

Draft Environmental Impact Statement

Infrastructure Improvements at

the Yap International Airport and

the Yap Seaport

Yap State, Federated States of Micronesia

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Appendix K
Noise Analyses

K-2
Noise Technical Report



Noise Technical Report for the Environmental Impact Statement for Infrastructure Improvements at the Yap International Airport and the Yap Seaport

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1. Introduction

This noise technical report presents the methodology, noise modeling inputs, and results for the Environmental Impact Statement (EIS) for Infrastructure Improvements at the Yap International Airport (YAP) and the Yap Seaport. The sections below discuss noise levels for the Affected Environment and the potential noise Environmental Consequences under the Proposed Action. The evaluation of noise for the Proposed Action includes both long-term aircraft, short-term construction, and Naval ship operations noise. The long-term aircraft noise is described for an average annual day as well as an average day during exercises¹.

According to the Environmental Protection Agency (EPA), annoyance is a psycho-social response to an auditory experience, which has its roots in the unpleasantness of noise, the disruption by noise of ongoing activities, and/or the meaning or message carried by a given noise. In compliance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the DoD predicts the environmental impacts of all major proposed changes in military operations, including the effects of the noise expected from such actions on exposed communities. The reaction of people to a given noise environment is extraordinarily complex. This is particularly evident when evaluating the potential health effects of people exposed to aircraft noise, with its intermittent nature and character, and where noise levels fluctuates significantly with time. Another important element is the complex psychological and physiological reaction of people to the noise environment, as well as their attitude toward the source of the noise. Further exacerbating this complex issue is the possibility that short-term community response can be different than the long-term community reaction. The concept of “community annoyance” was developed to provide one comprehensive term to describe the overall community response to noise, including both degradation of outdoor activities and interference with indoor activities. The primary effect of recurring aircraft noise on exposed communities is “long-term” annoyance. The scientific community has adopted the use of long-term annoyance as a primary indicator of community response, because it attempts to account for all negative aspects of effects from noise, including sleep disturbance, speech interference and distraction from other human activities (DNWG 2009).

In 1974, the Administrator of the EPA, under authority in the Noise Control Act of 1972, recommended all federal agencies adopt the Day-Night Average Sound Level (DNL) noise descriptor system. DNL does not reflect the actual sound level experienced at any point in time. It refers to the average sound level exposure, measured in decibels (dB) on the A-weighted scale, over a 24-hour period, with a 10-dB penalty for operations occurring during the hours of 10:00 p.m. to 7:00 a.m. The penalty accounts for the increased annoyance created by noise events that occur during this time. It provides a single noise descriptor for land use planning (Department of the Air Force 2017).

DNL is used today by federal agencies throughout the United States for the assessment of aircraft noise exposure, with the exception of California which uses a similar metric called Community Noise Equivalent Level (CNEL). DNL noise contours are generated using the latest DoD approved version of the NOISEMAP noise model based on Average Annual Day (AAD) of airfield operations in accordance with AFI 32-7063. Nearly all studies on residential aircraft noise compatibility recommend no residential uses in noise zones above 75 dB DNL. Generally, most land uses exposed to noise levels below 65 dB DNL are considered compatible with airfield operations. Appendix A reproduces the detailed table of land use compatibility guidance from DoD Instruction 4165.57.

¹ Per DoD Instruction 4715.13, “DoD Operational Noise Program”, 3.3 b. 3., a., 1. “The day-night average sound level (DNL) will be used to describe aviation... DNL contours are based on average annual day and averaged over 365 days for long-term compatible use planning.” The noise levels computed for an average day during exercises are included for informational purposes only.

2. Affected Environment

The current noise environment near YAP includes natural sounds and sounds from residential, educational, commercial, light industrial, and public facility land uses in a largely rural to small-town setting. It also includes noise from a small number of air service and charter aircraft operations at YAP averaging less than three combined arrivals and departures per day.

2.1 Aircraft Noise Modeling Methodology and Inputs

Average annual day noise levels for Existing Conditions scenario near YAP were modeled using version 7.370 of Noisemap. The modeling inputs included airfield layout, flight paths, runway utilization, aircraft flight operations, and the locations of noise sensitive receptors.

YAP has a single 6,000 ft runway oriented east-northeast (Runway End 7) to west-southwest (Runway End 25). There are no displaced thresholds and aircraft must taxi on the runway itself due to the lack of a parallel taxiway. For most airports, taxi noise is not a significant noise contributor unless noise sensitive receptors are in atypically close proximity to the taxiway and ramp areas. No taxiway or other ground noise was included in the Affected Environment noise modeling. Table 1 shows the noise modeling parameters for the existing runway layout.

Table 1 Existing Conditions Airport Layout

Runway End	Latitude (deg)	Longitude (deg)	Elevation (ft)	Threshold Crossing Height (ft)	Displaced Arrival Threshold (ft)
7	9.496310	138.074579	90.5	50	0
25	9.501512	138.090389	89.6	50	0

Source: USAF

Existing jet aircraft flight operations at YAP are comprised of twice-weekly service to Guam and once-weekly service to Palau. Propeller operations include once-weekly service to Palau and charter flights. In total, the existing conditions operations at YAP are represented in the noise modeling by four aircraft types with 936 annual operations as shown in Table 2. Table 3 presents the average daily aircraft operations for the Existing Conditions scenario noise modeling. The average daily operations are equal to the annual operations divided by 365. For each aircraft, the table lists the representative aircraft used for noise modeling in Noisemap. Each representative aircraft was selected because it matched the actual aircraft, was a military or civilian equivalent, or due to the overall similarity of the characteristics including thrust and weight. No military aircraft are included in the Existing Conditions scenario noise modeling.

Table 2 Existing Conditions Annual Aircraft Flight Operations

Group	Aircraft	NoiseMap Aircraft	Annual Operations						
			Arrival			Departure			Total
			Daytime	Nighttime	Total	Daytime	Nighttime	Total	
Civil	737-800	B-737-700	0	104	104	0	104	104	208
	757	B-757-200-RR	52	0	52	52	0	52	104
	BE-20a	C12	182	0	182	182	0	182	364
	BE 65-B80	U-8F	130	0	130	130	0	130	260
Total			364	104	468	364	104	468	936

Source: USAF

Table 3 Existing Conditions Average Annual Day Aircraft Flight Operations

Group	Aircraft	NoiseMap Aircraft	Daily Operations						
			Arrival			Departure			Total
			Daytime	Nighttime	Total	Daytime	Nighttime	Total	
Civil	737-800	B-737-700	0.0000	0.2849	0.2849	0.0000	0.2849	0.2849	0.5699
	757	B-757-200-RR	0.1425	0.0000	0.1425	0.1425	0.0000	0.1425	0.2849
	BE-20a	C12	0.4986	0.0000	0.4986	0.4986	0.0000	0.4986	0.9973
	BE 65-B80	U-8F	0.3562	0.0000	0.3562	0.3562	0.0000	0.3562	0.7123
Total			0.9973	0.2849	1.2822	0.9973	0.2849	1.2822	2.5644

Source: USAF

All aircraft in the Existing Conditions scenario noise modeling arrive and depart following runway heading. Aircraft performance profiles for the propeller aircraft were imported from prior Air Force noise modeling studies. The profiles for the Boeing aircraft were transcribed from the Federal Aviation Administration’s (FAA’s) Aviation Environmental Design Tool (AEDT) version 3g. Appendix B provides the full profile parameters for each arrival and departure operation in the noise modeling.

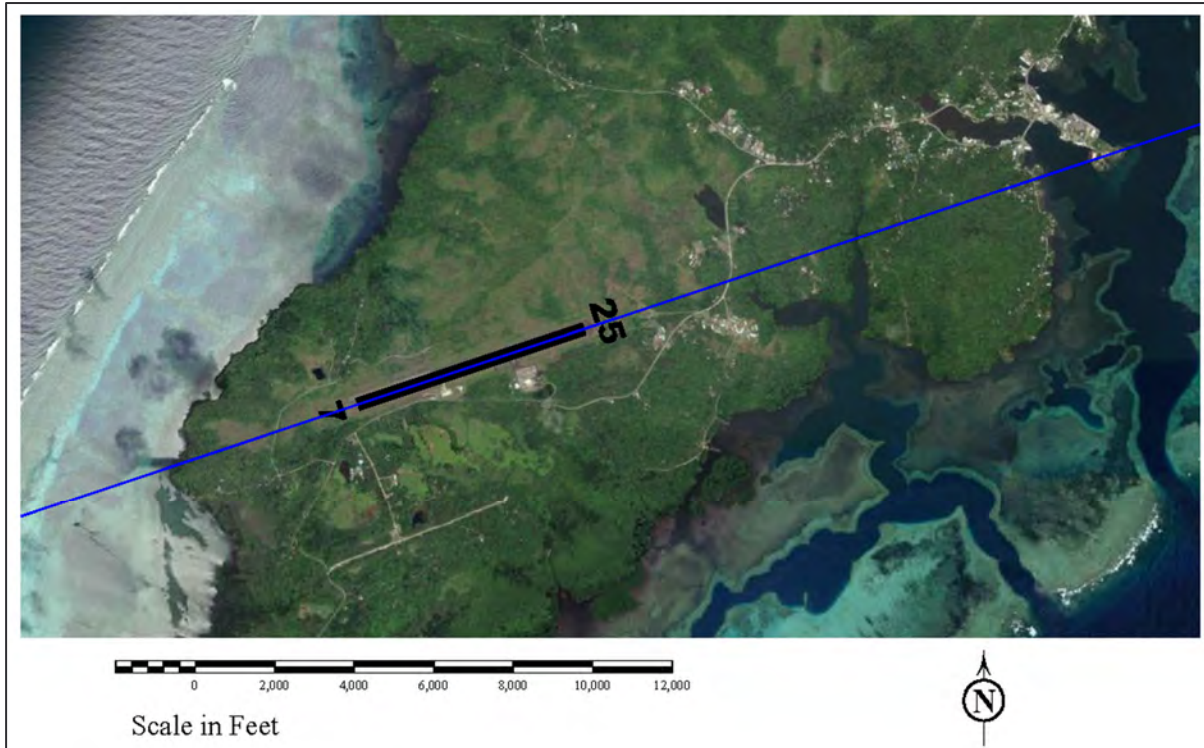


Figure 1 Existing Conditions Noise Modeling Flight Tracks

Winds are the primary factor in determining runway utilization as taking off and landing into the wind are strongly preferred for safety. At YAP, the winds are predominantly from the east which causes more operations to occur on Runway 7 than Runway 25. As shown in Table 4, the noise modeling inputs for the Existing Conditions scenario utilize Runway 7 for 70% of operations and Runway 25 for 30% of operations for all aircraft, operation types, and times of day.

Table 4 Existing Conditions Runway Utilization

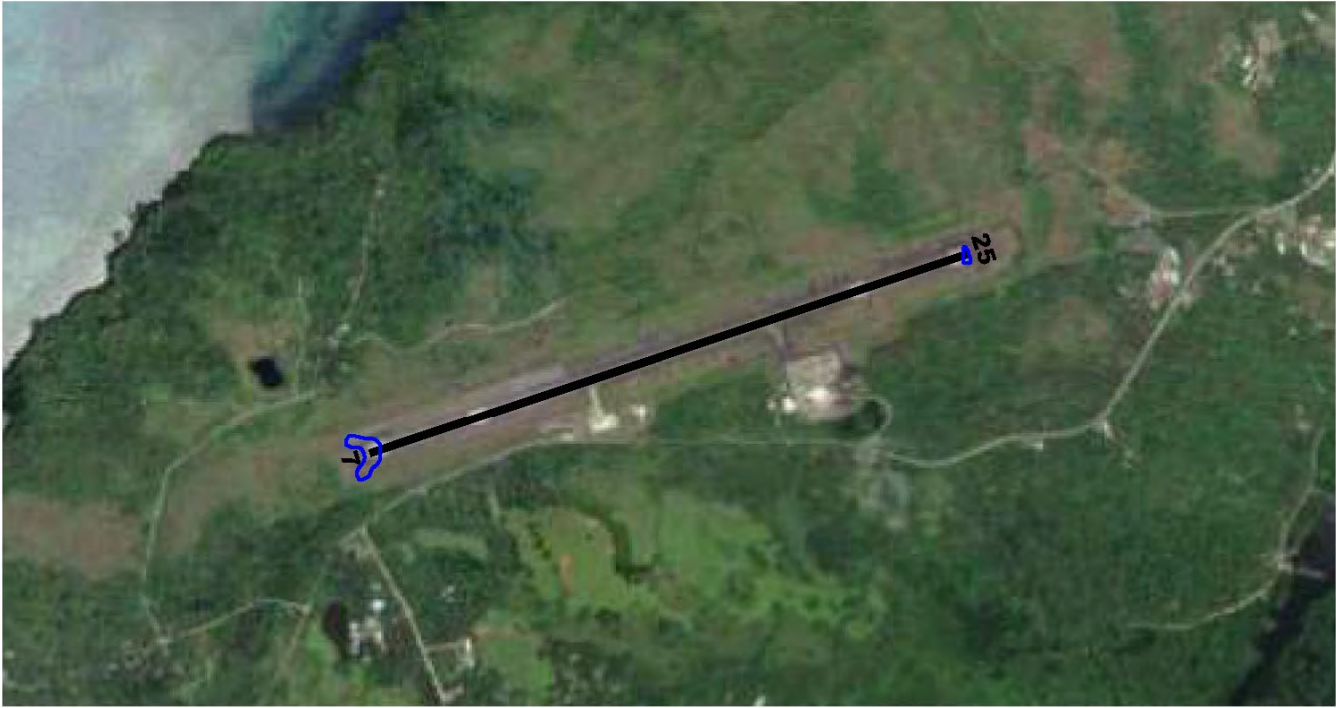
Aircraft Group	Operation Type	Time of Day	Runway 7	Runway 25	Total
All	Arrival	Daytime	70%	30%	100%
		Nighttime	70%	30%	100%
	Departure	Daytime	70%	30%	100%
		Nighttime	70%	30%	100%

Source: USAF

2.2 Aircraft Noise Modeling Results

Figure 2 displays the 65 dB DNL aircraft noise contours for the Existing Conditions Average Annual Day scenario at YAP. With just over one arrival and one departure per average day, the level of aircraft operations at YAP is very low. The figure shows that small islands of the 65 dB DNL contour are present near the start of takeoff roll at each runway end. No areas off airport property are exposed to aircraft noise in excess of 65 dB DNL. Using the land use compatibility guidelines in Appendix A, all land uses are generally compatible with aircraft noise when it is below 65 dB DNL. Figure 3 shows the location of noise sensitive receptors in the vicinity of the airport. Table 5 shows that computed aircraft DNL for identified noise sensitive receptors near YAP range from 35 to 49 dB DNL.

In addition to aircraft noise, other noise sources are present within the study area. Typical rural to small town noise levels from non-aircraft sources would be expected to result in DNLs ranging from the mid-40s to lower 50s (EPA 1974). Given the low levels of aircraft noise, aircraft noise is not likely to be responsible for the majority of the noise exposure currently at noise sensitive locations within the study area.



