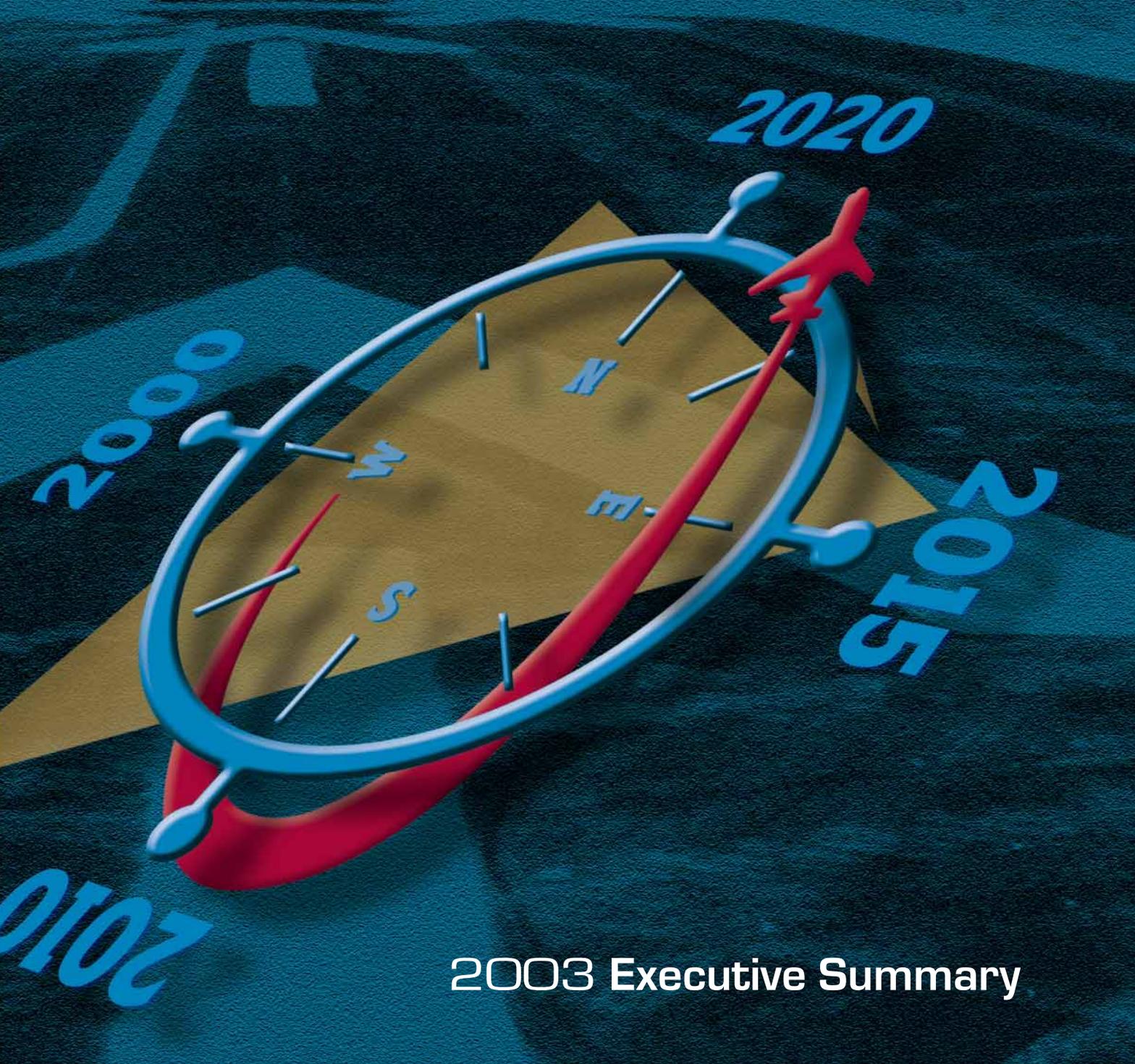


The **Virginia**

Air Transportation
System Plan Update



2003 Executive Summary

VIRGINIA'S AIR TRANSPORTATION SYSTEM is one of the most advanced and sophisticated in the country. More than 97 percent of the Commonwealth's population has convenient access to one of Virginia's nine commercial service airports or 59 general aviation airports. Virginia residents, visitors and those engaged in commercial activity all have access to a wide range of airport facilities and services to meet their aviation needs.

