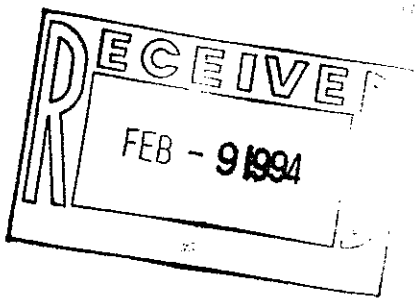

February 1, 1994

John Crump

Whereas the purpose of the Airport Advisory Commission is to assist and advise the New Kent Board of Supervisors in aviation related matters and whereas the primary desires of the Commission are to promote the airport for the use and enjoyment of the entire community and especially citizens interested in using aviation assets, the Commission will exert most of its efforts toward airport promotion and use and will respond to requests for assistance in [redacted] administrative matters only as requested by the Board of Supervisors or a member of County Administration as a representative of the Board.

2/8/94

Dear Pat:

I have received your memorandum of 2/2/94 relative to the purpose of Airport Advisory Commission. In the last meeting I objected, as did Ms. Abbs, to the maintenance being entered into the resolution.

If this wording is left in it will again allow the Commission to get into the day to day operation of the airport maintenance, and should be a matter between the County and Airport Manager. If we have a disagreement then this maintenance matter could be brought before the Commission for their recommendations. This however, would be covered as an advisory administrative matter.

Yours truly,

A. C. Worley

ACW/db

pc: John Crump

cc: BOS 2/9/94 bjw

BUCHART HORN, INC.

MEETING REPORT

DATE: December 9, 1994

PROJECT NAME: New Kent County Airport

PROJECT NUMBER: 71194

PREPARED BY: Ben Burton

MTG. LOCATION: New Kent County

PARTICIPANTS: Joe Emerson - County Administrator
Ben Burton - Buchart-Horn, Inc.

SUMMARY:

I hand-delivered Working Paper #1 (w/G. Barnes 12/9 transmittal letter and briefly reviewed: 1) the format - noted that it was in keeping with table of contents outline with exception that "Airport Management" section is now expected to precede "Future Use/Development" section; 2) the data in section 1 and 2 was essentially basic inventory and operational data with some minor facility recommendations; these would not be all of the recommendations and will be repeated with the overall study; 3) section 3 - Airport Management - was the primary section we are looking for his comments on a/o consensus with and 4) while he is reviewing, we are continuing with study as outlined in letter to produce Working Paper #2 in mid to late February.

Joe agreed he would review Working Paper #1 in detail and advise us of his comments (if BH hasn't received something in 2± weeks, I'll call him and ask status). After the comments are received and incorporated, he wants to schedule presentation to AAC. We agreed mid to late January was a good time and definitely want to do it prior to New Kent County receipt/evaluation of FBO bids on 1/31 so AAC would concentrate on study, not bid outcome.

We also discussed status of FBO bids - he advised it is on the streets with 22 bid packages sent out but they have received no bidder questions yet; he expects that will happen in early January.

71194MR.WS/D#81

cc: Joe Emerson
George Barnes

BUCHART HORN, INC.

9 December 1994

Mr. R. J. Emerson, Jr.
County Administrator
New Kent County
P. O. Box 50
New Kent, Virginia 23124

Consulting Engineers
and Planners

Suite 200, 1083 W. Rex Road
Memphis, TN 38119-3819
901 762 0341
FAX: 901 762 0343

Dear Mr. Emerson:

Re: New Kent County Airport
New Kent County, VA
AIRPORT FEASIBILITY STUDY
Work Paper # 1
BH Project No. 71194

Baltimore, MD
Cottbus, Germany
Frankfurt, Germany
Kenner, LA
King of Prussia, PA
Lancaster, PA
Lewisburg, PA
Magdeburg, Germany
Marlton, NJ
Memphis, TN
Pittsburgh, PA
State College, PA
Williamsburg, VA
York, PA

I had scheduled a meeting with the commission on 9 December, 1994, to present Work Paper # 1. I subsequently learned the meeting was cancelled. Therefore, Ben Burton is hand delivering Work Paper #1 today. Please contact me to discuss any aspect of the work paper.

