

Appendix D

NOISE AND COMPATIBILITY LAND USE

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The compatibility of existing and planned land uses in the vicinity of an airport is usually associated with the extent of the airport's noise impacts. Typically, significant impacts will occur over noise-sensitive areas within the 65 Community Noise Equivalent Level (CNEL) noise contour, based upon the Federal Aviation Administration's (FAA) Integrated Noise Model (INM).

INM describes aircraft noise in either the Yearly Day-Night Average Sound Level (DNL) or the CNEL. DNL accounts for the increased sensitivity to noise at night (10:00 p.m. to 7:00 a.m.) and is the metric preferred by the FAA, Environmental Protection Agency (EPA), and Department of Housing and Urban Development (HUD), among others, as an appropriate measure of cumulative noise exposure. In California, however, these agencies accept the use of CNEL which, in addition to nighttime sensitivities, also accounts for increased sensitivities during the evening hours (7:00 p.m. to 10:00 p.m.). The FAA accepts the 65 CNEL metric as the threshold of significance for the noise analysis within the State of California.

CNEL is defined as the average A-weighted sound level as measured in decibels during a 24-hour period. A 10 decibel weighting is applied to noise events occurring at night, and a 4.8 decibel weighting is applied to those occurring during the evening hours. CNEL is a summation metric which allows for objective analysis and can describe noise exposure comprehensively over a large area. In addition to being widely accepted, the primary benefit of using the CNEL metric is that it accounts for the average community response to noise as determined by the actual number and types of noise events and the time of day they occur.

The Town of Apple Valley has adopted an Airport Overlay District to ensure that only compatible land uses are developed within the airport vicinity and to encourage compatible future development in the areas surrounding the airport. Land to the north of the Airport is primarily

undeveloped. Low density residential development is located to the south and east of the airport, with more densely populated areas located farther south.

A variety of user-supplied input data is required to use the INM. This includes the airport elevation, average annual temperature, airport area terrain, a mathematical definition of the airport runways, the mathematical description of ground tracks above which aircraft fly, and the assignment of specific take-off weights to individual flight tracks. In addition, aircraft not included in the model's database may be defined for modeling, subject to FAA approval.

Noise contours were generated for the existing airport condition (2009) and forecast conditions (2015 and 2030). Existing airport activity for 2009 was estimated utilizing an FAA-approved statistical methodology for estimating general aviation operations using local variables.

The selection of individual aircraft types is important to the modeling process because different aircraft types generate different noise levels. The aircraft fleet mix was derived from an inventory of existing operations at the airport. Existing and forecast airport fleet mix data input into the noise analysis (i.e., take-offs and landings, or operations by aircraft) are summarized in **Table D1**.