Virginia's ability to provide the flying public with access to the global marketplace can be directly attributed to the time, energy and resources it has spent on developing a world-class airport system. The Commonwealth has a rich heritage of airport system planning, publishing its first aviation system plan, *Aviation in Virginia*, in 1949. This *2002 Virginia Air Transportation System Plan (VATSP) Update* is the Commonwealth's fourth air transportation system plan, and like previous plans, presents an airport system that will enable all of Virginia's regions to access the rest of the world, creating new economic opportunities for all Virginians.

The Virginia Department of Aviation is charged with determining the extent, type, nature, location and timing of airport development in the Commonwealth with the goal of establishing a viable, balanced and integrated system of airports. This update to the VATSP assists the Department in accomplishing that mission.

Goals and Objectives

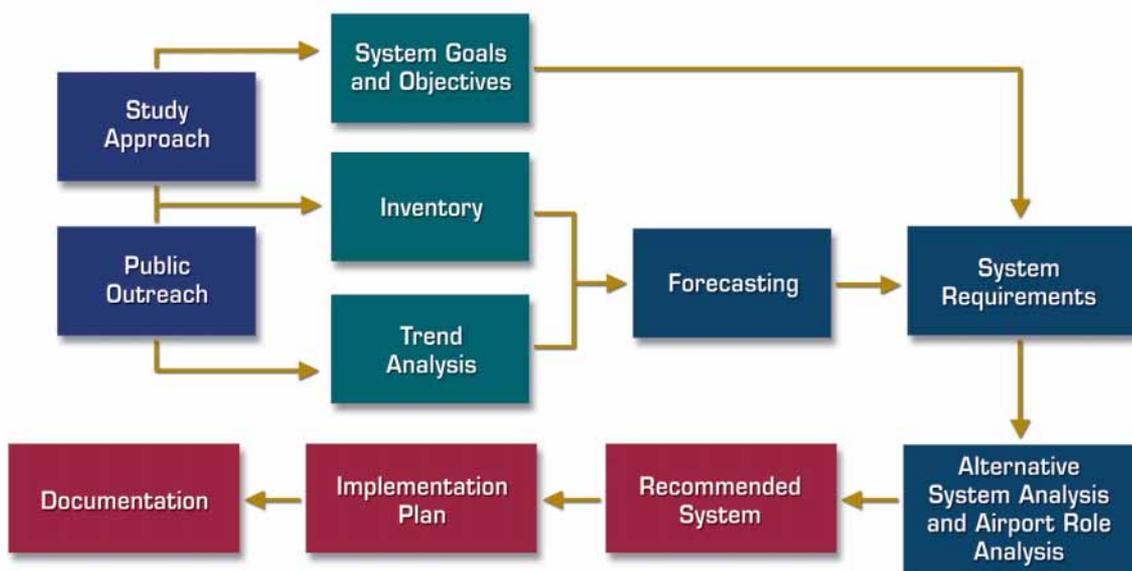
In January 2000, the Virginia Department of Aviation initiated the *Virginia Air Transportation System Plan Study (VATSP) Update*. The Commonwealth of Virginia maintains one of the nation's most comprehensive and technologically advanced airport systems. The VATSP Update was performed to ensure that our State Airport System continues to effectively serve the needs of Virginia's residents and visitors, and provides the necessary infrastructure and technology to facilitate healthy economic development across the Commonwealth.

This study represents a blueprint for the Department of Aviation to guide the future development of Virginia's airport system by identifying the type, location, timing and extent of airport development necessary to maintain an efficient and geographically balanced system of airports.

