September 2025 | DRAFT

Kalaeloa Airport

Chapter 2
Aviation Activity Forecast

Prepared for:

State of Hawaii Department of Transportation

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In association with:

ATAC Corporation

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AVIATION ACTIVITY FORECAST

This report presents the Aviation Activity Forecast (AAF) prepared for the Kalaeloa Airport (JRF or the Airport) Master Plan and Title 14 Code of Federal Regulation (CFR) Part 150 Noise Exposure Map. The AAF included determining the existing and future critical aircraft operating at the Airport. Critical aircraft determination is an important aspect of airport planning and design for federally obligated airports. According to the Federal Aviation Administration (FAA) Advisory Circular (AC) 150/5000-17, *Critical Aircraft and Regular Use Determination*, an accurate critical aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investment in airport facilities.

The report describes historical aviation activity and trends at the Airport and presents forecasts of aviation demand through federal fiscal year (FY) 2045, consistent with FAA AC 150/5070-6B, *Airport Master Plans*. Historical data are presented from FY 2014 through FY 2024, and the forecast period represents FY 2025 through FY 2045. Forecasts were developed for general aviation (GA) and military operations. Forecasts were also developed for based aircraft by engine type (i.e., jet, turboprop, piston, helicopter, other). The aircraft operations forecast is presented by user category (GA and military operations) and includes local and itinerant operations, operational fleet mix, peaking metrics, and critical aircraft operations. Additionally, this report presents industry trends and factors affecting aviation activity, including socioeconomic data, local factors, and detail on key operators at the Airport, including the Department of Defense United States Coast Guard (USCG).

Future activity levels at the Airport may differ from this forecast because of unexpected events, including economic, social, regulatory, political, technological, and environmental changes. Forecasts are intended to represent approximate future activity levels.

This report is organized into the following sections:

- Background and Historical Aviation Activity
- Factors Affecting Aviation Activity
- Aviation Activity Forecasts
- Forecast Comparisons
- Sensitivity Analysis: Relocation of Daniel K. Inouye International Airport (HNL) Light GA Activity to JRF

1. BACKGROUND AND HISTORICAL AVIATION ACTIVITY

This section presents the Airport history and historical aviation activity as well as its aeronautical role within the federal, state, and local air transportation system.

1.1 AIRPORT LOCATION

The Airport is in Kalaeloa, which is a community development district under the responsibility of the Hawaii Community Development Authority (HCDA). The Kalaeloa District covers 3,695 acres of land within the Ewa Plains in the southwest portion of the island of Oahu, Hawaii, and is bounded by predominantly single-family residential development to the north and east and by Campbell Industrial Park to the west. JRF is approximately 8 nautical miles west of HNL and approximately 12 nautical miles west of Downtown Honolulu. The aerial photograph on **Exhibit 1** shows the regional setting of the Airport, and **Exhibit 2** depicts landownership in the Kalaeloa District, which includes JRF.

For purposes of forecasting aviation activity, the Air Trade Area (ATA) is defined as a broader area of potential use at the Airport. Given JRF's location on Oahu, the ATA includes the Urban Honolulu, Hawaii, Metropolitan Statistical Area, which includes Honolulu County and is coterminous with the island of Oahu. In addition to HNL and JRF, Kawaihapai Airfield (HDH), a GA and military airfield located on the northwest side of the island near Mokuleia, also serves the ATA. Socioeconomic and aviation activity in the ATA is described in further detail in Sections 2.2 and 2.3, respectively, and Section 5 presents a GA activity sensitivity analysis related to the relocation of light GA activity currently operating at HNL.

1.2 HISTORY OF KALAELOA

Kalaeloa means "long point" in the Hawaiian language. It is a place of significance in Native Hawaiian heritage as it was a legendary birthplace and burial ground of Hawaii's Kings, encompassing a unique pre-contact archaeological cultural landscape. In addition, many historical developments occurred in Kalaeloa, including the production of sugar cane in the 1800s, military developments by the US Navy in the early 1900s, and military expansion in the 1940s due to World War II (WWII).

Exhibit 3 depicts a historical timeline of military development in Kalaeloa and its influence on the district. Kalaeloa is sometimes referred to as Barbers Point in reference to a voyage led by Captain Henry Barber that culminated in the 1796 shipwreck of the British brig *Arthur*. The US Navy developed Kalaeloa by expanding the Ewa Field as the Marine Corps Air Station (MCAS) in 1940 and constructed the Naval Air Station Barbers Point (NASBP), which was commissioned in 1942. Despite its strategic importance throughout WWII and in the four decades that followed, in 1993, the US Congress authorized closure of the NASBP at the recommendation of the Department of Defense. When NASBP officially closed on July 2, 1999, it was not until 2002 that the NASBP was transferred from the NASBP Redevelopment Commission to the HCDA when Governor Benjamin Cayetano signed Senate Bill 2702 or Act 184.[1]

[1] Hawaii Community Development Authority, *Draft Kalaeloa Master Plan*, July 2024.



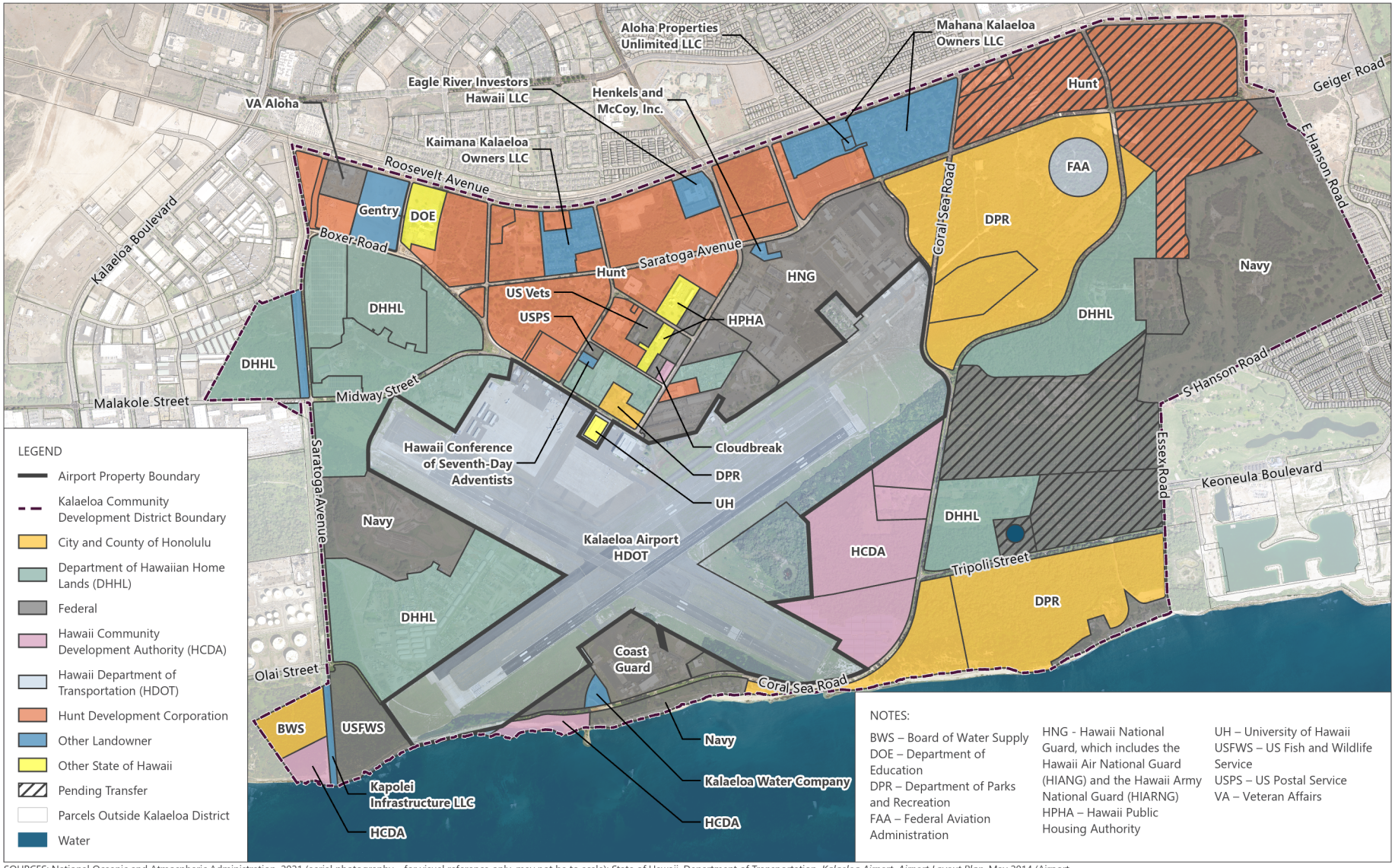
SOURCES: National Oceanic and Atmospheric Administration, 2021 (aerial photography – for visual reference only, may not be to scale); State of Hawaii, Department of Transportation, *Kalaeloa Airport, Airport Layout Plan,* May 2014 (Airport property boundary); Hawaii Community Development Authority, *Draft Kalaeloa Master Plan*, July 2024 (Kalaeloa district boundary); Hawaii Statewide GIS Program, 2024 (oceans).

EXHIBIT 1

NORTH 0 7,000 ft

AIRPORT LOCATION

Project: P:\GIS\Projects\JRF\APRX\JRF_AdvancedForecast_20250210.aprx Layout: JRF_Exh-1_AirportLocation_20250915



SOURCES: National Oceanic and Atmospheric Administration, 2021 (aerial photography – for visual reference only, may not be to scale); State of Hawaii, Department of Transportation, *Kalaeloa Airport, Airport Layout Plan,* May 2014 (Airport property boundary); Hawaii Community Development Authority, *Draft Kalaeloa Master Plan*, July 2024 (parcels, Kalaeloa district boundary); Hawaii Statewide GIS Program, 2024 (oceans).

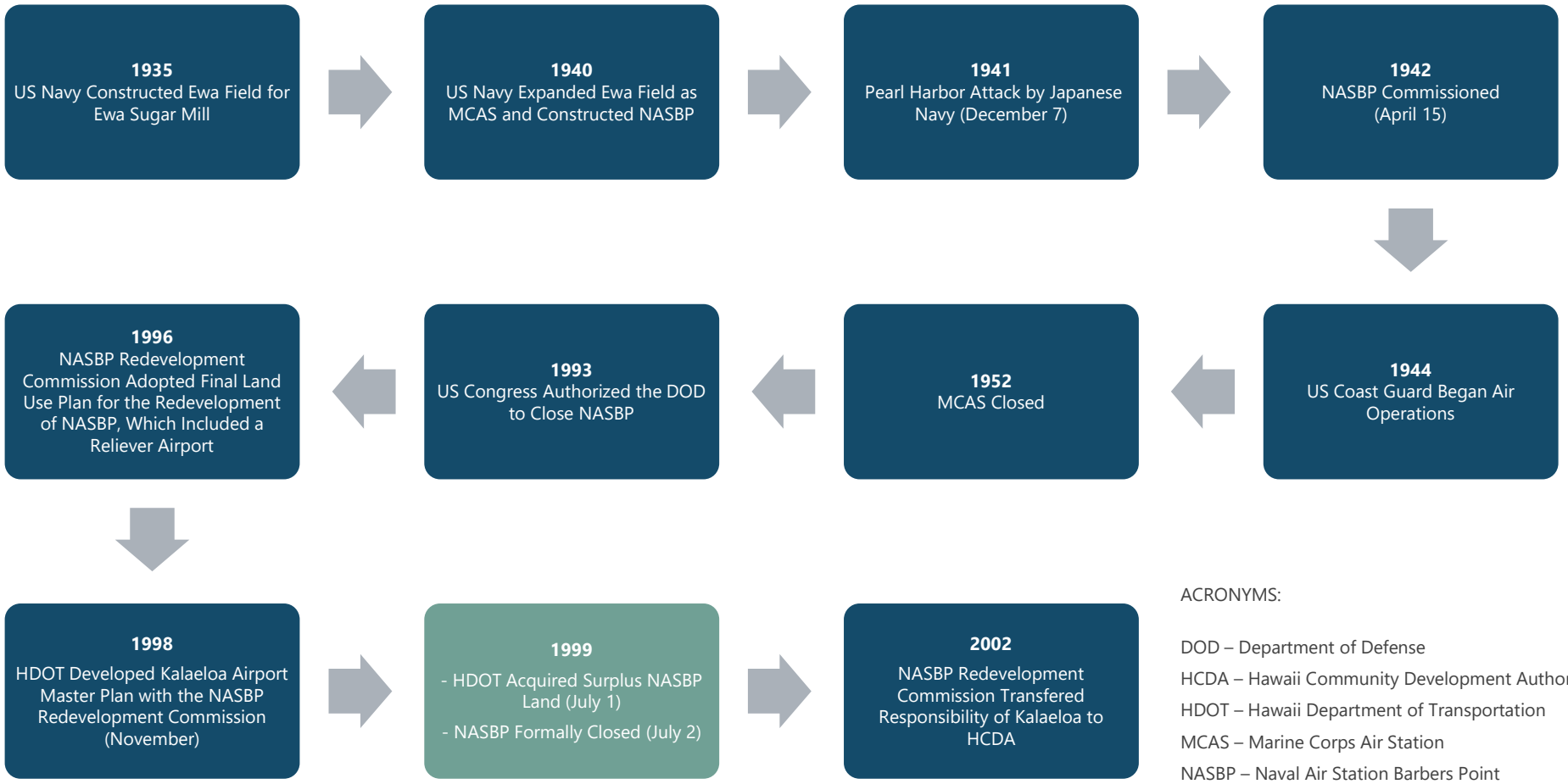
NORTH 0 2,500 ft

EXHIBIT 2

LAND OWNERSHIP WITHIN THE KALAELOA DISTRICT

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EXHIBIT 3 HISTORY OF MILITARY DEVELOPMENT AT KALAELOA



NOTES:

SOURCES: State of Hawaii Department of Transportation, *Kalaeloa Airport Master Plan*, November 1998; State of Hawaii Office of Assistant Registrar and State of Hawaii Bureau of Conveyances, *Quit Claim Deed with Notices, Covenants, Conditions, Reservations, Restrictions and Grant of Easements,* July 1, 1999; Hawaii Community Development Authority, *Draft Kalaeloa Master Plan*, July 2024.

According to the HCDA *Draft Kalaeloa Master Plan* (July 2024), Kalaeloa parcels are owned by various landowners, including federal, State of Hawaii, City and County of Honolulu, right-of-way, and private landowners. The State of Hawaii Department of Transportation (HDOT) owns approximately 808 acres, or 22 percent, of the total 3,695 acres of the Kalaeloa District. HDOT acquired the land on July 1, 1999, to be used as a GA reliever airport to HNL.[2] This acquisition was vital to HNL, as the US Navy planned to close the Ford Island Auxiliary Landing Field Runway, located in Pearl Harbor, in 1999. This would have forced aircraft to use HNL for training operations, resulting in air traffic congestion and operational delays for air carriers. HDOT decided to continue use of the airport code, JRF, honoring Commander John Rodgers, who in 1925 made the first attempt to fly from San Francisco to Hawaii.[3]

The last Airport Master Plan Update (MPU) was published in November 1998. It was completed with the assistance of the NASBP Redevelopment Commission to determine the combination of airport facilities for all aviation users, including the Hawaii National Guard (HNG), which includes the Hawaii Air National Guard (HIANG) and the Hawaii Army National Guard (HIARNG), and the USCG.

1.3 AIRPORT ROLE

In addition to serving as a GA reliever airport to HNL, JRF serves as a resource for businesses, a base for GA pilot training activity, and a base for recreational aviation activities. The Airport also continues to support USCG and HNG operations and serves as an alternate airport for a few airlines serving HNL.[4]

The USCG occupies approximately 58 acres south of JRF, which accommodates maintenance facilities for their Lockheed C-130J Super Hercules (C-130J) transport aircraft (the latest version of the Lockheed C-130 Hercules) and H65 Dolphin helicopters. The USCG uses the Airport for search and rescue missions as well as other operations, including maritime and recreational boating safety, law enforcement, environmental protection, and homeland security. The HNG (which comprises the 29th Separate Infantry Brigade, the 229th Military Intelligence Company, the 29th Support Battalion, and the 297th Air Traffic Control Squadron) occupies approximately 148 acres and has airfield access on the northeast side of the Airport.[5]

The Airport is included in the FAA *National Plan of Integrated Airport Systems* (NPIAS) for FY 2025 through FY 2029 and is defined as a local reliever airport. The NPIAS identifies airports integral to the national air transportation network and is issued by FAA every two years. An airport must meet a set of criteria (e.g., based aircraft counts and locational requirements) to be included in the NPIAS. Airports included in the NPIAS are eligible for development grants under the FAA Airport Improvement Program.

1.4 PASSENGER ACTIVITY

Historical data presented in the FAA 2024 Terminal Area Forecast (TAF) includes commuter enplaned passenger volumes recorded over the period from FY 2014 to FY 2016. According to Cirium Diio published airline schedules, regular passenger airline service was provided by Mokulele Airlines to three interisland destinations, including

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[2] State of Hawaii Office of Assistant Registrar and State of Hawaii Bureau of Conveyances, *Quit Claim Deed With Notices, Covenants, Conditions, Reservations, Restrictions and Grant of Easements*, July 1, 1999.

[3] State of Hawaii Department of Transportation, https://aviation.hawaii.gov/airfields-airports/oahu/kalaeloa-airport/ (accessed November 18, 2024).

[4] Airlines designating JRF as an alternate airport include Alaska Airlines, American Airlines, Delta Air Lines, Japan Air Lines, Hawaiian Airlines, Southwest Airlines, and WestJet.

[5] Hawaii Community Development Authority, *Draft Kalaeloa Master Plan*, July 2024.

Kapalua Airport (JHM), Molokai Airport (MKK), and Kahului Airport (OGG).[6] Since FY 2016, no passenger airlines have operated at the Airport, and none are expected to operate there over the forecast period.

1.5 AIRCRAFT OPERATIONS

Table 1 presents historical aircraft operations (takeoffs and landings) between FY 2014 and FY 2024 collected from the FAA Operations Network (OPSNET) system, which is the official source for aircraft operation counts from airport traffic control towers. During the historical period, the Airport accommodated between 116,075 and 220,681 operations, with the peak occurring in FY 2024. Operations increased at a 4.9 percent compound annual growth rate (CAGR) during the period.

TABLE 1 HISTORICAL AIRCRAFT OPERATIONS

FEDERAL FISCAL YEAR	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	ANNUAL CHANGE
2014	463	104,155	31,788	136,406	
2015	1,987	99,340	27,481	128,808	-5.6%
2016	2,056	94,011	20,008	116,075	-9.9%
2017	63	109,363	20,140	129,566	11.6%
2018	82	128,002	22,477	150,561	16.2%
2019	159	142,332	20,529	163,020	8.3%
2020	12	147,454	20,188	167,654	2.8%
2021	2	152,437	19,308	171,747	2.4%
2022	0	159,685	23,801	183,486	6.8%
2023	0	178,656	17,149	195,805	6.7%
2024	1	202,058	18,622	220,681	12.7%
Compound Annual Growth Rate					
2014 – 2024	-45.9%	6.9%	-5.2%	4.9%	

SOURCE: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024.

1.5.1 CATEGORY OF AIRCRAFT OPERATIONS

Aircraft operations are categorized into local and itinerant operations. Local operations are airport operations performed by aircraft that remain in the local traffic pattern or conduct operations to or from the same airport in a designated practice area within an approximately 20-mile radius of the airport. Itinerant operations are operations that either arrive from outside the airport area and land at an airport, or depart from the airport and leave the airport area. Itinerant operations are further categorized as operating under Visual Flight Rules (VFR) and Instrument Flight Rules (IFR). In itinerant VFR activity, pilots are permitted to operate aircraft by maintaining separation from terrain, obstacles, and other aircraft using visual cues. In itinerant IFR activity, pilots must use aircraft instruments due to minimum requirements for visibility, distance from clouds, and cloud ceiling above the ground. Operations reported by the FAA are also categorized according to user, as air carrier and air taxi, military, or GA. As defined by the FAA:

[6] Cirium Diio Mi, Market Intelligence for the Aviation Industry, 2025.

air carrier[7] and air taxi[8] operations carry passengers or cargo for hire or compensation; military operations are conducted by military aircraft; and GA operations consist of all activity other than air carrier, air taxi, and military operations.

Table 2 presents historical aircraft operations organized by operation type within the categories of itinerant IFR, itinerant VFR, and local operations; **Exhibit 4** depicts historical aircraft operations categorized by itinerant IFR, itinerant VFR, and local operations. Itinerant VFR and local operations increased during the historical period at CAGRs of 6.8 percent and 4.7 percent, respectively; itinerant IFR operations decreased during the historical period at a CAGR of -2.6 percent. Local operations represented the largest category throughout the historical period, though the share represented by this activity decreased from 82 percent in FY 2014 to 80 percent in FY 2024. GA aircraft operations represented the majority for both itinerant VFR and local operations, increasing at CAGRs of 9.2 percent and 6.5 percent, respectively, from FY 2014 to FY 2024.

1.5.2 AIRCRAFT FLEET MIX

Aircraft fleet mix data were provided for FY 2024 by ATAC Corporation (ATAC), a third-party vendor with access to radar data. ATAC's detailed aircraft operations data are compiled using radar data and other sources to identify granular characteristics of operations data, where available, including aircraft type, activity date and time, and operation type (i.e., landing, takeoff, or touch-and-go). Aircraft operations and fleet mix details provided by ATAC represented a 79 percent capture rate of the total FAA OPSNET data for FY 2024. Annual total operations at JRF were normalized against FAA OPSNET data, with operations identified in ATAC data assumed to be representative of the entirety of the FAA OPSNET total operations count; the remaining 21 percent "unknown" operations were distributed proportional to the aircraft type, operations category, and activity date and time granular data for operations identified in ATAC data.

Table 3 presents estimated fixed wing aircraft operations by powerplant type at the Airport in FY 2024 along with helicopter operations. During the year, piston-powered aircraft represented the largest share of operations at the Airport, with 82.8 percent of total operations. Helicopters represented the second-largest share of operations, with 12.7 percent of total operations. Jet aircraft represented 0.4 percent of operations in FY 2024, with 811 operations estimated to have occurred during the year.

Table 4 presents estimated aircraft operations by Aircraft Approach Category (AAC)[9] in FY 2024. AAC A aircraft types represented the largest share of operations at the Airport during the year, estimated at 183,317, or 83.1 percent, of operations. Helicopters represented the next largest grouping operating at the Airport, with an estimated 12.7 percent of operations. AAC C aircraft types represented the second-largest fixed-wing aircraft grouping, with an estimated 1.9 percent of total operations.

[7] This refers to aircraft with a seating capacity of more than 60 or a maximum payload capacity of more than 18,000 pounds that carry passengers or cargo for hire or compensation, including by US and foreign-flag airlines.

[8] Air taxi operators conduct operations in aircraft with 60 or fewer passenger seats and a payload capacity of 18,000 pounds or less; they do not engage in scheduled passenger operations and do not otherwise seek authority as a certificated or commuter airline.

[9] AAC represents a grouping of aircraft based on their approach speed (operational characteristic). The categories are as follows:

AAC A – approach speed up to 90 knots; AAC B – approach speed 91 to 120 knots; AAC C – approach speed 121 to 140 knots; and AAC D – approach speed 141 to 165 knots

Table 5 presents estimated operations by Airplane Design Group[10] (ADG) in FY 2024 as determined previously, with the proportional distribution of remaining GA operations largely consisting of ADG I aircraft. Approximately 182,394 ADG I operations, representing 82.7 percent of total operations, were estimated to have used JRF in FY 2024. Helicopter operations represented 12.7 percent of total operations during the year; ADG IV aircraft represented 2.2 percent of total operations in FY 2024.

