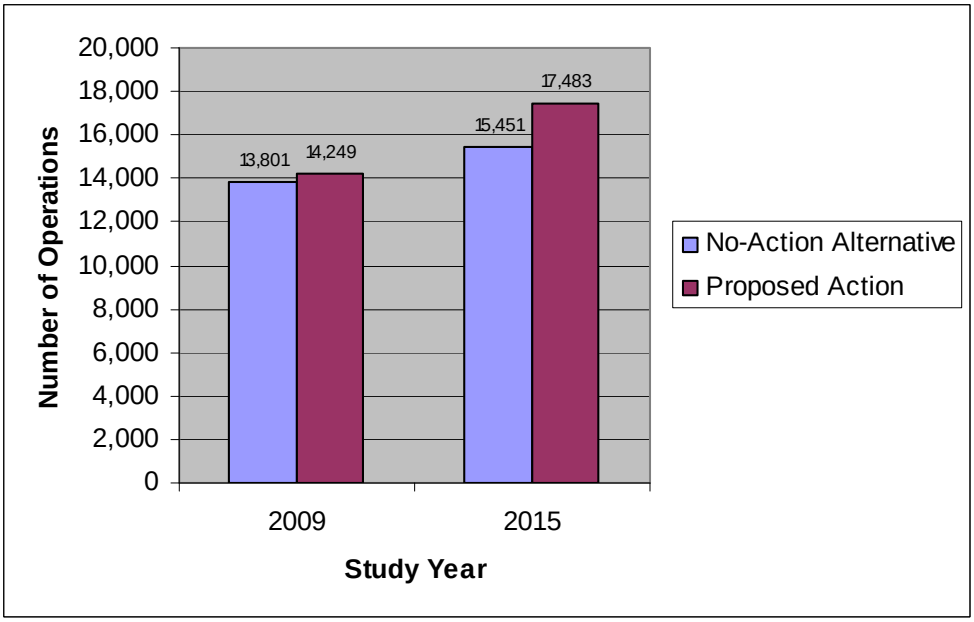
5.0 ENVIRONMENTAL CONSEQUENCES

The potential environmental impacts resulting from the No-Action and Proposed Action alternatives are presented in this section. The No-Action and Proposed Action alternatives are examined for the study years 2009 and 2015. Calendar year 2009 was used because it is the first full year during which Horizon Air would provide commercial air service operations into Mammoth Yosemite Airport (MMH) using the Bombardier DHC 8-402 (Q400 Dash 8) aircraft, operating at two flights per day. Calendar year 2015 was used because it represents the period of maximum operations of Horizon Air at MMH, which would total, but not exceed, eight flights per day by the Q400 Dash 8 aircraft. Details of the No-Action and Proposed Action alternatives are provided below:

No-Action Alternative - The No-Action Alternative assumes the Federal Aviation Administration (FAA) would not approve the Horizon Air Operations Specifications Amendment pursuant to 14 CFR Part 119 that would allow Horizon Air to provide scheduled commercial air service to MMH with a Bombardier Q400 Dash 8 aircraft. However, operations at MMH would continue slow growth with approximately 13,801 operations forecasted in 2009 and 15,451 operations forecast for 2015 (see **Figure 5-1**).

FIGURE 5-1
COMPARISON OF FUTURE OPERATIONS AT MMH



Proposed Action – Under this alternative, FAA would approve the Horizon Air Operations Specifications Amendment pursuant to 14 CFR Part 119 that would allow Horizon Air to provide scheduled commercial air service to MMH with a Bombardier Q400 Dash 8 aircraft. Horizon Air would initiate scheduled regional air carrier service to MMH beginning in December 2008 with two flights per day from Los Angeles International Airport (LAX) during the winter ski season (approximately December to April) – adding 448 annual operations, and resulting in a total of 14,249 annual operations. The approved aviation activity

forecast (**Table 1.3-1**) also projects two flights per day between MMH and LAX during two summer months beginning in 2012. The proposed service would at that time add 2,032 operations for a total of 17,483 annual operations (from LAX, LAS, SFO, and SAN). The projected summer service would not be subsidized.

The No-Action and Proposed Action alternatives would not affect the following environmental resources for the reasons indicated:

- Coastal Resources – no resources in vicinity,
- Construction Impacts – no proposed construction,
- Farmlands – no physical changes and no resources in vicinity,
- Floodplains – no physical changes,
- Light Emissions and Visual Impacts – no physical changes,
- Wetlands – no physical changes, and
- Wild and Scenic Rivers – no resources in vicinity that may be affected.

Therefore, using guidance within FAA Order 1050.1E, since potential impacts to these environmental resources would not occur as a result of the Proposed Action, they are not evaluated within this section of the EIS.

Comparison of the No-Action and Proposed Action alternatives, relative to the environmental impact categories described in FAA Order 1050.1E, show few differences in environmental impacts. **Table 3.3-1** provides a summary of environmental impacts associated with the implementation of the No-Action and Proposed Action alternatives. These summary findings are discussed in further detail in the following subsections. Within this section of the EIS, each subsection begins with a brief overview of impacts (printed in bold), followed by methodology and significance criteria, and 2009 and 2015 potential impacts if any.

5.1 NOISE

This section discusses potential noise impacts from the No-Action and Proposed Action alternatives in the Airport Study Area (ASA) in 2009 and 2015 as per FAA Order 1050.1E, Change 1, Appendix A, Section 14g(2). Potential constructive use impacts of noise on Department of Transportation Act Section 4(f) resources are addressed in **Section 5.5**.

5.1.1 Overview of Impacts

An ASA was established based on the estimated extent of the 2015 Proposed Action Community Noise Equivalent Level (CNEL) 65 dBA noise contour. There are no noise-sensitive land uses within the ASA. The Proposed Action would not cause noise-sensitive areas to experience an increase in noise of CNEL 1.5 dBA or more at or above CNEL 65 dBA, when compared to the No-Action Alternative in either 2009 or 2015. Therefore, the Proposed Action would not cause a significant noise impact in the ASA.

There are several Federal and state park resources, wilderness areas, national forests, historic sites and Native American lands in the vicinity of the airport. Section 5.5 discusses the possible effects on DOT Section 4(f) resources.

5.1.2 Methodology and Significance Criteria

Aircraft noise exposure for the No-Action and Proposed Action alternatives was predicted using the methodology described in **Appendix C-1**. Results were analyzed to determine if a significant noise impact (as defined by FAA Order 1050.1E, Change 1, Appendix A, Section 14.3) would result from implementation of the Proposed Action. A brief description of these analyses and results is provided in **Sections 5.1.3** and **5.1.4**, below.

The future conditions aircraft noise analysis used the forecast of aviation operations for MMH presented in Section 1.3. The MMH forecast is presented in **Section 1.3** and was summarized in the introduction to this section.

For this EIS the FAA developed projected arrival and departure flight tracks for both existing air traffic at MMH and proposed Q400 Dash 8 aircraft operations. The air carrier aircraft may use somewhat different arrival and departure patterns than are used by existing GA and other aircraft arriving and departing at MMH. Topographic maps were reviewed to identify locations of high terrain, published U.S. Terminal Procedures were researched, and airport personnel were interviewed, to best identify the location of the flight tracks of existing aircraft operations at MMH. The projected air carrier tracks were developed in coordination with FAA Air Traffic Control (ATC).

FAA conducted the evaluation of the MMH noise environment using the methodologies developed by the FAA and published in FAA Order 1050.1E, Change 1. In accordance with FAA Order 1050.1E, Change 1, Appendix A, Section 14.3 and 14.4c, a proposed action would be considered to have a significant impact with regard to aviation noise, when compared to the No-Action Alternative for the same time frame, if it would:

- Cause noise sensitive areas located at or above CNEL 65 dB to experience a noise increase of at least CNEL 1.5 dB.
- Cause an increase of CNEL 1.5 dB that introduces new noise sensitive areas to exposure levels of CNEL 65 dB or more.

To comply with FAA's guidance provided in 1050.1E and the recommendations of the 1992 FICON, noise-sensitive areas between 60 and 65 DNL should be evaluated for increases of 3.0 DNL or greater if an increase of 1.5 DNL occurs at any noise-sensitive area within the 65 DNL. To comply with guidance provided in FAA Order 1050.1E, Change 1, for proposed air traffic actions above 3,000 feet above ground level (3,000 AGL), potential noise impacts resulting from changes in airport arrivals and departures should be disclosed. Noise-sensitive areas between 45 and 60 DNL should be evaluated for increases of 5.0 DNL or greater.

FAA Order 1050.1E, Change 1, paragraph 14.4i requires the following information be disclosed for the future conditions:

- The number of people living or residences within each noise contour above DNL 65 dB, including the net increase or decrease in the number of people or residences exposed to that level of noise, and
- The location and number of noise sensitive uses (e.g., schools, churches, hospitals, parks, recreation areas) exposed to DNL 65 dB or greater.

5.1.3 No-Action Alternative

For the No-Action Alternative, 13,801 operations are projected to occur in 2009, and 15,451 operations are projected to occur in 2015. Modeled average daily operations for 2009 are shown in **Table C-1.7**, while those for 2015 are shown in **Table C-19**; both are in **Appendix C-1**. Runway and flight track use is projected to remain the same as in 2005, since the additional operations would only result from projected growth. The existing arrival and departure routes shown in **Figures 4.1-1 and 4.1-2** would remain in use. No new scheduled air carrier operations would be introduced under this alternative.

Noise exposure resulting from 2009 aircraft operations at MMH is depicted as CNEL 65, 70, and 75 dBA contours, superimposed over a local land use map, on **Figure 5.1-1**. Noise contours for 2015 are shown in **Figure 5.1-2**. There are no noise-sensitive land uses within the CNEL 65 dBA contour in either the 2009 or 2015 No-Action Alternative. There would be no housing units or people residing within the CNEL 65 dBA contour.

5.1.4 Proposed Action

The 2009-10 winter ski season is expected to have the same number of flights as the 2008-09 season. The proposed Horizon Air Q400 flights would add 448 additional operations to the number of operations projected under the No-Action Alternative in 2009. Therefore, the 2009 Proposed Action includes a total of 14,249 annual operations. Modeled average daily operations for 2009 are shown in **Table C-1.8** in **Appendix C-1**.

In 2015, eight winter ski season flights per day have been forecasted, consisting of: three flights to Los Angeles, two flights to San Francisco and Las Vegas, and one flight to San Diego. Additionally, two summer season flights per day to Los Angeles have been forecasted. These Horizon Air Q400 Dash 8 operations represent the Proposed Action, and result in an additional 2,032 annual operations. The 2015 Proposed Action includes a total of 17,483 annual operations. Modeled average daily operations for 2015 are shown in **Table C-1.10** in **Appendix C-1**.

Figures 5.1-3 and 5.1-4 depict Q400 Dash 8 flight tracks for the 2009 Proposed Action. **Figure 5.1-3** depicts east flow Q400 Dash 8 departures to Los Angeles and arrivals from Los Angeles using Runway 09, while **Figure 5.1-4** depicts west flow Q400 Dash 8 departures to Los Angeles and arrivals from Los Angeles using Runway 27. These tracks correspond to flight tracks utilized by existing operations. Flight track utilization for the 2009 Proposed Action is shown in **Table C-1.12** in **Appendix C-1**.

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-1, 2009 No-Action Alternative Noise Contours.mxd, {llp, rpf, hde, 09/24/07}

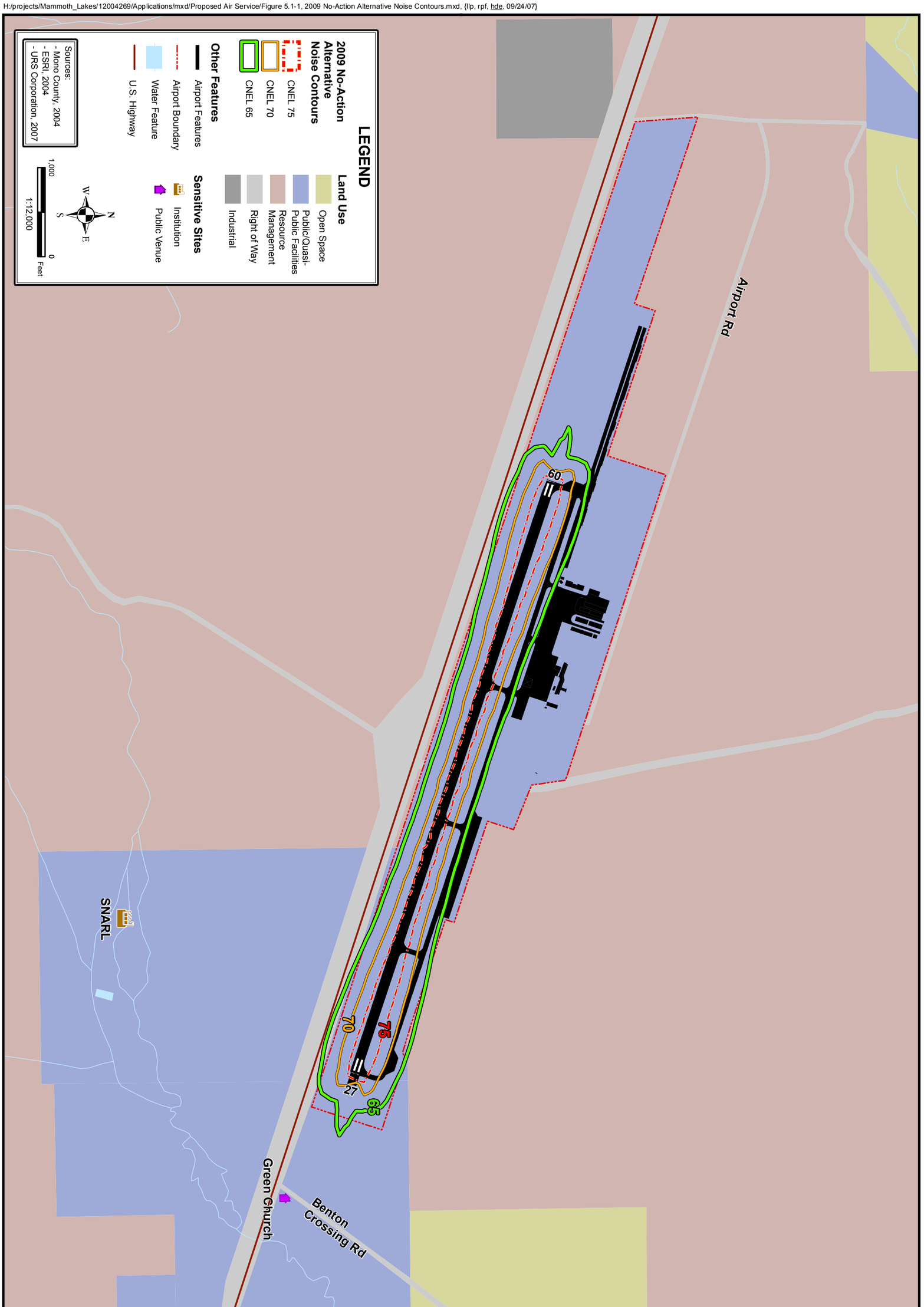
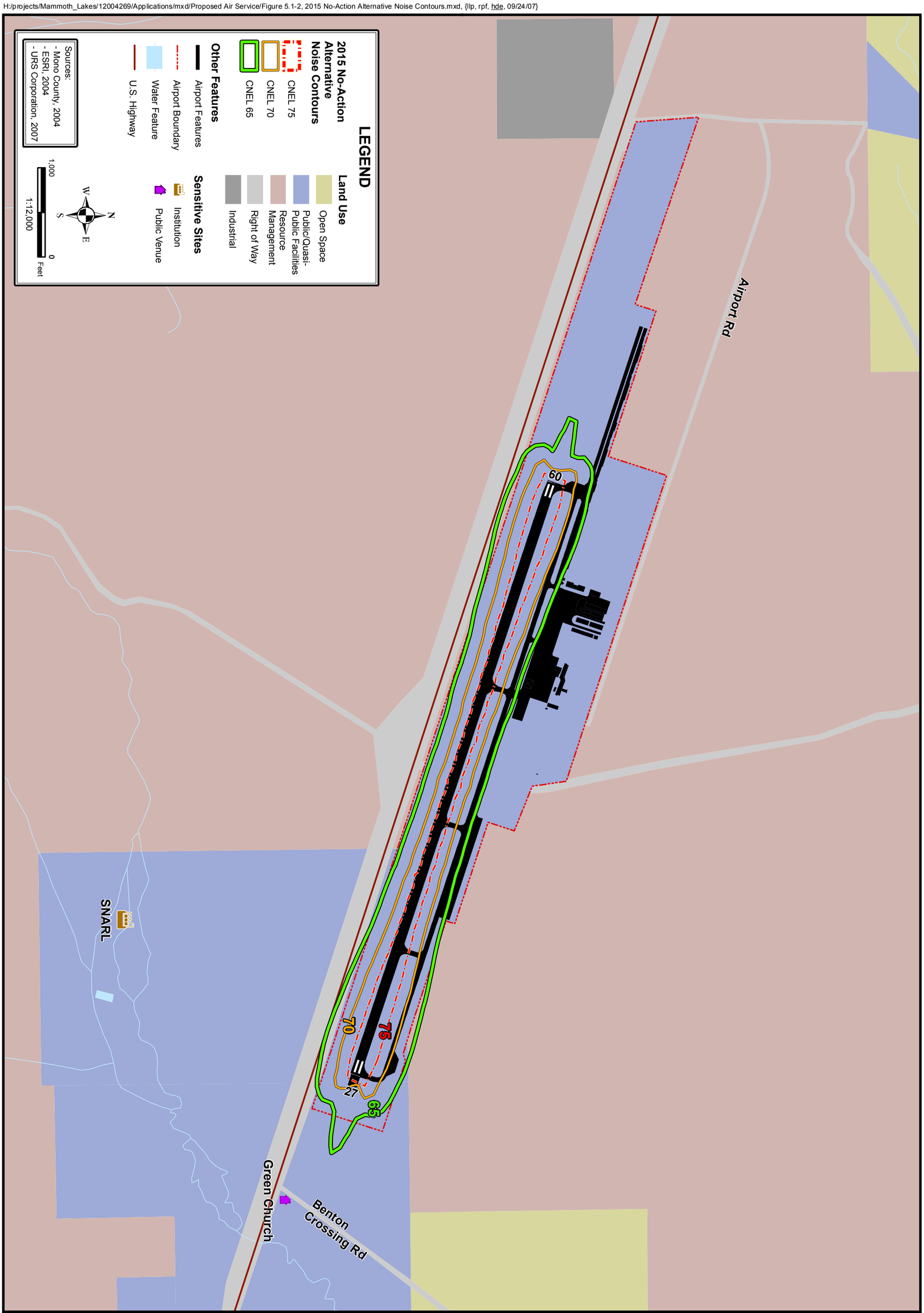


FIGURE 5.1-1

2009 NO-ACTION ALTERNATIVE NOISE CONTOURS

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-2, 2015 No-Action Alternative Noise Contours.mxd, {llp, rpf, hde, 09/24/07}



2015 NO-ACTION ALTERNATIVE NOISE CONTOURS

FIGURE 5.1-2

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

LEGEND

Area of Investigation (AI)

Flight Tracks
- Q400 Arrival Flight Tracks
- Q400 Departure Flight Tracks
- Victor and Jet Airways

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Elevation (ft. amsl)
- 14,000 ft.
- 12,000 ft.
- 10,000 ft.
- 8,000 ft.
- 6,000 ft.
- 3,000 ft.
- 500 ft.

N, W, E, S

5 0 5 Miles

1:400,000

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

Mono Lake
Yosemite National Park
Grant Lake
HAPDO
NIKOL
OVF V244
OVF V230
OVF NS
395
Benton Paiute Indian Reservation
EVERR
BLM Owned Lands
6
JASAT
FEBAT
Devils Postpile
Mammoth Lakes
MMH
Crowley Lake
OVF CNDA
Inyo National Forest
Sierra National Forest
Lake Thomas A. Edison
CANDA
Bishop
BIH
Bishop Paiute Indian Reservation
OVF BIH
09D12
09A12
09A11
Sequoia-Kings Canyon National Park
Big Pine

2009 PROPOSED Q400 FLIGHT TRACKS FOR RUNWAY 09 - EAST FLOW

FIGURE 5.1-3

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-3, 2009 Proposed Q400 Flight Tracks for Runway 09 - East Flow.mxd, {rpl, hde, 11/09/07}

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

2009 PROPOSED Q400 FLIGHT TRACKS FOR RUNWAY 27 - WEST FLOW

FIGURE 5.1-4

LEGEND

Area of Investigation (AI)

Flight Tracks
- Q400 Arrival Flight Tracks
- Q400 Departure Flight Tracks
- Victor and Jet Airways

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Elevation (ft. amsl)
- 14,000 ft.
- 12,000 ft.
- 10,000 ft.
- 8,000 ft.
- 6,000 ft.
- 3,000 ft.
- 500 ft.