The VATSP Update was performed in order to:

- Â Create a strategic development plan
- Â Evaluate limitations of the existing system
- Â Forecast future aeronautical system demand
- Â Develop five-, ten- and twenty-year facility improvements for individual airports and the airport system as a whole
- Â Identify strengths and weaknesses of the existing system and recommend solutions which:
 - enhance benefits to system users
 - use Virginia's Airport System to create new business opportunities
 - reduce adverse economic impacts
 - develop the Airport System in a fiscally responsible manner
 - strengthen all of Virginia's regions as destinations for national and international travelers and commercial activities

The VATSP Update Process



The VATSP Update followed a detailed process of interaction with the communities, information gathering and comprehensive data analysis. Following these critical phases of the study, recommendations were made and an implementation plan was formulated for the Virginia Airport System.

Study Public Participation

Public participation and coordination was a high priority in the VATSP Update effort. Airport sponsors, industry groups, businesses and private citizens were kept informed of study progress through quarterly newsletters and two series of public meetings held at strategic locations across the Commonwealth.

In addition, a Study Advisory Group (SAG) was formed to provide ongoing input and direction to the Study team. SAG members were appointed by the Virginia Aviation Board and the Director of the Department of Aviation and include representatives from planning districts, state agencies, aviation interest groups and the Federal Aviation Administration (FAA).

Existing Virginia System

Virginia's existing airport system is based on the findings and recommendations of the 1990 VATSP Update. At that time, the system was comprised of 68 public-use airports. Nine were Commercial Service Airports serving scheduled airlines, seven were Reliever Airports, 16 were General Aviation Regional Airports, 17 were classified as General Aviation Community Airports and 19 were Local Service Airports. The 1990 VATSP Update recommended the development of six new General Aviation Community Airports and one new Reliever Airport to replace existing constrained airports and to satisfy increasing aviation demand.

Many of the 1990 VATSP recommendations have been implemented. Most notably, a General Aviation Regional Airport opened in Tazewell County in 1992, a Reliever Airport opened in Stafford County in 2001, and a General Aviation Community Airport opened in Lee County in 2002. The Tappahannock/Essex County Airport is under development and expected to open in 2008. Franklin County, the Town of Grundy and the Northern Neck Planning District Commission are currently conducting planning studies to develop new airports. Examples of other significant

system improvements include the installation of 34 automated weather reporting systems, the construction and/or renovation of 28 terminal buildings, installation of 19 instrument landing systems, construction of 15 runway extensions, and construction of two air traffic control towers.

The airport system has also changed due to the pressures of land-use competition, environmental requirements and ownership status. Local Service Airports Whitman Strip, Kellam Field, Glascock and Sky Bryce elected to leave the public-use system, though all remain open as private-use facilities. Five other Local Service Airports—Mellar Field, Richlands, Heathsville, Hilltop and Kilmarnock—have permanently closed.

The current Virginia Airport System, including all changes over the past ten years, is shown inside the front cover of this report.

Changes in the Airport System Since 1990



Aircraft and Operations Forecasts

One of the most important steps in creating the strategic plan for the Commonwealth of Virginia's air transportation system was the development of reasonable estimates of future demand. The VATSP Update forecasts represent a reasonable future scenario for planning purposes, and include individual forecasts of based aircraft and operations at each airport over the 20-year planning horizon. These forecasts will help the Virginia Department of Aviation determine facility requirements and assess the relative costs and benefits of potential improvements and investments in the Commonwealth's air transportation system.

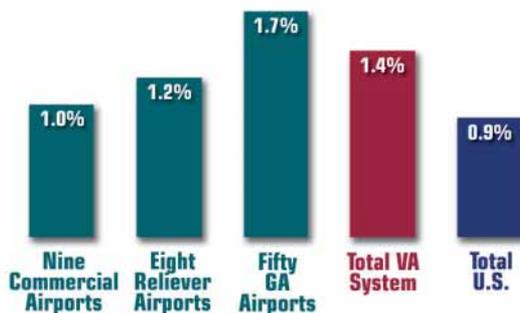
Forecasts of general aviation based aircraft and operations were developed based on analysis of historic trends and in consideration of expected future developments influencing the level and type of activity at Virginia's airports. Historic data was compiled from Department of Aviation records, individual airport master plans, Civil Air Patrol Surveys and information provided

by the Federal Aviation Administration (FAA). A number of forecast methodologies were devised and tested, with a preferred methodology selected to represent the most reasonable estimate of future activity. Based aircraft were estimated using a linear trend methodology, with adjustments made to account for individual airport characteristics and new airport construction. Since the accuracy of historic operations data was somewhat questionable, an operations forecast methodology was devised to estimate future operations using the number of current and forecast based aircraft at each airport.