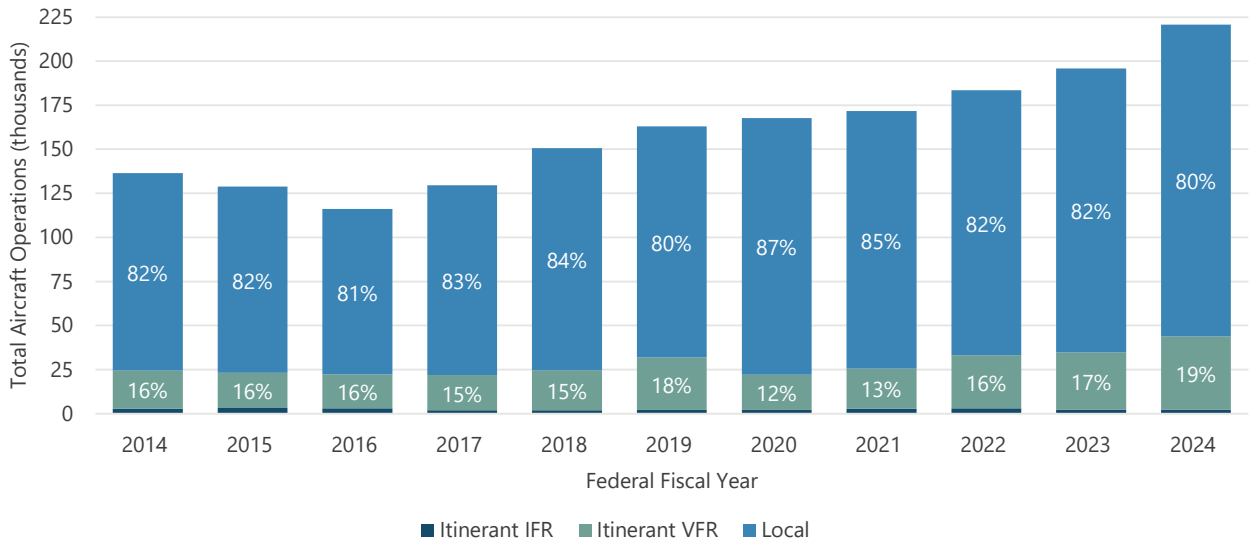
[10] ADG represents a grouping of aircraft based on their wingspan and tail height (operational characteristics). The ADG is selected based on the more limiting of the two operational characteristics. The categories are as follows: ADG I – tail height up to 19 feet and wingspan up to 48 feet; ADG II – tail height 20 to 29 feet and wingspan 49 to 78 feet; ADG III – tail height 30 to 44 feet and wingspan 79 to 117 feet; and ADG IV – tail height 45 to 59 feet and wingspan 118 to 170 feet.

TABLE 2 HISTORICAL AIRCRAFT OPERATIONS BY CATEGORY

	ITINERANT IFR				ITINERANT VFR				LOCAL			
FEDERAL FISCAL YEAR	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	GENERAL AVIATION	MILITARY	TOTAL	TOTAL OPERATIONS
2014	155	1,261	1,507	2,923	308	15,420	5,831	21,559	87,474	24,450	111,924	136,406
2015	886	846	1,519	3,251	1,101	14,018	4,868	19,987	84,476	21,094	105,570	128,808
2016	1,050	682	1,358	3,090	1,006	13,229	4,849	19,084	80,100	13,801	93,901	116,075
2017	21	522	1,341	1,884	42	15,398	4,550	19,990	93,443	14,249	107,692	129,566
2018	43	523	1,427	1,993	39	18,272	4,387	22,698	109,207	16,663	125,870	150,561
2019	2	591	1,491	2,084	157	25,543	4,140	29,840	116,198	14,898	131,096	163,020
2020	9	842	1,269	2,120	3	15,665	4,338	20,006	130,947	14,581	145,528	167,654
2021	0	1,191	1,558	2,749	2	18,566	4,265	22,833	132,680	13,485	146,165	171,747
2022	0	1,146	1,788	2,934	0	24,876	5,276	30,152	133,663	16,737	150,400	183,486
2023	0	732	1,637	2,369	0	28,139	4,293	32,432	149,785	11,219	161,004	195,805
2024	1	877	1,374	2,252	0	37,058	4,605	41,663	164,123	12,643	176,766	220,681
Compound Annual Growth Rate												
2014 – 2024	-39.6%	-3.6%	-0.9%	-2.6%	NA	9.2%	-2.3%	6.8%	6.5%	-6.4%	4.7%	4.9%

NOTES:
IFR – Instrument Flight Rules; NA – not applicable; VFR – Visual Flight Rules.
SOURCE: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024.

EXHIBIT 4 HISTORICAL AIRCRAFT OPERATIONS BY ITINERANT INSTRUMENT FLIGHT RULES, ITINERANT VISUAL FLIGHT RULES, AND LOCAL OPERATIONS



NOTES:
IFR – Instrument Flight Rules; VFR – Visual Flight Rules.
SOURCE: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024.

TABLE 3 ESTIMATED AIRCRAFT OPERATIONS BY POWERPLANT TYPE (FY 2024)

POWERPLANT TYPE	AIRCRAFT OPERATIONS	SHARE OF AIRCRAFT OPERATIONS
Jet	811	0.4%
Piston	182,640	82.8%
Turboprop	5,170	2.3%
Helicopter	27,926	12.7%
Other	509	0.2%
Unknown[1]	3,624	1.6%
Total[2]	**220,681**	**100.0%**

NOTES:
1 Includes operations with unknown powerplant types based on base year operations data.
2 Total may not add up due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data).

TABLE 4 ESTIMATED AIRCRAFT OPERATIONS BY AIRCRAFT APPROACH CATEGORY (FY 2024)

AIRCRAFT APPROACH CATEGORY	AIRCRAFT OPERATIONS	SHARE OF AIRCRAFT OPERATIONS
A	183,317	83.1%
B	1,466	0.7%
C	4,138	1.9%
D	98	0.0%
Helicopter	27,926	12.7%
Unknown[1]	3,735	1.7%
Total[2]	**220,681**	**100.0%**

NOTES:
1 Includes operations with unknown powerplant types based on base year operations data.
2 Total may not add up due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data).

TABLE 5 ESTIMATED AIRCRAFT OPERATIONS BY AIRPLANE DESIGN GROUP (FY 2024)

AIRPLANE DESIGN GROUP	AIRCRAFT OPERATIONS	SHARE OF AIRCRAFT OPERATIONS
I	182,394	82.7%
II	1,572	0.7%
III	235	0.1%
IV	4,828	2.2%
V	7	0.0%
Helicopter	27,926	12.7%
Unknown[1]	3,718	1.7%
Total[2]	**220,681**	**100.0%**

NOTES:
1 Includes operations with unknown powerplant types based on base year operations data.
2 Total may not add up due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data).

1.5.3 CURRENT CRITICAL AIRCRAFT

As previously stated, a key component of the airport planning process is the determination of critical aircraft. Airfield design standards vary in accordance with the performance (approach speed) and size (wingspan and tail height) of aircraft that commonly use the airport, represented by the AAC and the ADG, respectively. An aircraft's AAC and ADG combine to form its Runway Design Code (RDC). These design standards establish dimensional requirements for the airfield, such as the separation distance between taxiways and runways and the size of certain areas protecting the safety of aircraft operations and passengers. According to FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, accurate critical aircraft determination helps to ensure the proper development of, and the appropriate federal investment in, airport facilities. The critical aircraft is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that makes regular use of the airport. Regular use is defined

as 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or a landing.

Table 6 shows aircraft operations by RDC in FY 2024. These operations are presented by ADG and AAC, with the intersecting cells representing the operations count by RDC. Most operations at the Airport consisted of RDC A-I aircraft, with 182,270 operations in FY 2024. The most demanding aircraft type with regular use at the Airport was RDC C-IV aircraft, with 3,921 operations in FY 2024. Military aircraft, including the C-130J, represented most of these operations, and the C-130J is the current representative critical aircraft at JRF.[11] The largest civilian aircraft operating at the Airport on a regular basis were RDC A-II aircraft types, with 824 operations in FY 2024; Cessna 208B is the representative RDC A-II aircraft in the current critical aircraft family.

TABLE 6 CRITICAL AIRCRAFT OPERATIONS BY RUNWAY DESIGN CODE (FY 2024)

	AIRCRAFT APPROACH CATEGORY						
AIRPLANE DESIGN GROUP	A	B	C	D	HELICOPTER	UNKNOWN[1]	TOTAL
I	182,270	113	11	0	0	0	182,394
II	1,047	453	39	17	0	0	1,556
III	0	5	160	70	0	0	235
IV	0	896	3,921	11	0	0	4,828
V	0	0	7	0	0	0	7
Helicopter	0	0	0	0	27,926	0	27,926
Unknown[1]	0	0	0	0	0	3,735	3,735
Total[2]	**183,317**	**1,466**	**4,138**	**98**	**27,926**	**3,735**	**220,681**

NOTES:
1 Includes operations with unknown powerplant types based on base year operations data.
2 Total may not add due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data).

Critical aircraft operations can also be assessed in conjunction with runway utilization by aircraft type and RDC. At JRF, most operations by more demanding aircraft types, including AAC B, AAC C, and AAC D, along with ADG II, ADG III, ADG IV, and ADG V operations, are handled by Runway 4R-22L. Additionally, Runway 4L-22R accommodates the plurality of AAC A and ADG I operations, as well as the plurality of overall operations at the Airport. Accordingly, RDC C-IV aircraft represent the critical aircraft family for Runway 4L-22R, similar to the Airport overall. RDC A-I aircraft types are the most demanding aircraft types using Runway 4R-22L and Runway 11-29, representing the critical aircraft for these runways. Cessna 172 aircraft is the current representative aircraft for these runways. **Appendix A** presents additional fleet mix characteristics and runway utilization data by RDC grouping for FY 2024 (base year) by civilian vs. military aircraft operations.

[11] As noted in Section 1.3, JRF serves as an alternative airport for several airlines serving HNL. Aircraft operated by these airlines largely consist of aircraft designated in AAC C and AAC D as well as ADG III, ADG IV, and ADG V. The most demanding of these aircraft, the Boeing 777-300ER, is considered an RDC D-V aircraft, however, no operations of RDC D-V aircraft were recorded at JRF in FAA TFMSC data during the historical period.

FY 2024 aircraft operations and fleet mix details at JRF were presented and validated by HDOT and key stakeholders, including the USCG, during a meeting held on January 23, 2025. For more details, see the meeting notes summary in **Appendix B**, JRF Advanced Aviation Activity Forecast – Existing Aircraft Operations and Fleet Mix Data Review & Validation.

1.5.4 PEAK ACTIVITY

Peak activity is also a key component of the airport planning process, and peaking metrics are used to assess relative demand for facilities at the Airport. **Table 7** presents the annual, peak month, peak month average day (PMAD), and PMAD peak hour operations during the historical period. The share of total operations represented by the peak month and PMAD were highest in FY 2018, with 12.6 percent and 0.4 percent of annual operations, respectively. Peak hour operations were estimated based on ATAC data for June 20, 2024, which represented the day closest to the calculated PMAD during the peak month and are presented for FY 2024 in the table. The ATAC data only covered FY 2024; peak hour operations are not presented for other FYs. In FY 2024, the peak month and PMAD represented 9.3 percent and 0.3 percent of annual operations, respectively, and the PMAD peak hour represented 0.04 percent of annual operations.

TABLE 7 ESTIMATED REPRESENTATIVE PERIOD OPERATIONS

FEDERAL FISCAL YEAR	OPERATIONS				SHARE OF ANNUAL OPERATIONS		
	ANNUAL	PEAK MONTH	PMAD	PMAD PEAK HOUR[1]	PEAK MONTH	PMAD	PMAD PEAK HOUR[1]
2014	136,406	13,036	421	NA	9.6%	0.31%	NA
2015	128,808	12,146	405	NA	9.4%	0.31%	NA
2016	116,075	11,875	383	NA	10.2%	0.33%	NA
2017	129,566	12,375	399	NA	9.6%	0.31%	NA
2018	150,561	19,014	613	NA	12.6%	0.41%	NA
2019	163,020	16,114	520	NA	9.9%	0.32%	NA
2020	167,654	16,142	538	NA	9.6%	0.32%	NA
2021	171,747	15,253	545	NA	8.9%	0.32%	NA
2022	183,486	18,019	581	NA	9.8%	0.32%	NA
2023	195,805	20,333	656	NA	10.4%	0.33%	NA
2024	220,681	20,567	686	82	9.3%	0.31%	0.04%
Compound Annual Growth Rate							
2014 – 2024	4.9%	4.7%	5.0%	NA			

NOTES:
NA – not available; PMAD – peak month average day.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data).

1.6 BASED AIRCRAFT

Table 8 presents the historical data for based aircraft for the period recorded in the 2024 FAA TAF and published on the FAA TAF website on January 2025. During this period, based aircraft decreased from 39 aircraft in FY 2014 to 28 in FY 2024, representing a CAGR of -3.3 percent. **Exhibit 5** presents the current based aircraft by powerplant

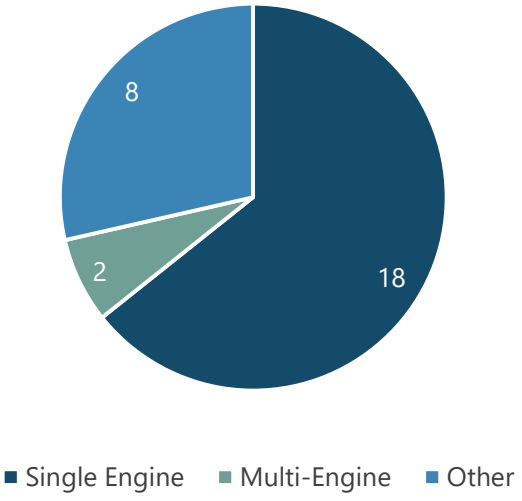
type in FY 2024, as recorded in the 2024 FAA TAF. Single-engine aircraft represented most of the aircraft based at the Airport in FY 2024, with 18 aircraft recorded. Aircraft that are neither helicopters nor have piston, turboprop, or jet powerplants represented the next largest share of based aircraft, with 8 recorded in FY 2024. Additionally, 2 multi-engine aircraft were based at the Airport in FY 2024. There were no based helicopters or jets recorded in the 2024 FAA TAF data.

TABLE 8 HISTORICAL BASED AIRCRAFT

FEDERAL FISCAL YEAR	BASED AIRCRAFT	ANNUAL GROWTH
2014	39	
2015	30	-23.1%
2016	37	23.3%
2017	37	0.0%
2018	37	0.0%
2019	37	0.0%
2020	28	-24.3%
2021	28	0.0%
2022	28	0.0%
2023	28	0.0%
2024	28	0.0%
Compound Annual Growth Rate		
2014 – 2024	-3.3%	

SOURCE: US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025.

EXHIBIT 5 BASED AIRCRAFT FLEET MIX (FY 2024)



SOURCE: US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025.

2. FACTORS AFFECTING AVIATION ACTIVITY

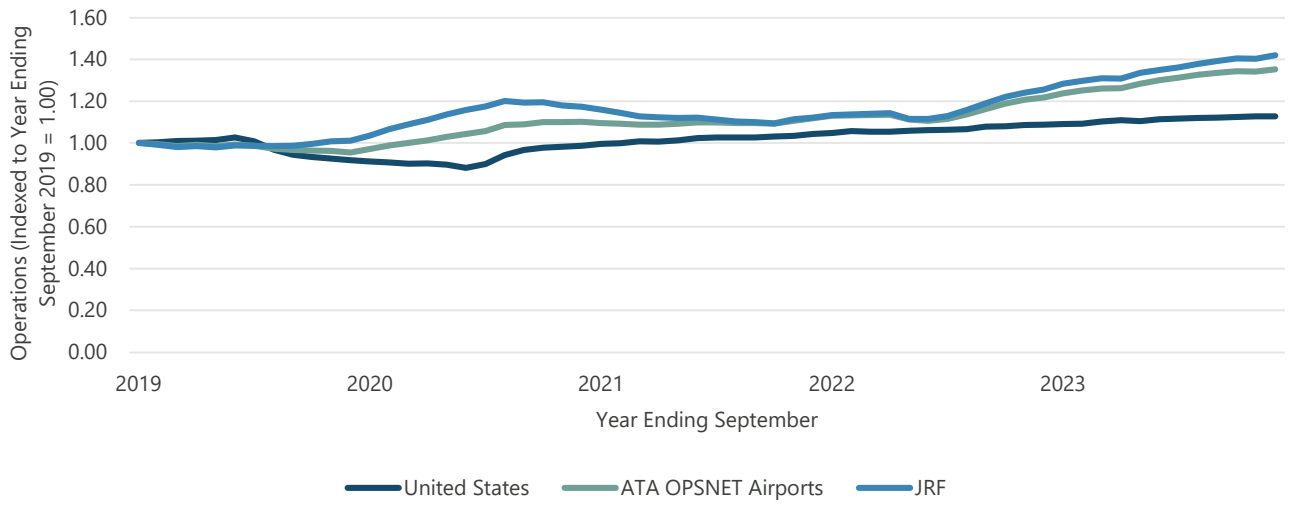
This section describes qualitative factors that may influence future aviation activity at the Airport. These factors were considered, either directly or indirectly, in developing the aviation activity forecasts.

2.1 IMPACT OF THE COVID-19 PANDEMIC

The effects of the COVID-19 pandemic were far-reaching, affecting different segments of aviation activity – such as passenger airlines, all-cargo airlines, and GA aircraft operators – in a variety of ways. At the Airport, GA aircraft operations are the primary component of civil aviation activity, and US GA activity was resilient compared to other segments of aviation activity during the pandemic period. GA activity typically involves limited direct contact between large groups of people, as local GA activity stays within a small radius of the Airport and in designated practice areas using low- and single-occupancy aircraft and itinerant GA activity was driven in part by a desire by high-budget leisure travelers to travel in a socially distanced manner.

Exhibit 6 presents total GA operations at the Airport, in the ATA, and in the US, indexed to the 12 months ending September 2019. GA operations in the ATA are presented for FAA-funded airports with airport traffic control towers, including federal contract towers. Activity at JRF represents most of this segment of aviation activity at those airports. Total GA activity at the Airport remained relatively constant at approximately 100 percent of FY 2019 levels throughout the initial stages of the pandemic period and then accelerated in the first fiscal quarter of FY 2021, reaching 120 percent of FY 2019 levels in the 12 months ending April 2021. Activity has remained higher at JRF than in the ATA and in the US throughout the period. Additional details regarding GA activity at ATA airports are presented in Section 2.3.

EXHIBIT 6 GENERAL AVIATION OPERATIONS COVID-19 RECOVERY – AIRPORT, AIR TRADE AREA, AND UNITED STATES



NOTES:
ATA – Air Trade Area; JRF – Kalaeloa Airport; OPSNET – Federal Aviation Administration Operations Network.

Air Trade Area airport operations are reported for Federal Aviation Administration–funded airports with airport traffic control towers, including federal contract towers.
SOURCE: US Department of Transportation, Federal Aviation Administration, Operations Network, December 2024.

2.2 NATIONAL AND AIR TRADE AREA ECONOMIC TRENDS

Historically, trends in aviation activity have correlated with national and regional economic trends, most notably changes in gross domestic product (GDP) and gross regional product (GRP). These correlations are relatively strong for drivers of commercial airline activity, i.e., passenger and cargo demand and associated airline operations, though economic and demographic trends also influence demand and propensity for travel and GA activity. As noted in Section 1.1, the ATA is defined as the Urban Honolulu, Hawaii, Metropolitan Statistical Area, which includes the entirety of the island of Oahu. While the FAA does not provide specific guidelines for defining an ATA, it can be described as the geographic area surrounding an airport that generates "local" activity. This area may also be described as the primary catchment area and may be shared totally or partially with other airports; for JRF, this includes HNL and HDH. Similarly, the attractions, businesses, and accommodations in the ATA generate activity for visitors arriving from outside the ATA. Here, the ATA contains a metropolitan core city, Honolulu, as well as notable tourism and leisure draws. The population and economic characteristics of an airport's service area are important factors in defining locally generated demand for aviation facilities and service. Actual economic activity may differ from projections, especially on a year-to-year basis, and demand for air service may be impacted by changes in economic performance. As of the development of the AAF, the US is proposing and implementing new tariffs on international trade. The full effects of these tariffs on local and national economic trends, as well as the GA activity trends discussed in subsequent sections, remain to be seen. Socioeconomic indicators potentially impacted by the imposition of tariffs include earnings, employment, income, and economic productivity (i.e., GDP and GRP) factors, while aviation activity factors potentially impacted by tariffs include increased prices or reduced availability for parts and aircraft along with changing fuel prices. Given the relatively recent development of tariff policies and uncertainties around their effect, this forecast does not reflect the potential effects of the tariffs. Further, it is not anticipated that the tariffs will have a long-term effect on aviation demand at JRF.

Table 9 presents the historical and projected values for socioeconomic metrics evaluated as part of the forecast process for the ATA as well as the values for the US, based on data from Woods & Poole Economics, Inc. (Woods & Poole). The data cover calendar years (CYs) 2013 through 2045, and the metrics are: total population, total employment, total and net earnings, GDP and GRP, and total and per capita personal income (PCPI). National GDP is projected to increase 1.9 percent annually and GRP is expected to increase 1.9 percent annually from 2023 through CY 2045, which should support the generally increasing demand for air service over the period.

Table 10 presents the historical and projected values for socioeconomic metrics evaluated as part of the forecast process for the ATA and the State of Hawaii, based on the State of Hawaii, Department of Business, Economic Development & Tourism (DBEDT). Again, the data covers the period from CY 2013 through CY 2045. The metrics are: total population, wage and salary jobs, total personal income, visitor arrivals by air, visitor days by air arrivals, and expenditure by air arrivals. Additionally, projected PCPI is derived from the projections of total population and total personal income using the following equation:

$$\frac{total\ personal\ income_n}{total\ population_n} = per\ capita\ personal\ income_n$$

All DBEDT socioeconomic indicators are projected to grow during the forecast period, though for the ATA, the CAGR for expenditure by air arrivals is almost flat.

Table 11 compares ATA socioeconomic indicators provided by Woods & Poole and the DBEDT. The DBEDT projections are generally more conservative than those made by Woods & Poole, with CAGRs for total population, total personal income, and PCPI lower by 0.4 percent, 0.7 percent, and 0.4 percent, respectively.

TABLE 9 HISTORICAL AND PROJECTED SOCIOECONOMIC CHARACTERISTICS – WOODS & POOLE ECONOMICS, INC.