I am proceeding with the study in the following manner:

- Tabulate based aircraft owner/business surveys;
- finalize forecasts;
- analyze future airport use/development;
- develop Airport Conceptual Improvement Plan;
- develop five-year development plan and budgeting plan and;
- prepare Work Paper # 2.

Ben has previously submitted the revised schedule and latest progress report. I suggest a rescheduled meeting between your office, the commission and Buchart-Horn. We can review my findings to date, your and the commission's comments, the FBO advertisement results, the "direction" of the study and the "feel" of the airport vis-á-vis recent developments in the county and the area.

Yours truly,

BUCHART-HORN, INC.

George D. Barnes

George D. Barnes, P.E.
Vice President

GDB/mkg
enclosures

BUCHART HORN, INC.

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Based
itinerate
mixed, and
hangared

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Based
itinerate
mix
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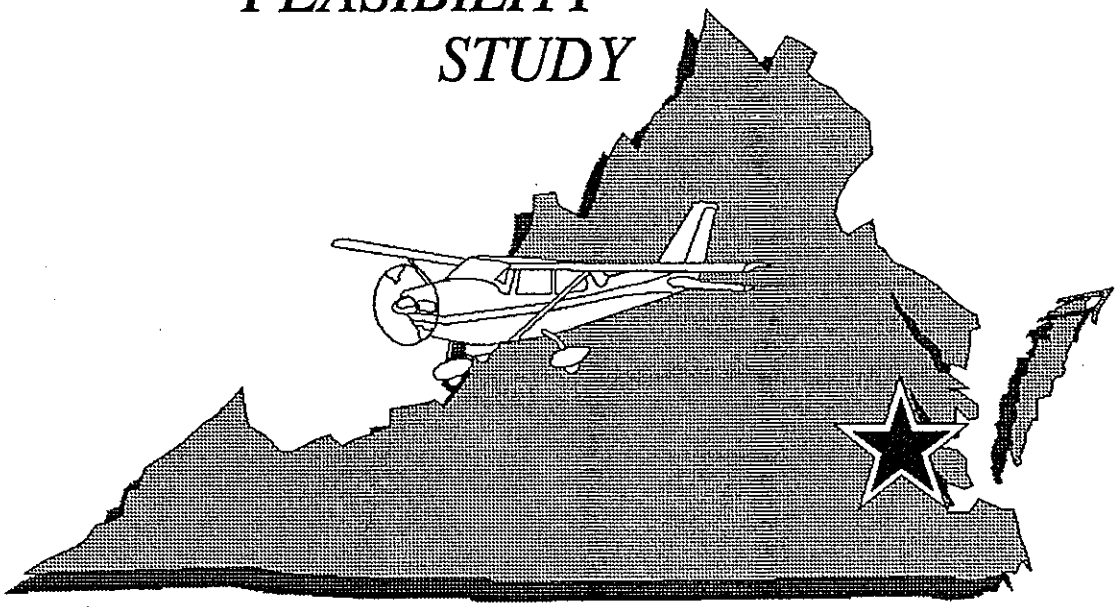
NEW KENT COUNTY AIRPORT
NEW KENT COUNTY, VIRGINIA

AIRPORT FEASIBILITY STUDY



WORK PAPER NO. 1
9 DECEMBER 1994

prepared by:

Buchart-Horn, Inc.
460 McLaws Circle
Williamsburg, Virginia 23185-5628

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SECTION 1

INVENTORY/ASSESSMENT

1.1 Airport Facilities

Runways

The existing runway system at **New Kent County Airport (NKC)** consists of a single 75 ft. by 3,600 ft. asphaltic concrete paved runway oriented in an east-west configuration (R/W 10-28). Data relative to the runway system are presented in **Table 1**. The overall condition of the runway pavement is judged as "fair," with some longitudinal surface cracking along the pavement joints. The runway was constructed in 1984, replacing a 2,300 ft. paved runway constructed in the late '60s. It was slightly reoriented at the time to provide better wind coverage and allow for the 3,600 ft. length. The runway has had some recent cracksealing treatment. That work has yet to be completed.