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

N W E S

5 0 5 Miles

1:400,000

Mono Lake
Yosemite National Park
Grant Lake
HAPDO
NIKOL
OVF V244
OVF V230
OVF NS
395
Inyo National Forest
Benton Paiute Indian Reservation
EVERR
BLM Owned Lands
6
JASAT
FEBAT
Devils Postpile
Mammoth Lakes
MMH
Crowley Lake
OVF CNDA
Sierra National Forest
Lake Thomas A. Edison
CANDA
27A11
Bishop
BIH
Bishop Paiute Indian Reservation
OVF BIH
27A12
27D12
Sequoia-Kings Canyon National Park
Big Pine

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-4, 2009 Proposed Q400 Flight Tracks for Runway 27 - West Flow.mxd, {grj, hde, 11/09/07}

Figures 5.1-5 and 5.1-6 depict Q400 Dash 8 flight tracks for the 2015 Proposed Action. **Figure 5.1-5** depicts east flow Q400 Dash 8 departures and arrivals using Runway 09, while **Figure 5.1-6** depicts west flow Q400 Dash 8 departures and arrivals using Runway 27. The additional Q400 Dash 8 flight tracks that appear in 2015 would result from the introduction of flights to/from Las Vegas and San Francisco. The flights to/from San Diego will use the same tracks as those to/from Los Angeles, at least in the close-in view depicted in the graphic. Flight track utilization for the 2015 Proposed Action is shown in **Table C-1.13** in **Appendix C-1**.

There are no noise-sensitive land uses within the CNEL 65 dBA contour in either the 2009 or 2015 Proposed Action (see **Figures 5.1-7** and **5.1-8**). Compared to the respective No-Action Alternative, less than one additional acre would be exposed to CNL 65 dBA or higher noise levels. There would be no housing units or people residing within the CNEL 65 dBA contour. The Proposed Action would not cause noise-sensitive areas to experience an increase in noise of CNEL 1.5 dBA or more at or above CNEL 65 dBA, when compared to the No-Action Alternative. Therefore, the Proposed Action would not cause a significant noise impact.

5.2 COMPATIBLE LAND USE

This section describes the methodology, significance criteria and potential compatible land use impacts of the 2009 and 2015 No-Action and Proposed Action alternatives.

5.2.1 Overview of Impacts

There are no residences, or other noise-sensitive land uses, within the ASA (i.e., the 2015 CNEL 65 dBA contour) for either the No-Action or Proposed Action alternatives in 2009 and 2015. Since there are no noise-sensitive land uses within the CNEL 65 dBA contour in either of the alternatives and there is no property acquisition or construction associated with either alternative, there would be no compatible land use impacts associated with the Proposed Action.

5.2.2 Methodology and Significance Criteria

As described in **Section 5.1**, noise contours based on projected 2009 and 2015 aircraft operations associated with the No-Action and Proposed Action alternatives were developed and superimposed over a land use map of the area around MMH. Geographic Information System (GIS) tools were used to calculate the land area within CNEL contour intervals (65, 70, and 75 dBA). Noise exposure was quantified as acreage of on- and off-airport land exposed to various levels of aircraft noise. Detailed breakdowns of acreage by land use within the contours are included in **Appendix C-1**.

FAA significance criteria contained in FAA Order 1050.1E state when the noise analysis indicates that, pursuant to NEPA, a significant noise impact will occur over noise-sensitive areas within the DNL (CNEL for this EIS) 65 dBA contour, the analysis should include a discussion of the noise impact on those areas.

5.2.3 No-Action Alternative

5.2.3.1 Potential 2009 and 2015 Impacts

As shown on **Figures 5.1-1 and 5.1-2**, the area around the airport is comprised of several land uses. Land uses within the CNEL 65 dBA or higher contour for the No-Action Alternative include approximately 130.3 acres of land in 2009 and 141.2 acres in 2015. There are 4.5 acres of off-airport and 125.8 acres of on-airport land within the 2009 CNEL 65 dBA or higher contour and 8.4 acres of off-airport and 132.9 acres of on-airport land within the 2015 CNEL 65 dBA or higher contours. All land uses within the 65 CNEL contour are compatible according to 14 CFR Part 150 *Land Use Compatibility Guidelines* (see **Appendix C-1**).

5.2.4 Proposed Action

5.2.4.1 Potential 2009 and 2015 Impacts

As shown on **Figures 5.1-7 and 5.1-8**, land uses within the CNEL 65 dBA or higher contour for the Proposed Action include approximately 130.4 acres of land in 2009 and 141.6 acres in 2015, respectively. There are 4.5 acres of off-airport and 125.9 acres of on-airport land within the 2009 CNEL 65 dBA or higher contour and 8.5 acres of off-airport and 133.1 acres of on-airport land within the 2015 CNEL 65 dBA or higher contour. All land uses within the CNEL 65 dBA or higher contour are compatible according to 14 CFR Part 150 *Land Use Compatibility Guidelines* (see **Appendix C-1**).

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

5.3.1 Overview of Impacts

Under the No-Action Alternative, regional air carrier service to MMH would not be implemented. The No-Action Alternative would not result in any residential or business acquisitions or relocations, division or disruption of established communities, alteration of surface traffic patterns, disruption of orderly planned development, environmental justice impacts, or impacts to environmental health or safety risks to children.

In 2009, under the Proposed Action, Horizon Air would operate two flights per day to MMH with an estimated 10,214 annual (160 per day for 16 weeks) enplanements. In 2015, Horizon Air would operate eight flights per day to MMH with an estimated 67,168 annual (640 per day/maximum winter) enplanements. The Proposed Action would not result in any residential or business acquisitions or relocations, division or disruption of established communities, alteration of surface traffic patterns, environmental justice impacts, or impacts to environmental health or safety risks to children. In addition, the Proposed Action would not result in any disruption of orderly planned development within the Socioeconomic Study Area.

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

LEGEND

Area of Investigation (AI)

Flight Tracks
- Q400 Arrival Flight Tracks
- Q400 Departure Flight Tracks
- Victor and Jet Airways

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Elevation (ft. amsl)
- 14,000 ft.
- 12,000 ft.
- 10,000 ft.
- 8,000 ft.
- 6,000 ft.
- 3,000 ft.
- 500 ft.

N, W, E, S

5 0 5 Miles
1:400,000

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

Mono Lake
Yosemite National Park
Grant Lake
Devils Postpile
Mammoth Lakes
Crowley Lake
Inyo National Forest
Sierra National Forest
Lake Thomas A. Edison
Benton Paiute Indian Reservation
BLM Owned Lands
Bishop Paiute Indian Reservation
Sequoia-Kings Canyon National Park
Big Pine
Bishop

09D13
09A13
09D10
09A10
09D12
09A12
09A11
OVF V244
OVF V230
OVF NS
OVF BIH
OVF CNDA
NIKOL
HAPDO
EVERR
JASAT
FEBAT
CANDA
MMH
BIH
395
6

2015 PROPOSED Q400 FLIGHT TRACKS FOR RUNWAY 09 - EAST FLOW

FIGURE 5.1-5

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-5, 2015 Proposed Q400 Flight Tracks for Runway 09 - East Flow.mxd, {rpf, hde, 11/09/07}

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

2015 PROPOSED Q400 FLIGHT TRACKS FOR RUNWAY 27 - WEST FLOW

FIGURE 5.1-6

LEGEND

Area of Investigation (AI)

Flight Tracks
- Q400 Arrival Flight Tracks
- Q400 Departure Flight Tracks
- Victor and Jet Airways

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Elevation (ft. amsl)
- 14,000 ft.
- 12,000 ft.
- 10,000 ft.
- 8,000 ft.
- 6,000 ft.
- 3,000 ft.
- 500 ft.

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

N W E S

5 0 5 Miles

1:400,000

Mono Lake
Yosemite National Park
Grant Lake
Inyo National Forest
Devils Postpile
Mammoth Lakes
Crowley Lake
Sierra National Forest
Lake Thomas A. Edison
Benton Paiute Indian Reservation
BLM Owned Lands
Bishop Paiute Indian Reservation
Bishop
Big Pine
Sequoia-Kings Canyon National Park

NIKOL
HAPDO
EVERR
JASAT
FEBAT
MMH
CANDA
BIH

27A13
27D13
OVF V244
OVF V230
OVF NS
OVF CNDA
OVF BIH
27A11
27A10
27D10
27A12
27D12
395
6

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-6, 2015 Proposed Q400 Flight Tracks for Runway 27 - West Flow.mxd, {gp}, hde, 11/09/07}

Airport Rd

09

27

75

70

65

Benton Crossing Rd

Green Church

SNARL

LEGEND

2009 Proposed Action Noise Contours

- CNEL 75
- CNEL 70
- CNEL 65

Land Use

- Open Space
- Public/Quasi-Public Facilities
- Resource Management
- Right of Way
- Industrial

Other Features

- Airport Features
- Airport Boundary
- Water Feature
- U.S. Highway

Sensitive Sites

- Institution
- Public Venue

Sources:
- Mono County, 2004
- ESRI, 2004
- URS Corporation, 2007

N
W E
S

1,000 0 Feet

1:12,000

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

FEDERAL AVIATION ADMINISTRATION

2009 PROPOSED ACTION NOISE CONTOURS

FIGURE
5.1-7

H:/projects/Mammoth_Lakes/120042269/Applications/mxd/Proposed Air Service/Figure 5.1-7, 2009 Proposed Action Noise Contours.mxd, {llp, rpf, hde, 10/30/07}

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.1-8, 2015 Proposed Action Noise Contours.mxd, {rpf, hde, 09/24/07}

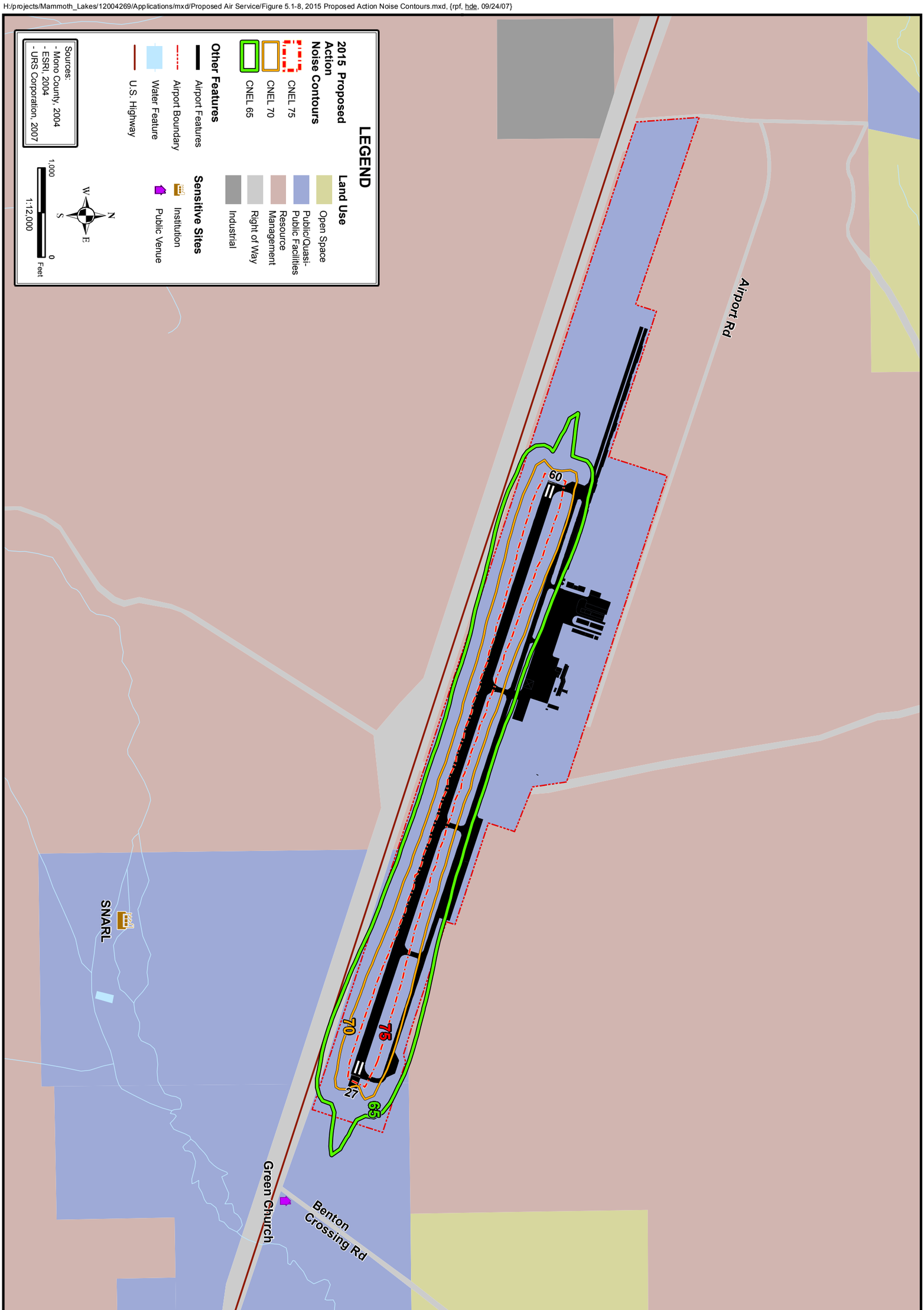


FIGURE 5.1-8

2015 PROPOSED ACTION NOISE CONTOURS

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

5.3.2 Methodology and Significance Criteria

Socioeconomic impacts were determined through the evaluation of the following criteria with respect to the areas potentially affected by each alternative.

- Residential and business acquisitions and relocations,
- Division or disruption of established communities,
- Disruption of orderly planned development,
- Alteration of surface transportation patterns,
- Environmental justice considerations, and
- Environmental health and safety risks to children.

The ASA is identified as the area within the 2015 CNEL 65 dBA noise contour. The Proposed Action does not include construction of new facilities. U.S. Bureau of Census demographic data (1990 and 2000), State of California Department of Finance Demographic Data, and U.S. Department of Commerce employment data were used to determine the demographic characteristics of potentially affected areas.

Potential impacts to the surface transportation systems within the Surface Transportation Study Area (STSA) in 2009 and 2015 were based on the review of data from CALTRANS and General Plans from Mono and Inyo Counties and associated municipalities (see **Section 4.3**).

The comparison population or the baseline demographic for comparison used in the analysis of disproportionate impacts was defined by the population within the Socioeconomic Study Area. The Socioeconomic Study Area encompasses the area where social and environmental justice conditions could potentially be influenced as a result of the alternatives. For purposes of this analysis, minority populations and low-income populations were defined as follows:

- **Minority** - Individual(s) who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

- **Minority population** - Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

- **Low-income population** - Low-income populations are identified using the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty.

According to FAA Order 1050.1E, the factors to be considered regarding socioeconomic impacts may include, but are not limited to:

- Extensive relocation of residents is required, but sufficient replacement housing is unavailable.

- Extensive relocation of community businesses that would create severe economic hardship for the affected communities.

- Disruptions of local traffic patterns that substantially reduce the levels of service of the roads serving the airport and its surrounding communities.

- A substantial loss in community tax base.

Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that Federal agencies include environmental justice as part of their mission by identifying and addressing as appropriate, the potential for disproportionately high and adverse human health or environmental effects of their programs, policies, and activities on minority populations, low-income populations, and Native American tribes. Environmental justice refers to the right to a safe and healthy environment for all and the conditions in which such a right can be freely exercised regardless of race, ethnicity, and socioeconomic status. Environmental justice applies to all environmental resources. Therefore, a disproportionately high and adverse human health or environmental effects on minority and low-income populations may represent a significant impact.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (April 23, 1997), requires federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children and ensure that their actions address any disproportionate impacts. Environmental health and safety risks are defined as risks to health or safety that are attributable to products or substances that a child is likely to come in contact with or ingest. Therefore, a disproportionate health and safety risk to children may represent a significant impact.

5.3.3 No-Action Alternative

Under the No-Action Alternative, FAA would not approve the proposed modification to the Horizon Air operational specifications at MMH, and scheduled regional air carrier service would not be implemented. In 2009 and 2015, under the No-Action Alternative there would be no residential or business acquisitions or relocations, division or disruption of established communities, alteration of surface traffic patterns, disruption of orderly planned development, environmental justice impacts, or impacts to environmental health or safety risks to children.

5.3.4 Proposed Action

Residential and Business Acquisitions and Relocations

No residential properties or businesses would be acquired or relocated as part of the Proposed Action.

Division or Disruption of Established Communities

Because there would be no construction actions associated with the Proposed Action, and there would be no property acquisition or relocations. Implementation of this alternative would not result in the division or disruption of established communities within the SSA established for this EIS.

Alteration of Surface Traffic Patterns

Implementation of the Proposed Action would not require the closure or relocation of any existing roadways within the STSA. The primary surface roadway providing access to and egress from MMH is

U.S. 395. The level of service along U.S. 395 in the vicinity of MMH is rated "A" (excellent operations) by CALTRANS with no capacity-related issues (see **Appendix E-4**, **Table E4.1**). Based on the MMH aviation forecast (see **Table 1.3-1**), implementation of the Proposed Action would result in approximately 160 daily enplanements while the proposed service is in operation (approximately 10,000 annually), and approximately 640 daily enplanements (approximately 67,000 annually) in 2015. Implementation of regional air carrier service into MMH would also necessitate the 8 to 10 additional airport employees. The projected increase in passengers and employees accessing the airport in 2009 and 2015 is not expected to significantly degrade the existing level of service along U.S. 395 or other local roads. Town of Mammoth Lakes transportation officials anticipate that airline passengers will be transported to their final destinations by a mixture of hotel vans, rental cars, taxicabs, or other private transportation (Personal Communication, 2007).

Disruption of Orderly Planned Development

The Proposed Action would involve no new construction or associated development actions at MMH. The Proposed Action would not adversely impact characteristics of non-airport development within the SSA.

Environmental Justice Considerations

The Proposed Action would have no significant impacts. There would be no impacts to minority or low-income populations residing in areas adjacent to or in the vicinity of the airport. No residential properties, minority or Hispanic businesses, or tribal nation properties would be acquired as a result of the Proposed Action. The year 2009 and 2015 CNEL 65 dBA noise contour for the Proposed Action are located primarily on airport property and any off-airport land is compatible in terms of FAA land use compatibility guidelines. There would be no disproportionately high and adverse direct impacts to minorities, ethnic groups, tribal nations, or low-income households.

Environmental Health and Safety Risks to Children

The Proposed Action would not result in the acquisition or relocation of any schools or child care centers. The Proposed Action is not anticipated to increase environmental health and safety risks or exposures to children in the surrounding community. There would be no disproportionate health and safety risks to children resulting from the Proposed Action.

5.4 HISTORICAL, ARCHITECTURAL, ARCHAEOLOGICAL, AND CULTURAL RESOURCES

5.4.1 Overview of Impacts

There are no historical, architectural, archaeological, or cultural resources contained within the Area of Potential Affect (APE); therefore, FAA has determined that there would be no effect on these resources under either the No-Action or Proposed Action alternatives. The State Historic Preservation Officer concurred with the FAA's determination by letter dated March 12, 2007. A copy of the letter is provided in Appendix G.

5.4.2 Methodology and Significance Criteria

The methodology for determining the potential environmental impacts of the alternatives on archaeological and historic resources was to apply the guidance of Section 106 of the National Historic Preservation Act (NHPA). According to Section 106, a proposed action has an effect on a historic property when the action may alter characteristics of the property that may qualify it for inclusion in the NRHP (36 CFR, Part 800.9[a]). An effect is considered adverse when it may diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects include the physical destruction of all or part of the property, changes to significant aspects of the property's setting, or alteration of character-defining features (36 CFR, Part 800.9[b]).

Section 4(f) of the U.S. Department of Transportation Act (Title 49, U.S. Code, Section 303[c]) also provides protection for some types of historic properties. This subject is discussed in **Sections 4.5 and 5.5**.

As discussed in **Section 4.4**, the APE consists of the airport boundary and the 2015 CNEL 65 dBA noise contour. No listed or eligible for listing properties in the NRHP are within the APE.

