



SOUTH CAROLINA **Airports System Plan**

executive summary



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The South Carolina Airports System Plan (SCASP) of 2008 is to gain knowledge and understanding of the needs and requirements of South Carolina airports. The purpose of this project is to incorporate traditional aviation planning techniques that identify future air traffic demands and the facilities required to meet these demands. A strategic planning element that will allow the South Carolina Department of Commerce, Division of Aeronautics (SCDOA)

to respond to changing aviation and economic trends including emerging technologies, projected funding shortfalls, and shifting priorities was included. The SCASP will provide a framework for investigating issues such as networking, economic impact of airports on their local communities and the state, and development of long-range strategies to meet the future aviation needs of South Carolinians.

goals and objectives

The goal of the SCASP is to provide guidelines for future system development, which will satisfy aviation demand in a cost-effective, feasible manner, while resolving aviation, environmental, and socio-economic issues of the State of South Carolina. The specific goals and objectives for the SCASP were:

- *Inventory of the existing public use airport system* – The inventory included on-site airport visits to discuss facilities, planning, airspace, and development issues; airport’s capital improvement program (ACIP); and airport’s vision of the future and to catalogue each airport’s historic and current facilities and operational activity levels from the South Carolina Comprehensive Aviation Information Reporting System (SCCAIRS) database.

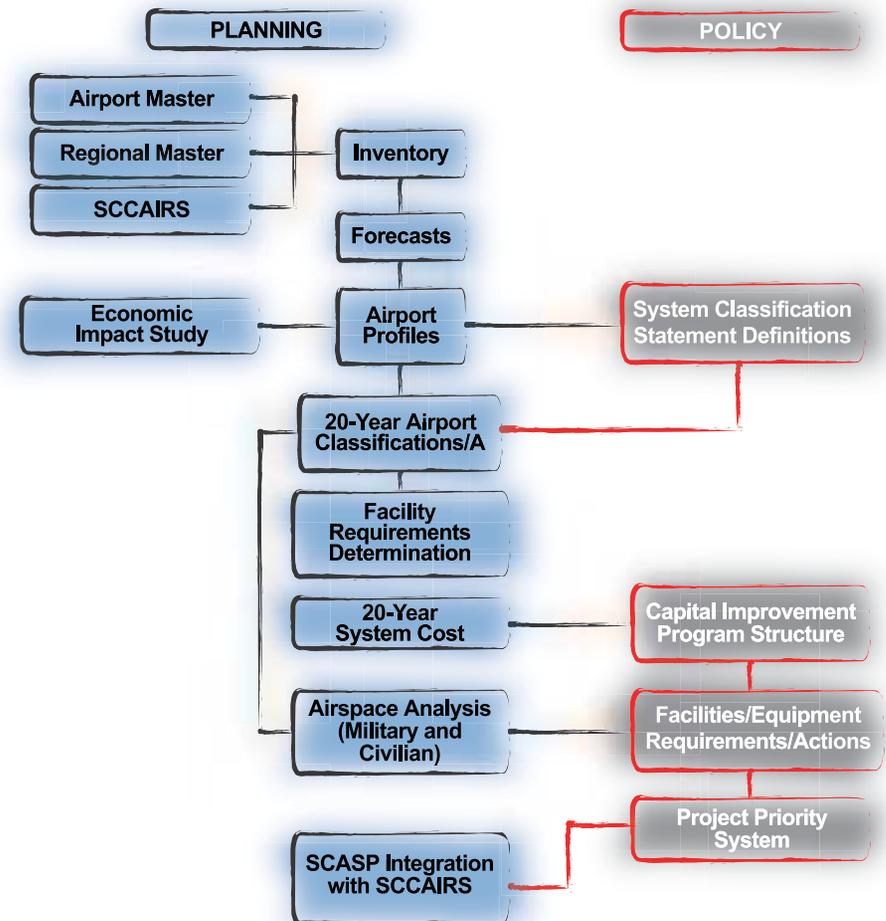
- *Identification of each public use airport’s role within the system* – Each airport’s classification was examined individually to determine how the airport functions within the South Carolina system and to what extent it impacts the state’s economy.

