Freight Element

The movement of goods through and between communities is often overlooked, but these freight activities play a vital role in our economy. A safe and efficient system that accommodates the needs of freight is an important element to consider during Sumter's long-range transportation planning process.

Freight has been an important part of life in Sumter since the original King's Highway (SC 261) connected the larger cities of Camden and Charleston. Freight between Sumter and Charleston traveled by road and ferry until the railroad arrived in the mid-19th century. The growth of the railroad improved freight mobility and contributed significantly to the local and regional economy. Today, freight continues to move through the area by rail, but the expansion of the interstate highway system in the region has shifted much of the dependence from rail to trucks. An effective transportation network combines all modes of freight movement to achieve a level of efficiency that ensures the marketplace can operate without interruption.

The economy of the SUATS MPO area depends on the movement of goods through the SUATS MPO area and High Hills region. To better understand the existing conditions and needs of freight providers in the SUATS MPO area, a brief survey was distributed to more than 170 companies as part of the *SUATS Long Range Transportation Plan* process. More detailed information was obtained through phone interviews with several freight operators.

Highway and Rail Freight Trends

Trucks and rail account for 64% of the nation's domestic freight volume, up from 57% in 1960. The balance is carried by pipelines, waterways, air, and multiple modes. Over the same period, rail freight has fallen slightly, from 38% to 37% of volume, while truck volumes have risen from 19% to 28%. In terms of total ton mileage, freight railroads have gained more than the other modes.

In 2007, trucks moved 749 million tons of goods (imports and exports) while freight railroads moved 279 million tons. Trucks will continue to be used as the most common mode of transporting goods through 2040 as projected. (Table 2-7, Office of Freight Management and Operations, Freight Facts and Figures 2012, FHWA, USDOT)

For decades, the nation's freight railroads have been losing market shares to highway freight (trucks). This trend has led to increased levels of traffic congestion on our nation's freeways and highways. It is logical to assume that the continued loss of rail freight market shares to trucks would have a more significant impact because of the difficulty of building new highway capacity through the most congested travel corridors.

Existing Conditions

Highways

Freight movements originating in Sumter travel along the area's US highways and major arterials to the region's network of interstate highways. Sumter is strategically located in the heart of a triangle formed by three interstates: I-95, I-20, and I-26. The primary north-south route is US 15, which connects Sumter to I-20 to the north and I-95 to the south. Sumter Industrial Complex, the area's largest industrial park, lies just west of US 15 south of Sumter. US 521 provides an alternate connection to I-95 and points south. Movements east and west rely on the network of roads near downtown as well as the US 76-378 Bypass (Robert Graham Freeway). US 76-378 connects Sumter with Columbia to the west. To the east, US 378 connects Sumter to I-95 before continuing to Myrtle Beach. According to the freight survey, Alice Drive and Guignard Drive also are used for freight.

The freight surveys re-emphasized the critical regional connections to interstate highways provided by these highways. The surveys, however, provided a range of opinions on the challenges facing freight providers and the weak links in the transportation system. In particular, respondents noted the lack of a true bypass around Sumter and the difficulty in getting from north of Sumter to the industrial areas south of the city without traveling through the downtown area. Specific comments from the freight survey included:

- "The bypass does not operate as a true bypass."
- "It's very difficult to get from the north side of Town to the industrial areas on the south side of Town without traveling through the downtown area. This can be problematic due to the traffic congestion and the roadway geometry."
- "The lack of effective access to the east-west routes such as I-20 and I-26 is a challenge, though access to I-95 is relatively easy."
- "Roadway construction has not kept pace with the increasing travel demands in the area."
- "The weakest link is the poor condition of the roadways and bridges in the state. I don't think the Sumter area receives a "fair" share of the funding for roadways."
- "Many of the roadways in the area are not suitable for 18-wheel vehicles."
- "Since most of the roadways in the area lead to the bypass, there are few alternatives when selecting routes."