The discussion of significant impact thresholds contained in FAA Order 1050.1E indicates that the NHPA Section 106 consultation process includes consideration of alternatives to avoid adverse effects on National Register listed or eligible properties; of mitigation measures; and of accepting adverse effects. The Order states that in all cases, the FAA makes the final determination on the level of effect. No specific criteria on the level of effect that indicates significant impact are provided in the Order.

5.4.3 No-Action Alternative

5.4.3.1 Potential 2009 and 2015 Impacts

Since there are no historical, architectural, archaeological, or cultural resources contained within the APE, FAA has determined that there would be no effect on these resources under the No-Action Alternative in 2009 and 2015.

5.4.4 Proposed Action

5.4.4.1 Potential 2009 and 2015 Impacts

Since there are no historical, architectural, archaeological, or cultural resources contained within the APE, FAA has determined that there would be no effect on these resources if the Proposed Action were implemented. The SHPO concurred with FAA's determination by letter dated March 12, 2007. A copy of the letter is provided in **Appendix G**.

5.5 DEPARTMENT OF TRANSPORTATION ACT SECTION 4(f) RESOURCES AND SECTION 6(F) RESOURCES

5.5.1 Overview of Impacts

As required in 1050.1E, potential impacts on 4(f) resources were evaluated for the No Action and the Proposed Action alternatives. No direct uses of potential Section 4(f) properties would occur for the No-Action or the Proposed Action alternatives because neither involves any land acquisition or construction activities. Implementation of the Proposed Action has the potential to increase aircraft noise exposure to noise sensitive sites such as national parks, wilderness areas, and other recreational resources where a quiet setting is a generally recognized purpose and attribute. No Native American traditional cultural properties, or historic properties, within the AI were identified during FAA consultation with appropriate Federal, state, and local agencies, and tribal representatives.

FAA conducted a supplemental noise assessment to evaluate potential constructive impacts on 4(f) resources. The supplemental noise assessment included a Noise Screening Assessment that indicated a 3 dBA increase over certain noise sensitive areas in 2015 when using the Lmax metric to compare the Proposed Action alternative to the No Action alternative. As a result, FAA conducted additional analyses that compared the projected impacts of the Proposed Action and No-Action Alternative while considering projected noise associated with aviation activity not associated with MMH (e.g., military, commercial, and general aviation aircraft transiting the area). This analysis showed that when the Proposed Action was considered with existing non-MMH aircraft operations, there is no longer a 3 dBA increase in Lmax and that any noise from the Proposed Action is masked by existing noise. Therefore, there is no substantial impairment of activities, features, or attributes of the potential Section 4(f) resources that contribute to their significance or enjoyment and no constructive use would occur.

5.5.2 Methodology and Significance Criteria

This section describes how the Section 4(f) properties were evaluated to determine if a direct or constructive use would occur as a result of the Proposed Action. The criteria evaluated to determine direct impacts included land acquisition and physical development of the resource resulting from the alternatives. In order to determine constructive use, the potential Section 4(f) properties were identified and FAA determined whether a quiet setting is considered a generally recognized feature or attribute. Constructive use (indirect impact) of the resources was determined by evaluating projected noise effects that could substantially impair or diminish the activities, features, or attributes of the resource. Constructive use of Section 4(f) resources where a quiet setting is a generally recognized purpose and attribute of the site's significance occurs when a *substantial impairment* would occur as a result of the Proposed Action. FAA Order 1050.1E, Change 1, Appendix A, Paragraph 6.2f states:

> "Substantial impairment occurs only when the activities, features, or attributes of the resource that contribute to its significance or enjoyment are substantially diminished. A project which respects a park's territorial integrity may still, by means of noise, air pollution, or otherwise, dissipate its

aesthetic value, harm its wildlife, defoliate its vegetation, and take it in every sense. For Section 4(f) purposes, the impairment must be substantial. With respect to aircraft noise, for example, the noise must be at levels high enough to have negative consequences of a substantial nature that amount to a taking of a park or portion of a park for transportation uses."

The indirect use analysis consisted of a standard noise contour analysis for the immediate vicinity of the airport environs, an initial noise screening assessment for potential 4(f) resources located at a distance from the airport but potentially impacted by noise associated with the project, and a final analysis that considered the cumulative noise environment.

5.5.2.1 Noise Analysis for 4(f) Areas in the Vicinity of the Airport

As an initial step, an inventory of 4(f) properties in the ASA was performed to determine if any Section 4(f) resources would be directly or indirectly impacted by the Proposed Action. As described in **Section 4.0**, the ASA was established based on the estimated extent of the 2015 Proposed Action CNEL 65 dBA noise contour. Aircraft noise exposure for the No-Action and Proposed Action alternatives was predicted using the methodology described in **Appendix C-1**. Results were analyzed to determine if a significant noise impact (as defined by FAA Order 1050.1E, Change 1, Appendix A, Section 14.3) would result from implementation of the Proposed Action. In this analysis, FAA utilized the *Land Use Compatibility Guidelines* as contained in 14 CFR Part 150. No Section 4(f) resources are located within the ASA, therefore no direct or constructive use of Section 4(f) resources would occur in the ASA as a result of the Proposed Action. Furthermore, because no construction will occur, there is no potential for direct use of any Section 4(f) resource, and direct use will therefore not be addressed further.

5.5.2.2 Noise Analysis for MMH Operations Potentially Affecting 4(f) Areas with Quiet Settings

The second step in the 4(f) evaluation was to consider the use of appropriate supplemental noise analysis in consultation with the officials having jurisdiction for national parks, national wildlife refuges, and historic sites including traditional cultural properties where a quiet setting is a generally recognized purpose and attribute that FAA identifies within the study area of a proposed action, as required under FAA Order 1050.1E, Change 1, Appendix A, Section 14.5g. In addition, FAA Order 1050.1E, Change 1, Appendix A, Section 6.2i goes on to say: "Part 150 guidelines may not be sufficient for all historic sites and do not adequately address the effects of noise on the expectations and purposes of people visiting areas within a national park or national wildlife refuge where other noise is very low and a quiet setting is a generally recognized purpose and attribute." As further guidance, the FAA issued *Guidance on Procedures for Evaluating the Potential Noise Impacts of Airport Improvement Projects on National Parks and Other Sensitive Park Environments* (Guidance Document) (FAA, 2007a).

In accordance with FAA Order 1050.1E and the Guidance Document, FAA prepared the *Noise Screening Assessment for the Request for Operations Specifications Amendment by Horizon Air to Provide Scheduled Air Service to Mammoth Yosemite Airport* (FAA, 2007b) (see **Appendix C-2**). The Noise Screening Assessment presents a methodical, technical approach to determining the possible effect of the Proposed Action on national parks, national wildlife refuges, and historic sites including traditional cultural properties where a quiet setting is a generally recognized purpose and attribute. The

methodology includes the definition of a study area, an inventory of confirmed and potential Section 4(f) properties within the study area, the compilation of aircraft operational data associated with MMH, and an assessment of future noise levels at the confirmed and potential Section 4(f) properties both with and without the Proposed Action.

As an initial screening test, a uniform grid was established with points spaced 0.5 nautical miles (nm) apart over the entire AI. In addition to the uniform grid, individual grid points were placed at representative locations within each confirmed and potential Section 4(f) property. **Figure 5.5-1** displays the location of the individual Section 4(f) grid points, while **Figure 5.5-2** displays the uniform grid. The INM was used to calculate results for each noise metric at each uniform and individual grid point location, both with and without the Proposed Action.

In order to consider a variety of noise conditions that could occur as a result of the Proposed Action, a combination of average noise metrics and single-event noise metrics were used in the supplemental noise analysis. As recommended in the FAA Guidance Document, the noise metrics in this assessment included the Equivalent Sound Level (L_{eq}), Community Noise Equivalent Level (CNEL), the Maximum A-Weighted Sound Level (L_{max}), and Time Above Ambient using the natural ambient sound level ($TAA_{natural}$).

For this EIS, FAA conducted ambient sound level monitoring at two sites in the Inyo National Forest (as shown in Figure 10 of **Appendix C-2**). A total of 10 days of noise monitoring data was gathered at each site (from October 23 through November 3, 2006). The results of this noise monitoring and subsequent data analysis effort indicate that the natural ambient sound level (based on the L_{50} sound pressure level) was measured to be 28.6 dBA at the quieter of the two locations (Mosquito Flats). Therefore, the supplemental noise analysis utilized the natural ambient sound level of 28.6 dBA for the entire AI, in order to produce a more conservative estimate of potential noise impacts.

As recommended in the FAA Guidance Document, the "change" in exposure between the No-Action and Proposed Action alternatives should be determined. The Change of Exposure (COE) criteria developed by FAA utilizes the CNEL, $Leq_{(Day)}$, $Leq_{(24\ hour)}$, $L_{max,}$ and $TAA_{natural}$ noise metrics. The COE criteria do not constitute a threshold for a determination of impacts, significant impacts, adverse effects or constructive use. FAA's criteria indicate that the change of noise exposure (either an increase or a decrease) must be equal to, or greater than, 3 dBA of CNEL, L_{eq}, or L_{max} (and exceed the natural ambient sound level), when the No-Action Alternative is compared to the Proposed Action. FAA tracks changes in $TAA_{natural}$ but does not have specific COE criteria for time-based results.

The proposed Horizon Air service, flying the Q400 Dash 8 aircraft, is projected to operate seasonally. The month of March was identified as the peak month during the 16-week winter ski season (mid-December through mid-April), while the month of July was identified as the peak month during the 8-week summer season (mid-June through mid-August). The fleet mix and number of operations were then identified for the average day in March, and will hereafter be referred to as the Winter Peak Month Average Day (Winter PMAD). Likewise, the fleet mix and number of operations were identified for the average day in July, and will hereafter be referred to as the Summer Peak Month Average Day (Summer PMAD).

As described in the NSA, in 2009, Horizon Air service is projected to operate two flights per day from Los Angeles at MMH for the winter ski season only (mid-December through mid-April). No flights are projected for MMH in the summer season in 2009. There would be 53.89 average daily aircraft operations at MMH for the 2009 No Action Alternative Winter PMAD. The 2009 Winter PMAD for the Proposed Action includes a total of 57.89 average daily operations at MMH with the Q400 Dash 8 operations added.

In 2015, the forecast indicates that Horizon Air would operate eight winter ski season flights per day, consisting of: three flights from Los Angeles, two flights from San Francisco and Las Vegas, and one flight from San Diego. It is also forecast that in 2015 Horizon Air would operate two flights per day to Los Angeles during two months of the summer. The 2015 Summer PDMA for the Proposed Action is approximately 58 average daily operations.

5.5.2.3 Additional Noise Analysis Including Non-MMH Operations Potentially Affecting 4(f) Areas with Quiet Settings.

In accordance with the FAA Guidance Document, where a 3 dBA COE was identified, additional analyses were conducted to assess the impacts of the Proposed Action considering the noise environment associated with non-MMH aviation activity transiting the area. As was done for the Noise Screening Assessment, a uniform grid was set up as an initial screening test, with points spaced 0.5 nm apart over the entire AI. In addition to the uniform grid, individual grid points were placed at representative locations within each confirmed Section 4(f) and potential Section 4(f) properties. **Figure 5.5-1** displays the location of the individual Section 4(f) grid points, while **Figure 5.5-2** displays the uniform grid.

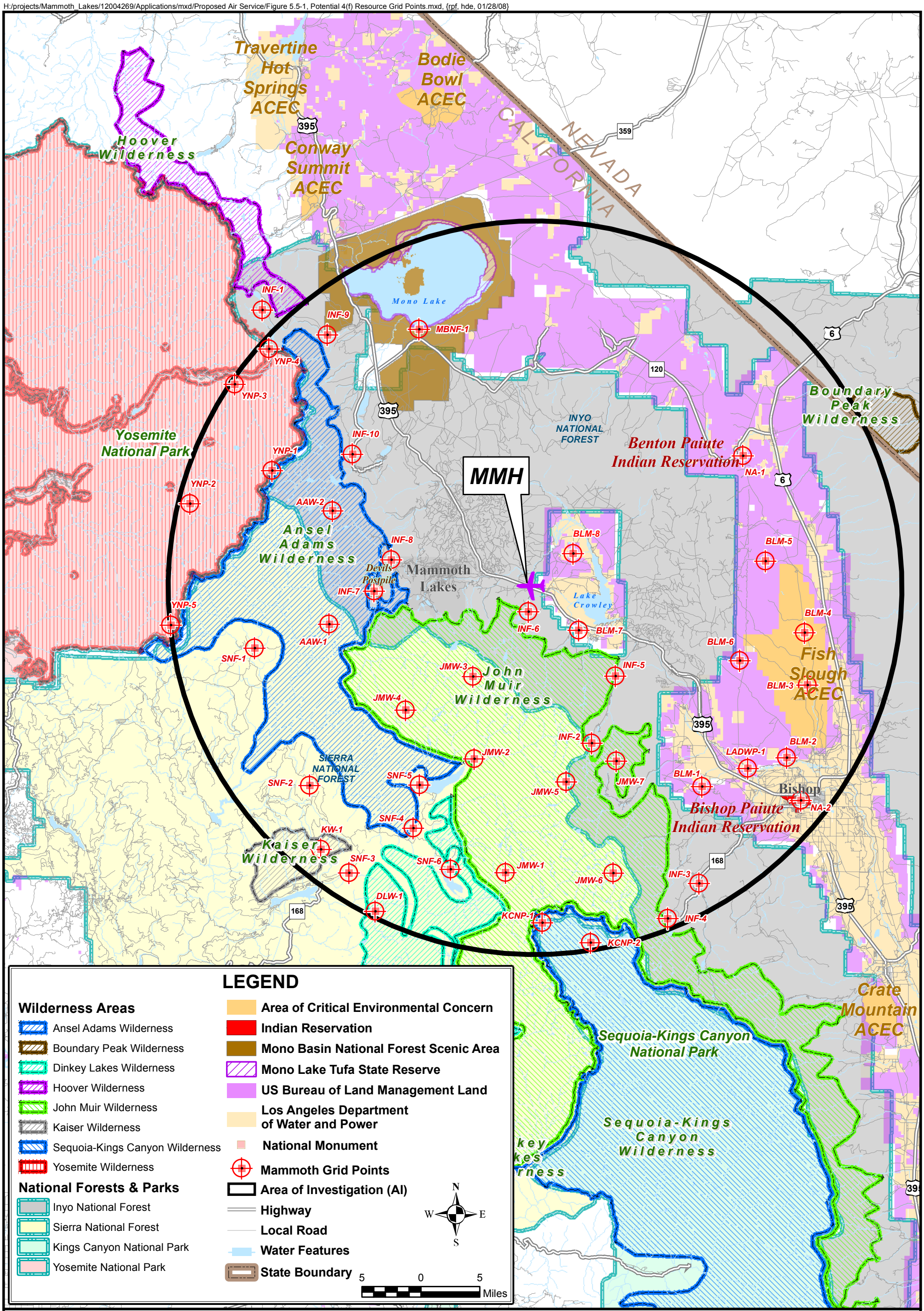
As recommended in the FAA Guidance Document, the noise metrics included in this assessment included $Leq_{(Day)}$, $Leq_{(24\ hour)}$, CNEL, L_{max}, and TAA using the natural ambient sound level of 28.6 dBA.

The analysis modeled the MMH Winter PMAD in 2009 and 2015, the MMH Summer PMAD in 2015, as well as the aircraft transitioning the AI. Aircraft operational data for aircraft transitioning through the AI was identified from a sample of radar data obtained from the FAA Oakland ARTCC. The data included all aircraft operating within the AI, and in constant radar contact with the Oakland ARTCC. The INM overflight tracks developed from the radar data are shown in **Figure 5.5-3**. In addition to providing flight track information, this data also provided operational counts, fleet mix, aircraft altitudes, and aircraft speeds. The methodology and results are presented in **Appendix C-3**, and the results are summarized below.

In 2009, there would be 53.89 average daily MMH aircraft operations for the No Action Alternative Winter PMAD. The 2009 Winter PMAD for the Proposed Action includes a total of 57.89 average daily operations. There would also be 435.77 average daily aircraft operations from aircraft transitioning the AI.

In 2015, there would be 60.33 average daily MMH aircraft operations for the No Action Alternative Winter PMAD. The 2015 Winter PMAD for the Proposed Action includes a total of 76.33 average daily operations. There would also be 518.55 average daily aircraft operations from aircraft transitioning the AI.

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.5-1, Potential 4(f) Resource Grid Points.mxd, {rpf, hde, 01/28/08}



LEGEND

Wilderness Areas
- Ansel Adams Wilderness
- Boundary Peak Wilderness
- Dinkey Lakes Wilderness
- Hoover Wilderness
- John Muir Wilderness
- Kaiser Wilderness
- Sequoia-Kings Canyon Wilderness
- Yosemite Wilderness

National Forests & Parks
- Inyo National Forest
- Sierra National Forest
- Kings Canyon National Park
- Yosemite National Park

- Area of Critical Environmental Concern
- Indian Reservation
- Mono Basin National Forest Scenic Area
- Mono Lake Tufa State Reserve
- US Bureau of Land Management Land
- Los Angeles Department of Water and Power
- National Monument
- Mammoth Grid Points
- Area of Investigation (AI)
- Highway
- Local Road
- Water Features
- State Boundary

N W E S

5 0 5 Miles

FIGURE 5.5-1

POTENTIAL 4 (f) RESOURCE GRID POINTS

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H:\projects\Mammoth_Lakes\12004269\Applications\mxd\Proposed Air Service\Noise Screening Assessment\Appendix_C\Figure 5.5-2, INM Uniform Grid.mxd, { rpf, hde, 01/28/08}

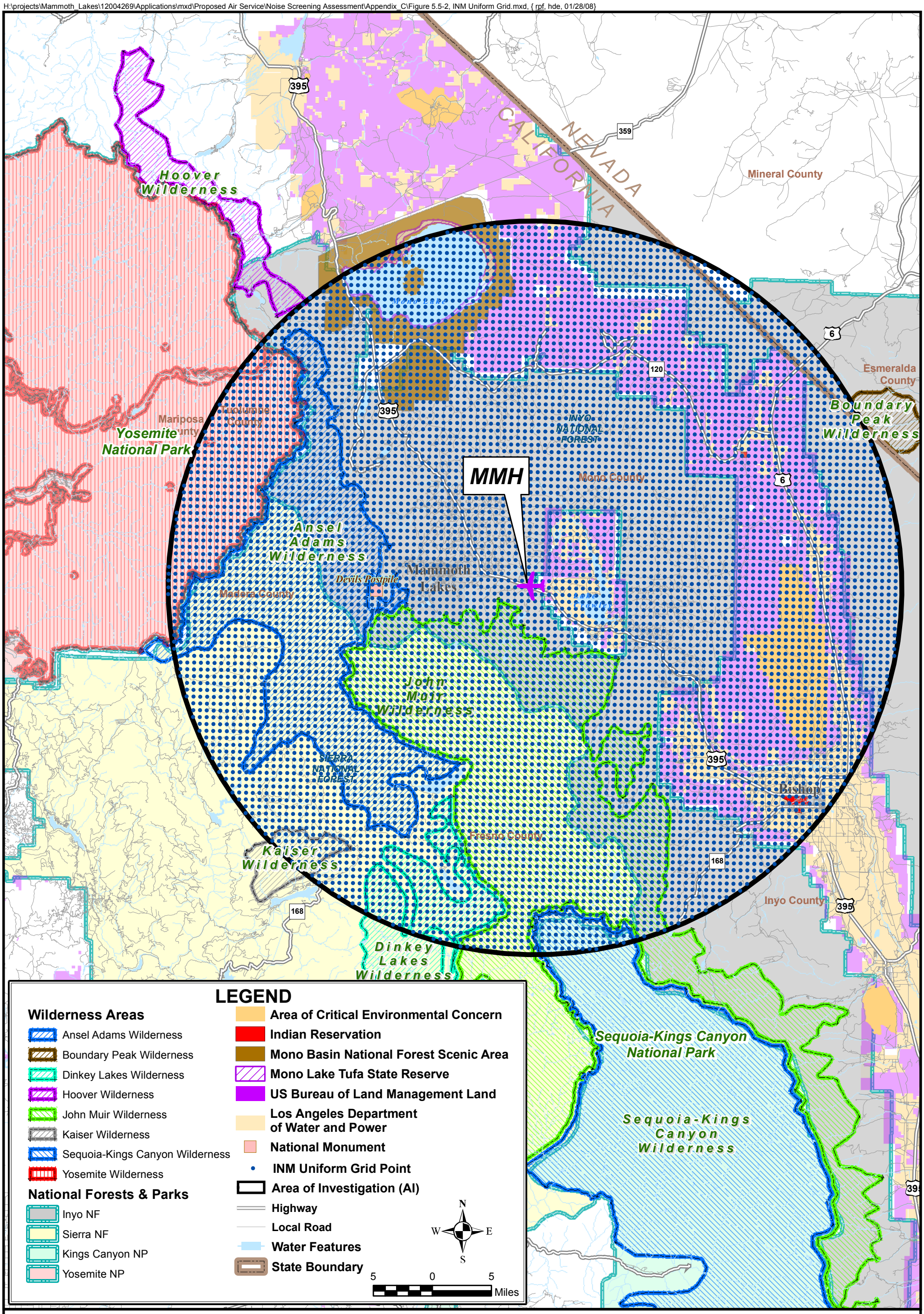

FIGURE 5.5-2

INM UNIFORM GRID

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INM AI OVERFLIGHT TRACKS

FIGURE
5.5-3

OVF-V244
OVF-NS
OVF-V230
OVF-CNDA
OVF-BIH

NIKOL
HAPDO
EVERR
JASAT
FEBAT
MMH
CANDA
BIH

Mono Lake
Yosemite National Park
Grant Lake
Benton Paiute Indian Reservation
BLM Owned Lands
Inyo National Forest
Devils Postpile
Mammoth Lakes
Crowley Lake
Sierra National Forest
Lake Thomas A. Edison
Bishop Paiute Indian Reservation
Bishop
Big Pine
Sequoia-Kings Canyon National Park

395
6

LEGEND

Area of Investigation (AI)

Overflight Tracks
- Primary
- Dispersion

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Elevation (ft. amsl)
- 14,000 ft.
- 12,000 ft.
- 10,000 ft.
- 8,000 ft.
- 6,000 ft.
- 3,000 ft.
- 500 ft.