The VATSP Update forecasts reflect growth rates in general aviation based aircraft and operations that are slightly faster than both the Federal Aviation Administration (FAA) Terminal Area Forecasts for Virginia and the FAA Aerospace Forecasts for the nation as a whole. Total GA based aircraft were forecast to increase from approximately 3,200 in 2000 to nearly 4,200 by 2020. GA operations were forecast to increase from approximately 1.6 million in 2000 to nearly 2.4 million by 2020. This growth in GA based aircraft and operations includes rapid growth in multi-engine jets, which have been and are projected to be the fastest growing segment in Virginia general aviation.

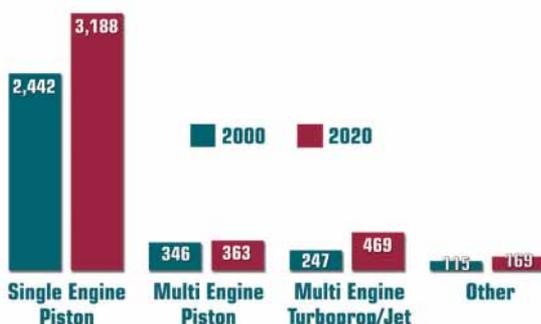
Forecasts of commercial passenger enplanements were developed for each airport using data provided by individual airports, FAA historical data, and FAA nationwide activity projections. Preliminary forecasts were

Growth in Based Aircraft by Airport Role

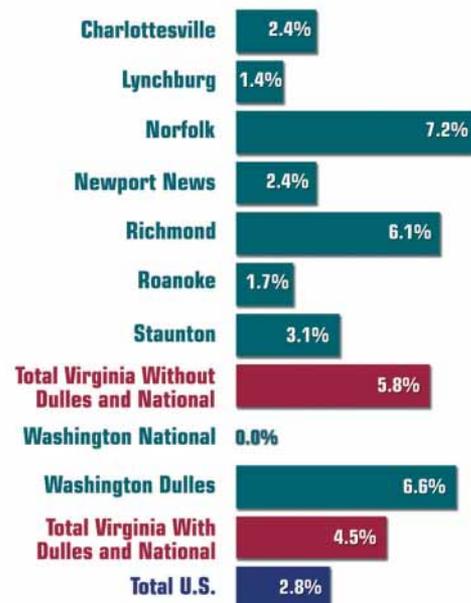


Note: Total U.S. growth from FAA aerospace forecasts, 2000-2001

Changes in Aircraft Mix During Forecast Period



Forecast Enplanement Growth

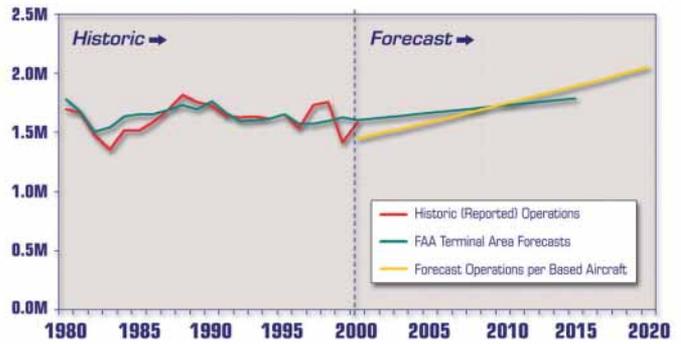


developed using alternative methodologies, with the most suitable then selected as the preferred forecast. Supplemental analysis beyond this preferred methodology was performed, especially when major service changes were anticipated and implied changed assumptions about traffic growth.

A derivative forecast of aircraft operations was then produced from the projections of passenger enplanements. Enplanements per operation at each Virginia commercial service airport were forecast considering historic trends at the airport and nationwide. Forecast enplanements were divided by enplanements per operation to yield a forecast of commercial aircraft operations.