Rail

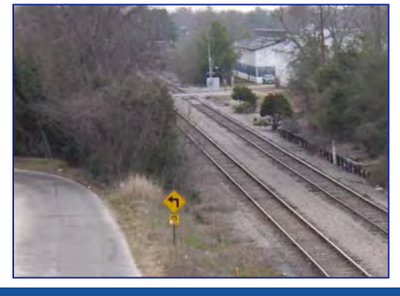
The existing rail network in the SUATS MPO area includes track owned and operated by two major railroad companies (CSX Corporation and Norfolk-Southern Railway Company) as well as the U.S. government. **Figure 8.1** shows the existing rail network in the study area. CSX Corporation provides freight rail service to the heart of Sumter with three railroad lines approaching downtown from the south, southwest, and west. These lines are part of the company's 1,300 miles of railroad in South Carolina that links Sumter with the state's major cities. The more than 22,000 miles of CSX track that blanket the eastern United States connects Sumter to major cities from Canada to southern Florida and as far west as St. Louis.

The Norfolk-Southern Railway Company has a single line just west of the study area that runs north to Columbia and south to Charleston. Like CSX, the Norfolk-Southern line is part of an extensive network of more than 21,000 miles of railroad that connects Sumter with points across the eastern U.S.

The final link in the SUATS MPO area railroad network is owned and operated by the U.S. government. The line owned and operated by the federal government includes a 5-mile railroad spur that connects Shaw AFB with the east-west CSX line at Cane Savanah just west of the city limits. The line's sole purpose is to haul jet fuel to the military base.

Several local companies depend on private rail for importing materials and exporting products. Rail access can be a major selling point to businesses looking to relocate to area. In addition to strengthening the local economy, the use of rail for moving freight has a significant impact on the area's roadways, particularly given the large ports on the South Carolina coast. According to the CSX Corporation, every railcar trip provided by the company removes approximately three truck trips from the state's highways.

Despite the benefits of using rail to move freight, barriers limit the effectiveness in the region. Several respondents to the rail transportation portion of the freight survey ranked costs and equipment availability as fair to poor.



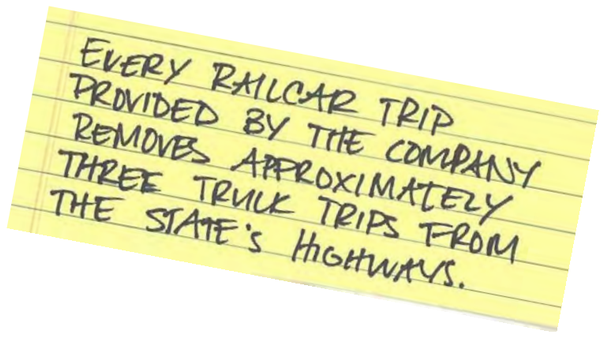


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Figure 8.1
Existing Railroad Facilities and Industrial Parks

- Railroad
- Street
- Dirt Road
- Heavy Industrial Site
- Shaw Air Force Base
- City Limits
- Study Area Boundary
- County Boundary

N

0 0.5 1 2 Miles

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Truck Route Recommendations

Trucks are defined as vehicles with a manufacturer's gross vehicle weight of 33,000 pounds or more. This definition excludes most straight, panel, and delivery trucks, but includes large trucks with more than two axles, such as tractor-trailers and tandem axle dump trucks. This definition also excludes public service vehicles, such as garbage collection trucks.

Upon designation of routes, signs should be posted at the city limits, highway exits, and other appropriate locations directing truck drivers to those streets on which their movements are permitted. Restrictions may include limiting their travel to US and SC routes or designated/signed routes through the city. Within the city limits, consideration could be given to amending the local ordinance to specifically prohibit through trip truck movements on local streets. Prohibition of trucks on any segment of state-maintained roadways will require approval from SCDOT.

Truck designations for major routes and industrial streets could prove beneficial. Those streets critical to the freight community and intended to serve truck traffic are logical selections for truck route designation. These streets include US 76, US 378, US 15, and US 521. Utilization of these routes provides better defined east-west and north-south freight corridors. Likewise, truck traffic should be discouraged on roadways that do not meet the design criteria necessary to facilitate heavy truck traffic.

The *Lafayette Drive Corridor Study*, a by-product of the *SUATS Long-Range Transportation Plan*, created a community-based plan to reinvigorate one of the area's critical north-south corridors. Currently, heavy vehicles are using several facilities throughout Sumter to travel between the Bypass and the various industrial parks. These roads include routes through the central business district that were not intended to facilitate major truck traffic.