Taxiways

The existing taxiway system at **NKC** consists of a full length parallel taxiway to R/W 10-28, five exit taxiways connecting the runway to the parallel taxiway and a taxiway connecting the west T-hangar to the parallel taxiway. Two of the exit taxiways extend to the apron, one of which (referred to herein as the north-south taxiway) extends all the way to the south T-hangar area. The taxiways range in width from 15 ft. to 40 ft. All taxiways are constructed of asphaltic concrete.

The parallel taxiway and exit taxiways were constructed in 1984. The exit taxiways extending to the apron and the west T-hangar taxiway were constructed in 1986. The taxiways in the vicinity of the south T-hangar area were constructed in the late '60s. The taxiways constructed since 1984 are in fair to good condition. Taxiways constructed in the late 1960s (in the south T-hangar area) are in poor condition.

Because the centerline separation between R/W 10-28 and the parallel taxiway is only 150 ft, the Airport Reference Code (ARC) for **NKC** must be designated **B-I**. The ARC B-I designation is applicable only to aircraft with approach speeds less that 121 knots and less than a 49 ft. wingspan. Even though the existing R/W 10-28 width meets ARC B-II requirements (aircraft with less than a 79 ft. wingspan), the lower ARC designation must apply. However, almost all of the aircraft which can operate from **NKC's** existing 3,400 ft. runway have less than a 49 ft. wingspan. Therefore, the relatively narrow runway/taxiway separation is not considered a serious operating constraint at this time.

Table 1

NEW KENT COUNTY AIRPORT

RUNWAY DATA

Feature	Runway 10-28	Remarks
Length (ft.)	3,600	Meets length requirements for 100% of small aircraft with less than 10 seats. R/W 10 displaced threshold = 110 ft. ±
Width (ft.)	75	Meets Airport Reference Code (ARC) B-II requirement.
Surface	Asphaltic Concrete	Long cracks near R/W 28 end
Marking	Non-precision Instrument	Faded Markings
Lighting	Medium Intensity Edge	Amber lenses last 2,000 ft. R/W 28, some globes twisted
Visual Approach Aids	PAPI: R/W 28, R/W 10 REIL: R/W 28, R/W 10	PAPI's installed in 1992
Principal Function	Primary Runway	
Load Limits	12,500 lbs. Single Wheel	
Condition	Fair	

Source: FAA Form 5010 "Airport Master Record," dated 6-4-93; augmented by Consultant's field inventory conducted on 5-26-94.

Aprons

The primary apron at **NKC** is located near the center of the airport, south of R/W 10-28 and the parallel taxiway. The apron was constructed in 1986 and has an asphaltic concrete surface. Its dimensions are approximately 235 ft. x 700 ft. There is one single row of 15 aircraft parking positions along the north edge of the apron and a double row containing 29 positions in the center of the apron. Only eleven of the positions have ropes to tie down aircraft, but each position has tiedown rings. The asphaltic concrete surface of the apron is in good condition and the marking is good (inventory date of 26 May 94).

A smaller 125 ft. x 140 ft. apron is located adjacent to the old terminal. This apron has no tiedowns and is primarily used for access to the open-bay hangar adjacent to the old terminal building. The apron was originally constructed in the late '60s (when it served as the primary aircraft parking apron), but was repaved about 1986.

Airfield Lighting and Visual Aids

R/W 10-28 has medium intensity edge lighting. The lights on the last 2,000 feet of R/W 28 have amber lenses. FAA Advisory Circular (AC) 150/5340-24, Runway and Taxiway Edge Lighting System, instructs that the last 2,000 ft. of an instrument runway (or one half the runway length, whichever is less) have amber/yellow lenses to indicate the "caution zone" for rollout after landing. Therefore, at **NKC** the amber lights should begin 1,800 ft. from the R/W 28, not 2,000 ft. A few of the light globes are twisted and need straightening.

Runway threshold lights at both approach ends are standard and operative. Located near the threshold lights on each side of the runway (at both ends) are unidirectional runway end identifier lights (REIL's). The REIL's were installed in 1992 and are photoelectric.

Two-box precision approach path indicators (PAPI's) are located at each end of the runway. The R/W 10 PAPI is located on the right side (when approaching the runway) and the R/W 28 PAPI is on the left side. The PAPI's are relatively new and are installed on concrete pads.

