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REPORT

DOCUMENTATION IN SUPPORT OF A NEPA CATEGORICAL EXCLUSION DETERMINATION FOR A PROPOSED CURFEW AT BOB HOPE AIRPORT

Bob Hope Airport

Prepared for

Burbank-Glendale-Pasadena Airport Authority
Burbank, California

BURBANK-GLENDALE-PASADENA AIRPORT AUTHORITY
ORGANIZED JUNE 21, 1977

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1.0 INTRODUCTION

The Burbank-Glendale-Pasadena Airport Authority (the Authority) has prepared a Federal Aviation Regulation (FAR) Part 161 Application documenting its need for and the potential impacts of a curfew on nighttime operations at Bob Hope Airport (the Airport or BUR).

Contact information for the Airport Authority is noted below:

Burbank-Glendale-Pasadena Airport Authority
Bob Hope Airport
2627 Hollywood Way
Burbank, CA 91505

Executive Director: Dan Feger, phone – 818-840-8840, email -- dfeger@bur.org.

1.1 Documentation in Support of a Categorical Exclusion under NEPA

Among the requirements of FAR Part 161 is that the airport sponsor must submit to the Federal Aviation Administration (FAA) with its application "an adequate environmental assessment… or adequate information supporting a categorical exclusion in accordance with FAA orders and procedures…"* The FAA, in turn, consistent with the *National Environmental Policy Act* (NEPA), will make its decision on the Authority's proposed curfew. This document constitutes the Authority's information supporting a categorical exclusion for FAA approval of a proposed curfew. This material documents the lack of any significant adverse environmental impacts associated with implementation of the proposed curfew.

In its comments on the Draft FAR Part 161 Application, FAA staff raised concerns about the potential impact of the proposed curfew on noise at airports to which traffic from Bob Hope Airport would be shifted. The FAA also expressed concerns about the potential impact on air quality caused by the shifts in aircraft operations and the related changes in ground transportation.

This report includes detailed quantitative analyses of the effects of the proposed curfew on air quality in the Los Angeles Region and on noise at two airports that are projected to receive the greatest numbers of operations shifted from Bob Hope Airport because of the curfew. It also discusses potential effects on all other environmental resource categories required to be evaluated under FAA Order 1050.1E.

*FAR Part 161, Subpart D, Section 161.305 (c).

The Authority's FAR Part 161 Application includes detailed evaluations of three different curfews – a full curfew, which is the Authority's proposed action, a departure curfew, and a noise-based curfew. The departure and noise-based curfews would produce less noise reduction at Bob Hope Airport and would result in a lower level of impact on other airports than the full curfew. This environmental documentation evaluates the effects of the full curfew only. From the standpoint of potential environmental impacts in the environs of other airports, this represents the "worst case" among the three curfew alternatives considered in the Authority's Application. This evaluation finds no significant adverse impacts attributable to the full curfew, thus it is clear that neither the departure curfew nor the noise-based curfew would create any significant adverse impacts.

1.2 California Environmental Policy Act (CEQA)

Prior to adopting the proposed curfew, the Authority is obligated to undertake the studies and evaluations required by CEQA. The Authority intends to conduct these studies after the FAA makes its determination whether to approve a nighttime restriction at the Airport, but prior to the Authority adopting the proposed curfew.

1.3 Summary Conclusion

Briefly, the analysis set foth below shows that there will be no significant environmental impact from the proposed restrictions. The analysis of the air quality impact arising from shifted flights within the Los Angeles region, employing the FAA's Emissions and Dispersion Modeling System (EDMS), shows impacts below the de minimis impact threshold (under the standards endorsed by the FAA) on air quality. The analysis of the noise impact from shifted flights at those airports, employing the FAA's Integrated Noise Model (INM), shows a CNEL dB change of less than 1.5 dB (the criteria for "significant impact" endorsed by the FAA) at both the Van Nuys and LA/Ontario International airports. In short, this evaluation finds no significant adverse impacts either to air quality or noise attributable to the full curfew, thus it is clear that neither the departure curfew nor the noise-based curfew would create any significant adverse impacts.

2.0 DESCRIPTION OF PROPOSED ACTION

The proposed Federal action is FAA approval of the curfew proposed by the Authority, pursuant to the requirements of FAR Part 161, Subpart D.

The Authority proposes to adopt a curfew prohibiting all takeoffs and landings at Bob Hope Airport from 10:00 p.m. through 6:59 a.m., subject to specific exceptions associated with exigent circumstances. Among the alternatives considered in the Part 161 Application, the proposed curfew would most fully achieve the Authority's noise reduction goal – "to eliminate or significantly reduce nighttime flight noise at the Airport now and in the future."

3.0 PURPOSE AND NEED FOR PROJECT

The purpose and need for the curfew is summarized in this section. Chapters 2 and 5 in the FAR Part 161 Application describe in detail the conditions that have led the Authority to pursue a mandatory curfew.

Significant public concern exists, and has existed for decades, about aircraft noise at Bob Hope Airport. Nighttime noise, in particular, has been a cause of public concern. These concerns have been registered in a variety of forums through the years. The Authority has determined that nighttime noise is the part of the noise problem that most urgently needs to be addressed.

The Authority has taken many actions to promote noise abatement and land use compatibility since its creation in 1978. The Airport completed its first Part 150 Study in 1989 with an update in 1999. The updated noise compatibility plan (NCP) recommended 29 measures to prevent the introduction of additional incompatible land uses and to reduce the effect of the noise generated at the Airport. These recommendations included twelve noise abatement measures, four noise mitigation measures, seven land use measures, and six program management measures. In support of the NCP, the Authority has implemented a two-track noise program: noise abatement (principally its voluntary curfew) to reduce aircraft noise exposure over residential neighborhoods, and noise mitigation (principally the residential acoustical treatment program) to reduce the impact of noise on people and dwellings. While these two programs, together, have substantially reduced the number of non-compatible dwellings around the Airport, a nighttime noise problem persists and is projected to increase at the Airport through 2015.

The Authority must also comply with California State Noise Law, which requires proprietors of airports with a defined noise problem (incompatible land uses within the 65 CNEL contour) to develop programs to reduce and ultimately eliminate the noise problem. Airports with noise problems are permitted to operate only if they obtain a variance from the California Department of Transportation (CALTRANS), which requires the airport to develop and implement programs to reduce the noise impact area. Accordingly, a number of variances have been issued by CALTRANS, with the most recent approved in March 2008.

Based on the 2008 baseline noise analysis, 255 acres of noise-sensitive land use (residential, schools and preschools, and places of worship) are within the 65 CNEL contour. By 2015, the noise-sensitive area within the 65 CNEL contour is projected to increase to 383 acres. Additionally, an estimated 4,825 people currently reside within the 65 CNEL contour and is projected to increase to 8,217 in 2015. See Appendix B in the FAR Part 161 Application, Section B.3.6 and Table B-26, for additional details on noise impacts at the Airport.*

*Thus, this number is not at odds with the current actual measurements of the airport's noise impact area as that calculation is based, pursuant to California state law, on actual noise monitoring and the definition of "noise impact area" set forth in the California Noise Standards.

Evidence of the contribution of nighttime noise to the noise problem is indicated by the magnitude of reduction in the size of the noise contour with the elimination or substantial reduction of nighttime aircraft activity. With a full curfew, the total area within the 65 CNEL contour would immediately be reduced by 35% and the noise-sensitive area within the contour by 55%. The Authority seeks to reduce nighttime noise events to reduce the noise affected popultation now and in the future

4.0 APPLICABLE FEDERAL ACTION AND CATEGORICAL EXCLUSION

FAA Order 5050.4B, Table 6-2, describes the applicable FAA action as approval of a proposed airport action "to restrict Stage 3 aircraft operations under 14 CFR, Part 161." FAA Order 1050.1E, Paragraph 307u, describes approval under 14 CFR Part 161 of a restriction on the operations of Stage 3 aircraft as an action that may be categorically excludedfrom a formal environmental review, provided that it does not have the potential to significantly increase noise at the airport submitting the restriction proposal or at other airports to which restricted aircraft may be shifted.

5.0 REVIEW OF EXTRAORDINARY CIRCUMSTANCES

Although approval of a restriction on Stage 3 aircraft operations at an airport is nominally eligible for a categorical exclusion, FAA Order 1050.1E, Section 304 notes that in some situations, extraordinary circumstances may exist that require a more thorough environmental investigation.

> "Some actions that would normally be categorically excluded could require additional environmental analysis to determine the appropriate NEPA documentation. A determination of whether the proposed action that is normally categorically excluded requires an EA or EIS depends on whether the proposed action involves extraordinary circumstances."

This section considers the potential for extraordinary circumstances to exist with respect to any of the environmental resource categories required to be considered under FAA Orders 1050.1E and 5050.4B. The FAA's comments on the draft Application raised the issue that extraordinary circumstances might be presented because of shifting of flights to airports that would likely result from a nighttime restriction. Pursuant to a scope of work provided to the FAA (see Appendix A), the Authority's consultant analyzed the impact of the shifting of flights to the two airports likely to receive the majority of shifted flights (Van Nuys Airport and LA/Ontario International Airport) (see Appendix B). As described in detail below, this analysis determined that the environmental impact of projected shifted flights would fall well below the threshold for significant impact endorsed by the FAA.

5.1 Aircraft Noise*

This analysis examines the effect of the flights shifted from Bob Hope Airport on noise at Van Nuys Airport and LA/Ontario International Airport. This includes a

*See FAA Order, 1050.1E, Paragraph 304f.

presentation of noise exposure for forecast operational levels in 2008 and 2015. For each year, forecasts are presented for two alternative scenarios: (1) baseline conditions, assuming no additional noise restrictions at Bob Hope Airport; and (2) conditions assuming implementation of a full curfew on nighttime flights at Bob Hope Airport.

The source data for these analyses are described in greater detail in the Part 161 Application, primarily in Chapter 4, the Benefit Cost Analysis, and Appendix B, Aircraft Noise Analysis.

5.1.1 Noise Methodology

Los Angeles World Airports (LAWA) noise office provided Jacobs Consultancy with the INM input files that represented conditions at Van Nuys and LA/Ontario International Airport for the year 2006. The data in the input files were verified for reasonableness and used as the basis for the noise analysis.

The noise analysis described in this chapter was conducted using Version 6.2 of INM. This is the version in which the LAWA INM files were provided and, in its essential aspects, is the same as Version 6.2a, which was used for the noise analyses undertaken for the FAR Part 161 Application (described in Appendix B). *

The original version of the INM was developed by the Transportation Systems Center of the U.S. Department of Transportation, and the model has been under continuous refinement since then. The FAA has used INM as the standard instrument for determining airport noise impact since 1978. The INM includes sets of algorithms describing sound propagation and attenuation over distance. It also includes an extensive database of noise-thrust-distance relationships for most civil aircraft, and many military aircraft, operating in the United States. The INM works by mathematically computing noise exposure for each aircraft type and engine thrust level along each flight track and then developing contours of the cumulative noise exposure levels using the selected noise metric.

The INM requires considerable user-supplied input data. Input data include:

- Airfield description
- Airport elevation
- Average annual temperature and relative humidity
- Study area terrain mapping

*Version 6.2a corrected a minor software problem in the Detail Grid Reporting function (which was not used for this environmental analysis) and provided updated noise/performance data for selected air carrier aircraft. None of the affected aircraft operate at Van Nuys or would shift to Van Nuys with a curfew at Bob Hope Airport, nor would any of the affected aircraft shift to LA/Ontario Airport with a curfew at Bob Hope Airport. As such, the use of INM Version 6.2 would yield the same results as Version 6.2a for this analysis. See the FAA's release notes for INM Version 6.2a, www.faa.gov/about/office_org/headquarters_offices/aep/models/inm_model/inm6_2a/.

- Aircraft operations by aircraft type and time-of-day
- Departure and arrival flight tracks
- Climb and descent profiles
- Average runway use

The metric used in this analysis to portray the noise contours is the community noise equivalent level (CNEL). CNEL is a noise metric designed to show the cumulative noise level in an area for an average 24-hour period during any given year. CNEL levels are computed by summing all noise events occurring in a 24-hour period. An extra weight of 4.8 dB is added to evening events (after 7:00 p.m. and before 10:00 p.m.) and 10 dB is added to nighttime events (after 10:00 p.m. and before 7:00 a.m.). CNEL is similar to the more widely used day-night average sound level (DNL), which also includes the 10 dB weighting factor for nighttime noise but not the 4.8 dB weight for evening events. The FAA accepts the use of CNEL for noise studies in California since the use of that metric is required by California law for airport noise studies.

5.1.2 Van Nuys Airport Noise Analysis

5.1.2.1 Input Assumptions For Baseline Scenarios, Without Additional Operating Restrictions

The 2006 baseline, which represents actual conditions for the year 2006, serves as the origin for the baseline cases for both forecast years. It was assumed that data derived from the INM input files for 2006 such as airfield definition, flight tracks, fleet mix and runway use remained consistent for the years 2008 and 2015. The general aviation fleet mix was assumed to remain the same in the years 2008 and 2015. The only data that is expected to change is the number of aircraft operations.

The annual forecast operations for Van Nuys in 2008 and 2015, as presented in the FAA's 2007 Terminal Area Forecast (TAF), were used as the forecast operations totals for the 2008 and 2015 baseline noise analyses. Because the INM uses average annual day (AAD) conditions to produce CNEL contours, the number of projected annual operations was divided by 365 (the number of days in the year).

Based on the data in the LAWA INM input files for Van Nuys, there were 987 daily operations in 2006. Using the approach described above, approximately 948.02 AAD operations were calculated for the 2008 baseline forecast and 1001.9 operations for the 2015 baseline forecast.