Recommendations for wayfinding, signage, and truck route designation include consolidating the current designations into a continuous truck route through the city that utilizes the capacity and geometrics of Lafayette Drive (designated as US 15). From the north, the consolidated truck route would utilize the proposed interchange at US 76/378 before proceeding down Lafayette Drive.

Figure 8.2 displays the proposed truck route designation along Lafayette Drive as well as other truck routes in the study area.

Increased industrial development will require efficient truck access and circulation to the arterial system, ultimately improving freight mobility while limiting cut-through truck traffic in neighboring subdivisions.

Additional tasks associated with establishing a series of truck routes through the urban area include:

- Work with SCDOT to prioritize resurfacing of designated routes in an effort to reduce noise and vibration from trucks.
- Adjust signal timing along high priority routes to allow uninterrupted through movements based on posted speed limits. The result will be improved travel times and reduced noise and air pollution.
- Publish and distribute educational materials to businesses and industries concerning proposed designated truck routes.
- Work with SCDOT to make improvements to critical intersections on truck routes to facilitate and encourage their use by truck operators. Improved turning radii, lane width and the provision of dedicate turn lanes will greatly improve the efficiency and safety of these corridors
- Identify streets in industrial areas that function as industrial collectors and work with stakeholders to evaluate and implement the appropriate cross-section presented in **Chapter 5.**

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Figure 8.2
Proposed Truck Route Designations

- Street
- Dirt Road
- Railroad
- Heavy Industrial Site
- Shaw Air Force Base
- City Limits
- Study Area Boundary
- County Boundary

Truck Route Designation

- US 15
- US 521
- US 15 - US 521
- US 76/378 Bypass
- US 521 - US 76/378 Bypass
- Downtown Service Route

N

0 0.5 1 2 Miles

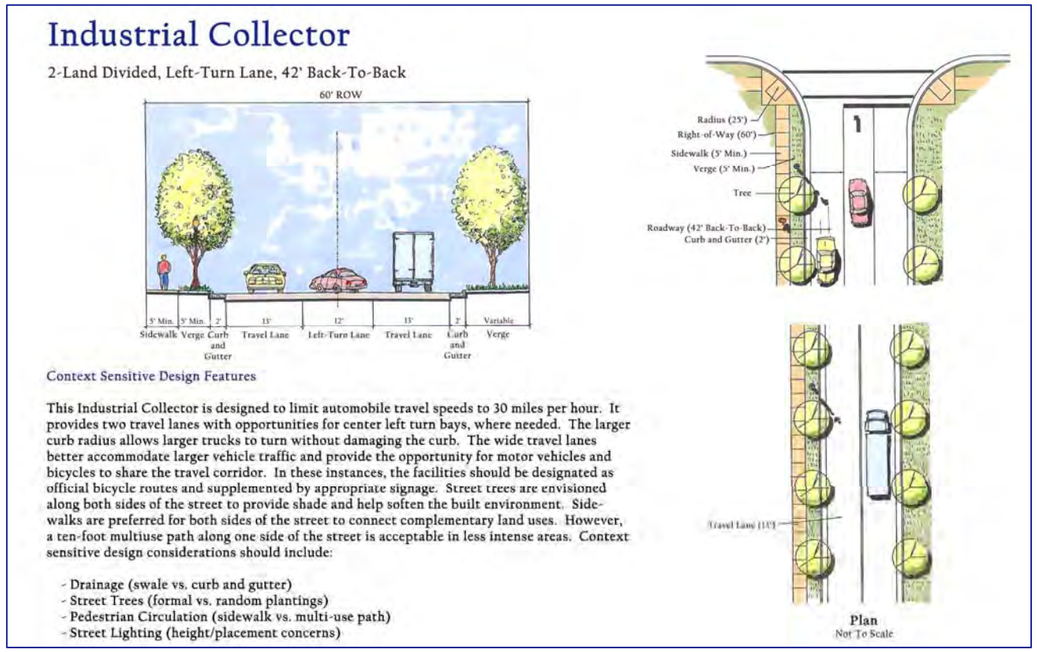
Kimley-Horn and Associates, Inc.