There are concrete duct markers each side of the exit taxiways signifying the presence of the electric cables supplying power to the airfield electrical system. An electrical vault, containing the airfield power regulators and transformer, is located south of the parallel taxiway and just west of the north-south taxiway.

There are no taxiway edge lights nor reflectors.

A rotating beacon, mounted on a metal tower, is located at the mid-point of R/W 10-28, approximately 450 ft. north of the runway centerline and several feet above it.. The rotating beacon is of monotube type, with a 46-inch lens. Near the beacon is a segmented circle with a lighted wind cone. The segmented circle is not easily accessible due to high grass and trees which have not been cut nor cleared in the area.

Airfield Marking and Signage

The non-precision instrument markings on R/W 10-28, taxiway centerline and hold-line markings are all badly faded. Currently there are airfield signs installed along the taxiways to signify the runway, terminal direction, etc. Airport direction signs are provided for vehicular activity on and in the vicinity of the airport. The runway and taxiway signage does not conform to the FAA's AC guidelines.

Terminal Building

The terminal building fronts the west half of the main apron and is attached to an open-bay maintenance hangar. The terminal is approximately 24 ft. wide by 80 ft. long. The building contains a fixed base operator (FBO) counter, waiting room, snack bar, vending machines, kitchen, mens' and womens' rest rooms, pilot training room, pilot exam room, manager's office, assistant manager's office and a 16 ft. x 24 ft. recreation room.

The terminal building was constructed in 1986. It has wood siding that is painted light yellow. The building has a flat, built-up roof with a mansard of asphalt shingles on the east and north sides. The siding and the roof appear to be in good condition, however, there is minor leakage into the recreation room and assistant manager's office.

Access to the terminal is provided by two full safety glass exterior doors (north and east faces). Locks and fixtures are in working order. There are two security doors to the hangar at each end of the terminal building. Two doors in the recreation room provide emergency access to the outside. Other noted features of the terminal building include:

a. Positive

- double-hung glass wood-frame windows on the east side;
- canopies/porches over the entranceway from the ramp (north) and auto parking area (east);
- outside wooden benches and vending machine;
- neat and orderly FBO counter with unicom, credit card machine, business telephone, etc.;

- display case;
- recessed fluorescent lighting;
- outside public phone (under canopy);
- furniture includes couch, desks, chairs (some old) and cabinets;
- brown carpeting and;
- mens' and womens' rest rooms are clean and in good operating condition (inventory day).

b. Negative

- lack of exterior lighting (no bulbs in the three cluster ground spot lights) and;
- lacks Flight Service Station (FSS) telephone with direct line.

Overall, the terminal building is in "good" condition, adequate in size, functional and has a neat appearance.

Maintenance Hangar

This 65 ft. x 82 ft. steel and aluminum constructed facility is attached to the terminal building and fronts the main apron. It has an upward opening bi-fold door, flat metal roof with four fiberglass skylights and an off-white/tan painted exterior. Two spot lights provide exterior lighting. Twelve fluorescent lights provide interior lighting. There are no windows. Two ceiling heaters and four ceiling fans provide heating and air circulation. The walls and ceiling are insulated.

On inventory day, the aircraft bay housed two Cessna 150's, one PA-22, one Piper Cub and an experimental bi-plane. In addition to the aircraft bay, a shop, parts storage room and battery room are contained in the hangar. The shop houses many specialty tools (including oxygen tanks, shear press, pipe threader, drills, etc.) and is in clean and neat condition. Overall, the hangar is in "good" condition, clean and neatly arranged.

Old Terminal, Maintenance Shed and Storage Hangar

Located across the north-south taxiway from the maintenance hangar is the old terminal building, maintenance shed and storage hangar. These facilities front the small apron located west of the north-south taxiway.

The old terminal is two stories high and is used primarily for storage. It is constructed of brick and steel material. Generally, it is in "fair" condition.

The maintenance shed is attached to the terminal building. It has steel frame construction with corrugated metal siding. The siding, sliding metal doors and metal roof all show extensive rusting. The overall condition of this facility is "poor."