- *Establish a system of project ranking in order of priority to support the allocation of limited state and federal funding* – Based on the airport classification system, a new priority system was developed utilizing meaningful and measurable criteria, which compares each airport’s role and project in order of its system importance.

- *Identification of system deficiencies* – The system was analyzed to determine whether there was a need for new airports or replacement of existing airports. The plan also provides the SCDOA with a recommended process for system management to address the adding and removal of airports.

- *Estimates of costs to implement the system* – The plan provides the determination of facility requirements that are based upon the individual discussions with each airport sponsor. Cost estimates (FY 2008) of those facility requirements over the 20-year horizon are developed to arrive at a year-by-year, 20-year system cost to the State of South Carolina.

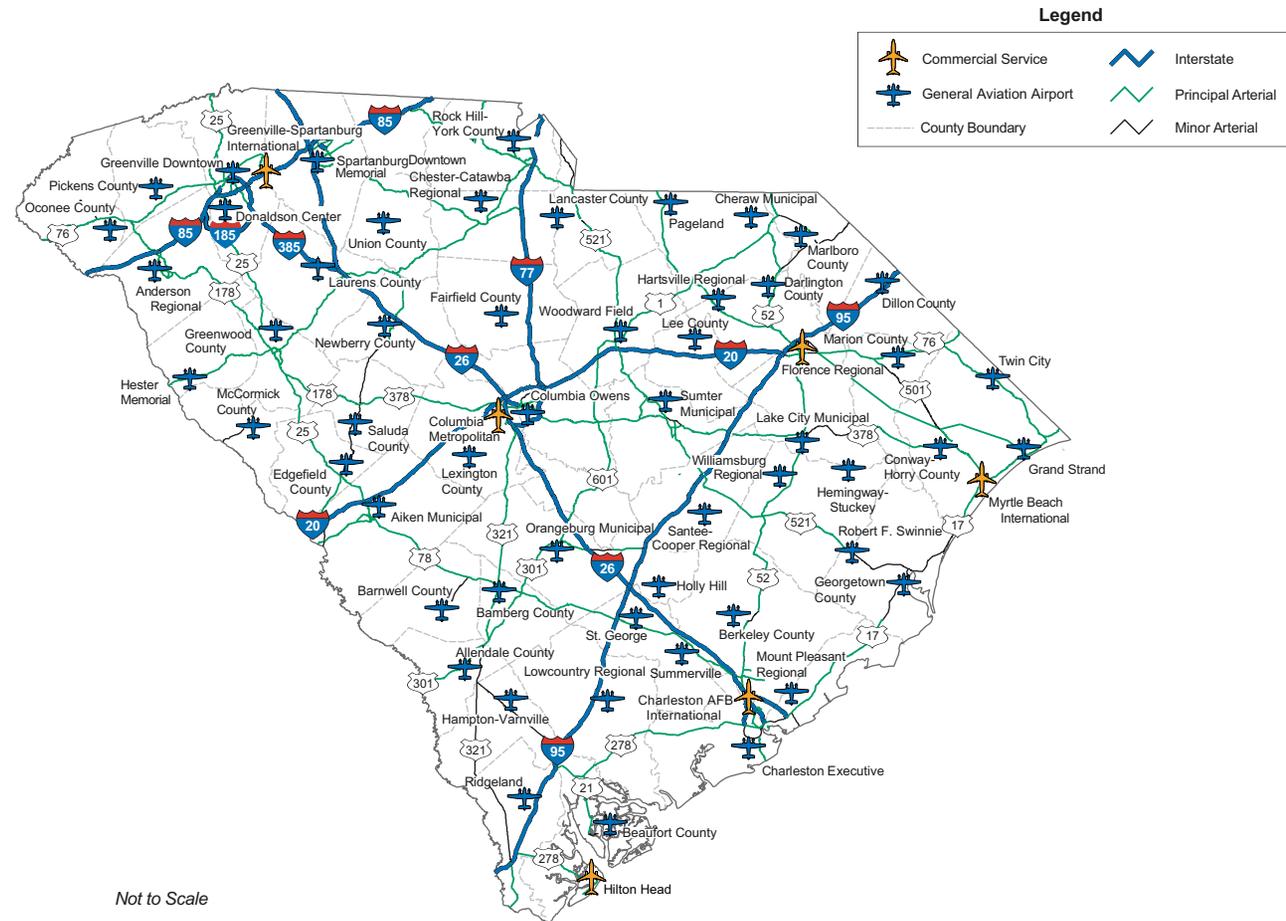
- *Establishment of an easily updated plan* – The SCASP will be a web-based plan that can be updated on an annual basis. The purpose of the SCASP is to allow for continued development throughout the system as the need arises.