	UNITED STATES							AIR TRADE AREA						
CALENDAR YEAR	TOTAL POPULATION[1]	TOTAL EMPLOYMENT[1]	TOTAL EARNINGS[2]	TOTAL PERSONAL INCOME[2]	NET EARNINGS[2]	PCPI	GDP[2]	TOTAL POPULATION[1]	TOTAL EMPLOYMENT[1]	TOTAL EARNINGS[2]	TOTAL PERSONAL INCOME[2]	NET EARNINGS[2]	PCPI	GRP[2]
Historical														
2013	316,765	182,328	$10,629,008	$14,682,748	$9,481,798	$46,352	$17,466,806	1,003	625	$37,126	$48,917	$32,702	$48,791	$58,878
2014	319,295	186,240	$10,928,506	$15,216,235	$9,746,207	$47,656	$17,953,808	1,009	635	$37,917	$50,624	$33,518	$50,167	$59,803
2015	321,851	190,326	$11,346,284	$15,896,477	$10,113,480	$49,391	$18,596,359	1,018	648	$39,587	$52,616	$35,004	$51,688	$62,869
2016	324,378	193,426	$11,508,971	$16,162,082	$10,253,262	$49,825	$18,910,750	1,024	658	$40,457	$53,966	$35,824	$52,684	$64,052
2017	326,611	196,394	$11,848,205	$16,658,962	$10,553,893	$51,005	$19,368,509	1,023	659	$41,085	$54,939	$36,376	$53,703	$65,253
2018	328,526	200,292	$12,189,079	$17,163,074	$10,860,287	$52,243	$19,999,274	1,022	658	$41,239	$54,695	$36,504	$53,522	$65,664
2019	330,222	201,635	$12,548,276	$17,721,060	$11,177,671	$53,664	$20,529,773	1,019	645	$41,738	$55,866	$36,920	$54,824	$65,385
2020	331,527	195,287	$12,575,166	$18,741,325	$11,196,293	$56,530	$19,998,314	1,012	584	$39,576	$58,312	$34,966	$57,598	$59,032
2021	332,049	202,752	$13,099,002	$19,626,253	$11,675,749	$59,107	$21,264,626	1,004	608	$40,546	$59,168	$35,843	$58,922	$61,819
2022	333,271	212,442	$13,105,445	$18,803,588	$11,644,967	$56,421	$21,788,014	995	635	$39,904	$55,715	$35,168	$56,004	$62,595
2023	334,915	216,167	$13,627,217	$19,522,869	$12,148,207	$58,292	$22,642,585	989	647	$41,449	$57,163	$36,720	$57,775	$65,103
Projection														
2024	337,215	218,894	$13,909,757	$19,959,948	$12,400,557	$59,191	$23,109,448	996	655	$42,344	$58,433	$37,512	$58,654	$66,556
2025	339,516	221,879	$14,194,683	$20,402,721	$12,655,069	$60,093	$23,583,118	1,003	665	$43,300	$59,765	$38,359	$59,585	$68,106
2026	341,808	224,737	$14,482,311	$20,851,524	$12,912,059	$61,004	$24,059,316	1,010	673	$44,197	$61,050	$39,154	$60,462	$69,562
2027	344,080	227,627	$14,772,793	$21,306,465	$13,171,666	$61,923	$24,540,161	1,016	682	$45,108	$62,354	$39,961	$61,353	$71,042
2028	346,327	230,072	$15,066,135	$21,767,439	$13,433,882	$62,852	$25,019,354	1,023	687	$45,937	$63,591	$40,696	$62,176	$72,394
2029	348,565	232,834	$15,362,492	$22,234,560	$13,698,875	$63,789	$25,507,116	1,029	694	$46,850	$64,909	$41,506	$63,072	$73,878
2030	350,794	235,603	$15,661,853	$22,707,644	$13,966,625	$64,732	$25,999,436	1,035	702	$47,771	$66,239	$42,323	$63,973	$75,374
2031	353,011	238,320	$15,964,177	$23,186,409	$14,237,088	$65,682	$26,495,363	1,042	709	$48,685	$67,566	$43,134	$64,868	$76,861
2032	355,175	241,012	$16,269,754	$23,670,984	$14,510,547	$66,646	$26,995,687	1,048	716	$49,603	$68,902	$43,949	$65,774	$78,354
2033	357,339	243,667	$16,578,866	$24,161,595	$14,787,279	$67,615	$27,500,588	1,053	723	$50,525	$70,244	$44,767	$66,679	$79,852
2034	359,482	246,375	$16,891,767	$24,658,549	$15,067,537	$68,595	$28,011,583	1,059	730	$51,466	$71,607	$45,603	$67,603	$81,381
2035	361,600	249,077	$17,208,529	$25,162,043	$15,351,386	$69,585	$28,528,044	1,065	737	$52,413	$72,979	$46,446	$68,534	$82,921
2036	363,685	251,768	$17,529,177	$25,672,116	$15,638,848	$70,589	$29,049,858	1,070	744	$53,366	$74,360	$47,293	$69,475	$84,469
2037	365,732	254,452	$17,853,610	$26,188,368	$15,929,817	$71,605	$29,576,880	1,076	751	$54,327	$75,751	$48,148	$70,427	$86,029
2038	367,754	257,131	$18,181,771	$26,710,490	$16,224,231	$72,631	$30,109,032	1,081	757	$55,296	$77,150	$49,011	$71,388	$87,602
2039	369,759	259,810	$18,513,683	$27,238,411	$16,522,108	$73,665	$30,646,411	1,086	764	$56,275	$78,560	$49,883	$72,356	$89,190
2040	371,756	262,483	$18,849,454	$27,772,278	$16,823,552	$74,706	$31,189,013	1,091	771	$57,260	$79,978	$50,761	$73,329	$90,789
2041	373,754	265,149	$19,189,167	$28,312,101	$17,128,642	$75,751	$31,736,916	1,096	777	$58,253	$81,404	$51,646	$74,304	$92,399
2042	375,755	267,813	$19,533,016	$28,858,193	$17,437,564	$76,801	$32,290,456	1,100	784	$59,254	$82,838	$52,539	$75,281	$94,021
2043	377,766	270,477	$19,881,185	$29,410,773	$17,750,499	$77,855	$32,849,852	1,105	790	$60,264	$84,282	$53,439	$76,260	$95,655
2044	379,791	273,142	$20,233,861	$29,970,116	$18,067,627	$78,912	$33,415,402	1,110	797	$61,281	$85,736	$54,347	$77,239	$97,301
2045	381,833	275,810	$20,591,282	$30,536,648	$18,389,181	$79,974	$33,987,342	1,115	803	$62,306	$87,199	$55,263	$78,218	$98,960
Compound Annual Growth Rate														
2013 – 2023	0.6%	1.7%	2.5%	2.9%	2.5%	2.3%	2.6%	-0.1%	0.3%	1.1%	1.6%	1.2%	1.7%	1.0%
2023 – 2045	0.6%	1.1%	1.9%	2.1%	1.9%	1.4%	1.9%	0.5%	1.0%	1.9%	1.9%	1.9%	1.4%	1.9%

NOTES:
GDP – gross domestic product; GRP – gross regional product; PCPI – per capita personal income.
Per capita personal income columns may not reflect the exact division of total population and total personal income due to rounding.
1 In thousands.
2 In millions of 2017 US dollars.
SOURCE: Woods & Poole Economics, Inc., February 2025.

TABLE 10 HISTORICAL AND PROJECTED SOCIOECONOMIC CHARACTERISTICS – STATE OF HAWAII DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

	STATE OF HAWAII							AIR TRADE AREA						
CALENDAR YEAR	TOTAL POPULATION	WAGE AND SALARY JOBS	TOTAL PERSONAL INCOME[1]	VISITOR ARRIVALS BY AIR	VISITOR DAYS BY AIR ARRIVALS	EXPENDITURE BY AIR ARRIVALS[2]	PCPI[1]	TOTAL POPULATION	WAGE AND SALARY JOBS	TOTAL PERSONAL INCOME[1]	VISITOR ARRIVALS BY AIR	VISITOR DAYS BY AIR ARRIVALS	EXPENDITURE BY AIR ARRIVALS[2]	PCPI[1]
Historical														
2013	1,422,902	636,153	$64,489	8,003	74,050	$74,050	$14,933	1,002,256	464,829	$48,747	5,044	35,060	$7,656	$48,637
2014	1,433,841	645,657	$66,866	8,196	75,269	$75,269	$15,191	1,008,691	470,878	$50,436	5,193	35,201	$7,564	$50,002
2015	1,445,958	656,913	$70,014	8,563	78,086	$78,086	$15,336	1,017,378	478,572	$52,556	5,340	36,421	$7,562	$51,658
2016	1,456,362	665,712	$71,988	8,822	79,669	$79,669	$16,030	1,023,671	484,526	$53,972	5,447	36,968	$7,469	$52,724
2017	1,457,740	672,607	$73,646	9,278	83,608	$83,608	$16,622	1,022,520	486,868	$54,939	5,683	38,348	$7,598	$53,729
2018	1,459,663	677,546	$73,780	9,761	87,725	$87,725	$17,120	1,021,622	488,890	$54,713	5,862	40,479	$7,812	$53,555
2019	1,456,703	676,009	$75,877	10,243	89,692	$89,692	$17,056	1,018,914	482,883	$55,860	6,154	41,828	$7,863	$54,823
2020	1,451,043	575,588	$79,118	2,678	28,517	$28,517	NA	1,012,305	419,092	$58,329	1,506	12,830	NA	$57,620
2021	1,455,978 [3]	605,036	$81,394	6,778	65,312	$65,312	$12,012	1,014,415 [3]	432,990	$59,016	3,327	26,898	$5,224	$58,178
2022	1,460,929 [3]	636,238	$69,266	9,139	84,736	$84,736	$14,689	1,016,529 [3]	453,665	$50,332	4,858	36,169	$6,498	$49,514
2023	1,465,897 [3]	639,101 [3]	$70,208	9,488 [4]	85,596 [4]	$85,596 [3]	$14,720	1,018,647 [3]	455,429 [3]	$50,986	5,615 [4]	40,628 [4]	$6,403 [3]	$50,053
Projection														
2024	1,470,882	641,978	$71,163	9,731	86,438	$86,438	$14,752	1,020,770	457,200	$51,649	5,767	40,521	$6,310	$50,598
2025	1,475,884	644,867	$72,130	9,979	87,288	$87,288	$14,783	1,022,898	458,977	$52,320	5,924	40,414	$6,218	$51,149
2026	1,480,903	647,769	$73,111	10,081	88,118	$88,118	$14,846	1,025,029	460,762	$53,000	5,959	40,716	$6,234	$51,706
2027	1,485,939	650,685	$74,105	10,184	88,956	$88,956	$14,909	1,027,166	462,554	$53,689	5,993	41,020	$6,250	$52,269
2028	1,490,993	653,613	$75,113	10,288	89,801	$89,801	$14,972	1,029,306	464,352	$54,387	6,029	41,327	$6,266	$52,838
2029	1,496,063	656,555	$76,135	10,394	90,655	$90,655	$15,036	1,031,451	466,157	$55,094	6,064	41,635	$6,282	$53,414
2030	1,501,151	659,510	$77,170	10,500	91,517	$15,100	$51,407	1,033,601	467,970	$55,810	6,099	41,946	$6,298	$53,996
2031	1,505,242	661,726	$78,150	10,603	92,348	$15,205	$51,919	1,035,689	469,230	$56,501	6,120	42,159	$6,299	$54,554
2032	1,509,345	663,950	$79,143	10,707	93,186	$15,310	$52,435	1,037,782	470,493	$57,201	6,142	42,374	$6,301	$55,118
2033	1,513,458	666,181	$80,148	10,812	94,032	$15,417	$52,957	1,039,878	471,759	$57,909	6,163	42,589	$6,302	$55,689
2034	1,517,583	668,420	$81,166	10,918	94,885	$15,524	$53,483	1,041,979	473,029	$58,627	6,184	42,806	$6,303	$56,265
2035	1,521,720	670,666	$82,196	11,025	95,746	$15,632	$54,015	1,044,084	474,302	$59,353	6,206	43,023	$6,304	$56,847
2036	1,525,867	672,919	$83,240	11,135	96,631	$15,708	$54,553	1,046,193	475,579	$60,088	6,239	43,323	$6,317	$57,435
2037	1,530,026	675,181	$84,297	11,246	97,523	$15,783	$55,095	1,048,307	476,859	$60,832	6,273	43,626	$6,330	$58,029
2038	1,534,196	677,449	$85,368	11,358	98,424	$15,859	$55,643	1,050,425	478,143	$61,585	6,307	43,930	$6,343	$58,629
2039	1,538,377	679,726	$86,452	11,472	99,332	$15,936	$56,197	1,052,547	479,430	$62,348	6,341	44,237	$6,356	$59,235
2040	1,542,570	682,010	$87,550	11,586	100,250	$16,012	$56,756	1,054,674	480,720	$63,120	6,375	44,545	$6,369	$59,848
2041	1,544,392	683,704	$88,472	11,685	101,029	$16,114	$57,286	1,055,216	481,698	$63,767	6,400	44,790	$6,373	$60,431
2042	1,546,216	685,402	$89,404	11,784	101,814	$16,216	$57,821	1,055,758	482,678	$64,421	6,425	45,036	$6,377	$61,019
2043	1,548,042	687,104	$90,345	11,884	102,605	$16,319	$58,361	1,056,301	483,660	$65,082	6,450	45,283	$6,380	$61,613
2044	1,549,870	688,811	$91,297	11,985	103,402	$16,423	$58,906	1,056,844	484,644	$65,749	6,475	45,532	$6,384	$62,213
2045	1,551,701	690,522	$92,258	12,087	104,205	$16,527	$59,456	1,057,387	485,630	$66,424	6,500	45,782	$6,387	$62,819
Compound Annual Growth Rate														
2013 – 2023	0.3%	0.0%	0.9%	1.7%	1.5%	-0.1%	0.6%	0.2%	-0.2%	0.5%	1.1%	1.5%	-1.8%	0.3%
2023 – 2045	0.3%	0.4%	1.2%	1.1%	0.9%	0.5%	1.0%	0.2%	0.3%	1.2%	0.7%	0.5%	0.0%	1.0%

NOTES:
NA – not available; PCPI – per capita personal income.
Data for the projection period are based on growth rates developed from the most recent historical data provided by the State of Hawaii Department of Business, Economic Development & Tourism and available projection interval years. Per capita personal income columns may not reflect the exact division of total population and total personal income due to rounding.
1 In 2017 US dollars.
2 Expenditure by air arrivals is presented in millions of 2017 US dollars. Historical data provided by the State of Hawaii Department of Business, Economic Development & Tourism are presented in millions of 2017 US dollars, converted to annual growth rates using US Census Bureau inflation indices to allow for comparison of historical and projected socioeconomic data.
3 Historical period data projected based on growth rates developed from the most recent historical data provided by the State of Hawaii Department of Business, Economic Development & Tourism and available projection interval years.
4 Historical period projections are provided by the State of Hawaii Department of Business, Economic Development & Tourism.
SOURCES: State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (historical and projected socioeconomic data); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (analysis).

TABLE 11 HISTORICAL AND PROJECTED SOCIOECONOMIC CHARACTERISTICS FOR THE AIR TRADE AREA – COMPARISON

SOURCE	TOTAL POPULATION	TOTAL PERSONAL INCOME	PER CAPITA PERSONAL INCOME
CY 2013 – CY 2023 CAGR			
Woods & Poole	-0.1%	1.6%	1.7%
State of Hawaii DBEDT	0.2%	0.5%	0.3%
Difference	**0.3%**	**-1.1%**	**-1.4%**
CY 2023 – CY 2045 CAGR			
Woods & Poole	0.5%	1.9%	1.4%
State of Hawaii DBEDT	0.2%	1.2%	1.0%
Difference	**-0.4%**	**-0.7%**	**-0.4%**

NOTES:
CAGR – compound annual growth rate; DBEDT – Department of Business, Economic Development & Tourism; Woods & Poole – Woods & Poole Economics, Inc.
Difference may not add up due to rounding.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (analysis).

2.3 ROLE OF THE AIRPORT

Activity can be affected by the availability and quality of air service and facilities at the Airport as well as other airports in the ATA, and these effects can vary by aviation activity segment. Two other airports provide GA facilities in the ATA, including HDH and HNL. Among these airports, JRF serves as a reliever airport to HNL, which is classified by the FAA NPIAS as a large hub airport and is the primary airport serving commercial (i.e., passenger and cargo airline) activity as well as significant GA and military operations, while HDH is classified as a basic airport serving non-commercial activity. The relationship between activity at HNL and JRF, particularly with respect to itinerant GA and local GA activity, is further discussed in the sensitivity analysis provided in Section 5.

Table 12 presents GA operations (itinerant GA, local GA, and total GA) and based aircraft, as reported by the 2024 FAA TAF, at JRF, HNL, and HDH along with the share JRF represents for each of the activity segments. As well as historical operations and based aircraft, for FY 2014 and FY 2024, the table includes forecasts for FY 2045. During the historical period, JRF represented an increasing share of itinerant GA, local GA, and total GA operations in the ATA, though the Airport also had a decreasing share of based aircraft in the ATA. These trends are forecast to continue during the period from FY 2024 to FY 2045.

2.4 GENERAL AVIATION TRENDS

The following subsection includes additional detail regarding broader historical and projected trends in GA activity. These trends are examined on global and national level, and include details regarding fleet mix trends, aircraft utilization, and potential technological shifts relevant to GA.

TABLE 12 HISTORICAL AND FORECAST GENERAL AVIATION ACTIVITY – AIR TRADE AREA AIRPORTS

FEDERAL FISCAL YEAR	JRF	HNL	HDH	JRF SHARE OF ATA
Itinerant General Aviation Operations				
2014	16,684	51,436	0	24%
2024	37,935	54,128	0	41%
2045	42,905	57,636	0	43%
Local General Aviation Operations				
2014	87,474	815	40,850	68%
2024	164,123	46	36,031	82%
2045	178,475	50	36,031	83%
Total General Aviation Operations				
2014	104,158	52,251	40,850	53%
2024	202,058	54,174	36,031	69%
2045	221,380	57,686	36,031	70%
Based Aircraft				
2014	39	217	54	13%
2024	28	286	40	8%
2045	28	328	40	7%

NOTES:
ATA – Air Trade Area; HDH – Kawaihāpai Airfield; HNL – Daniel K. Inouye International Airport; JRF – Kalaeloa Airport.
SOURCE: US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025.

2.4.1 GENERAL AVIATION AIRCRAFT MANUFACTURING TRENDS

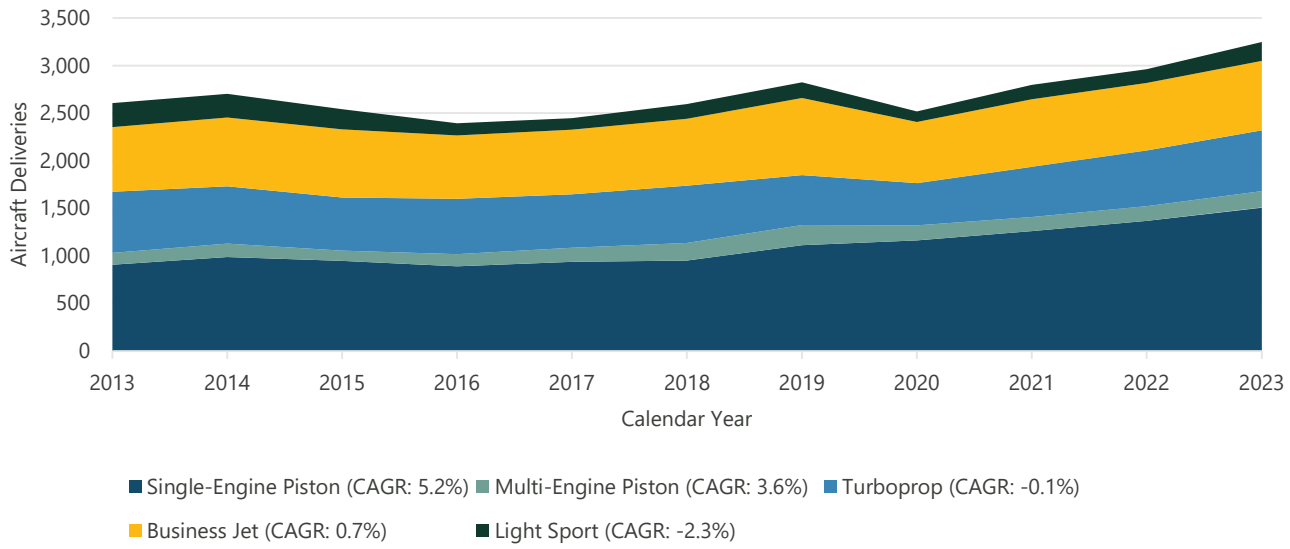
The global fleet mix of GA aircraft has been evolving in recent years. As indicated by the General Aviation Manufacturers Association data (GAMA 2023 Annual Data),[12] global deliveries of GA aircraft grew at a CAGR of 2.2 percent from CY 2013 to CY 2023. Single-engine piston aircraft made up the largest share of GA aircraft deliveries in CY 2023. The single-engine piston share of global deliveries increased from 34.9 percent in CY 2013 to 46.4 percent in CY 2023. During the same period, the share of turboprop deliveries decreased from 24.8 percent to 19.6 percent, and the jet aircraft share decreased from 26.0 percent to 22.5 percent. **Exhibit 7** shows the number of historical GA aircraft deliveries from CY 2013 to CY 2023 by type of aircraft.

According to *FAA Aerospace Forecasts: Fiscal Years 2024–2044* (FAA Aerospace Forecast), single-engine piston activity largely comprises hobby and personal operators, whereas jet activity applies more commonly to business purposes. As flying becomes more expensive due to increased fuel costs and higher training and maintenance costs, the FAA projects that single-engine piston activity will decrease, but that jet activity will increase due to favorable socioeconomic and business trends.[13]

[12] General Aviation Manufacturers Association, *2023 Market Overview and Historical Data*, March 2025.

[13] US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, March 2025.

EXHIBIT 7 HISTORICAL GLOBAL GENERAL AVIATION AIRCRAFT DELIVERIES



NOTES:
CAGR – compound annual growth rate.
Percentages included in the legend represent the CAGR between 2013 and 2023 for each aircraft type.
SOURCE: General Aviation Manufacturers Association, GAMA 2023 Annual Data, February 2025.

2.4.2 NATIONAL GENERAL AVIATION ACTIVITY TRENDS

Table 13 presents the historical and forecast results for national active GA aircraft and GA hours flown, as reported in the FAA Aerospace Forecast. The number of single-engine active GA aircraft decreased from FY 2014 to FY 2024 at a CAGR of -0.1 percent, and is forecast to decrease at a CAGR of -0.2 percent from FY 2024 to FY 2044. In contrast, the number of active jet aircraft increased nationwide at a CAGR of 3.3 percent from FY 2014 to FY 2024, and is forecast to increase at a 2.6 percent CAGR between FY 2024 and FY 2044. Active turboprop aircraft increased during the historical period at a CAGR of 1.1 percent, and active multi-engine piston aircraft decreased at a CAGR of -1.3 percent over the same period. These trends are forecast to continue in the forecast period, with active turboprop aircraft forecast to increase at a CAGR of 1.0 percent and active multi-engine piston aircraft forecast to decrease at a CAGR of -0.3 percent.

Annual hours flown by GA aircraft is also a key metric for aviation activity at airports with high levels of GA activity. According to the FAA Aerospace Forecast, single-engine hours flown increased at a CAGR of 1.8 percent from FY 2014 to FY 2024, turboprop aircraft hours flown increased at a CAGR of 1.4 percent, and jet aircraft hours flown increased at a CAGR of 3.5 percent, while multi-engine piston aircraft hours flown decreased at a CAGR of -0.6 percent. In the forecast period, jet aircraft hours flown are forecast to increase at a CAGR of 2.5 percent, a slightly lower rate of growth than that for the number of active GA jet aircraft. Meanwhile, single-engine piston aircraft hours flown are forecast to decrease at a CAGR of -0.8 percent, outpacing the decrease in active single-engine piston aircraft. Multi-engine piston aircraft hours flown are forecast to increase, despite the forecast decrease in the number of active aircraft, and turboprop aircraft hours flown are forecast to increase at a slightly higher rate than the number of active turboprop aircraft.

TABLE 13 HISTORICAL AND FORECAST ACTIVE GENERAL AVIATION AIRCRAFT AND HOURS FLOWN – UNITED STATES

COMPOUND ANNUAL GROWTH RATE	SINGLE-ENGINE	MULTI-ENGINE	TURBOPROP	JET	HELICOPTER	OTHER[1]
Active General Aviation Aircraft						
2014 – 2024	-0.1%	-1.3%	1.1%	3.3%	0.1%	-0.4%
2024 – 2044	-0.2%	-0.3%	1.0%	2.6%	1.7%	0.3%
General Aviation Hours Flown						
2014 – 2024	1.8%	-0.6%	1.4%	3.5%	-1.0%	0.2%
2024 – 2044	-0.8%	0.2%	1.1%	2.5%	2.1%	0.5%

NOTES:
Data are presented for federal fiscal years.
1 includes experimental aircraft, light sport aircraft, and gliders.
SOURCE: US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025.