The storage hangar adjacent to the old terminal/maintenance shed is 42 ft. x 50 ft. The facility is of metal construction. The doors are dented, warped and are punctured. Interior lighting is provided by six overhead fluorescent lights. There is direct aircraft access from the hangar to the small apron.

Inside the storage hangar are hazardous materials (fifteen 50 gallon drums), an old refrigerator, wood, miscellaneous junk and an airplane. The concrete floor is dirty with oil and grease spewed all over. The area outside the hangar contains airfield maintenance equipment aircraft parts and junk.

T-hangars

A total of 36 T-hangar units are provided at **NKC**. Sixteen of the units are in the west T-hangar building located south of the parallel taxiway and east of the R/W 10 approach end. This T-hangar is constructed of steel (frame) and corrugated metal (siding and roof). The exterior siding is painted in an off white color. The overall condition of the west T-hangar is "fair" to "good." Electric service is provided. Drainage in the area of this T-hangar is poor.

The remainder of the units are located in three T-hangars situated in an area south of the main apron and maintenance hangar. Two of the T-hangars, which house 8 units each, are constructed of steel and corrugated metal. Electric service is provided. The T-hangars are unpainted and in "poor" condition. Both units sag to the west and contain several dents in their siding. The steel framework is beginning to rust. The hangar doors are dented, torn and are punctured. Grass and weeds are growing through cracks in the pavement outside the T-hangars and through the concrete floor inside. Drainage is poor.

The third T-hangar, which has four units, is in "poor" condition. The steel framework is beginning to rust and the sliding doors, on the units that have them, are beginning to rust. There is no electrical service to this smaller T-hangar.

The location and configuration of the three, old T-hangars in the main terminal area should be assessed in relation to access and functionality. Further, the potential for long term usability and adequate protection for expensive aircraft must be considered.

Fuel Facility

The aircraft fueling facilities at **NKC** consist of two individual fuel pump dispenser/ underground storage systems: One 100 octane low lead aviation fuel; one gasoline for automobiles and airplanes. The 100 octane low lead fuel pump and underground storage tank are located on (and under) a paved (concrete) area just west of the maintenance hangar. The auto gas system is located on (and under) a concrete pad at the small apron near the old terminal building.

The outward condition of the fuel facilities appears to be "good." The condition of the underground tanks is unknown to the Consultant.

Utilities

Utility services at **NKC** include electric (Virginia Power), well water and septic sewer. Electric charges and septic sewer maintenance costs are paid by the FBO.

Fencing

NKC only has a partial perimeter fence system. It consists of a three foot high woven wire fence around the T-hangars, terminal access road and auto parking lot. Four foot high stock fencing is located along the southern boundary of the main apron, along the west side of the north-south taxiway and south of the western half of the parallel taxiway.

Three sets of vehicle gates are located within the perimeter fence system. Two gates access the main apron and the third is located near the south T-hangars to provide vehicular access to that area. A pedestrian gate is located near the terminal and accesses the apron.

The north side of **NKC** is unfenced, especially in the area where residences abut the airport property. The Consultant recommends fencing the entire **NKC** property as a priority for safety and security reasons. The vehicle gate located near the T-hangars should be locked at all times to prohibit unlawful and inadvertent entry into aircraft movement areas.

Lighting

Exterior lighting at **NKC** is limited to the spot lights on the maintenance hangar. No street light or other type of exterior lighting is provided. For safety reasons, more exterior lighting is needed at **NKC**, especially in the apron and hangar areas.

Access Roads, Auto Parking and Circulation

The access roads on the airport are in "good" condition. However, access to the airport from U.S. 60 and I-64 requires the airport bound driver to travel a very circuitous route. A number of turns are required from the two main thoroughfares (2.5 miles from U.S. 60; 5 miles from I-64) on routes that consist of narrow, rural residential roads with numerous horizontal curves.

The auto parking lot adjacent to the terminal is paved but not marked. It appears adequate in size to meet the needs of the terminal and maintenance hangar patrons and employees.

On-airport access is lacking in the area of the west T-hangar. The T-hangar renters are required either to drive or walk through aircraft movement areas in order to access their planes.