N
W E
S

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

5 0 5 Miles
1:400,000

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.5-3, INM AI Overflight Tracks.mxd, {rpf, hde, 11/02/07}

5.5.3 Potential Impact

5.5.3.1 No-Action Alternative

No constructive use of any Section 4(f) resources would occur as a result of the No-Action Alternative in the years 2009 or 2015 because there would be no change to the operation of the airport other than the normal growth in operations.

5.5.3.2 Proposed Action

FAA evaluated the potential for constructive use of Section 4(f) properties where a quiet setting is a recognized feature or attribute to the property's significance utilizing the methodology contained in the Guidance Document. FAA completed the Noise Screening Assessment (see **Appendix C-2**), and consulted with resource managing agencies regarding the results of the assessment. The Noise Screening Assessment revealed that there would be no Change of Exposure (COE) greater than 3.0 dBA in CNEL, L_{eq}, or L_{max} in year 2009 for the Proposed Action. The use of COE 3.0 dBA DNL for screening for constructive use is a conservative application of the screening criteria used by the FAA to analyze noise levels below 65 dBA DNL in NEPA documents and is consistent with Federal Highway Administration and Federal Transit Administration (formerly Urban Mass Transit Administration) regulations defining constructive use under 23 C.F.R. §771.135.[1]. Therefore, FAA concluded that no additional quantitative analysis was required and the change in noise would not result in a constructive use of the Section 4(f) resources with quiet settings in year 2009.

For the Proposed Action in 2015, no COE in CNEL or L_{eq} greater than 3.0 dBA would occur at any of the representative Section 4(f) resources with quiet settings. An increase in the L_{max} COE criteria (greater than 3.0 dBA) would occur during the winter season of year 2015 at the following representative Section 4(f) resource locations:

- Yosemite National Park in the general vicinity of Tioga Pass (YNP-4), and
- Inyo National Forest in the general vicinity of Sawmill Campground (INF-1).

Figure 5.5-4 illustrates the results of the L_{max} uniform grid analysis for the 2015 Winter PMAD. Yellow grid points indicate locations that meet the COE criteria. All changes of exposure are increases, where both No-Action and Proposed Action alternative noise levels are above Natural Ambient (28.6 dBA) and there is an increase of 3 dBA; no decreases occurred. Only one area would experience increases in L_{max} as a result of the Proposed Action. No change of exposure would occur in CNEL or L_{eq}.

[1] As noted in the *Record of Decision for the New York/New Jersey/Philadelphia Metropolitan Area Airspace Redesign* (FAA, September 5, 2007), FAA has adopted the recommendations of the Federal Interagency Committee on Noise (FICON) to broaden the scope of airport noise analysis to address increases of 3 dBA or more between DNL 60 and 65 dBA, which is clearly perceptible between these sound levels, in its NEPA documents. Although changes of 5 dBA in noise exposure between DNL 45 and 60 dBA are identified within populated areas (for air traffic airspace actions where the study area is larger than the immediate area of the airport per FAA Order 1050.1E, Change 1, Appendix A, Section 14.5e), FAA has used the 3 dBA threshold at much lower noise levels to provide special consideration for Section 4(f) resources with quiet setting attributes. The FICON guidance concerning DNL 3 dBA is more directly relevant here than the FHWA constructive use regulations, which relate to traffic noise exposure measured in hourly or 12 hour equivalent sound levels.

The area that would experience an increase is northwest of MMH, along Q400 Dash 8 tracks 09D13 and 27D13, where the L_{max} levels are attributed to the Q400 Dash 8, and are no longer influenced by louder existing MMH aircraft on tracks 27A3/09A2 and 27D3/09D2 that are flying north/south (see **Figures 4.1-1** and **4.1-2**). These air carrier routes (09D13 and 27D13) are only used for flights departing from MMH to San Francisco, which are forecasted to occur only two times per day in the winter season, beginning in the winter of 2009/2010. The section 4(f) resources that would experience an increase include portions of Yosemite National Park and Inyo National Forest.

Based on coordination with the United States Department of Agriculture (USDA) Forest Service (letter from Jon G. Regelbrugge, USDA Forest Service, to David Kessler, FAA, dated July 24, 2007; see **Appendix G**), the Sawmill Campground is considered a Section 4(f) resource based on its recreational purpose, but it is not within an area where a quiet setting is a generally recognized feature and attribute. Therefore, noise resulting from the proposed action does not result in substantial impairment of the property and there could not be constructive use.

Based on coordination with the National Park Service, Yosemite National Park in the vicinity of Tioga Pass was determined to have a quiet setting as a generally recognized feature and attribute.

As a result of these initial exceedances of the screening criteria, the next step in the screening evaluation was to determine where project flight procedures intersect the enroute environment. This additional analysis revealed that project flights at Tioga Pass have reached cruise altitude and joined with other enroute traffic. Consequently, a cumulative analysis with and without the project flights was performed at Tioga Pass to determine the noise context for the project at this location (see **Appendix C**). **Table 5.5-1** summarizes aircraft operations over Yosemite National Park. Overflight tracks OVF_244 and OVF_NS are shown on **Figure 5.5-3**, while Q400 tracks 27D13 and 09D13 are shown on **Figures 5.1-5** and **5.1-6**. The Q400 aircraft on this track would be operating at an enroute altitude of 20,000 to 24,000 feet MSL.

TABLE 5.5-1
SUMMARY OF 2015 AIRCRAFT OPERATIONS OVER YOSEMITE NATIONAL PARK

Track	Annual Operations	Average Daily Operations
Q400 on 27D13/09D13	224	2.0*
OVF_NS	39,420	108.0
OVF_V244	52,065	142.6
TOTAL	**91,709**	**250.6**

* Winter Peak Month Average Daily Operations

Source: URS, 2007.

The results of this additional analysis, summarized in **Table 5.5-2**, indicate that the L_{eq}, L_{max}, CNEL, and $TAA_{natural}$ associated with the non-MMH aircraft operations would be considerably higher than those associated with the MMH No-Action and Proposed Action alternatives. When the MMH aircraft operations are added to the non-MMH aircraft operations, there is no change in Leq, L_{max}, or CNEL. The Proposed Action adds 1.8 minutes to the $TAA_{natural}$.

The results of this additional analysis are summarized in **Table 5.5-2**.

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- Area of Investigation (AI)
- Grid Points Exceeding 3 dBA L_{MAX} COE Criteria
- Proposed Action Departure Tracks
- No-Action Departure Tracks

Navaids
- VOR-DME
- Waypoint

Other Features
- Water Features
- U.S. Highways
- Other Roads
- National Monument
- Paiute Indian Reservation
- Resource Boundary

Sources:
- FAA , 2004
- ESRI, 2004
- URS Corporation, 2007

N W E S

5 0 5 Miles

1:400,000

2015 WINTER GRID POINTS EXCEEDING 3 dBA L_{MAX} COE CRITERIA

FIGURE 5.5-4

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.5-4, 2015 Winter Grid Points Exceeding 3 dB COE Criteria.mxd, {ref, hde, 11/02/07}

TABLE 5.5-2
SUMMARY OF NOISE ANALYSIS FOR YEAR 2015 WINTER SEASON
AT YOSEMITE NATIONAL PARK NEAR TIOGA PASS

(1) Alternative	(2) MMH Aircraft Operations	(3) MMH and Non-MMH Aircraft Operations[1]
A. No-Action (No Q400 Flights)		
$Leq_{(Day)}$	N/A[2]	35.3 dBA
$Leq_{(24\text{-hour})}$	N/A[2]	33.6 dBA
CNEL	N/A[2]	36.6 dBA
L_{max}	39.1 dBA	72.7 dBA
$TAA_{natural}$	0.0 minutes	196.1 minutes
B. Proposed Action (Two Q400 Departures per Day Near Tioga Pass)		
$Leq_{(Day)}$	12.2 dBA	35.3 dBA
$Leq_{(24\text{-hour})}$	10.1 dBA	33.6 dBA
CNEL	10.1 dBA	36.6 dBA
L_{max}	44.9 dBA	72.7 dBA
$TAA_{natural}$	1.9 minutes	197.9 minutes
C. Change of Exposure		
$Leq_{(Day)}$	**None[3]**	**0.0**
$Leq_{(24\text{-hour})}$	**None[3]**	**0.0**
CNEL	**None[3]**	**0.0**
L_{max}	**5.8 dBA**	**0.0**
$TAA_{natural}$	**1.9 minutes**	**1.8 minutes**

[1] Non-MMH aircraft operations include GA, commercial, and military aviation activity within the AI that are not associated with MMH.

[2.] Noise levels are not available (N/A) because they are outside the capabilities of INM to calculate.

[3.] No change of exposure since both the No Action and Proposed Action Alternative noise levels would be below the natural ambient sound level of 28.6 dBA.

Source: URS Corporation, 2007.

These results indicate the following:

- The noise levels associated with the existing and future MMH and non-MMH aircraft transiting the area are substantially higher than those that would result from the activity associated with the Proposed Action (see Column 2, Category B as compared to Column 3, Category A)

- The addition of the Proposed Action activity would not increase the overall noise environment in terms of L_{eq}, L_{max}, or CNEL (see Column 3, Category A as compared to Column 3, Category B)

- The only impact of the Proposed Action would be in increase in $TAA_{natural}$ of less than 2 minutes per day during the winter season that the scheduled air service would be in operation (Category C).

Numerous individual noise events associated with non-MMH aircraft overflights are louder than the proposed MMH Q400 aircraft (as per L_{max} analysis). **Table 5.5-3** identifies the L_{max} of individual events over Yosemite National Park near Tioga Pass.

Due to the findings in the Noise Screening Assessment, agency consultation, and the additional aircraft noise analysis, FAA determined that the change in noise levels as a result of the Proposed Action would not substantially impair the activities, features, or attributes within the resources that contribute to their significance or enjoyment. Therefore, the Proposed Action would not result in a constructive use of the Section 4(f) resources in Year 2015.

5.6 FISH, WILDLIFE, AND PLANTS

5.6.1 Overview of Impacts

Since neither the No Action nor the Proposed Action would involve any physical changes at MMH in either 2009 or 2015, there would be no direct impact on vegetative communities, wildlife habitat, or protected species. Secondary impacts associated with noise from increased aircraft operations at MMH are not projected to be significant.

5.6.2 Methodology and Significance Criteria

The evaluation of potential impacts on fish, wildlife and plants was conducted through a review of existing applicable descriptions of the habitat and wildlife found at MMH, the conduct of limited additional field investigations of the airport lands and surrounding lands, and coordination with wildlife resource agencies such as the California Department of Fish and Game and the U.S Fish and Wildlife Service (FWS). The field investigation included the measurement of aircraft noise levels and the concurrent observation of the behavior of sage grouse at a lek located approximately two miles east of MMH (see **Figure 4.6-2**).

Threatened, Endangered and Other Species of Interest

With regard to federal protected species, a Biological Assessment (BA) was prepared as part of informal consultation with the FWS under the Endangered Species Act of 1973 (16 U.S.C. §§1531-1544). A copy of the BA is provided in **Appendix H-2**. The FWS review of and response to the BA is provided in **Appendices G and H**.

FAA Order 1050.1E, Appendix A, Section 8.3 indicates that; "A significant impact to federally-listed threatened and endangered species would occur when the FWS or National Marine Fisheries Services (NMFS) determines that a proposed action would be likely to jeopardize the continued existence of the species in question, or would result in the destruction or adverse modification of federally-designated critical habitat in the affected area. The involvement of federally listed threatened or endangered species and the possibility of impacts as potentially serious as extinction or extirpation, or destruction or adverse modification of designated critical habitat, are factors weighing in favor of a finding of significance."

TABLE 5.5-3
RANK ORDER LISTING OF NOISE EVENTS FOR YEAR 2015 WINTER SEASON AT YOSEMITE NATIONAL PARK NEAR TIOGA PASS

Rank	Aircraft Type	Track ID	Altitude (feet MSL)	Number of Operations	L_{max} (dBA)
1	GIIB	OVF_V244	41,925	0.4202	72.7
2	GII	OVF_V244	38,000	0.1051	68.7
3	F-18	OVF_V244	27,000	0.0746	67.1
4	CNA206	OVF_V244	14,100	0.5251	63.7
5	EA6B	OVF_V244	29,200	0.1492	62.8
6	C130	OVF_V244	16,100	0.2237	60.1
7	727QF	OVF_V244	33,738	1.9269	59.1
8	KC135R	OVF_V244	30,500	0.2983	59
9	737N17	OVF_NS	35,000	0.0875	57.3
10	P3C	OVF_V244	23,525	0.0746	55.7
11	BEC58P	OVF_V244	16,400	0.6304	54.9
12	DC1030	OVF_V244	31,812	1.2265	53.8
13	737800	OVF_V244	36,121	10.5118	53.3
14	737300	OVF_V244	33,208	3.066	52.1
15	737500	OVF_V244	35,500	0.9637	52.1
16	737700	OVF_V244	38,385	3.7669	52
17	737800	OVF_NS	38,248	2.9783	51.7
18	GASEPV	OVF_V244	16,367	0.9455	51.5
19	LEAR25	OVF_V244	32,000	0.1051	51.5
20	MD82	OVF_V244	33,397	2.4529	51.4
21	MD83	OVF_V244	33,298	11.4755	51.2
22	MU3001	OVF_V244	35,752	1.9961	51.2
23	MD81	OVF_V244	32,000	0.0875	51.1
24	C5A	OVF_V244	31,400	0.0746	50.9
25	C17	OVF_V244	33,500	0.2239	50.7
26	747200	OVF_V244	36,100	0.0875	50.6
27	FAL20	OVF_V244	36,000	0.2102	50.5
28	F15E29	OVF_NS	37,000	0.1492	49.9
29	GASEPF	OVF_V244	13,050	0.4204	49.8
30	DC1010	OVF_V244	33,569	3.4161	49
31	767300	OVF_V244	36,175	15.5047	48.6
32	CNA441	OVF_V244	17,500	0.3153	47.6
33	737400	OVF_NS	34,337	13.7529	47.2
34	DHC6	OVF_V244	24,629	0.6456	46.7
35	EA6B	OVF_NS	26,158	0.8949	46.2
36	727200	OVF_NS	34,000	0.1753	45.8
37	767CF6	OVF_V244	36,320	4.6426	45.8
38	737700	OVF_NS	37,305	17.5195	45.7
39	737500	OVF_NS	36,000	0.3505	45.1
40	737300	OVF_NS	34,284	1.6645	45
41	Q400	27D13	22,000	0.5	44.9
42	Q400	09D13	22,000	1.5	44.8

Source: URS Corporation, 2007.

FAA Order 1050.1E, Appendix A, Section 8.3 goes on to indicate: "However, an action need not involve a threat of extinction to federally listed species to meet the NEPA standard of significance. Lesser impacts including impacts on non-listed species could also constitute a significant impact. In consultation with

agencies and organizations having jurisdiction or special expertise concerning the protection and/or management of the affected species, NEPA practitioners should consider factors affecting population dynamics and sustainability for the affected species such as reproductive success rates, natural mortality rates, non-natural mortality (e.g., road kills and hunting), and the minimum population levels required for population maintenance."

In order to assess possible impacts of commercial air service at MMH on the existing grouse population in the vicinity of MMH, a study was conducted to observe the response of sage grouse at the lek nearest to MMH (Lek #2) to overflights of a small corporate jet aircraft (see **Appendix H-3**). In addition, the INM was used to project existing and future noise levels at Lek #2 related to aviation activity in a manner similar to that described in **Appendix H-4** (Aircraft Noise Data for Assessment of Q400 Aircraft Overflights on Lekking Sage Grouse).

5.6.3 No-Action Alternative

5.6.3.1 Potential 2009 and 2015 Impacts

Vegetation

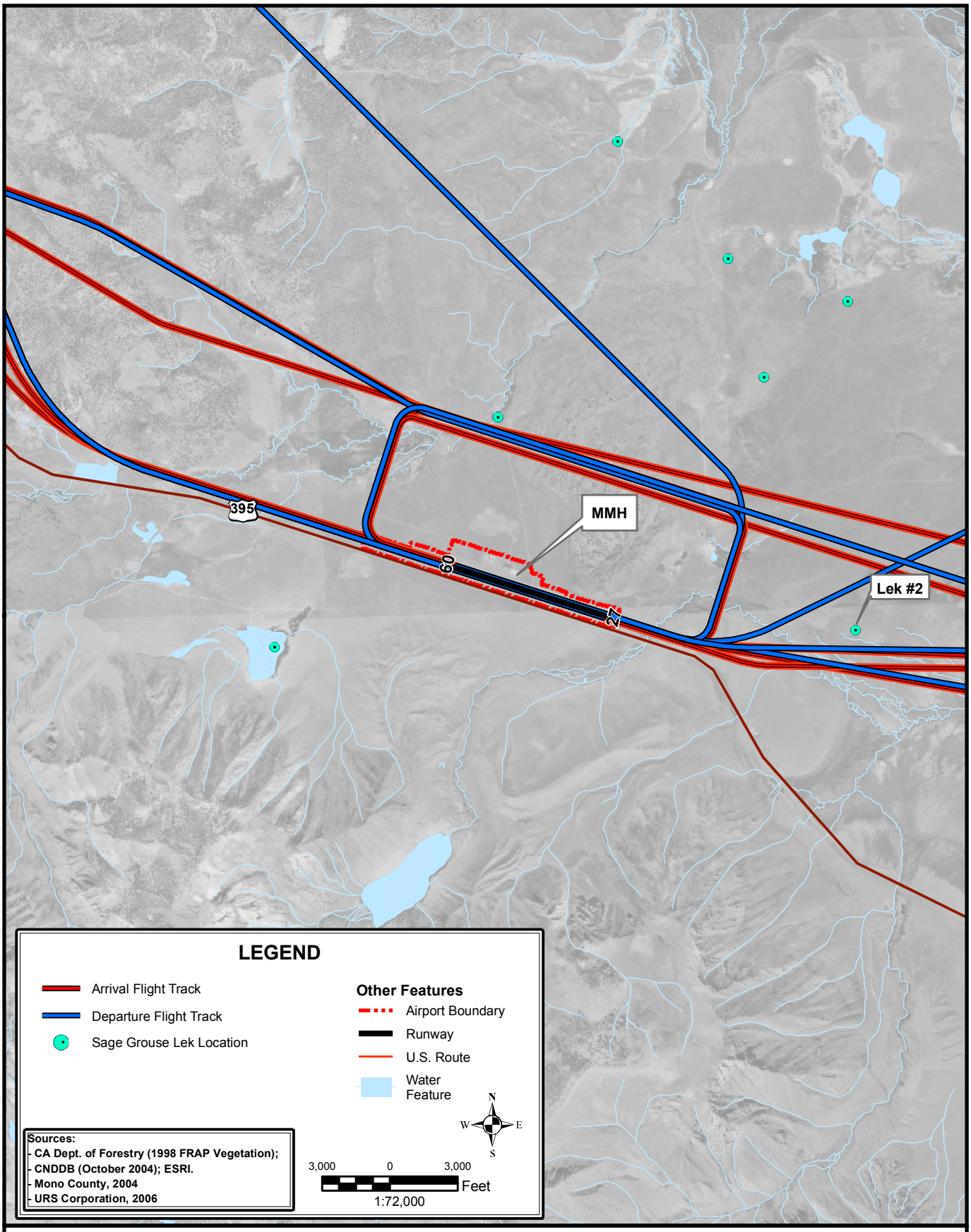
Aviation activities would continue to occur at MMH with no change to the existing vegetative communities at MMH.

