposed action and the determination of their scope. Scoping was not conducted for this EA as per Section 404a of FAA Order 1050.1E CHG 1, which states that, "scoping, as described in 40 CFR 1501.7, is not required for an EA but is optional at the discretion of the responsible FAA official."

The Draft Environmental Assessment for the proposed action was made available for a 30 day public review and comment period from May 6, 2009 to June 4, 2009. Notice of the availability of the Draft EA was published in the Las Vegas Review-Journal, a newspaper of local circulation in the Las Vegas area (see p. 78). Digital copies of the Draft EA were also sent to the Nevada State Clearinghouse and the Southern Nevada Regional Planning Coalition for review by local, regional and State agencies. The Nevada Department of Air Quality & Environmental Management responded with a request to review future documents relating to the project. The Nevada State Clearinghouse declined to distribute the EA to State agencies because "the project is on previously disturbed land in an urban area and replaces existing infrastructure with similar structures" and "the project has already been extensively reviewed and commented upon by both state and federal agencies regarding environmental and cultural impacts." Copies of these comment letters are included as pages 80-82 of this document. No other comments were received on the Draft EA. As per Section 406g of FAA Order 1050.1E CHG 1, a Notice of Public Availability of the Final EA will be published in a newspaper of local circulation; however, no further comments will be accepted.

AFFP DISTRICT COURT
Clark County, Nevada

AFFIDAVIT OF PUBLICATION

STATE OF NEVADA)
COUNTY OF CLARK) SS:



STACEY M. LEWIS, being 1st duly sworn, deposes and says: That she is the Legal Clerk for the Las Vegas Review-Journal and the Las Vegas Sun, daily newspapers regularly issued, published and circulated in the City of Las Vegas, County of Clark, State of Nevada, and that the advertisement, a true copy attached for,

SAGE ENVIRONMENTAL, LLC 3222050SAG 5237779

was continuously published in said Las Vegas Review-Journal and / or Las Vegas Sun in 1 edition(s) of said newspaper issued from 05/06/2009 to 05/06/2009, on the following days:

05/06/2009

PUBLIC NOTICE
DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION
Draft Environmental Assessment, McCarran International Airport, Airport Traffic Control Tower (ATCT) and Base Building Construction and Operation

SUMMARY: The Federal Aviation Administration (FAA) announces the release of the Draft Environmental Assessment (EA) for the proposed McCarran International Airport ATCT and Base Building Construction and Operation project located in Las Vegas, NV. The Draft EA will be available for public review for 30 days starting May 6, 2009. The document is available on-line at www.faa.gov/airports_air traffic/environmental_issues/. A hard copy of the EA can be viewed or copies made at the Clark County Library, 1401 East Flamingo Road, Las Vegas, NV or at the Clark County Department of Aviation Planning Section, 1845 East Russell Road, 3rd Floor, Las Vegas, NV. The document is also available on CD by request to SAGE Environmental, Attn: Joelle Dickson, 807 E. South Temple, Suite 100, Salt Lake City, UT 84102 or jdickson@sage-env.com.
DATES: In order to be considered, written comments must be received by 5:00pm June 4, 2009, by Joelle Dickson, SAGE Environmental, 807 E. South Temple, Suite 100, Salt Lake City, UT 84102 or jdickson@sage-env.com. Questions concerning the EA or the process being applied by the FAA in connection with this project should be directed to Ms. Joelle Dickson at (801) 322-2050.
SUPPLEMENTARY INFORMATION: The project involves the construction and operation of an ATCT and base building on the existing airport property. An ATCT is an airport observation facility that visually and electronically monitors aircraft takeoffs and landings and ground traffic within the airport. The base building would house electrical, mechanical, and communications equipment and administrative offices associated with the operation of the proposed ATCT. The purpose of this notice is to inform the public, and state, local, and federal agencies that a draft EA has been prepared, and to provide those interested in doing so with an opportunity to present their views, comments, information, data, or other relevant observations concerning the environmental effects related to implementation of this proposal. Issued in Las Vegas, NV on May 6, 2009 by Joelle Dickson, Environmental Analyst, SAGE Environmental, 807 E. South Temple, Suite 100, Salt Lake City, UT 84102, (801) 322-2050 and Janelle Cass, Environmental Engineer, Federal Aviation Administration, Air Traffic Organization, Engineering Services, 1601 Lind Avenue, S.W., Renton, WA 98055-4056, (425) 227-1343.