1.2 Airspace, Weather and Navaids

Airspace

The airspace in the area of **NKC** is under the jurisdiction of Richmond Approach/Departure Control (RIC Approach). **NKC** is just east of the Richmond International Airport Air Traffic Control Zone (RIC CZ) and within the Richmond Airport Radar Service Area (ARSA)/Class C airspace. Aircraft arriving into **NKC** at altitudes over 1,600 ft. MSL must be in contact with RIC Approach, then obtain local traffic advisory using the unicom frequency. Aircraft at altitudes under 1,600 ft. need only to be monitoring the local unicom frequency as long as they remain outside the RIC CZ.

According to the Richmond Regional Airports System Plan, dated November 1988, **NKC** runway orientation and proximity to Richmond International Airport (RIC) result in overlapping instrument approaches. Aircraft approaching R/W 10 under instrument conditions must be coordinated with traffic using the primary runways at RIC. Future instrument approaches at **NKC** may be restricted because of the airspace overlap.

There are no other known airspace overlaps between **NKC** and other airports in the region.

Obstructions and Hazards

Trees under the approaches to R/W 10-28 were cleared between 1988-1992. However, the Consultant's 26 May 1994 inventory of the airport indicates that new trees are growing fast under the R/W 10 approach surface and that some will soon become hazards to aircraft approaches to that runway.

The most recent FAA Form 5010-1, Airport Master Record, dated 6/4/93, stated that there are 66 ft. high trees located 1,200 ft. from the end, and 104 ft. to the right of R/W 10. As a result, the obstacle clearance slope is 15:1 instead of 20:1. Since this area is controlled by the airport through an avigation easement, the county of **New Kent** should top or remove the subject trees (and any other trees that will be imminent obstructions) at earliest possible time.

Navaid Adequacy

There are currently no navaids located on **NKC**. However, the Richmond VOR (9 NM west) and the Hopewell VORTAC (10.5 NM south) are in proximity to the airport. Given the instrument airspace overlap with RIC, and newly developing satellite positioning technology, the Consultant is of the opinion that future navaid enhancements at **NKC** could be limited to a satellite based Global Positioning System (GPS) providing a non-precision instrument approach.

Wind Rose and Meteorological Data

The wind rose and wind coverage data depicted on the 1984 Airport Layout Plan for **NKC** were reviewed by the Consultant. The wind coverage data are presented in **Table 2.**

The prevailing all-weather wind direction at **NKC** is from the south/southwest. This is inconsistent with the east-west oriented R/W 10-28. As a result, the 10.5 knot cross wind coverage (for aircraft with wingspans less than 49 ft.) is only 91.8%, which is below the FAA prescribed 95% coverage. Curtailment of aircraft operations, particularly flight training, due to high cross wind conditions are more apt to occur at **NKC** than at an airport which meets the 95% wind coverage requirement.

The mean maximum temperature at **NKC** is 76 degrees fahrenheit.

Table 2

NEW KENT COUNTY AIRPORT

WIND DATA
ALL WEATHER CONDITIONS

Runway	10.5 kt. Crosswind Coverage	12.5 kt. Crosswind Coverage
10	41.27%	44.02%
28	50.52%	54.19%
Combined	91.79%	98.21%

Source: 1984 Airport Layout Plan, prepared by Delta Associates P.E., Inc.

1.3 Environmental Overview

Wetlands/Environmentally Sensitive Areas

Review of the New Kent County Resource Protection Area map reveals that there are resource protection areas (RPA's) immediately off each end of **NKC**'s R/W 10-28. The RPA's are associated with two separate streams and surrounding wetlands protected by the Chesapeake Bay Protection Act. These two streams flow into Kent Lake just 1/2 mile south of the airport. The lake discharges into Toe Ink Swamp which then flows into the Chikahominy River.

An RPA encompasses an area that extends approximately 100 ft. beyond limits of wetlands/environmentally sensitive areas. Improvements, other than roads and utilities, can not be implemented within the RPA's without major mitigation measures being implemented. Presence of the existing RPA's at **NKC** will likely make any wetland/conservation area mitigation associated with the extension of R/W 10-28 cost prohibitive.