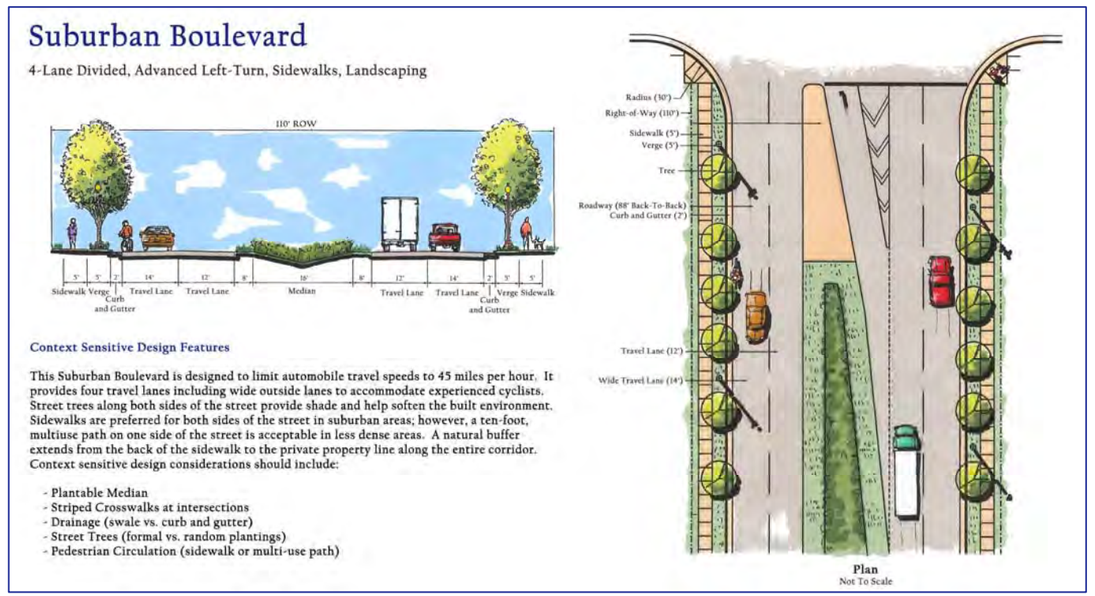
Street Design Considerations

The design of all roadways should be consistent with their intended function and be responsive to the environment through which they pass. This principle is equally important when considering roads designated as truck routes or as industrial collectors where the movements of goods and materials occur with some frequency.

All routes used by trucks, however, are not identical in their design or intended functions. Industrial collectors — such as the one shown in the illustration to the right — require different types and sizes of context-sensitive design features when compared with other street types that may handle limited truck traffic. Common design elements that are a priority for all truck routes include appropriate lane widths, turning radii, and adequate separation for pedestrian facilities. A general set of design considerations for truck routes, including the industrial collector and suburban boulevard examples presented to the right, should include:

- **Edge Treatment** — Curb and gutter preferred; ditch/swale in unincorporated areas
- **Lane Widths** — Minimum 12 feet
- **Bike/Pedestrian Accommodations** — Minimum 5-foot sidewalks and 5-foot verge
- **Design/Posted Speed** — 30-55 mph
- **Turning Radii** — Minimum 25 feet
- **On-Street Parking** — Prohibited within 30 feet of intersections