Scale in Feet



Figure 2 Existing Conditions Average Annual Day Aircraft Day-Night Average Sound Level (DNL) Contours

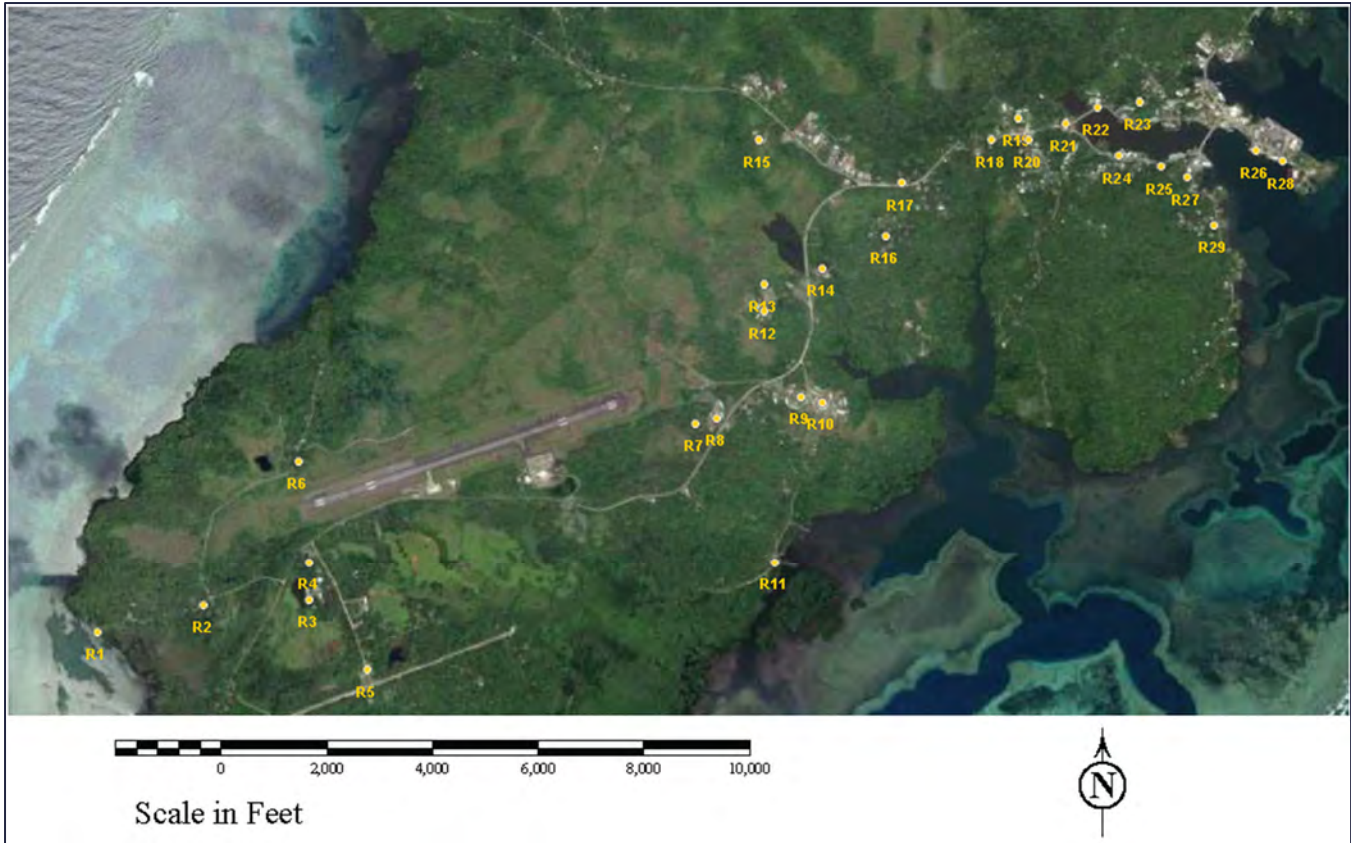


Figure 3 Noise Sensitive Receptors

Table 5 Existing Conditions Aircraft Noise Exposure at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Day-Night Average Sound Level (dB)
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	44
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	44
R3	Yap Catholic High School	School	9.491389	138.074167	43
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	48
R5	Milew Community Center	Community Center	9.487778	138.077222	35
R6	Residence North of Airport	Private Residence	9.498611	138.073611	49
R7	Residences East of Airport	Private Residences	9.500556	138.094444	49
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	48
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	47
R10	Yap High School	School	9.501667	138.101111	46
R11	Ohnn	Church	9.493333	138.098611	36
R12	Colonia Middle School	School	9.506389	138.098056	48
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	45
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	45
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	35
R16	Jesylene Googur	Private Residences	9.510278	138.104444	44
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	40
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	39
R19	Gaanelay Elementary School	School	9.516389	138.111389	38
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	39
R21	Aces Mart 2	Business	9.516111	138.113889	39
R22	Aces Mart 1	Business	9.516944	138.115556	38
R23	Yap State Department of Education	Government Office	9.517222	138.117778	38
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	41
R25	Oceania Hotel	Hotel	9.513889	138.118889	42
R26	Yap Public Library	Public Library	9.514722	138.123889	42
R27	YCA Hardware	Business	9.513333	138.120278	43
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	43
R29	J&S Store	Business	9.510833	138.121667	43

3. Environmental Consequences

The noise evaluation for the Proposed Action included the analysis of long-term impacts due to aircraft noise for both civil and military aircraft for future conditions with the Proposed Action implemented as well as the evaluation of short-term effects of construction noise due to the Proposed Action.

3.1 Aircraft Noise Modeling

Two overall scenarios were evaluated for future civil and military aircraft operations at YAP, the No Action scenario and Proposed Action scenario. The sections below discuss the noise modeling methods, inputs, and results for these scenarios.

3.1.1 Aircraft Noise Modeling Methodology and Inputs

Average annual day aircraft noise levels for the Proposed Action near YAP were modeled using version 7.370 of Noisemap. The modeling inputs included airfield layout, flight paths, runway utilization, aircraft flight operations, aircraft runup operations, and the locations of noise sensitive receptors.

Table 6 shows the noise modeling parameters for the Proposed Action runway layout. Runway 7/25 is extended at both ends. Additionally, the arrival threshold is displaced by 1,100 ft at each end. The proposed layout includes a new ramp area and a full-length parallel taxiway, both to the north of the Runway. Noise from high-power landing, take-off, and runup operations dominates the overall aircraft noise exposure and low power operations on the taxiway and ramp areas were not included in the Environmental Consequences noise modeling.

Table 6 Proposed Action Airport Layout

Runway End	Latitude (deg)	Longitude (deg)	Elevation (ft)	Threshold Crossing Height (ft)	Displaced Arrival Threshold (ft)
7	9.495366	138.071678	94.4	50	1100
25	9.503249	138.095635	92.3	50	1100

Source: USAF

Aircraft flight operations at YAP for the Proposed Action noise modeling scenario include expected civil operations, which remain unchanged from the Existing Conditions operations in Table 2, as well as new military operations by the Air Force and Navy. The Air Force operations are by cargo, tanker, and fighter aircraft and are expected to occur over two two-week periods during the year. Navy flights are forecast to occur throughout the year. In total, the Proposed Action noise modeling includes 936 civil and 988 military aircraft operations as shown in Table 7. Table 8 displays the average annual day noise modeling aircraft flight operations for the Proposed Action scenario. The average daily operations are equal to the annual operations divided by 365. For each aircraft, the table lists the representative aircraft used for noise modeling in Noisemap. Each representative aircraft was selected because it matched the actual aircraft, was a military or civilian equivalent, or due to the overall similarity of the characteristics including thrust and weight. Although night operations are not specifically planned, the Air Force estimated that 10% of the military operations could occur during the 10 pm – 7 am nighttime period to account for mission contingencies.

Table 7 Proposed Action Annual Aircraft Flight Operations

Group	Aircraft	Noise map Aircraft	Annual Operations						
			Arrival			Departure			Total
			Daytime	Nighttime	Total	Daytime	Nighttime	Total	
Civil	737-800	B-737-700	0	104	104	0	104	104	208
	757	B-757-200-RR	52	0	52	52	0	52	104
	BE-20a	C12	182	0	182	182	0	182	364
	BE 65-B80	U-8F	130	0	130	130	0	130	260
Air Force Cargo	C-17	C-17	13	1	14	13	1	14	28
	C-130	C-130H&N&P	25	3	28	25	3	28	56
Air Force Tanker	KC-46	KC-46X	25	3	28	25	3	28	56
	KC-135	KC-135R	25	3	28	25	3	28	56
Air Force Fighter	F-15	F-15E	76	8	84	76	8	84	168
	F-16	F-16C	76	8	84	76	8	84	168
	F-22	F-22	76	8	84	76	8	84	168
	F-35	F-35A	76	8	84	76	8	84	168
Navy	Modified Boeing 737-800	B-737-700	54	6	60	54	6	60	120
Total			809	153	962	809	153	962	1,924

Source: USAF

Table 8 Proposed Action Average Annual Day Aircraft Flight Operations

Group	Aircraft	Noise map Aircraft	Daily Operations						
			Arrival			Departure			Total
			Daytime	Nighttime	Total	Daytime	Nighttime	Total	
Civil	737-800	B-737-700	0.0000	0.2849	0.2849	0.0000	0.2849	0.2849	0.5699
	757	B-757-200-RR	0.1425	0.0000	0.1425	0.1425	0.0000	0.1425	0.2849
	BE-20a	C12	0.4986	0.0000	0.4986	0.4986	0.0000	0.4986	0.9973
	BE 65-B80	U-8F	0.3562	0.0000	0.3562	0.3562	0.0000	0.3562	0.7123
Air Force Cargo	C-17	C-17	0.0345	0.0038	0.0384	0.0345	0.0038	0.0384	0.0767
	C-130	C-130H&N&P	0.0690	0.0077	0.0767	0.0690	0.0077	0.0767	0.1534
Air Force Tanker	KC-46	KC-46X	0.0690	0.0077	0.0767	0.0690	0.0077	0.0767	0.1534
	KC-135	KC-135R	0.0690	0.0077	0.0767	0.0690	0.0077	0.0767	0.1534
Air Force Fighter	F-15	F-15E	0.2071	0.0230	0.2301	0.2071	0.0230	0.2301	0.4603
	F-16	F-16C	0.2071	0.0230	0.2301	0.2071	0.0230	0.2301	0.4603
	F-22	F-22	0.2071	0.0230	0.2301	0.2071	0.0230	0.2301	0.4603
	F-35	F-35A	0.2071	0.0230	0.2301	0.2071	0.0230	0.2301	0.4603
Navy	Modified Boeing 737-800	B-737-700	0.1479	0.0164	0.1644	0.1479	0.0164	0.1644	0.3288
Total			2.2153	0.4203	2.6356	2.2153	0.4203	2.6356	5.2712

Source: USAF

The noise modeling for the Proposed Action includes the calculation of the average noise exposure during the twice annual Air Force exercises at YAP. The Air Force operations occur over two 14-day periods each year. Thus, the average daily operations for the Air Force aircraft are equal to the annual operations divided by 28. The civil and Navy operations are spread throughout the year, and therefore, their average daily operations during the Air Force exercises remain equal to the annual total divided by 365. Table 9 presents the average daily noise modeling aircraft flight operations during the Air Force exercises.

Table 9 Proposed Action Average Exercises Day Aircraft Flight Operations

Group	Aircraft	Noisemap Aircraft	Daily Operations						
			Arrival			Departure			Total
			Daytime	Nighttime	Total	Daytime	Nighttime	Total	
Civil	737-800	B-737-700	0.0000	0.2849	0.2849	0.0000	0.2849	0.2849	0.5699
	757	B-757-200-RR	0.1425	0.0000	0.1425	0.1425	0.0000	0.1425	0.2849
	BE-20a	C12	0.4986	0.0000	0.4986	0.4986	0.0000	0.4986	0.9973
	BE 65-B80	U-8F	0.3562	0.0000	0.3562	0.3562	0.0000	0.3562	0.7123
Air Force Cargo	C-17	C-17	0.4500	0.0500	0.5000	0.4500	0.0500	0.5000	1.0000
	C-130	C-130H&N&P	0.9000	0.1000	1.0000	0.9000	0.1000	1.0000	2.0000
Air Force Tanker	KC-46	KC-46X	0.9000	0.1000	1.0000	0.9000	0.1000	1.0000	2.0000
	KC-135	KC-135R	0.9000	0.1000	1.0000	0.9000	0.1000	1.0000	2.0000
Air Force Fighter	F-15	F-15E	2.7000	0.3000	3.0000	2.7000	0.3000	3.0000	6.0000
	F-16	F-16C	2.7000	0.3000	3.0000	2.7000	0.3000	3.0000	6.0000
	F-22	F-22	2.7000	0.3000	3.0000	2.7000	0.3000	3.0000	6.0000
	F-35	F-35A	2.7000	0.3000	3.0000	2.7000	0.3000	3.0000	6.0000
Navy	Modified Boeing 737-800	B-737-700	0.1479	0.0164	0.1644	0.1479	0.0164	0.1644	0.3288
Total			15.0952	1.8514	16.9466	15.0952	1.8514	16.9466	33.8932

Source: USAF

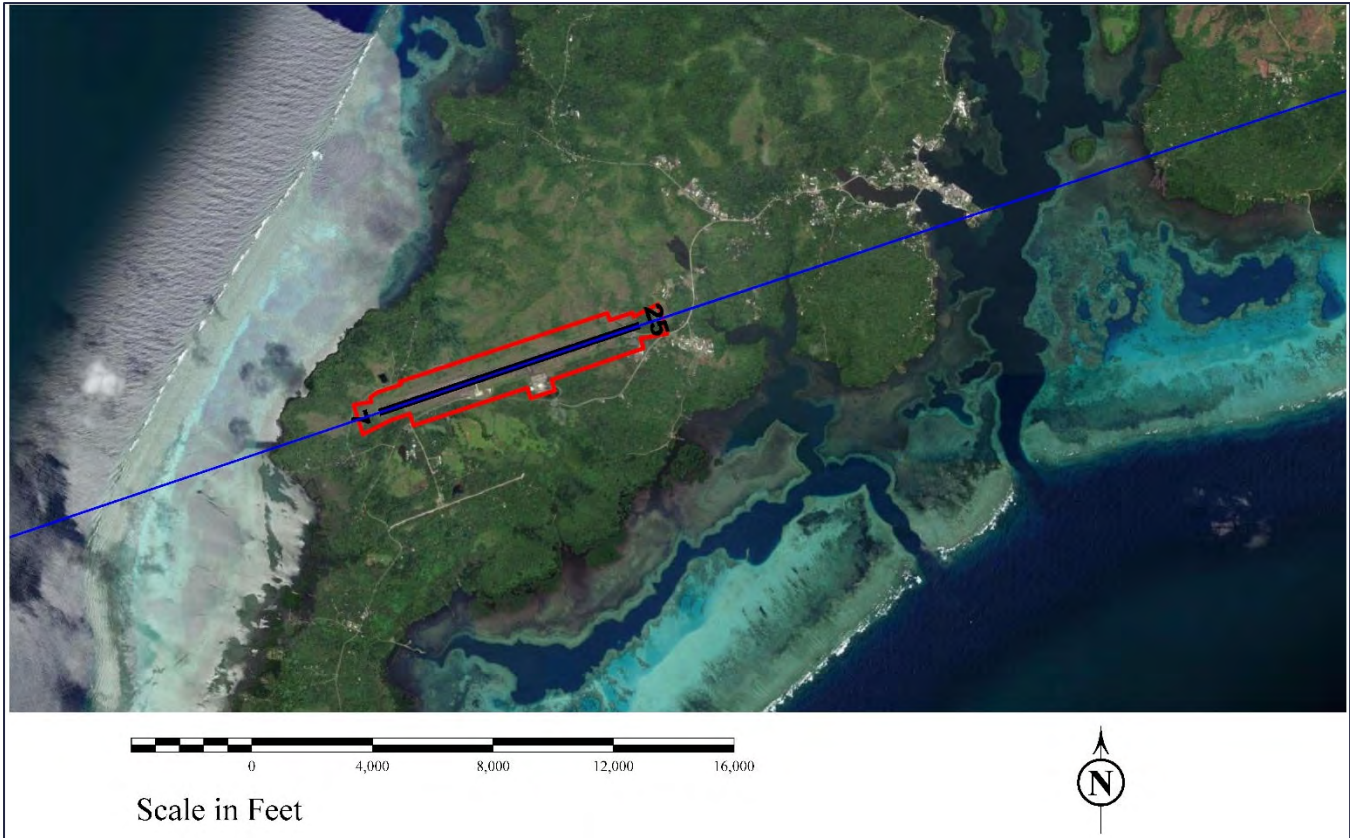


Figure 4 Proposed Action Noise Modeling Flight Tracks

As with existing aircraft operations, the future civil and military operations are modeled with takeoffs and landings along runway heading as shown in Figure 4. The same wind considerations that cause a preference for arrivals and departures on Runway 7 for existing operations by civil aircraft also apply for future civil and military operations in the Proposed Action noise modeling. Table 10 shows runway use splits for all aircraft groups, operation types, and times of day for the Proposed Action noise modeling.