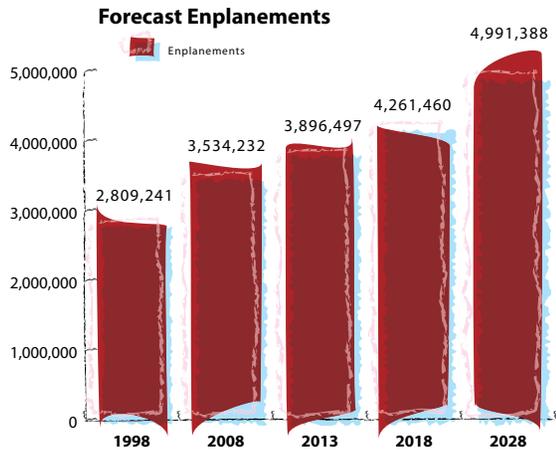
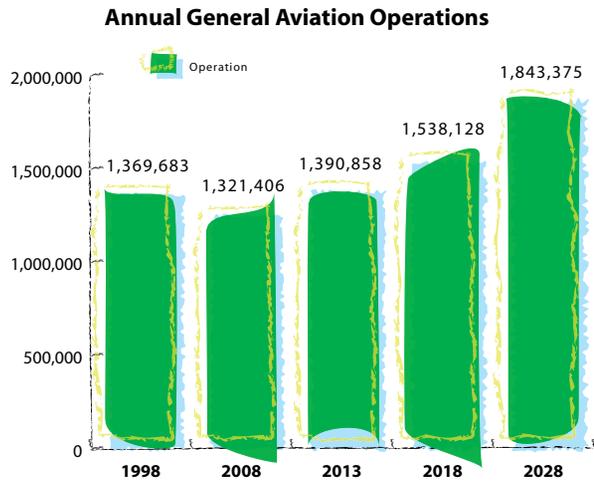
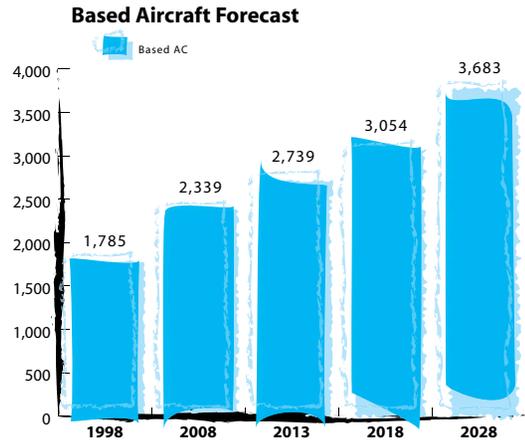
existing system