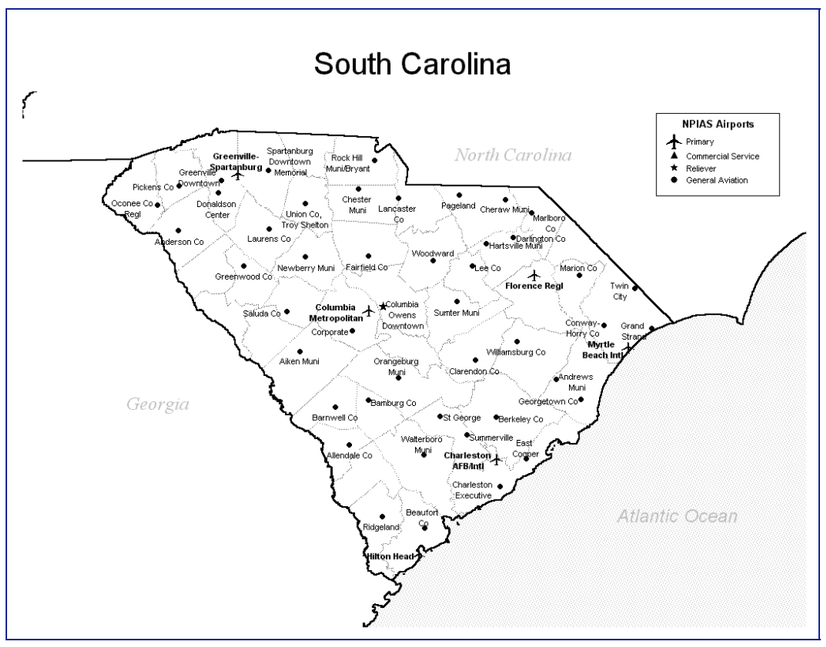




Aviation Element

Airports throughout South Carolina serve the needs of the flying public, whether as passengers on an airline or piloting private passenger or freight aircraft. The state's airports vary in size and function, but each is an important component of the statewide transportation system and vital to the state's economy. While the majority of air passengers travel to and from the state's international airports (Greenville-Spartanburg, Charleston, and Myrtle Beach), many daily trips originate and end at one of the many smaller facilities located throughout South Carolina. In general, airport facilities in South Carolina can be categorized into one of two groups:

- Air carrier airports
- General aviation (GA) airports



South Carolina Airports

Air Carrier — These include the group of facilities that serve regularly scheduled passenger service. They are large facilities with the capacity to handle significant volumes of freight and passengers on a daily basis. The three international airports mentioned above account for the majority of revenue and traffic generated by airports within this classification; however, airports such as Columbia Metropolitan and Hilton Head also qualify under this classification.

General Aviation — These airports include the network of smaller facilities that exist in the majority of counties throughout the state. These facilities typically have paved runways 2,000 feet to 5,500 feet in length and are capable of accommodating small-sized (single engine) and medium-sized (multi-engine) aircraft. These airports often provide opportunities for businesses with suitable aircraft to avoid the use of larger facilities and minimize lag time associated with air travel. They also have proven useful in attracting businesses to communities throughout the state.

Existing Conditions

Sumter Airport is a general aviation facility without scheduled passenger service. The County owns Sumter Airport, which is located in north central Sumter County. **Figure 8.3** illustrates the location of Sumter Airport. The existing conditions and recommendations for this section are derived from the *Sumter Airport Layout Plan* (ALP) Update, which was completed in November 2004.

Sumter Airport Terminal

Sumter Airport (SMS)

Characteristics of the runways, taxiway, and facilities at the airport include:

Airport Facilities

Primary Runway

- Designation — 5/23
- Surface — Asphalt
- Length — 5,500 feet
- Width — 100 feet
- Load Bearing — 26,000 lbs. (single gear); 55,000 lbs. (dual gear)

Sumter Airport Aerial

Secondary Runway

- Designation — 14/32
- Surface — Turf
- Length — 3,180 feet
- Width — 120 feet
- Notes — Accommodates VFR operations only

Taxiway

- Location — Parallel to Runway 5/23
- Surface — Asphalt
- Components — 3 stub connectors and 2 high-speed exits

Lighting and Approach Aids

Lights at Sumter Airport help pilots operate safely and efficiently at night, and runway markings provide vital information to pilots. Sumter Airport provides the following equipment and markings:

- Instrument Landing System (ILS) – In 2009, ILS was installed as a part of infrastructure improvements. Among other electronic devices, a 50 ft. tall antenna was installed on one end of the runway and then on the other end of the runway, an array of antennas about 100 ft. wide were installed.
- Rotating Beacon — 36-inch rotating beacon located adjacent to the clearspan hangar; generally visible from 10 miles; standard colorization
- Runway Edge Lights (5/23) — Medium intensity runway lights (MIRL) outlining perimeter of the runway
- Threshold Lights (5/23) — Split lens lights marking the ends of the runway
- Approach Lights — 5 omni-directional flashing lights located on runway centerline, first light located 300 feet from runway edge followed by the additional 4 lights spaced every 1,500 feet moving away from the runway; 2 omni-directional flashing lights installed at the approach end of both runway ends
- Runway Marking — Centerline markings, runway direction numbers, threshold, aiming point, Touch Down Zone markings; all in good condition
- Notes — Turf runway has strictly visual approaches

Aircraft Storage

The following aircraft storage options are available at Sumter Airport:

- Conventional Hangars — 3 hangars totaling 7,800 square yards; the 100' x 120' facilities operated by Pride Aviation serve as maintenance hangars
- T-Hangars — 3 hangars (30' x 330' and 52' x 230') totaling 30 units

Terminal and Services

The 6,800-square foot Sumter Airport terminal provides a lobby, restrooms, flight planning, vending machines, and management offices. Fixed Based Operator (FBO) services include fuel provided by On Eagles Wings and aircraft maintenance provided by Pride Aviation.