PUB: May 6, 2009
LV Review-Journal

EMILY GONZALEZ
Notary Public State of Nevada
No. 09-8940-1
My appt. exp. Nov. 13, 2012

Signed: Stacey M. Lewis

SUBSCRIBED AND SWORN BEFORE ME THIS, THE
7th day of May, 2009.

Emily Gonzalez
Notary Public

JIM GIBBONS
Governor

STATE OF NEVADA

ANDREW K. CLINGER
Director

DEPARTMENT OF ADMINISTRATION
209 E. Musser Street, Room 200
Carson City, Nevada 89701-4298
(775) 684-0222
Fax (775) 684-0260
http://www.budget.state.nv.us/

May 19, 2009

Janelle Cass
Federal Aviation Administration
Western Service Area, Engineering Services Group
Seattle, Washington

RE: Draft Environmental Assessment for Proposed Replacement Airport Traffic Control Tower and Administrative Base Building Construction at McCarran International Airport, Las Vegas Nevada.

The Nevada State Clearinghouse has declined to distribute this document for comment by state agencies for the following reasons:

- The project is on previously disturbed land in a major urban area and replaces existing infrastructure with similar structures.
- The project has already been extensively reviewed and commented upon by both state and federal agencies regarding environmental and cultural impacts and the essential nature of the project has not been substantially altered since those comments were made.

As such, the Nevada State Clearinghouse has no additional comment on this project at this time. Please advise this office of any further publications regarding this project. This constitutes the State Clearinghouse review of this proposal as per Executive Order 12372. If you have questions, please contact me at (775) 684-0213.

Sincerely,

R. Tietje
Nevada State Clearinghouse

DAQEM

DEPARTMENT OF AIR QUALITY & ENVIRONMENTAL MANAGEMENT

500 S Grand Central Parkway 1st Floor · Box 555210 · Las Vegas, NV 89155-5210
(702) 455-5942 · Fax (702) 383-9994
Lewis Wallenmeyer Director · Alan Pinkerton Assistant Director · Tina Gingras Assistant Director

June 4, 2009

Ms. Joelle Dickson
SAGE Environmental
807 E. South Temple, Ste. 100
Salt Lake City, UT 84102
jdickson@sage-env.com

Draft Environmental Assessment Airport Traffic Control Tower and Base Building Construction and Operation

Dear Ms. Dickson:

The Clark County Department of Air Quality and Environmental Management has reviewed the draft environmental assessment for compliance with air quality and storm water quality regulations. We understand that the project entails demolishing the existing airport traffic control tower and constructing a new tower and base building. We do not have any comments or suggestions at this time. However, we would appreciate the opportunity to review future documents regarding this project.

Thank you for your consideration. If you have questions, please contact me at 702-455-1600.

Sincerely,

for Lewis Wallenmeyer
Director

8.0 LIST OF PREPARERS

This section of the Environmental Assessment lists the people responsible for its preparation, as well as persons consulted from other agencies and Tribes who provided information included in the EA.

PREPARERS

Joelle Dickson, B.S., Environmental Analyst, SAGE Environmental, L.L.C.

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Buddy Smith, Botanist, Western Ecological Services

Janelle Cass, Environmental Engineer, Federal Aviation Administration

PERSONS CONSULTED

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Lora Tom, Paiute Indian Tribe of Utah

Charles Vaughn, Hualapai Tribal Council

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