2.4.3 TECHNOLOGICAL SHIFTS

Changes in fuel and performance can affect the demand for aviation facilities at an airport. Vertical takeoff and landing aircraft can typically also hover like helicopters, though this category of aircraft can include fixed-wing aircraft designs as well. The ability for aircraft to land and take off vertically may positively impact activity at airports by allowing more operations without the increased use of runways or the need for additional runway capacity. However, airport sponsors may need to develop policies and procedures to address airspace congestion around runway safety areas, approach areas, and other safety zones for non-vertical takeoff and landing aircraft movements. Electric aircraft may offer a feasible alternative fuel source for the light aircraft sector. Electric aircraft are being designed to produce less noise and provide a cleaner alternative to fossil fuel powered aircraft. This technology is in development, and infrastructure will need to evolve to support electric aircraft charging at airports.

According to the FAA drone registration database,[14] there are over 864,000 drones registered with the FAA and over 330,000 certified Remote Pilots. It is projected that these numbers will continue to grow. Drones, also referred to as unmanned aircraft systems, are used for commercial and recreational purposes, such as for real estate listings and water sport activities. Drones may spur additional interest in aviation, though they could also substitute for conventional aircraft activity use cases, such as news and traffic reporting.

Sustainable aviation fuel (SAF) represents another potential change in the type of fuel. As a liquid jet fuel SAF is similar in consistency to traditional aviation fuel, though it has different facility and aircraft system requirements,. It is also currently more expensive and less widely available than traditional aviation fuel. These factors influence the propensity for end users to use SAF as fuel, though incentives, infrastructure development, and technological adaptation on existing and newly delivered aircraft could influence operators' ability and intent to use SAF.

[14] US Department of Transportation, Federal Aviation Administration, https://www.faa.gov/uas/ (accessed March 2025).

3. AVIATION ACTIVITY FORECASTS

Forecasts of aircraft operations and based aircraft were developed for the period from FY 2024 through FY 2045. These forecasts considered multiple historical and forecast factors, including activity trends at the Airport and throughout the industry, historical trends and projections of local and national socioeconomic factors, and anticipated trends in use of the Airport. The assumptions, techniques, and results of the forecast process and the development of forecast derivatives are described in the following subsections.

3.1 KEY ASSUMPTIONS UNDERLYING THE FORECASTS

The following assumptions were incorporated into the forecast:

- While variants of COVID-19 may emerge, it is assumed that GA activity would remain relatively resilient to the effects, similar to historical activity in FY 2020 and FY 2021.
- The longer-term relationship between aviation activity and socioeconomic factors will remain intact throughout the forecast period.
- Activity forecast at the Airport is unconstrained.

3.2 AIR CARRIER AND AIR TAXI ACTIVITY FORECASTS

Aside from the period when Mokulele Airlines was operating at the Airport (from FY 2014 to FY 2016), minimal air carrier and air taxi operations were recorded at JRF. No change in the use of the Airport by air carriers or air taxi operators were assumed in this forecast; in FY 2024, one total operation by air carriers and air taxi operators was recorded.

3.3 GENERAL AVIATION ACTIVITY FORECAST

As presented in Table 1, GA activity decreased from FY 2014 to FY 2016 before rebounding in FY 2017. GA operations increased at double-digit annual growth rates in the three years prior to the onset of the COVID-19 pandemic. Growth continued, though at a lower rate, in FY 2020, FY 2021, and FY 2022 despite the effects of the pandemic on aviation activity and travel demand more broadly. GA operations returned to double-digit annual growth rates in FY 2023 and FY 2024. Overall, the period from FY 2014 to FY 2024 yielded a 6.9 percent CAGR. Forecasts for GA activity were subsequently developed through multiple methodologies, including the following:

- **Socioeconomic Regression Analysis:** Statistical regression analysis was used to analyze the relationship between historical operations and local or national socioeconomic indicators. This approach was applied to activity at the Airport, in the ATA, and in the US, and it yielded usable predictive relationships for some of the time periods analyzed. Socioeconomic regression analysis for these regions was used to forecast activity for GA operations, which is detailed later in this section and presented in **Table 14**. Results of the regression analysis are presented in **Appendix C** (Section C.1).
- **Activity Market Share Analysis:** This approach is based on an assessment of how activity will grow at JRF relative to the rest of the industry. For this analysis, the Airport's share of ATA GA operations as well as GA operations in Hawaii and the US were analyzed. The Airport represented 69.1 percent of ATA GA operations, 48.6 percent of Hawaii GA operations, and 0.4 percent of US GA operations in FY 2024, based on 2024 FAA TAF

data. These shares were applied to GA operations forecast in the 2024 FAA TAF for the respective airport grouping. This method was not selected for development of GA and other air taxi (OAT) activity forecasts, since operations at HDH are not available from non-TAF sources and are recorded as flat during the historical period.

- **Growth Rate Analysis:** This approach applied several growth rates to base year GA operations, i.e., the operations recorded in FY 2024. These growth rates include the 2024 FAA TAF growth rate for GA operations at JRF, raw and exponential smoothing time series growth rates for GA operations at JRF over a variety of potential historical bases, and the applied FAA Aerospace Forecast for GA operations and GA operations weighted by powerplant type based on base year fleet mix at JRF. This method was not selected for development of GA and OAT activity forecasts for several reasons, including the particularly high historical growth rate for activity at the Airport over several historical periods and the national nature of the FAA Aerospace Forecast growth rates.

TABLE 14 GENERAL AVIATION OPERATIONS SOCIOECONOMIC REGRESSION ANALYSIS – SUMMARY

SOCIOECONOMIC VARIABLE	GEOGRAPHY	PROJECTION SOURCE	ADJUSTED R^2 VALUE	FORECAST CAGR (CY 2024 – CY 2045)
Visitor Arrivals by Air	Air Trade Area	State of Hawaii DBEDT	76%	0.3%
Visitor Days by Air Arrivals	Air Trade Area	State of Hawaii DBEDT	80%	0.3%
Visitor Days by Air Arrivals	State of Hawaii	State of Hawaii DBEDT	78%	0.5%
Visitor Arrivals by Air	State of Hawaii	State of Hawaii DBEDT	80%	0.5%
Expenditure by Air Arrivals	State of Hawaii	State of Hawaii DBEDT	78%	0.3%
Personal Income per Capita	Air Trade Area	Woods & Poole	72%	3.2%
Personal Income per Capita	State of Hawaii	Woods & Poole	72%	2.9%
Total Population	United States	Woods & Poole	73%	3.0%
Total Earnings	United States	Woods & Poole	82%	3.1%
Total Personal Income	United States	Woods & Poole	81%	3.1%
Personal Income per Capita	United States	Woods & Poole	81%	2.6%
Gross Domestic Product	United States	Woods & Poole	81%	3.1%
Total Employment	United States	Woods & Poole	74%	2.5%
Net Earnings	United States	Woods & Poole	83%	3.2%
Weighted Average Growth Rate				**2.2%**

NOTES:
CAGR – compound annual growth rate; CY – calendar year; DBEDT – Department of Business, Economic Development & Tourism; Woods & Poole – Woods & Poole Economics, Inc.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (analysis).

Historical GA operations were analyzed to develop forecasts of GA at the Airport through FY 2045. The socioeconomic regression analysis used regression equations to identify predictive relationships between historical GA activity in the ATA and socioeconomic variables. Regression models analyzed GA operations on a CY basis, consistent with the period used for socioeconomic variable projections by Woods & Poole and the DBEDT, and the resulting forecast growth rates are assumed to be reflective of annual growth on a FY basis. The Woods & Poole projections that were incorporated into regression models were population, employment, total and net earnings,

total personal income, PCPI, and GRP or GRP for the ATA, the state of Hawaii, and the US; the DBEDT projections that were incorporated into regression models were air visitor arrivals, air visitor days spent in Hawaii, and air visitor expenditure. Socioeconomic regression models were developed with CY 2023 as the end period for analysis, as this was the most recent period with historical data, and varying start years within the historical time period were analyzed to yield the strongest predictive relationships. Relationships with an adjusted R^2 value of 70 percent or higher were used to forecast growth rate; socioeconomic regressions for the period from CY 2010 to CY 2023 yielded the strongest predictive relationships and were used in forecast modeling. Of note, DBEDT air visitor data includes all visitor segments (i.e., including passengers arriving in Hawaii and in the ATA on commercial passenger airline flights), and dummy variables were incorporated into regression models for the pandemic recovery period (CY 2020 through CY 2023) to account for outlier data, i.e., data not consistent with historical activity patterns.

Overall, 14 socioeconomic regression equations met the minimum R^2 threshold, including equations modeling 5 DBEDT socioeconomic variables and 9 Woods & Poole socioeconomic variables. The overall growth rate was developed from the weighted average of the relationships, excluding the highest and lowest implied CAGR from each source to limit the effect of potential outliers on forecast GA operations. Table 14 presents the results of the regression analyses.

Table 15 presents the results of the GA aircraft operations forecast. Aircraft operations are forecast to increase from 202,058 in FY 2024 to 321,695 in FY 2045, representing a 2.2 percent CAGR.

3.4 MILITARY ACTIVITY FORECAST

Military aircraft operations are dependent on US Department of Defense initiatives, and information about these is generally not made available to the public. No changes in the use of the Airport by military aircraft were assumed in this forecast; military aircraft operations were forecast using an approach similar to the FAA TAF, assuming actual FY 2024 operations, i.e., 18,622 operations, for each forecast year. **Table 16** presents the historical and forecast military aircraft operations.

3.5 TOTAL AIRCRAFT OPERATIONS FORECAST AND DERIVATIVE CHARACTERISTICS

Table 17 summarizes the aircraft operations forecasts by user category – air carrier and air taxi, GA, military – and total operations. Total aircraft operations are forecast to increase from 220,681 in FY 2024 to 340,318 in FY 2045, representing a 2.1 percent CAGR.

3.5.1 ITINERANT INSTRUMENT, ITINERANT VISUAL, AND LOCAL OPERATIONS FORECASTS

Table 18 presents the forecast of itinerant IFR, itinerant VFR, and local operations at the Airport by category; **Exhibit 8** depicts forecast aircraft operations by itinerant IFR, itinerant VFR, and local operations. All three operations categories are forecast to grow during the forecast period, with itinerant IFR, itinerant VFR, and local operations increasing at a CAGR of 1.3 percent, 2.8 percent, and 1.9 percent, respectively. Itinerant IFR, itinerant VFR, and local air carrier, air taxi, and military operations were forecast similar to total operations of each category, i.e., the share represented by each is forecast to remain constant during the forecast period.

TABLE 15 GENERAL AVIATION AIRCRAFT OPERATIONS FORECAST

FEDERAL FISCAL YEAR	GENERAL AVIATION AIRCRAFT OPERATIONS	ANNUAL CHANGE
Historical		
2014	104,155	
2015	99,340	-4.6%
2016	94,011	-5.4%
2017	109,363	16.3%
2018	128,002	17.0%
2019	142,332	11.2%
2020	147,454	3.6%
2021	152,437	3.4%
2022	159,685	4.8%
2023	178,656	11.9%
2024	202,058	13.1%
Forecast		
2025	207,805	2.8%
2026	213,274	2.6%
2027	218,801	2.6%
2028	223,988	2.4%
2029	229,472	2.4%
2030	234,994	2.4%
2031	240,539	2.4%
2032	246,098	2.3%
2033	251,665	2.3%
2034	257,318	2.2%
2035	263,008	2.2%
2036	268,702	2.2%
2037	274,431	2.1%
2038	280,196	2.1%
2039	286,003	2.1%
2040	291,845	2.0%
2041	297,723	2.0%
2042	303,643	2.0%
2043	309,609	2.0%
2044	315,625	1.9%
2045	321,695	1.9%
Compound Annual Growth Rate		
2014 – 2024	6.9%	
2024 – 2045	2.2%	

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (forecast).

TABLE 16 MILITARY AIRCRAFT OPERATIONS FORECAST

FEDERAL FISCAL YEAR	MILITARY AIRCRAFT OPERATIONS	ANNUAL CHANGE
Historical		
2014	31,788	
2015	27,481	-13.5%
2016	20,008	-27.2%
2017	20,140	0.7%
2018	22,477	11.6%
2019	20,529	-8.7%
2020	20,188	-1.7%
2021	19,308	-4.4%
2022	23,801	23.3%
2023	17,149	-27.9%
2024	18,622	8.6%
Forecast		
2025	18,622	0.0%
2026	18,622	0.0%
2027	18,622	0.0%
2028	18,622	0.0%
2029	18,622	0.0%
2030	18,622	0.0%
2031	18,622	0.0%
2032	18,622	0.0%
2033	18,622	0.0%
2034	18,622	0.0%
2035	18,622	0.0%
2036	18,622	0.0%
2037	18,622	0.0%
2038	18,622	0.0%
2039	18,622	0.0%
2040	18,622	0.0%
2041	18,622	0.0%
2042	18,622	0.0%
2043	18,622	0.0%
2044	18,622	0.0%
2045	18,622	0.0%
Compound Annual Growth Rate		
2014 – 2024	-5.2%	
2024 – 2045	0.0%	

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate).

TABLE 17 TOTAL AIRCRAFT OPERATIONS SUMMARY FORECAST

FEDERAL FISCAL YEAR	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	ANNUAL CHANGE
Historical					
2014	463	104,155	31,788	136,406	
2015	1,987	99,340	27,481	128,808	-5.6%
2016	2,056	94,011	20,008	116,075	-9.9%
2017	63	109,363	20,140	129,566	11.6%
2018	82	128,002	22,477	150,561	16.2%
2019	159	142,332	20,529	163,020	8.3%
2020	12	147,454	20,188	167,654	2.8%
2021	2	152,437	19,308	171,747	2.4%
2022	0	159,685	23,801	183,486	6.8%
2023	0	178,656	17,149	195,805	6.7%
2024	1	202,058	18,622	220,681	12.7%
Forecast					
2025	1	207,805	18,622	226,428	2.6%
2026	1	213,274	18,622	231,897	2.4%
2027	1	218,801	18,622	237,424	2.4%
2028	1	223,988	18,622	242,611	2.2%
2029	1	229,472	18,622	248,095	2.3%
2030	1	234,994	18,622	253,617	2.2%
2031	1	240,539	18,622	259,162	2.2%
2032	1	246,098	18,622	264,721	2.1%
2033	1	251,665	18,622	270,288	2.1%
2034	1	257,318	18,622	275,941	2.1%
2035	1	263,008	18,622	281,631	2.1%
2036	1	268,702	18,622	287,325	2.0%
2037	1	274,431	18,622	293,054	2.0%
2038	1	280,196	18,622	298,819	2.0%
2039	1	286,003	18,622	304,626	1.9%
2040	1	291,845	18,622	310,468	1.9%
2041	1	297,723	18,622	316,346	1.9%
2042	1	303,643	18,622	322,266	1.9%
2043	1	309,609	18,622	328,232	1.9%
2044	1	315,625	18,622	334,248	1.8%
2045	1	321,695	18,622	340,318	1.8%
Compound Annual Growth Rate					
2014 – 2024	-45.9%	6.9%	-5.2%	4.9%	
2024 – 2045	0.0%	2.2%	0.0%	2.1%	

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate).

TABLE 18 (1 OF 2) TOTAL AIRCRAFT OPERATIONS SUMMARY FORECAST BY TYPE

FEDERAL FISCAL YEAR	ITINERANT IFR				ITINERANT VFR				LOCAL			TOTAL OPERATIONS
	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	GENERAL AVIATION	MILITARY	TOTAL	
Historical												
2014	155	1,261	1,507	2,923	308	15,420	5,831	21,559	87,474	24,450	111,924	136,406
2015	886	846	1,519	3,251	1,101	14,018	4,868	19,987	84,476	21,094	105,570	128,808
2016	1,050	682	1,358	3,090	1,006	13,229	4,849	19,084	80,100	13,801	93,901	116,075
2017	21	522	1,341	1,884	42	15,398	4,550	19,990	93,443	14,249	107,692	129,566
2018	43	523	1,427	1,993	39	18,272	4,387	22,698	109,207	16,663	125,870	150,561
2019	2	591	1,491	2,084	157	25,543	4,140	29,840	116,198	14,898	131,096	163,020
2020	9	842	1,269	2,120	3	15,665	4,338	20,006	130,947	14,581	145,528	167,654
2021	0	1,191	1,558	2,749	2	18,566	4,265	22,833	132,680	13,485	146,165	171,747
2022	0	1,146	1,788	2,934	0	24,876	5,276	30,152	133,663	16,737	150,400	183,486
2023	0	732	1,637	2,369	0	28,139	4,293	32,432	149,785	11,219	161,004	195,805
2024	1	877	1,374	2,252	0	37,058	4,605	41,663	164,123	12,643	176,766	220,681
Forecast												
2025	1	909	1,374	2,284	0	38,450	4,605	43,055	168,447	12,643	181,090	226,428
2026	1	939	1,374	2,314	0	39,809	4,605	44,414	172,527	12,643	185,170	231,897
2027	1	970	1,374	2,345	0	41,196	4,605	45,801	176,635	12,643	189,278	237,424
2028	1	1,001	1,374	2,376	0	42,537	4,605	47,142	180,451	12,643	193,094	242,611
2029	1	1,032	1,374	2,407	0	43,951	4,605	48,556	184,489	12,643	197,132	248,095
2030	1	1,064	1,374	2,439	0	45,391	4,605	49,996	188,539	12,643	201,182	253,617
2031	1	1,097	1,374	2,472	0	46,853	4,605	51,458	192,589	12,643	205,232	259,162
2032	1	1,130	1,374	2,505	0	48,336	4,605	52,941	196,632	12,643	209,275	264,721
2033	1	1,163	1,374	2,538	0	49,839	4,605	54,444	200,663	12,643	213,306	270,288
2034	1	1,197	1,374	2,572	0	51,377	4,605	55,982	204,744	12,643	217,387	275,941

TABLE 18 (2 OF 2) TOTAL AIRCRAFT OPERATIONS SUMMARY FORECAST BY TYPE

FEDERAL FISCAL YEAR	ITINERANT IFR				ITINERANT VFR				LOCAL			TOTAL OPERATIONS
	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	AIR CARRIER AND AIR TAXI	GENERAL AVIATION	MILITARY	TOTAL	GENERAL AVIATION	MILITARY	TOTAL	
2035	1	1,232	1,374	2,607	0	52,941	4,605	57,546	208,835	12,643	221,478	281,631
2036	1	1,267	1,374	2,642	0	54,524	4,605	59,129	212,911	12,643	225,554	287,325
2037	1	1,302	1,374	2,677	0	56,133	4,605	60,738	216,996	12,643	229,639	293,054
2038	1	1,338	1,374	2,713	0	57,768	4,605	62,373	221,090	12,643	233,733	298,819
2039	1	1,374	1,374	2,749	0	59,431	4,605	64,036	225,197	12,643	237,840	304,626
2040	1	1,411	1,374	2,786	0	61,120	4,605	65,725	229,314	12,643	241,957	310,468
2041	1	1,449	1,374	2,824	0	62,835	4,605	67,440	233,439	12,643	246,082	316,346
2042	1	1,486	1,374	2,861	0	64,579	4,605	69,184	237,577	12,643	250,220	322,266
2043	1	1,525	1,374	2,900	0	66,352	4,605	70,957	241,732	12,643	254,375	328,232
2044	1	1,564	1,374	2,939	0	68,155	4,605	72,760	245,907	12,643	258,550	334,248
2045	1	1,603	1,374	2,978	0	69,989	4,605	74,594	250,103	12,643	262,746	340,318
Compound Annual Growth Rate												
2014 – 2024	-39.6%	-3.6%	-0.9%	-2.6%	-100.0%	9.2%	-2.3%	6.8%	6.5%	-6.4%	4.7%	4.9%
2024 – 2045	0.0%	2.9%	0.0%	1.3%	NA	3.1%	0.0%	2.8%	2.0%	0.0%	1.9%	2.1%

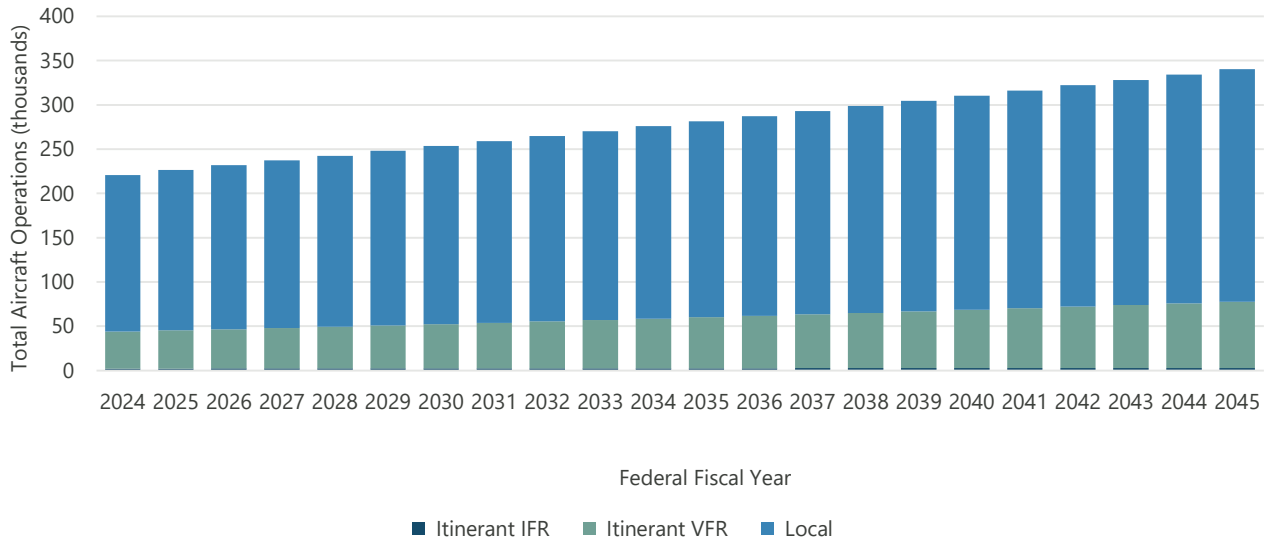
NOTES:

IFR – Instrument Flight Rules; NA – not applicable; VFR – Visual Flight Rules.

Totals may not add up due to rounding.

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate).

EXHIBIT 8 ITINERANT INSTRUMENT FLIGHT RULES, ITINERANT VISUAL FLIGHT RULES, AND LOCAL OPERATIONS FORECASTS



NOTES:
IFR – Instrument Flight Rules; VFR – Visual Flight Rules.
Actual data for 2024. Forecast data from 2025 to 2045.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate).

The share of GA operations represented by itinerant IFR, itinerant VFR, and local operations varied during the historical period. Itinerant IFR operations decreased from 7.6 percent of total itinerant GA operations in FY 2014 to 2.3 percent in FY 2024; this decrease represented a decrease from 1.2 percent to 0.4 percent of total GA operations. The share of total GA operations represented by local GA operations also decreased during the historical period, from 84.0 percent of total GA operations in FY 2014 to 81.2 percent in FY 2024. During the forecast period, Holt-Winters exponential smoothing was applied to the historical trend in the share of total GA operations represented by itinerant IFR, itinerant VFR, and local operations.[15] Based on this, itinerant IFR and itinerant VFR operations are forecast to increase from 0.4 percent to 0.5 percent and from 18.3 percent to 21.8 percent of total GA operations, respectively, from FY 2024 to FY 2045; local operations are forecast to decrease from 81.2 percent of total GA operations in FY 2024 to 77.7 percent of total GA operations in FY 2045.