In addition to the two RPA's, there is a fresh water pond immediately south of the main apron. Any disturbance to this body of water and associated wetland fringes for airport expansion will require permitting and approval of local, state and federal environmental/ wetland protection agencies (Virginia Department of Environmental Quality, etc.).

Flood Zones

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate map, **NKC** and adjoining areas are outside the 100 year flood boundary. The closest point where the 100 year flood boundary reaches **NKC** is Toe Ink Swamp, south of U.S. 60, 1 mile south of the airport.

Aircraft noise and other environmental impact categories have little or no effect on existing or imminent conditions at **NKC**. However, as residential development increases in the vicinity of the airport, aircraft noise may become an environmental issue. This situation needs to be closely monitored by the county in the event noise mitigation measures, such as land use and zoning controls, become required for land surrounding the airport.

1.4 Land Use and Zoning

On-Airport Land Use

Given **NKC's** relatively small size (148 acres)when compared to other airports of its type, the types of land uses are limited to those associated with general aviation. The "specific" land uses on **NKC** include airfield operations and aviation support. There are no non-aviation commercial or industrial land uses.

Airfield operations land use includes areas that encompass the runways, taxiways, runway protection zones, runway safety areas and runway object free zones. Aviation support land use includes areas that encompass the terminal, hangars, aircraft parking apron, access roads and parking.

According to the county's Draft Comprehensive Land Use Plan, dated June 15, 1992, the official "generalized" designation for existing land use at **NKC** by the New Kent County Department of Planning and Community Development is "Transportation/Utilities." **NKC** property is currently zoned "Industrial Limited" (M-1).

Surrounding Land Use and Zoning

According to the county's 1992 Draft Comprehensive Land Use Plan, the designated land use surrounding the airport is forest/open space. Private residences are scattered within the forest and open space areas. The Consultant agrees with the county's land use designation except for the area south of the airport which comprises the Woodhaven Shores subdivision. This area should be designated as existing single family residential.

The zoning surrounding the airport includes the following:

- North boundary, limited industrial (M-1), extending to I-64 right-of-way and a small area of single family residential (R-1) just north of R/W 10-28;
- east boundary, limited industrial (M-2);
- south boundary, single family residential (R-2) and general agriculture (A-1) and;
- west boundary, single family residential (R-1), general agriculture (A-1).

The land use within the runway protection zones (RPZ's) for **NKC** R/W 10-28 is forest/open space. The are no residential structures currently within the RPZ's. Existing zoning in the areas encompassing the RPZ's is comprised of single family residential (R-1) under the west RPZ (R/W 10) and limited industrial (M-2) under the east RPZ (R/W 28).

Land Use Controls

New Kent County has enacted land use controls for the airport and environs. A conditional use permit, dated January 21, 1985, issued by the county for **NKC,** outlines terms and conditions under which the airport is permitted to operate. These terms and conditions include:

- Compliance with FAA and VDOT airport regulations;
- county approval of all new structures;
- preparation of soil and erosion control plans for any construction/disturbance of land and;
- implementation of natural buffers between the airport and residential areas.

New Kent County, through Chapter 9, Division 21, of its official code, has established restrictions for areas adjacent to the airport. These areas include:

- Airport flight zones (Sec. 9-318);
- height limitation (Sec. 9-319);
- prohibited activities (Sec. 9-320);
- vested rights not impaired (Sec. 9-321) and;
- special provisions relating to zoning permits (Sec. 9-322).

The county, through purchase of easements within the RPZ's of R/W 10-28, has the right to control land use activities within these areas. FAA AC 150/5300-13, Airport Design, Change 2, Paragraph 212 (4) (b), dated 6/5/91, states: "land uses prohibited from the RPZ are: residences and public assembly." Since the land use controls currently in place by the county may be construed to allow residential development in the R/W 10 RPZ easement, the Consultant recommends that this area currently zoned as single family residential (R-1) be rezoned by the county to a designation that complies with FAA regulations and guidelines. This action will help enforce the county's right to prohibit residential land use within the R/W 10 RPZ.