5.1.2.2 Input Assumptions for Scenarios with Full Curfew at BUR

Operations that would shift to Van Nuys Airport due to the implementation of a full curfew at Bob Hope Airport were estimated as documented in Appendix AA of Technical Report 1, Aviation Demand Forecasts and as described in Chapter 10 of the Part 161 Application. It is projected that in response to a full curfew at Bob Hope

Airport, 18.59 average daily operations would shift to Van Nuys in 2008 and 33.17 in 2015.

Operations shifted to Van Nuys Airport were assumed to follow the same flight profiles and have the same runway and flight track assignments as similar aircraft types currently operating at Van Nuys Airport. These data were derived from the 2006 INM files provided by LAWA and were kept constant for the 2008 and 2015 analyses.

Operations shifted to Van Nuys were distributed among day, evening, and nighttime periods based on the analysis of shifted operations described in Appendix AA of Technical Report 1, Aviation Demand Forecasts, and summarized in Chapter 10.

The annual operations for baseline and full curfew scenario are presented by aircraft type in Table 1.

5.1.2.3 VNY Noise Modeling Results

The INM input data were used to generate noise modeling results in the form of noise contours and grid analyses. The grid analyses were undertaken to develop estimates of the change in noise exposure using the CNEL metric. The noise contours were used to develop generalized noise impacts.

Figure 1 presents noise exposure contours for the 2008 and 2015 forecasts based on the assumption that the full curfew has been implemented at Bob Hope Airport. The baseline contours for the respective years are also shown for comparison.

The 2008 baseline 65 CNEL contour covers about 1,352 acres and extends to Tupper Street to the north and the Sepulveda dam recreation area to the south. The 2015 baseline contours are larger than the 2008 contours because of the projected increase in operations. The 65 CNEL contour for the 2015 baseline covers about 1,408 acres.

The 2008 full curfew 65 CNEL contour extends approximately to Plummer Street to the north. The 65 CNEL contour covers an area of 1,463 acres. This is an increase of 111 acres (8.2%) compared to 2008 baseline conditions.

Table 1

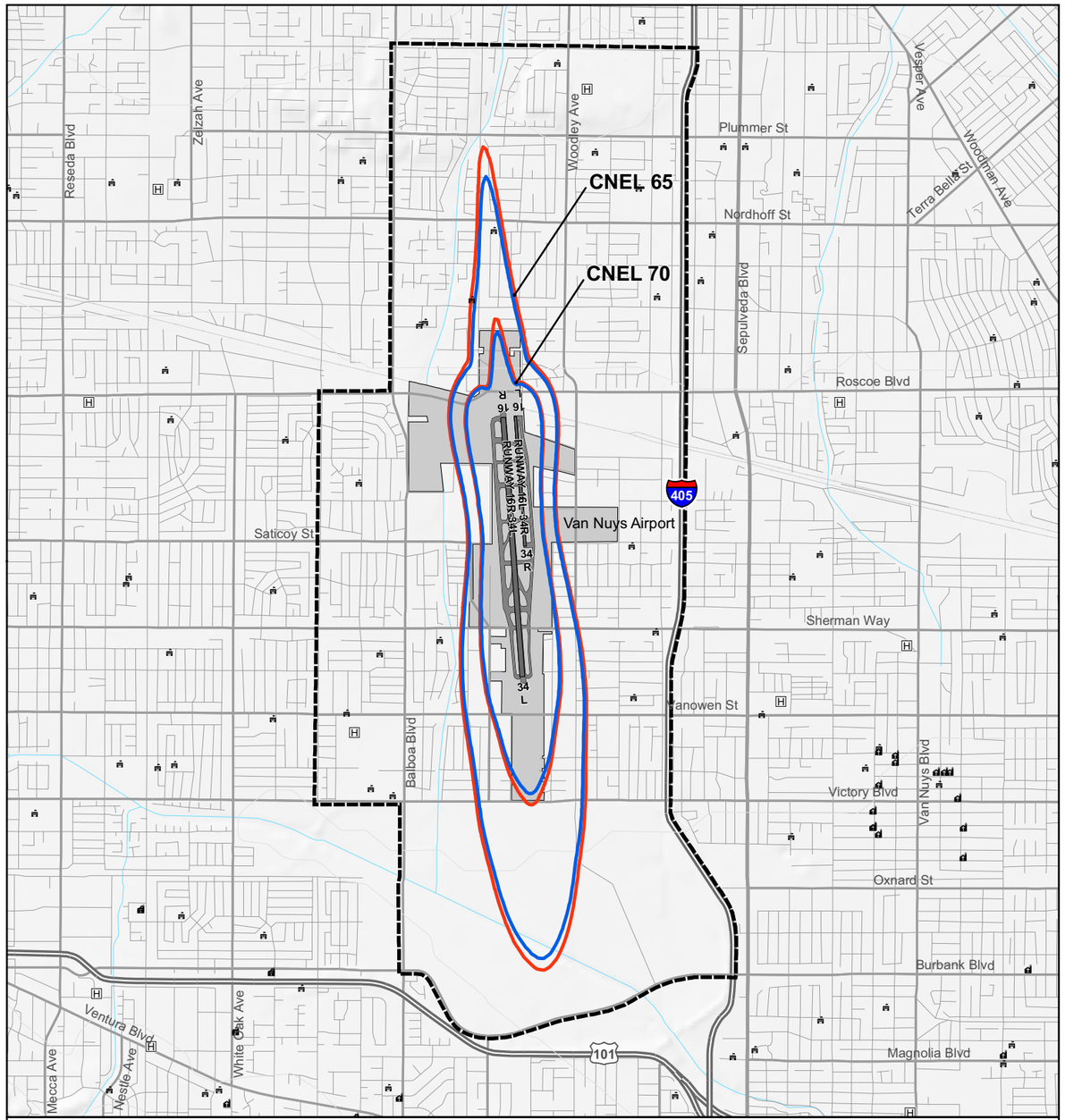
ANNUAL OPERATIONS BY AIRCRAFT TYPE AT VNY
Bob Hope Airport FAR Part 161 Study

Engine Type	Aircraft Type	2008 Baseline	2008 Shifted with Curfew	2008 Total with Curfew	2015 Baseline	2015 Shifted with Curfew	2015 Total with Curfew
Jet	Boeing 737-700	472	0	472	498	0	498
	Boeing 737-800	36	0	36	38	0	38
	McDonnell-Douglas SkyWarrior	82	0	82	88	0	88
	Airbus A319	2	0	2	2	0	2
	Airbus A320	12	0	12	12	0	12
	A-7 Corsair II	12	0	12	12	0	12
	Cessna Citation III	610	24	634	646	52	698
	Canadair Challenger 600	4,492	72	4,564	4,746	146	4,892
	Canadair Challenger 601	360	202	562	380	390	770
	Cessna Citation II	2,274	148	2,422	2,402	282	2,684
	Cessna 550 Citation Bravo	2,490	0	2,490	2,632	0	2,632
	Cessna 560 Citation V	396	476	872	418	926	1,344
	Cessna 650 Citation	0	4	4	0	8	8
	Cessna Citation X	2,858	214	3,072	3,020	402	3,422
	Dassault Falcon 20	510	10	520	540	26	566
	Dassault Falcon 20A	0	86	86	0	162	162
	Gulfstream GII	2,892	98	2,990	3,058	244	3,302
	Gulfstream GIIB	1,924	94	2,018	2,034	236	2,270
	Gulfstream GIV-SP	4,912	468	5,380	5,192	852	6,044
	Gulfstream GV	2,346	282	2,628	2,480	516	2,996
	Israel 1124 Westwind	0	214	214	0	390	390
	Israel 1125 Gulfstream 100	274	70	344	290	130	420
	Learjet 25	4,238	44	4,282	4,480	110	4,590
	Learjet 35	9,668	2,184	11,852	10,218	3,196	13,414
	Learjet 55	0	92	92	0	140	140
	Learjet 45	0	46	46	0	94	94
	Learjet 60	0	64	64	0	122	122
	McDonnell-Douglas 80	56	0	56	60	0	60
	Mitsubishi MU-300 Diamond	898	0	898	948	0	948
	Very Light Jet	0	56	56	0	1,356	1,356

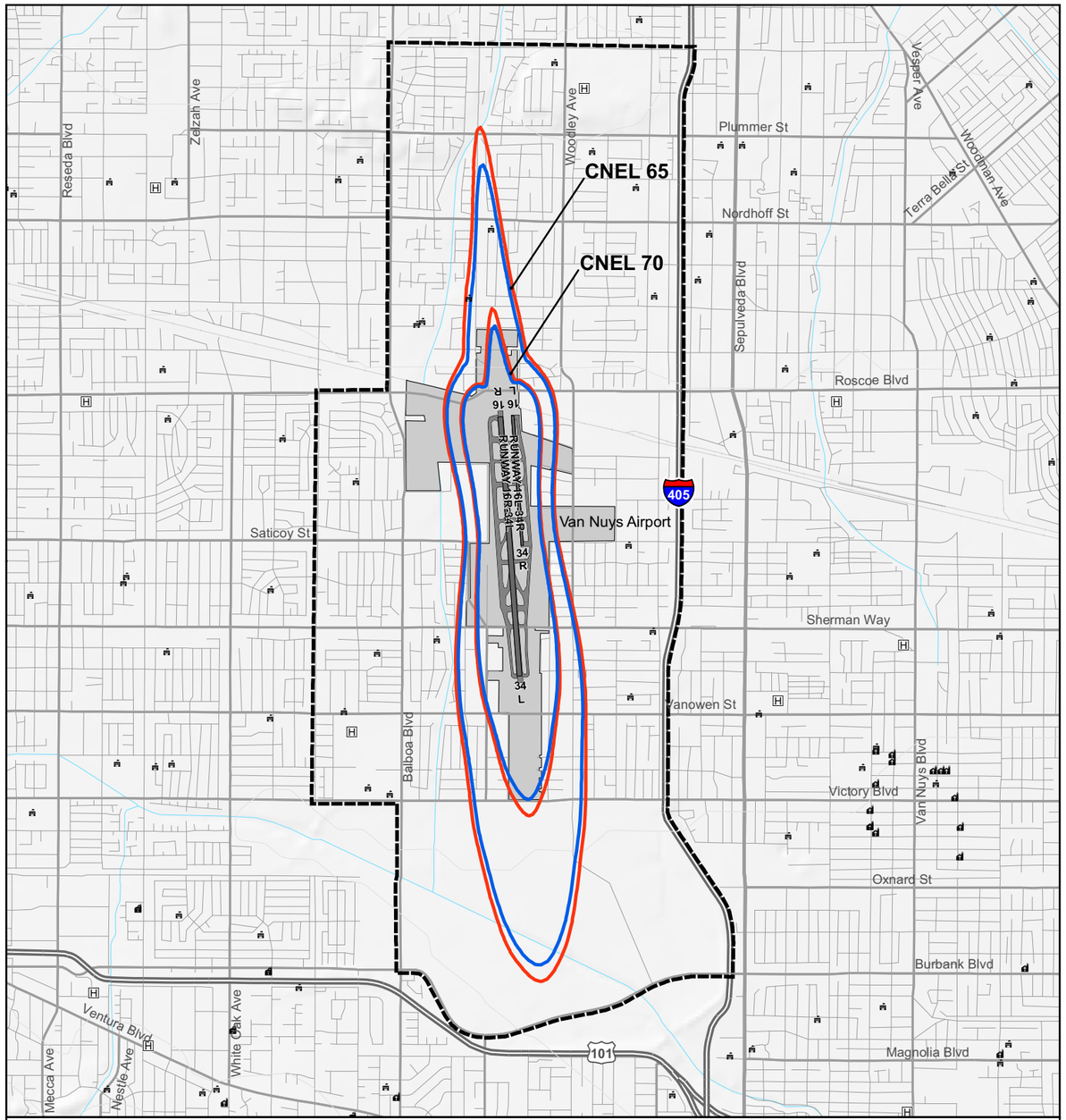
Table 1 *(continued)*

ANNUAL OPERATIONS BY AIRCRAFT TYPE AT VNY
Bob Hope Airport FAR Part 161 Study

Engine Type	Aircraft Type	2008 Baseline	2008 Shifted with Curfew	2008 Total with Curfew	2015 Baseline	2015 Shifted with Curfew	2015 Total with Curfew
Turboprop	Lockheed Hercules C130	4	0	4	4	0	4
	Cessna Conquest II	42,134	106	42,240	44,532	144	44,676
	Convair CV-580	80	0	80	84	0	84
	Bombardier Dash 8	6,450	1,696	8,146	6,818	2,080	8,898
	Bombardier Dash 6	20	2	22	22	10	32
	Embraer 120	70	0	70	74	0	74
	Hawker-Siddely 748	200	0	200	212	0	212
	Shorts SD330	2,712	0	2,712	2,866	0	2,866
	Saab 340	242	0	242	254	0	254
Piston	Beech 1900	0	22	22	0	54	54
	Beech Baron 58P	46,254	0	46,254	48,886	0	48,886
	Beech King Air C90	0	14	14	0	40	40
	Cessna 172	103,456	0	103,456	109,344	0	109,344
	Cessna 177	140	0	140	148	0	148
	Cessna 206	36,970	0	36,970	39,074	0	39,074
	Cessna T206H	2,190	0	2,190	2,316	0	2,316
	McDonnell-Douglas DC-3	40	0	40	42	0	42
	General Aviation - Single Engine Single Pitch	6,750	0	6,750	7,136	0	7,136
	General Aviation - Single Engine	56,500	0	56,500	59,716	0	59,716



Forecast 2008



Forecast 2015

LEGEND

- Baseline CNEL contour
- CNEL contour with full curfew at BUR
- Land Use Study Area
- Freeways
- Roads
- Schools, Preschools
- Places of Worship
- Hospital
- Library
- Airport Boundary

Source:
Noise analysis by Jacobs Consultancy, 2008.
Land use data from Los Angeles County Assessor, 2008.