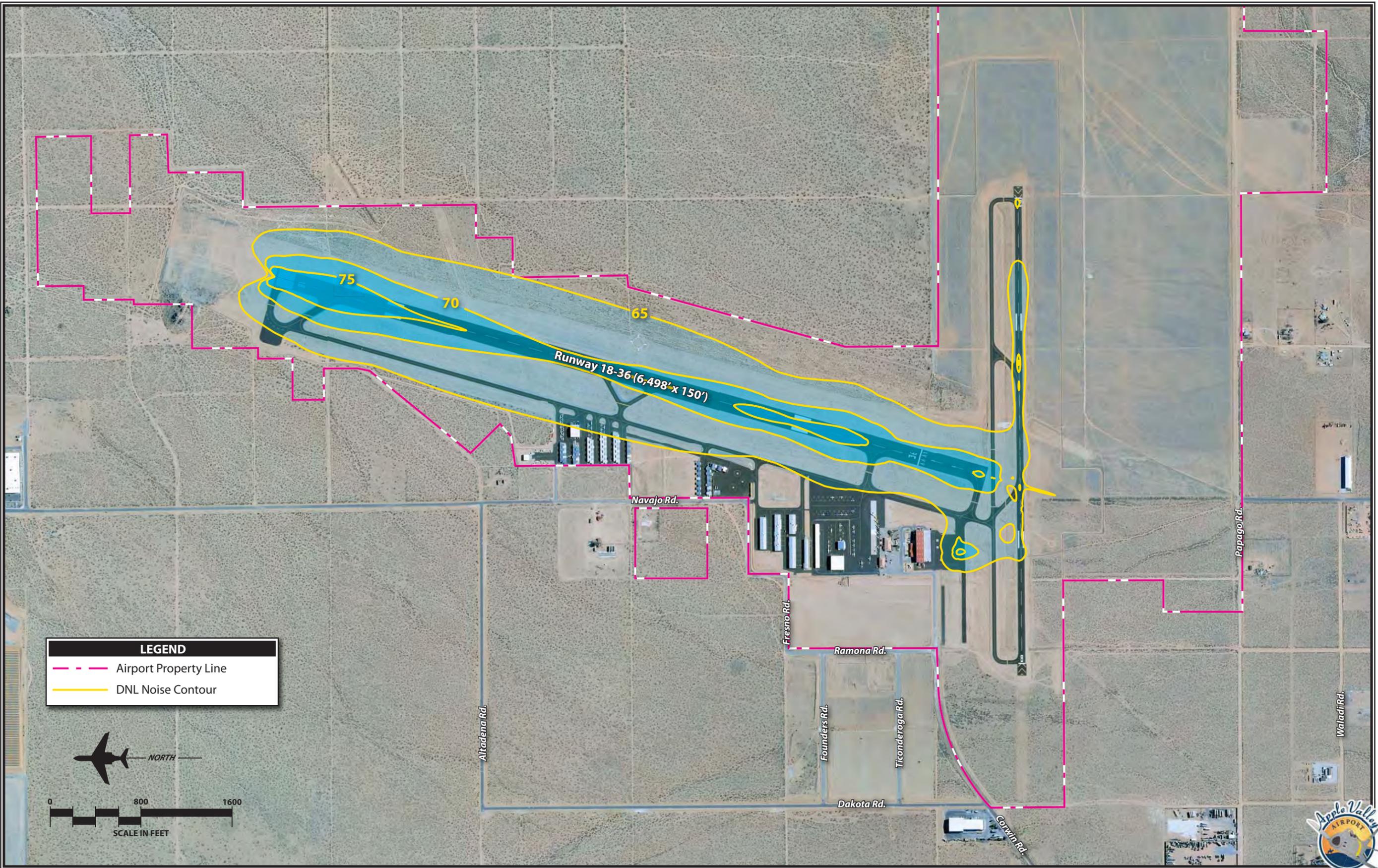
TABLE D1
Operational Fleet Mix
Apple Valley Airport Aircraft Fleet Mix and Operations