Wildlife

Aviation activities would continue to occur at MMH with no change to wildlife habitat at MMH in either 2009 or 2015. Therefore, there would be no impacts to mule deer, pigmy rabbits, Owens sucker, or bald eagles. There would be no change in the limited potential for secondary impacts on sage grouse resulting from noise associated with aircraft activity at MMH. **Figure 5.6-1** indicates the location of the existing and future flight tracks of aircraft arriving and departing from MMH, in relation to Grouse Lek #2. As indicated in **Table 5.6-1**, under the No-Action Alternative in 2009 the aviation-related noise levels at Lek #2 are projected to increase to an average day Leq of 47.1 during the winter peak month. In 2015 during the summer peak month, the average day Leq is projected to be 45.1 dBA. The average day Leq is projected to be 47.6 during the average day in the winter peak month. The measured Leq levels at the northwest edge of Grouse Lek # 2 ranged from 39.7 dBA to 50.6 dBA **(Appendix H-3)**. Potential impacts would be limited to a possible increase in premature daily departure of some grouse from the lek in response to any increase in early morning (prior to 9:00 AM) overflights during the lekking season (December through May).

Federally Protected Species

There would be no direct impacts to the habitat of the Owens tui chub or the Sierra Nevada bighorn sheep. There would be no secondary impacts associated with the noise of increased aircraft activity as a result of the less than 2 percent per year projected growth in existing aviation activity.



H:\projects\Mammoth_Lakes\12004269\Applications\mxd\Proposed Air Service\Figure 5.6-1, Lek #2 Location with Flight Tracks.mxd {jlb, rpf, hde, 11/05/07}

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

LEK #2 LOCATION WITH FLIGHT TRACKS

FIGURE 5.6-1

TABLE 5-6.1
LEQ AND LMAX NOISE LEVELS AT SAGE GROUSE LEK #2

Case	Latitude	Longitude	Elevation	Leq (dBA)	Lmax (dBA)
2005 Affected Environment	37.618039	-118.785262	6,837.9	43.4	93.8
2009 Winter NA	37.618039	-118.785262	6,837.9	47.1	93.8
2009 Winter PA	37.618039	-118.785262	6,837.9	47.2	93.8
2015 Summer NA	37.618039	-118.785262	6,837.9	45.1	93.8
2015 Summer PA	37.618039	-118.785262	6,837.9	45.2	93.8
2015 Winter NA	37.618039	-118.785262	6,837.9	47.6	93.8
2015 Winter PA	37.618039	-118.785262	6,837.9	47.9	93.8

Note: NA = No Action
PA= Proposed Action

5.6.4 Proposed Action

5.6.4.1 Potential 2009 and 2015 Impacts

Vegetation

There would be no direct impact to the existing vegetative communities at MMH as a result of the Proposed Action in either 2009 or 2015.

Wildlife

There would be no change to the existing wildlife habitat at MMH as a result of the Proposed Action. As indicated in **Section 5.10**, Water Quality, the Proposed Action would not result in changes to the quality of surface waters in the vicinity of MMH, and therefore would not impact local fish habitat or populations.

Secondary impacts resulting from increased aircraft noise associated with the Proposed Action would be limited. As indicated in **Figure 5.6-1**, the Q400 would utilize the existing approach and departure tracks to provide service to MMH. Based on the approved forecast, only 2 flights (2 arrivals and 2 departures) are projected to be added to the 53.9 average daily operations during the peak winter month in 2009. As indicated in **Table 5.6-1**, the projected average day Leq during the winter peak month in 2009 would be only 0.1 dBA higher than that projected under the No-Action Alternative (47.2 dBA as compared to 47.1 dBA).

In 2015, eight daily flights (8 arrivals and 8 departures) are projected to be added to the 60.3 average daily GA operations during the winter peak month and two daily flights (2 arrivals and 2 departures) would be added to the 49.7 average daily operations during the summer peak month in 2015. As indicated in **Table 5.6-1**, the projected average day Leq during the winter peak month would be only 0.3 dBA higher than that projected under the No-Action Alternative (47.9 dBA as compared to 47.6 dBA). The projected average day Leq during the summer peak month would be only 0.1 dBA higher than that projected under the No-Action Alternative (45.2 dBA as compared to 45.1 dBA).

Importantly, as shown in **Table 5.6-1**, the maximum noise levels at the lek would not change. The projected noise level resulting from operation of Q400 aircraft would be substantially lower than many of the existing and projected future aircraft operations at MMH. As indicated in **Appendix H-4**, INM results indicate that approximately 200 of the projected operations by other aircraft types (approach vs. departure, Runway 9 vs. Runway 27) would be louder than the loudest approach by a Q400 aircraft. Approximately 400 types of operations would be louder than the loudest departure by the Q400. **Appendix H-4** also includes a graphical comparison of the noise footprint of the Q400 aircraft to those of other aircraft currently operating at MMH. Similar to the No-Action Alternative, potential impacts would be limited to a possible increase in premature daily departure of some grouse from the lek in response to any increase in early morning (prior to 9:00 AM) overflights during the lekking season (December through May).

Federally Protected Species

There would be no direct impacts to the habitat of the Owens tui chub or the Sierra Nevada bighorn sheep. As indicated in **Section 5.10**, Water Quality, the Proposed Action would not result in changes to the quality of surface waters in the vicinity of MMH, and therefore would not impact the habitat or population of the Owens tui chub. As indicated in the BA (see **Appendix H-2**), the additional Proposed Action overflights are not expected to have a significant impact on bighorn sheep or other endangered or threatened species.

5.7 AIR QUALITY

5.7.1 Overview of Impacts

When compared to the No-Action Alternative in both 2009 and 2015, air pollutant emissions for all EPA criteria pollutants associated with the Proposed Action would increase. These increases are attributable to the addition of scheduled air carrier operations and associated increase in motor vehicle trips.

Total direct and indirect emissions of PM_{10} associated with the Proposed Action are below the Clean Air Act (CAA) General Conformity Rule *de minimis* levels and these emissions are not regionally significant. Therefore, the requirements of Part 93, Subpart B do not apply and no formal General Conformity Determination is required.

The Transportation Conformity Rule requirements in the Clean Air Act do not apply to the Proposed Action as there are no planned off-airport roadway improvements associated with this alternative.

5.7.2 Methodology and Significance Criteria

The air quality analysis conducted for this EIS included the preparation of emissions inventories of "criteria pollutants." Emissions inventories are quantities of air pollutants emitted over a given time period, and provide information about pollutant contributions from various sources. For this EIS, the

emissions inventories were developed for the No-Action and Proposed Action alternatives for the expected opening year (2009) and the horizon year (2015).

The overall methodology (including computer models, technical approaches, etc.) used to prepare the emission inventory is consistent with the latest FAA guidance. This guidance provides both regulatory context and technical direction for completing airport-related air quality impact assessments.

The air quality assessment was prepared in accordance with FAA guidance and in compliance with FAA Order 1050.1E Chg. 1, *Environmental Impacts: Policies and Procedures* (*Appendix A, Section 2, Air Quality*), the FAA document *Air Quality Procedures for Civilian Airports and Air Force Bases* (FAA, 1997) and its 2004 addendum (FAA, 2004), and the 1990 Clean Air Act Amendments (CAAA) (42 U.S.C. 7401 et. seq.).

FAA Order 1050.1E states that potentially significant air quality impacts associated with an FAA project or action would be demonstrated by the project or action exceeding one or more of the National Ambient Air Quality Standards (NAAQS) for any of the time periods analyzed.

The air quality analyses were prepared for a projected initial full year of operation in 2008. While the initial full year of operation is now projected to 2009, test calculations have determined that the projected emissions for 2008 would be the same for an initial operating year of 2009. The number of projected operations and the associated aircraft emissions for 2015 are the same in both analyses.

5.7.2.1 Regulatory Perspective

The following presents background information describing the regulatory perspective that governs MMH, including discussions of the Federal Clean Air Act Conformity Rule, the region's attainment status and State Implementation Plan (SIP) requirements, and conformity with the California SIP.

Ambient Air Quality Standards

Air pollution is of concern because of its demonstrated effects on human health. Of special concern are the respiratory effects of the pollutants, as well as their general toxic effects. Under the authority of the CAA and its amendments, the U.S. EPA established a set of National Ambient Air Quality Standards (NAAQS) for seven "criteria" air pollutants. The "criteria" pollutants include carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), lead (Pb), and particulate matter (PM_{10} and $PM_{2.5}$). These standards are intended to protect the public health and welfare. Primary air quality standards are established at levels that protect the public health from harm with an adequate margin of safety. Secondary standards are set at levels necessary to protect the public welfare (buildings, clothing, and vegetation).

California has additional pollutant standards and ambient air quality standards that are more restrictive than the U.S. EPA standards. The NAAQS are summarized in **Table 5.7-1**.

TABLE 5.7-1
NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	Federal Standards[a,b]	State Standards
Ozone (O_3)	1 Hour[c]	0.12 ppm (235 $\mu g/m^3$)	0.09 ppm (180 ug/m^3)
	8 Hour	0.08 ppm (157 $\mu g/m^3$)	0.070 ppm (137 ug/m^3)
Particulate Matter (PM_{10})	24 Hour	150 $\mu g/m^3$	50 ug/m^3
	Annual[d]	na	20 ug/m^3
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	35 $\mu g/m^3$	35 ug/m^3
	Annual	15 $\mu g/m^3$	12 ug/m^3
Carbon Monoxide (CO)	8 Hour	9 ppm (10 mg/m^3)	9.0 ppm (10 ug/m^3)
	1 Hour	35 ppm (40 mg/m^3)	20 ppm (23 ug/m^3)
Nitrogen Dioxide (NO_2)	Annual	0.053 ppm (100 $\mu g/m^3$)	0.030 ppm (56 ug/m^3)
Sulfur Dioxide (SO_2)	Annual	0.030 ppm (80 $\mu g/m^3$)	--
	24 Hour	0.14 ppm (365 $\mu g/m^3$)	0.04 ppm (105 ug/m^3)
	3 Hour	0.5 ppm (1300 $\mu g/m^3$)	--
Lead (Pb)	Calendar Quarter	1.5 $\mu g/m^3$	--

[a] National Standards (other than ozone, PM, and those based on annual averages) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration is above 150 $\mu g/m^3$ is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations averaged over 3 years, are equal to or less than the standard.

[b] All standards, except 3-hour SO_2, are National Primary Standards, which is the level of air quality necessary, with an adequate margin of safety to protect public health. The 3-hour SO_2 standard is a National Secondary Standard which is the level of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[c] The U.S. EPA revoked the national 1-hour ozone standard on June 15, 2005. However, the U.S. EPA required that all emissions reduction measures, including the State Implementation Plan and the General Conformity Regulations based on the 1-hour ozone standard, must remain in place until the national 8-hour ozone standard is met.

[d] U.S. EPA revoked the annual PM10 standard of 50 ug/m^3 effective on December 17, 2006 due to a lack of evidence linking health problems to long-term exposure to coarse particulates.

Source: U.S. CFR, Title 40, Part 50.

Federal Clean Air Act Conformity Rule

As part of the 1990 amendments of the federal CAA, the Conformity Rule (40 CFR, Part 93.150) stipulates that all federal activities must conform to the goals of the applicable SIP. By conforming to the SIP, the federal action would not cause or contribute to any new violation of any standard, worsen (i.e., increase the frequency or severity) an existing violation of any standard, nor delay the timely attainment of any standard or other SIP-mandated milestone.

The CAA Conformity Rule is subdivided into two sections: Transportation Conformity, which applies to federally-approved surface transportation (i.e., highways and roadways) and transit (rail) projects, and General Conformity, which applies to all other federal activities (including actions at airports). In both cases, the requirements of the CAA Conformity Rule apply to U.S. EPA-designated nonattainment areas (i.e., areas that do not meet the NAAQS) and maintenance areas (i.e., areas that have transitioned from nonattainment to attainment). However, since the Proposed Action at MMH does not involve the federal approval, funding, or construction of any off-site (i.e., off-airport) roadways or transit systems, the CAA Transportation Conformity Rule does not apply.

Attainment Status and State Implementation Plan Requirements

The Great Basin Valley airshed, which includes Mono County and MMH, has been designated by U.S. EPA as being in attainment of all of the criteria pollutant ambient air quality standards except for PM_{10}. With respect to PM_{10}, the area is designated as moderate nonattainment.

In compliance with the mandates of the CAAA, California has developed a SIP for control of PM_{10} emissions in the Mammoth Lakes area. The SIP defines the process by which the NAAQS will be attained, and defines the control strategies and schedule that the state will apply to reduce emissions in order to attain the PM_{10} standard. To comply with the SIP, any proposed action must not result in any violations of the NAAQS, and must meet the conditions of the conformity regulations.

Conformity with the California State Implementation Plan

Under the General Conformity Rule, federal agencies, such as FAA, are prohibited from engaging in, supporting in any way, providing financial assistance for, licensing or permitting, or approving any activity in a nonattainment or maintenance area that does not conform to an approved SIP.

For federal activities located in areas designated as being in nonattainment of the ambient air quality standards, the U.S. EPA has issued rules for determining general conformity of proposed federal actions. The U.S. EPA General Conformity Rule defines a "conforming" activity as one that: 1) conforms to the SIP's overall objective of eliminating or reducing the severity and number of air quality violations in a state and achieving expeditious attainment of the NAAQS; 2) does not cause or contribute to new NAAQS violations in the area; 3) does not increase the frequency or severity of existing NAAQS violations in the area; and 4) does not delay the state's timely attainment with NAAQS or impede required progress toward attainment. Under the general conformity rules, a federal activity does not require a conformity determination if the increase in emissions due to a proposed federal action is less than the *de minimis* thresholds outlined in 40 CFR Part 93 Subpart B and the Proposed Action is not Regionally Significant (40 CFR 93.153(i)), i.e., contributes less than 10 percent of the nonattainment area's emissions inventory. Because MMH is located in a PM_{10} nonattainment area, it is FAA's responsibility, under Section 176(c) of the CAA, to assure that the Proposed Action conforms to the California SIP.

5.7.2.2 Criteria Pollutant Emissions Inventories

The primary tool that was used in this EIS to assess the MMH operational emissions was FAA's *Emissions Dispersion & Modeling System* (EDMS) (FAA, 2006b), Version 4.5. Version 4.5 was the most recent version available at the time the analyses were conducted. EDMS is identified as the "required" model by FAA and the approved model of the U.S. EPA for conducting airport air quality assessments. EDMS was used to estimate emissions for the following air pollutants: carbon monoxide (CO), volatile organic compounds (VOCs), and nitrogen oxides (NO_x) as precursor pollutants to ozone formation, particulate matter of 10 microns or less (PM_{10}), particulate matter of 2.5 microns or less ($PM_{2.5}$), and sulfur dioxide (SO_2). The most recent version of the California Air Resources Board (CARB) motor vehicle emissions factor program EMFAC2002 (CARB, 2004) was used to generate motor vehicle emission factors for use in EDMS.

Since ozone emissions are not calculated in EDMS, hydrocarbons (represented by VOCs) and NO_x, the two primary precursors to O_3 formation, are used to evaluate the impact of this pollutant. Lead (Pb) was not included in the emission inventory calculations because: 1) Mono County is in attainment for Pb, and 2) since the prohibition of Pb as an additive in gasoline, Pb has ceased to be a major transportation related pollutant. Particulate emissions from most gas turbine jet aircraft are quantified in EDMS; while particulate emissions from turboprop and piston aircraft are not. Particulate emissions from turboprop and piston aircraft engines were calculated in a spreadsheet using the FAA's First Order Approximation procedure described in FAA's policy memorandum of May 24, 2005 (FAA, 2005). This methodology does not distinguish between PM_{10} and $PM_{2.5}$; thus, the PM emissions from aircraft are assumed to be the same for both PM_{10} and $PM_{2.5}$.

The sources of information and data as well as further explanation of the methodology for completing the emissions inventory are discussed separately in the following sections.

Emissions Sources

The sources of air pollutant emissions evaluated in this EIS include aircraft, ground support equipment, motor vehicles using the airport access roads and parking facility, deicing activities, and fuel storage facilities. This evaluation does not include emissions due to construction activities, since the Proposed Action does not include any construction activities. For this analysis, standard EDMS parameters and databases were used except where MMH-specific inputs were available and more appropriate. The most important of these are MMH-specific aircraft taxi times and airport-related motor vehicles accessing the airport. Each of the sources of emissions included in the emissions inventory is briefly described below.

Aircraft

FAA approved forecasts of future year operations at MMH by aircraft type (e.g., commercial and GA) were used as the basis for the air quality analysis. Aircraft/engine combinations and individual aircraft engine emission factors were obtained from the EDMS database. Summary tables provided in **Appendix D** list the aircraft and engine type combinations used for this analysis.

The activities of aircraft in their airborne and ground-based operational modes are referred to as a Landing and Takeoff (LTO) cycle. One LTO cycle equals two operations (i.e., one landing and one takeoff) and, within EDMS, these activities are further subdivided into the following four modes:

- **Approach/Landing Mode** - Begins when an aircraft descends below the atmospheric mixing height (a default value of 3,000 feet AGL was used in this analysis) and ends when the aircraft touches down on the runway and decelerates to the taxi/idle mode. Depending on the aircraft type, this time varies from 3.57 to 9.06 minutes in this analysis.

- **Climbout Mode** - Begins when the aircraft is 1,000 feet AGL and ends when the aircraft reaches an altitude of 3,000 feet AGL (the default atmospheric mixing height). Again, depending on the aircraft type, this time ranges from 0.59 to 4.53 minutes.

- **Takeoff Mode** - Begins when takeoff power is applied to an aircraft and ends when an aircraft reaches 1,000 feet AGL. This time varies between 0.69 and 2.27 minutes, again by aircraft type.

- **Taxi/Idle Mode** - Comprises all of the time periods when an aircraft is on the airport taxiway system or terminal area aprons with its engines running. This includes all ground-based delays incurred or encountered between the runway ends and the terminal gates. The total duration of this mode is largely a function of the airport design, layout, and operational capacity and assumes that all aircraft travel at approximately the same speed while on the airfield. For this air quality analysis, the full time for this mode (which includes taxi-in, taxi-out, and delay) was calculated to be 5.8 minutes under existing and future conditions, based on actual travel distance at a speed of 15 mph.

EDMS automatically calculates the times-in-mode for the approach/landing, climb-out, and takeoff modes for each aircraft classification type (e.g., jet, turbo prop, etc.). A mixing height of 3,000 feet AGL was used in the analysis. Consistent with FAA guidelines "Consideration of Air Quality Impacts by Airplane Operations at or above 3,000 feet AGL," FAA Office and Environment and Energy, Washington, D.C. Page 3, September 2000, it was also assumed that aircraft emissions above the atmospheric mixing height would have no ground-level effect; therefore, these emissions are not included in the inventory.

Ground Support Equipment

Ground Support Equipment (GSE) associated with both commercial and GA aircraft at MMH can include baggage and pushback tugs; belt loaders (Proposed Action only); fuel trucks and other service vehicles; and auxiliary power units (APU). For this EIS, a MMH-specific GSE fleet, default fuel types and operating times, and the default GSE emission factors which are contained in the EDMS GSE database were used.

Motor Vehicles

On-site motor vehicles (i.e., cars, vans, limousines, trucks, etc.) are those that are operating on the airport's primary internal roadway network and within the parking facilities located on the airport. These motor vehicles are primarily associated with airport patron and employee trips operating within the airport boundary. Traffic volumes on these roadways and facilities were developed specifically for this analysis.

The motor vehicle engine emission factors were derived from the CARB mobile source emissions model, EMFAC2002. For this analysis, Mono County-specific motor vehicle operating characteristics (i.e., fleet mix, operating temperatures, etc.) were used in EMFAC2002. These and other supporting data used to assess on-site motor vehicle emissions are contained in **Appendix D**.