NORTH

0 1,150 2,300 4,600 Feet

Figure 1
CHANGE IN NOISE EXPOSURE AT VAN NUYS WITH FULL CURFEW AT BOB HOPE AIRPORT
FAR Part 161 Study for Bob Hope Airport
January 2009

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The 2015 full curfew 65 CNEL contour is somewhat larger than the 2015 contour, crossing Plummer Street to the north. The 65 NEL contour covers 1,562 acres, an increase of 154 acres (10.9%) compared to 2015 baseline conditions.

In addition to noise contours, CNEL values were computed at a network of grid points for the baseline and the full curfew cases. The difference in the CNEL values between the full curfew and baseline case at each point were computed to quantify the magnitude of increased noise with the full curfew at Bob Hope Airport.

Figure 2 shows the increase in CNEL values for the 2008 and 2015 full curfew case as compared to the baseline cases. The maximum increase in the CNEL metric at any point within the 65 CNEL contour is 0.7 dBA in 2008 and 0.9 dBA in 2015. These levels are below the FAA's threshold of significant noise impact – 1.5 dBA at or above the 65 CNEL level.*

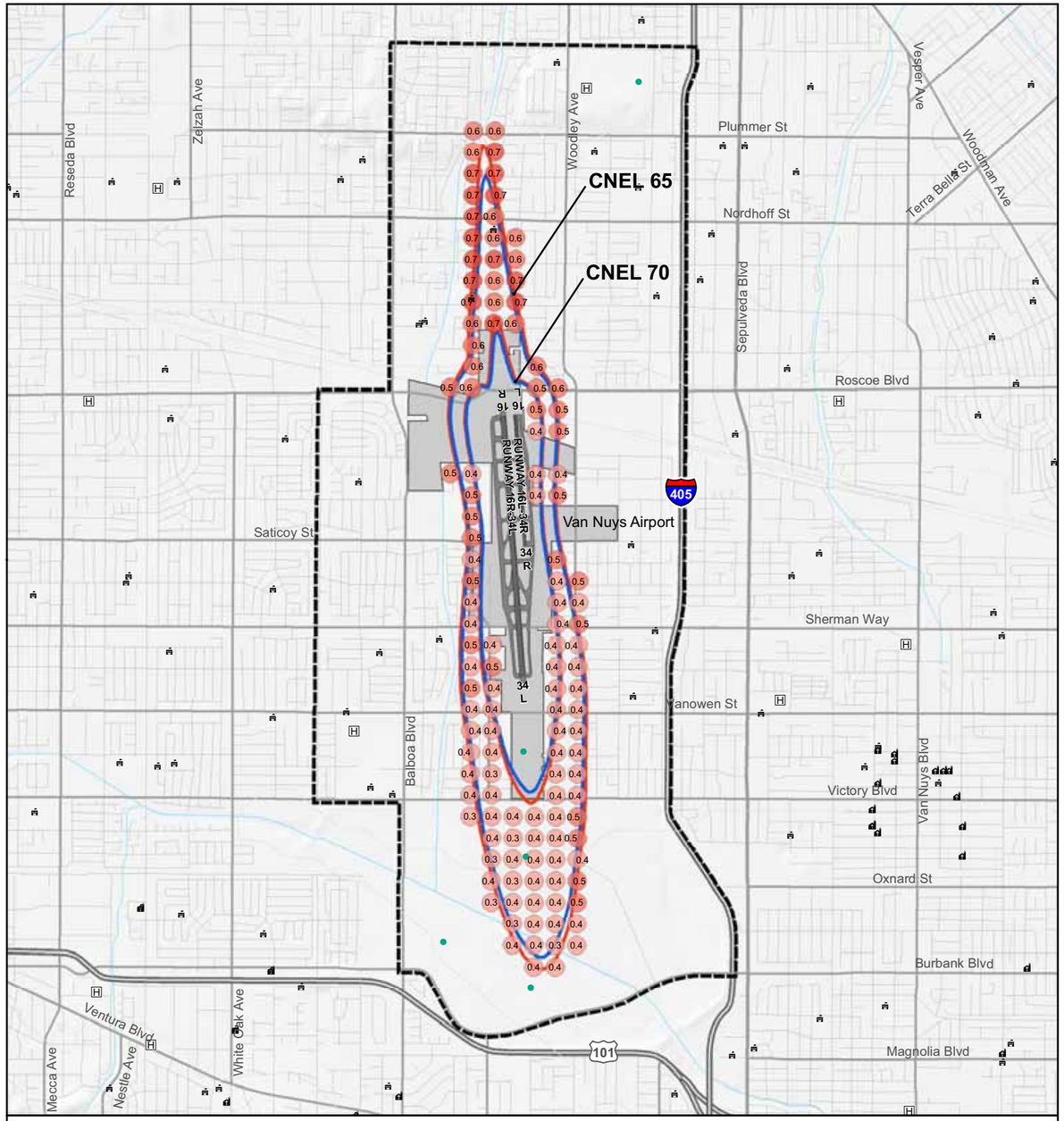
5.1.3 LA/Ontario International Airport Noise Analysis

5.1.3.1 Input Assumptions for Baseline Scenarios, without Additional Operating Restrictions

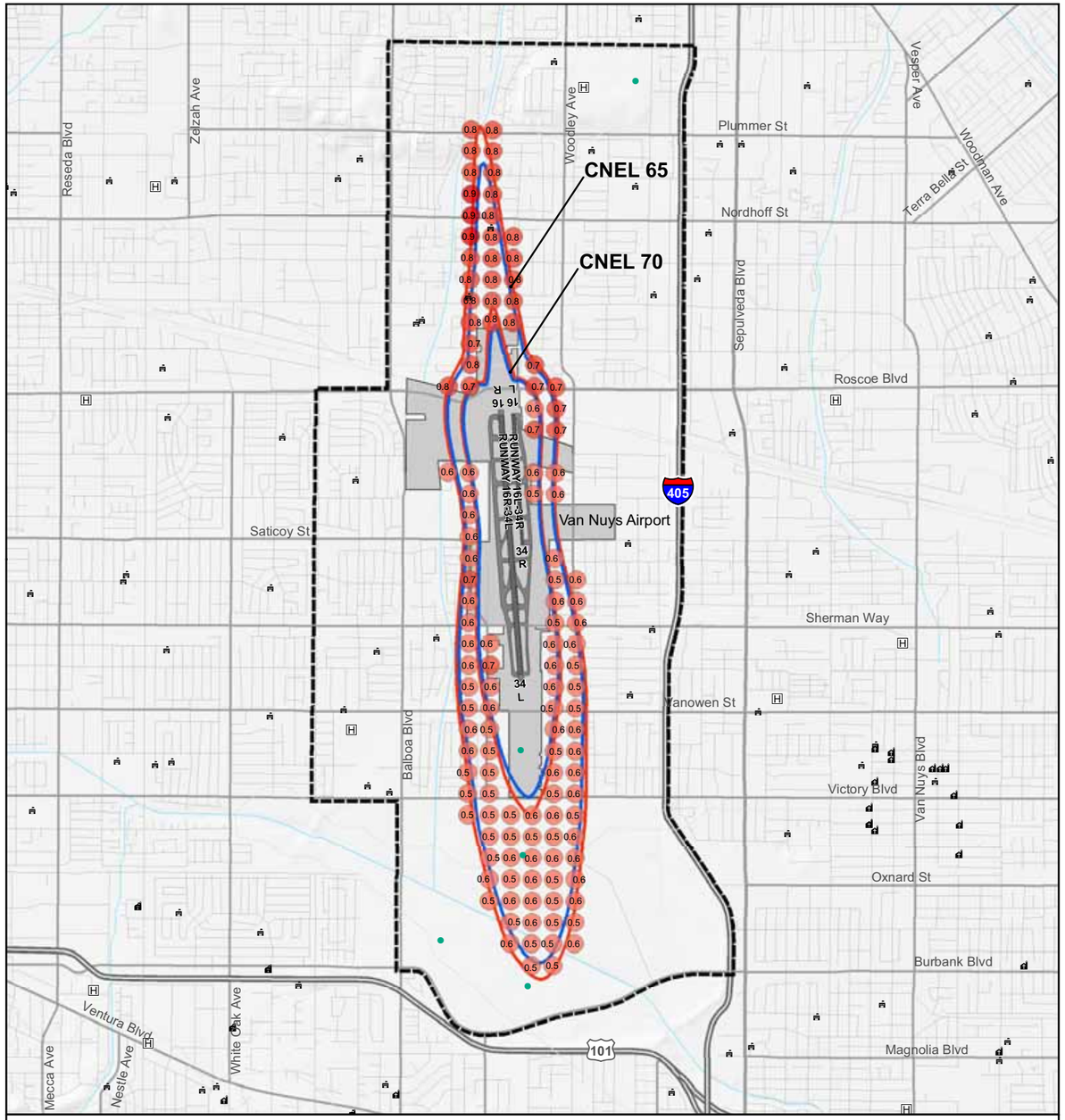
The 2006 baseline, which represents actual conditions for the year 2006, was used as the starting point to estimate operations for both forecast years. It was assumed that airfield descriptions, flight tracks, and runway use remained consistent for the years 2008 and 2015. However, fleet mix and the number of aircraft operations were the two parameters that were changed.

Annual forecast operations for LA/Ontario in 2008 and 2015 presented in the FAA's 2007 FAA Terminal Area Forecast (TAF) were used for the baseline 2008 and 2015 noise analyses. The annual totals were divided by 365 to yield operations per average annual day. Based on the LAWA INM data, there were 373.9 daily operations in 2006. Based on the FAA's TAF forecast, there would be 401.3 daily operations in 2008 and 435.3 in 2015.

*FAA Order 1050.1E, Appendix A, Section 14.3.



Forecast 2008



Forecast 2015

LEGEND

Increase in CNEL

- 0.0 to 0.2 dBA
- 0.3 to 0.4 dBA
- 0.5 to 0.6 dBA
- 0.7 to 0.8 dBA
- 0.9 dBA and More

- Baseline CNEL contour
- CNEL contour with full curfew at BUR
- Land Use Study Area
- Freeways
- Roads

- Schools, Preschools
- Places of Worship
- Hospital
- Library
- Airport Boundary

NORTH

0 1,050 2,100 4,200 Feet

Source:
Noise analysis by Jacobs Consultancy, 2008.
Land use data from Los Angeles County Assessor, 2008.

Figure 2
INCREASE IN CNEL AT VAN NUYS WITH FULL CURFEW AT BOB HOPE AIRPORT
FAR Part 161 Study for Bob Hope Airport
January 2009

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Airport Management Consulting

The fleet of aircraft described in the LAWA data for 2006 was used as a starting point for the 2008 and 2015 fleet mix projections. Changes were made for the two forecast years reflecting up-to-date knowledge of the aircraft upgrade and phase-out plans for individual airlines and cargo operators. (The general aviation fleet mix was assumed to remain the same for the years 2008 and 2015.) The following assumptions were made to account for fleet mix changes in 2008 and 2015.

- MD80 Phase-out - The share of MD80s was reduced to reflect the plans of American and Alaska airlines to retire MD80s from their fleets. The share of MD80s removed from the fleet was added directly to the share of B-737-800 aircraft in the LA/Ontario fleet. That is the aircraft that both airlines have designated to replace the MD80.

- B-727 Phase-out - The share of B-727 aircraft was eliminated in 2015 to reflect the plans of UPS to retire the B-727 from their fleet in 2008. They will be replaced by B-767-300 aircraft.

- Reduction in Embraer 120 - The share of Embraer 120 turboprop aircraft was reduced in 2008 to reflect reductions reported in the *Official Airline Guide* (OAG) since 2006. The Canadair Regional Jet was used in place of the reduced Embraer-120 operations.

5.1.3.2 Input Assumptions for Scenarios with Full Curfew at BUR

Based on the analysis described in Appendices AA and BB in Technical Report 1, Aviation Demand Forecasts, and summarized in Chapter 10, it is projected that 17.36 average daily operations would shift to LA/Ontario in 2008 and 16.28 in 2015 with adoption of a full curfew at Bob Hope Airport.

Operations shifted to LA/Ontario International Airport were assumed to follow the same flight profiles and have the same flight track and runway assignments as similar aircraft types currently operating at LA/Ontario International Airport. These data were derived from the 2006 INM files provided by LAWA and were kept constant for the 2008 and 2015 analyses.

Operations shifted to LA/Ontario were distributed among day, evening, and nighttime periods according to the analysis of shifted operations described in Appendix AA (for Ameriflight) and Appendix BB (for air carrier operations) of Technical Report 1, Aviation Demand Forecasts, and summarized in Chapter 10.

The annual operations for baseline and full curfew scenario are presented by aircraft type in Table 2.