The VATSP Update forecasts indicate that commercial enplanements will more than double, from 21.6 million

General Aviation Operations Forecast Compared with the FAA Terminal Area Forecasts



annual enplanements in 2000 to 43.9 million in 2020. Commercial operations are predicted to grow more slowly, from nearly 900,000 annual operations in 2000 to approximately 1.4 million by 2020.

Recommended System Goals and Objectives

The system goals, objectives and performance measures identified by the Department of Aviation establish a policy framework that has guided the development of various elements of this System Plan. The goals and objectives reflect airport system policy issues and priorities identified by the Department of Aviation in consultation with a Study Advisory Group (SAG) comprised of stakeholders from government and private industry that was involved throughout this system planning process. The recommended system is the system that best meets the goals and objectives set forth below.

Maintain a safe and reliable airport system

- ⌘ Ensure that airport facilities meet applicable Federal or State design criteria and safety standards.
- ⌘ Protect FAA-mandated safety areas, runway protection zones, and other clear areas.
- ⌘ Provide meteorological facilities at all airports with a service role of “general aviation community” and higher to enhance the safety and reliability of operations under all weather conditions.
- ⌘ Provide instrument approach procedures through the use of ground based navigational facilities and/or global positioning satellites (GPS) to airports with a service role of “general aviation community” and higher, to improve reliability during adverse weather conditions.

Provide an efficient airport system capable of meeting existing and future demand and supporting statewide economic development

- ⌘ Preserve and enhance existing airport facilities and provide new or replacement airports as recommended by the adopted system plan
- ⌘ Provide convenient access to the National Air Transportation System
- ⌘ Where practical, provide 30 minute or better access to GA airports and 45 minute or better access to commercial service airports

Minimize non-compatible land use

- ⌘ Encourage local planning/zoning boards to consider airport needs and impacts when developing land use and zoning plans