Table 10 Proposed Action Noise Modeling Runway Utilization

Aircraft Group	Operation Type	Time of Day	Runway 7	Runway 25	Total
All	Arrival	Daytime	70%	30%	100%
		Nighttime	70%	30%	100%
	Departure	Daytime	70%	30%	100%
		Nighttime	70%	30%	100%

Source: USAF

In addition to aircraft flight operations, the Proposed Action aircraft noise modeling includes preflight runups and maintenance runups. These high-power ground operations occur at the runway end just prior to take-off and on the newly constructed ramp area, respectively. All military aircraft with sufficient information in the Noisemap database were included in the modeling for these operations. Preflight runups were modeled at 75% to 80% power using all engines for

two minutes. Maintenance runups were at 70% to 80% power using all engines for 30 or 60 minutes. Table 11 shows the modeled runups for the average annual day Proposed Action scenario. Table 12 shows the modeled runups for the Proposed Action Average Exercises Day scenario.

Table 11 Proposed Action Noise Modeling Average Annual Day Preflight and Maintenance Runups

Aircraft	Noisemap Aircraft	Daily Operations		Duration per Operation (min)	# of Engines in Use	Engine Power	Power Units	Notes
		Daytime	Nighttime					
C-17	C-17	0.0242	0.0027	2	4	1.0	EPR	Runway 7 Preflight
		0.0104	0.0012	2	4	1.0	EPR	Runway 25 Preflight
		0.0019	0.0000	60	4	70	% NC	Maintenance
C-130	C-130H&N&P	0.0483	0.0054	2	4	775	C TIT	Runway 7 Preflight
		0.0207	0.0023	2	4	775	C TIT	Runway 25 Preflight
		0.0038	0.0000	60	4	775	C TIT	Maintenance
KC-135	KC-135R	0.0483	0.0054	2	4	80	% NF	Runway 7 Preflight
		0.0207	0.0023	2	4	80	% NF	Runway 25 Preflight
		0.0038	0.0000	60	4	70	% NF	Maintenance
F-15	F-15E	0.1450	0.0161	2	2	80	% NC	Runway 7 Preflight
		0.0621	0.0069	2	2	80	% NC	Runway 25 Preflight
		0.0460	0.0000	30	2	80	% NC	Maintenance
F-16	F-16C	0.1450	0.0161	2	1	80	% NC	Runway 7 Preflight
		0.0621	0.0069	2	1	80	% NC	Runway 25 Preflight
		0.0460	0.0000	30	1	80	% NC	Maintenance
F-22	F-22	0.1450	0.0161	2	2	80	% ETR	Runway 7 Preflight
		0.0621	0.0069	2	2	80	% ETR	Runway 25 Preflight
		0.0460	0.0000	30	2	80	% ETR	Maintenance
F-35	F-35A	0.1450	0.0161	2	1	80	% ETR	Runway 7 Preflight
		0.0621	0.0069	2	1	80	% ETR	Runway 25 Preflight
		0.0460	0.0000	30	1	80	% ETR	Maintenance

Source: USAF

Table 12 Proposed Action Noise Modeling Average Exercises Day Preflight and Maintenance Runups

Aircraft	Noisemap Aircraft	Daily Operations		Duration per Operation (min)	# of Engines in Use	Engine Power	Power Units	Notes
		Daytime	Nighttime					
C-17	C-17	0.3150	0.0350	2	4	1.0	EPR	Runway 7 Preflight
		0.1350	0.0150	2	4	1.0	EPR	Runway 25 Preflight
		0.0250	0.0000	60	4	70	% NC	Maintenance
C-130	C-130H&N&P	0.6300	0.0700	2	4	775	C TIT	Runway 7 Preflight
		0.2700	0.0300	2	4	775	C TIT	Runway 25 Preflight
		0.0500	0.0000	60	4	775	C TIT	Maintenance
KC-135	KC-135R	0.6300	0.0700	2	4	80	% NF	Runway 7 Preflight
		0.2700	0.0300	2	4	80	% NF	Runway 25 Preflight
		0.0500	0.0000	60	4	70	% NF	Maintenance
F-15	F-15E	1.8900	0.2100	2	2	80	% NC	Runway 7 Preflight
		0.8100	0.0900	2	2	80	% NC	Runway 25 Preflight
		0.6000	0.0000	30	2	80	% NC	Maintenance
F-16	F-16C	1.8900	0.2100	2	1	80	% NC	Runway 7 Preflight
		0.8100	0.0900	2	1	80	% NC	Runway 25 Preflight
		0.6000	0.0000	30	1	80	% NC	Maintenance
F-22	F-22	1.8900	0.2100	2	2	80	% ETR	Runway 7 Preflight
		0.8100	0.0900	2	2	80	% ETR	Runway 25 Preflight
		0.6000	0.0000	30	2	80	% ETR	Maintenance
F-35	F-35A	1.8900	0.2100	2	1	80	% ETR	Runway 7 Preflight
		0.8100	0.0900	2	1	80	% ETR	Runway 25 Preflight
		0.6000	0.0000	30	1	80	% ETR	Maintenance

Source: USAF

3.1.2 Aircraft Noise Modeling Results

Three aircraft noise modeling scenarios were used to evaluate future conditions near YAP: No Action Average Annual Day, Proposed Action Annual Average Day, and Proposed Action Average Exercises Day. Under the No Action Average Annual Day scenario, improvements are not made at YAP and military aircraft operations are not introduced. Civil aircraft flights remain at current levels and the noise exposure is the same as the results presented in Section 2.2 for the Existing Conditions Average Annual Day scenario. Under that scenario no noise sensitive locations are exposed to aircraft noise levels exceeding the land use compatibility guidelines presented in Appendix A.

Under the Proposed Action, improvements are made at YAP and military operations are introduced. Land use compatibility impacts for noise sensitive locations are evaluated using the Proposed Action Average Annual Day noise modeling scenario. Because Air Force operations are forecast to be concentrated within two two-week periods within the year, the noise results for the Proposed Action Average Exercises Day noise modeling scenario are presented here for informational purposes.

Figure 5 displays the 65 to 85 dB DNL aircraft noise contours in 5 dB increments for the Proposed Action Average Annual Day scenario at YAP. The figure shows that areas off airport property including some noise sensitive locations are exposed to aircraft noise in excess of 65 dB DNL. Using the land use compatibility guidelines in Appendix A, all land uses are generally compatible with aircraft noise when it is below 65 dB DNL. Table 13 shows that computed aircraft DNL for identified noise sensitive receptors near YAP range from 56 to 74 dB DNL for the Proposed Action Average Annual Day scenario. Table cells for noise levels in excess of the levels within the land use compatibility guidance in appendix A are shaded. Note that receptors R8 and R14 show noise levels over 65 dB DNL, but these industrial land uses are compatible at the computed DNL shown. Potential significant impacts from the Proposed Action include land use incompatibility for residential and educational noise sensitive receptors.

Receptors R2, R4, R6, R7, R9, and R13 indicate residential land uses and are located within the 70 dB DNL contour. Residential land use is generally considered incompatible with aircraft noise levels in excess of 65 dB DNL unless local considerations or adequate soundproofing is present. The land use compatibility guidance presented in Appendix A strongly discourages residential land uses between 70 dB and 74 dB DNL. If local conditions regarding the need for housing may require residential use in these zones, measures to achieve an outdoor to indoor noise level reduction of 30 dB should be incorporated. Adequate soundproofing may include multi-pane windows, acoustically-rated doors with functioning seals, and a sufficient climate control system to keep windows and doors closed for heating and cooling. Publicly available street-view photography suggests that adequate sound proofing is not likely present for many buildings near YAP and that windows and doors may be left open for cooling purposes.

Receptors R3 and R10 indicate educational land uses and are located with the 65 dB DNL contour. Educational services are considered compatible between 65 and 69 dB DNL only if the buildings can provide 25 dB or greater outdoor to indoor noise reduction. Receptors R9, R12, and R13 indicate educational land uses and are located with the 70 dB DNL contour. Educational services are considered compatible between 70 and 74 dB DNL only if the buildings can provide 30 dB or greater outdoor to indoor noise reduction. It is not known if these structures have adequate soundproofing to achieve these reductions or if cooling systems are present which would facilitate keeping windows and doors closed.

In addition to aircraft noise, other noise sources are present within the study area. Typical rural to small town noise levels from other sources would be expected to result in DNLs ranging from the mid-40s to lower 50s [EPA, 1974]. Given the low levels of other noise sources, aircraft noise is likely to be responsible for the majority of the noise exposure at all noise sensitive locations within the study area under the Proposed Action scenario.

Figure 6 shows the 65 to 85 dB DNL contours in 5 dB increments for the Proposed Action Average Exercises Day noise modeling scenario. The figure and Table 13 show that the 65 dB DNL contour encompasses all identified noise sensitive receptors. The shading in the Average Exercises Day column of Table 13 indicates receptors with land uses that would be generally incompatible with the computed noise exposure if it were present throughout the year. This is presented for informational purposes and does not represent a finding of significant impact.

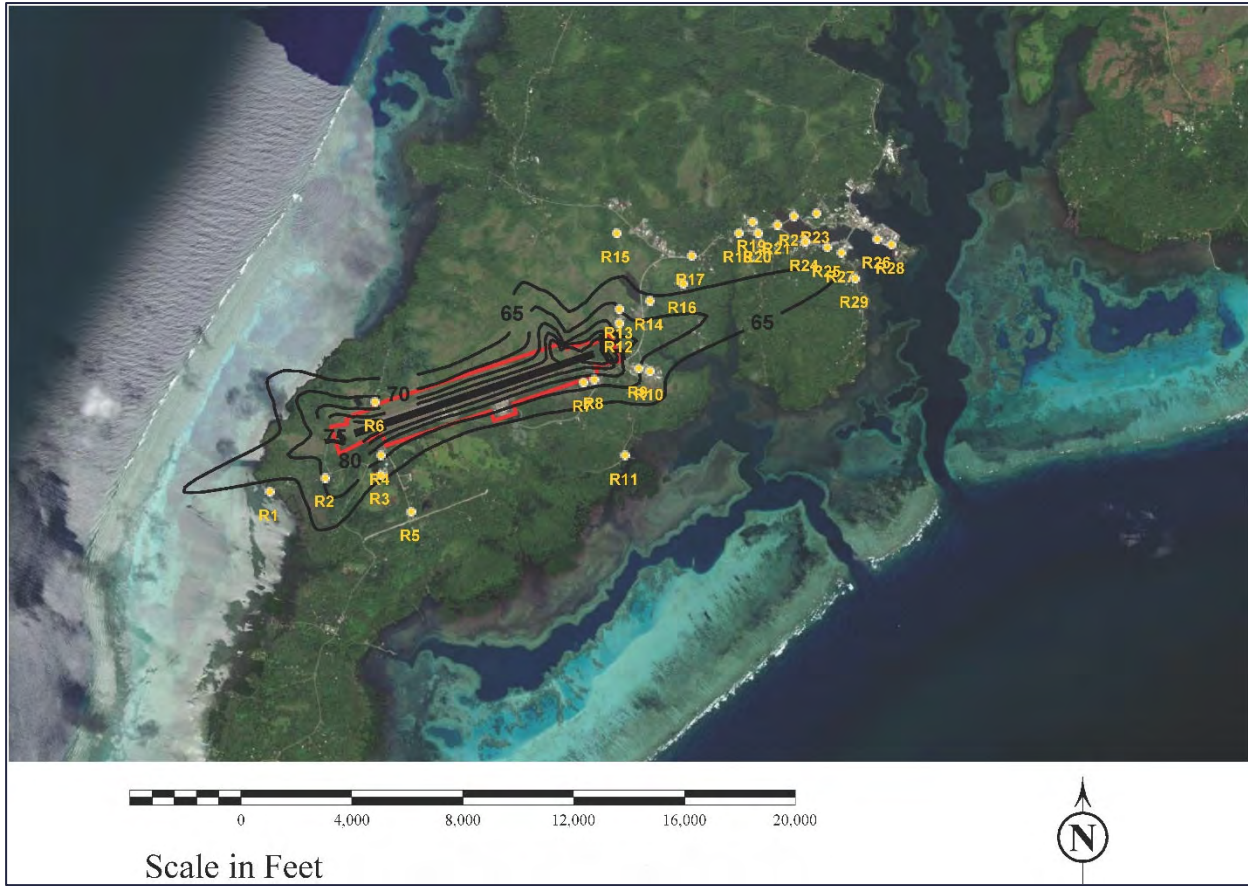


Figure 5 Proposed Action Average Annual Day Aircraft Day-Night Average Sound Level (DNL) Contours