Table 2

ANNUAL OPERATIONS BY AIRCRAFT TYPE AT ONT
Bob Hope Airport FAR Part 161 Study

Engine Type	Aircraft Type	2008 Baseline	2008 Shifted with Curfew	2008 Total with Curfew	2015 Baseline	2015 Shifted with Curfew	2015 Total with Curfew
Jet	Boeing 727-100	147	0	147	0	0	0
	Boeing 727-200	734	0	734	0	0	0
	Boeing 737-300 GE1	27,319	0	27,319	14,817	0	14,817
	Boeing 737-300 GE2	880	0	880	956	0	956
	Boeing 737-400	2,852	0	2,852	3,092	0	3,092
	Boeing 737-500	2,771	0	2,771	3,006	0	3,006
	Boeing 737-700	7,454	0	7,454	34,582	0	34,582
	Boeing 737-800	5,128	0	5,128	12,404	0	12,404
	Boeing 737-200 LGW Hushkit	10,771	0	10,771	0	0	0
	Boeing 747-100	1,027	0	1,027	1,114	0	1,114
	Boeing 747-200	844	0	844	916	0	916
	Boeing 747-400	10	0	10	12	0	12
	Boeing 757-300	32	0	32	34	0	34
	Boeing 757-200 PW	5,996	0	5,996	6,502	0	6,502
	Boeing 757-200 RR	16	0	16	16	0	16
	Boeing 767-300	4,528	0	4,528	5,868	0	5,868
	Boeing 767-200 CF6	734	0	734	798	0	798
	Boeing 767-200 JT9	1	0	1	1	0	1
	Airbus A300-200	6	0	6	6	0	6
	Airbus A300-622	2,650	0	2,650	2,873	0	2,873
	Airbus A310	41	0	41	44	0	44
	Airbus A319	594	0	594	643	0	643
	Airbus A320-232	9,901	0	9,901	10,740	0	10,740
	A-7 Corsair II	46	0	46	50	0	50
	Cessna Citation III	322	0	322	350	0	350
	Canadair Challenger 600	780	0	780	846	0	846
	Canadair Challenger 601	11,412	0	11,412	17,868	0	17,868
	Cessna Citation II	1,020	0	1,020	1,106	0	1,106
	Cessna 550 Citation Bravo	798	0	798	866	0	866
	Cessna 560 Citation V	548	0	548	596	0	596
	Cessna Citation X	588	0	588	638	0	638
	McDonnell-Douglas DC-10-10	2,066	0	2,066	2,240	0	2,240
	McDonnell-Douglas DC-10-30	6	0	6	6	0	6
	McDonnell-Douglas DC-8-70	838	0	838	908	0	908
	McDonnell-Douglas DC-8-60	334	0	334	362	0	362
	McDonnell-Douglas DC-9-30	8	0	8	8	0	8

Table 2 *(continued)*

ANNUAL OPERATIONS BY AIRCRAFT TYPE AT ONT
Bob Hope Airport FAR Part 161 Study

Engine Type	Aircraft Type	2008 Baseline	2008 Shifted with Curfew	2008 Total with Curfew	2015 Baseline	2015 Shifted with Curfew	2015 Total with Curfew
Jet	Embraer 145	10	0	10	10	0	10
	Dassault Falcon 20	382	0	382	414	0	414
	Gulfstream GII	188	0	188	204	0	204
	Gulfstream GIIB	410	0	410	446	0	446
	Gulfstream GIV-SP	368	0	368	400	0	400
	Gulfstream GV	82	0	82	90	0	90
	Israel 1124 Westwind	98	0	98	108	0	108
	Learjet 25	742	0	742	806	0	806
	Learjet 35	2,294	0	2,294	2,489	0	2,489
	McDonnell-Douglas 80 GE	732	0	732	794	0	794
	McDonnell-Douglas 80 PW	1,634	0	1,634	1,772	0	1,772
	McDonnell-Douglas 81	776	0	776	0	0	0
	McDonnell-Douglas 82	3,730	0	3,730	0	0	0
	McDonnell-Douglas 83	3,378	0	3,378	1,710	0	1,710
	McDonnell-Douglas 90	552	0	552	598	0	598
	Airbus A320-211	0	8	8	0	8	8
Turboprop	Lockheed Hercules C130	136	0	136	148	0	148
	Cessna Conquest II	1,750	261	2,011	1,900	358	2,258
	Bombardier Dash 8	8,658	4,175	12,833	9,391	5,123	14,514
	Bombardier Dash 6	1	6	7	1	24	25
	Embraer 120	5,062	0	5,062	0	0	0
	Shorts SD330	620	0	620	673	0	673
	Saab 340	10	0	10	10	0	10
Piston	Beech 1900	1,120	1,795	2,915	1,216	200	1,416
	Cessna 172	770	0	770	836	0	836
	Cessna 206	750	0	750	814	0	814
	Cessna T206H	2	0	2	4	0	4
	McDonnell-Douglas DC-3	2	0	2	2	0	2
	General Aviation - Single Engine	536	0	536	581	0	581
	General Aviation - Single Engine	8,466	0	8,466	9,184	0	9,184
	Beech 1900	0	55	55	0	132	132
	Beech King Air C90	0	36	36	0	100	100

5.1.3.3 ONT Noise Modeling Results

Figure 3 presents noise exposure contours for the 2008 and 2015 forecasts based on the assumption that the full curfew has been implemented at Bob Hope Airport. The baseline contours for the respective years are also shown for comparison.

The 2008 baseline 65 CNEL contour covers about 2,972 acres and extends to South Sultana Street to the west and Etiwanda Street to the east. The 2015 baseline 65 CNEL contour covers about 2,893 acres. Despite the projected increase in operations, the 2015 contours are smaller than the 2008 contours because of the phasing out of noisier aircraft and the substitution of much quieter aircraft in their place, as described in the previous section.

The 2008 full curfew 65 CNEL contour is slightly larger than the baseline contour and extends beyond South Sultana Street to the west. The 65 CNEL contour covers an area of 3,037 acres, an increase of 64.9 acres (2.2%) compared to 2008 baseline conditions.

The 2015 full curfew 65 CNEL contour is also slightly larger than the 2015 baseline contour, crossing beyond South Sultana Street to the west and Etiwanda Street to the east. The 65 CNEL contour covers 2,957 acres, an increase of 64.1 acres (2.2%) compared to 2015 baseline conditions.

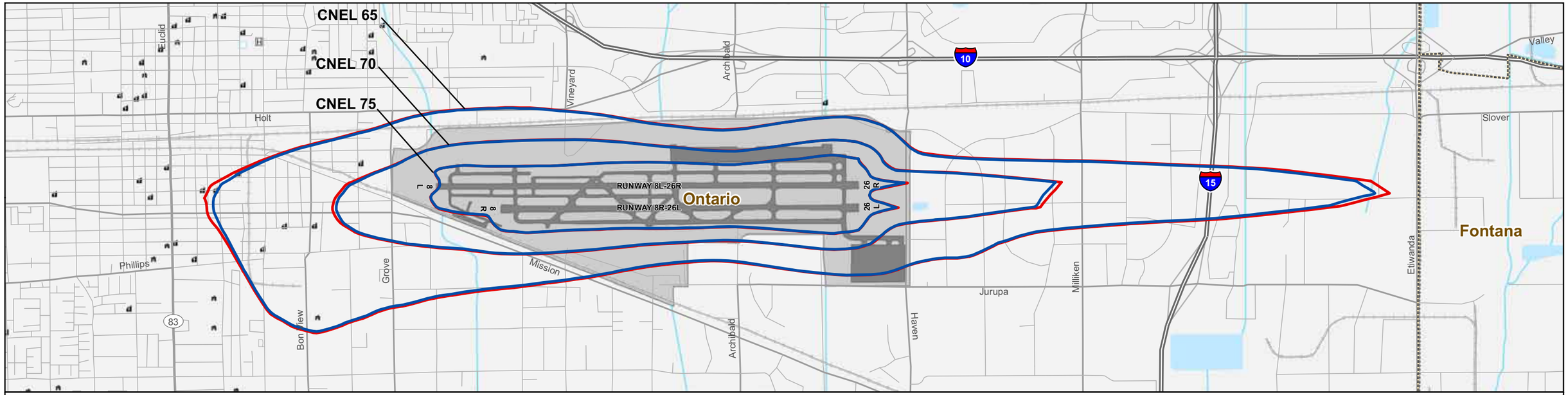
CNEL values were also calculated at a network of grid points for both the baseline and the full curfew cases. The difference in the CNEL values between the full curfew and baseline case represents the increase in noise at each point. Figure 4 shows the increase in CNEL values for the 2008 and 2015 full curfew case compared to the baseline cases. The maximum increase in the CNEL metric is 0.3 dBA for both the 2008 and 2015 cases. These levels are well below the FAA's threshold of significant noise impact – 1.5 dBA at or above the 65 CNEL level.*

5.1.4 Conclusions on Noise

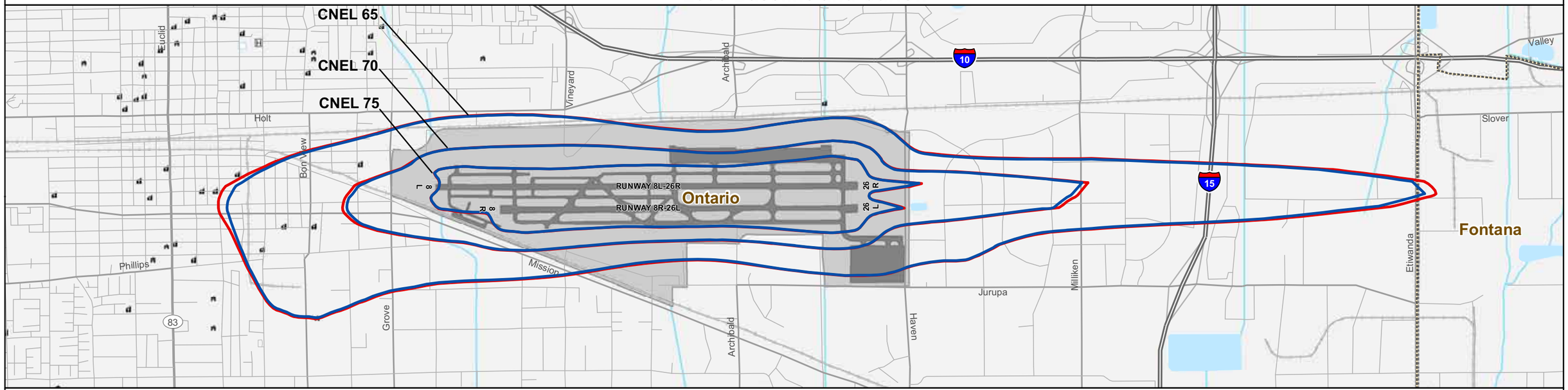
The noise analyses for Van Nuys and LA/Ontario International airports found that the magnitude of increased noise at each airport caused by the projected shift in air traffic from Bob Hope Airport with implementation of a full curfew would be too small to constitute a significant impact. The maximum increases would range from 0.7 to 0.9 dBA at Van Nuys and 0.3 dBA at LA/Ontario, well below the FAA's threshold of significant impact, which is 1.5 dBA at the 65 CNEL level.**

*FAA Order 1050.1E, Appendix A, Section 14.3.

**In contrast, the expected decreases in noise impacts on residential areas surrounding Bob Hope Airport from implementation of a full curfew are significant, and range from -1.6 to -6.5 decibels within the 65 CNEL contour. See Appendix B, Section B.3 of the Application.



2008 Baseline and Curfew



2015 Baseline and Curfew

LEGEND

- Baseline CNEL Contour
- Curfew CNEL Contour
- Land Use Study Area
- Freeways
- Roads
- Schools, Preschools
- Places of Worship
- Hospital
- Library
- Airport Boundary

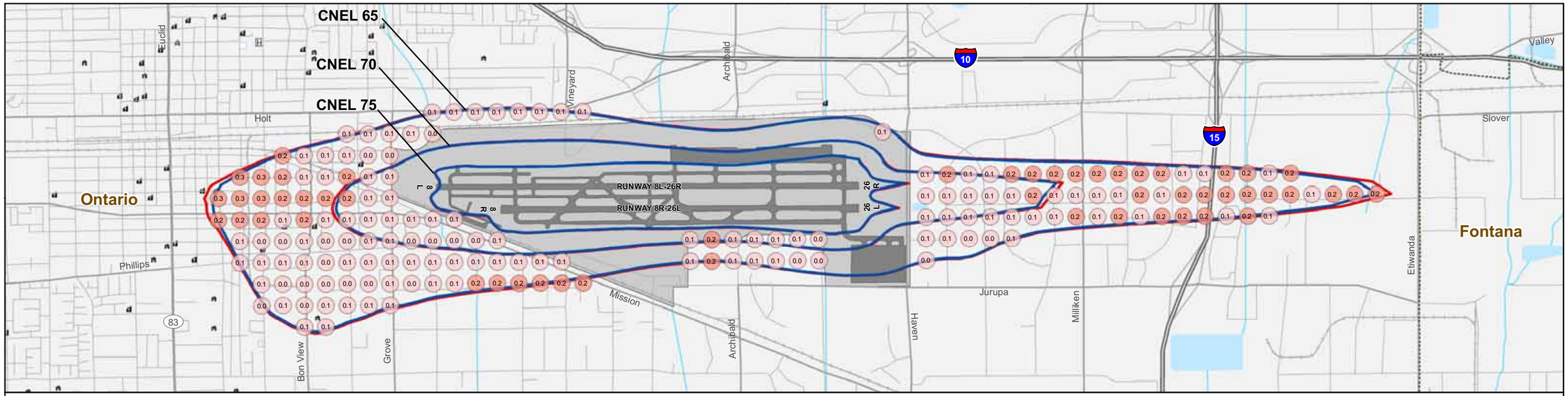
NORTH

0 750 1,500 3,000 Feet

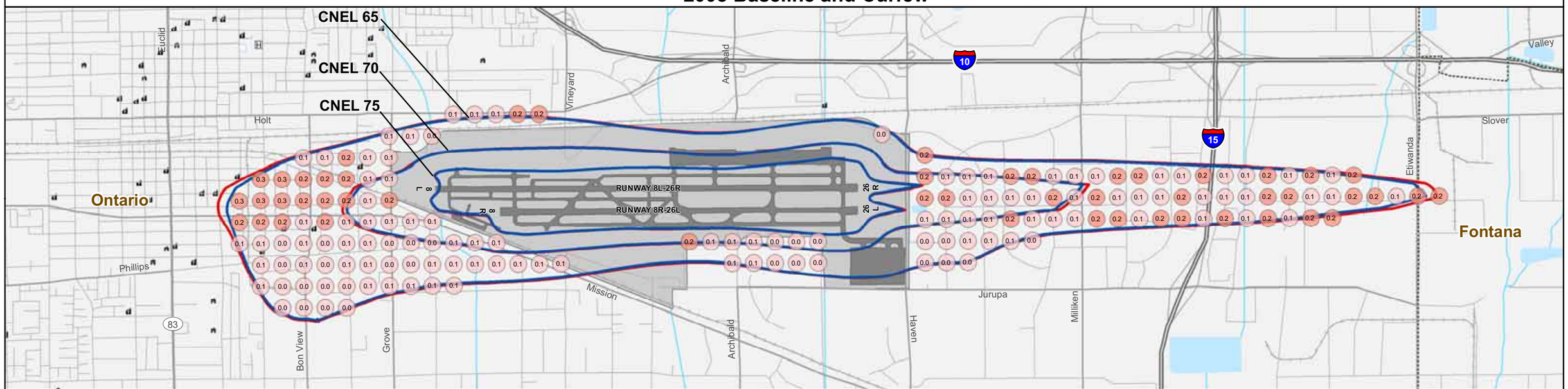
Source:
Land use data from San Bernardino County Assessor, 2008
Noise analysis by Jacobs Consultancy, 2008