Develop system in a fiscally responsible manner

- ⌘ Optimize benefit derived from capital improvement investments

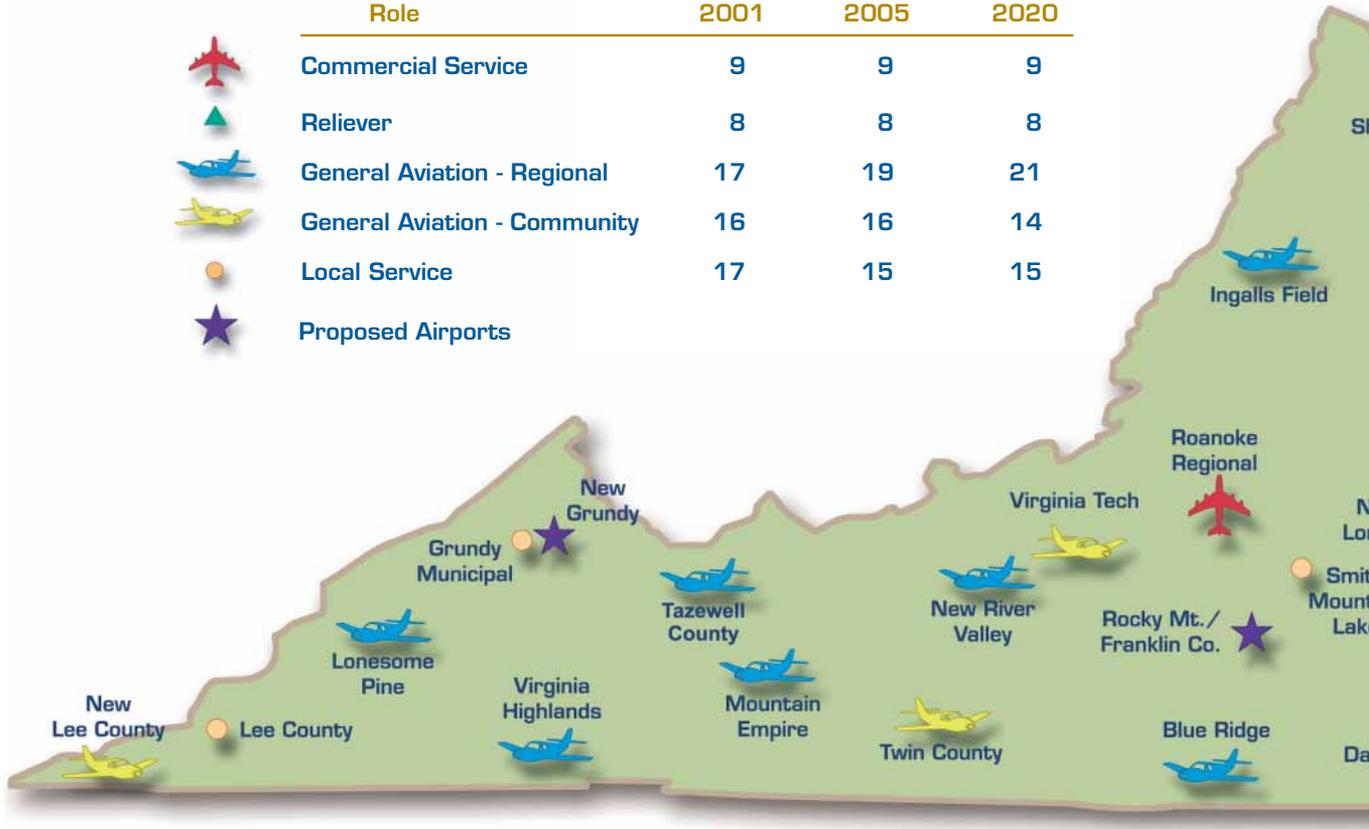
Airport Classification Roles Updated

	Commercial Service (CS)	Reliever (RL)	GA – Regional (GR)	GA – Community (GC)	Local Service (LO)
Service Role	Provide scheduled commuter and/or air carrier service to surrounding communities.	Provide alternative GA facilities to reduce congestion at commercial service airports.	Provide a full range of aviation facilities and services to business and recreational users in a broad market area. Service areas are often multijurisdictional due to geographic isolation or the relative scarcity of other airport services and facilities.	Provide GA facilities and services to business and recreational users. Community airports typically serve a limited market area.	Provide limited facilities to their respective communities. Substantial expansion is typically precluded by development constraints such as airspace conflicts, environmental concerns, topography, competing services, surrounding land use patterns and ownership status.
Funding Eligibility	Entitlement as well as air carrier/reliever discretionary funding	Air carrier/reliever discretionary funding	GA discretionary funding	GA discretionary funding	GA discretionary funding – safety and preservation projects only
Market Area	Metropolitan area	Metropolitan area, Relieves CS Airport	Regional market area serving multiple jurisdictions, isolated from other GR airports, convenient access	Community market area, access to a separate GR, RL or CS airport	Local market area
Activity Level and Mix	Provides scheduled airline service	25,000 annual operations, 50 based A/C with jets, 500 annual jet operations	10,000 annual operations, 25 Based A/C with jets, 100 jet operations	5,000 annual operations, 10 based A/C, 50 jet operations	Low activity levels
Recommended Facility Attributes	5,500 x 150 runway, parallel taxiway, precision approach	5,500 x 100 runway, parallel taxiway, precision approach	5,500 x 100 runway, non-precision approach (300-1)	3,100 x 75 runway, non-precision approach (400-1)	3,000 x 50 runway, visual approach
Available Services	Jet fuel and AvGas, major maintenance, hangars, passenger terminal, rentals, training, charters	Jet fuel and AvGas, major maintenance, hangars and GA terminal, rentals, training, charters	Jet fuel and AvGas, minor maintenance, hangars and GA terminal, rentals, training, charters	AvGas sales, rentals, training, charters	Limited services
Development/Constraints	No significant constraints	No significant constraints	No significant constraints	No significant constraints	Environmental, airspace, or topographic constraints/ownership status

The Recommended System

Airport Roles of the Recommended System

	Role	2001	2005	2020
	Commercial Service	9	9	9
	Reliever	8	8	8
	General Aviation - Regional	17	19	21
	General Aviation - Community	16	16	14
	Local Service	17	15	15
	Proposed Airports			



One of the objectives of the VATSP Update is to provide convenient access to both commercial service and general aviation airports. With Virginia's current aviation system, greater than 97 percent of the population is within 30 minutes of a General Aviation Airport or within 45 minutes of a Commercial Service Airport. This coverage can be improved either by the constructing of new airports or by improving access to the existing airports in the system. For example, the New Lee County Airport improves coverage by providing a new gateway for people in southwest Virginia. Similarly, Stafford Regional Airport provides additional airport access to the communities south of Washington D.C.