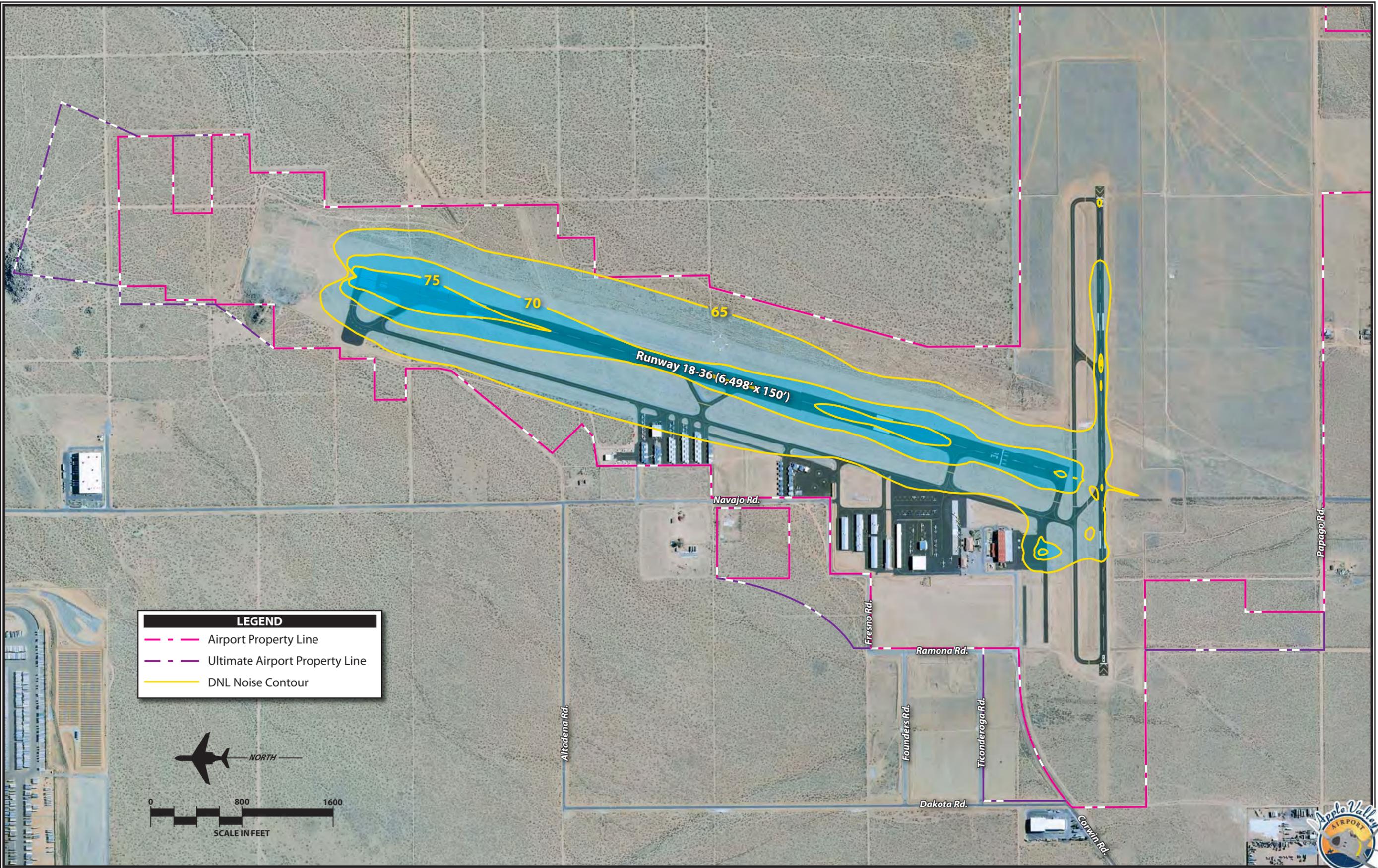
Aircraft	INM Designator	2009	2015	2030
GA Itinerant				
GIV	GIV	50	75	400
CITX	CNA750	100	175	750
CNA500	CNA500	200	400	1,200
Helicopter	SA350D	6,000	6,250	8,000
King Air	DHC6	250	400	1,250
MEP	BEC58P	2,000	1,800	1,500
SEP	GASEPF	6,867	6,900	8,300
Local				
SEP	GASEPF	28,933	29,750	38,750
Helicopter	SA350D	1,000	1,250	2,250
ME	DHC6	1,000	1,200	2,000
Total operations		46,400	48,200	64,400