Figure 3
CHANGE IN NOISE EXPOSURE AT LA/ONTARIO WITH FULL CURFEW AT BOB HOPE AIRPORT
FAR Part 161 Study for Bob Hope Airport
January 2009

JACOBS CONSULTANCY



2008 Baseline and Curfew



2015 Baseline and Curfew

LEGEND

Increase in CNEL

- 0.0 to 0.2 dBA
- 0.3 to 0.4 dBA
- 0.5 to 0.6 dBA
- 0.7 to 0.8 dBA
- 0.9 dBA and More

- Baseline CNEL Contour
- Curfew CNEL Contour
- Land Use Study Area
- Freeways
- Roads

- Schools, Preschools
- Places of Worship
- Hospital
- Library
- Airport Boundary

NORTH

0 750 1,500 3,000 Feet

Source:
Noise analysis by Jacobs Consultancy, 2008

Figure 4
INCREASE IN NOISE EXPOSURE AT LA/ONTARIO WITH FULL CURFEW AT BOB HOPE AIRPORT
FAR Part 161 Study for Bob Hope Airport
January 2009

JACOBS CONSULTANCY

5.2 Air Quality*

With a full curfew at the Airport, operations that would have occurred between 10:00 p.m. and 6:59 a.m. will either be canceled or shifted to other airports in the Los Angeles area. Operations shifted to other airports will result in the shift of associated emissions from the affected aircraft and associated ground support equipment. In some cases, aircraft diverted to other airports because they are too late to land at Bob Hope Airport will need to reposition to Bob Hope Airport in the morning, resulting in additional emissions. In addition, emissions associated with ground transportation of flight crews, passengers, and cargo may increase if distances to the various destinations are greater from the other airports than it would be from Bob Hope Airport.**

The Environmental Protection Agency (EPA) uses six "criteria pollutants" as indicators of air quality; ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead (Pb). To determine under the General Conformity regulation that a project will not adversely affect attainment of the NAAQS, emissions from the proposed action cannot exceed the *de minimis* threshold for any of the maintenance or nonattainment pollutants within a designated area.

The purpose of this analysis is the quantification of additional emissions resulting from implementation of a full curfew at Bob Hope Airport – the proposed action. The emissions were evaluated using FAA procedures*** to determine if they are likely to cause or contribute to a future exceedance of the NAAQS. Sources of emissions pertinent to this analysis include: aircraft emissions, aircraft support equipment emissions, and vehicular emissions. No construction is associated with the proposed action.

Therefore, emission changes associated with the proposed action fall within the following categories:

- Emissions from additional aircraft operations that occur as a result of the proposed action
- Emissions from the operation of aircraft support equipment associated with additional aircraft operations
- Emissions from vehicle trips associated with additional aircraft operations
- Emissions from changes in the distance vehicles travel as a result of permanently reassigned aircraft operations
- Relocation of emissions between EPA defined air sheds

*See FAA Order 1050.1E, Paragraph 304g.

**The source data used in this analysis are described in greater detail in the Part 161 Application, primarily in Chapter 4, Benefit-Cost Analysis and Appendix B, Aircraft Noise Analysis.

***As outlined in FAA Report No. AEE-AEE-97-03, Air Quality Procedures for Civilian Airports and Air Force Bases.

5.2.1 Air Quality Classification of Affected Areas

Airports experiencing a change in operations as a result of the proposed action include: Bob Hope Airport (BUR), Los Angeles International Airport (LAX), LA/Ontario International Airport (ONT), Van Nuys Airport (VNY), Long Beach Airport (LGB), Whiteman Airport (WHP), and Camarillo Airport (CMA). Table 3 presents the airshed name, pollutant, classification, and *de minimis* threshold for each of the aforementioned airports.

As identified in Table 3, CMA is located in Ventura County, which places it in a different nonattainment area than the other affected airports. Therefore, emissions from aircraft operations that are permanently shifted to CMA will be compared to the standards of Ventura County, and the relocated emissions will be subtracted from the total emissions change resulting in the Los Angeles South Coast Air Basin as a result of the proposed action.

The Los Angeles South Coast Air Basin is classified by the U.S. EPA as a nonattainment area under the $PM_{2.5}$ standard for air quality, a "Serious" nonattainment area under the PM_{10} standard for air quality, and a "Severe 17" nonattainment area under the 8-hour standard for air quality. Additionally, the Los Angeles South Coast Air Basin is classified as a maintenance area under the CO standard for air quality. Ventura County is classified as a "Serious" nonattainment area under the 8-hour standard for air quality

Ozone is not emitted directly into the air, but is formed by gases called nitrogen oxides (NO_X) and volatile organic compounds (VOCs) that in the presence of heat and sunlight react to form ozone. The *de minimis* thresholds for ozone and its precursors-NO_X, and VOCs-as identified in *Title 40 Code of Federal Regulations, Section 93, Part 153* are also presented in Table 3.

EPA issued a final rule on May 6, 2005, (*70 FR 24280*) that clarified the general conformity rule (*40 CFR Part 93*) regarding *de minimis* thresholds for the following $PM_{2.5}$ precursors: NO_X, VOCs, sulfur oxides (SO_X), and ammonia (NH_3). This also specified when each of these precursors must be considered in conformity determinations in $PM_{2.5}$ nonattainment and maintenance areas.

Based on the Los Angeles South Coast Air Basin's modeling sensitivity analysis*, SO_X reductions, followed by directly-emitted $PM_{2.5}$ and NO_X reductions, provide the greatest benefits in terms of reducing the ambient $PM_{2.5}$ concentrations. VOC reductions can contribute to improvements in ambient $PM_{2.5}$ air quality but are of lesser effectiveness. Ammonia is not considered to be a significant contributor to $PM_{2.5}$ concentrations in the airshed, and will not be assessed in this analysis.

The purpose of this analysis is to demonstrate that the quantity of ozone, CO, $PM_{2.5}$, and PM_{10} and their precursors NO_X, VOCs, SO_X, will be less than the allowable *de minimis* thresholds.

*Final 2007 Air Quality Management Plan, June 2007.

Table 3

AIRSHED INFORMATION
Bob Hope Airport FAR Part 161 Study

Pollutant	Classification	*De minimis* threshold (tons per year)
Los Angeles South Coast Air Basin (BUR, LAX, ONT, VNY, LGP, WHP)		
8-Hr Ozone[1]	Nonattainment (Severe 17)	25
PM-10	Nonattainment (Serious)	70
PM-2.5[2]	Nonattainment	100
CO	Maintenance	100
Ventura County (CMA)		
8-Hr Ozone[1]	Nonattainment (Serious)	50

Notes:
(*1*). Precursors include NO_x and VOCs
(*2*). Precursors include NO_x, VOCs, SO_x, and ammonia

Source: U.S. Environmental Protection Agency, 2008.

5.2.2 Environmental Dispersion and Modeling System

The emissions inventory was developed for airport-related sources using Version 5.1 of the FAA's EDMS program. The FAA requires use of EDMS when assessing aviation emission sources at airports* and is recognized by the U.S. EPA** as the preferred tool for modeling aircraft emissions. The Mobile 6.2 component of EDMS was used for the vehicle emissions inventory.

The FAA developed EDMS in the mid-1980s in cooperation with the United States Air Force. The model has become increasingly sophisticated over time and provides users with the ability to conduct emission inventories and dispersion analysis for all of the major emission sources in the airport environment. EDMS develops time- and location-varying emissions from aircraft engines, APUs, GSE, ground access vehicles, training fires, and stationary sources, such as generators, commercial kitchens, cooling towers, boilers, and bulk liquid storage tanks. EDMS incorporates specific details on types of aircraft and typical aircraft schedules for taxi, take-off, and landing to develop a robust temporal and spatial representation of airport emissions.

*Federal Register, Volume 63, No. 70, April 13, 1998.

**Guidelines on Air Quality Models (Revised) with Supplements A and B, EPA-450/2-78-027R, U.S. Environmental Protection Agency, July 1, 1997. Codified in 40 CFR Part 51, Appendix W.

Every major source group of airport-related emissions was inventoried within the EDMS program. EDMS has an internal database of emission factors for airport pollutant sources. There are specific factors for all pollutants tracked by the program, including VOCs, NO_X, CO, SO_2, PM_{10}, and $PM_{2.5}$. These emission factors are typically in units of mass per unit of time or distance (e.g., grams/second, or grams/mile). The EDMS database of emission factors reflects differences in emissions based on fuel type, fuel burn, engine power load, manufacture year, and manufacturer, among many other characteristics.

These emission factors are used by EDMS to calculate a total estimated emission inventory for a specified time period by multiplying the emission factor for the particular source, by the time, distance, or number of events input by the user. The result is the estimated total emissions for each source group and ultimately total estimated emissions for the study period.

5.2.3 Aircraft Operational Assumptions

EDMS portrays aircraft operations in six modes of operation; taxi-out, takeoff, climb-out, approach, landing roll, and taxi-in. Aircraft emissions are calculated using the factors specific to aircraft and engine type combinations, multiplied by the time spent in each of the operation modes. To estimate emissions from aircraft sources, a series of model inputs are needed. These inputs include aircraft fleet mix, aircraft engine type and aircraft taxi times.

Aircraft type and activity information for Van Nuys and LA/Ontario was derived from the noise analysis associated with this study, described in Section 5.1. For the other airports, information is presented in Chapter 4, Chapter 10, and Technical Report 1, Aviation Demand Forecasts, Appendices AA, BB, and CC. For takeoff, climb-out, approach and landing roll, EDMS defaults were used for the time spent in each mode. LAX and ONT taxi times are available through FAA's Aviation System Performance Metrics (ASPM) system, and their unimpeded taxi times were used as model inputs for aircraft operations relocated to those airports. EDMS defaults were used for aircraft operating at all other airports in the study. Emissions from reassigned flights within the same airshed were not inventoried (i.e., flights that will switch from BUR to LAX, LGB, ONT, VNY, or WHP and that will not require repositioning to BUR).

Table 4 presents the aircraft type, engine type, and taxi time for additional annual aircraft operations within the Los Angeles South Coast Air Basin. Table 5 presents the aircraft type, engine type, and taxi time for annual additional aircraft operations within Ventura County.