3.5.2 AIRCRAFT OPERATIONAL FLEET MIX FORECAST

As noted in Section 1.5, the historical operations fleet mix was identified through analysis of ATAC radar operations data. Operations by powerplant type and RDC were identified for the base year using these data. Military operations

[15] Holt-Winters exponential smoothing is a time series-based method to model growth. For the purposes of annual forecasting, Holt-Winters double exponential smoothing is employed, allowing for an exponentially weighted moving average to incorporate linear historical trends to modeling, i.e., incorporating an annual increase or decreasing slope to forecast based on a historical trend.

are segmented out of the base year operations for the purposes fleet mix forecasting, as the military operations fleet mix is forecast to remain constant, in line with total military operations forecast assumptions. Fleet mix for civil operations was forecast using the relative change in GA aircraft active hours by powerplant type forecast in the FAA Aerospace Forecast, applied proportionally to the change in active hours per operation derived from the FAA Aerospace Forecast of national GA operations during the forecast period. These fleet mix projections by powerplant were then applied to base year operations by RDC and powerplant type groupings. The resulting operations were normalized to the total GA operations forecast using the baseline forecast methodology described in Section 3.3, and the forecast fleet mix by powerplant type and RDC was developed by summing the component civil operations with military operations by powerplant type and RDC.

Table 19 summarizes the aircraft operations by jet, piston, turboprop, helicopter, and other or unknown powerplant. Total operations (i.e., both civil and military operations) are presented. Jet aircraft operations are forecast to increase from 811 in FY 2024 to 1,629 in FY 2045, representing a 3.4 percent CAGR. Piston aircraft operations are forecast to increase from 182,640 in FY 2024 to 272,661 in FY 2045, while turboprop aircraft operations are forecast to increase from 5,170 in FY 2024 to 6,261 in FY 2045. Increases in piston and turboprop aircraft activity between FY 2024 and FY 2045 represent CAGRs of 1.9 percent and 0.9 percent, respectively. In FY 2024, approximately 51.7 percent of helicopter operations were by civilian helicopters. Civilian and military helicopter operations are forecast using the fleet mix methodologies described previously. The methodology used for civilian aircraft operations fleet mix applies fleet activity assumptions derived from US forecasts by powerplant type to the forecast of total civilian operations, while military helicopter operations are forecast to remain constant. The share of total helicopter operations flown by civilian helicopters is forecast to increase, with FY 2045 civilian helicopter operations representing 74.0 percent of total helicopter operations.

3.5.3 CRITICAL AIRCRAFT FORECAST

As noted in Section 1.5.3, FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, defines the critical aircraft as the most demanding aircraft type, or grouping of aircraft with similar characteristics, that makes regular use of an airport. Regular use is defined as 500 annual operations, wherein an operation is defined as one arrival or one departure, excluding touch-and-go activity.[16] Groupings of aircraft with similar characteristics are defined by RDC. Operational fleet mix by RDC is projected to remain proportional to the current share of operations by powerplant and operations category.

Table 20 presents baseline operations in FY 2024 and forecast operations in FY 2045 for all RDC groups and operations categories at the Airport. Currently, RDC C-IV aircraft, particularly C-130J, represent the most demanding size and performance categories in regular operation at the Airport. These aircraft are operated by the USCG at JRF, and operations of these aircraft are forecast similar to total military operations, i.e., military aircraft operational fleet mix will remain constant over the forecast period. On that basis, it is anticipated that the C-130J would continue to be the critical military aircraft.

[16] Federal Aviation Administration, AC 150/5000-17, *Critical Aircraft and Regular Use Determination*, June 20, 2017.

TABLE 19 AIRCRAFT OPERATIONS FORECAST BY POWERPLANT TYPE

FEDERAL FISCAL YEAR	OPERATIONS						SHARE OF OPERATIONS			
	JET	PISTON	TURBOPROP	HELICOPTER	OTHER[1]	TOTAL[2]	JET	PISTON	TURBOPROP	HELICOPTER
2024	811	182,640	5,170	27,926	4,133	220,681	0.4%	82.8%	2.3%	12.7%
Forecast										
2025	842	187,049	5,229	29,006	4,302	226,428	0.4%	82.6%	2.3%	12.8%
2026	875	191,159	5,283	30,109	4,472	231,897	0.4%	82.4%	2.3%	13.0%
2027	908	195,380	5,331	31,169	4,636	237,424	0.4%	82.3%	2.2%	13.1%
2028	939	199,340	5,371	32,173	4,788	242,611	0.4%	82.2%	2.2%	13.3%
2029	973	203,561	5,413	33,199	4,950	248,095	0.4%	82.0%	2.2%	13.4%
2030	1,006	207,799	5,455	34,246	5,111	253,617	0.4%	81.9%	2.2%	13.5%
2031	1,042	212,038	5,500	35,305	5,279	259,162	0.4%	81.8%	2.1%	13.6%
2032	1,077	216,328	5,543	36,330	5,443	264,721	0.4%	81.7%	2.1%	13.7%
2033	1,114	220,552	5,588	37,420	5,614	270,288	0.4%	81.6%	2.1%	13.8%
2034	1,152	224,861	5,634	38,508	5,787	275,941	0.4%	81.5%	2.0%	14.0%
2035	1,190	229,176	5,682	39,620	5,962	281,631	0.4%	81.4%	2.0%	14.1%
2036	1,233	233,408	5,735	40,801	6,149	287,325	0.4%	81.2%	2.0%	14.2%
2037	1,276	237,656	5,788	41,996	6,338	293,054	0.4%	81.1%	2.0%	14.3%
2038	1,318	241,939	5,841	43,195	6,526	298,819	0.4%	81.0%	2.0%	14.5%
2039	1,361	246,242	5,898	44,409	6,716	304,626	0.4%	80.8%	1.9%	14.6%
2040	1,406	250,536	5,956	45,657	6,913	310,468	0.5%	80.7%	1.9%	14.7%
2041	1,451	254,896	6,015	46,876	7,108	316,346	0.5%	80.6%	1.9%	14.8%
2042	1,496	259,310	6,072	48,084	7,304	322,266	0.5%	80.5%	1.9%	14.9%
2043	1,538	263,768	6,132	49,297	7,497	328,232	0.5%	80.4%	1.9%	15.0%
2044	1,583	268,209	6,196	50,564	7,697	334,248	0.5%	80.2%	1.9%	15.1%
2045	1,629	272,661	6,261	51,866	7,901	340,318	0.5%	80.1%	1.8%	15.2%
Compound Annual Growth Rate										
2024 – 2045	3.4%	1.9%	0.9%	3.0%	3.1%	2.1%				

NOTES:

Civilian jet operations represented approximately 52.6% of total jet operations in FY 2024, civilian piston operations represented 100.0% of total piston operations, civilian turboprop operations represented 17.9% of total turboprop operations, civilian helicopter operations represented 51.7% of total helicopter operations, and civilian aircraft represented 87.7% of total operations of other or unknown aircraft, with military aircraft representing the remainder of operations by each powerplant type. Civilian piston aircraft are forecast to represent 100.0% of operations throughout the forecast period, while the shares represented by jet, turboprop, helicopter, and other aircraft are forecast to increase, representing 76.4%, 32.2%, 74.0%, and 93.6%, respectively, of total operations by powerplant.

1 Includes experimental aircraft, light sport aircraft, gliders, and aircraft with unknown powerplant type.

2 Totals may not add due to rounding.

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025 (general aviation fleet mix trends).

TABLE 20 CRITICAL AIRCRAFT OPERATIONS FORECAST

RUNWAY DESIGN CODE	AIRCRAFT APPROACH CATEGORY	AIRPLANE DESIGN GROUP	OPERATIONS		CAGR	SHARE OF OPERATIONS	
			2024	2045	2024 – 2045	2024	2045
A-I	A	I	182,270	272,172	1.9%	82.6%	80.0%
A-II	A	II	1,047	1,784	2.6%	0.5%	0.5%
B-I	B	I	113	206	2.9%	0.1%	0.1%
B-II	B	II	453	1,073	4.2%	0.2%	0.3%
B-III	B	III	5	7	1.9%	0.0%	0.0%
B-IV	B	IV	896	908	0.1%	0.4%	0.3%
C-I	C	I	11	32	5.2%	0.0%	0.0%
C-II	C	II	39	106	4.9%	0.0%	0.0%
C-III	C	III	160	444	5.0%	0.1%	0.1%
C-IV	C	IV	3,921	3,997	0.1%	1.8%	1.2%
C-V	C	V	7	22	5.2%	0.0%	0.0%
D-II	D	II	17	50	5.2%	0.0%	0.0%
D-III	D	III	70	101	1.8%	0.0%	0.0%
D-IV	D	IV	11	32	5.2%	0.0%	0.0%
Helicopter			27,926	51,866	3.0%	12.7%	15.2%
Other[1]			3,735	7,517	3.4%	1.7%	2.2%
Total[2]			**220,681**	**340,318**	**2.1%**		

NOTES:
CAGR – compound annual growth rate.
Highlighted cells represent the existing and forecast critical aircraft.
1 Includes operations with unknown or other powerplant types.
2 Totals may not add up due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025 (general aviation fleet mix trends).

Table 21 presents civil aircraft operations by RDC. Currently, the civilian aircraft operating at the Airport on a regular basis with the most demanding performance and geometry characteristics are RDC A-II aircraft types, with 824 operations in FY 2024. Operations of the current critical aircraft family are forecast to increase at a 3.1 percent CAGR. During the forecast period, it is projected that RDC B-II aircraft types will exceed 500 annual operations, increasing from 453 operations in FY 2024 to 1,073 in FY 2045, representing a 4.2 percent CAGR. RDC B-II aircraft consist of turboprop and medium-sized jet aircraft, which are forecast to grow at a high rate relative to other aircraft powerplant types, particularly piston-powered aircraft. Based on fleet mix projections, RDC B-II aircraft type activity is forecast to exceed 500 operations in FY 2026. The Cessna 208B is the representative RDC A-II aircraft in the

current critical aircraft family; the Beechcraft Super King Air 200 is the representative RDC B-II aircraft in the future critical aircraft family.[17]

TABLE 21 CRITICAL AIRCRAFT OPERATIONS FORECAST – CIVIL AIRCRAFT ACTIVITY

RUNWAY DESIGN CODE	AIRCRAFT APPROACH CATEGORY	AIRPLANE DESIGN GROUP	OPERATIONS		CAGR	SHARE OF OPERATIONS	
			2024	2045	2024 – 2045	2024	2045
A-I	A	I	182,270	272,172	1.9%	90.2%	84.6%
A-II	A	II	824	1,561	3.1%	0.4%	0.5%
B-I	B	I	113	206	2.9%	0.1%	0.1%
B-II	B	II	453	1,073	4.2%	0.2%	0.3%
B-III	B	III	5	7	1.9%	0.0%	0.0%
B-IV	B	IV	10	22	3.8%	0.0%	0.0%
C-I	C	I	11	32	5.2%	0.0%	0.0%
C-II	C	II	37	105	5.1%	0.0%	0.0%
C-III	C	III	148	433	5.2%	0.1%	0.1%
C-IV	C	IV	40	115	5.2%	0.0%	0.0%
C-V	C	V	7	22	5.2%	0.0%	0.0%
D-II	D	II	17	50	5.2%	0.0%	0.0%
D-III	D	III	16	47	5.2%	0.0%	0.0%
D-IV	D	IV	11	32	5.2%	0.0%	0.0%
Helicopter			14,442	38,381	4.8%	7.1%	11.9%
Other[1]			3,655	7,438	3.4%	1.8%	2.3%
Total[2]			**202,059**	**321,696**	**2.2%**		

NOTES:
CAGR – compound annual growth rate.
Highlighted cells represent the current and forecast critical aircraft.
1 Includes operations with unknown or other powerplant types.
2 Totals may not add up due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025 (general aviation fleet mix trends).

It is assumed that the same relative rate of runway utilization by aircraft type will continue during the forecast period. During the forecast period, RDC C-IV aircraft types are forecast to continue to represent the critical aircraft family using Runway 4R-22L, while RDC A-I aircraft types are forecast to continue to represent the critical aircraft family

[17] As noted in Section 1.3, JRF serves as an alternative airport for several airlines serving HNL. Aircraft operated by these airlines largely consist of aircraft designated in AAC C and AAC D as well as ADG III, ADG IV, and ADG V. The most demanding of these aircraft, the Boeing 777-300ER, is considered an RDC D-V aircraft, however, no operations of RDC D-V aircraft were recorded at JRF in FAA TFMSC data during the historical period. It is assumed that operations by RDC D-V aircraft will be in line with historical trends during the forecast period, with minimal RDC D-V aircraft activity assumed to occur at JRF.

using Runway 11-29. These are represented by the C-130J and Cessna 172, respectively. During the forecast period, operations by RDC A-II aircraft types using Runway 4L-22R are forecast to exceed 500 annual operations, representing a change in critical aircraft. The Cessna 208B is the representative RDC A-II aircraft in the future critical aircraft family using Runway 4L-22R. **Appendix D** presents additional details regarding civilian and military aircraft fleet and operations by RDC grouping and runway at the Airport.

3.5.4 PEAK-PERIOD OPERATIONS FORECAST

Table 22 presents the activity peaking metrics at the Airport. The peak month in the base year was selected by identifying the month in which the maximum average daily operations, according to FAA OPSNET data. The PMAD (June 20, 2024) was selected as the representative day for developing peaking metrics based on ATAC granular radar data; approximately 0.037 percent of annual operations were recorded in the PMAD peak hour. Peak month and PMAD activity are forecast based on historical peaking trends in FAA OPSNET data over the total period of available data. Over this period, these metrics were relatively consistent; peak month operations and PMAD operations are forecast to represent an average of 9.823 percent and 0.323 percent of annual operations, respectively, over the period from FY 2024 to FY 2045, with 1,098 PMAD operations forecast in FY 2045. PMAD peak hour historical data is available for FY 2024, and the share of annual operations occurring in the PMAD peak hour is assumed to remain constant during the forecast period at 0.037 percent of annual operations. The forecast for PMAD peak hour operations in FY 2045 is 126.

3.6 BASED AIRCRAFT FORECAST

Based aircraft forecasts were developed for by powerplant type, including jet, multi-engine, single-engine, and helicopter aircraft. These forecasts were based on the 2024 FAA TAF for JRF aircraft applied to the current reported base year-based aircraft counts by powerplant type. Fleet mix by powerplant type was forecast based on FAA Aerospace Forecast trends in active aircraft by powerplant type, with annual relative growth by powerplant type applied to the count of aircraft based at the Airport in FY 2024. **Table 23** presents the forecast for based aircraft by powerplant type from FY 2024 to FY 2045. The total number of based aircraft is forecast to remain constant during the period.

TABLE 22 PEAK-PERIOD OPERATIONS FORECAST

FEDERAL FISCAL YEAR	OPERATIONS				SHARE OF ANNUAL OPERATIONS		
	ANNUAL	PEAK MONTH	PMAD	PMAD PEAK HOUR	PEAK MONTH	PMAD	PMAD PEAK HOUR
Historical							
2014	136,406	13,036	421	NA	9.557%	0.308%	NA
2015	128,808	12,146	405	NA	9.430%	0.314%	NA
2016	116,075	11,875	383	NA	10.230%	0.330%	NA
2017	129,566	12,375	399	NA	9.551%	0.308%	NA
2018	150,561	19,014	613	NA	12.629%	0.407%	NA
2019	163,020	16,114	520	NA	9.885%	0.319%	NA
2020	167,654	16,142	538	NA	9.628%	0.321%	NA
2021	171,747	15,253	545	NA	8.881%	0.317%	NA
2022	183,486	18,019	581	NA	9.820%	0.317%	NA
2023	195,805	20,333	656	NA	10.384%	0.335%	NA
2024	220,681	20,567	686	82	9.320%	0.311%	0.037%
Forecast							
2025	226,428	22,256	732	84	9.829%	0.323%	0.037%
2026	231,897	22,792	749	86	9.828%	0.323%	0.037%
2027	237,424	23,333	767	88	9.828%	0.323%	0.037%
2028	242,611	23,842	784	90	9.827%	0.323%	0.037%
2029	248,095	24,379	801	92	9.826%	0.323%	0.037%
2030	253,617	24,920	819	94	9.826%	0.323%	0.037%
2031	259,162	25,464	837	96	9.825%	0.323%	0.037%
2032	264,721	26,008	855	98	9.825%	0.323%	0.037%
2033	270,288	26,554	873	100	9.824%	0.323%	0.037%
2034	275,941	27,108	891	102	9.824%	0.323%	0.037%
2035	281,631	27,666	909	104	9.823%	0.323%	0.037%
2036	287,325	28,224	927	106	9.823%	0.323%	0.037%
2037	293,054	28,785	946	109	9.822%	0.323%	0.037%
2038	298,819	29,350	964	111	9.822%	0.323%	0.037%
2039	304,626	29,919	983	113	9.822%	0.323%	0.037%
2040	310,468	30,492	1,002	115	9.821%	0.323%	0.037%
2041	316,346	31,068	1,021	117	9.821%	0.323%	0.037%
2042	322,266	31,648	1,040	119	9.820%	0.323%	0.037%
2043	328,232	32,233	1,059	122	9.820%	0.323%	0.037%
2044	334,248	32,822	1,078	124	9.820%	0.323%	0.037%
2045	340,318	33,417	1,098	126	9.819%	0.323%	0.037%
Compound Annual Growth Rate							
2014 – 2024	4.9%	4.7%	5.0%	NA			
2024 – 2045	2.1%	2.3%	2.3%	2.1%			

NOTES:
NA – not available; PMAD – peak month average day.

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate).

TABLE 23 BASED AIRCRAFT FORECAST

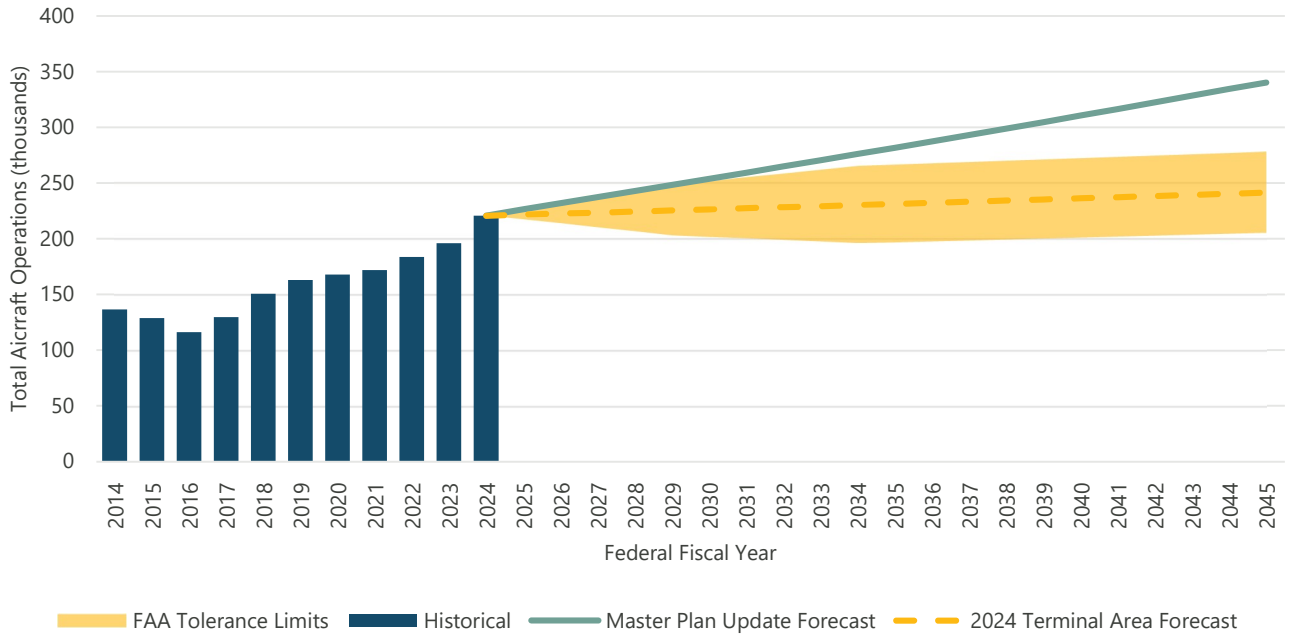
FEDERAL FISCAL YEAR	SINGLE ENGINE	MULTI-ENGINE	JET	HELICOPTER	OTHER	TOTAL
2024[1]	18	2	0	0	8	28
Forecast						
2025	18	2	0	0	8	28
2026	18	2	0	0	8	28
2027	18	2	0	0	8	28
2028	18	2	0	0	8	28
2029	18	2	0	0	8	28
2030	18	2	0	0	8	28
2031	18	2	0	0	8	28
2032	18	2	0	0	8	28
2033	18	2	0	0	8	28
2034	17	2	0	0	8	28
2035	17	2	0	0	8	28
2036	17	2	0	0	8	28
2037	17	2	0	0	8	28
2038	17	2	0	0	8	28
2039	17	2	0	0	8	28
2040	17	2	0	0	8	28
2041	17	2	0	0	8	28
2042	17	2	0	0	8	28
2043	17	2	0	0	8	28
2044	17	2	0	0	8	28
2045	17	2	0	0	8	28
Compound Annual Growth Rate						
2024 – 2045	-0.2%	-0.3%	NA	NA	0.3%	0.0%

NOTES:
NA – not applicable.
1 Historical 2024 based aircraft at JRF is based on the 2024 FAA TAF data.
SOURCES: US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (historical based aircraft counts, based aircraft projection growth rate); US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025 (general aviation fleet mix trends).

4. FORECAST COMPARISONS

The MPU baseline forecast of total aircraft operations is compared to the 2024 FAA TAF in **Table 24**; this comparison is depicted graphically on **Exhibit 9**. The MPU aircraft operations forecast is higher than the 2024 FAA TAF aircraft operations forecast. The MPU aircraft operations forecast is equivalent to the upper bound of 10 percent variance tolerance at the 5-year interval, and the forecast exceeds the upper bound of 15 percent variance tolerance at the 10-year forecast interval.[18] The higher GA operations growth rate is the primary contributor to this difference; both the MPU forecast and 2024 FAA TAF growth rates are significantly lower than the growth observed during the historical period, particularly with regards to GA operations. Based on the 2024 FAA TAF, GA operations are forecast to grow at 0.4 percent CAGR during the forecast period, while the MPU GA operations forecast indicates a 2.1 percent CAGR.

EXHIBIT 9 COMPARISON OF AIRCRAFT OPERATIONS FORECASTS



NOTE:
FAA – Federal Aviation Administration.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate, aircraft operations forecast).

[18] Forecast tolerances are defined in FAA AC 150/5070-6B as exceeding a 10 percent difference from the TAF at 5 years and exceeding a 15 percent difference from the TAF at 10 years.

TABLE 24 COMPARISON OF AIRCRAFT OPERATIONS FORECASTS

FEDERAL FISCAL YEAR	MASTER PLAN UPDATE FORECAST	2024 TERMINAL AREA FORECAST	DIFFERENCE
Historical			
2014	136,406	136,406	
2015	128,808	128,808	
2016	116,075	116,075	
2017	129,566	129,566	
2018	150,561	150,561	
2019	163,020	163,020	
2020	167,654	167,654	
2021	171,747	171,747	
2022	183,486	183,486	
2023	195,805	195,805	
2024	220,681	220,681	
Forecast			
2025	226,428	221,632	2.2%
2026	231,897	222,580	4.2%
2027	237,424	223,534	6.2%
2028	242,611	224,493	8.1%
2029	248,095	225,456	10.0%
2030	253,617	226,422	12.0%
2031	259,162	227,392	14.0%
2032	264,721	228,367	15.9%
2033	270,288	229,345	17.9%
2034	275,941	230,328	19.8%
2035	281,631	231,315	21.8%
2036	287,325	232,306	23.7%
2037	293,054	233,300	25.6%
2038	298,819	234,300	27.5%
2039	304,626	235,303	29.5%
2040	310,468	236,311	31.4%
2041	316,346	237,323	33.3%
2042	322,266	238,338	35.2%
2043	328,232	239,359	37.1%
2044	334,248	240,384	39.0%
2045	340,318	241,412	41.0%
Compound Annual Growth Rate			
2014 – 2024	4.9%	4.9%	
2024 – 2045	2.1%	0.4%	

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate; aircraft operations forecast).