South Carolina's public use system is based on the 1992 South Carolina Airport System Plan, which was comprised of 69 airports – 6 commercial service, 20 transport, 14 general utility, 29 basic utility, and one proposed airport (which has not been built). Of the 69 airports, 52 are listed in the FAA's National Plan of In-

tegrated Airport Systems (NPIAS). In the 1992 System Plan, the airports were classified based on the FAA's system, which was based upon airport design requirements conforming to the NPIAS, rather than tailoring a system to meet the needs of South Carolina.



forecasts



As part of the SCASP, forecasts of aviation activity were developed for the 60 public use airports that comprised the study. A trend line forecast methodology was applied to each airport using existing data from the FAA, the SCDOA, and the individual airports. This methodology provided a macro-level analysis of the aviation activity that could reasonably be expected over the next 20 years.

A 20-year trend line of based aircraft was developed from historical annual based aircraft counts for each airport. This information was obtained from the FAA Terminal Area Forecast records. Aircraft types were then derived from the FAA Airport Master Record (5010) data and total based aircraft forecasts. These percentages remain constant through the 20-year planning period.

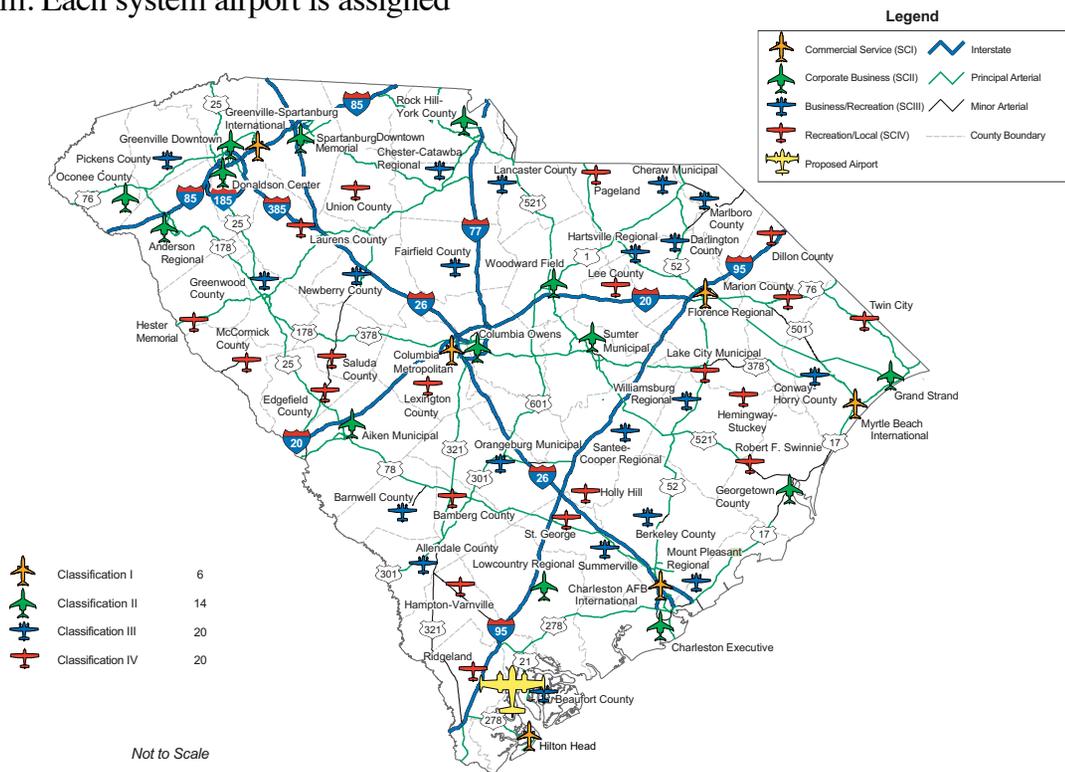
The operations forecasts for each of the airports were developed from FAA 5010 data, which were divided into the total itinerant operations in order to determine the relationship between instrument flight rules operations and itinerant operations. This ratio was then used to forecast total itinerant operations. The FAA 5010 ratio of air carrier, commuter/air taxi, general aviation, and military operations within itinerant operations was then used to forecast these specific types for the planning period.