Table 4

ADDITIONAL AIRCRAFT OPERATIONS: LOS ANGELES SOUTH COAST AIR BASIN
Bob Hope Airport FAR Part 161 Study

Aircraft	EDMS aircraft	EDMS engine	2008				2015			
			Departures	Arrivals	Taxi out	Taxi in	Departures	Arrivals	Taxi out	Taxi in
Airbus A320-200 Series *(1)*	A320-2	1IA003	4	4	8.7*	4.3*	4	4	8.7*	4.3*
Boeing 737-700 Series *(2)*	B737-7	3CM031	2	2	12*	6.4*	2	2	12*	6.4*
Bombardier Challenger 600	CL600	1TL001	8	8	19	7	15	15	19	7
Bombardier Challenger 601	CL601	1GE034	23	23	19	7	39	39	19	7
Bombardier Learjet 25	LEAR25	CJ6106	1	1	19	7	3	3	19	7
Bombardier Learjet 35	LEAR35	1AS001	61	61	19	7	76	76	19	7
Bombardier Learjet 45	LEAR45	1AS001	1	1	19	7	2	2	19	7
Bombardier Learjet 55	LEAR55	1AS002	11	11	19	7	14	14	19	7
Bombardier Learjet 60	LEAR60	TFE731	7	7	19	7	12	12	19	7
Cessna 500 Citation I	CNA500	1PW035	4	4	19	7	7	7	19	7
Cessna 560 Citation V	CNA560	1PW037	13	13	19	7	22	22	19	7
Cessna 650 Citation III	CNA650	1AS002	3	3	19	7	6	6	19	7
Cessna 750 Citation X	CNA750	6AL022	25	25	19	7	40	40	19	7
Dassault Falcon 20-D	FAL20-D	CF700D	11	11	19	7	19	19	19	7
Gulfstream II	GULF2	1RR016	13	13	19	7	30	30	19	7
Gulfstream II-B	GULF2-B	1RR016	13	13	19	7	29	29	19	7
Gulfstream IV-SP	GULF4-SP	6RR042	63	63	19	7	104	104	19	7
Gulfstream V-SP	GULF5-SP	3BR001	38	38	19	7	63	63	19	7
Israel IAI-1124 Westwind I	IAI1124	1AS002	25	25	19	7	39	39	19	7
Israel IAI-1125 Astra	IAI1125	1AS002	8	8	19	7	13	13	19	7
Airbus A319-100 Series *(1)*	A319-1	3CM028	0	0	8.7*	4.3*	3	3	8.7*	4.3*
Cessna 501 Citation ISP	CNA501	1PW035	3	3	19	7	32	32	19	7
Total			337	337			574	574		

Source: Jacobs Consultancy, 2008; *FAA, 2008
Notes:
(1) All operations occur at ONT
(2) All operations occur at LAX

Table 5

ADDITIONAL AIRCRAFT OPERATIONS: VENTURA COUNTY
Bob Hope Airport FAR Part 161 Study

Aircraft	EDMS aircraft	EDMS engine	2008 Departures	2008 Arrivals	2008 Taxi out	2008 Taxi in	2015 Departures	2015 Arrivals	2015 Taxi out	2015 Taxi in
Bombardier Challenger 600	CL600	1TL001	1	1	19	7	2	2	19	7
Bombardier Challenger 601	CL601	1GE034	2	2	19	7	4	4	19	7
Bombardier Learjet 25	LEAR25	CJ6106	0	0	19	7	1	1	19	7
Bombardier Learjet 35	LEAR35	1AS001	25	25	19	7	34	34	19	7
Bombardier Learjet 45	LEAR45	1AS001	1	1	19	7	1	1	19	7
Cessna 650 Citation III	CNA650	1AS002	0	0	19	7	1	1	19	7
Cessna 750 Citation X	CNA750	6AL022	2	2	19	7	4	4	19	7
Dassault Falcon 20-D	FAL20-D	CF700D	1	1	19	7	2	2	19	7
Gulfstream II	GULF2	1RR016	1	1	19	7	3	3	19	7
Gulfstream II-B	GULF2-B	1RR016	1	1	19	7	3	3	19	7
Gulfstream IV-SP	GULF4-SP	6RR042	5	5	19	7	9	9	19	7
Gulfstream V-SP	GULF5-SP	3BR001	3	3	19	7	5	5	19	7
Israel IAI-1124 Westwind I	IAI1124	1AS002	2	2	19	7	4	4	19	7
Israel IAI-1125 Astra	IAI1125	1AS002	1	1	19	7	1	1	19	7
Bombardier Learjet 55	LEAR55	1AS002	1	1	19	7	2	2	19	7
Bombardier Learjet 60	LEAR60	TFE731	1	1	19	7	1	1	19	7
Cessna 500 Citation I	CNA500	1PW035	2	2	19	7	3	3	19	7
Cessna 560 Citation V	CNA560	1PW037	5	5	19	7	10	10	19	7
Total			54	54			90	90		

Source: Jacobs Consultancy, 2008

5.2.4 Aircraft Support Equipment

Auxiliary power units (APUs) are on-board generators that power an aircraft while its main engines are shut down. These generators supply the aircraft with power for heating or cooling air, lights, electronics, and restarting the jet engines. The APU is, in effect, a small jet engine and the calculations for the emissions generated by it are similar to those of an aircraft engine operating in one power setting only.

For this study, the default APU type and time was used, as defined by EDMS for each aircraft/engine type.

Ground support equipment (GSE) encompasses all equipment that is needed to service aircraft on the ground. Different types of aircraft operations require different services (e.g., passenger airlines require catering trucks, while cargo operations require forklifts). All of these ground support operations are accounted for in the GSE source group.

EDMS offers two methods for estimating GSE emissions; the operations-based method, or the population-based method. In the operations-based method EDMS can assign explicit levels of GSE activity to each aircraft specified in the model; therefore providing an emissions estimate based on the number of operations and the type of service each aircraft would likely require. In the population-based method, an inventory of equipment is developed and linked with annual hours of usage to calculate an emissions inventory from hourly emissions factors.

For this study, the operations-based method was used, with the default GSE activity per landing-takeoff cycle (LTO) specified by EDMS used for each aircraft type.

5.2.5 Vehicle Operational Assumptions

Emissions from on-road sources, which include all types of vehicles ranging from employee automobiles to heavy duty haul trucks, were calculated using EDMS's built-in on-road emission factor module, Mobile 6.2. Emission rates, in the form of pollutant per unit of distance traveled, are dependent on the vehicle's age, fuel type, classification (e.g. passenger auto or heavy truck), and average speed of operation.

The following text identifies key assumptions used for developing inputs used to tabulate vehicular emissions. A summary of inputs used is presented in Table 6.

5.2.5.1 Diversions to LAX

The following assumptions were made regarding the ground transportation requirements as a result of unscheduled diversions of passenger airline flights to LAX:

- 2008: 4 flights per year, 93 passengers plus 6 crew per flight
- 2015: 4 flights per year, 97 passengers plus 6 crew per flight

- Passengers, crew, and baggage are transported from LAX to BUR in 57-passenger charter buses
- For each flight, assume crew scheduled for the next morning's use of the aircraft is transported in one taxicab from BUR to LAX in the early morning to move the aircraft to BUR. Taxicab roundtrip distance: 63.4 miles (assume taxi "dead-heads" back to BUR area) at an average speed of 60 mph.
- Travel distances and speeds
  - Due to late-night nature of operations, it is assumed that travel speed is not affected by congestions on regional roadways
  - Bus lot to LAX: 10 miles at 30 mph (assumes trip is predominately on arterials and local streets)
  - LAX to BUR: 31.7 miles at 60 mph (assumes trip is predominately on freeways)
  - BUR to Bus lot: 31.7 miles at 50 mph (assumes trip is predominately on freeways, but has a limited portion on arterials and locals streets)

The following assumptions were made regarding the ground transportation requirements as a result of the scheduled diversion of general aviation flights to LAX:

- All shifted general aviation operations are Multi-Engine Business Jets.
- Each operation creates an average of 2 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 5 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

5.2.5.2 Diversions to ONT

The following assumptions were made regarding the ground transportation requirements as a result of an unscheduled diversion of passenger airline flights to ONT:

- 2008: 4 flights per year, 129 passengers plus 6 crew per flight
- 2015: 4 flights per year with 133 passengers plus 6 crew per flight, 3 flights per year with 120 passengers per flight
- Passengers, crew, and baggage are transported from ONT to BUR in 57-passenger charter buses

- For each flight, assume crew scheduled for the next morning's use of the aircraft is transported in one taxicab from BUR to ONT in the early morning to move the aircraft to BUR. Taxicab roundtrip distance: 102.2 miles (assume taxi "dead-heads" back to BUR area) at an average speed of 60 mph.

- Travel distances and speeds:

  – Due to late-night nature of operations, it is assumed that travel speed is not affected by congestions on regional roadways

  – Bus Lot to ONT: 10 miles at 30 mph (assumes trip is predominately on arterials and local streets)

  – ONT to BUR: 51.1 miles at 60 mph (assumes trip is predominately on freeways)

  – BUR to Bus Lot: 51.1 miles at 55 mph (assumes trip is predominately on freeways, but has a limited portion on arterials and locals streets)

5.5.2.3 Operations Shifted to VNY

The following assumptions were made regarding the ground transportation requirements as a result of shift of operations to VNY and repositioning of aircraft from VNY to BUR:

For Multi-Engine Business Jets:

- For each operation, assume crew travels to and from the airport in a passenger car but that crew transport creates no net vehicle miles traveled compared to when operation occurred at BUR. Assume average travel speed is similar to when operation occurred at BUR.

- Each operation creates an average of 2 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 17.6 miles longer than when the operation occurred at BUR, (VNY is 8.8 road miles west of BUR). Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

For Very Light Jets:

- Each operation, assume crew travels to and from the airport in a passenger car but that crew transport creates no net vehicle miles traveled compared to when operation occurred at BUR. Assume average travel speed is similar to when operation occurred at BUR.

- Each operation creates an average of 1 vehicle roundtrip for passengers being carried on the flight. These roundtrips are assumed to be an average of 17.6 miles longer than when the operation occurred at BUR, (VNY is 8.8 road

miles west of BUR). Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

For Multi-Engine Turboprop and Single-Engine Turboprop:

- Each operation creates an average of 1 vehicle roundtrip for the pilot and passengers. These roundtrips are assumed to be an average of 17.6 miles longer than when the operation occurred at BUR, (VNY is 8.8 road miles west of BUR). Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

5.2.5.4 Operations Shifted to LGB

The following assumptions were made regarding the ground transportation requirements as a result of the shift of general aviation flights to LGB:

- All shifted general aviation operations are Multi-Engine Business Jets.
- Each operation creates an average of 2 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 5 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

5.2.5.5 Operations Shifted to WHP

The following assumptions were made regarding the ground transportation requirements as a result of the projected shift of general aviation operations to WHP:

For Multi-Engine Business Jets:

- For each operation, assume crew travels to and from the airport in a passenger car but that crew transport creates no net vehicle miles traveled compared to when operation occurred at BUR. Assume average travel speed is similar to when operation occurred at BUR.
- Each operation creates an average of 2 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 5 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

For Very Light Jets:

- Each operation, assume crew travels to and from the airport in a passenger car but that crew transport creates no net vehicle miles traveled compared to when operation occurred at BUR. Assume average travel speed is similar to when operation occurred at BUR.

- Each operation creates an average of 1 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 5 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

For Multi-Engine Turbo Prop and Single-Engine Turbo Prop:

- Each operation creates an average of 1 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 5 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

5.2.5.6 Operations Shifted to CMA

The following assumptions were made regarding the ground transportation requirements as a result of the projected shift of general aviation flights to CMA:

- All shifted general aviation operations are Multi-Engine Business Jets.
- All travel will take place within Ventura County.
- Each operation creates an average of 2 vehicle roundtrips for passengers being carried on the flight. These roundtrips are assumed to be an average of 25 miles longer than when the operation occurred at BUR. Average travel speed for the additional distance: 40 mph (assumes additional distance is over a mix of freeways and arterials).

5.2.5.7 Ameriflight

The following assumptions were made regarding the changes in ground transportation as a result of Ameriflight's anticipated move to ONT as described in Section 4.6.2.1 of the Part 161 Application:

Employee Trips:

- Ameriflight would relocate 50 employee positions to ONT
  - 16 employees resign
  - 17 employees move their residence to closer to ONT
  - 17 employees keep current residence and commute to ONT

- Employees who keep current residence
  - By 2015, these employees will resign or move their residence closer to ONT
  - 240 commute days per year
  - Additional commute distance of 100 miles (round-trip) at an average speed of 50 mph
- Employees who resign or move their residence, it is assumed that commute distance and speed remain similar to today

Couriers:

- Couriers using Ameriflight will drive to ONT instead of BUR
- Couriers average 67 round-trips per day to Ameriflight
- Couriers operate 240 days per year
- Average round-trip distance will increase by 50 miles
- Average travel speed: 50 mph

5.2.5.8 FEDEX / UPS

The following assumptions were made regarding the changes in ground transportation as a result of the anticipated relocation of FedEx and UPS to LAX as described in Section 4.6.2.2 of the Part 161 Application:

- Annual operations relocating to LAX
  - FedEx: 416 in 2008, 520 in 2015
  - UPS: 416 in 2008, 520 in 2015
- Truck round-trips per operation: 1.25
- Additional distance per truck round-trip:
  - FedEx: 37 miles
  - UPS: 1.6 miles
- Average travel speed
  - FedEx: 40 mph
  - UPS: 60 mph

Table 6

ADDITIONAL VEHICULAR OPERATIONS
Bob Hope Airport FAR Part 161 Study

Description	Vehicle type	2008 Trips	2008 Distance (miles)	2008 Speed (mph)	2015 Trips	2015 Distance (miles)	2015 Speed (mph)
Passenger transportation for flights diverted to ONT	Charter bus	12	112.2	55	21	112.2	55
Crew transportation for flights diverted to ONT	Taxicab	4	102.2	60	7	102.2	60
Passenger transportation for flights diverted to LAX	Charter bus	6	73.4	50	6	73.4	50
Crew transportation for flights diverted to LAX	Taxicab	2	102.2	60	2	102.2	60
Additional distance travel by Ameriflight employees	Passenger vehicle	4,080	100	50	0	100	50
Additional distance traveled by couriers	Passenger van	16,080	50	50	16,080	50	50
Additional distance traveled by FedEx vehicles	Large cargo truck	520	37	40	650	37	40
Additional distance traveled by UPS vehicles	Large cargo truck	520	1.6	60	650	1.6	60
Transportation for flights diverted to VNY	Passenger vehicle	10,639	17.6	40	18,184	17.6	40
Transportation for repositioning flights at VNY	Passenger vehicle	1,856	17.6	40	3,200	17.6	40
Transportation for GA flights diverted to LAX	Passenger	530	5	40	860	5	40
Transportation for GA flights diverted to LGB	Passenger	530	5	40	860	5	40
Transportation for GA flights diverted to WHP	Passenger	519	5	40	1,981	5	40
Transportation for GA flights diverted to CMA*	Passenger	221	25	40	359	25	40

Source: Jacobs Consultancy, 2008

*CMA resides in Ventura County

5.2.6 Air Quality Results

The results of the emissions quantification are summarized in Tables 7 and 8, organized by emissions source. As identified earlier, emissions shifted to Ventura County are subject to the thresholds identified by the EPA for Ventura County. The emissions are subtracted from the net emissions subject to the standards of the Los Angeles South Coast Air Basin.