Recommended

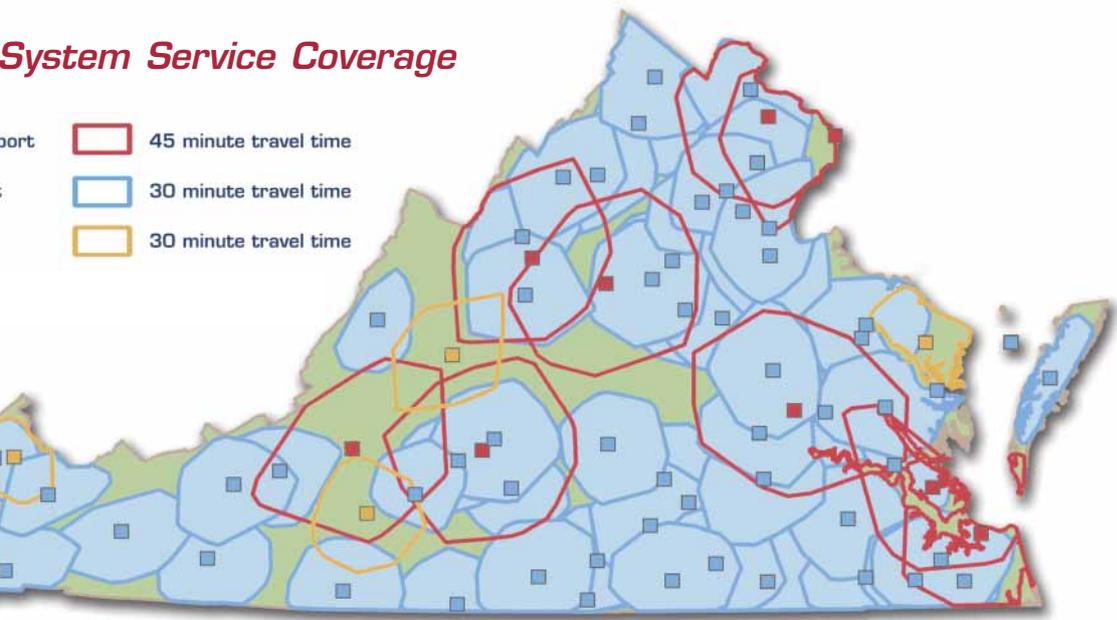
-  Commercial Service Airport
-  General Aviation Airport
-  Proposed Airport





System Service Coverage

- 45 minute travel time
- 30 minute travel time
- 30 minute travel time



Capital System Needs

Having conducted a detailed inventory of each airport's facilities, along with forecasts of key demand drivers for the near-term (2005) and long-term (2020), a statewide facility needs analysis was performed for major infrastructure elements.

The analysis was completed from a macro, or top-down, perspective using FAA planning criteria. Bottom-up checks for verification took place with comparisons to existing or recent master plans and Airport Capital Improvement Plans for each airport. In addition, each airport sponsor was provided an opportunity to review and comment on facility recommendations, and adjustments were made where appropriate.

The VATSP Update identified the need for 18 runway extensions, 10 new runways, four taxiway improvement projects, almost four million square yards of additional apron area, and almost three million square feet of new terminal area space throughout the Commonwealth. In addition, a number of support projects such as aircraft storage and nav aids were identified.

The total cost of the State's facility needs is outlined on the adjacent page according to short and long-term needs, and is presented both with and without the capital needs of the Metro Washington Airports (Washington Dulles International and Reagan National). Of the total \$2.78 billion in anticipated 20-year needs, the State's share totals \$187 million.

Near-term capital requirements for projects recommended by 2005 total \$681 million, with a State share of \$60 million. Long-term capital requirements covering the period from 2006 to 2020 will require total funding of \$2.1 billion with \$127 million provided by the Commonwealth.