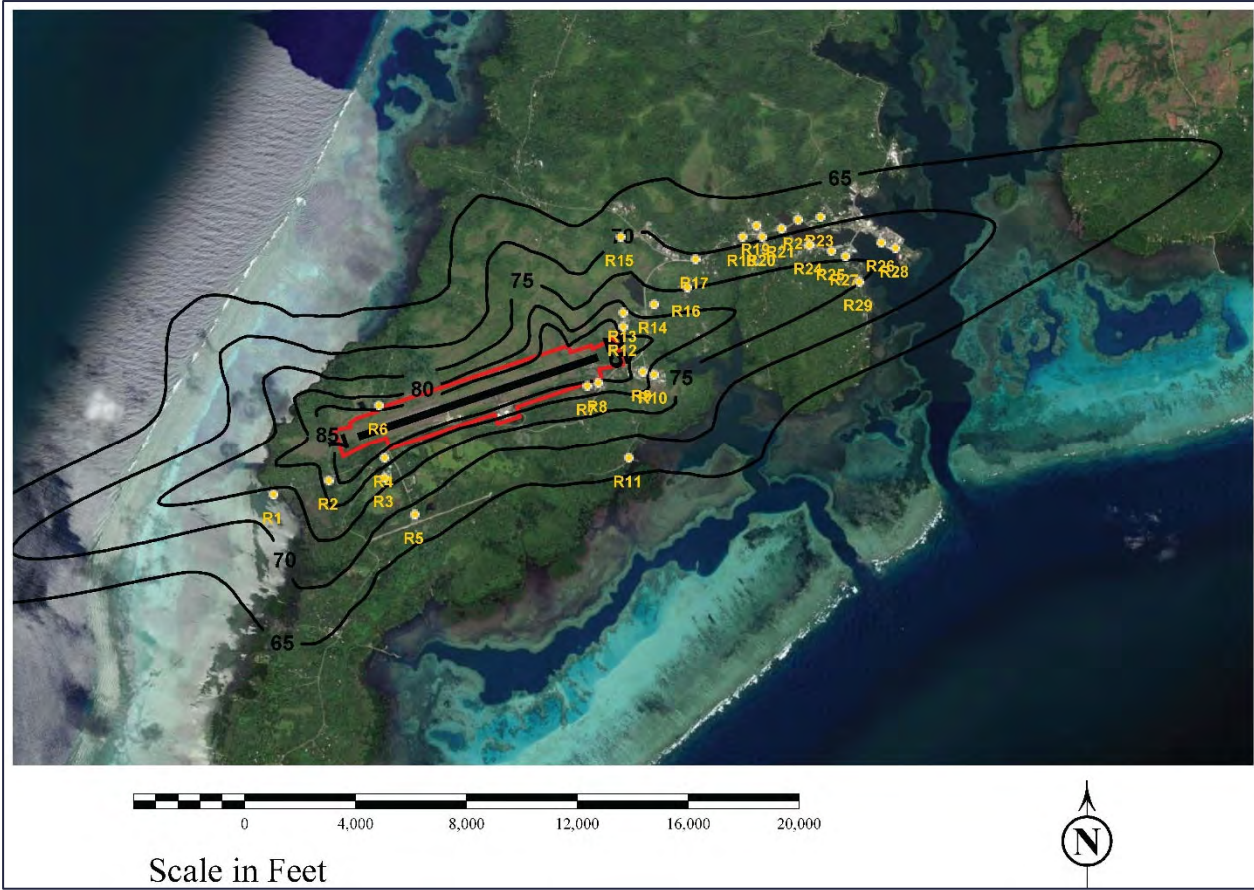


Figure 6 Proposed Action Average Exercises Day Aircraft Day-Night Average Sound Level (DNL) Contours

Table 13 Proposed Action Aircraft Noise Exposure at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Day-Night Average Sound Level (dB)	
					Average Annual Day	Average Exercises Day*
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	63	74
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	71	82
R3	Yap Catholic High School	School	9.491389	138.074167	67	78
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	72	83
R5	Milew Community Center	Community Center	9.487778	138.077222	58	69
R6	Residence North of Airport	Private Residence	9.498611	138.073611	71	83
R7	Residences East of Airport	Private Residences	9.500556	138.094444	73	84
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	74	85
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	71	82
R10	Yap High School	School	9.501667	138.101111	68	79
R11	Ohnn	Church	9.493333	138.098611	56	67
R12	Colonia Middle School	School	9.506389	138.098056	72	83
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	70	81
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	66	77
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	59	70
R16	Jesylyene Googur	Private Residences	9.510278	138.104444	63	74
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	60	71
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	58	69
R19	Gaanelay Elementary School	School	9.516389	138.111389	57	68
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	58	69
R21	Aces Mart 2	Business	9.516111	138.113889	58	69
R22	Aces Mart 1	Business	9.516944	138.115556	57	68
R23	Yap State Department of Education	Government Office	9.517222	138.117778	58	69
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	61	72
R25	Oceania Hotel	Hotel	9.513889	138.118889	62	74
R26	Yap Public Library	Public Library	9.514722	138.123889	62	73
R27	YCA Hardware	Business	9.513333	138.120278	63	75
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	63	74
R29	J&S Store	Business	9.510833	138.121667	64	75

Notes: Blue shading indicates that the land use for the noise sensitive receptor is generally considered incompatible with

the average annual noise level using the guidance in Appendix A. *Included for informational purposes only. Average annual day noise exposure is utilized for impact assessment.

3.2 Construction Noise Modeling

In addition to the impacts of long-term aircraft noise levels, short-term noise exposures due to construction activities were evaluated for the Proposed Action. These construction activities were comprised of four categories: airport, seaport, and roadway construction and dredging. Airport construction includes the clearing and grading of land and the construction of temporary turn-around areas, taxiways, extended runway ends, arresting system foundations, an aircraft parking apron, and perimeter roads. Roadway construction includes improvements and realignments of roads near the airport, improvements to the roadway connecting the airport to the seaport, and roadway improvements in the seaport area. Seaport construction includes the demolition of an existing warehouse, improvements to the existing wharf, and construction of a new wharf extension. Dredging includes activities in the berth, turn around basin, and navigation channel entrance areas.

3.2.1 Construction Noise Modeling Methodology

For each category of activity, available high-level project maps, construction schedules, and equipment lists were evaluated to provide noise modeling inputs. Noise source locations were determined from project maps and the minimum distance between each source area each receptor was computed. Lists of construction equipment used in each source area were developed from the project schedules and equipment lists. These equipment were then mapped to equipment in the Federal Highway Administration's (FHWA's) Roadway Construction Noise Model (RCNM) as incorporated in version 3.2 of the FHWA's Traffic Noise Model (TNM). Maximum A-weighted Sound Level (LA_{max}) values at each noise sensitive receptor were then computed using RCNM source levels and the minimum source-receiver distances. The noise results reflect a conservative estimate of the LA_{max} due to assumptions of simple spherical spreading, use of the shortest distance between the source area and the receptor, and no line-of-sight attenuation due to terrain or vegetation.

Noise levels for construction activities were assessed on their potential to interfere with speech. The degree to which noise interferes with speech depends on factors including speaker vocal effort, background noise level at the listener's ear and the distance between speakers. Figure 7 provides guidance on the vocal effort required to communicate at various distances (horizontal axis) and background noise levels (vertical axis). At a conversational distance of 3 ft, speech interference is minimal with normal vocal effort when background noise levels are below 65 dB. This provides a useful guideline for predicting the likelihood of outdoor speech interference due to construction noise.

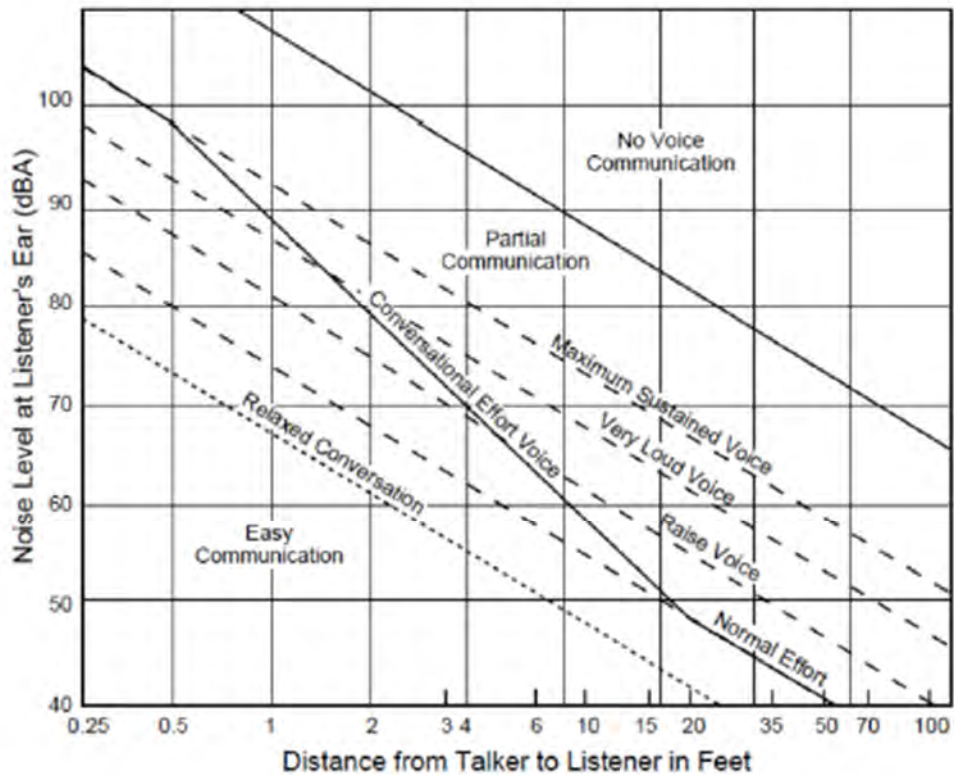


Figure 7 Distance at Which Speech Can Be Understood

Source: EPA Report 550/9-73-002, Public Health and Welfare Criteria for Noise, July 27, 1973 (reprinted from DNWG 2013)

3.2.2 Construction Noise Modeling Results

The sections below discuss the modeled noise exposure for each category of construction and show source location maps and tables of construction source noise levels and construction noise levels at noise sensitive receptors.

3.2.2.1 Airport Construction Noise Modeling Results

Figure 8 shows the existing and proposed airport boundaries. Airport construction within the proposed airport property boundary includes the clearing and grading of land and the construction of temporary turn around areas, taxiways, extended runway ends, arresting system foundations, the aircraft parking apron, and perimeter roads. The closest potential airport construction distance for each noise sensitive receptor was computed using the proposed airport property boundary. Although not all construction equipment would be operated at the property boundary, the location was used to conservatively estimate potential noise at sensitive receptors.

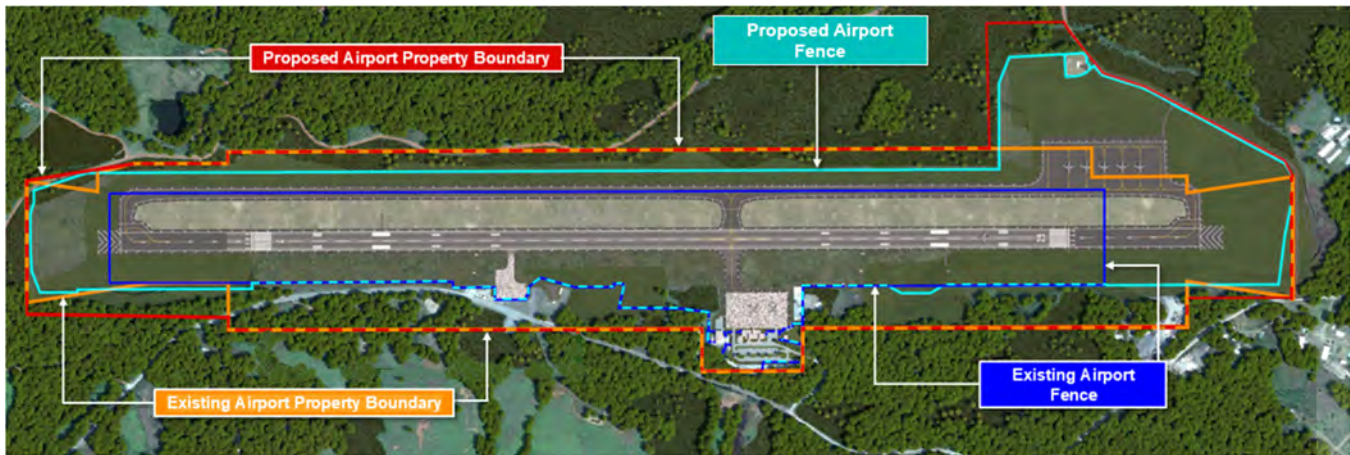


Figure 8 Airport Construction Map

Source: USAF

Table 14 shows the L_{Amax} at 50 ft from the RCNM for the loudest airport construction noise sources. Table 15 shows the L_{Amax} for all airport construction equipment at each noise sensitive receptor. The L_{Amax} values in Table 15 represent the maximum level for the loudest piece of airport construction equipment, the auger drill, and the closest point of the airport construction area, the airport property boundary. The use of any individual piece of equipment may be limited to a smaller geographic area within the overall construction area. Additionally, the L_{Amax} for each piece of equipment represents noise from the loudest moments of its activity, e.g., the Dump Truck (Cyclical) L_{Amax} includes not only driving, but also dumping rocks. Thus, the results in Table 15 are a conservative upper limit because all other construction noise sources will be quieter due to a lower source level or a greater distance from the receptor.

For locations with an L_{Amax} below 65 dB, such as R18 through R29, outdoor speech interference due to airport construction is unlikely. Locations R8 and R14 are industrial uses where the levels associated with airport construction would be consistent with the land use. For all other locations some amount of outdoor speech interference could occur when the sources in Table 14 are closer than the listed distance for each piece of equipment. A comparison of minimum distances to the construction area for a particular receptor in Table 15 to the distances to 65 dB for each piece of construction equipment in Table 14 yields the pieces of equipment with the potential to create outdoor speech interference at each site. For example, Table 15 shows that R1 is 2,824 ft from the closest point in the airport construction area. Table 14 shows that the Auger Drill is at 65 dB at 3,972 ft and therefore would be above 65 dB at R1 when in use at the nearest airport construction areas and would likely cause outdoor speech interference. All other pieces of airport construction equipment would not cause outdoor speech interference at R1.

Table 14 Loudest Airport Construction Noise Sources

Equipment	L _{Amax} at 50 ft (dB)	Distance to 65 dB (ft)
Auger Drill	103	3,972
Power Tools - Jackhammer	97	1,991
Concrete Grinder	97	1,991
Dump Truck (Cyclical)	94	1,409
Concrete Pump Truck	91	998
Paving - Concrete (Placer + Slipform Paver)	91	998
Excavator	90	889
Pavement Scarifier (Milling Machine)	85	500
Backhoe	84	446
Paving - Asphalt (Paver + Dump Truck)	84	446

Source: FHWA Traffic Noise Model version 3.2

Table 15 Proposed Action Airport Construction Maximum Noise Levels at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Minimum Source Distance (ft)	L _{Amax} (dB)
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	2,824	68
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	896	78
R3	Yap Catholic High School	School	9.491389	138.074167	1,005	77
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	330	87
R5	Milew Community Center	Community Center	9.487778	138.077222	2,139	71
R6	Residence North of Airport	Private Residence	9.498611	138.073611	180	92
R7	Residences East of Airport	Private Residences	9.500556	138.094444	45	104
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	78	99
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	668	81
R10	Yap High School	School	9.501667	138.101111	1,079	77
R11	Ohnn	Church	9.493333	138.098611	3,008	68
R12	Colonia Middle School	School	9.506389	138.098056	480	84
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	906	78
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	1,813	72
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	3,540	66
R16	Jesylyene Googur	Private Residences	9.510278	138.104444	3,125	67
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	4,014	65
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	5,819	62
R19	Gaanelay Elementary School	School	9.516389	138.111389	6,462	61
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	6,379	61
R21	Aces Mart 2	Business	9.516111	138.113889	7,127	60
R22	Aces Mart 1	Business	9.516944	138.115556	7,795	59
R23	Yap State Department of Education	Government Office	9.517222	138.117778	8,527	59
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	7,696	59
R25	Oceania Hotel	Hotel	9.513889	138.118889	8,345	59
R26	Yap Public Library	Public Library	9.514722	138.123889	10,134	57
R27	YCA Hardware	Business	9.513333	138.120278	8,740	58
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	10,542	57
R29	J&S Store	Business	9.510833	138.121667	8,935	58

Note: Blue shading denotes sites with the potential for outdoor speech interference due to the loudest piece of construction equipment.