Fuel Storage

VOC emissions of Jet A fuel and aviation gasoline (Avgas) represent potential sources of evaporative VOC emissions. For this analysis, the amounts of fuel-related VOC emissions generated were based on the types and amounts of fuels stored and dispensed at MMH. Future year emissions were adjusted from existing values according to the forecasted increase in GA aircraft operations at MMH for the years 2009 and 2015. Due to operational considerations, it was assumed that the scheduled commercial aircraft would not refuel at MMH. These data are contained in **Appendix D**.

Deicing Fluid

Deicing fluid (ethylene glycol) generates a very small portion of evaporative VOC emissions at MMH. For this analysis, the amount of ethylene glycol deicing fluid that would be used was estimated to be

approximately 3,700 gallons per year in 2009, and approximately 16,800 gallons per year in 2015. See **Section 5.10** for additional details regarding the use of deicing fluid at MMH.

5.7.2.3 Significance Criteria

As stated previously, MMH is in an area designated as "attainment" for all U.S. EPA criteria air pollutants, except for PM_{10}, for which the area is designated as moderate nonattainment. Thus, the PM_{10} *de minimis* threshold for this area is 100 tpy. The only other significant impact thresholds for air quality identified in Section 2.3 of Appendix A of FAA Order 1050.1E that apply to the Proposed Action are the NAAQS.

5.7.3 No-Action Alternative

5.7.3.1 Potential 2009 and 2015 Impacts

Criteria Pollutant Emissions Inventories

As presented in **Table 5.7-2**, total criteria air pollutant emissions associated with the No-Action Alternative in 2009 are estimated to be 62.09 tpy of CO, 4.43 tpy of VOC, 1.99 tpy of NO_x, 0.64 tpy of $PM_{10}/PM_{2.5}$, and 0.27 tpy of SO_2.

Aircraft operations and attendant motor vehicle activities at MMH are expected to increase by 2015 without the Proposed Action being implemented. Total criteria air pollutant emissions associated with the No-Action Alternative in 2015 are presented in **Table 5.7-2** and are estimated to be 69.68 tpy of CO, 4.60 tpy of VOC, 1.88 tpy of NO_x, 0.77 tpy of $PM_{10}/PM_{2.5}$, and 0.29 tpy of SO_2.

5.7.4 Proposed Action

5.7.4.1 Potential 2009 and 2015 Impacts

Criteria Pollutant Emissions Inventories

As shown in **Table 5.7-2**, total criteria air pollutant emissions associated with the Proposed Action in 2009 are estimated to be 67.69 tpy of CO, 4.63 tpy of VOC, 2.60 tpy of NO_x, 0.67 tpy of $PM_{10}/PM_{2.5}$, and 0.30 tpy of SO_2. Compared to the results for the 2009 No-Action Alternative, emissions due to the Proposed Action in 2009 are estimated to generate increases of 5.60 tpy for CO, 0.20 tpy for VOC, 0.61 tpy for NO_x, 0.03 tpy for $PM_{10}/PM_{2.5}$, and 0.03 tpy for SO_2. These increases are attributable to the addition of scheduled air carrier operations in 2009 and the associated increase in motor vehicle trips.

Total pollutant emissions associated with the Proposed Action in 2015 are estimated to be 92.41 tpy of CO, 5.41 tpy of VOC, 4.34 tpy of NO_x, 0.93 tpy of $PM_{10}/PM_{2.5}$, and 0.49 tpy of SO_2 as shown in **Table 5.7-2**. Compared to the results for the 2015 No-Action Alternative, pollutant emissions due to the Proposed Action in 2015 are estimated to generate increases of 22.73 tpy for CO, 0.81 tpy for VOC, 2.46 tpy for NO_x, 0.16 tpy for $PM_{10}/PM_{2.5}$, and 0.20 tpy for SO_2. These increases are attributable to the addition of scheduled air carrier operations in 2015 and associated increase in motor vehicle trips.

TABLE 5.7-2
AIR POLLUTANT EMISSIONS FOR THE NO-ACTION AND PROPOSED ACTION ALTERNATIVES

Source	Pollutant (tpy)				
	CO	VOC	NO_x	$PM_{10}/PM_{2.5}$	SO_2
2009 No-Action Alternative[1]					
Aircraft	60.32	1.54	1.45	0.61	0.21
Ground Support Equipment	0.06	0.02	0.23	0.02	0.06
Motor Vehicles	1.71	0.07	0.31	0.01	<0.01
Fuel Storage and Deicing	--	2.80	--	--	--
Annual Total (tpy)	62.09	4.43	1.99	0.64	0.27
2009 Proposed Action[1]					
Aircraft	60.45	1.54	1.78	0.63	0.24
Ground Support Equipment	4.60	0.18	0.34	0.02	0.06
Motor Vehicles	2.64	0.11	0.48	0.02	<0.01
Fuel Storage and Deicing	--	2.80	--	--	--
Annual Total (tpy)	67.69	4.63	2.60	0.67	0.30
2015 No-Action Alternative[2]					
Aircraft	68.82	1.76	1.66	0.70	0.24
Ground Support Equipment	0.02	0.01	0.06	0.06	0.05
Motor Vehicles	0.84	0.03	0.16	0.01	<0.01
Fuel Storage and Deicing	--	2.80	--	--	--
Annual Total (tpy)	69.68	4.60	1.88	0.77	0.29
2015 Proposed Action[2]					
Aircraft	69.44	1.76	3.15	0.81	0.38
Ground Support Equipment	20.67	0.76	0.69	0.09	0.11
Motor Vehicles	2.30	0.09	0.50	0.03	<0.01
Fuel Storage and Deicing	--	2.80	--	--	--
Annual Total (tpy)	92.41	5.41	4.34	0.93	0.49

[1] Emissions based on 13,801 annual aircraft operations for the No-Action Alternative in 2009; and on 14,249 annual aircraft operations for the Proposed Action in 2009.

[2] Emissions based on 15,451 annual aircraft operations for the No-Action Alternative in 2015; and on 17,483 annual aircraft operations for the Proposed Action in 2015.

Sources: EDMS Version 4.5; URS Corporation, 2006.

5.7.5 General Conformity

As discussed previously, Mono County (including MMH) has been designated as a "nonattainment" area for PM_{10} under the federal ambient air quality standards. As a result, the Great Basin Unified Air Pollution Control District (GBUAPCD) has developed the State Implementation Plan (SIP) for this pollutant; the goals and objectives of which are to manage the growth of the pollutant emissions and bring the area into attainment with the NAAQS.

Applicability Criteria

As a means of determining whether or not the requirements of the General Conformity Rule apply, the U.S. EPA has established *de minimis* levels for all nonattainment air pollutants. The applicable *de minimis* values for this nonattainment area is 100 tpy for PM_{10}. Because the area around MMH is designated as in attainment with respect to ozone, CO, NO_2, $PM_{2.5}$, and SO_2, no *de minimis* values apply to these criteria pollutants.

Under the applicability test, the sum of future net direct and indirect emissions must be evaluated. Net direct and indirect emissions include those emissions that are explicitly created by each proposed

alternative, are reasonably foreseeable, and are controllable by the federal agency. Under the General Conformity Rule, both operational and construction-related emissions are classifiable as direct emissions. However, as there are no construction activities associated with the Proposed Action, no assessment of construction-related emissions was performed.

In addition, according to the General Conformity Rule, conformity with the SIP is demonstrated when the total direct and indirect emissions are not "regionally significant" (e.g., greater than 10 percent of the emissions inventory for the nonattainment area) (40 CFR 93.153).

Under the applicability test, the requirements of Part 93, Subpart B do not apply to emissions levels generated by the federal action which are below these *de minimis* thresholds. However, when the emissions exceed the *de minimis* levels or the emissions are regionally significant, the General Conformity Rule does apply. In these cases, further demonstration must be made in a formal General Conformity Determination to show that the federal action conforms to the applicable SIP before the lead federal agency is allowed to approve the proposed action.

Emissions Applicability Test

The information and data used in support of this EIS was derived from the operational emissions inventory results presented previously in **Table 5.7-2**. Emissions attributable to the Proposed Action were determined by subtracting the emissions due to the No-Action Alternative from the future Proposed Action emissions (i.e., the 2009 Proposed Action emissions minus the 2009 No-Action Alternative emissions).

Total operational emissions for PM_{10} from the Proposed Action for 2009 and 2015 are presented in **Table 5.7-3**. As shown, the PM_{10} emissions generated due to the Proposed Action are well below the General Conformity *de minimis* threshold of 100 tpy. Therefore, the requirements of Part 93, Subpart B do not apply and no formal General Conformity Determination is required. Since the Proposed Action does not include any project-related construction activities, no construction-related emissions were included in this assessment.

TABLE 5.7-3
OPERATIONAL EMISSIONS FOR THE PROPOSED ACTION (TPY)

ALTERNATIVE	PM_{10}
2009 Proposed Action	0.03
2015 Proposed Action	0.16
DE MINIMIS LEVELS	**100**

Source: URS Corporation, 2007.

Regional Significance Applicability Test

According to the General Conformity Rule, a regionally significant action is a federal action with total direct and indirect emissions greater than 10 percent of the emissions inventory for the nonattainment area. As shown in **Table 5.7-4**, total emissions increases due to the Proposed Action are much less than 10 percent of the Great Basin Valley Air Basin nonattainment area emissions for all pollutants. Thus, these emissions are not regionally significant and conform to the goals and requirements of the CAA and the applicable SIP.

Conformity Determination

Based on the findings of this analysis, no General Conformity Determination is required for project-related emissions due to the Proposed Action in 2009 and 2015. The emissions for these years are all well below the applicable *de minimis* levels for the Great Basin Valley nonattainment area. In addition, total MMH emissions due to the Proposed Action are less than 10 percent of the emissions inventory for the nonattainment area and are not regionally significant.

TABLE 5.7-4
OPERATIONAL EMISSIONS COMPARED TO THE
GREAT BASIN VALLEY AIR BASIN NONATTAINMENT AREA EMISSIONS (TPY)

STANDARD / ALTERNATIVE	PM_{10}	
	TONS PER YEAR	PERCENT OF INVENTORY
2010 Great Basin Valley Air Basin[1]	32,612	--
2009 Proposed Action[2]	0.03	<0.01
2015 Great Basin Valley Air Basin[3]	33,365	--
2015 Proposed Action[2]	0.16	<0.01

1 Taken from the Emission Inventories for 2010 (the closest year to 2009 available) as published by the CARB on their website: http://arbis.arb.ca.gov. Data accessed August 10, 2006.
2 Emissions associated with the Proposed Action are defined as: (Proposed Action emissions minus the No-Action Alternative emissions).
3 Taken from the Emission Inventories for 2015 as published by the CARB on their website: http://arbis.arb.ca.gov. (Data accessed August 10, 2006.)

Sources: CARB Emission Inventories for PM_{10} (2006); URS Corporation, 2007.

It should also be noted that reduction and control of vehicle-miles traveled (VMT) in and around the Town of Mammoth Lakes is a stated goal of the SIP. The contribution of the Proposed Action to the VMTs in the Town of Mammoth Lakes would be less than 1 percent on a daily basis for the days that Horizon Air operates at MMH. This small increase to the Town's VMTs would not cause an exceedance of the VMT limit in the SIP; therefore, no significant impact would occur.

The Transportation Conformity Rule requirements in the Clean Air Act do not apply as there are no planned off-airport roadway improvements associated with the Proposed Action.

5.7.6 Comparison to Significance Criteria

The Proposed Action is not expected to exceed any of the NAAQS in 2009 or 2015; therefore it would not exceed the significant impact thresholds for air quality identified in Section 2.3 of Appendix A of FAA Order 1050.1E.

5.8 HAZARDOUS MATERIALS, POLLUTION PREVENTION AND SOLID WASTE

5.8.1 Overview of Impacts

Since no construction activities would occur under either the No-Action or Proposed Action alternatives, neither alternative has the potential to effect sites or facilities known to contain environmental contamination. The implementation of the Proposed Action would not substantially alter the types of hazardous materials and other regulated materials currently used at MMH. However, the amounts of aviation fuel used would increase in the future due to the forecasted increase in the number of GA and air carrier aircraft operations at MMH. This increase would not result in a significant impact.

In 2009 and 2015, the projected enplanements at MMH with the Proposed Action would total approximately 10,214 and 67,168, respectively. In 2009, approximately 6,537 pounds of waste per year (i.e., 3.3 tons per year or less than 0.01 ton per day) greater than that projected for the No-Action Alternative would be generated by pilots, passengers and other on-airport personnel at MMH. In 2015, approximately 42,988 additional pounds of waste per year (i.e., 21.5 tons per year or 0.06 ton per day) would be generated by the same types of persons using MMH. The efforts of the Town of Mammoth Lakes to sort the waste materials and implementing reuse and recycling programs (e.g., Mammoth Disposal Transfer Station) would further reduce the quantity sent to the local landfill. The Benton Crossing Sanitary Landfill is permitted for a maximum throughput of 120 tons per day, and has a projected life expectancy of 17 years. Therefore, the Proposed Action in 2009 and 2015 would have no significant impact on the capacity of the Benton Crossing Sanitary Landfill.

There are no landfills within 10,000 feet of either runway end at MMH. The end of Runway 27 is within a 5-mile radius of the Benton Crossing Sanitary Landfill. However, the landfill does not attract or sustain hazardous bird movements into or across the runway and/or approach and departure patterns of aircraft. The Proposed Action is therefore consistent with the guidance provided in FAA AC 150/5200-33A.

5.8.2 Methodology and Significance Criteria

The potential impacts of the No-Action and Proposed Action on long-term generation of solid waste at the airport were evaluated. Future estimated airport solid waste generation was measured against projected landfill capacities to estimate: 1) the airport's contribution to the county-wide solid waste stream, and 2) the ability of the Benton Crossing Sanitary Landfill to accommodate the estimated solid waste generation associated with the Proposed Action.

Based on the average size of aircraft operating at MMH, a conservative assumption of 1.5 passengers per GA operation was used to calculate the number of passengers (e.g., pilots and passengers) under the No-Action Alternative. Since MMH would continue to operate as a GA airport and not have commercial service under the future No-Action Alternative, an assumed solid waste generation rate of 0.50 pounds per passenger per operation was used to calculate the municipal solid waste (MSW) generated by pilots, passengers and on-airport personnel at MMH. This assumed generation rate of 0.50 pounds for the GA

operations is 0.14 pounds less than that used for the Proposed Action because GA operations do not provide in-flight service as do commercial service airlines (e.g., Horizon Air).

The MMH aviation forecast, shown in **Section 1.3** of this EIS, included the number of enplanements associated with Horizon Air service to MMH. The additional enplanements were 10,214 in 2009 and 67,168 in 2015. A recent study by the Natural Resources Defense Council estimated 0.64 pounds of commercial airline waste per passenger (NRDC, 2006). This estimate of 0.64 pounds of airline waste per passenger was used to calculate the MSW projected to be generated for Horizon Air enplanements for the study years 2009 and 2015.

FAA guidance states that additional information or analysis is required only if problems are anticipated with respect to meeting applicable local, state, tribal, or federal laws and regulations relating to hazardous or solid waste management. Actions involving properties listed (or potentially listed) on the National Priorities List (NPL) are considered significant by definition.

According to FAA AC 150/5200-33A, waste disposal sites having the potential to attract birds are considered incompatible if located within 10,000 feet (1.9 statute miles) of any runway used or planned to be used by turbine-powered aircraft. FAA also recommends a distance of 5 statute miles between the farthest edge of the airport's operation area and the hazardous wildlife attractant if the attractant could cause hazardous wildlife movement into or across the approach or departure airspace.

5.8.3 No-Action Alternative

Airport operations in 2009 or 2015 under the No-Action Alternative would not substantially alter the types of hazardous materials and other regulated materials currently used at the airport. The quantity of fuel used would increase slightly under the No-Action Alternative from 2005 to 2009 and 2015 consistent with the aviation forecast.

In 2009, the projected GA enplanements at MMH would be approximately 20,702; therefore, approximately 10,351 pounds of waste per year (i.e., 5.2 tons per year or less than 0.01 ton per day) would be generated by pilots, passengers and other on-airport personnel at MMH. In 2015, the projected enplanements would equate to approximately 11,588 pounds of waste per year (i.e., 5.8 tons per year or less than 0.02 ton per day). The Town of Mammoth Lakes efforts to sort the waste materials and implementing reuse and recycling programs (e.g., Mammoth Disposal Transfer Station) would further reduce the quantity sent to the local landfill. The Benton Crossing Sanitary Landfill is permitted for a maximum throughput of 120 tons per day and has a projected life expectancy of 17 years. Therefore, the No-Action Alternative in 2009 would have no significant impact on the capacity of the Benton Crossing Sanitary Landfill.

There are no landfills within 10,000 feet of either runway end at MMH. The existing airport runway ends are within a 5-mile radius of the Benton Crossing Sanitary Landfill; however, the landfill does not attract or sustain hazardous bird movements into or across the runway and/or approach and departure patterns of aircraft. The No-Action Alternative is consistent with the recommended guidance provided in FAA AC 150/5200-33A.

5.8.4 Proposed Action

In 2009, Horizon Air would fly 448 additional yearly operations when compared with the No-Action Alternative. In 2015, Horizon Air would fly 2,032 additional operations when compared with the No-Action Alternative. The increase in operations has the potential to increase the use of maintenance and safety vehicles at MMH. Implementation of the Proposed Action would not substantially alter the types of hazardous materials and other regulated materials currently used at the airport. However, the quantity of aviation fuel used would increase in the future due to the forecasted increase in the number of GA operations and air carrier aircraft at MMH. Since the existing fueling facilities are compliant with applicable regulations and MMH has an approved Spill Prevention Control and Countermeasure (SPCC) Plan, the additional operational activity would not result in a significant impact. MMH does have an area at the airport that is known to contain environmental contamination. The contamination, consisting of an aviation fuel plume, would not interfere with the future operations at MMH and since no construction activity would occur, this area would not be disturbed by implementation of the Proposed Action.

Air service provided by Horizon Air scheduled for the winter ski season has the potential to result in an increase in the use and treatment of deicing substances. See **Section 5.10** for further information associated on the location of the potential deicing pad, as well as the use, treatment and disposal of deicing substances associated with the Proposed Action.

The projected additional enplanements at MMH in 2009 would generate approximately 6,537 additional pounds of waste per year (i.e., 3.3 tons per year or less than 0.01 ton per day) greater than the No-Action Alternative. In 2015, the projected additional enplanements would generate approximately 42,988 pounds of waste per year (i.e., 21.5 tons per year or less than 0.06 ton per day) greater than the No-Action Alternative. The Town of Mammoth Lakes efforts to sort the waste materials and implementing reuse and recycling programs (e.g., Mammoth Disposal Transfer Station) would further reduce the quantity sent to the local landfill. The Benton Crossing Sanitary Landfill is permitted for a maximum throughput of 120 tons per day and has a projected life expectancy of 17 years. Therefore, the Proposed Action in 2009 would have no significant impact on the capacity of the Benton Crossing Sanitary Landfill.

There are no landfills within 10,000 feet of either runway end at MMH. However, the end of Runway 27 is within a 5-mile radius of the Benton Crossing Sanitary Landfill. However, the landfill does not attract or sustain hazardous bird movements into or across the runway and/or approach and departure patterns of aircraft. The Proposed Action is therefore consistent with the recommended guidance provided in FAA AC 150/5200-33A.

5.9 NATURAL RESOURCES AND ENERGY SUPPLY

5.9.1 Overview of Impacts

The demand for aviation fuel would marginally increase under the Proposed Action when compared to the No-Action Alternative in both study years due to the projected increase in aircraft activity, associated with the introduction of passenger services at MMH. The increased demand for fuel is considered small and would be supplied by existing service providers and

infrastructure without an impact to the supply or capacity of the resources. According to the Town of Mammoth Lakes General Plan Update, Southern California Edison is able to supply the region with enough electricity to accommodate the needs of the region. Since the Proposed Action would create a small demand for energy that would be accommodated within the existing energy supply, the Proposed Action would not result in a significant impact.

There are no known sources of mineral or energy resources on MMH that would be adversely affected by the Proposed Action. Implementation of the Proposed Action would not require the use of unusual materials or those that are in short supply in the Town of Mammoth Lakes area.

5.9.2 Methodology and Significance Criteria

Future fuel utilization at MMH for the No-Action and Proposed Action alternatives was qualitatively assessed based on the projected number of aircraft operations as contained in the forecast of future aviation activity.

Review of USGS Topographic 7.5 Minute Series Quadrangles, the Town of Mammoth Lakes General Plan, the California Department of Conservation, and land use maps were used to determine if the Proposed Action would impact any natural sources of mineral or energy resources.

Specific thresholds regarding the potential for significant impact to natural resources and energy supply are not provided in FAA Order 1050.1E.