To forecast commercial service passenger enplanements, a trend line forecast was used. The principal time line used is from 1998 through 2008. An important assumption of non-restrained trend line forecasting is used. With the annual reevaluation of the forecast methodology, reduced or increased activity at each airport will be determined through the 20-year planning period.

recommended system

In order to develop a system of airports to meet the forecast of aviation demand and needs for economic development across the entire state, the SCASP recommended a new airport to replace the existing Ridgeland Airport and established Minimum Design Standards for each airport based on the new Classification System. These standards are based upon FAA design criteria in that each Airport's Reference Code (ARC) is cited as a factor in the classification assignment for each individual airport in the system. Each system airport is assigned

a classification based on its current and future service role in the system. There may be certain airports in each classification that do not meet all of the minimum design standards for that particular classification. This shortcoming does not infer that the airport should be reclassified but does signify that the airport shall work towards meeting these design standards based on current or future needs through a phased airport capital improvement program for airport development.



MINIMUM DESIGN STANDARDS

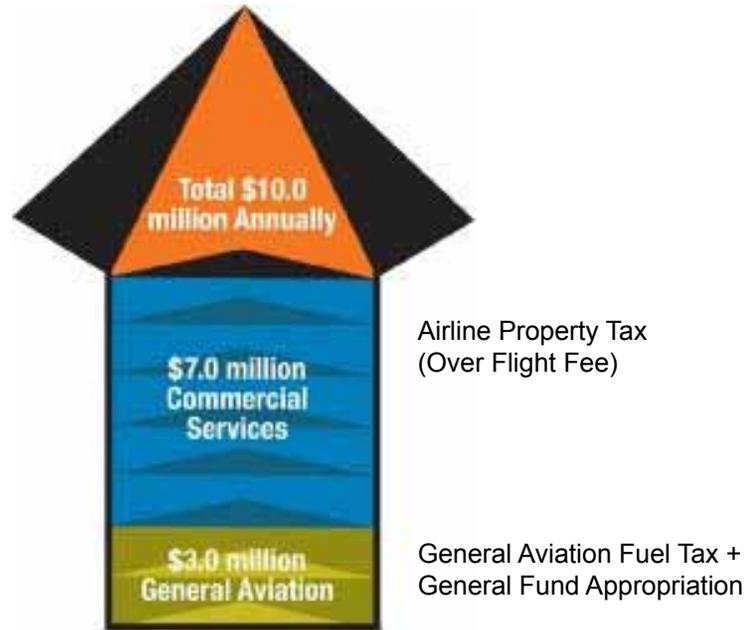
Commercial Service (SCI)	Corporate/Business (SCII)	Business/Recreation (SCIII)	Recreation/Local (SCIV)
Airports under FAR Parts 121 and 135	An ALP approved by SCDOA	An ALP approved by SCDOA	An ALP approved by SCDOA
Compliance with FAR Part 139	Runway length: 5,000'	Runway length: 3,600'	Minimum runway length (paved or turf) of 2,000' with 200' of graded overrun on each end
Instrument approach minima of 200-1/2	Runway width: 100'	Runway width: 75'	Unobstructed approaches in accordance with FAA AC 150/5300-13 – Airport Design (as amended) to instrument runways
Unobstructed approaches	Runway strength of 60,000 lbs, dual wheel load	Runway strength of 30,000 lbs, dual wheel load	Primary surface of 200' in width and 2,400' in length
Approved ALP	Unobstructed approaches in accordance with FAA AC 150/5300-13 – Airport Design (as amended)	Unobstructed approaches in accordance with FAA AC 150/5300-13 – Airport Design (as amended)	Visual runway protection zones of 200' by 1,000' by 400' with a slope of 15:1
	Runway to taxiway centerline distance: 400'	Runway to taxiway centerline distance: 300'	Transition surface shall begin at the edge of the primary surface and extend outward and upward at a slope of 5:1
	Runway supported by a full parallel taxiway	Runway lighting shall consist of MIRLs, PAPIs, and REILs	Runway width: 60'
	Runway lighting shall consist of HIRLs, PAPIs, and REILs	Airport shall attempt to achieve RNAV (GPS) LNAV instrument approach minimums on the primary runway of 400-1	Runway strength of 12,500 lbs wheel load
	Airport shall attempt to achieve RNAV (GPS) LPV instrument approach minimums on the primary runway of 250-3/4	Adequate approved RSA's	Runway lighting shall consist of LIRLs
	Adequate approved RSA's		Airport shall not be approved for an instrument approach procedure unless it is required to support public safety or emergency services