3.2.2.2 Roadway Construction Noise Modeling Results

Roadway construction includes improvements and realignments of roads near the airport, improvements to the roadway connecting the airport to the seaport, and roadway improvements in the seaport area. Figure 9 highlights the roadways where construction will occur due to the Proposed Action. The closest potential roadway construction distance for each noise sensitive receptor was computed using geometry shown in Figure 9.



Figure 9 Roadway Construction Map

Source: USAF

Table 16 shows the LAmax at 50 ft for the loudest roadway construction noise sources and the distance within which the level from the source would be at or above 65 dB. Table 17 shows the LAmax for the loudest piece of roadway construction equipment, the Dump Truck (Cyclical) at the closest point of roadway construction for each receptor. The use of any individual piece of equipment may be limited to a smaller geographic area within the overall construction area. Thus, the results in Table 17 are a conservative upper limit.

For locations with an LAmax below 65 dB, such as R1, R5, R11, and R15 outdoor speech interference due to roadway construction for any appreciable duration is unlikely. For all other locations, temporary short-duration speech interference could be expected when the equipment shown in Table 16 are within 200 ft (Crane) to 1,400 ft (Dump Truck) of the receptor.

Table 16 Loudest Roadway Construction Noise Sources

Equipment	Lamax at 50 ft (dB)	Distance to 65 dB (ft)
Dump Truck (Cyclical)	94	1,409
Concrete Saw	90	889
Excavator	90	889
Pavement Scarifier (Milling Machine)	85	500
Paving - Asphalt (Paver + MTV + Dump Truck)	85	500
Backhoe	84	446
Front End Loader (Cyclical)	84	446
Compactor (Roller)	83	397
Grader (passby)	81	315
Crane	77	199

Source: FHWA Traffic Noise Model version 3.2

Table 17 Proposed Action Roadway Construction Maximum Noise Levels at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Minimum Source Distance (ft)	L _{Amax} (dB)
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	2,212	61
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	201	82
R3	Yap Catholic High School	School	9.491389	138.074167	534	74
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	221	81
R5	Milew Community Center	Community Center	9.487778	138.077222	2,230	61
R6	Residence North of Airport	Private Residence	9.498611	138.073611	221	81
R7	Residences East of Airport	Private Residences	9.500556	138.094444	497	74
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	207	82
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	455	75
R10	Yap High School	School	9.501667	138.101111	771	71
R11	Ohnn	Church	9.493333	138.098611	2,203	62
R12	Colonia Middle School	School	9.506389	138.098056	377	77
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	763	71
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	198	82
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	1,753	64
R16	Jesylyene Googur	Private Residences	9.510278	138.104444	930	69
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	78	91
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	27	100
R19	Gaanelay Elementary School	School	9.516389	138.111389	320	78
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	97	89
R21	Aces Mart 2	Business	9.516111	138.113889	47	95
R22	Aces Mart 1	Business	9.516944	138.115556	41	96
R23	Yap State Department of Education	Government Office	9.517222	138.117778	419	76
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	49	95
R25	Oceania Hotel	Hotel	9.513889	138.118889	70	91
R26	Yap Public Library	Public Library	9.514722	138.123889	113	87
R27	YCA Hardware	Business	9.513333	138.120278	364	77
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	108	88
R29	J&S Store	Business	9.510833	138.121667	1,372	66

Note: Blue shading denotes sites with the potential for outdoor speech interference due to the loudest piece of construction equipment.

3.2.2.3 Seaport Construction Noise Modeling Results

Seaport construction includes the demolition of an existing warehouse, improvements to the existing wharf, and construction of a new wharf extension. Figure 10 shows the seaport construction area. The closest potential seaport construction distance for each noise sensitive receptor was computed using the construction area shown in Figure 10.



Figure 10 Seaport Construction Map

Note: Seabee buildings to be constructed under a separate action.

Source: USAF

Table 18 shows the L_{Amax} at 50 ft for the loudest seaport construction noise sources and the distance with which the level from the equipment would be at or above 65 dB. Table 19 shows the L_{Amax} for the loudest piece of seaport construction equipment, the vibratory pile driver, at the closest point of seaport construction for each receptor. The use of any individual piece of equipment may be limited to a smaller geographic area within the overall construction area. Thus, the results in Table 19 are a conservative upper limit using the loudest equipment at the closest construction distance.

For locations with an L_{Amax} below 65 dB, such as R1 through R17, outdoor speech interference due to seaport construction for any appreciable duration is unlikely. For all other locations, temporary speech interference could be expected when the loudest equipment shown in Table 18 are within 900 to 7,000 ft of the receptor. The majority of the outdoor speech interference for these sites will be due to pile driving. Locations R26 and R28 are located on the peninsula with the seaport construction activities and will likely experience noise levels that frequently cause outdoor speech interference throughout the seaport construction period.

Table 18 Loudest Seaport Construction Noise Sources

Equipment	Lamax at 50 ft (dB)	Distance to 65 dB (ft)
Vibratory Pile Driver	108	7,063
Impact Pile Driver	107	6,295
Auger Drill	103	3,972
Hoe Ram	103	3,972
Power Tools - Jackhammer	97	1,991
Concrete Grinder	97	1,991
Dump Truck (Cyclical)	94	1,409
Concrete Batch Plant	93	1,256
Concrete Pump Truck	91	998
Concrete Saw	90	889

Source: FHWA Traffic Noise Model version 3.2

Table 19 Proposed Action Seaport Construction Maximum Noise Levels at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Minimum Source Distance (ft)	L _{Amax} (dB)
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	24,294	54
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	22,248	55
R3	Yap Catholic High School	School	9.491389	138.074167	20,366	56
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	20,090	56
R5	Milew Community Center	Community Center	9.487778	138.077222	19,960	56
R6	Residence North of Airport	Private Residence	9.498611	138.073611	19,643	56
R7	Residences East of Airport	Private Residences	9.500556	138.094444	12,340	60
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	11,933	60
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	10,310	61
R10	Yap High School	School	9.501667	138.101111	9,995	62
R11	Ohnn	Church	9.493333	138.098611	12,382	60
R12	Colonia Middle School	School	9.506389	138.098056	10,399	61
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	10,274	61
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	9,134	62
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	10,118	62
R16	Jesylyene Googur	Private Residences	9.510278	138.104444	7,836	64
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	7,419	64
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	5,722	67
R19	Gaanelay Elementary School	School	9.516389	138.111389	5,270	67
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	5,024	68
R21	Aces Mart 2	Business	9.516111	138.113889	4,365	69
R22	Aces Mart 1	Business	9.516944	138.115556	3,842	70
R23	Yap State Department of Education	Government Office	9.517222	138.117778	3,112	72
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	3,307	71
R25	Oceania Hotel	Hotel	9.513889	138.118889	2,507	74
R26	Yap Public Library	Public Library	9.514722	138.123889	734	86
R27	YCA Hardware	Business	9.513333	138.120278	2,027	76
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	204	96
R29	J&S Store	Business	9.510833	138.121667	1,927	76

Note: Blue shading denotes sites with the potential for outdoor speech interference due to the loudest piece of construction equipment.

3.2.2.4 Dredging Noise Modeling Results

Dredging includes activities in the berth, turn around basin, and navigation channel entrance as shown by the highlighted areas in Figure 11. The closest potential dredging noise source distance for each noise sensitive receptor was computed using highlighted areas shown in Figure 11.

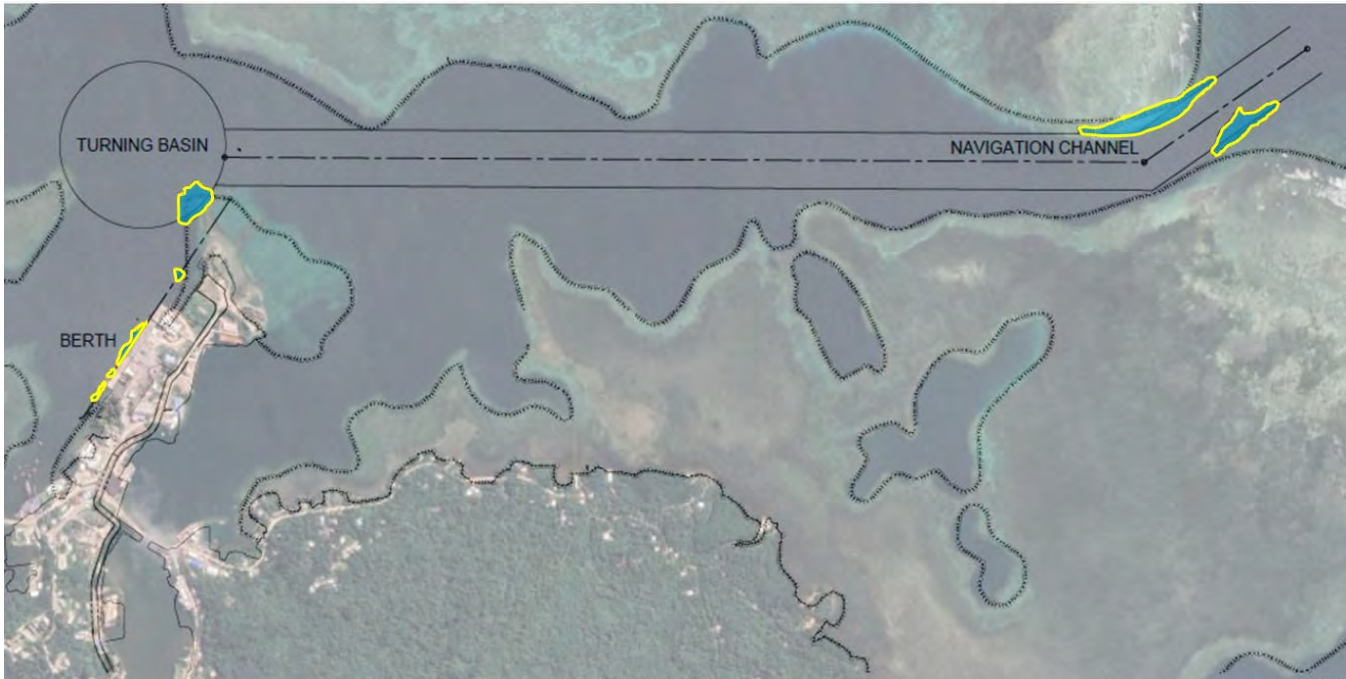


Figure 11 Dredging Noise Source Areas

Source: USAF

Dredging can generate noise levels ranging from 77dB to 94 dB at 50 ft depending on the type of equipment utilized (Clampton 2000, Department of the Navy 2010, Louis Berger Group, Inc. 2010, Malcolm Hunt Associates 2020). The construction plan indicated the use of a backhoe dredge which has a 15-minute Equivalent Sound Level (Leq) of 84 dB at 50 ft, which is in the middle of the range for different types of dredges (Clampton 2000).

Table 20 shows the computed noise levels for the closest dredging location to each noise sensitive receptor. Outdoor speech interference would not be expected at any location. This includes locations R26 and R28, located on the peninsula closest to the berth dredging area.

Table 20 Proposed Action Dredging Average Noise Levels at Noise Sensitive Receptors

ID	Name	Category	Latitude (deg)	Longitude (deg)	Minimum Source Distance (ft)	15-Minute Leq (dB)
R1	Daqabyuch Building	Private Residence	9.489722	138.063056	24,165	31
R2	Residences Southwest of Airport	Private Residences	9.491111	138.068611	22,133	31
R3	Yap Catholic High School	School	9.491389	138.074167	20,285	32
R4	Avi's Laundromat and Private Residence	Private Residence and Business	9.493333	138.074167	19,978	32
R5	Milew Community Center	Community Center	9.487778	138.077222	19,258	33
R6	Residence North of Airport	Private Residence	9.498611	138.073611	19,438	33
R7	Residences East of Airport	Private Residences	9.500556	138.094444	12,269	37
R8	GPPC Batch Plant (Private Property)	Industrial Zone - Private Property	9.500833	138.095556	11,868	37
R9	College of Micronesia (Yap Campus)	School and Nearby Private Residences	9.501944	138.100000	10,279	38
R10	Yap High School	School	9.501667	138.101111	9,991	38
R11	Ohnn	Church	9.493333	138.098611	11,548	37
R12	Colonia Middle School	School	9.506389	138.098056	10,199	38
R13	Early Childhood Education	School and Nearby Private Residences	9.507778	138.098056	10,028	38
R14	YSPSC Water Plant	Light Industrial Zone	9.508611	138.101111	8,889	39
R15	Yap Seventh-day Adventist Church	Church	9.515278	138.097778	9,624	39
R16	Jesylyene Googur	Private Residences	9.510278	138.104444	7,560	41
R17	Satawal Compound (housing complex)	Private Residences	9.513056	138.105278	7,025	41
R18	Yap Department of Agriculture and Forestry Complex	Government Office	9.515278	138.110000	5,230	44
R19	Gaanelay Elementary School	School	9.516389	138.111389	4,711	45
R20	The Church of Jesus Christ of Latter-day Saints	Church	9.515278	138.111944	4,533	45
R21	Aces Mart 2	Business	9.516111	138.113889	3,813	47
R22	Aces Mart 1	Business	9.516944	138.115556	3,213	48
R23	Yap State Department of Education	Government Office	9.517222	138.117778	2,422	51
R24	ESA Bay View Hotel	Hotel	9.514444	138.116667	2,908	49
R25	Oceania Hotel	Hotel	9.513889	138.118889	2,224	51
R26	Yap Public Library	Public Library	9.514722	138.123889	656	62
R27	YCA Hardware	Business	9.513333	138.120278	1,901	53
R28	FSM National Police Yap Field Office	Government Office	9.514167	138.125278	541	64
R29	J&S Store	Business	9.510833	138.121667	2,273	51

3.3 Yap Seaport Noise Analysis

In addition to the impacts of long-term aircraft noise levels and short-term noise exposures due to construction activities, noise from future Naval ship activities at the seaport was evaluated for the Proposed Action. These activities include pulling in and out of port, berthing, and cargo activities. Unlike the aircraft noise or construction noise, there are not large datasets of reference noise levels or validated and approved noise models for these types of activities. Therefore, the noise analysis was qualitative in nature based on a comparison of the proposed activities to the existing activity in the vicinity of the Yap Seaport.

The Yap Seaport provides four berths servicing local and international cargo vessels, fuel tankers, an inter-island ferry, and longline fishing vessels. Within the fenced area of the Seaport, there is a warehouse, a maintenance shop, an administrative office, and a former tuna canning operation. In addition to the seaport, there are other industrial land uses on the peninsula including a recycling facility, an automotive salvage yard, and a wastewater treatment facility. Although it is not possible to quantify all vessel traffic in the vicinity of the Seaport, schedules for the container ship service at the Seaport by Mariana Express Lines and Kyowa Shipping Co., Ltd. were available online. A typical container ship used at Yap for these carriers would have a length of 470 ft and a beam of 75 ft. Based on a full year of schedules for Mariana Express Lines and five months of schedules for Kyowa Shipping Co., Ltd., these carriers average 27 and 13 operations at Yap Seaport annually. Mariana Express Lines vessels typically remained in port for one day. No data for length of stay in port was available for Kyowa Shipping Co., Ltd.