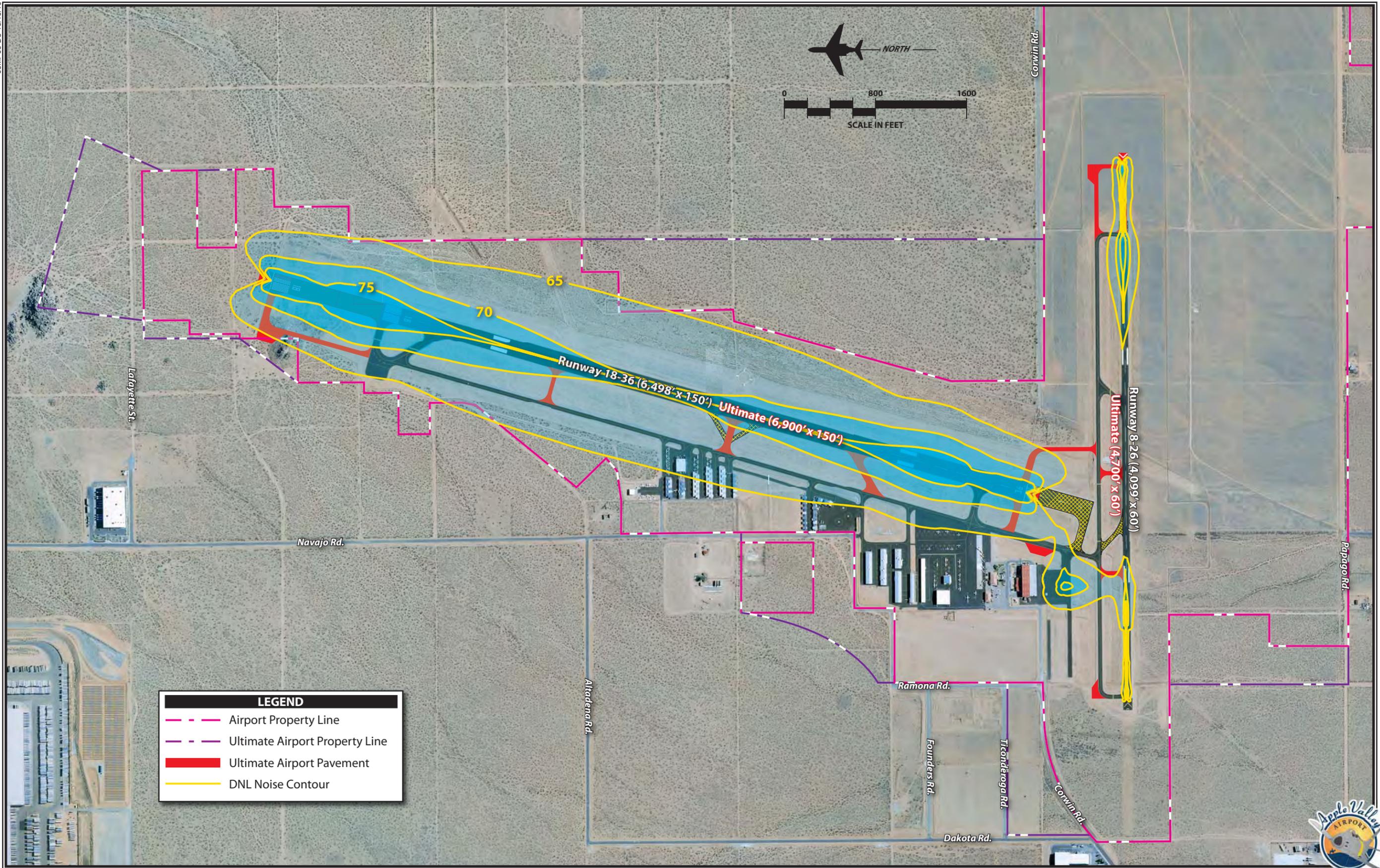
Source: Coffman Associates analysis

Existing noise conditions are depicted on **Exhibit D1**. Under existing conditions, the 65 CNEL contour does not extend beyond airport property, resulting in no significant noise impacts.

Future noise contours for 2015 and 2030 are depicted on **Exhibits D2** and **D3**, respectively. In both future noise conditions, the 65 CNEL contour remains almost entirely on ultimate airport property. Where the 65 CNEL contour does extend beyond ultimate airport property, it encompasses land that, according to the *North Apple Valley Industrial Specific Plan*, is planned for commercial and industrial land uses, which are considered compatible with airport operations.







LEGEND

- - - Airport Property Line
- - - Ultimate Airport Property Line
- █ Ultimate Airport Pavement
- DNL Noise Contour