As presented in Table 7, the emissions for the proposed action fall below the de minimis thresholds identified in Table 3 for the Los Angeles South Coast Air Basin. Emissions for Ventura County, presented in Table 8, also fall below the de minimis thresholds for Ventura County.

It is the conclusion of this analysis that no extraordinary circumstances related to air quality exist as a result of the proposed action.

It should be noted that the assumptions that are presented in this evaluation are not intended to establish precedence for the methodology on any future air quality analyses. Instead, overly conservative assumptions have been used to clearly demonstrate that the air quality impacts from the proposed action do not come close to crossing the Federal threshold of significance.

5.3 Coastal Resources*

The California Coastal Act of 1976 delineates a costal zone as the area bordering a shoreline extending one kilometer inland. Bob Hope Airport is situated approximately 24 kilometers from the coast of the Pacific Ocean and, therefore, is not located in a coastal zone. Additionally, the proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths. As such, the proposed action would not result in an impact to distant coastal zone areas.

*See FAA Order 1050.1E, Paragraph 304c.

Table 7

CHANGE IN EMISSIONS: LOS ANGELES SOUTH COAST AIR BASIN (TONS PER YEAR)
Bob Hope Airport FAR Part 161 Study

	2008						2015					
Emissions source	CO	VOC	NOx	SOx	PM-10	PM-2.5	CO	VOC	NOx	SOx	PM-10	PM-2.5
Aircraft	3.15	0.76	1.03	0.17	0.03	0.03	5.76	1.41	1.73	0.30	0.05	0.05
GSE	1.76	0.06	0.17	0.01	0.00	0.00	1.38	0.05	0.12	0.01	0.00	0.00
APUs	0.12	0.00	0.04	0.01	0.01	0.01	0.22	0.01	0.07	0.01	0.01	0.01
Roadways	17.19	0.53	1.13	0.01	0.04	0.02	11.37	0.37	0.43	0.01	0.03	0.02
Total	22.22	1.35	2.37	0.20	0.08	0.05	18.73	1.83	2.35	0.33	0.10	0.08
Ventura County emissions	0.806	0.192	0.119	0.019	0.004	0.004	1.184	0.332	0.197	0.035	0.009	0.009
Net emissions*	21.42	1.16	2.25	0.18	0.07	0.05	17.54	1.50	2.16	0.29	0.09	0.07
De minimis	100	25	25	100	70	100	100	25	25	100	70	100

Source: Jacobs Consultancy, 2008

*Numbers may not add due to rounding.

Table 8

CHANGE IN EMISSIONS: VENTURA COUNTY (TONS PER YEAR)
Bob Hope Airport FAR Part 161 Study

	2008						2015					
Category	CO	VOC	NOx	SOx	PM-10	PM-2.5	CO	VOC	NOx	SOx	PM-10	PM-2.5
Aircraft	0.462	0.180	0.086	0.018	0.003	0.003	0.860	0.322	0.169	0.033	0.007	0.007
GSE	0.280	0.010	0.026	0.001	--	--	0.228	0.007	0.019	0.001	0.001	0.001
APUs	0.010	--	0.003	--	--	--	0.022	0.001	0.006	0.001	0.001	0.001
Roadways	0.053	0.002	0.003	--	--	--	0.074	0.003	0.002	--	--	--
Net emissions*	0.806	0.192	0.119	0.019	0.004	0.004	1.18	0.33	0.20	0.04	0.01	0.01
De minimis	--	50	50	--	--	--	--	50	50	--	--	--

Source: Jacobs Consultancy, 2008

*Numbers may not add due to rounding

5.4 Compatible Land Use*

As stated in FAA Order 1050.1E (Appendix A, Section 4.1a), "the compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of an airport's noise impacts." As discussed in detail in the FAR Part 161 Application, the proposed curfew would result in a substantial reduction of noise in the Bob Hope Airport area, ranging from 1.6 to 6.5 dBA within the 65 CNEL contour, based on 2015 forecasts. ** Thus, no adverse land use impacts would be experienced in the Bob Hope Airport area due to the proposed action.

Section 5.1 above presents an analysis of the effect of the proposed curfew on cumulative noise exposure at Van Nuys and LA/Ontario International airports. The results show that the increases in noise at each airport, due to the shift in traffic induced by the proposed curfew, would be well below the FAA's threshold of significant impact (a 1.5 dBA increase at the 65 CNEL level). Thus, no adverse land use impacts would be experienced in the vicinity of those airports.

5.5 Construction Impacts***

The proposed action involves no construction. Thus, no construction-related impacts would be created.

5.6 DOT Section 4(f)****

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities.

The noise analysis in Section 5.1 found that only slight increases in noise exposure would be experienced at Van Nuys and LA/Ontario International airports – the two airports that would be most affected by the shift in traffic from Bob Hope Airport. The increases in noise would be well below the FAA's threshold of significant impact. No Section 4(f) resources are known to be present in the environs of Van Nuys and LA/Ontario International airports. Thus, the proposed action would not result in the constructive use of or an impact to any Section 4(f) resources.

5.7 Natural Resources and Energy Supply*****

The proposed action would limit the hours of aircraft operations at the Airport, specifically at night. The decrease in flight operations at night may slightly reduce energy consumption associated with airfield lighting at the Airport.

The air quality analysis in Section 5.2.6, Table 7, showed that the effect of the proposed curfew would be a slight increase in emissions in the Los Angeles South

*See FAA Order 1050.1E, Paragraphs 304d and f.
**See Appendix B, Aircraft Noise Analysis, and Chapter 5, Section 5.3.4.
***See FAA Order 1050.1E, Paragraph 304k.
****See FAA Order 1050.1E, Paragraph 304b.
*****See FAA Order 1050.1E, Paragraph 304c.

Coast Air Basin. This indicates a small increase in energy consumption related to the shift in flights from Bob Hope Airport to other airports in the Los Angeles region, and related changes in ground support equipment usage and surface transportation related to the servicing of air cargo operations and diverted passengers.

The potential change in energy consumption is slight and would have no consequences on regional energy supplies.

5.8 Farmlands*

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. As such, the proposed action would not result in an impact to any surrounding farm resources.

5.9 Fish, Wildlife, and Plants*

The proposed project area does not contain any federally-listed endangered or threatened species of flora and fauna. Additionally, the proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. As such, the proposed action would not result in an impact to any surrounding fish, wildlife, and plant resources.

5.10 Floodplains*

The proposed project area does not contain any floodplains. Additionally, the proposed action would limit the hours of aircraft operations at the Airport and would not require construction activities. As such, the proposed action would not result in impacts to any surrounding floodplains.

5.11 Hazardous Materials, Pollution Prevention, and Solid Waste**

The proposed action would limit the hours of aircraft operations at the Airport and would not require any construction activities. As such, the proposed action would not result in an impact to any existing potentially contaminated areas of land.

5.12 Historic, Architectural, Archeological, and Cultural Resources***

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. As such, the proposed action would not result in the constructive use of or an impact to any surrounding historic, architectural, or cultural resources.

The noise analysis in Section 6.1 found that only slight increases in noise exposure would be experienced at Van Nuys and LA/Ontario International airports – the two airports that would be most affected by the shift in traffic from Bob Hope Airport.

*See FAA Order 1050.1E, Paragraph 304c.
**See FAA Order 1050.1E, Paragraph 304k.
***See FAA Order 1050.1E, Paragraphs 304a and j.

The increases in noise would be well below the FAA's threshold of significant impact. Thus, the proposed action would not involve the constructive use of any of these resources.

5.13 Light Emissions and Visual Impacts*

The proposed project involves no construction that would alter the visual scene in the Bob Hope Airport area. Neither would the proposed project involve changes in any lighting in the vicinity of Bob Hope Airport or any other airport in the region. Thus, the proposed project would create no adverse impacts related to light emissions or aesthetics.

5.14 Secondary (Induced) Impacts**

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. Any direct impacts associated with the proposed action would be related to potential effects on noise and air quality caused by the shift in air traffic from Bob Hope Airport to other Los Angeles area airports. These potential effects are discussed in Sections 5.1 and 5.2, above, and are insignificant.

Any secondary or induced impacts of the proposed curfew also would be related to the shift in air traffic. These impacts relate primarily to localized economic and fiscal effects. They include:

- Loss of property tax revenues for the City of Burbank due to the relocation of based aircraft from Bob Hope Airport to other airports in the region. Most of the relocated aircraft will move to airports in the City of Los Angeles, and a small number to Camarillo. Those cities would gain the property tax revenue lost by Burbank.

- The potential loss of some revenues to airport-related businesses in the Bob Hope Airport area. With the marked decrease in nighttime operations, businesses catering to nighttime airport employees and airport users, such as restaurants, hotels, and rental car companies, may experience a decrease in revenues. These losses will be offset by gains at similar businesses near airports receiving the operations shifted from Bob Hope Airport.

*See FAA Order 1050.1E, Paragraph 304k.
**See FAA Order 1050.1E, Paragraphs 304d and e.

5.15 Socioeconomic Impacts*

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. With a reduction in night time noise, the proposed action would result in a beneficial impact to surrounding residential areas.

The small increase in noise at Van Nuys Airport caused by the shift in traffic from Bob Hope Airport due to the proposed curfew, while below the FAA's threshold of significant impact, may cause disruptions for particularly sensitive residents of the area. (See Section 5.1, above.) These potential effects are discussed in Appendix E, Documentation and Analysis of Contingent Valuation Surveys in the Bob Hope and Van Nuys Airport Areas, and Chapter 4, Benefit-Cost Analysis, Section 4.9.1.2.

Increases in noise at LA/Ontario International Airport due to the proposed curfew would be much less than at Van Nuys and are unlikely to be great enough to cause any adverse effects on local residents. (See Section 5.1, above.)

Although the proposed action would result in a very small shift in surface transportation patterns, the changes would be far too small to contribute to surface traffic congestion.

5.15.1 Children's Health and Safety

In accordance with Executive Order 13045, Federal agencies must make it a high priority "to identify and assess environmental health and safety risks that may disproportionately affect children."** As the proposed action is a policy action with negligible effects on the physical environment, it would create no significant adverse impacts related to children's environmental health or safety.

5.15.2 Environmental Justice

Executive Order 12898 and DOT Order 5610.2 require the FAA to assess potential adverse impacts of proposed actions on minority and low income populations that may be disproportionately high. FAA Order 1050.1E, Section 16.2, state that "where there is a potentially significant impact …, FAA must conduct analysis … of the potential effects, to identify and address potential impacts on these populations that may be disproportionately high and adverse." FAA Order 5050.4B, Table 7-1, notes that "when an action would cause disproportionately high and adverse human helath or environmental effects on minority and low-income populations, a significant impact may occur."

The proposed action will result in no significant adverse impacts in any resource categories. Small increases in emissions may occur throughout the Los Angeles Basin, and very small increases in noise are likely at several airports in the region

*See FAA Order 1050.1E, Paragraphs 304d, 304e.

**FAA Order 1050.1E, Section 16.1b.

(Camarillo, Long Beach, Los Angeles International, LA/Ontario, Whiteman, and Van Nuys). Among these airports, the increases in noise at Van Nuys would be the greatest, possibly great enough to be noticeable, although the increases will be below the FAA's threshold of significant impact. Further, based on the information presented in Table 11, the Van Nuys area would not be considered a minority or low income area, compared with the minority and low income population proportions in the County as a whole.

The proposed project actually will enhance environmental justice. The areas in the Bob Hope Airport environs receiving the greatest noise reduction have large proportions of minority and low income populations, relative to the proportions in the larger study area and Los Angeles County as a whole. As shown in Figure 5-4 in Chapter 5 of the FAR Part 161 Application, the greatest noise reductions, up to 6.0 dBA, will be experienced immediately north of the Airport. Reductions ranging from 2.3 to 5.5 dBA will be experienced west of the Airport.

Table 9 summarizes demographic data for the census tracts in these areas, comparing it with data for the larger study area and for Los Angeles County. It shows that the percentage of Latinos in the north and west side census tracts is considerably higher than in the larger study area and the county as a whole – 75.6% compared to 44.3% in the study area 44.6% in the county. The percentage of households with incomes below $15,000 is 22% compared to 15.6% in the larger study area and 17% in the county as a whole.

Table 9

DEMOGRAPHIC DATA FOR CENSUS TRACTS RECEIVING GREATEST NOISE REDUCTION WITH PROPOSED CURFEW

Bob Hope Airport FAR Part 161 Study

	Population		Households	
Area	Total	Percent Latino	Total	Percent of with Incomes Under $15,000
BUR North and West Side Census Tracts *(a)*	46,958	75.6%	12,405	22.0%
BUR Hedonic Modeling Study Area *(b)*	307,052	44.3%	113,638	15.6%
Los Angeles County	9,519,338	44.6%	3,136,279	17.0%
VNY Area Census Tracts *(c)*	35,475	49.3%	10,978	14.9%

(a) Census tracts 1211, 1221.10, 1222, 1224.10, 1224.20, 1230.10, 1232.03, 1232.04, 1232.05, 1232.06, 1233.01.

(b) ncludes 56 census tracts in Los Angeles and 11 in the City of Burbank. See Figure 2 in Technical Report 2, The Impact of Aircraft Noise on Residential Property Values in the Bob Hope Airport Environs, for a map of the area.

(c) Census tracts 1173.1, 1173.03, 1274, 1275.10, 1276.01, 1276.02, 1321.

Source: U.S. Census Bureau, 2000 Census.