Aircraft Activities

The general aviation operations at Sumter Airport include charter, corporate, and non-scheduled air taxi service. As of 2001, 44 aircraft were based at the airport, including 40 single engine, 2 multi-engine, and 2 rotor aircraft. **Table 8.1** shows based aircraft at Sumter Airport since 1990.

Improvements Since 2007

Several improvements have been made at the Sumter Airport since 2007. These include:

- Runways were restriped
- A new taxiway was added
- The automatic weather reporting system was upgraded
- Instrument Landing System (ILS) was installed

Table 8.1 – Historical Based Aircraft

Year	Single Engine	Multi-Engine	Rotor	Other (Experimental)	Total
1990	27	3	0	0	30
1991	30	4	0	0	34
1992	30	4	0	0	34
1993	30	4	0	0	34
1994	30	4	0	0	34
1995	30	4	0	0	34
1996	32	4	0	0	36
1997	38	3	0	2	43
1998	38	3	0	2	43
1999	35	2	0	2	39
2000	35	2	0	2	39
2001	40	2	2	0	44
2013	52	10	0	0	62

Source: Sumter Airport Staff Updated Information

Shaw AFB

Though not in use by the general public, the air facilities at Shaw AFB provide a major air terminal for personnel and supplies.

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Figure 8.3
Existing Airport

- Sumter Municipal Airport
- Street
- Dirt Road
- Railroad
- Shaw Air Force Base
- City Limits
- Study Area Boundary
- County Boundary

N
0 0.5 1 2 Miles

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Recommendations

According to the *Sumter Airport Layout Plan Update*, the airport should experience steady growth during the plan's 20-year planning horizon (2001 to 2021). **Tables 8.2** and **8.3** detail projected growth of Sumter Airport.

Based on the growth potential, the *Sumter Airport Layout Plan Update* provides several recommendations grouped into three stages of implementation: Stage I (0-5 years), Stage II (6-10 years), and Stage III (11-20 years). Recommendations for the airport include the following:

Stage I:

- Land should be acquired in the safety area at the south end of Runway 5/23
- Vegetation should be cleared on north approach to Runway 5/23
- Instrument landing system should be implemented on Runway 23 to ensure reliable, all-weather operation

Stage II:

- Evaluate and possible renovate existing terminal
- Expand available parking spaces to a total of 100 spaces

Stage III:

- Runway 5/23 should be extended to 6,000 feet to accommodate larger corporate jets (*could be sooner if corporate activity increases*)
- Runway 5/23 pavement should be strengthened to 70,000 lbs. (dual gear)
- Taxiway should be extended at the time of Runway 5/23 extension

Additional recommendations call for improved hangar and tie-down facilities, increased fuel storage capacity, and improved directional signage for persons trying to access the airport.

Table 8.2 – Based Aircraft By Type

Year	Single Engine	Multi-Engine	Turbo Prop	Jet	Rotor	Experi-mental	Other	Total
2001	40	2	0	0	2	0	0	44
2006	42	7	2	2	3	0	0	56
2011	47	9	2	3	3	1	1	66
2016	55	10	3	4	3	1	2	78
2021	64	11	3	6	4	2	3	93

Source: Sumter Airport Layout Plan Update; November 4, 2004

Table 8.3 – Projected Emplaned Pilots and Passengers

Year	Pilots/ Passengers	Design Hour Peak (pilots/passengers per hr)	Design Day Peak (pilots/passengers per day)
2001	36,496	N/A	N/A
2006	47,313	73	362
2011	56,571	87	432
2016	68,086	105	521
2021	81,154	125	620

Source: Sumter Airport Layout Plan Update; November 4, 2004