5.9.3 No-Action Alternative

The demand for aviation fuel at MMH would increase under the No-Action Alternative consistent with the 2009 and 2015 forecasts of aviation activity when compared to the existing 2005 condition. Electricity demand should remain relatively constant throughout the period since no new construction activities would occur. The increased demand for fuel is considered small and would be supplied by existing service providers and infrastructure without an impact to the supply or capacity of these resources. Since the No-Action Alternative would create a small demand for energy that would be accommodated within the existing energy supply, the No-Action Alternative would not result in a significant impact.

No construction would occur with the No-Action Alternative; therefore, this alternative would not result in natural resource impacts.

5.9.4 Proposed Action

The demand for fuel and electrical energy would increase under this alternative due to a projected increase in aviation activity when compared to the No-Action Alternative. The increase in airport operations (i.e., 448 additional yearly operations in 2009 and 2,032 additional operations in 2015) would result in increased aircraft fuel needs. The increased demand for fuel is considered small and would be supplied by existing service providers and infrastructure without an impact to the supply or capacity of these resources. According to the Town of Mammoth Lakes General Plan Update, Southern California Edison is able to supply the region with enough electricity to accommodate the needs of the region.

Since the Proposed Action would create a small demand for energy that would be accommodated within the existing energy supply, the Proposed Action would not result in a significant impact.

There are no known sources of mineral or energy resources on MMH that would be adversely affected by the Proposed Action. Implementation of this alternative would not require the use of unusual materials or those that are in short supply in the Town of Mammoth Lakes area. No construction would occur with the Proposed Action; therefore, this alternative would not result in natural resource impacts.

5.10 WATER QUALITY

5.10.1 Overview of Impacts

Under the No-Action Alternative, aircraft operations at MMH would increase slightly over time when compared to the existing conditions. As a result, there would be little change in the quality and quantity of stormwater runoff or groundwater supplies in the vicinity of MMH. Drinking water use and the generation of wastewater would increase slowly under the Proposed Action, consistent with the forecast increase in passenger enplanements at the airport. These increases are within the capacities of the existing systems at MMH; therefore, implementation of the Proposed Action would not result in water supply or wastewater treatment impacts.

In 2009, the Proposed Action would not result in impacts to stormwater runoff or surface water in comparison to the No-Action Alternative. Aircraft deicing would be required during the winter for approximately 33 percent of the Horizon Air flights (approximately five aircraft per week). Each deicing event would require approximately 50 gallons or less of deicing fluid, which equals a volume of approximately 250 gallons per week. The existing onsite collection basin has sufficient holding capacity to store the spent deicing fluid until it can be removed for disposal. Spent deicing fluid would be transported to an off-site permitted facility for disposal or recycling. There would be no significant impact from the Proposed Action on groundwater quality or supply. The Proposed Action would not significantly increase the demand for water. Approximately 400 gallons per day of wastewater from the terminal toilet facilities would be discharged to a permitted septic system.

In 2015, the Proposed Action would have no significant impact on stormwater runoff, surface water quality, or groundwater quality or supply in comparison to the No-Action Alternative. The number of aircraft requiring deicing would increase to approximately 18 per week. The existing onsite collection basin has sufficient holding capacity to store this volume of spent deicing fluid until it can be removed for disposal or recycling at an off-site permitted facility. Water consumption at MMH would increase in response to the increase in passenger enplanements and additional airport staff. The existing water supply system would be adequate to supply the projected drinking water needs at the airport. Approximately 1,800 gallons per day of wastewater from the terminal toilet facilities would be discharged to a permitted septic system.

5.10.2 Methodology and Significance Criteria

Potential impacts to surface and groundwater resources were evaluated using local geologic and hydrologic maps and review of existing site documentation. Existing documentation on soil and groundwater contamination in the vicinity of the airport was reviewed to assess areas of concern. Additionally, the increased need for potable water and domestic wastewater to accommodate the forecasted growth in passenger enplanements was evaluated.

The following criteria were applied to evaluate whether the No-Action and Proposed Action alternatives would result in impacts to water quality/resources.

- Modification of any stream or other body of water,
- Violation of any water quality standards or waste discharge requirements,
- Substantial depletion of groundwater supplies,
- Substantial alteration of existing drainage patterns, and
- Creation of or contribution to excessive stormwater water runoff.

Specific thresholds to determine potential significance of water resources are not established in FAA Order 1050.1E. However, the order states that consideration should be given to the potential for a project to exceed water quality standards, result in problems that cannot be avoided or successfully mitigated, or may indicate difficulties in requiring needed permits.

5.10.3 No-Action Alternative

5.10.3.1 Potential 2009 and 2015 Impacts

Under the No Action Alternative, Horizon Air would not initiate regional air carrier service into MMH. MMH would continue to operate as a Part 139 airport with GA and non-scheduled air service activity. There would be no change in the quality and quantity of stormwater runoff, surface water quality, or groundwater supplies in the vicinity of MMH. Deicing operations would continue as needed, with the runoff being contained and disposed of according to the MMH Deicing Plan. Drinking water use and the generation of wastewater would remain consistent with the forecast enplanements at the airport. The projected water consumption and wastewater generation are within the capacities of the existing systems at MMH. There would be no impacts on groundwater levels or flow directions.

5.10.4 Proposed Action

5.10.4.1 Potential 2009 and 2015 Impacts

Surface Water

Stormwater runoff – The Proposed Action would involve no construction or other activities that would involve grading, other land disturbance, or an increase in impervious surface area at MMH. The Proposed Action would not impound, divert, drain, control, or otherwise modify the water of any stream or

other body of water. Therefore, there would be no impacts to surface water quality resulting from implementation of the Proposed Action.

MMH currently complies with the NPDES Industrial General Permit issued by the Regional Water Quality Control Board (RWQCB) (Personal Communication, 2005). The airport has prepared a SWPPP that describes the methods used at the airport to prevent impacts to water quality (Triad/Holmes, 2006). MMH does not discharge stormwater into waters of the U.S. since stormwater runoff infiltrates to the ground or evaporates. Stormwater runoff from the aircraft parking apron and aircraft storage hangars would continue to be collected in inlets and conveyed via underground drainpipes to the existing infiltration trench. With the exception of the proposed deicing procedures discussed below, there would be no additional sources of pollutants due to the Proposed Action.

Deicing – Deicing operations at MMH would be required for approximately 33 percent of the Horizon Air flights during the winter period (typically December through February). For 2009, Horizon Air is forecast to operate approximately 224 winter season flights from MMH. Approximately 74 of these flights would require deicing, which is equal to approximately five aircraft per week. In 2015 Horizon Air is forecast to operate approximately 896 winter season flights from MMH. Approximately 296 of these flights (approximately 18 flights per week) would require deicing.

Deicing would generally be accomplished by the use of glycol diluted to a 50 percent solution by water (Town of Mammoth Lakes, 2000). Both ethylene glycol and propylene glycol, which form the base chemical of deicing fluid, have a low toxic potential for aquatic and other animal life; however, both are highly biodegradable and therefore can reduce dissolved oxygen levels in receiving waters. Each deicing event would require approximately 50 gallons or less of deicing fluid, which equates to a volume of approximately 250 gallons per week in 2009 and 900 gallons in 2015.

Deicing operations would be the responsibility of the airline. A deicing plan would be developed in accordance with FAA's AC 150/5200-30A requirements (FAA, 1991) and in accordance with FAA's AC 150/5300-14 (FAA, 2000). All aircraft would be deiced at the same location on the aircraft parking apron. The proposed location of the deicing pad is shown in **Figure 5.10-1**. The area on which the aircraft would park during the deicing operations slopes to a slotted drain which collects the fluids and then flows to a drop inlet collection basin. The outlet of the collection basin would be plugged during deicing operations. During normal operations, without deicing fluid, the outlet would be open such that stormwater runoff would be discharged into the oil/water separator and conveyed to the infiltration trench. When deicing operations are being performed and the outlet is plugged, all of the deicing fluids would be pumped using a mobile motorized pump to a portable holding tank. The collected fluid would be removed for disposal or recycling at an off-site permitted facility.

The existing inlet collection basin has sufficient holding capacity to store the spent deicing fluid until it can be collected for disposal. The collected deicing fluid runoff would be transported off site for disposal or recycling at a permitted facility. Since runoff from the deicing area would be collected and disposed, impacts to surface water quality due to deicing operations are not anticipated.

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

FBO

TERMINAL BUILDING

18" CMP

7,000' x 100'

Legend

- Slotted Storm Drain
- Deicing Pad
- Airport Boundary
- Runway 9-27
- Taxiway
- Apron
- Roads
- Existing Building
- Water Storage Facility

200 0 200 Feet

Scale: 1" = 200' (at 11"x17")

N W E S

Sources:
-Mono County, 2005
-Airport Layout Plan, 2006

DEICING PAD

FIGURE 5.10-1

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.10-1, Deicing Pad.mxd, {pjf, hde, 11/02/07}

Groundwater

The aquifer below MMH is used as a community drinking water supply, and MMH extracts water from this aquifer for use at its facilities. The Proposed Action does not have the potential to result in contamination of this aquifer. As no construction would occur as part of the Proposed Action, there would be no increase in impervious areas and no change in the rate of groundwater recharge.

The Proposed Action would not affect groundwater levels in the vicinity of MMH or the nearby Hot Creek Fishery. The amount of additional groundwater extracted from the airport's existing water supply wells to provide drinking water and water for the portable toilet system for airline passengers while in the terminal facility would be within the existing capacity of the water supply aquifer. There would be no change in groundwater levels or flow direction. Based on historical groundwater monitoring data, MMH is located downgradient from the Hot Creek Fishery.

Two former gasoline underground storage tanks (USTs) and one former diesel UST were removed from a fueling facility located west of the airport terminal building in October 1998. There have been no impacts to groundwater supply wells from the former USTs. While not part of the Proposed Action, monitoring and remedial activities, as necessary, would continue at these sites until remedial objectives are achieved (TEAM, 2005, 2006a, and 2006b).

Water Supply

Under the Proposed Action, MMH would continue the current practice of extracting groundwater from onsite wells for water supply use (see **Section 4.9**). Water consumption at MMH would increase in response to the forecast increase in passenger enplanements and additional airport staff. The existing water supply well and storage tank system at MMH would be adequate to supply the projected potable water needs at the airport. There would be no depletion of groundwater supplies or lowering of the local groundwater table level due to the Proposed Action.

Wastewater

With implementation of the Proposed Action, the number of toilets within the building converted for use as a terminal would be increased. Wastewater from the toilets would be discharged to a permitted septic system. It is estimated that with 2 flights per day during the winter air service period approximately 400 gallons per day of additional domestic waste would be generated, and with 8 flights per day approximately 1,800 additional gallons per day would be generated.

5.11 SECONDARY (INDUCED) IMPACTS

5.11.1 Overview of Impacts

Under the No-Action Alternative, regional air carrier service to MMH by Horizon Air would not be implemented. As a result, employment, business and economic activity, population characteristics, housing demands, requirements for public services, and impacts on recreational and natural resources would not be impacted by the increased visitation projected to occur if the Proposed Action were implemented.

Under the Proposed Action, in 2009 Horizon Air would operate two flights per day to MMH with estimated annual enplanements of 10,214 passengers. This would result in approximately a 0.4 percent increase in total annual visitor days to Mammoth Lakes. As a result of these additional visitors, there could be a small increase in part-time and full-time job opportunities (176) and resident population (252) within the two-county Socioeconomic Study Area. These increases would not represent a significant impact to employment, business and economic activity, population and housing, or public service demands within the Socioeconomic Study Area.

Under the Proposed Action, in 2015 Horizon Air would operate eight flights per day to MMH during the winter season and two flights per day for two months during the summer season. The total estimated number of annual enplanements would be approximately 67,168 passengers. This would represent an increase of approximately 2.4 percent in total annual visitor days to Mammoth Lakes. As a result of the increased visitation, employment within the Socioeconomic Study Area could increase by up to 1,158 full-time and part-time job opportunities when compared to the No-Action Alternative. The increased total employment could in turn result in an increase in total resident population of approximately 1,536 individuals, and require approximately 1,098 more housing units beyond that projected under the No-Action Alternative. The potential increase in job opportunities and associated resident population would be distributed throughout the Socioeconomic Study Area and would not represent a significant impact when considered in the context of on-going development in the region and the adopted general plans of local jurisdictions. Impacts to recreational or natural resources associated with the increased visitation and resident population would not be significant.

5.11.2 Background

Tourism is an essential component of the Socioeconomic Study Area's economy and is the economic sector most likely to grow in response to additional visitation in the future. As a result, the potential secondary or induced impacts of the Proposed Action (those impacts facilitated by the introduction of regional air service at MMH) are evaluated in detail in this section of the EIS. **Appendix E-1**, *Technical Memorandum: Economic Impact of Proposed Regional Air Service at Mammoth Yosemite Airport,* discusses the methodology and socioeconomic impacts in greater detail.

A key assumption in this EIS is that enplanements represent "additional new visitors" to the Mammoth Lakes area, rather than passengers who would have driven from Los Angeles to Mammoth Lakes in the absence of commercial air service. This analysis assumes the regional service between Los Angeles and MMH would primarily function as a connecting flight, thereby allowing skiers and other tourists to fly from their local airport to LAX and from LAX to MMH. Assuming that enplanements signify "additional new visitors" insures that this EIS discloses the maximum potential for environmental impacts in terms of effect on future growth and development. However, it is likely that some percentage of visitors that currently drive approximately 300 miles from the Los Angeles area would take advantage of the new commercial service; therefore, this analysis is conservative and may over-predict what could occur if the Proposed Action at MMH were initiated.

Resort communities like Mammoth Lakes experience major fluctuations in tourist traffic, population, and local economic activity both throughout the week and during different times of the year. Visitation at Mammoth Lakes is typically much higher during the weekends of both the winter and summer seasons, compared to mid-week or the spring and fall off-seasons. For this EIS the assumption is that regional air service could draw more skiers and winter visitors from a broader geographic market base, and would stabilize the current weekend-based resort economy by increasing visitation during the mid-week. As a result of the seasonal nature of visitation to the community, it is expected that many of the job opportunities that could follow the start of scheduled commercial air service would also be seasonal, and that some job opportunities that are currently part-time could become full-time job opportunities extending beyond the peaks currently seen on weekends.

In order to fully understand the potential for induced impacts that may result from the Proposed Action at MMH, it is critical to understand the constraints as well as the factors influencing economic growth within the Socioeconomic Study Area. Land use, and therefore economic development, within both Mono and Inyo counties is constrained by public land ownership. Greater than 95 percent of the land in the Socioeconomic Study Area is publicly owned. Approximately 88 percent of the land is federally owned, and 7 percent is owned by the State of California, the Los Angeles Department of Water and Power, and Native American Communities. Privately owned lands are predominantly located near the urbanized areas in Mammoth Lakes and Bishop. As a result of this land use constraint, opportunities for substantial commercial and light industrial development within both counties are limited.

The magnitude of potential tourism-related socioeconomic impact is best understood by first estimating the potential additional visitor days that could result from the Proposed Action. The Mammoth Lakes Visitor's Bureau estimates an annual average of 2.8 million visitors come to the Town of Mammoth Lakes. The winter season, from November through April attracts approximately 1.3 million visitors and in the summer season, June through September, the town hosts approximately 1.5 million tourists. Currently, visitors in both seasons stay an average of four days. The off-seasons (i.e., shoulder seasons) for tourism in the area are spring and fall. The tourism industry dominates the employment characteristics of the region. In 2005, the accommodations and food services sectors accounted for approximately 20 percent of the employment and 16 percent of the industrial output in the Socioeconomic Study Area (see **Appendix E**).

During the first year of regional air service at MMH (winter season of 2008-2009), it is forecasted that there would be two flights per day for 112 days during the ski season - resulting in approximately 10,214 passenger enplanements. These enplanements could represent 10,214 "new visitors." For this analysis it was projected that visitors would stay in the area an average of five days and four nights, based on data from the Mammoth Lakes Visitors Bureau. This represents an addition of 40,856 additional "visitor days" during the 2008-2009 winter season. By 2015, it is forecasted that there would be two flights per day for 60 days during the summer and eight flights per day during 112 days of the winter season. As a result, there could be 6,240 enplanements during the summer season and 60,928 enplanements during the winter season. Assuming an average of four nights per visit for summer and winter visitors, an additional 268,672 additional annual visitor days is projected in 2015. Information from the Mammoth Lakes Visitors Bureau indicates that the Town of Mammoth Lakes experiences an average of approximately 11,200,000

annual visitor days. Thus, the Proposed Action could potentially result in a 0.4 percent increase in total annual visitor days in 2009, and a 2.4 percent increase in total annual visitor days in 2015.

It is important to note that creation of job opportunities, attraction of potential employees to the area and potential changes in population, as well as other changes in business and economic activity, are all subject to a variety of factors. Business decisions made by local employers are certainly not under the purview of the FAA. Changes in the local economy would also have an effect on what job opportunities would be created.

The analysis in this EIS is a prediction of creation of job opportunities based on economic modeling. Since many of the job opportunities could be in the service sector, the availability of affordable workforce housing may be a limiting factor to how many jobs in that sector are actually filled.

5.11.3 Methodology and Significance Criteria

Pursuant to FAA Order 1050.1E, Appendix A, Section 15, Secondary (Induced) Impacts represent the potential for a Proposed Action to cause induced or secondary impacts on surrounding communities. When potential for such impacts exists, the NEPA document describes in general terms such impacts. Examples 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. Induced impacts will normally not be significant except where there are also significant impacts in other categories, especially noise, land use, or direct social impacts.

CEQ regulations, 40 CFR § 1508.8, define "indirect effects" as those caused by an action but occur later in time or further in distance, but are still reasonably foreseeable. As discussed in **Section 5.3** of this EIS, results of the socioeconomic, environmental justice, and children's health and safety risk analyses indicate that there are no measurable direct impacts anticipated as a result of the Proposed Action at MMH. The potential effects discussed in this section are all "indirect effects" as defined by CEQ regulations.

The economic impact analysis used in the preparation of this EIS applied input-output models to measure the total value of spending on the economy that may be associated with increased visitation to Mammoth Lakes. **Appendix E-1**, *Technical Memorandum: Economic Impact of Proposed Regional Air Service at Mammoth Yosemite Airport,* discusses the methodology and socioeconomic impacts in greater detail. Initially, it was anticipated that the Horizon Air service to MMH would begin in 2008. Consequently, **Appendix E-1** forecasts socioeconomic impacts for the years 2008 to 2015. The projected impacts are considered representative for the revised analysis period of 2009-2015 since the forecast of aviation activity indicates that the maximum level of operations would be reached prior to the 2015 analysis year.

Estimating the potential long-term economic effects linked to the Proposed Action at MMH was based on projected differential employment opportunities associated with the Proposed Action, as compared to the No-Action Alternative. If there is an effect on long-term employment as a result of the proposed change in air service, then there is "value" associated with that change in terms of value added, employment opportunities, employment compensation, overall output, and tax benefits. The potential population impacts projected in these analyses are related directly to the projected increases in employment using labor participation ratios of residents to employment based on recent California statistics for the Socioeconomic Study Area (see **Appendix E-1**).

For the assessment of potential impacts to business and economic development within the Socioeconomic Study Area, projections of commercial development for the No-Action and Proposed Action alternatives were developed and evaluated. Commercial development projections are based on an inventory of existing space by jurisdiction, coupled with historic trends in average square feet per employee. The percentage distribution for future commercial space is based on the existing patterns of employment throughout the Socioeconomic Study Area projected forward.

5.11.4 No-Action Alternative

Under the No-Action Alternative, FAA would not approve the requested modification to the operations specifications for Horizon Air, and regional air carrier service into MMH would not be initiated. As a result, otherwise projected increases in employment, business and economic activity, population characteristics, public service and housing demands would not be impacted. As shown in **Tables 5.11-1** and **5.11-2**, normal growth in population would continue, but not at the increased rate projected to be associated with the increased aviation activity. Between 2005 and 2009 the total population of the Socioeconomic Study Area is projected to increase by 856 residents and the total number of full and part-time job opportunities is projected to increase by 1,851. Total housing units and occupied housing units are projected to increase by 702 and 359, respectively. Commercial development square footage is projected to increase by 547,828 square feet.

Between 2009 and 2015 the total population of the Socioeconomic Study Area is projected to increase by an additional 1,418 residents and the total number of full and part-time job opportunities is projected to increase by an additional 2,951. During the same 2009 – 2015 time period total housing units are projected to increase by an additional 1,462, occupied housing units are projected to increase by an additional 609, and commercial development is projected to increase by 855,790 square feet.