Naval activities at the Yap Seaport under the Proposed Action will consist of approximately one vessel visiting the port per year for humanitarian assistance or logistics training, with visits lasting one to two weeks. Port improvements would enable dual-use activities (i.e. military and commercial) and mooring of U.S. and allied vessels without interfering with normal commercial seaport operations. During non-contingency times, the Navy anticipates only mooring one ship at a time. Noise creating activities would include pulling in and out of port, berthing at the wharf, limited cargo loading, and the use of generators for power. The largest vessels that may visit are the Arleigh Burke class destroyers and the T-AKE, though the visiting vessel may be smaller depending on the mission. Arleigh Burke class destroyers are multi-mission surface combatants. They have a length of 510 ft and a beam of 59 ft. In their primary mission role, the T-AKEs provide logistic lift to deliver cargo to U.S. and allied ships at sea. In this case, a destroyer or T-AKE ship could supply cargo for humanitarian support needs when in port at Yap. They have a length of 689 ft and a beam of 106 ft.

The Naval activities at the Yap Seaport under the Proposed Action would comprise one visit annually lasting 7 to 14 days. Existing operations include an unknown number of operations by local cargo vessels, fuel tankers, an inter-island ferry, and longline fishing vessels in addition to approximately 40 annual operations by two container-ship cargo carriers. In the context of the existing much larger number of ocean vessel operations, including container-ship cargo operations and the existing industrial land uses on the peninsula, it is unlikely that the Naval activities at Yap Seaport will introduce new significant noise impacts.

4. References

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Appendix A: Noise Land Use Compatibility Guidelines

APPENDIX 3C: RECOMMENDED LAND USE COMPATIBILITY IN AIRCRAFT NOISE ZONES

3C.1. Table 2 provides compatibility recommendations based on yearly DNL or CNEL on and around air installations. The primary land use objective is to discourage noise-sensitive land uses in areas of higher noise exposure.

3C.2. Table 2 is organized based on SLUCM categories; however, it varies from SLUCM as the coding system does not differentiate based on noise-sensitivity. Some uses warrant additional evaluation due to potential for annoyance and activity interference. General notes and specific footnotes at the bottom of Table 2 provide additional information and considerations for compatibility determinations.

3C.3. These recommendations are intended to support compatible land use planning both on- and off-base; they do not constitute a Federal determination that any use of land is acceptable or unacceptable in accordance with local zoning.

Table 2. Land Use Compatibility in Aircraft Noise Zones

Land use Name and SLUCM Category	A-weighted DNL/CNEL levels					
	<65 decibel (dB)	65-70 dB	70-75 dB	75-80 dB	80-85 dB	85 dB
Residential use group (SLUCM Category 10)						
Residential uses, inclusive of all residential units (i.e. any type of single or multiple dwelling units).	Y	N ¹	N ¹	N	N	N
Mobile home parks or courts	Y	N	N	N	N	N
Transient lodgings	Y	N ¹	N ¹	N ¹	N	N
Manufacturing use group (SLUCM Categories 20 and 30)						
Manufacturing and industrial uses	Y	Y	Y ²	Y ³	Y ⁴	N
Precision manufacturing	Y	Y	Y ²	Y ³	N	N
Transportation, communication and utilities use group (SLUCM Category 40)						
Rail, motor vehicle, aircraft, marine, and other transportation, and communication systems and utilities	Y	Y	Y ²	Y ³	Y ⁴	N
Highway and street right-of-way, automobile parking	Y	Y	Y	Y	Y	N
Telephone, cellular and radio communication	Y	Y	Y ²	Y ³	N	N
Trade use group (SLUCM Category 50)						
Wholesale trade	Y	Y	Y ²	Y ³	Y ⁴	N
Building materials, hardware and farm equipment sales	Y	Y	Y ²	Y ³	Y ⁴	N
Mass retailing, super stores, strip malls, shopping centers, discount clubs, home improvement stores, eating and drinking establishments, etc.	Y	Y	Y ²	Y ³	N	N

Table 2. Land Use Compatibility in Aircraft Noise Zones, Continued

Land use name and SLUCM Category	A-weighted DNL/CNEL levels					
	<65 dB	65-70 dB	70-75 dB	75-80 dB	80-85 dB	85 dB
Services use group (SLUCM Category 60)						
Finance, insurance and real estate, personal, professional and miscellaneous services; religious activities	Y	Y	Y ²	Y ³	N	N
Cemeteries	Y	Y	Y ²	Y ³	Y ⁴	Y ⁵
Warehousing or storage and repair services	Y	Y	Y ²	Y ³	Y ⁴	N
Hospitals or medical, child care and development services, educational facilities	Y	Y ²	Y ³	N	N	N
Nursing homes	Y	N ¹	N ¹	N	N	N
Governmental	Y	Y	Y ²	Y ³	N	N
Cultural, entertainment, and recreational use group (SLUCM Category 70)						
Cultural activities, auditoriums and concert halls	Y	Y ²	Y ³	N	N	N
Nature exhibits	Y	Y	N	N	N	N
Public assembly	Y	Y	N	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Outdoor sports arenas, spectator sports	Y	Y ⁶	Y ⁶	N	N	N
Amusements	Y	Y	Y	N	N	N
Outdoor recreational activities	Y	Y	Y ²	Y ³	N	N
Resorts, camps, parks and other cultural, entertainment, and recreational activities	Y	Y	Y ²	N	N	N
Resource production and extraction use group (SLUCM Category 80)						
Agriculture and forestry	Y	Y ⁷	Y ⁸	Y ⁹	Y ⁹	Y ⁹
Livestock farming, animal breeding	Y	Y ⁷	Y ⁸	N	N	N
Fishing, mining, and other resource production or extraction	Y	Y	Y	Y	Y	Y
Key to Table 2 – Land use compatibility in aircraft noise zones						
Land use recommendations						
Y (Yes) – Land use and related structures compatible without restrictions.						
N (No) – Land use and related structures are not compatible and should be prohibited.						
Y ^x – Yes with restrictions. The land use and related structures generally are compatible. However, see note(s) indicated by the superscript.						
N ^x – No with exceptions. The land use and related structures are generally incompatible. However, see note(s) indicated by the superscript.						
Notes for Table 2 – Land use compatibility in aircraft noise zones						
General notes for all uses:						
a. Compatibility designations in Table 2 generally refer to the principal use of the site. If other uses with greater sensitivity to noise are proposed, a determination of compatibility should be based on that use which is most adversely affected by noise and its contribution to the successful use of the property.						
b. Where a proposed development falls within two DNL or CNEL noise zones, the land use recommendations of the higher noise zone should be used. For example, if a proposed development is exposed to 70 dB DNL or CNEL, land use recommendations for the 70-75 dB DNL or CNEL noise zone should be applied.						

Table 2. Land Use Compatibility in Aircraft Noise Zones, Continued

Notes for Table 2 – Land Use Compatibility in Aircraft Noise Zones, Continued

c. When appropriate, noise level reduction (NLR) may be necessary to achieve compatibility. NLR (outdoor to indoor) is achieved through the incorporation of sound attenuation into the design and construction of a structure. Measures to achieve an indoor noise reduction do not necessarily solve noise issues outside the structure and additional evaluation may be warranted. Building location, site planning, design, and use of berms and barriers can help mitigate outdoor noise exposure, particularly from aircraft ground maintenance run-ups. Measures that reduce noise at a site should be used wherever practical in preference to measures that only protect interior spaces.

d. All land uses are generally compatible with noise below 65dB DNL. However, localities, when evaluating the application of these guidelines, should consider possible annoyance tied to land uses that involve predominately outdoor activities, or where quiet is a basis for the use.

e. Land uses that involve outdoor activities in areas above 80dB DNL are not recommended.

Footnotes for Table 2 – Land Use Compatibility in Aircraft Noise Zones

Footnotes specific to certain land uses:

1. Residential

a. Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in DNL 65-70 and strongly discouraged above DNL 70. The absence of viable alternative development options should be determined, and an evaluation should be conducted locally prior to local approvals. These evaluations should clearly demonstrate that the community's need for additional residential property could not be met if development were prohibited in these zones, and that the expense of additional noise attenuation will not undermine affordable housing goals.

b. Where the community determines that these uses must be allowed, measures to achieve outdoor to indoor NLR of at least 25 dB in DNL 65-70 and 30 dB in DNL 70-75 should be incorporated into building codes, and be considered in individual approvals; for transient housing, an NLR of at least 35 dB should be incorporated in DNL 75-80.

c. Normal permanent construction can be expected to provide a NLR of 20 dB, thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded sound transmission class ratings in windows and doors, and closed windows year-round. Additional consideration should be given to modifying NLR levels based on peak noise levels (as defined in the glossary) or vibrations.

2. Measures to achieve NLR of 25 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

3. Measures to achieve NLR of 30 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

4. Measures to achieve NLR of 35 dB must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.

5. Buildings where public is received, are not recommended.

6. Land use is compatible provided special sound reinforcement systems are installed.

7. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 25 dB should be incorporated into the design.

8. Where residences are permitted, measures to achieve outdoor to indoor NLR of at least 30 dB should be incorporated into the design.

9. Residences are not compatible.

Appendix B: Noise Modeling Aircraft Profiles

Flight Profile Details

AFC_C17_A_7A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted some altitudes to AGL

Notes:
 APPROACH FROM NORTHEAST

C17F

Day Ops 0.0242

Night Ops 0.0027

Aircraft C-17

Engine F117-PW-100

A/C Category Transient

Runway/Pad 7

Track 7A01

Runup Time ----

Takeoff 0 ft

Displacement

Landing 1,100 ft

Displacement

Profile Segments

Point	Distance ft	Height ft	Power EPR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	1.1 Cruise	250	-3.4	-1400	351
b	66,600	2,000 AGL	1.1 Approach	200	-1.2	-400	78
c	43,000	1,500 AGL	1.2 Approach	160	0.0	0	37
d	33,600	1,500 AGL	1.1 Approach	140	-2.4	-600	126
e	4,800	300 AGL	1.1 Approach	130	-3.0	-700	23
f	0	50 AGL	1.1 Approach	120			

AFC_C17_A_25A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted some altitudes to AGL

Notes:
 APPROACH FROM NORTHEAST

C17F

Day Ops 0.0104

Night Ops 0.0012

Aircraft C-17

Engine F117-PW-100

A/C Category Transient

Runway/Pad 25

Track 25A01

Runup Time ----

Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power EPR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	1.1 Cruise	250	-3.4	-1400	351
b	66,600	2,000 AGL	1.1 Approach	200	-1.2	-400	78
c	43,000	1,500 AGL	1.2 Approach	160	0.0	0	37
d	33,600	1,500 AGL	1.1 Approach	140	-2.4	-600	126
e	4,800	300 AGL	1.1 Approach	130	-3.0	-700	23
f	0	50 AGL	1.1 Approach	120			

AFC_C17_D_7D01

Notes Copied from AndersenAFB_2023_Final.baseops

Notes:
 DEPART TO 065 HEADING
 C17N

Day Ops 0.0242
Night Ops 0.0027
Aircraft C-17
Engine F117-PW-100
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power EPR	Speed kts	Climb Angle °	Climb Rate fpm	Dura se
a	0	0 AGL	1 Idle	0	0.0	0	
b	5,000	0 AGL	1.35 Derated Thrust	130	4.4	1100	
c	18,000	1,000 AGL	1.3 Derated Thrust	160	5.3	1900	
d	39,000	2,954 AGL	1.3 Derated Thrust	250	5.4	2400	
e	60,000	4,954 AGL	1.3 Derated Thrust	250	5.9	2600	
f	108,000	9,954 AGL	1.3 Derated Thrust	250	3.1	1400	
g	200,000	14,954 AGL	1.3 Derated Thrust	250			

AFC_C17_D_25D01

Notes Copied from AndersenAFB_2023_Final.baseops

Notes:
 DEPART TO 065 HEADING
 C17N

Day Ops 0.0104
Night Ops 0.0012
Aircraft C-17

Engine F117-PW-100
A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power EPR	Speed kts	Climb Angle °	Climb Rate fpm	Dura se
a	0	0 AGL	1 Idle	0	0.0	0	
b	5,000	0 AGL	1.35 Derated Thrust	130	4.4	1100	
c	18,000	1,000 AGL	1.3 Derated Thrust	160	5.3	1900	
d	39,000	2,954 AGL	1.3 Derated Thrust	250	5.4	2400	
e	60,000	4,954 AGL	1.3 Derated Thrust	250	5.9	2600	
f	108,000	9,954 AGL	1.3 Derated Thrust	250	3.1	1400	
g	200,000	14,954 AGL	1.3 Derated Thrust	250			

AFC_C130_A_7A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted some altitudes to AGL

Notes:
 APPROACH FROM EAST/NORTHEAST
 130F

Day Ops 0.0483
Night Ops 0.0054
Aircraft C-130H&N&P
Engine T56-A-15
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power IN-LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	3200 Approach	200	-3.1	-1000	446
b	60,600	2,600 MSL	4000 Approach	170	-1.7	-500	76
c	40,200	2,000 MSL	4000 Approach	150	0.0	0	52
d	28,200	2,000 MSL	4000 Approach	125	-4.1	-900	97
e	7,800	440 AGL	4000 Approach	125	-2.9	-600	39
f	0	50 AGL	3200 Approach	110			

AFC_C130_A_25A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted some altitudes to AGL

Notes:
 APPROACH FROM EAST/NORTHEAST
 130F

Day Ops 0.0207
Night Ops 0.0023
Aircraft C-130H&N&P
Engine T56-A-15
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power IN-LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	3200 Approach	200	-3.1	-1000	446
b	60,600	2,600 MSL	4000 Approach	170	-1.7	-500	76
c	40,200	2,000 MSL	4000 Approach	150	0.0	0	52
d	28,200	2,000 MSL	4000 Approach	125	-4.1	-900	97
e	7,800	440 AGL	4000 Approach	125	-2.9	-600	39
f	0	50 AGL	3200 Approach	110			

AFC_C130_D_7D01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:

DEPART 360 HEADING
 130O

Day Ops 0.0483
Night Ops 0.0054
Aircraft C-130H&N&P
Engine T56-A-15
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power C TIT	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	775 Power Runup	0	0.0	0	52
b	4,800	0 AGL	977 Takeoff	105	2.0	400	42
c	13,500	300 AGL	977 Takeoff	130	5.8	1500	30
d	21,115	1,077 AGL	932 Takeoff	170	5.8	1800	60
e	38,190	2,820 AGL	932 Takeoff	170	4.7	1400	242
f	108,562	8,588 AGL	932 Takeoff	170	0.0	0	315
g	200,000	8,588 AGL	932 Takeoff	170			

AFC_C130_D_25D01

Notes Copied from AndersenAFB_2023_Final.baseops

Notes:
 DEPART 360 HEADING
 1300

Day Ops 0.0207
Night Ops 0.0023
Aircraft C-130H&N&P
Engine T56-A-15
A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power C TIT	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	775 Power Runup	0	0.0	0	52
b	4,800	0 AGL	977 Takeoff	105	2.0	400	42
c	13,500	300 AGL	977 Takeoff	130	5.8	1500	30
d	21,115	1,077 AGL	932 Takeoff	170	5.8	1800	60
e	38,190	2,820 AGL	932 Takeoff	170	4.7	1400	242
f	108,562	8,588 AGL	932 Takeoff	170	0.0	0	315
g	200,000	8,588 AGL	932 Takeoff	170			