The state shares of near- and long-term system capital requirements average approximately \$9.4 million annually, significantly below the annual funding level provided by the Commonwealth for airport projects over the past five years (approximately \$17 million in constant 2002 dollars). However, the federal share of system

Capital Needs Include:

- Â 18 runway extensions
- Â 10 new runways – four at existing airports, six at new or replacement airports
- Â Four new parallel taxiways
- Â Additional apron areas at 22 airports
- Â Terminal improvements at 37 airports
- Â Six new instrument landing systems (ILS)

capital requirements is \$451 million through 2005, and nearly \$1.5 billion between 2006 and 2020. Based on historic levels of federal funding provided for airport development in Virginia—approximately \$78 million annually over the past three years—there is expected to be a significant shortfall of available federal dollars.

Historically, the Commonwealth has absorbed a portion of the federal funding shortfall for high priority projects. In fact, the Department of Aviation directs funding on an annual basis by applying its resource allocation system to evaluate and prioritize projects submitted by airport sponsors in their six-year airport capital improvement plans.

Although the Commonwealth may provide a portion of the unmet federal shares for certain airport projects, there is still expected to be a shortfall in the total funding available for airport system development. This shortfall is quite typical and the Department of Aviation has historically dealt with funding constraints by phasing projects and extending the timeframe during which recommended projects are funded and completed. It is expected that similar strategies will be employed over the planning horizon to reconcile the available funding with the Commonwealth's airport development requirements.

Summary of Capital Needs by Service Role and Funding Source

(In \$ Thousands, US 2002 Dollars)

2000 to 2005

	Federal	State	Local	Total
Commercial Service	\$323,911	\$34,949	\$147,555	\$506,415
Reliever	\$30,372	\$5,248	\$8,464	\$44,084
GA - Regional	\$29,974	\$5,857	\$7,681	\$43,511
GA - Community	\$58,645	\$10,683	\$6,398	\$75,726
Local Service	\$270	\$926	\$258	\$1,453
Runway Rehabilitation	\$0	\$0	\$0	\$0
Terminal Rehabilitation	\$6,545	\$2,197	\$486	\$9,228
System Planning	\$900	\$100	\$0	\$1,000
Program Total	\$450,615	\$59,960	\$170,841	\$681,417
Program Total (without MWAA)	\$251,843	\$53,960	\$100,014	\$405,817

2006 to 2020

	Federal	State	Local	Total
Commercial Service	\$1,340,011	\$49,796	\$478,719	\$1,868,526
Reliever	\$16,342	\$3,854	\$9,644	\$29,840
GA - Regional	\$18,352	\$5,214	\$9,192	\$32,758
GA - Community	\$26,443	\$8,684	\$5,315	\$40,442
Local Service	\$63	\$246	\$61	\$370
Runway Rehabilitation	\$19,839	\$48,254	\$12,064	\$80,157
Terminal Rehabilitation	\$32,724	\$10,984	\$2,432	\$46,141
System Planning	\$3,600	\$400	\$0	\$4,000
Program Total	\$1,457,375	\$127,431	\$517,427	\$2,102,233
Program Total (without MWAA)	\$274,693	\$97,431	\$112,873	\$484,998

2000 to 2020

	Federal	State	Local	Total
Commercial Service	\$1,663,922	\$84,745	\$626,274	\$2,374,940
Reliever	\$46,714	\$9,102	\$18,108	\$73,924
GA - Regional	\$48,326	\$11,070	\$16,873	\$76,269
GA - Community	\$85,088	\$19,367	\$11,712	\$116,168
Local Service	\$333	\$1,171	\$319	\$1,823
Runway Rehabilitation	\$19,839	\$48,254	\$12,064	\$80,157
Terminal Rehabilitation	\$39,269	\$13,181	\$2,919	\$55,369
System Planning	\$4,500	\$500	\$0	\$5,000
Program Total	\$1,907,990	\$187,391	\$688,268	\$2,783,650
Program Total (without MWAA)	\$526,536	\$151,391	\$212,887	\$890,815



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