For comparison, Table 9 also presents demographic data for the census tracts within which the Van Nuys Airport 65 CNEL contour lies. This area would experience a small increase in noise exposure, although less than the FAA's threshold of significant impact. The Latino population in the Van Nuys area is substantially smaller than in the Bob Hope Airport-area census tracts receiving the greatest noise reduction with the curfew. The proportion of the population with incomes under $15,000 is also considerably smaller. Indeed, the low income population is somewhat smaller in the Van Nuys area than in the county as a whole.

In summary, the proposed action would not have disproportionate and adverse impacts on minority and low income populations. In fact, the proposed action would have positive effects on environmental justice by significantly reducing noise exposure in minority and low income neighborhoods north and west of Bob Hope Airport.

5.16 Water Quality*

The proposed action would limit the hours of aircraft operations at the Airport and would not require construction activities. As such, the proposed action would not result in an impact to any surrounding water resources.

5.17 Wetlands**

The proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. As such, the proposed action would not result in the constructive use of or an impact to any surrounding wetland areas.

5.18 Wild and Scenic Rivers**

No wild and scenic rivers are in the study area. Further, the proposed action would limit the hours of aircraft operations at the Airport and would not alter existing flight paths or require construction activities. As such, the proposed action would have no effect on wild and scenic rivers.

5.19 Other Considerations***

5.19.1 Consistency with Local Plans and Policies

The proposed curfew is consistent with local environmental policy to control noise, as expressed by the general plans of the cities of Burbank and Los Angeles**** and the State of California airport noise law (California Code of Regulations, Title 21,

*See FAA Order 1050.1E, Paragraph 304h.
**See FAA Order 1050.1E, Paragraph 304c.
***See FAA Order 1050.1E, Paragraphs 304i, j, and k.
****North Hollywood-Valley Village Community Plan, A Part of the General Plans, City of Los Angeles, May 14, 1996, p. III-7. Sun Valley-La Tuna Canyon Community Plan, A Part of the General Plans, City of Los Angeles, August 13, 1999, p. III-26. www.lacity.org/PLN.

Subchapter 6, Noise Standards, Section 5000, et seq.). The proposed curfew also enjoys support from the surrounding community.

Although concerns have been raised that the proposed curfew may conflict with regional aviation policy as articulated in the 2008 Regional Transportation Plan, a review of that document indicates no basis for that concern. In fact, the 2008 RTP clearly recognizes the limited expansion potential of the region's urban airports (LAX, Long Beach, John Wayne-Orange County, and Bob Hope Airport), and emphasizes the need for developing the facilities at the region's outlying airports, including Palmdale, March Inland Port, Southern California Logistics Airport, and San Bernardino International. It also puts substantial emphasis on major improvements in ground transportation links to the outlying airports.* Furthermore, the 2008 RTP acknowledges the efforts of the Authority and the City of Burbank to cooperate in pursuing the FAR Part 161 process.**

5.19.2 Potential for Controversy on Environmental Grounds

According to FAA Order 1050.1E, Paragraph 304i,

> The term "controversial" means a substantial dispute exists as to the size, nature, or effect of a proposed Federal action. The effects of an action are considered to be highly controversial when reasonable disagreement exists over the project's risks of causing environmental harm.

During the official public comment period, numerous comments were filed expressing concern with the adoption of a curfew. Most of those comments related to concerns about impact on the local economy, undue interference with interstate commerce, and the lack of a sufficiently severe noise problem to justify the proposed curfew. These arguments relate to the substance of the proposed restriction – its justification and economic effects.

Some concerns were raised by residents of the Van Nuys Airport area about the projected shift in traffic from Bob Hope Airport and the resulting increase in noise. Other commenters expressed a desire for a quantitative analysis of the potential noise and air quality impacts associated with the proposed curfew quantitatively analyzed.

The noise and air quality analyses in Sections 5.1 and 5.2, above, demonstrate that the effects of the proposed curfew on these resource categories would be very slight, falling well below the FAA's threshold of significant impact. Thus, the risks of the project causing environmental harm are considered to be minimal.

*Southern California Association of Governments, 2008 Regional Transportation Plan, Aviation and Ground Access Report, pp. 7 - 8.

**Southern California Association of Governments, 2008, p. 14.

5.19.3 Potential Cumulative Impacts

Based on the FAR Part 161 Application and this environmental analysis, the proposed curfew will result in substantial noise reductions in the Bob Hope Airport environs while causing only very small environmental effects elsewhere.

The increased noise in the Van Nuys Airport environs is the largest environmental effect, although it is well below the level that would constitute a significant adverse impact. Circumstances could occur in the future to cause additional increases in noise at Van Nuys. Among the most likely is an increase in operations to accommodate increasing business aviation demand.

At the same time, Los Angeles World Airports is considering a variety of actions to limit the potential growth of noise at Van Nuys. These include a Part 161 Study evaluating a variety of noise and operating restrictions and a proposal to adopt a maximum noise limit. The Part 161 Study is evaluating nine different restrictions, some of which would apply only to Stage 2 aircraft and others which would apply to all aircraft, including Stage 3 aircraft. The restrictions under study include:

- Establish differential lease and tie-down rental rates to encourage the greater use of quieter aircraft and less use of noisier aircraft.
- Establish differential landing fees, with higher landing fees for noisier aircraft and lower landing fees for quieter aircraft.
- Make the voluntary "Quiet Jet Departure" program mandatory, with violations subject to fines and sanctions.
- Establish a maximum daytime noise limit for all aircraft operating at VNY.
- Establish a cap on the number of Stage 3 jets that may be based at VNY.
- Amend the existing Stage 2 nighttime curfew ordinance to expand the hours of the current curfew to include all non-emergency jets and non-emergency helicopters as aircraft that would come under the provisions of the curfew during the hours of 10:00 p.m. to 7:00 a.m.
- Establish a cap on the number of, or a phase-out of helicopters.
- Phase out Stage 2 aircraft in shortest possible time.
- Extend the existing Stage 2 curfew to 9 a.m. on weekends and holidays.

It is noted that none of these measures wouldimplement a Stage 3 nightime curfew and thus would not affect the shift of Stage 3 aircraft from Bob Hope Airport to Van Nuys Airport.

In addition to these policy actions, the business jet market itself is being subjected to powerful forces leading to a significantly quieter fleet in the near future. This is important because business jets are the major contributor to the noise contours at Van Nuys. Stage 2 business jets are aging, and their retirement from the domestic fleet is accelerating.

5.19.3.1 Projected Attrition in Stage 2 Aircraft Fleet

Stage 2 business aircraft were produced from 1962 until 1987 with the majority being manufactured between 1965 and 1980. Thus, the youngest of these aircraft are over 20 years old, and their average age is 34 years. As aircraft age, they become increasingly expensive to maintain. At some point, this problem becomes so great that it is more cost-effective to retire the aircraft from service, break them up and sell the parts.

Specific factors that are causing the steady decrease in the Stage 2 fleet include:

- Increasing fuel costs. These aircraft have much higher fuel consumption than later Stage 3 aircraft. This applies particularly to the Gulfstream II/IIB/III. The hourly fuel consumption for these aircraft is between 550 and 600 gallons per hour or as much as $3,300 to $3,600 per hour.

- Increasing maintenance cost. As aircraft age, the cost of major maintenance and overhauls of engines and major components increases to the point that the total cost of the required maintenance exceeds the resale value of the aircraft. This is particularly true for Gulfstream II/IIB as well as the JetStar, Hawker 125, Sabre, Jet Commander and the Learjet 23/24.

- Corrosion and fatigue. Some aircraft are prone to corrosion and fatigue in major structural components. When this happens repairs are often not cost-effective. This problem applies particularly to the Sabre 75/80.

- Structural life limit. The Sabre series of aircraft has a structural life limit of 15,000 hours. This can be extended to 30,000 hours, but the cost may well exceed the value of the aircraft at which point the life extension is not cost-effective.

- Poor after-sales support. This results in limited availability of spare parts or extended periods of down time. When that happens it may be more cost-effective to sell the aircraft for parts. This applies particularly to the Jet Commander, the JetStar and to a lesser extent the Hawker 125.

An analysis was undertaken to determine the total number of Stage 2 business aircraft left in service and to project the future attrition in the fleet. The number of aircraft in service was determined from published in-service data.* The data, presented in Table 10, show that as of early October 2008, 1,275 Stage 2 aircraft remain in operation. This represents about 46% of the 2,786 aircraft originally built.

Table 10

ACTIVE STAGE 2 BUSINESS AIRCRAFT
Bob Hope Airport FAR Part 161 Study

	Active Stage 2 Aircraft	
Year	Number	Percent of Total Built
Total built	2,786	100%
1988	2,429	87%
1995	2,069	74%
2001	1,930	69%
2007	1,396	50%
2008	1,275	46%

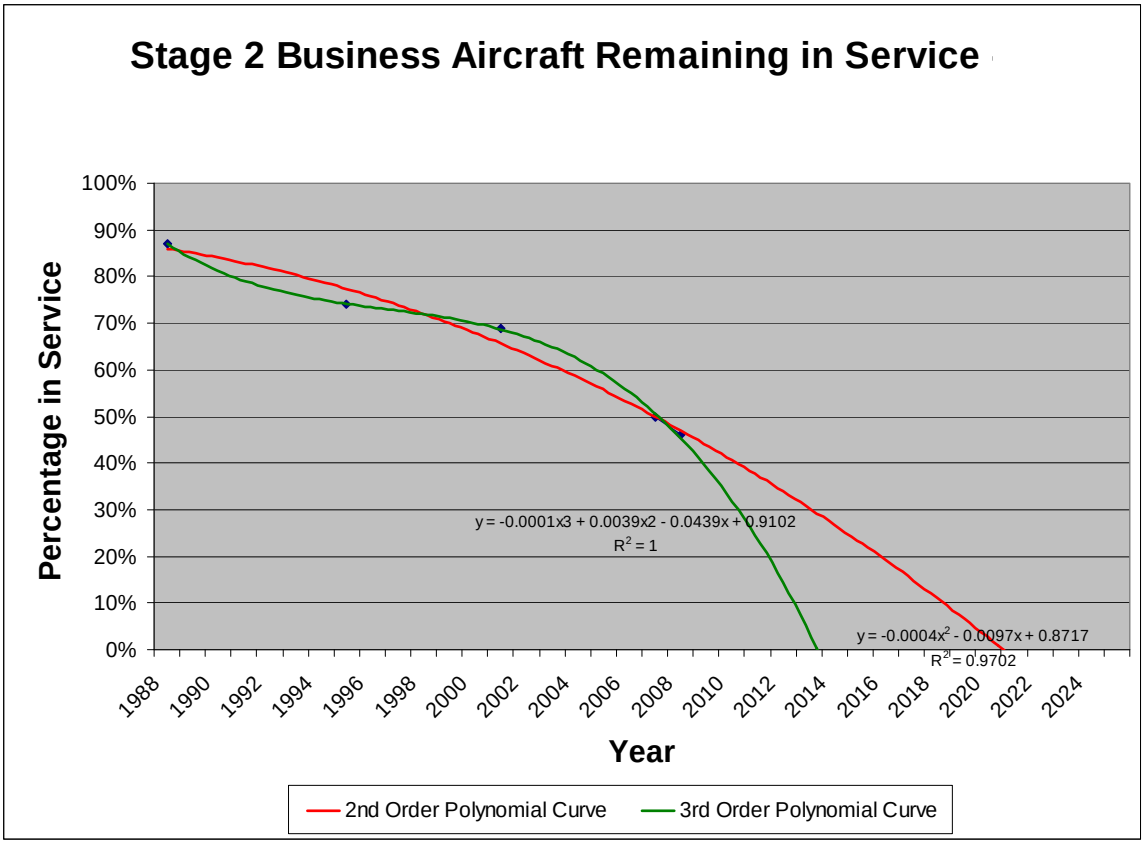
Source: Analysis by Conklin de Decker Aviation Information of data published by AvData, 1989, 1996, 2002, and 2008 and AMSTAT, October 10, 2008.

About 60% of this total fleet, or about 750 to 800 aircraft, is based in the US.

A time series regression analysis, using the data in Table 10 was undertaken to produce a simple projection of the future attrition in the Stage 2 fleet. Two alternative curves are shown. The first, based on a third order polynomial equation, fits the available data points and shows the Stage 2 fleet being reduced to zero in 2014. This is probably unrealistic since the youngest of the Stage 2 aircraft will be only 27 to 30 years old in 2014 and are likely to remain in service for some additional time. The second curve, based on a second order polynomial equation, shows the Stage 2 fleet being reduced to zero in 2022.

*_Jet & Propjet Business Aircraft Directory_ published by AvData, 1989, 1996, 2002 and 2008 editions. This directory lists all business jets by model and serial number and indicates whether they are in service or have been withdrawn from use. It is published annually in January, with the listings current as of mid-year of the previous year.

AMSTAT Fleet Report (Oct 10, 2008). This shows all business jets by model and serial number and indicates whether they are in service or have been withdrawn from use. This listing, which is provided on a subscription basis, is current, but the publisher does not provide historical data.



The likely year in which Stage 2 business jet aircraft will be essentially retired from service is likely to be somewhere in between these two years.

5.19.3.2 Conclusion – Potential Cumulative Impacts

Because Bob Hope Airport already has a ban on nighttime flights of noisier Stage 2 aircraft, the proposed nighttime curfew at Bob Hope Airport will not shift Stage 2 aircraft to Van Nuys Airport. Further, the key point of this analysis is that Stage 2 business aircraft are rapidly being retired naturally from the fleet. This means that over the next decade or so, noise levels at Van Nuys Airport will quite possibly be declining, even in the face of some degree of increase in operations levels. Thus, the likelihood is small that the shift in traffic from Bob Hope Airport caused by the proposed curfew would lead to a cumulative adverse noise impact at Van Nuys.