AFF_F15_A_7A01

Notes Copied from AndersenAFB_2023_Final.baseops

Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F15AH
 Standard Straight-in Arrival

Day Ops 0.145
Night Ops 0.0161

Aircraft F-15E
Engine F100-PW-220
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	18,000 AGL	86 Variable	300	-2.9	-1500	118
b	140,000	15,000 AGL	83 Variable	300	-11.2	-5500	114
c	87,000	4,550 AGL	82 Variable	250	-3.0	-1100	149
d	33,000	1,725 AGL	84 Variable	180	-2.9	-800	124
e	0	50 AGL	72.4 Variable	135			

AFF_F15_A_25A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F15AH
 Standard Straight-in Arrival

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-15E
Engine F100-PW-220
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	18,000 AGL	86 Variable	300	-2.9	-1500	118
b	140,000	15,000 AGL	83 Variable	300	-11.2	-5500	114
c	87,000	4,550 AGL	82 Variable	250	-3.0	-1100	149
d	33,000	1,725 AGL	84 Variable	180	-2.9	-800	124
e	0	50 AGL	72.4 Variable	135			

AFF_F15_D_7D01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F15D6
 Standard Military Power

Day Ops 0.145
Night Ops 0.0161
Aircraft F-15E
Engine F100-PW-220
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0
b	4,000	0 AGL	90 Variable	150	5.2	2100
c	15,000	1,000 AGL	92 Variable	300	8.4	4700
d	75,600	10,000 AGL	92 Variable	330	11.6	7100
e	100,000	15,000 AGL	90 Variable	350	1.7	1100
f	200,000	18,000 AGL	90 Variable	350		

AFF_F15_D_25D01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F15D6
 Standard Military Power

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-15E
Engine F100-PW-220
A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0
b	4,000	0 AGL	90 Variable	150	5.2	2100
c	15,000	1,000 AGL	92 Variable	300	8.4	4700
d	75,600	10,000 AGL	92 Variable	330	11.6	7100
e	100,000	15,000 AGL	90 Variable	350	1.7	1100
f	200,000	18,000 AGL	90 Variable	350		

AFF_F16_A_7A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Converted some altitudes to AGL
 Notes:
 IFR ARRIVAL
 Profile from Luke PTC EIS

Day Ops 0.145
Night Ops 0.0161
Aircraft F-16C
Engine F100-PW-229
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	280,937	15,420 AGL	84 Variable	250	-3.9	-1700	422
b	102,902	3,420 AGL	84 Variable	250	-1.8	-800	96
c	62,457	2,120 AGL	80 Variable	250	-0.9	-300	99
d	29,056	1,620 AGL	84 Variable	150	-3.1	-800	115
e	0	50 AGL	80 Variable	150			

AFF_F16_A_25A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Converted some altitudes to AGL
 Notes:
 IFR ARRIVAL
 Profile from Luke PTC EIS

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-16C

Engine F100-PW-229
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	
a	280,937	15,420 AGL	84 Variable	250	-3.9	-1700	422	cc
b	102,902	3,420 AGL	84 Variable	250	-1.8	-800	96	cc
c	62,457	2,120 AGL	80 Variable	250	-0.9	-300	99	cc
d	29,056	1,620 AGL	84 Variable	150	-3.1	-800	115	cc
e	0	50 AGL	80 Variable	150				

AFF_F16_D_7D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Notes:
 MIL Departure
 Profile from Luke PTC EIS

Day Ops 0.145
Night Ops 0.0161
Aircraft F-16C
Engine F100-PW-229
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm	
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0	
b	3,000	0 AGL	93 Variable	145	3.8	1500	
c	12,000	600 AGL	93 Variable	300	4.8	2800	
d	64,650	5,000 AGL	89 Variable	350	11.4	7100	
e	119,250	16,000 AGL	85 Variable	350	0.0	0	
f	319,000	16,000 AGL	85 Variable	350			

AFF_F16_D_25D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops

Notes:

MIL Departure

Profile from Luke PTC EIS

Day Ops 0.0621

Night Ops 0.0069

Aircraft F-16C

Engine F100-PW-229

A/C Category Transient

Runway/Pad 25

Track 25D01

Runup Time 120 sec

Takeoff 0 ft

Displacement

Landing 0 ft

Displacement

Profile Segments

Point	Distance ft	Height ft	Power % NC	Speed kts	Climb Angle °	Climb Rate fpm
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0
b	3,000	0 AGL	93 Variable	145	3.8	1500
c	12,000	600 AGL	93 Variable	300	4.8	2800
d	64,650	5,000 AGL	89 Variable	350	11.4	7100
e	119,250	16,000 AGL	85 Variable	350	0.0	0
f	319,000	16,000 AGL	85 Variable	350		

AFF_F22_A_7A01

Notes Copied from AndersenAFB_2023_Final.baseops

Notes:

Imported from "Copy of ISR EIS Alt A.baseops" F22AH-i

Standard Arrival

Day Ops 0.145

Night Ops 0.0161

Aircraft F-22

Engine F119-PW-100

A/C Category Transient

Runway/Pad 7

Track 7A01

Runup Time ----

Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	33 Approach	350	-4.6	-2700	113
b	138,000	5,000 AGL	33 Approach	300	-2.0	-1100	113
c	81,000	3,000 AGL	30 Approach	300	-1.6	-600	139
d	27,000	1,500 AGL	27 Approach	160	-3.3	-900	78
e	6,000	300 AGL	27 Approach	160	-2.3	-600	19
f	1,000	100 AGL	26.8 Approach	160	-2.9	-800	4
g	0	50 AGL	26.8 Approach	140			

AFF_F22_A_25A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F22AH-i
 Standard Arrival

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-22
Engine F119-PW-100
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	33 Approach	350	-4.6	-2700	113
b	138,000	5,000 AGL	33 Approach	300	-2.0	-1100	113
c	81,000	3,000 AGL	30 Approach	300	-1.6	-600	139
d	27,000	1,500 AGL	27 Approach	160	-3.3	-900	78
e	6,000	300 AGL	27 Approach	160	-2.3	-600	19
f	1,000	100 AGL	26.8 Approach	160	-2.9	-800	4
g	0	50 AGL	26.8 Approach	140			

AFF_F22_D_7D01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F22D6-i
 Standard Departure

Day Ops 0.145
Night Ops 0.0161

Aircraft F-22
Engine F119-PW-100
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	
a	0	0 AGL	80 Mil	0	0.0	0	20	80%
b	3,000	0 AGL	100 Mil	180	2.5	1200	16	
c	10,000	300 AGL	100 Mil	350	5.7	3500	20	
d	22,000	1,500 AGL	70 Mil	350	5.9	3700	41	
e	46,000	4,000 AGL	70 Mil	350	7.2	4500	79	
f	92,700	10,000 MSL	38 Mil	350	0.0	0	182	
g	200,000	10,000 MSL	38 Mil	350				

AFF_F22_D_25D01

Notes Copied from AndersenAFB_2023_Final.baseops
 Notes:
 Imported from "Copy of ISR EIS Alt A.baseops" F22D6-i
 Standard Departure

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-22
Engine F119-PW-100
A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	
a	0	0 AGL	80 Mil	0	0.0	0	20	80%
b	3,000	0 AGL	100 Mil	180	2.5	1200	16	
c	10,000	300 AGL	100 Mil	350	5.7	3500	20	
d	22,000	1,500 AGL	70 Mil	350	5.9	3700	41	
e	46,000	4,000 AGL	70 Mil	350	7.2	4500	79	
f	92,700	10,000 MSL	38 Mil	350	0.0	0	182	
g	200,000	10,000 MSL	38 Mil	350				

AFF_F35_A_7A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Converted some altitudes to AGL
 Notes:
 Straight-in IFR Arrival
 Profile from Eglin AFB EIS

Day Ops 0.145
Night Ops 0.0161
Aircraft F-35A
Engine F-135-PW-100
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec	
a	281,480	15,420 AGL	35 Variable	300	-4.2	-2000	356	c
b	116,326	3,420 AGL	35 Variable	250	-1.3	-500	154	c
c	57,881	2,120 AGL	50 Parallel	200	-1.0	-300	91	c
d	28,605	1,620 AGL	40 Parallel	180	-3.1	-1000	95	c
e	0	50 AGL	40 Parallel	175				

AFF_F35_A_25A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Converted some altitudes to AGL
 Notes:
 Straight-in IFR Arrival
 Profile from Eglin AFB EIS

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-35A
Engine F-135-PW-100
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----

Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	281,480	15,420 AGL	35 Variable	300	-4.2	-2000	356 c
b	116,326	3,420 AGL	35 Variable	250	-1.3	-500	154 c
c	57,881	2,120 AGL	50 Parallel	200	-1.0	-300	91 c
d	28,605	1,620 AGL	40 Parallel	180	-3.1	-1000	95 c
e	0	50 AGL	40 Parallel	175			

AFF_F35_D_7D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops

Notes:
 Mil Departure
 Profile from Eglin AFB EIS

Day Ops 0.145
Night Ops 0.0161
Aircraft F-35A
Engine F-135-PW-100
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	80 75% ETR	0	0.0	0	24
b	3,000	0 AGL	100 Variable	150	0.8	200	2
c	3,500	7 AGL	100 Mil	174	2.1	900	16
d	10,000	250 AGL	100 Variable	300	8.9	5200	32
e	27,500	3,000 AGL	95 Variable	350	15.0	9500	76
f	72,309	15,000 AGL	35 Variable	350	0.0	0	216
g	200,000	15,000 AGL	35 Variable	350			

AFF_F35_D_25D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops

Notes:
 Mil Departure
 Profile from Eglin AFB EIS

Day Ops 0.0621
Night Ops 0.0069
Aircraft F-35A
Engine F-135-PW-100

A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % ETR	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	80 75% ETR	0	0.0	0	24
b	3,000	0 AGL	100 Variable	150	0.8	200	2
c	3,500	7 AGL	100 Mil	174	2.1	900	16
d	10,000	250 AGL	100 Variable	300	8.9	5200	32
e	27,500	3,000 AGL	95 Variable	350	15.0	9500	76
f	72,309	15,000 AGL	35 Variable	350	0.0	0	216
g	200,000	15,000 AGL	35 Variable	350			

AFT_KC46_A_7A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Notes: none
Day Ops 0.0483
Night Ops 0.0054
Aircraft KC-46X
Engine PW4062
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	312,336	10,000 MSL	25 Variable	250	-3.3	-1400	328
b	180,849	2,420 AGL	50 Approach	225	-0.4	-200	264
c	80,709	1,720 AGL	55 Approach	225	0.0	0	65
d	56,141	1,720 AGL	55 Approach	220	-0.2	-100	85
e	30,381	1,620 AGL	50 Approach	140	-3.0	-700	129
f	0	50 AGL	20 Approach	140			

AFT_KC46_A_25A01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Notes: none
Day Ops 0.0207
Night Ops 0.0023
Aircraft KC-46X
Engine PW4062

A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	312,336	10,000 MSL	25 Variable	250	-3.3	-1400	328
b	180,849	2,420 AGL	50 Approach	225	-0.4	-200	264
c	80,709	1,720 AGL	55 Approach	225	0.0	0	65
d	56,141	1,720 AGL	55 Approach	220	-0.2	-100	85
e	30,381	1,620 AGL	50 Approach	140	-3.0	-700	129
f	0	50 AGL	20 Approach	140			

AFT_KC46_D_7D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Notes: 'standard departure'

Day Ops 0.0483
Night Ops 0.0054
Aircraft KC-46X
Engine PW4062
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	70 Takeoff	0	0.0	0	8
b	200	0 AGL	100 Takeoff	30	0.0	0	38
c	6,000	0 AGL	100 Takeoff	150	6.6	1800	47
d	18,270	1,420 AGL	80 Takeoff	160	2.4	900	70
e	42,533	2,420 AGL	100 Variable	250	3.9	1900	256
f	159,277	10,420 AGL	100 Variable	290	3.9	2000	121
g	218,486	14,420 AGL	100 Variable	290			

AFT_KC46_D_25D01

Notes Copied from 2024 Selfridge KC-46 Pre-NEPA Analysis (17APR24).baseops
 Notes: 'standard departure'

Day Ops 0.0207
Night Ops 0.0023
Aircraft KC-46X
Engine PW4062

A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % N1	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	70 Takeoff	0	0.0	0	8
b	200	0 AGL	100 Takeoff	30	0.0	0	38
c	6,000	0 AGL	100 Takeoff	150	6.6	1800	47
d	18,270	1,420 AGL	80 Takeoff	160	2.4	900	70
e	42,533	2,420 AGL	100 Variable	250	3.9	1900	256
f	159,277	10,420 AGL	100 Variable	290	3.9	2000	121
g	218,486	14,420 AGL	100 Variable	290			

AFT_KC135_A_7A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted MSL altitudes to AGL
Day Ops 0.0483
Night Ops 0.0054
Aircraft KC-135R
Engine F108-CF-100
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	66.5 Approach	250	-3.3	-1300	369
b	60,000	2,000 AGL	66.5 Approach	200	-1.4	-500	65
c	40,200	1,500 AGL	66.5 Approach	160	0.0	0	49
d	27,600	1,500 AGL	66.5 Approach	145	-3.0	-800	113
e	0	50 AGL	66.5 Approach	145			

AFT_KC135_A_25A01

Notes Copied from AndersenAFB_2023_Final.baseops
 Converted MSL altitudes to AGL
Day Ops 0.0207
Night Ops 0.0023
Aircraft KC-135R
Engine F108-CF-100
A/C Category Transient

Runway/Pad 25
Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,000 AGL	66.5 Approach	250	-3.3	-1300	369
b	60,000	2,000 AGL	66.5 Approach	200	-1.4	-500	65
c	40,200	1,500 AGL	66.5 Approach	160	0.0	0	49
d	27,600	1,500 AGL	66.5 Approach	145	-3.0	-800	113
e	0	50 AGL	66.5 Approach	145			

AFT_KC135_D_7D01

Notes Copied from AndersenAFB_2023_Final.baseops
Day Ops 0.0483
Night Ops 0.0054
Aircraft KC-135R
Engine F108-CF-100
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time 120 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0
b	6,000	0 AGL	85 Max Rated Thrust	147	2.9	800
c	10,000	200 AGL	85 Max Rated Thrust	185	5.3	2100
d	36,000	2,630 AGL	85 Max Rated Thrust	250	6.3	2800
e	90,000	8,630 AGL	85 Max Rated Thrust	250	0.0	0
f	96,000	8,630 AGL	85 Max Rated Thrust	285	3.5	1800
g	200,000	15,000 AGL	85 Max Rated Thrust	285		

AFT_KC135_D_25D01

Notes Copied from AndersenAFB_2023_Final.baseops
Day Ops 0.0207
Night Ops 0.0023
Aircraft KC-135R
Engine F108-CF-100
A/C Category Transient
Runway/Pad 25
Track 25D01
Runup Time 120 sec

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % NF	Speed kts	Climb Angle °	Climb Rate fpm
a	0	0 AGL	80 80% RPM Eng Runup	0	0.0	0
b	6,000	0 AGL	85 Max Rated Thrust	147	2.9	800
c	10,000	200 AGL	85 Max Rated Thrust	185	5.3	2100
d	36,000	2,630 AGL	85 Max Rated Thrust	250	6.3	2800
e	90,000	8,630 AGL	85 Max Rated Thrust	250	0.0	0
f	96,000	8,630 AGL	85 Max Rated Thrust	285	3.5	1800
g	200,000	15,000 AGL	85 Max Rated Thrust	285		

