

4. Forecast of Aviation Demand

Table 4.21 General Aviation Forecast Summary					
Operations (Total)	2021	2026	2031	2036	2041
Total	12,605	13,446	14,343	15,299	16,320
Operations (Aircraft Type)	2021	2026	2031	2036	2041
Single Engine	7,185	7,664	8,175	8,720	9,303
Jet	4,034	4,303	4,590	4,896	5,222
Multi-Engine	630	672	717	765	816
Rotorcraft	756	807	861	918	979
Operations (Aircraft ARC)	2021	2026	2031	2036	2041
A-I	5,925	6,320	6,741	7,190	7,671
A-II	1,387	1,479	1,578	1,683	1,795
B-I	504	538	574	612	653
B-II	2,647	2,824	3,012	3,213	3,427
B-III	0	0	0	0	0
C-I	252	269	287	306	326
C-II	756	806	860	918	980
C-III	252	269	287	306	326
C-IV	0	0	0	0	0
D-I	0	0	0	0	0
D-II	126	134	143	153	163
D-III	0	0	0	0	0
Operations (Mix)	2021	2026	2031	2036	2041
Itinerant	8,193	8,740	9,323	9,945	10,608
Local	4,412	4,706	5,020	5,354	5,712
Based Aircraft	2021	2026	2031	2036	2041
Total	84	90	96	102	109

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4.14 CRITICAL AIRCRAFT

The development of airport facilities is driven by both the demand for those facilities and the types of aircraft expected to make use of those facilities. The critical aircraft is the most demanding aircraft with at least 500 annual operations at the airport, and determination of the critical aircraft is an important aspect of the forecast as it defines the FAA standards used for planning and design. An accurate determination of the critical aircraft ensures appropriate development of airport facilities, including runway, taxiway, and apron areas.

The critical aircraft is not a decision to be made, but a determination based on actual operations at the airport. The forecast of aviation demand and critical aircraft determination are approved by the FAA based on information presented and industry trends.

Instrument flight plans filed with the FAA and photographs from motion-activated cameras indicated that Heber Valley Airport operations in the ARC C-II category exceed the FAA defined regular use threshold of 500 annual operations. The 2015 camera data showed 518 annual operations being performed by C-II category aircraft, while the 2019 camera data showed 634 annual operations being performed by C-II category aircraft (**Table 4.16**). This forecast showed 756 operations by aircraft in the C-II category in 2021, which increases to 979 operations in 2041 (**Table 4.21**).

The critical aircraft for Heber Valley Airport was determined to be the Bombardier Challenger 350 (or CL35), a C-II business jet aircraft which was captured over 100 times by the motion-activated cameras placed on the airfield. Additionally, FBO landing records and TFMSC data verified the CL35's regular use of the airport. (Regular use being defined by the FAA as at least 500 annual operations.) The specifications for this aircraft can be seen in **Table 4.22**.

In addition to conducting frequent operations at the airport, the CL35, shown in **Figure 4.14**, is among the top ten aircraft for domestic business jet operations with steadily increasing numbers, according to FAA Business Jet Reports.⁶ Because the airport is expected to remain an ARC C-II airport throughout the planning period, the CL35 is both the existing and future critical aircraft.

Table 4.22 Aircraft Characteristics

Specification	Bombardier Challenger 350 (CL35)
Wingspan	69 feet
Tail Height	20 feet
Approach Speed	125 knots
Maximum Takeoff Weight	40,600 pounds
Aircraft Approach Category (AAC)	C
Airplane Design Group (ADG)	II

Source: FAA Aircraft Characteristics Database

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Figure 4.14 Bombardier Challenger 350 (CL35)



4.15 FORECAST CONCLUSION

The critical aircraft determination is an important aspect of airport planning and design for federally obligated airports. It sets dimensional requirements on an airport, such as the separation distance between taxiways and runways, and the size of certain areas protecting the safety of aircraft operations and passengers. An accurate critical aircraft determination helps ensure proper development and appropriate federal investment in airport facilities. Additionally, an accurate critical aircraft determination matches aircraft operational area dimensions to the most demanding aircraft (or group of aircraft) that regularly uses the runway, taxiways, and apron areas. Regular use is defined as at least 500 annual operations.

This forecast examined a variety of data sources to identify current and projected aircraft traffic levels and types at the Heber Valley Airport in the short, medium, and long term, taking into consideration industry trends, local socioeconomic and demographic conditions, and national and state forecasts. This study determined that HCR is currently an ARC C-II facility and that it will remain a C-II facility throughout the 20-year planning period.

A designation of ARC C-II is an ARC upgrade from the ARC of B-II established in previous planning studies. **Table 4.26** provides a summary of airport design elements affected by this upgrade, which will be discussed in greater detail in the following chapter.

Table 4.26 ARC Upgrade FAA Design Standards

ARC Upgrade	Changes in Airport Design Standards
B-II to C-II	<ul style="list-style-type: none"> • Increase in crosswind component • Increase runway separation standards • Increase Runway Protection Zone (RPZ) dimensions • Increase runway design standards • Increase surface gradient standards

Source: FAA AC 150/5300-13A, Airport Design

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REFERENCES

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