5. SENSITIVITY ANALYSIS: RELOCATION OF DANIEL K. INOUYE INTERNATIONAL AIRPORT LIGHT GENERAL AVIATION ACTIVITY TO KALAELOA AIRPORT

A sensitivity analysis was conducted in conjunction with the development of baseline forecasts of aircraft operations at the Airport. Sensitivity analyses are not intended to represent an augmented operations forecast at JRF; rather, the sensitivity analysis presents a high-level overview of aircraft operational outcomes that could occur given stated assumptions regarding aviation activity. As noted in Section 1.3, the Airport serves as a GA reliever airport for HNL, which is located 8 miles to the east of the Airport. Currently, GA activity is handled by both airports, though HNL primarily caters to non-GA activity. The purpose of the sensitivity analysis is to test a possible relocation of light GA activity should HNL be limited and constrained from accommodating future air carrier, air cargo, and corporate GA demand and/or should some light GA activity elect to use JRF rather than HNL. For the purpose of this sensitivity analysis, light GA aircraft are defined as fixed-wing airplanes that weigh 12,500 pounds or less and are powered by single- or multiple-piston engines. These airplanes are typically used for personal use, sightseeing, and flight instruction. Additionally, the terms "light GA" and "light GA and OAT" are used interchangeably for the purpose of this analysis, based on the nature of the data sources available for HNL operations analyses. GA and OAT operations represent the difference between total civil operations (including air carrier, air taxi, and GA operations), identified in FAA OPSNET data, and total commercial operations (passenger and cargo airline operations), identified using US Department of Transportation T-100 data; these two sources represent the available data sources for HNL operations.

Table 25 presents a summary of current operations at HNL in FY 2024; commercial passenger and cargo airline operations were identified using US Department of Transportation T-100 data, while GA and OAT operations represented by light GA aircraft were estimated based on the share of GA and OAT operations consisting of non-jet aircraft and non-business aviation activity in FAA Traffic Flow Management System Counts data.[19] The majority of GA and OAT operations consisted of light GA activity in FY 2024, with 92,537 light GA and OAT operations estimated during the fiscal year.

Two methodologies were assessed in developing sensitivity analyses for light GA relocation to JRF:

- **HNL Light GA No Additional Growth Scenario:** This scenario assumes that the current level of light GA and OAT activity which currently uses HNL would remain constant over the forecast period. Over the forecast period, a range of assumptions related to the share of this activity using JRF rather than HNL were applied, allowing for a granular examination of the effects of some or all this activity segment shifting to JRF. Based on FY 2024 light GA operations estimated at HNL, a maximum of 92,537 operations could shift from HNL to JRF using this methodology.
- **HNL Light GA Socioeconomic Growth Scenario:** This scenario applies similar socioeconomic regression modeling to historical HNL GA and OAT activity to develop a forecast of GA and OAT operations using HNL. GA fleet mix projections are applied to the forecast of GA activity at HNL, with the share of business aviation and non-business aviation activity assumed to remain consistent over the forecast period for non-jet activity.

[19] US Department of Transportation, Federal Aviation Administration, Traffic Flow Management System Counts, March 2025.

Over the forecast period, a range of assumptions related to the share of this activity using JRF rather than HNL were applied, allowing for a granular examination of the effects of some or all of this activity segment shifting to JRF. Based on FY 2024 light GA and OAT operations estimated at HNL, socioeconomic regression modeling for total GA and OAT operations at HNL, and projected powerplant and user categorization, a maximum of 143,152 operations could shift from HNL to JRF using this methodology.

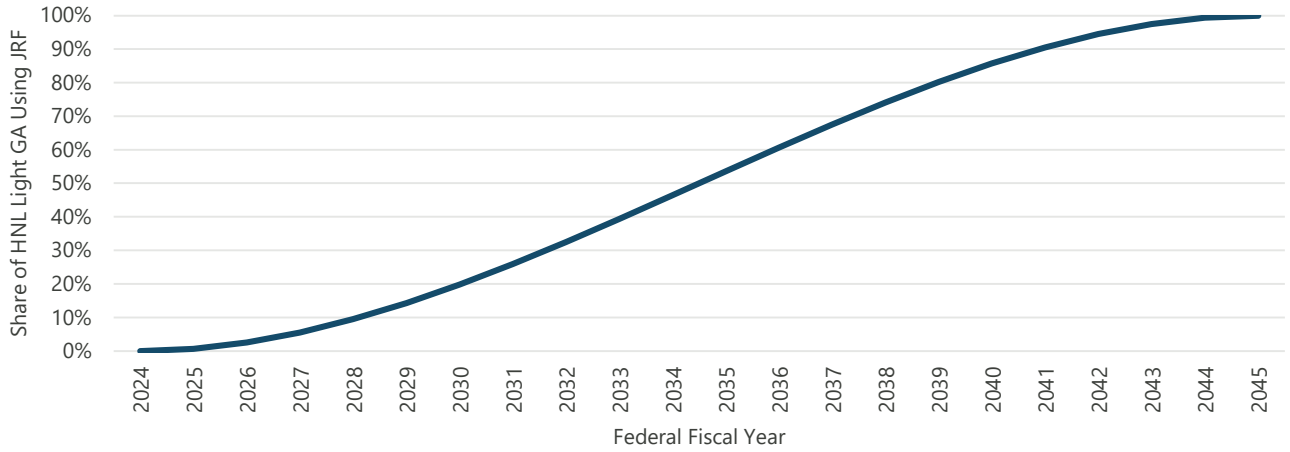
TABLE 25 HNL AIRCRAFT OPERATIONS BY CATEGORY (FY 2024)

CATEGORY	OPERATIONS
Commercial Passenger and Cargo Airline Operations	188,569
GA and OAT Operations	131,008
Military Operations	14,612
Total Aircraft Operations	**334,189**
ESTIMATED SENSITIVITY ANALYSIS BASE YEAR AIRCRAFT OPERATIONS:	
Light GA and OAT Operations[1]	92,537

NOTES:
FY – fiscal year; GA – general aviation; HNL – Daniel K. Inouye International Airport; OAT – other air taxi.
General aviation and other air taxi operations represent the difference between total civil operations (air carrier, air taxi, and GA operations) and total commercial operations (passenger and cargo airline operations) in available data sources.
1 Light GA and OAT operations were estimated based on the share of non-jet and non-business aviation operations using the airport identified in Federal Aviation Administration Traffic Flow Management System Counts data.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Cirium Diio, February 2025 (US Department of Transportation, T-100 data); US Department of Transportation, Traffic Flow Management System Counts, February 2025 (operational fleet mix).

Exhibit 10 presents the assumed share of HNL light GA operations using JRF instead over the forecast period. For consistency between scenarios, it is assumed that the share shift between HNL and JRF is similar, with 100 percent of light GA activity shifting from HNL to JRF by FY 2045. Share shift is modeled with a cubic polynomial function, which represents a slower initial increase, an accelerated interim period where additional users shift activity, and a tapering of activity following the widespread adoption of JRF by current HNL light GA users.

EXHIBIT 10 SHARE OF HNL LIGHT GENERAL AVIATION AND OTHER AIR TAXI OPERATIONS USING JRF



NOTES:
GA – general aviation; HNL – Daniel K. Inouye International Airport; JRF – Kalaeloa Airport.

SOURCE: Ricondo & Associates, Inc., February 2025.

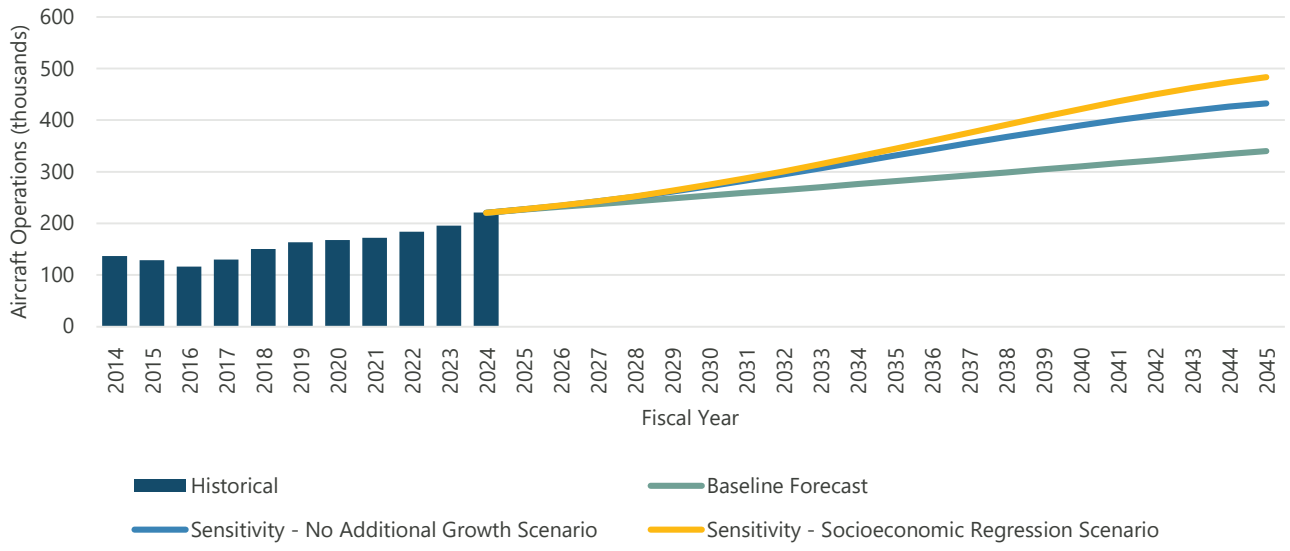
Table 26 and **Exhibit 11** present a comparison of the total operations forecast in the baseline forecast, as well as the results of both scenarios developed in conjunction with the sensitivity analysis. Both scenarios result in higher forecast operations at JRF, with 27.2 percent and 42.1 percent more operations forecast at JRF in the HNL Light GA No Additional Growth Scenario and the HNL Light GA Socioeconomic Growth scenarios, respectively. These scenarios represent CAGRs of 3.3 percent and 3.8 percent, respectively, from FY 2024 to FY 2045, while the baseline operations forecast represents a CAGR of 2.1 percent. Aircraft operations at JRF increased at a 4.9 percent CAGR during the historical period from FY 2014 to FY 2024, a higher rate than the baseline forecast and the scenarios developed in conjunction with the sensitivity analysis.

TABLE 26 COMPARISON OF AIRCRAFT OPERATIONS FORECAST AND SENSITIVITY ANALYSES

FEDERAL FISCAL YEAR	OPERATIONS			DIFFERENCE FROM BASELINE FORECAST	
	BASELINE FORECAST	SENSITIVITY – NO ADDITIONAL GROWTH SCENARIO	SENSITIVITY – SOCIOECONOMIC REGRESSION SCENARIO	SENSITIVITY – NO ADDITIONAL GROWTH SCENARIO	SENSITIVITY – SOCIOECONOMIC REGRESSION SCENARIO
Historical					
2014	136,406	136,406	136,406	0.0%	0.0%
2015	128,808	128,808	128,808	0.0%	0.0%
2016	116,075	116,075	116,075	0.0%	0.0%
2017	129,566	129,566	129,566	0.0%	0.0%
2018	150,561	150,561	150,561	0.0%	0.0%
2019	163,020	163,020	163,020	0.0%	0.0%
2020	167,654	167,654	167,654	0.0%	0.0%
2021	171,747	171,747	171,747	0.0%	0.0%
2022	183,486	183,486	183,486	0.0%	0.0%
2023	195,805	195,805	195,805	0.0%	0.0%
2024	220,681	220,681	220,681	0.0%	0.0%
Forecast					
2025	226,428	227,038	227,055	0.3%	0.3%
2026	231,897	234,255	234,382	1.0%	1.1%
2027	237,424	242,550	242,951	2.2%	2.3%
2028	242,611	251,404	252,286	3.6%	4.0%
2029	248,095	261,335	262,973	5.3%	6.0%
2030	253,617	271,963	274,684	7.2%	8.3%
2031	259,162	283,154	287,291	9.3%	10.9%
2032	264,721	294,777	300,697	11.4%	13.6%
2033	270,288	306,709	314,756	13.5%	16.5%
2034	275,941	318,907	329,484	15.6%	19.4%
2035	281,631	331,202	344,675	17.6%	22.4%
2036	287,325	343,441	360,090	19.5%	25.3%
2037	293,054	355,535	375,615	21.3%	28.2%
2038	298,819	367,365	391,184	22.9%	30.9%
2039	304,626	378,818	406,615	24.4%	33.5%
2040	310,468	389,766	421,589	25.5%	35.8%
2041	316,346	400,090	436,006	26.5%	37.8%
2042	322,266	409,677	449,596	27.1%	39.5%
2043	328,232	418,411	462,264	27.5%	40.8%
2044	334,248	426,176	473,661	27.5%	41.7%
2045	340,318	432,856	483,470	27.2%	42.1%
Compound Annual Growth Rate					
2014 – 2024	4.9%	4.9%	4.9%		
2024 – 2045	2.1%	3.3%	3.8%		

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); Cirium Diio, February 2025 (US Department of Transportation, T-100 data); US Department of Transportation, Traffic Flow Management System Counts, February 2025 (operational fleet mix).

EXHIBIT 11 COMPARISON OF AIRCRAFT OPERATIONS FORECAST AND SENSITIVITY ANALYSES



SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); Cirium Diio, February 2025 (US Department of Transportation, T-100 data); US Department of Transportation, Traffic Flow Management System Counts, February 2025 (operational fleet mix).

APPENDIX A EXISTING (FY 2024) FLEET MIX CHARACTERISTICS AND RUNWAY UTILIZATION DATA BY RDC BY CIVILIAN VS. MILITARY AIRCRAFT OPERATIONS

TABLE A-1 BASE YEAR (FY 2024) FLEET MIX CHARACTERISTICS AND CRITICAL AIRCRAFT - CIVILIAN AIRCRAFT OPERATIONS

AIRPLAINE DESGIN GROUP	AIRCRAFT APPROACH CATEGORY						
	A	B	C	D	HELICOPTER	UNKNOWN[1]	TOTAL
I	182,270	113	11	0	*NA*	*NA*	**182,394**
II	824	453	37	17	*NA*	*NA*	**1,331**
III	0	5	148	16	*NA*	*NA*	**169**
IV	0	10	40	11	*NA*	*NA*	**61**
V	0	0	7	0	*NA*	*NA*	**7**
Helicopter	*NA*	*NA*	*NA*	*NA*	14,442	*NA*	**14,442**
Unknown[1]	*NA*	*NA*	*NA*	*NA*	*NA*	3,655	**3,655**
Total	**183,094**	**580**	**244**	**45**	**14,442**	**3,655**	**202,059**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).

TABLE A-2 BASE YEAR (FY 2024) CRITICAL AIRCRAFT BY RUNWAY – MILITARY AIRCRAFT

AIRPLAINE DESGIN GROUP	AIRCRAFT APPROACH CATEGORY						
	A	B	C	D	HELICOPTER	UNKNOWN[1]	TOTAL
I	0	0	0	0	*NA*	*NA*	0
II	223	0	2	0	*NA*	*NA*	225
III	0	0	11	54	*NA*	*NA*	65
IV	0	886	3,882	0	*NA*	*NA*	4,768
V	0	0	0	0	*NA*	*NA*	0
Helicopter	*NA*	*NA*	*NA*	*NA*	13,484	*NA*	13,484
Unknown[1]	*NA*	*NA*	*NA*	*NA*	*NA*	80	80
Total	**223**	**886**	**3,895**	**54**	**13,484**	**80**	**18,622**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).

TABLE A-3 BASE YEAR (FY 2024) CRITICAL AIRCRAFT BY RUNWAY – CIVILIAN AIRCRAFT OPERATIONS

RDC	11-29	04L-22R	04R-22L	TOTAL
A-I	15,829	78,659	87,782	182,270
A-II	152	365	307	824
B-I	38	26	48	113
B-II	15	48	390	453
B-III	0	0	5	5
B-IV	0	0	10	10
C-I	2	0	9	11
C-II	5	0	32	37
C-III	21	7	120	148
C-IV	0	0	39	40
C-V	4	0	4	7
D-II	0	0	17	17
D-III	2	1	14	16
D-IV	0	0	11	11
Helicopter	2,842	8,752	2,848	14,442
Unknown[1]	885	509	2,261	3,655
Unknown-II[2]	0	0	0	0
Total[3]	**19,795**	**88,368**	**93,896**	**202,059**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
2 Unknown II aircraft have an airplane design group (ADG) designation, but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
3 Total may not add due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).

TABLE A-4 BASE YEAR (FY 2024) CRITICAL AIRCRAFT BY RUNWAY – MILITARY AIRCRAFT OPERATIONS

RDC	11-29	04L-22R	04R-22L	TOTAL
A-I	0	0	0	0
A-II	41	99	83	223
B-I	0	0	0	0
B-II	0	0	0	0
B-III	0	0	0	0
B-IV	0	3	883	886
C-I	0	0	0	0
C-II	0	0	1	2
C-III	2	1	9	11
C-IV	24	8	3,850	3,882
C-V	0	0	0	0
D-II	0	0	0	0
D-III	6	2	46	54
D-IV	0	0	0	0
Helicopter	2,654	8,172	2,659	13,484
Unknown[1]	15	9	39	64
Unknown-II[2]	10	7	0	16
Total[3]	**2,752**	**8,300**	**7,570**	**18,622**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
2 Unknown II aircraft have an airplane design group (ADG) designation, but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
3 Total may not add due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).

APPENDIX B JRF ADVANCED AVIATION ACTIVITY FORECAST – EXISTING AIRCRAFT OPERATIONS AND FLEET MIX DATA REVIEW & VALIDATION

JRF Advanced Aviation Activity Forecast – Existing Aircraft Operations and Fleet Mix Data Review & Validation

January 23, 2025
2:30 PM – 3:30 PM HST

Client Project Number: AO5022-01 and Ricondo Project Number: 2024-11-06

Microsoft Teams

MEETING FACILITATOR: Ura Yvan

DATE TRANSCRIBED: 2/6/2025

NOTE TAKER(S): Ura Yvan

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Roger Hyun	Parsons	Roger.hyun@parsons.com	√	

SUMMARY OF MEETING DISCUSSION

The following points were discussed ***[text in bold and italicized font indicates items addressed post meeting]*** :

- Introductions/Attendance
  - Meeting attendees are listed above.
- Meeting Agenda Overview:
  - The meeting agenda included a brief review of related projects at Kalaeloa Airport, the objectives of the Advanced Aviation Activity Forecast, aircraft operations and fleet mix summary from various FAA and radar sources, Survey responses summary (primarily from military users at the airport), and preliminary findings and next steps.
- Purpose of Meeting:
  - To review and validate existing (baseline) aircraft operations and fleet mix at Kalaeloa Airport (JRF), prior to proceeding with the Advanced Aviation Activity Forecast.
- Background
  - The JRF Airfield Improvements project (State Project No. AO5022-01) includes reconstructing airfield pavement at the airport, including runways, taxiways, and shoulders. At the kick-off meeting last year in June, the FAA requested that the Design Team identifies the critical design aircraft consistent with existing and future aircraft activity at the Airport.
  - The planning process for determining existing and future facility needs at an airport, including airfield infrastructure such as runways, taxiways, apron areas, etc., are typically addressed as part of the Airport Master Planning process. This process is approximately 2 years, including FAA's review and approval of the Aviation Activity Forecast and Airport Layout Plan (ALP).
  - The JRF Master Plan, however, is not anticipated to start until Spring 2025.

- To address the deteriorated pavement conditions of the primary runway at JRF, the Hawaii State Department of Transportation (HDOT) asked the Design Team to evaluate a mill and fill for Runway 4R-22L as part of the Repave Runway 4R project (State Project No. AO5022-02).
- While a temporary solution is underway to address the primary runway pavement conditions, HDOT also requested that the Aviation Activity Forecast be conducted in advance of the start of the Airport Master Plan.

- Advanced Aviation Activity Forecast.
  - The Advanced Aviation Activity Forecast is being conducted in advance of the start of the Master Plan and Noise Exposure Map Updates (anticipated start in Spring 2025) to assist the design team in determining the existing and future aircraft fleet mix at JRF for purposes of the on-going Airfield Improvements project, specifically the critical aircraft per FAA Advisory Circular (AC) 150/5000-17, *Critical Aircraft and Regular Use Determination*.
  - Notice to Proceed for the Advanced Aviation Activity Forecast was initiated in October 2024.
  - The FAA AC 150/5000-17 requires that the most recent 12 months of aircraft operations be the basis for the determination of the critical aircraft.
  - At JRF, the most recent 12 months of aircraft operations for the Advanced Aviation Activity Forecast is from October 2023 to September 2024.
  - The critical aircraft determination is an important aspect in Airport Planning and Design for federally obligated airports. An accurate critical aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investment in airport facilities. It is based on the most demanding aircraft that regularly use the runways, taxiways, and apron areas.
  - The "critical aircraft" is defined as the most demanding aircraft type, or grouping of aircraft with similar characteristics that make regular use of the airport. "Regular use" is 500 annual operations, including both itinerant and local operations but excluding touch and go operations. An operation is either a takeoff or landing.
  - "Similar characteristic" refer to the practice of grouping aircraft by comparable operational performance and/or physical dimensions. For example, aircraft with similar wingspans and/or approach speeds may be grouped to determine the most demanding Aircraft Approach Category (AAC) and/or Airplane Design Group (ADG).

- Review and Validate Existing (Baseline) Aircraft Operations.
  - FAA OPSNET is the official tower count of aircraft operations at airports with an air traffic control tower. It provides a summary of aircraft operations by Itinerant and local operations by various categories of aircraft operators as defined by the FAA. Itinerant aircraft operations are performed by aircraft, either flying instrument flight rules (IFR), special visual flight rules (SVFR), or visual flight rules (VFR) that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area. Local aircraft operations are performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20-mile radius of the airport.
  - Slide 6 summarizes FAA OPSNET aircraft operations at JRF for CY 2023 by itinerant and local aircraft operation. As shown, local aircraft operations represent the majority of aircraft operations at JRF with 82

percent compared to itinerant aircraft operations at 18 percent. The 82 percent local aircraft operations comprise 93 percent civil aircraft operations and 7 percent military. The 18 percent itinerant aircraft operations comprise 86 percent general aviation aircraft operations and 14 percent military aircraft operations. Overall, at JRF, general aviation aircraft operation represent 92 percent of total aircraft operation compared to 8 percent military aircraft operations.