APA_B752_A_7A01

Notes AEDT 3g 757RR D STANDARD 1
Day Ops 0.0997
Night Ops 0
Aircraft B-757-200-RR
Engine RB211-535
A/C Category Civilian
Runway/Pad 7
Track 7A01
Runup Time ---
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	312 Landing	250	-3.0	-1100	165
b	56,308	3,000 AGL	1843 Landing	160	-3.0	-800	114
c	27,687	1,500 AGL	6261 Landing	137	-3.0	-700	42
d	18,146	1,000 AGL	7626 Landing	135	-3.0	-700	80
e	0	50 AGL	7368 Landing	135			

APA_B752_A_25A01

Notes AEDT 3g 757RR D STANDARD 1
Day Ops 0.0427
Night Ops 0
Aircraft B-757-200-RR
Engine RB211-535
A/C Category Civilian
Runway/Pad 25
Track 25A01
Runup Time ---

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	312 Landing	250	-3.0	-1100	165
b	56,308	3,000 AGL	1843 Landing	160	-3.0	-800	114
c	27,687	1,500 AGL	6261 Landing	137	-3.0	-700	42
d	18,146	1,000 AGL	7626 Landing	135	-3.0	-700	80
e	0	50 AGL	7368 Landing	135			

APA_B752_D_7D01

Notes AEDT 3g 757RR D STANDARD 1
Day Ops 0.0997
Night Ops 0
Aircraft B-757-200-RR
Engine RB211-535
A/C Category Civilian
Runway/Pad 7
Track 7D01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	37904 Takeoff	0	0.0	0	28
b	3,658	0 AGL	31967 Takeoff	156	15.7	4400	14
c	7,219	1,000 AGL	32494 Takeoff	156	5.2	1600	22
d	13,536	1,575 AGL	23819 Takeoff	192	5.0	1800	8
e	16,343	1,820 AGL	23452 Takeoff	206	6.5	2600	49
f	35,249	3,986 AGL	22777 Takeoff	250	8.4	3700	24
g	45,529	5,500 AGL	23297 Takeoff	250	7.9	3500	34
h	59,889	7,500 AGL	23983 Takeoff	250	6.7	3000	50
i	81,145	10,000 AGL	24902 Takeoff	250			

APA_B752_D_25D01

Notes AEDT 3g 757RR D STANDARD 1
Day Ops 0.0427
Night Ops 0
Aircraft B-757-200-RR
Engine RB211-535
A/C Category Civilian
Runway/Pad 25
Track 25D01
Runup Time ----

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	37904 Takeoff	0	0.0	0	28
b	3,658	0 AGL	31967 Takeoff	156	15.7	4400	14
c	7,219	1,000 AGL	32494 Takeoff	156	5.2	1600	22
d	13,536	1,575 AGL	23819 Takeoff	192	5.0	1800	8
e	16,343	1,820 AGL	23452 Takeoff	206	6.5	2600	49
f	35,249	3,986 AGL	22777 Takeoff	250	8.4	3700	24
g	45,529	5,500 AGL	23297 Takeoff	250	7.9	3500	34
h	59,889	7,500 AGL	23983 Takeoff	250	6.7	3000	50
i	81,145	10,000 AGL	24902 Takeoff	250			

NVY_B737_A_7A01

Notes AEDT 3g 737700 A STANDARD 1
Day Ops 0.1036
Night Ops 0.0115
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Transient
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	282 Approach	250	-3.0	-1100	161
b	56,308	3,000 AGL	1512 Approach	171	-3.0	-800	109
c	27,687	1,500 AGL	3253 Approach	140	-3.0	-700	41
d	18,146	1,000 AGL	5513 Approach	133	-3.0	-700	81
e	0	50 AGL	5326 Approach	133			

NVY_B737_A_25A01

Notes AEDT 3g 737700 A STANDARD 1
Day Ops 0.0444
Night Ops 0.0049
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Transient
Runway/Pad 25
Track 25A01
Runup Time ----

Takeoff 0 ft
Displacement
Landing 1,100 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	282 Approach	250	-3.0	-1100	161
b	56,308	3,000 AGL	1512 Approach	171	-3.0	-800	109
c	27,687	1,500 AGL	3253 Approach	140	-3.0	-700	41
d	18,146	1,000 AGL	5513 Approach	133	-3.0	-700	81
e	0	50 AGL	5326 Approach	133			

NVY_B737_D_7D01

Notes AEDT 3g 737700 D STANDARD 1
Day Ops 0.1036
Night Ops 0.0115
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	23595 Takeoff	0	0.0	0	46
b	6,489	0 AGL	18690 Takeoff	168	9.3	2800	21
c	12,570	1,000 AGL	18998 Takeoff	168	4.0	1300	26
d	20,972	1,587 AGL	17404 Takeoff	212	8.2	3100	27
e	30,757	3,000 AGL	17684 Takeoff	212	3.7	1500	31
f	42,678	3,778 AGL	16938 Takeoff	250	7.1	3100	33
g	56,601	5,500 AGL	17331 Takeoff	250	5.1	2300	53
h	78,848	7,500 AGL	17837 Takeoff	250	6.9	3100	49
i	99,592	10,000 AGL	18621 Takeoff	250			

NVY_B737_D_25D01

Notes AEDT 3g 737700 D STANDARD 1
Day Ops 0.0444
Night Ops 0.0049
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Transient
Runway/Pad 7
Track 7D01
Runup Time ----

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	23595 Takeoff	0	0.0	0	46
b	6,489	0 AGL	18690 Takeoff	168	9.3	2800	21
c	12,570	1,000 AGL	18998 Takeoff	168	4.0	1300	26
d	20,972	1,587 AGL	17404 Takeoff	212	8.2	3100	27
e	30,757	3,000 AGL	17684 Takeoff	212	3.7	1500	31
f	42,678	3,778 AGL	16938 Takeoff	250	7.1	3100	33
g	56,601	5,500 AGL	17331 Takeoff	250	5.1	2300	53
h	78,848	7,500 AGL	17837 Takeoff	250	6.9	3100	49
i	99,592	10,000 AGL	18621 Takeoff	250			

PMA_BE20_A_7A01

Notes Standard Arrival BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.349
Night Ops 0
Aircraft C-12
Engine PT6A-38
A/C Category Civilian
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	8,000 AGL	90 Variable	190	-2.0	-700	320
b	100,000	4,500 AGL	93 Variable	180	-1.8	-500	122
c	66,000	3,450 AGL	93 Variable	150	-3.0	-700	85
d	46,000	2,400 AGL	93 Variable	130	-2.9	-700	89
e	26,400	1,400 AGL	85 Variable	130	-2.9	-600	125
f	0	50 AGL	30 Variable	120			

PMA_BE20_A_25A01

Notes Standard Arrival BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.1496
Night Ops 0
Aircraft C-12
Engine PT6A-38
A/C Category Civilian
Runway/Pad 25

Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	8,000 AGL	90 Variable	190	-2.0	-700	320
b	100,000	4,500 AGL	93 Variable	180	-1.8	-500	122
c	66,000	3,450 AGL	93 Variable	150	-3.0	-700	85
d	46,000	2,400 AGL	93 Variable	130	-2.9	-700	89
e	26,400	1,400 AGL	85 Variable	130	-2.9	-600	125
f	0	50 AGL	30 Variable	120			

PMA_BE20_D_7D01

Notes AEDT NOISEMAP profile
Day Ops 0.349
Night Ops 0
Aircraft C-12
Engine PT6A-38
A/C Category Civilian
Runway/Pad 7
Track 7D01
Runup Time 0 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	98 Variable	0	0.0	0	23
b	2,500	0 AGL	100 Variable	130	3.8	1000	31
c	10,000	500 AGL	95 Variable	155	6.3	1700	76
d	30,000	2,700 AGL	95 Variable	155	1.6	400	268
e	100,000	4,700 AGL	95 Variable	155	3.0	800	382
f	200,000	10,000 AGL	95 Variable	155			

PMA_BE20_D_25D01

Notes AEDT NOISEMAP profile
Day Ops 0.1496
Night Ops 0
Aircraft C-12
Engine PT6A-38
A/C Category Civilian
Runway/Pad 25
Track 25D01
Runup Time 0 sec

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	98 Variable	0	0.0	0	23
b	2,500	0 AGL	100 Variable	130	3.8	1000	31
c	10,000	500 AGL	95 Variable	155	6.3	1700	76
d	30,000	2,700 AGL	95 Variable	155	1.6	400	268
e	100,000	4,700 AGL	95 Variable	155	3.0	800	382
f	200,000	10,000 AGL	95 Variable	155			

PMA_BE65_A_7A01

Notes Standard Arrival BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.2493

Night Ops 0

Aircraft U-8F

Engine LYC 480-A1

A/C Category Civilian

Runway/Pad 7

Track 7A01

Runup Time ----

Takeoff 0 ft

Displacement

Landing 0 ft

Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,580 AGL	31 Variable	120	-3.0	-600	427
b	113,471	6,000 AGL	30 Variable	120	-3.0	-600	188
c	75,313	4,000 AGL	30 Variable	120	-3.0	-600	86
d	60,050	3,200 AGL	30 Variable	90	-3.7	-600	25
e	56,235	2,950 AGL	30 Variable	90	-3.0	-500	251
f	18,076	950 AGL	30 Variable	90	-2.9	-500	119
g	0	50 AGL	30 Variable	90			

PMA_BE65_A_25A01

Notes Standard Arrival BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.1068

Night Ops 0

Aircraft U-8F

Engine LYC 480-A1

A/C Category Civilian

Runway/Pad 25

Track 25A01

Runup Time ----

Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	200,000	10,580 AGL	31 Variable	120	-3.0	-600	427
b	113,471	6,000 AGL	30 Variable	120	-3.0	-600	188
c	75,313	4,000 AGL	30 Variable	120	-3.0	-600	86
d	60,050	3,200 AGL	30 Variable	90	-3.7	-600	25
e	56,235	2,950 AGL	30 Variable	90	-3.0	-500	251
f	18,076	950 AGL	30 Variable	90	-2.9	-500	119
g	0	50 AGL	30 Variable	90			

PMA_BE65_D_7D01

Notes Standard Departure BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.2493

Night Ops 0

Aircraft U-8F

Engine LYC 480-A1

A/C Category Civilian

Runway/Pad 7

Track 7D01

Runup Time 0 sec

Takeoff 0 ft

Displacement

Landing 0 ft

Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	100 Variable	0	0.0	0	21
b	1,948	0 AGL	100 Variable	110	6.2	1200	49
c	11,087	1,000 AGL	100 Variable	110	3.9	800	15
d	13,942	1,197 AGL	100 Variable	120	7.5	1600	68
e	27,638	3,000 AGL	100 Variable	120	6.6	1400	107
f	49,267	5,500 AGL	100 Variable	120	5.7	1200	99
g	69,275	7,500 AGL	100 Variable	120	4.9	1000	144
h	98,518	10,000 AGL	100 Variable	120	4.9	1000	501
i	200,000	18,676 AGL	100 Variable	120			

PMA_BE65_D_25D01

Notes Standard Departure BaseOps 7.366
 Same as AEDT NOISEMAP profile

Day Ops 0.1068

Night Ops 0

Aircraft U-8F

Engine LYC 480-A1

A/C Category Civilian

Runway/Pad 25
Track 25D01
Runup Time 0 sec
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power % RPM	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	100 Variable	0	0.0	0	21
b	1,948	0 AGL	100 Variable	110	6.2	1200	49
c	11,087	1,000 AGL	100 Variable	110	3.9	800	15
d	13,942	1,197 AGL	100 Variable	120	7.5	1600	68
e	27,638	3,000 AGL	100 Variable	120	6.6	1400	107
f	49,267	5,500 AGL	100 Variable	120	5.7	1200	99
g	69,275	7,500 AGL	100 Variable	120	4.9	1000	144
h	98,518	10,000 AGL	100 Variable	120	4.9	1000	501
i	200,000	18,676 AGL	100 Variable	120			

UAL_B738_A_7A01

Notes AEDT 3g 737700 A STANDARD 1
Day Ops 0
Night Ops 0.1995
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Civilian
Runway/Pad 7
Track 7A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	282 Approach	250	-3.0	-1100	161
b	56,308	3,000 AGL	1512 Approach	171	-3.0	-800	109
c	27,687	1,500 AGL	3253 Approach	140	-3.0	-700	41
d	18,146	1,000 AGL	5513 Approach	133	-3.0	-700	81
e	0	50 AGL	5326 Approach	133			

UAL_B738_A_25A01

Notes AEDT 3g 737700 A STANDARD 1
Day Ops 0
Night Ops 0.0855
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Civilian
Runway/Pad 25

Track 25A01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	113,552	6,000 AGL	282 Approach	250	-3.0	-1100	161
b	56,308	3,000 AGL	1512 Approach	171	-3.0	-800	109
c	27,687	1,500 AGL	3253 Approach	140	-3.0	-700	41
d	18,146	1,000 AGL	5513 Approach	133	-3.0	-700	81
e	0	50 AGL	5326 Approach	133			

UAL_B738_D_7D01

Notes AEDT 3g 737700 D STANDARD 1
Day Ops 0
Night Ops 0.1995
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Civilian
Runway/Pad 7
Track 7D01
Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	23595 Takeoff	0	0.0	0	31
b	3,810	0 AGL	19272 Takeoff	148	13.8	3700	16
c	7,867	1,000 AGL	19580 Takeoff	148	5.8	1800	20
d	13,679	1,593 AGL	17797 Takeoff	195	12.6	4400	19
e	19,999	3,000 AGL	18075 Takeoff	195	5.3	2100	31
f	31,642	4,074 AGL	17003 Takeoff	250	9.9	4400	19
g	39,800	5,500 AGL	17331 Takeoff	250	9.0	4000	30
h	52,472	7,500 AGL	17837 Takeoff	250	7.6	3400	45
i	71,321	10,000 AGL	18621 Takeoff	250			

UAL_B738_D_25D01

Notes AEDT 3g 737700 D STANDARD 1
Day Ops 0
Night Ops 0.0855
Aircraft B-737-700*
Engine CFM56-7B-24
A/C Category Civilian
Runway/Pad 25
Track 25D01

Runup Time ----
Takeoff 0 ft
Displacement
Landing 0 ft
Displacement
Profile Segments

Point	Distance ft	Height ft	Power LBS	Speed kts	Climb Angle °	Climb Rate fpm	Duration sec
a	0	0 AGL	23595 Takeoff	0	0.0	0	31
b	3,810	0 AGL	19272 Takeoff	148	13.8	3700	16
c	7,867	1,000 AGL	19580 Takeoff	148	5.8	1800	20
d	13,679	1,593 AGL	17797 Takeoff	195	12.6	4400	19
e	19,999	3,000 AGL	18075 Takeoff	195	5.3	2100	31
f	31,642	4,074 AGL	17003 Takeoff	250	9.9	4400	19
g	39,800	5,500 AGL	17331 Takeoff	250	9.0	4000	30
h	52,472	7,500 AGL	17837 Takeoff	250	7.6	3400	45
i	71,321	10,000 AGL	18621 Takeoff	250			

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