TABLE 5.11-1
POPULATION AND EMPLOYMENT FORECASTS FOR THE NO-ACTION AND THE PROPOSED ACTION ALTERNATIVES FOR THE SOCIOECONOMIC STUDY AREA, 2009-2015

Year	Total Population		Total Full and Part-Time Employment		IMPACT OF PROPOSED ACTION	
	No-Action	Proposed Action	No-Action	Proposed Action	Additional Employment	ADDITIONAL POPULATION
2009	32,973	33,225	23,284	23,460	176	252
2010	33,209	33,778	23,775	24,177	402	569
2011	33,446	34,507	24,266	25,026	760	1,061
2012	33,682	35,129	24,757	25,807	1,050	1,447
2013	33,919	35,476	25,249	26,393	1,144	1,557
2014	34,155	35,710	25,742	26,900	1,158	1,555
2015	34,391	35,927	26,235	27,393	1,158	1,536
Average Annual Increase	**236**	**450**	**492**	**656**	---	---

NOTE: 2005 Baseline Population = 32,117.

Sources: The SGM Group, Inc. and Hayes Planning Associates, Inc.

TABLE 5.11-2
GEOGRAPHIC DISTRIBUTION OF SOCIOECONOMIC AND DEVELOPMENT IMPACTS, 2009 AND 2015

Subarea	2005	2009 No-Action	2009 Proposed Action		2015 No-Action	2015 Proposed Action	
			Incremental Change	Total		Incremental Change	Total
Employment (full and part-time jobs opportunities)							
Mammoth Lakes	5,576	6,170	50	6,220	6,952	332	7,284
Balance of Mono County	4,578	4,860	33	4,893	5,476	217	5,693
City of Bishop	2,327	2,513	19	2,532	2,832	122	2,954
Balance of Inyo County	8,953	9,740	74	9,814	10,974	487	11,462
Total	21,433	23,284	176 (.76)	23,460	26,235	1,158 (4.41)	27,393
Population (resident people)							
Mammoth Lakes	7,602	8,219	108	8,327	8,572	656	9,228
Balance of Mono County	5,935	6,011	37	6,048	6,269	226	6,495
City of Bishop	3,641	3,612	14	3,626	3,767	84	3,851
Balance of Inyo County	14,939	15,132	94	15,226	15,783	571	16,354
Total	32,117	32,973	252 (.76)	33,225	34,391	1,536 (4.47)	35,927
Total Housing (units)							
Mammoth Lakes	8,962	9,721	113	9,834	10,337	697	11,034
Balance of Mono County	4,248	4,568	51	4,619	4,857	304	5,161
City of Bishop	1,875	1,775	1	1,776	1,887	7	1,894
Balance of Inyo County	7,291	7,015	13	7,028	7,459	90	7,549
Total	22,376	23,078	178 (.77)	23,256	24,540	1,098 (4.47)	25,638
Occupied Housing (units)							
Mammoth Lakes	3,168	3,496	54	3,550	3,649	325	3,974
Balance of Mono County	2,576	2,807	38	2,845	2,930	242	3,172
City of Bishop	1,692	1,631	1	1,632	1,702	6	1,708
Balance of Inyo County	6,116	5,977	15	5,992	6,239	81	6,320
Total	13,552	13,911	108 (.78)	14,019	14,520	654 (4.50)	15,174
Commercial Development (sf)							
Total	6,204,532	6,752,360	51,040 (.76)	6,803,400	7,608,150	335,820 (4.42)	7,943,970

Note: Numbers may not add as a result of rounding. Numbers in parentheses are percent increase relative to No-Action Alternative levels for the same year.
Sources: The SGM Group, Inc. and Hayes Planning Associates, Inc.

5.11.5 Proposed Action

Changes in Employment

As shown in **Table 5.11-1**, in 2009 a total of 176 additional part-time and full-time employment opportunities are projected to result from the increased visitation associated with the Proposed Action at MMH, an increase of 0.76 percent from the projected No-Action Alternative level. These new employment opportunities would be distributed throughout the Socioeconomic Study Area, with approximately 50 expected to be located in the Town of Mammoth Lakes. Thirty-three employment opportunities would be located within the balance of Mono County; 19 would be located in the City of Bishop; and 74 would be located in the remainder of Inyo County. These 176 employment opportunities associated with the Proposed Action represent less than 1 percent of the total 2009 No-Action Alternative employment and are within the typical annual employment changes within the region. Between 2000 and 2005, the amount of annual employment changes fluctuated in the Socioeconomic Study Area from a low of 103 in 2002 to a high of 928 in 2004 (see **Appendix E-1**, Table 9). It is projected that in 2009 the annual employment change would be 490 positions for the No-Action Alternative plus 176 positions for the Proposed Action for a total of 666 new employment opportunities. This estimated increase in the number of employment opportunities would not be a significant change in total employment.

As shown in **Table 5.11-1**, by 2015 a total of 1,158 additional part-time and full-time employment opportunities are projected to result from the increased visitation associated with the Proposed Action at MMH, an increase of 4.4 percent from the projected No-Action Alternative level in 2015. Included in this total are 10 to 12 jobs at the airport itself, including airline representatives, Transportation Security Agency (TSA) screeners, baggage handlers, and other staff necessary for commercial air service. These new employment opportunities would be distributed throughout the Socioeconomic Study Area as shown **Table 5.11-2**. Approximately 332 employment opportunities are projected to be located in the Town of Mammoth Lakes, with 217 located within the balance of Mono County, 122 located in the City of Bishop, and 487 located in the remainder of Inyo County. The projected increase of employment opportunities associated with the Proposed Action progresses gradually with 176 employment opportunities developing in 2009 when regional service begins; 226 developing in 2010; 358 in 2011; 290 in 2012; 95 in 2013; and 13 in 2014 for a total of 1,158 employment opportunities over the seven-year period. These annual employment changes are within the ranges experienced between 2000 and 2005. (see **Appendix E-1**, Table 9). These gradual changes in employment opportunities would occur throughout the Socioeconomic Study Area, thereby facilitating the assimilation into the regional economy, and would not be a significant change in total employment.

Changes in Business and Economic Activity

The percentage distribution for future commercial space is based on the existing patterns of employment throughout the Socioeconomic Study Area projected forward to the 2008 and 2015 planning periods. The demand for commercial space in the Socioeconomic Study Area could increase by approximately 51,040 square feet in 2009 as a result of increased economic activity linked to the availability of regional air service (see **Table 5.11-2**). This increase in commercial space would be about the size of a typical grocery store or small shopping center with 3 or 4 small businesses. This change in commercial development activity related to the Proposed Action in 2009 represents less than 1 percent of the total

commercial development within the Socioeconomic Study Area and would not be significant when considered in relation to existing and projected activity in the Socioeconomic Study Area.

The percentage distribution for future commercial space is based on the existing patterns of employment throughout the Socioeconomic Study Area projected forward to the 2008 and 2015 planning periods. The Socioeconomic Study Area could realize an increase in demand for commercial space of approximately 335,820 square feet by 2015 as a result of increased economic activity associated with increased visitation resulting from the Proposed Action (**Table 5.11-2**). This projected increase in commercial space is about the size of a regional shopping center if all the forecasted commercial space was built in one location at one time. The 2015 Proposed Action commercial space projection represents an increase of 4.4 percent from the square footage of commercial space projected under the 2015 No-Action Alternative. The 2015 Proposed Action commercial space would be built throughout the Socioeconomic Study Area over the seven-year period in relationship to the projected employment growth and is not a considered a significant change.

Population and Housing

In 2009, the increased economic activity associated with the Proposed Action could create the potential for an increase in population of approximately 252 residents throughout the Socioeconomic Study Area (see **Table 5.11-2**). The Town of Mammoth Lakes could gain the most residents (108), followed by Inyo County, which could gain an estimated 94 residents. It is projected that Mono County and the City of Bishop could gain 37 and 14 residents, respectively. The potential population gains in the Socioeconomic Study Area represent an increase of less than 1 percent over the levels that would occur under the No-Action Alternative, and there would be no substantial shift in population patterns.

Based on the projected growth in employment and possible increase in resident population, the Socioeconomic Study Area is projected to have 23,256 housing units by 2009, a total that represents 178 more units than projected for the No-Action Alternative (see **Table 5.11-2**). This projected number of additional new residences is less than 1 percent greater than the number projected under the No-Action Alternative, and is not significant in relation to the availability of existing and planned housing.

By 2015 implementation of the Proposed Action and the associated increased visitation could potentially result in an increase of 1,536 additional residents in the Socioeconomic Study Area when compared to the No-Action Alternative (see **Table 5.11-2**). This represents an increase of 4.47 percent. The Town of Mammoth Lakes is anticipated to gain the most residents in 2015 followed by Inyo County (less Bishop). The anticipated population gains in Mono County and the City of Bishop are substantially less than the other two jurisdictions. There would be no substantial shift in population patters.

Based on the projected growth in population under the Proposed Action, by 2015 the Socioeconomic Study Area is projected to have 25,638 housing units, a total of 1,098 more units than projected for the No-Action Alternative, an increase of 4.47 percent (see **Table 5.11-2**). The estimated capacity (number of dwelling units) of the available vacant land in the jurisdictions within the Socioeconomic Study Area is over 5,800 housing units. It is projected that nearly 64 percent of the 1,098 additional units would be located in the Town of Mammoth Lakes.

Ultimately, the actual distribution within the Town could be less as determined by availability of developable land rather than by other land use constraints and market value. Both Mono and Inyo counties, the City of Bishop and the Town of Mammoth Lakes have adopted land use policies and regulations. These land use regulations would ensure the compatibility of any residential or commercial development resulting from the initiation of regional air service.

Because the primary economic growth factors in the Socioeconomic Study Area are related to the tourist and resort industries, most of the additional employment opportunities linked to the Proposed Action would typically be service-sector jobs with lower than average salaries. The salary forecasts indicate that these wage earners may not earn annual incomes sufficient to support acquisition of market-rate housing in and around the Town of Mammoth Lakes. As a result, the demand for affordable workforce housing is anticipated to increase (see **Appendix E-1**). The projected potential changes in economic activity, employment opportunities, and population described here are likely to be realized only if an adequate supply of affordable workforce housing can be provided for new residents.

Public Service Demands

In 2009, the Proposed Action could increase employment in the Socioeconomic Study Area by 176 employment opportunities and the resident population could increase by up to 252 individuals. These increases are insignificant (less than 1 percent) with respect to the total employment and population within the Socioeconomic Study Area. As described in Section 4 of this EIS, existing public services within the Socioeconomic Study Area such as water supply and wastewater treatment presently have surplus capacity and would be able to accommodate the projected 2009 increase in demand.

In 2015, increased visitation associated with the Proposed Action could result in 1,158 additional employment opportunities and potentially result in 1,536 additional residents within the Socioeconomic Study Area. This represents approximately a 4.47 percent increase in the total employment and population within the Socioeconomic Study Area, as compared to the levels that would be reached under the No Action Alternative. Based on a review of the General Plans for local jurisdictions in the Socioeconomic Study Area, existing public services such as water supply and wastewater treatment presently have surplus capacity and would be able to fully accommodate the projected 2015 increase in demand. If the demand for additional affordable workforce housing is not met, the projected increase in residential population is not anticipated to occur to the degree discussed in this analysis.

Recreation and Natural Resources

The projected increase of 0.4 percent in the average number of Mammoth Lakes visitor days and the potential 0.76 percent increase in resident population across the Socioeconomic Study Area in 2009 are not projected to have any significant impact on recreational resources. According to Town of Mammoth Lakes November 2006 Community Plan Information Sheet concerning commercial air service, the Proposed Action is projected to primarily increase mid-week visitation when available recreation facilities, primarily the Mammoth Mountain Ski Area, are often underutilized. In 2009 the proposed air service would only occur during the winter season when access to the Devils Postpile National Monument, Yosemite Park via Tioga Pass, and numerous other campgrounds in the region would be closed because of snow. Impacts to these areas are not anticipated.

The projected increase of 2.4 percent in average Mammoth Lakes visitor days, and the potential 4.4 percent increase in resident population across the Socioeconomic Study Area in 2015, is also not projected to have a significant impact on recreational resources. The proposed air service during the winter season is projected to primarily increase mid-week visitation when available recreation facilities, primarily the Mammoth Mountain Ski Area, are often underutilized. The Devils Postpile National Monument, Yosemite Park via Tioga Pass, and numerous other campgrounds in the region would be closed because of snow, and impacts to these areas are not anticipated.

Summer visitors arriving by the proposed air service would represent a 0.4 percent increase in total summer visitor days at Mammoth Lakes. These additional visitors would likely utilize hotel and other rental accommodations and would be unlikely to add additional demand for facilities such as campsites, which are largely occupied by drive-in occupants utilizing campers and tents. The overall impact of the Proposed Action on recreational resources would not be significant.

The small increase in visitation (particularly in summer) and the potential small increase in resident population associated with the Proposed Action are not projected to have a significant impact on wildlife or other natural resources when considered in the context of the limited resident population and the large number of annual visitors to the region.

5.12 CUMULATIVE IMPACTS

FAA Order 1050.1E Sections 405f(1)(c) and 500c(2) require that cumulative impacts be addressed in this EIS. CEQ regulations at 40 CFR Section 1508.7 state that: "*Cumulative impact* is 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. Cumulative impact can result from individually minor but collectively significant actions taking place over a period of time." For the purposes of this EIS, concurrent actions have been separated into those projected to occur at MMH "on-airport," and those that are projected to occur in the vicinity of the Town of Mammoth Lakes, but not at the airport "off-airport."

5.12.1 Cumulative On-Airport Projects

No new facilities would be constructed under the Proposed Action. However, the Town of Mammoth Lakes plans to remodel the exterior and interior of the existing maintenance building for use as a passenger terminal. The passenger terminal would contain TSA facilities, baggage handling, customer services, rental cars, and food services within renovated structure. Portable restrooms and wash station facilities would be provided adjacent to the terminal. The existing fence at the terminal would be modified at the same location to allow for passenger processing and access to the airfield from the terminal. No additional pavement or other ground disturbing changes are anticipated as part of the Proposed Action. The town intends to complete a maintenance rehabilitation project of the existing runway within 2008.

5.12.2 Cumulative Off-Airport Projects

The Town of Mammoth Lakes adopted its revised General Plan (GP) and certified the associated Final Program Environmental Impact Report (FEIR) in August 2007. The GP and FEIR forecast an increase in

the maximum seasonal population of Mammoth Lakes (including residents and visitors) from the current level of approximately 35,000 to a future level of approximately 52,000. The GP implements an urban growth boundary within which all future population and development must be located.

The Town of Mammoth Lakes has identified 63 individual projects within the Town that may be developed by 2025 under the GP. Almost all of these projects are residential developments ranging from single-family residences to high-density multifamily, residential, or mixed-use projects. Descriptions of the individual projects are provided in **Table K-1** of **Appendix K**. The General Plan projects are projected to be completed by 2025, but the specific schedule for their implementation will depend on a variety of economic factors and cannot be projected at this time.

The FEIR also identifies 15 additional concurrent projects proposed in the general vicinity of the Town and MMH. These include five geothermal projects, six residential developments, one business park project, and three other projects. The locations of these projects are indicated in **Figure 5.12-1**. Summary descriptions of these projects are provided in **Table K-2** in **Appendix K**.

5.12.3 Assessment of Cumulative Impacts

The conversion of the maintenance building into a passenger terminal would have no measurable direct impacts on environmental resources.

The GP projects listed in **Tables K-1 and K-2** are currently planned for implementation with or without the establishment of passenger service. However, scheduled commercial air service was anticipated in the development of the GP and the associated FEIR. Thus, the potential for additive incremental impacts of the Proposed Action and the GP projects has been considered in both this EIS and the FEIR prepared by the Town.

For most of the environmental resources identified in FAA Order 1050.1E there is no potential for a cumulative impact when the GP projects are combined with the Proposed Action because:

- The same resources are not impacted by the Proposed Action and the cumulative projects, or
- The cumulative projects are not located close enough to the location of the Proposed Action to have an interactive impact.

The following topics were considered in more detail because of the potential for a cumulative impact of the Proposed Action and other on-going development: Socioeconomics/Induced Growth, Surface Traffic, Land Use, and Water Quality.

Environmental Impact Statement
Mammoth Yosemite Airport
Horizon Air Operations Specifications
Amendment Service to/from MMH

LEGEND

▲ Cumulative Project Locations

2.5 0 2.5 Miles

1:240,000

Sources:
-Town of Mammoth, 2005
-USGS, 1994
-URS Corporation, 2007

N W E S

Yosemite National Park
Grant Lake
Ansel Adams Wilderness
Rodeo Grounds Specific Plan
395
1
Rhyolite Plateau Geothermal Project
Upper Basalt Geothermal Project
Mammoth Rehab Fuelbreak Project
Benton Crossing Landfill
Sierra Business Park
Mammoth Lakes
MMH
Basalt Canyon Slim Hole & Geothermal Well Exploration and Basalt Canyon Geothermal Pipeline Projects
Casa Diablo Geothermal Plant
Crowley Lake
Lake Ridge Ranch
Crowley Lake Estates
John Muir Wilderness
Rimrock Ranch
395
C & L Development
6
Mesa
Pine Creek Communities
Round Lake
Lake Thomas A. Edison
Bishop
West Bishop

ADDITIONAL PROJECTS IDENTIFIED IN THE TOWN GENERAL PLAN FEIR

FIGURE 5.12-1

H:/projects/Mammoth_Lakes/12004269/Applications/mxd/Proposed Air Service/Figure 5.12-1, Cumulative Projects.mxd, {rpt: hde, 09/24/07}

Socioeconomics/Induced Growth

As described in **Section 5.11**, the Proposed Action at MMH will marginally increase job opportunities and the residential population in the SSA. The Proposed Action would accelerate economic growth in Mammoth Lakes within the limits established by the GP. While additional population and requirements for work force housing would result, a beneficial impact in terms of economic activity at Mammoth Lakes is anticipated. The Proposed Action would not result in significant additional changes to planned development anticipated in the GP. The Proposed Action and other planned developments would have a positive cumulative socioeconomic impact.

Surface Traffic

As discussed in **Section 5.3.4**, the Proposed Action would not significantly impact the Level of Service (LOS) A rating for U.S. 395. There is potential for a cumulative impact of the Proposed Action with the Sierra Business Park when it gets developed because both projects would generate additional traffic in the vicinity of MMH. The projected cumulative traffic levels would still remain low, such that no significant impacts on the level of service on U.S. 395 are anticipated. The expansion of the Benton Crossing Landfill would increase the capacity and lifespan of that facility, but would not itself result in increase associated daily traffic on U.S. 395 and Benton Crossing Road, which would be more dependent on the overall level of local residents and visitors.

Land Use

As stated in **Section 5.2** there are no residences or noise-sensitive land uses with the ASA and no property acquisition is planned as part of the Proposed Action. The remodeling of the terminal will not change the land use at the airport. The planned projects identified in the GP and FEIR will result in changes to existing land uses within, and in the vicinity of, Mammoth Lakes. The GP implements an urban growth boundary within which all future population and development must be located. The induced economic activity resulting from the Proposed Action may accelerate the rate at which some of this land use change occurs, but the specific schedule for most of the projects listed in **Section 5.12.2** is not presently known. The cumulative impact of these projects or land use will be limited by the provisions of the adopted General Plans of Mammoth Lakes and Mono County.

Water Resources and Quality

Most of the projects identified in the GP and the associated FEIR will result in additional demand for drinking water and wastewater treatment. Most would also result in changes to existing stormwater hydrology and quality. The cumulative impact of the Proposed Action and the projects described in **Section 5.12.2** may be an acceleration of the rate at which these demands increase or change occurs. However, the total amount of development and associated increases in demand will be limited by the adopted General Plans of Mammoth Lakes and Mono County.

The FEIR indicates that the existing Mammoth Community Water District wastewater treatment facilities have sufficient capacity to meet the requirements of the projected full buildout allowed under the GP. The FEIR indicates that additional groundwater supplies of drinking water and use of recycled water will need to be developed to support the future development levels projected under the GP with or without the Proposed Action. Failure to provide the necessary additional water supply would limit development under

the GP. Town and state regulations regarding stormwater management will reduce the impacts of the projects development on surface water quality.

Recreation and Natural Resources

The cumulative impact of the Proposed Action and the cumulative projects on recreation and natural resources would be a slight acceleration in the rate of future increases in levels of visitation to Mammoth Lakes and the rate of future land use changes within the Town of Mammoth lakes. These are discussed above and in Section 5.11 of this EIS.