- Slide 7 summarizes the FAA OPSNET aircraft operations from October 2023 to September 2024, the most recent 12 months from Notice to Proceed for the Advanced Aviation Activity Forecast for JRF. The share of itinerant vs local aircraft operations and general aviation vs. military is similar to CY2023 FAA OPSNET aircraft data.
- To assist in obtaining more detailed aircraft by fleet type, radar data was acquired as summarized on slides 8 and 9. The capture rate was about 79% of the total FAA OPSNET Data for 2024 (October 2023 to September 2024), while 21% represented the share of unknown data. Slide 9 summarizes the aircraft fleet mix by Runway Design Code. As the data suggest, the most demanding aircraft is in the C-IV category and primarily uses Runway 4R-22L .
- Slides 10 and 11 calibrate or normalize the radar data to 1) the FAA OPSNET data and to 2) the GA/Military split for 2024 (October 2023 to September 2024). The radar data normalization to the FAA OPSNET data distributes evenly the unknown data to the same share of FAA OPSNET data from slide 9. The radar data normalization to the GA/Military split distribute the unknown data based on the GA/Military of aircraft operations by fleet type. In both cases, the most demanding aircraft remains in the C-IV category and primarily uses Runway 4R-22L. Of those aircraft in the C-IV category, 99% are military aircraft (Slide 12), primarily the C130J super Hercules (flown by the US Coast Guard) (slides 13 and 14).
- Questions/Comments
    - Does the summary of aircraft operations include touch and go operations: Yes.
    - US Coast Guard indicated not being able to see materials presented via Teams due to security reasons. Team offered to follow up separately with US Coast Guard to review data.
    - Aircraft operations Data and fleet mixed were described to US Coast Guard, specifically the number of operations for the C130J and C130. It also appeared that the C130J (newest version of Hercules aircraft flown by US Coast Guard) falls within the C-IV category while the older version is in the B-IV category.

- Survey Response (for Military)
    - Responses (from Military) to the survey sent in November 2024 are summarized on slide 15, validating aircraft fleet mix data obtained from radar feed.
- Preliminary Findings
    - Recommend using the normalized/calibrated data to FAA OPSNET Military/GA Split
    - Preliminary findings for the Critical Design Aircraft at JRF:
        - For Airfield Planning: C130J Super Hercules (ADG C-IV)
        - For FAA federal fund eligibility: ADG A-II (possibly B-II)
    - Federal law does not allow FAA to fund projects that solely benefit another federal agency

- When an airport sponsor anticipate requesting AIP grant funds or PFC revenues for airport projects, a critical aircraft determination must consider civil aircraft activity only.
- When calculating the amount of FAA federal funds that can be considered for airport projects, the difference in design requirements (if the project is to be built for both civil and military aircraft needs) will be considered and the costs will be prorated accordingly.

— Pending comments/validation on data presented, proceed with Aviation Activity Forecast. Estimated completion for draft Aviation Activity Forecast Report is approximately within 60 days (including HDOT's review), or by end of March. Assumes the draft Aviation Activity Forecast report will be submitted to HDOT by Mid-March.

— Pending HDOT review and comments on draft Aviation Activity Forecast report, submittal to FAA for review and approval is estimated by end of April. Typical timeframe for FAA review and approval is approximately 90 days (July).

— Questions/Comments

- No concerns were raised on using normalized/calibrated data to FAA OPSNET Military/GA split from meeting participants able to view the materials.
- US Coast Guard could not comment on the data provided in meeting. Team offered to coordinate with HDOT Planning and JRF Airport Manager to schedule a follow up meeting with US Coast Guard.
- ***[PowerPoint slides shared during meeting were sent to all participants following the meeting on January 23rd. US Coast Guard reviewed materials and confirmed accuracy of existing aircraft data via email on January 30th].***

ATTACHMENT:

1/23/2025 PowerPoint Presentation



Aircraft Operations Review & Validation

As part of the Advanced Aviation Activity Forecast for Airfield Improvements at Kalaeloa Airport

State Project No. AO5022-01

January 23, 2025

Overview

- Introductions
- Project Background
- Advanced Aviation Activity Forecast Objective
- Review of Aircraft Operations from FAA OPSNET, FAA TFMSC, and Radar Data
- Survey Responses
- Preliminary Findings & Next Steps



Background

- JRF Airfield Improvements project (State Project No. AO5022-01) kicked off in June 2024.
- Repave Runway 4R (State Project No. AO5022-02)
- JRF Airport Master Plan and Noise Exposure Map Updates planned to kick off in the Spring of 2025.



Advanced Aviation Activity Forecast Objective

- Assist the design team in determining the existing and future aircraft fleet mix at JRF for purposes of the Airfield Design Improvements project the Airport, specifically the critical aircraft per FAA Advisory Circular (AC) 150/5000-17, *Critical Aircraft and Regular Use Determination* .
  - "Critical Aircraft", "Design Aircraft", or "Critical Design Aircraft" are synonymous in FAA AC 150/5000-17.
  - The critical aircraft determination is an important aspect of airport planning and design for federally obligated airports.
  - An accurate critical aircraft determination helps to ensure the proper development of airport facilities and appropriate federal investment in airport facilities, which is based on the most demanding aircraft that regularly use the runways, taxiways, and apron areas.



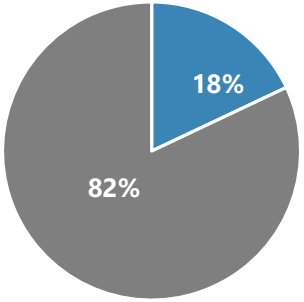
Advanced Aviation Activity Forecast Objective (cont)

- What is the definition of "Critical Aircraft" and "Regular Use"?
  - The "Critical Aircraft" is the most demanding aircraft type, or grouping of aircraft with similar characteristics, that make regular use of the airport. "Regular use" is 500 annual operations, including both itinerant and local operations but excluding touch-and-go operations. An operation is either a takeoff or landing

- What is the definition of "Similar Characteristics"?
  - "Similar Characteristics" refer to the practice of grouping aircraft by comparable operational performance and/or physical dimensions. For example, aircraft with similar wingspans and/or approach speeds may be grouped to determine the most demanding Aircraft Approach Category (AAC) and/or Airplane Design Group (ADG), respectively.

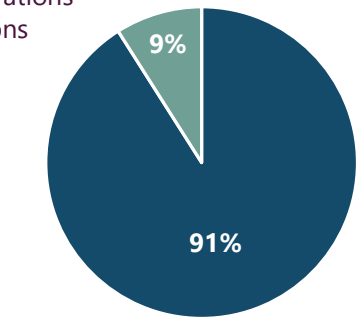


FAA OPSNET (Tower Counts) – CY 2023 Airport Operations



■ Itinerant Operations
■ Local Operations

	Itinerant[1]					Local[2]			
	Air Carrier	Air Taxi	General Aviation	Military	Itinerant Total	Civil	Military	Local Total	Grand Total 204,193
Count	0	0	31,135	5,953	37,088	155,242	11,863	167,105	
Percentage	0%	0%	84%	16%		93%	7%		



■ General Aviation ■ Military

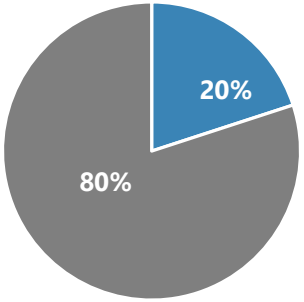
Overall Summary

	Air Carrier	Air Taxi	General Aviation	Military	Grand Total
Annual	0	0	186,377	17,816	**204,193**
Average Annual Day	0	0	511	49	**560**

Notes:
CY – Calendar Year OPSNET – Operations Network
1 Itinerant operations are performed by an aircraft, either instrument flight rules (IFR), special visual flight rules (SVFR), or visual flight rules (VFR), that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.
2 Local operations are performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20−mile radius of the tower.
Sources: U.S. Federal Aviation Administration, Operations Network (OPSNET), August 2024; U.S. Federal Aviation Administration, https://aspm.faa.gov/aspmhelp/index/Glossary.html (accessed December 13, 2024).

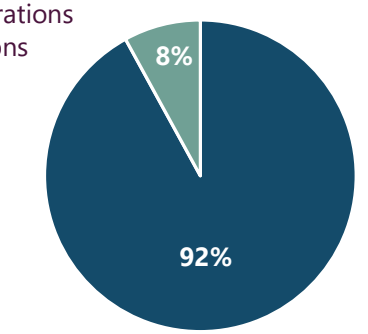
FAA OPSNET (Tower Counts) – 2024[1] Airport Operations

- The total airport operations from CY 2023 increased by 7%. The main driver is the increase in GA operations.



Itinerant Operations
Local Operations

	Itinerant[2]					Local[3]			
	Air Carrier	Air Taxi	General Aviation	Military	Itinerant Total	Civil	Military	Local Total	Grand Total 220,681
Count	1	0	37,935	5,979	43,915	164,123	12,643	176,766	
Percentage	0%	0%	86%	14%		93%	7%		



General Aviation Military

Overall Summary

	Air Carrier	Air Taxi	General Aviation	Military	Grand Total
Annual	1	0	202,058	18,622	**220,681**
Average Annual Day	0	0	554	51	**605**

Notes:
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024).
2 Itinerant operations are performed by an aircraft, either instrument flight rules (IFR), special visual flight rules (SVFR), or visual flight rules (VFR), that lands at an airport, arriving from outside the airport area, or departs an airport and leaves the airport area.
3 Local operations are performed by aircraft that remain in the local traffic pattern, execute simulated instrument approaches or low passes at the airport, and the operations to or from the airport and a designated practice area within a 20−mile radius of the tower.
Sources: U.S. Federal Aviation Administration, Operations Network (OPSNET) for October 2023 thru December 2023, November 2024; State of Hawaii Department of Transportation, OPSNET for January 2024 thru September 2024, October 2024; ; U.S. Federal Aviation Administration, https://aspm.faa.gov/aspmhelp/index/Glossary.html (accessed December 13, 2024).

2024* Radar Data Findings

		Count	% Share
FAA OPSNET 2024* Airport Operations	**[A]**	**220,681**	
Radar Data Captured (Dataset Total)	**[B]**	**174,804**	**Radar Data Captured: 79% of FAA OPSNET 2024* Data**
Radar Data - Identified	[B1]	171,874	98% Radar Data Captured
Radar Data – Unknown	[B2]	2,930	2% Unknown Radar Data
Unknown Data	**[C]=[A]-[B]+[B2]**	**48,807**	

*Note: The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024)
Sources: U.S. Federal Aviation Administration, Operations Network (OPSNET) for October 2023 thru December 2023, November 2024; State of Hawaii Department of Transportation, OPSNET for January 2024 thru September 2024, October 2024; ATAC, November 2024 (radar data).

2024[1] Radar Data – Runway Usage by Runway Design Code (RDC)

		Runway								
RDC	**TOTAL**	**11**	**29**	**04L**	**04R**	**22L**	**22R**	**11-29**	**04L-22R**	**04R-22L**
A-I	147,372	6,541	6,257	53,667	59,695	11,280	9,932	12,798	63,599	70,975
A-II	803	53	95	298	266	33	58	148	356	299
B-I	91	25	6	14	34	5	7	31	21	39
B-II	366	3	9	-	269	46	39	12	39	315
B-III	4	-	-	-	-	4	-	-	-	4
B-IV	552	-	-	2	509	41	-	-	2	550
C-I	9	2	-	-	5	2	-	2	-	7
C-II	31	1	3	-	24	3	-	4	-	27
C-III	127	12	6	3	99	4	3	18	6	103
C-IV	2,415	6	9	3	1,992	403	2	15	5	2,395
C-V	6	2	1	-	1	2	-	3	-	3
D-II	14	-	-	-	12	2	-	-	-	14
D-III	46	4	1	2	32	7	-	5	2	39
D-IV	9	-	-	-	9	-	-	-	-	9
Helicopter	19,955	2,966	961	10,010	3,165	770	2,083	3,927	12,093	3,935
Unknown	2,994	283	442	278	1,707	145	139	725	417	1,852
Unknown II[2]	10	6	-	4	-	-	-	6	4	-
Data Set Total	**174,804**	**9,904**	**7,790**	**64,281**	**67,819**	**12,747**	**12,263**	**17,694**	**76,544**	**80,566**

Notes:
RDC – Runway Design Code
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024) .
2 Unknown II aircraft have an airplane design group (ADG) designation but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
Source: ATAC, November 2024 (radar data).

2024[1] Radar Data – Runway Usage by Runway Design Code (RDC) – CALIBRATED TO FAA OPSNET DATA

		Runway								
RDC	TOTAL	11	29	04L	04R	22L	22R	11-29	04L-22R	04R-22L
A-I	186,050	8,258	7,899	67,752	75,362	14,240	12,539	16,157	80,290	89,602
A-II	1,014	67	120	376	336	42	73	187	449	377
B-I	115	32	8	18	43	6	9	39	27	49
B-II	462	4	11	-	340	58	49	15	49	398
B-III	5	-	-	-	-	5	-	-	-	5
B-IV	697	-	-	3	643	52	-	-	3	694
C-I	11	3	-	-	6	3	-	3	-	9
C-II	39	1	4	-	30	4	-	5	-	34
C-III	160	15	8	4	125	5	4	23	8	130
C-IV	3,049	8	11	4	2,515	509	3	19	6	3,024
C-V	8	3	1	-	1	3	-	4	-	4
D-II	18	-	-	-	15	3	-	-	-	18
D-III	58	5	1	3	40	9	-	6	3	49
D-IV	11	-	-	-	11	-	-	-	-	11
Helicopter	25,192	3,744	1,213	12,637	3,996	972	2,630	4,958	15,267	4,968
Unknown	3,780	357	558	351	2,155	183	175	915	526	2,338
Unknown II[2]	13	8	-	5	-	-	-	8	5	-
Data Set Total	**220,681**	**12,503**	**9,834**	**81,151**	**85,618**	**16,092**	**15,481**	**22,338**	**96,633**	**101,710**

Notes:
RDC – Runway Design Code
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024) .
2 Unknown II aircraft have an airplane design group (ADG) designation but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
Source: ATAC, November 2024 (radar data).

2024[1] Radar Data – Runway Usage by Runway Design Code (RDC) – CALIBRATED TO FAA OPSNET MILITARY/GA SPLIT

		Runway								
RDC	TOTAL	11	29	04L	04R	22L	22R	11-29	04L-22R	04R-22L
A-I	182,270	8,090	7,739	66,376	73,831	13,951	12,284	15,829	78,659	87,782
A-II	1,047	69	124	389	347	43	76	193	464	390
B-I	113	31	7	17	42	6	9	38	26	48
B-II	453	4	11	-	333	57	48	15	48	390
B-III	5	-	-	-	-	5	-	-	-	5
B-IV	896	-	-	3	826	67	-	-	3	893
C-I	11	2	-	-	6	2	-	2	-	9
C-II	39	1	4	-	30	4	-	5	-	34
C-III	160	15	8	4	125	5	4	23	8	130
C-IV	3,921	10	15	5	3,234	654	3	24	8	3,889
C-V	7	2	1	-	1	2	-	4	-	4
D-II	17	-	-	-	15	2	-	-	-	17
D-III	70	6	2	3	49	11	-	8	3	59
D-IV	11	-	-	-	11	-	-	-	-	11
Helicopter	27,926	4,151	1,345	14,009	4,429	1,078	2,915	5,496	16,924	5,507
Unknown	3,718	351	549	345	2,120	180	173	900	518	2,300
Unknown II[2]	16	10	-	7	-	-	-	10	7	-
Data Set Total	**220,681**	**12,743**	**9,804**	**81,157**	**85,399**	**16,068**	**15,511**	**22,546**	**96,668**	**101,467**

Notes:
RDC – Runway Design Code
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024) .
2 Unknown II aircraft have an airplane design group (ADG) designation but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
Source: ATAC, November 2024 (radar data).

2024[1] Radar Data – GA and Military Operations by Runway Design Code (RDC) – CALIBRATED TO FAA OPSNET MILITARY/GA SPLIT

RDC	Civil	Military	Total
A-I	182,270	0	182,270
A-II	824	223	1,047
B-I	113	0	113
B-II	453	0	453
B-III	5	0	5
B-IV	10	886	896
C-I	11	0	11
C-II	37	2	39
C-III	148	11	160
C-IV	40	3,882	3,921
C-V	7	0	7
D-II	17	0	17
D-III	16	54	70
D-IV	11	0	11
Helicopter	14,442	13,484	27,926
Unknown	3,655	64	3,718
Unknown II[2]	0	16	16
Data Set Total	**202,059**	**18,622**	**220,681**

Notes:
RDC – Runway Design Code
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024) .
2 Unknown II aircraft have an airplane design group (ADG) designation but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
Source: ATAC, November 2024 (radar data).

2024[1] Radar Data – Top 5 Aircraft Types by RDC

RDC	1	2	3	4	5
A-I	Textron Aviation Inc 172S	Cessna 172P	Cessna172S	Cessna 172R	Cessna172M
A-II	Cessna 208B	Beech D95A	Cessna 208	Beech D18S	De Havilland DHC-6 Twin Otter
B-I	Piper PA-31-350	Piper PA-23-250	Cessna 510	Beech 95-B55 (T42A)	Piper PA-42-1000
B-II	Beechcraft Super King Air 200	Cessna 525	Cessna 680	Air Tractor AT-802	Embraer SA EMB-545
B-III	Douglas DC-6A				
B-IV	C-17 Globemaster (326)	C-130 Hercules (196)	Boeing 737-700/C-130 Hercules (58)	Lockheed C-130H (10)	Lockheed 382G (3)
C-I	Learjet 35				
C-II	Bombardier Inc BD-100-1A10	Israel Aerospace IND LTD Gulfstream 200	SAAB-SCANIA SAAB 340B	Bombardier Inc CL-600-2B16	Textron Aviation Inc 700
C-III	Boeing 737-700	Boeing 717-200	Bombardier Inc BD-700-1A11	Boeing 737-436	Boeing 737-3H4
C-IV[2]	C-130 Super Hercules (3,811)	C-17, Globemaster/C-130 Super Hercules (395)	Boeing 767-200 (24)	Boeing 767-316 (15)	Boeing 757-223 (10)
C-V	Airbus A330-243	Boeing 777-200			
D-II	Gulfstream Aerospace GIV-X, G450	Gulfstream Aerospace G-IV			
D-III	Boeing 737-8	Gulfstream Aerospace G-V	Gulfstream Aerospace Corp GVI, G650	Gulfstream Aerospace Corp GVI, G650ER	Gulfstream Aerospace GV-SP, G550
D-IV	McDonnell Douglas DC-10	Boeing 757-33N	McDonnell Douglas MD-11F		
Helicopter	Robinson R22 Beta	Eurocopter SA 356	Sikorsky UH-60 Black Hawk	Boeing CH-47 Chinook/Sikorsky UH-60 Black Hawk	Hughes 369D

Notes:
RDC – Runway Design Code
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024). Data Calibrated to FAA OPSNET GA/Military Split
2 Values shown in parenthesis are the number of operations.
Source: ATAC, November 2024 (radar data).

FAA TFMSC and Radar Data Comparison – Military ADG IV Aircraft Fleet Mix

FAA TFMSC – CY 2023		2024[1] RADAR DATA	
Aircraft	**Count of Operations**	**Aircraft**	**Count of Operations**
C30J - C-130J Hercules ; Lockheed	1,009	C-130 Super Hercules	2,468
C17 - Boeing Globemaster 3	375	C-17 Globemaster	244
K35R - Boeing KC-135 Stratotanker	162	Boeing 737-700/C-130 Hercules	36
B762 - Boeing 767-200	83	Boeing 767-200	15
B752 - Boeing 757-200	16	Boeing 757-223	6
DC10 - Boeing (Douglas) DC 10-10/30/40	13	Lockheed C-130H	6
B703 - Boeing 707-300	1	McDonnell Douglas DC-10	6
		Boeing KC-135 Stratotanker	1
TOTAL	**1,659**	**TOTAL**	**2,782**

Notes: CY – Calendar Year
1 The 2024 airport operations shown is the latest 12 months from the Advanced Master Plan Forecast Notice to Proceed (October 2023 to September 2024).
Source: U.S. Federal Aviation Administration, Traffic Flow Management System Counts (TFMSC), August 2024; U.S. Federal Aviation Administration, Operations Network (OPSNET) for October 2023 thru December 2023, November 2024; State of Hawaii Department of Transportation, OPSNET for January 2024 thru September 2024, October 2024; ATAC, November 2024 (radar data).

Survey Response by Military

Survey Question	HI Air National Guard	US Coast Guard	HI Army National Guard (HIARNG)
1. Peak Month Average Day (PMAD) Operations			
Peak Month		2023 – March 2024 – March	2023 – June 2024 – June
PMAD Operations		2023 – 8 ops/day 2024 – 8 ops/day	2023 – 6 ops/day 2024 – 6 ops/day
% of PMAD Itinerant Operations		2023 – 90% 2024 – 90%	2023 – 16% 2024 – 16%
% of PMAD Local Operations		2023 – 10% 2024 – 10%	2023 – 84% 2024 – 84%
2. Frequent Aircraft Type During PMAD	C-17A, Globemaster III	Average 4 C130 flights/day Average 4 H65 flights/day *H65 (helicopter) stay in the local area and complete traffic pattern work at JRF	CH-47F Chinook (Helicopter)
3. Based Aircraft	None.	4 C130J 4 H65 (Helicopter)	8 CH-47F Chinook (Helicopter) 1 C-12 Huron
4. Anticipated Aircraft Type Change in 10-Year to 20-Year Period	None.	Change H65s to H60s. (Timeline TBD)	None.

SOURCE: Tenant Surveys, December 2024.

Survey Response by Military

Survey Question	ATC		US Coast Guard	HIRANG
5. Other Comments/Info	• Local aircraft operations are particularly Assault Landing Zone (ALZ) training with night vision equipment. • C-17s assigned to JBPHH operated by members of the 15WG (Active Duty AF) and 154WG (Hawaii Air National Guard) regularly conduct local training at JRF. • Normal operations are Monday – Thursday, except Holidays, from 2015-2145L pending the use of ALZ lighting on an unlit Runway 4R. • Additional training can be accomplished with GA traffic in the pattern but not ideal. • JBPHH C-17s arrive and depart on either a VFR or IFR clearances dependent on pre or post training requirements.	• 1 training event = 1 arrival and 1 departure, i.e. 2 runway passes • Max # of training events per training day would be 15, or 30 runway passes. • 4 days of training/week = 120 runway passes/week max - Although we rarely get all of the required training events done within any given training day due to other traffic and time on station requirements. • No training on federal holidays and some PACAF no fly days. • Planning factor – max number of runway passes per any given year is approximately 5,500.	None	• Itinerant aircraft include: LUH-72A Lakota UH-60M Blackhawk HH-60M Blackhawk

NOTE: PMAD – Peak Month Average Day
SOURCE: Tenant Surveys, December 2024.

Preliminary Findings Summary & Next Steps

- Recommend use of calibrated data to FAA OPSNET Military/GA Split for baseline year
- Preliminary Findings for the Critical Design Aircraft at JRF:
  - for Airfield Planning: **C130 Super Hercules (ADG C-IV)**
  - For FAA federal funds (AIP/PFC): **ADG A-II aircraft (May need to consider B-II)**

- Notes: Federal law does not allow FAA to fund projects that solely benefit another federal agency[1/]
  - When an airport sponsor anticipate requesting AIP grant funds or PFC revenues for airport projects, a critical aircraft determination must consider civil aircraft activity only.
  - When calculating the amount of FAA federal funds that can be considered for airport projects, the difference in design requirements (if the project is to be built for both civil and military aircraft needs) will be considered and the costs will be prorated accordingly.

- Conduct Aviation Activity Forecast ~60 days including HDOT review

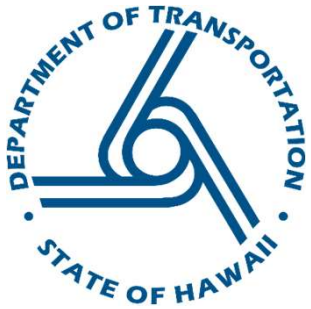
- HDOT to Submit JRF Aviation Activity Forecast to FAA for Review Approval ~ 90 days

NOTE:
1/ FAA AC 150/5000-17, *Critical Aircraft and Regular Use Determination,* Section 2.4.