commercial service airport “leakage”

The system plan evaluated passenger leakage at all of South Carolina’s commercial service airports. Those estimates include both in-state and out-of-state passenger usage of competing commercial service airports. When air passenger service areas overlap, the negative connotations of leakage are subject to question. In reality, the primary concerns of the State of South Carolina involve those passengers who utilize out-of-state airports to fulfill their air travel needs. If, on the other hand, facility development will reduce the leakage from a given airport then this fact will be considered in any funding decision. The following leakage estimates are only for general consideration.

Airport	Numbers of Passengers	Percent of State
Total SC Passengers	4,971,056	100.0%
Savannah/Hilton Head International Airport (SAV)	391,703	7.9%
Wilmington International Airport (ILM)	28,347	0.6%
Charlotte/Douglas International Airport (CLT)	404,857	8.1%
Hartsfield/Jackson Atlanta International Airport (ATL)	196,504	4.0%
Augusta Regional Airport (AGS)	12,756	0.3%
Asheville Regional Airport (AVL)	16,041	0.3%
Total Leakage	1,050,208	21.1%

Source: South Carolina Division of Aeronautics, “Enplanements and Deplanements for Major Hub Airports”



Aviation Generated Revenues

funding assessment

Sources of aviation-generated revenue used for this forecast are those that are currently paid to the State of South Carolina by the commercial air carriers and general aviation fuel tax and include the:

- Over-flight fees that are levied against the commercial air carriers, and currently deposited into the state's General Fund
- Five percent sales tax on general aviation fuel sales that comprises the State

Aviation Fund and used for maintenance and other capital development

- \$0.5 million of Appropriated Funds as an annual budget item used to match FAA funding (discontinued in 2008).

One key component in the study was to visit each airport in the system and discuss the capital improvement and maintenance needs for that facility. That exchange provided

each airport's CIP for the five-year period, 2009 through 2013. It is important to plan the system from the bottom-up in order to be able to realistically estimate the cost of system development. The total cost of the facility requirements for all sectors of the SCASP totals approximately \$2.05 billion for the years 2009 through 2028.