Thank you


STATE OF HAWAII
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DEPARTMENT OF TRANSPORTATION
STATE OF HAWAII

APPENDIX C FORECAST METHODOLOGY

C.1 BASELINE FOR THE GENERAL AVIATION SOCIOECONOMIC REGRESSION MODEL

This appendix provides additional information regarding the general aviation (GA) operations forecast. **Table C-1** presents a high-level overview of the process for selecting a historical period as the basis for socioeconomic regression models. Socioeconomic data and projections provided by Woods & Poole Economics, Inc. (Woods & Poole) for the United States (US), Hawaii, and the Air Trade Area (ATA, defined as the Urban Honolulu, Hawaii, Metropolitan Statistical Area) were assessed to determine the period serving as the regression model basis. These were used as historical Woods & Poole data were available for all variables in all calendar years (CYs) in which full-year Federal Aviation Administration (FAA) Operations Network activity data were available. As highlighted in the table, socioeconomic regression modeling using the period from CY 2010 to CY 2023 as the time period basis yielded the highest share of socioeconomic relationships, with an adjusted R^2 value of 0.70 or higher; i.e., this is the period with the highest occurrence of strong predictive relationships and the highest average R^2 value inclusive of all socioeconomic relationships, as well as a relatively high average R^2 value inclusive of only valid socioeconomic relationships and relatively low difference between the average of all regression relationships and valid regression relationships.

TABLE C-1 COMPARISON OF SOCIOECONOMIC REGRESSION RESULTS BY TIME PERIOD – WOODS & POOLE ECONOMICS, INC.

START YEAR	SHARE OF SOCIOECONOMIC VARIABLES MEETING R^2 THRESHOLD	ADJUSTED R^2 VALUE			FORECAST CAGR (CY 2024 – CY 2045)
		ALL SOCIOECONOMIC VARIABLES	SOCIOECONOMIC VARIABLES MEETING R^2 THRESHOLD	DIFFERENCE	
CY 2006	19.0%	0.43	0.71	-0.28	2.5%
CY 2007	38.1%	0.49	0.76	-0.27	2.7%
CY 2008	38.1%	0.48	0.75	-0.27	2.7%
CY 2009	38.1%	0.48	0.75	-0.28	2.8%
CY 2010	**42.9%**	**0.49**	**0.78**	**-0.29**	**2.9%**
CY 2011	33.3%	0.45	0.78	-0.33	3.0%
CY 2012	33.3%	0.42	0.77	-0.35	3.1%
CY 2013	28.6%	0.39	0.77	-0.37	3.2%
CY 2014	33.3%	0.43	0.82	-0.39	3.6%
CY 2015	28.6%	0.41	0.83	-0.42	3.9%
CY 2016	23.8%	0.36	0.82	-0.46	4.5%
CY 2017	14.3%	0.26	0.80	-0.54	4.5%

NOTES:
CAGR – compound annual growth rate; CY – calendar year.
Calendar year (CY) 2023, the most recent complete CY with available socioeconomic and aviation activity data, serves as the end year for all time periods. CY – CY 2023 regressions yielded no valid regressions and are excluded from the table.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic data and projections); Ricondo & Associates, Inc., February 2025 (analysis).

Tables C-2 through **C-5** present the results of the GA operations regression analysis for socioeconomic variables included in the forecast model. Woods & Poole data for the US, Hawaii, and the ATA, respectively, are presented in Tables C-2 through C-4, and State of Hawaii Department of Business, Economic Development & Tourism data for Hawaii and the ATA are presented in Table C-5. Historical socioeconomic variable data and GA activity are presented along with the slope, intercept, and adjusted R^2 value from the regression analysis, and the resulting forecast compound annual growth rates. For the purposes of regression modeling, adjusted R^2 was calculated using the following equation, where R^2 represents the coefficient of determination for regression modeling, N represents the total sample size, and p represents the number of independent variables:

$$1 - \frac{(1 - R^2) * (N - 1)}{(N - p - 1)} = adjusted\ R^2$$

No years were excluded, nor were any dummy variables included in the Woods & Poole regression analysis, as during the COVID-19 pandemic GA activity remained relatively consistent with non-pandemic activity. As noted in Section 3.3, State of Hawaii Department of Business, Economic Development & Tourism air visitor data includes all visitor segments, and dummy variables were incorporated into regression models for the pandemic recovery period (CY 2020 through CY 2023) to account for outlier data not consistent with historical activity patterns.

C.2 OPERATIONAL FLEET MIX DEVELOPMENT

The *FAA Aerospace Forecasts: Fiscal Years 2024–2044* is a forecast of national aviation activity that includes forecasts of several components of aviation activity, such as GA activity and fleet by powerplant type. Trend analysis was used to develop powerplant type forecasts for GA operations at Kalaeloa Airport (JRF or the Airport) based on the base year fleet mix and the FAA fleet projections. Currently, piston aircraft represent the majority of GA activity at the Airport. Also, jet hours flown are forecast to grow at a higher rate than hours for other aircraft types nationally, as presented in **Table C-6**, while piston operations are forecast to grow at a slower rate than overall GA activity. When applied to the annual operations by powerplant type, the growth forecast indicates a change in the share of piston aircraft GA operations at JRF. While these aircraft represent most GA and other air taxi activity, the share represented by these aircraft is forecast to decrease throughout the forecast period due to the forecast trends.

TABLE C-2 GENERAL AVIATION OPERATIONS REGRESSION ANALYSIS FOR THE UNITED STATES – WOODS & POOLE ECONOMICS, INC.

CALENDAR YEAR	GENERAL AVIATION AIRCRAFT OPERATIONS	TOTAL POPULATION[1]	TOTAL EMPLOYMENT[1]	TOTAL EARNINGS[2]	TOTAL PERSONAL INCOME[2]	NET EARNINGS[2]	TOTAL PERSONAL INCOME PER CAPITA	GROSS REGIONAL PRODUCT[2]
2010	89,925	309,382	172,902	$9,969,636	$13,862,498	$8,888,060	$44,807	$16,511,322
2011	95,225	311,861	176,092	$10,176,702	$14,331,083	$9,194,136	$45,953	$16,689,513
2012	96,243	314,371	178,980	$10,424,645	$14,709,786	$9,424,431	$46,791	$17,074,008
2013	109,696	316,765	182,328	$10,629,008	$14,682,748	$9,481,798	$46,352	$17,466,806
2014	99,100	319,295	186,240	$10,928,506	$15,216,235	$9,746,207	$47,656	$17,953,808
2015	101,242	321,851	190,326	$11,346,284	$15,896,477	$10,113,480	$49,391	$18,596,359
2016	94,239	324,378	193,426	$11,508,971	$16,162,082	$10,253,262	$49,825	$18,910,750
2017	107,471	326,611	196,394	$11,848,205	$16,658,962	$10,553,893	$51,005	$19,368,509
2018	140,006	328,526	200,292	$12,189,079	$17,163,074	$10,860,287	$52,243	$19,999,274
2019	140,290	330,222	201,635	$12,548,276	$17,721,060	$11,177,671	$53,664	$20,529,773
2020	158,025	331,527	195,287	$12,575,166	$18,741,325	$11,196,293	$56,530	$19,998,314
2021	146,106	332,049	202,752	$13,099,002	$19,626,253	$11,675,749	$59,107	$21,264,626
2022	162,283	333,271	212,442	$13,105,445	$18,803,588	$11,644,967	$56,421	$21,788,014
2023	186,377	334,915	216,167	$13,627,217	$19,522,869	$12,148,207	$58,292	$22,642,585
REGRESSION RESULTS								
Adjusted Coefficient of Determination (R^2)		0.73	0.74	0.82	0.81	0.83	0.81	0.81
Slope		3.21	2.09	0.02	0.01	0.03	5.88	0.01
Intercept		-917,201.70	-280,878.42	-159,622.22	-115,880.84	-168,729.94	-178,092.32	-158,886.06
CAGR (2024 – 2045)		3.0%	2.5%	3.1%	3.1%	3.2%	2.6%	3.1%

NOTES:
CAGR – compound annual growth rate.
1 In thousands.
2 In millions of 2017 US dollars.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic data); US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Ricondo & Associates, Inc., February 2025 (analysis).

TABLE C-3 GENERAL AVIATION OPERATIONS REGRESSION ANALYSIS FOR THE STATE OF HAWAII – WOODS & POOLE ECONOMICS, INC.

CALENDAR YEAR	GENERAL AVIATION AIRCRAFT OPERATIONS	TOTAL POPULATION[1]	TOTAL EMPLOYMENT[1]	TOTAL EARNINGS[2]	TOTAL PERSONAL INCOME[2]	NET EARNINGS[2]	TOTAL PERSONAL INCOME PER CAPITA	GROSS REGIONAL PRODUCT[2]
2010	89,925	1,365	824	$45,234	$62,586	$40,035	$45,850	$73,881
2011	95,225	1,385	835	$45,740	$63,819	$40,917	$46,077	$74,441
2012	96,243	1,405	849	$46,810	$64,698	$41,910	$46,039	$76,063
2013	109,696	1,424	868	$47,596	$64,714	$41,944	$45,460	$77,839
2014	99,100	1,435	883	$48,723	$67,114	$43,109	$46,783	$79,049
2015	101,242	1,447	901	$51,071	$70,094	$45,214	$48,446	$83,485
2016	94,239	1,457	915	$52,291	$71,980	$46,349	$49,391	$85,379
2017	107,471	1,459	921	$53,397	$73,646	$47,323	$50,493	$87,217
2018	140,006	1,460	924	$53,925	$73,757	$47,768	$50,511	$88,519
2019	140,290	1,457	914	$54,987	$75,886	$48,676	$52,084	$88,793
2020	158,025	1,451	818	$51,371	$79,095	$45,431	$54,504	$78,879
2021	146,106	1,447	861	$53,620	$81,603	$47,503	$56,404	$83,574
2022	162,283	1,439	904	$52,963	$76,673	$46,749	$53,267	$85,247
2023	186,377	1,435	920	$54,911	$78,532	$48,684	$54,721	$88,433
REGRESSION RESULTS								
Adjusted Coefficient of Determination (R^2)		0.13	-0.01	0.46	0.66	0.45	0.72	0.26
Slope		471.14	213.16	6.47	4.13	7.40	7.24	3.29
Intercept		-551,976.67	-64,537.58	-205,866.27	-172,607.24	-210,557.34	-238,599.68	-147,320.93
CAGR (2024 – 2045)		NA	NA	NA	NA	NA	2.9%	NA

NOTES:
CAGR – compound annual growth rate; NA – not applicable.
1 In thousands.
2 In millions of 2017 US dollars.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic data); US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Ricondo & Associates, Inc., February 2025 (analysis).

TABLE C-4 GENERAL AVIATION OPERATIONS REGRESSION ANALYSIS FOR THE AIR TRADE AREA – WOODS & POOLE ECONOMICS, INC.

CALENDAR YEAR	GENERAL AVIATION AIRCRAFT OPERATIONS	TOTAL POPULATION[1]	TOTAL EMPLOYMENT[1]	TOTAL EARNINGS[2]	TOTAL PERSONAL INCOME[2]	NET EARNINGS[2]	TOTAL PERSONAL INCOME PER CAPITA	GROSS REGIONAL PRODUCT[2]
2010	89,925	957	596	$35,341	$47,545	$31,275	$49,657	$56,168
2011	95,225	974	604	$35,793	$48,529	$32,005	$49,848	$56,924
2012	96,243	989	613	$36,524	$49,062	$32,674	$49,590	$57,740
2013	109,696	1,003	625	$37,126	$48,917	$32,702	$48,791	$58,878
2014	99,100	1,009	635	$37,917	$50,624	$33,518	$50,167	$59,803
2015	101,242	1,018	648	$39,587	$52,616	$35,004	$51,688	$62,869
2016	94,239	1,024	658	$40,457	$53,966	$35,824	$52,684	$64,052
2017	107,471	1,023	659	$41,085	$54,939	$36,376	$53,703	$65,253
2018	140,006	1,022	658	$41,239	$54,695	$36,504	$53,522	$65,664
2019	140,290	1,019	645	$41,738	$55,866	$36,920	$54,824	$65,385
2020	158,025	1,012	584	$39,576	$58,312	$34,966	$57,598	$59,032
2021	146,106	1,004	608	$40,546	$59,168	$35,843	$58,922	$61,819
2022	162,283	995	635	$39,904	$55,715	$35,168	$56,004	$62,595
2023	186,377	989	647	$41,449	$57,163	$36,720	$57,775	$65,103
REGRESSION RESULTS								
Adjusted Coefficient of Determination (R^2)		-0.06	-0.08	0.36	0.60	0.34	0.72	0.16
Slope		206.33	64.88	9.07	6.48	10.40	7.89	4.36
Intercept		-83,601.33	82,451.53	-232,021.73	-222,342.36	-237,236.24	-296,261.24	-145,187.42
CAGR (2024 – 2045)		NA	NA	NA	NA	NA	3.2%	NA

NOTES:
CAGR – compound annual growth rate; NA – not applicable.
1 In thousands.
2 In millions of 2017 US dollars.
SOURCES: Woods & Poole Economics, Inc., February 2025 (socioeconomic data); US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), January 2025 (historical operations data); Ricondo & Associates, Inc., February 2025 (analysis).

TABLE C-5 GENERAL AVIATION OPERATIONS REGRESSION ANALYSIS FOR THE STATE OF HAWAII AND THE AIR TRADE AREA – STATE OF HAWAII DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

CALENDAR YEAR	GENERAL AVIATION AIRCRAFT OPERATIONS	DUMMY VARIABLE	STATE OF HAWAII			AIR TRADE AREA		
			VISITOR ARRIVALS BY AIR	VISITOR DAYS BY AIR ARRIVALS	VISITOR EXPENDITURE BY AIR ARRIVALS[1]	VISITOR ARRIVALS BY AIR	VISITOR DAYS BY AIR ARRIVALS	VISITOR EXPENDITURE BY AIR ARRIVALS[1]
2010	89,925		6,917	64,951	$12,137	4,274	31,467	$6,167
2011	95,225		7,174	67,826	$12,931	4,402	32,477	$6,717
2012	96,243		7,867	73,664	$14,945	4,904	35,864	$8,079
2013	109,696		8,003	74,050	$14,933	5,044	35,060	$7,656
2014	99,100		8,196	75,269	$15,191	5,193	35,201	$7,564
2015	101,242		8,563	78,086	$15,336	5,340	36,421	$7,562
2016	94,239		8,822	79,669	$16,030	5,447	36,968	$7,469
2017	107,471		9,278	83,608	$16,622	5,683	38,348	$7,598
2018	140,006		9,761	87,725	$17,120	5,862	40,479	$7,812
2019	140,290		10,243	89,692	$17,056	6,154	41,828	$7,863
2020	158,025	TRUE	2,678	28,517	$5,423	1,506	12,830	$2,412
2021	146,106	TRUE	6,778	65,312	$12,012	3,327	26,898	$5,224
2022	162,283	TRUE	9,139	84,736	$14,689	4,858	36,169	$6,498
2023	186,377	TRUE	9,488 [2]	85,596 [2]	$14,720 [3]	5,615 [2]	40,628 [2]	$6,403 [3]
REGRESSION RESULTS								
Adjusted Coefficient of Determination (R^2)			0.74	0.72	0.71	0.76	0.74	0.67
Slope of Socioeconomic Variable			5.72	0.64	3.53	10.56	1.53	6.42
Intercept			58,790.75	57,890.77	53,555.47	52,134.68	51,754.26	59,516.53
CAGR (2024 – 2045)			0.5%	0.5%	0.3%	0.3%	0.3%	NA

NOTES:

CAGR – compound annual growth rate; NA – not applicable.

1 Expenditure by air arrivals is presented in millions of 2017 US dollars. Historical data provided by the State of Hawaii Department of Business, Economic Development & Tourism are presented in millions of 2017 US dollars, converted to annual growth rates using US Census Bureau inflation indices to allow for comparison of historical and projected socioeconomic data.

2 Historical period projections are provided by the State of Hawaii Department of Business, Economic Development & Tourism.

3 Historical period projections are based on growth rates developed from most recent historical data provided by the State of Hawaii Department of Business, Economic Development & Tourism and available projection interval years.

SOURCES: State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (historical and projected socioeconomic data); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (analysis).

TABLE C-6 CHANGE IN GENERAL AVIATION HOURS FLOWN – UNITED STATES

FEDERAL FISCAL YEAR	PISTON	TURBOPROP	JET	HELICOPTER
Historical				
2014	-3.1%	1.0%	11.3%	10.0%
2015	7.2%	-2.9%	-1.1%	1.6%
2016	5.6%	6.7%	0.2%	-5.0%
2017	0.3%	-3.1%	5.7%	6.1%
2018	1.5%	4.2%	13.0%	-12.0%
2019	4.7%	-4.3%	-14.5%	2.5%
2020	-10.3%	-10.5%	-15.0%	-19.6%
2021	10.5%	16.0%	45.9%	14.4%
2022	0.9%	4.6%	7.6%	0.7%
2023	-1.9%	3.0%	2.2%	2.9%
2024	-1.6%	2.1%	2.3%	2.9%
Forecast				
2025	-2.1%	1.6%	2.5%	2.7%
2026	-2.1%	1.0%	2.7%	2.6%
2027	-1.5%	0.8%	2.8%	2.6%
2028	-1.0%	0.6%	2.8%	2.5%
2029	-0.9%	0.7%	3.0%	2.4%
2030	-0.8%	0.8%	2.7%	2.3%
2031	-0.8%	0.8%	2.8%	2.2%
2032	-0.5%	0.9%	2.8%	2.1%
2033	-0.6%	0.9%	2.8%	2.2%
2034	-0.5%	1.0%	2.6%	2.0%
2035	-0.5%	1.0%	2.5%	2.0%
2036	-0.7%	1.1%	2.6%	1.9%
2037	-0.6%	1.1%	2.7%	1.9%
2038	-0.5%	1.1%	2.4%	1.9%
2039	-0.4%	1.3%	2.3%	1.8%
2040	-0.4%	1.3%	2.4%	1.8%
2041	-0.3%	1.4%	2.3%	1.8%
2042	-0.1%	1.3%	2.3%	1.7%
2043	-0.1%	1.4%	2.0%	1.7%
2044	-0.2%	1.5%	2.0%	1.6%

SOURCES: US Department of Transportation, Federal Aviation Administration, *FAA Aerospace Forecasts: Fiscal Years 2024–2044*, February 2025 (general aviation hours flown forecast); Ricondo & Associates, Inc., February 2025 (analysis).

APPENDIX D FORECAST YEAR FLEET MIX CHARACTERISTICS AND RUNWAY UTILIZATION DATA BY RDC BY CIVILIAN VS. MILITARY AIRCRAFT OPERATIONS

TABLE D-1 FORECAST YEAR FLEET MIX CHARACTERISTICS AND CRITICAL AIRCRAFT - CIVILIAN AIRCRAFT OPERATIONS

AIRPLAINE DESGIN GROUP	AIRCRAFT APPROACH CATEGORY						
	A	B	C	D	HELICOPTER	UNKNOWN[1]	TOTAL
I	272,172	206	32	0	*NA*	*NA*	272,410
II	1,561	1,073	105	50	*NA*	*NA*	2,789
III	0	7	433	47	*NA*	*NA*	487
IV	0	22	115	32	*NA*	*NA*	169
V	0	0	22	0	*NA*	*NA*	22
Helicopter	*NA*	*NA*	*NA*	*NA*	38,381	*NA*	38,381
Unknown[1]	*NA*	*NA*	*NA*	*NA*	*NA*	7,438	7,438
Total[2]	**273,733**	**1,308**	**707**	**130**	**38,381**	**7,438**	**321,696**

NOTES:
1 Includes operations with unknown powerplant types based on base year operations data.
2 Total may not add due to rounding.

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); US Department of Transportation, Federal Aviation Administration, FAA Aerospace Forecasts: Fiscal Years 2024–2044, February 2025 (general aviation fleet mix trends).

TABLE D-2 FORECAST YEAR CRITICAL AIRCRAFT BY RUNWAY – MILITARY AIRCRAFT

AIRPLAINE DESGIN GROUP	AIRCRAFT APPROACH CATEGORY						
	A	B	C	D	HELICOPTER	UNKNOWN[1]	TOTAL
I	0	0	0	0	*NA*	*NA*	0
II	223	0	2	0	*NA*	*NA*	225
III	0	0	11	54	*NA*	*NA*	65
IV	0	886	3,882	0	*NA*	*NA*	4,768
V	0	0	0	0	*NA*	*NA*	0
Helicopter	*NA*	*NA*	*NA*	*NA*	13,484	*NA*	13,484
Unknown[1]	*NA*	*NA*	*NA*	*NA*	*NA*	80	80
Total[2]	**223**	**886**	**3,895**	**54**	**13,484**	**80**	**18,622**

NOTES:

1 Includes operations with unknown powerplant types based on base year operations data.

2 Total may not add due to rounding.

SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024 (historical operations data); Woods & Poole Economics, Inc., February 2025 (socioeconomic indicator growth rates); State of Hawaii, Department of Business, Economic Development & Tourism, February 2025 (socioeconomic indicator growth rates); US Department of Commerce, US Census Bureau, Current versus Constant (or Real) Dollars, February 2025 (inflation indices); Ricondo & Associates, Inc., February 2025 (general aviation operations forecast); US Department of Transportation, Federal Aviation Administration, 2024 Terminal Area Forecast, January 2025 (military operations forecast growth rate); US Department of Transportation, Federal Aviation Administration, FAA Aerospace Forecasts: Fiscal Years 2024–2044, February 2025 (general aviation fleet mix trends).

TABLE D-3 FORECAST YEAR CRITICAL AIRCRAFT BY RUNWAY – CIVILIAN AIRCRAFT OPERATIONS

RDC	11-29	04L-22R	04R-22L	TOTAL
A-I	23,636	117,457	131,079	272,172
A-II	288	692	581	1,561
B-I	70	47	88	206
B-II	35	114	924	1,073
B-III	0	0	7	7
B-IV	0	0	21	22
C-I	7	0	25	32
C-II	13	0	91	105
C-III	61	20	351	433
C-IV	1	0	114	115
C-V	11	0	11	22
D-II	0	0	50	50
D-III	5	2	40	47
D-IV	0	0	32	32
Helicopter	7,553	23,260	7,569	38,381
Unknown[1]	1,801	1,036	4,601	7,438
Unknown-II[2]	0	0	0	0
Total[3]	**33,482**	**142,629**	**145,586**	**321,696**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
2 Unknown II aircraft have an airplane design group (ADG) designation, but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
3 Total may not add due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).

TABLE D-4 FORECAST YEAR CRITICAL AIRCRAFT BY RUNWAY – MILITARY AIRCRAFT OPERATIONS

RDC	11-29	04L-22R	04R-22L	TOTAL
A-I	0	0	0	0
A-II	41	99	83	223
B-I	0	0	0	0
B-II	0	0	0	0
B-III	0	0	0	0
B-IV	0	3	883	886
C-I	0	0	0	0
C-II	0	0	1	2
C-III	2	1	9	11
C-IV	24	8	3,850	3,882
C-V	0	0	0	0
D-II	0	0	0	0
D-III	6	2	46	54
D-IV	0	0	0	0
Helicopter	2,654	8,172	2,659	13,484
Unknown[1]	15	9	39	64
Unknown-II[2]	10	7	0	16
Total[3]	**2,752**	**8,300**	**7,570**	**18,622**

NOTES:
NA – Not Applicable
1 Includes operations with unknown powerplant types based on base year operations data.
2 Unknown II aircraft have an airplane design group (ADG) designation, but no aircraft approach category (AAC) or approach speeds identified. Unknown II aircraft may likely include vertical take-off and landing (VTOL) aircraft or similar characteristics.
3 Total may not add due to rounding.
SOURCES: US Department of Transportation, Federal Aviation Administration, Operations Network (OPSNET), December 2024; ATAC Corporation, November 2024 (radar data); Ricondo & Associates, Inc., December 2024 (analysis).