PROJECTED SYSTEM NEEDS

Fiscal Year	Total Need	Projected Participation Share			Projected Funding Available			Estimated Unmet Need
		Federal	State	Local	Federal	State	Local	
2009	\$94,705,937	\$89,179,234	\$2,846,658	\$2,680,046	\$33,669,384	\$2,116,587	\$2,110,098	\$56,809,868
2010	\$108,245,187	\$99,455,107	\$4,725,940	\$4,064,140	\$32,254,489	\$2,131,937	\$2,124,151	\$71,734,609
2011	\$96,357,989	\$89,834,745	\$3,441,132	\$3,082,112	\$32,009,092	\$2,224,965	\$2,218,872	\$59,905,059
2012	\$98,715,880	\$92,474,786	\$3,269,197	\$2,971,897	\$35,097,886	\$2,119,056	\$2,111,744	\$59,387,194
2013	\$70,025,332	\$64,920,085	\$2,806,363	\$2,298,883	\$35,315,759	\$1,947,709	\$1,942,173	\$30,819,692
2014	\$98,290,568	\$91,531,431	\$3,588,751	\$3,170,386	\$33,669,322	\$2,108,051	\$2,101,408	\$60,411,788
2015	\$99,043,341	\$92,025,392	\$3,744,590	\$3,273,358	\$33,669,310	\$2,106,344	\$2,099,670	\$61,168,018
2016	\$97,110,953	\$90,465,152	\$3,538,507	\$3,107,294	\$33,952,274	\$2,101,225	\$2,094,773	\$58,962,681
2017	\$97,269,076	\$90,597,538	\$3,558,956	\$3,112,582	\$34,340,910	\$2,076,477	\$2,069,953	\$58,781,735
2018	\$96,965,247	\$90,203,316	\$3,619,805	\$3,142,126	\$34,189,515	\$2,067,961	\$2,061,595	\$58,646,175
2019	\$102,622,629	\$95,512,794	\$3,790,628	\$3,319,207	\$33,964,266	\$2,092,011	\$2,085,480	\$64,480,871
2020	\$103,532,361	\$96,348,880	\$3,833,022	\$3,350,459	\$34,023,255	\$2,088,803	\$2,082,294	\$65,338,009
2021	\$104,475,056	\$97,256,813	\$3,851,593	\$3,366,650	\$34,094,044	\$2,085,295	\$2,078,819	\$66,216,897
2022	\$106,021,517	\$98,683,062	\$3,917,341	\$3,421,115	\$34,122,398	\$2,082,110	\$2,075,628	\$67,741,381
2023	\$107,859,530	\$100,381,022	\$3,992,602	\$3,485,907	\$34,078,696	\$2,083,236	\$2,076,763	\$69,620,835
2024	\$110,147,330	\$102,518,340	\$4,070,889	\$3,558,101	\$34,056,532	\$2,086,291	\$2,079,797	\$71,924,710
2025	\$111,727,517	\$103,989,504	\$4,129,744	\$3,608,269	\$34,074,985	\$2,085,147	\$2,078,660	\$73,488,724
2026	\$113,448,499	\$105,594,035	\$4,192,055	\$3,662,409	\$34,085,331	\$2,084,416	\$2,077,934	\$75,200,819
2027	\$115,332,923	\$107,344,852	\$4,263,552	\$3,724,518	\$34,083,588	\$2,084,240	\$2,077,757	\$77,087,338
2028	\$117,288,318	\$109,163,828	\$4,336,257	\$3,788,233	\$34,075,826	\$2,084,666	\$2,078,182	\$79,049,643



system needs

SCASP needs were developed using standard planning parameters and relationships that are considered appropriate for macro-level analysis. Needs for runways, taxiways, apron areas, T-hangar units, conventional hangars, terminal buildings, and automobile parking were based on FAA guidelines. Circumstances at individual airports will differ from the standards used for this analysis, and specific considerations may justify a level of facility development that could exceed or differ from system forecast projections. The system projections will not eliminate or replace the need or validity of individual airport planning efforts, and those planning efforts will continue to be important to funding decisions in relation to specific projects. Nevertheless, it is important from a system perspective that the forecasts of individual airport facility requirements provide a reasonable estimate of overall system needs for the short- and long-term planning years. The system needs developed for the system plan represents a fiscally unconstrained condition.

SCASP needs were compared to airport master plans and capital improvement plans to verify airport needs. System needs include:

- Runway and taxiway rehabilitation
- Runway extensions
- Modern terminal buildings
- Airport safety (obstruction removal and land use compatibility)
- Airport security facilities (fencing)
- Land acquisition for continued airport development
- T-hangar and corporate hangar development
- Replacement airport at Ridgeland (Jasper County)

However, several issues must be addressed in order to satisfy the system needs. These include:

- A predictable recurring source of revenue
- Continued activity at each airport
- Local community support for airport development