Proposed Surrounding Land Use and Zoning

According to the county's Draft Comprehensive Land Use Plan, dated June 15, 1992, the future land use proposed by the New Kent County Department of Planning and Community Development for the areas surrounding **NKC** includes the following:

- North boundary, medium density residential, low density residential;
- east boundary, conservation and agriculture;
- south boundary, medium density residential and;
- west boundary, conservation and medium residential.

The Consultant, after review of the county's future land use plans, is concerned that the future residential land use west and northwest of the airport may be incompatible with aviation operations. If more residential development is allowed to occur in close proximity to the airport, there is a likelihood that aircraft generated noise over residential areas will become a future problem, and a land use compatibility/environmental concern.

The Consultant recommends that the county revisit its future land use plan and redesignate the residential land use west of R/W 10-28 to a land use compatible with the existing airport.

1.5 Ground Access

Airport Entrance Roads

Access into **NKC** is provided via Terminal Road (VA 686). Terminal Road connects with Airport Road (VA 612), which provides access from the north, and Old Roxbury Road, which provides access from the south. All three roads are narrow, two lane facilities with restrictive horizontal and vertical alignment. Signs directing people to the airport from U.S. 60 provide just adequate instructions. Some additional signing in more strategic locations is warranted.

Existing I-64/U.S. 60 Access

Interstate Highway 64 (I-64), a major regional east-west, divided /controlled access thoroughfare is located approximately 1,000 ft. north of **NKC**. Access from I-64 eastbound to **NKC** (from Richmond) can be made from the New Kent Highway interchange via New Kent Highway (VA 249) north to Airport Road south, or south to Pocohantas Trail (U.S. 60) east to Old Roxbury Road north. From I-64 westbound (Williamsburg), access to **NKC** can be made from the Emmaus Church Road interchange via Pine Fork Road (VA 610) west to Airport Road south. All roads mentioned, with the exception of I-64 and U.S. 60, are two-lanes. U.S. 60 and I-64 are four lanes, divided.

Future I-64 Access

Airport Road now over-crosses I-64 on a two lane bridge northwest of **NKC**. Based on the Consultant's information from the VADOT, there are no plans to build an interchange at I-64 and Airport Road. The factors that mitigate against consideration of an interchange at that location are: 1. Right-of-way acquisition costs; 2. displacement of residents in several high quality homes; 3. proximity to existing interchanges at I-64/VA106 (approx. 5.5 miles east) and I-64/VA 249 (approx. 3.5 miles west); 4. rolling terrain that would require extensive construction methods/costs and ; 5. the low traffic volume projections on Airport Road.

1.6 Socioeconomic Data

Airport History

The history of **NKC** was complied from information provided by the airport manager (and airport founder), A.C. Worley, and the Airport Master Plan dated June 1974.

The **New Kent County Airport** was constructed in 1955 by Mr. Worley. The initial airfield was a 1,200 ft. turf runway. In the late '50s, the runway was extended twice: First to 1,800 ft., then to 2,000 ft. It was eventually paved. In 1969, the runway was extended to 2,300 ft. Throughout this period, the airport was privately owned, but open to the public. A number of facilities were added during the first twenty years of the airport's operation: A terminal building, T-hangars, open-bay hangar and maintenance shed.

In 1979, the ownership of **NKC** was transferred to the **New Kent County.** The airport was closed in 1984 to allow for construction of a new 3,600 ft. runway to replace the old 2,300 ft. runway. In 1986, an aircraft parking apron, terminal and maintenance building were constructed. Emphasis on airport development since 1984 has been associated with land and easement acquisition, installation of visual approach aids and improved runway lighting.

County Population

New Kent County's population has increased significantly since 1950. **Table 3** shows the actual population numbers reported for the county by the U.S. Census Bureau. The Consultant sought data on population projections for **New Kent County.** The only data available were found in the county's draft Future Land Use Plan, which listed the population projection source as being Richmond RPDC. Their projections showed that the county's population will almost double to 19,500 between 1990 and 2010.

Table 3

NEW KENT COUNTY AIRPORT

POPULATION STATISTICS
NEW KENT COUNTY

Year	Population
1950	3,995
1960	4,504
1970	5,300
1980	8,781
1990	10,445

Source: U.S. Department of Commerce, Bureau of the Census; various years.

County Location

New Kent County is located in east central Virginia, approximately 15 miles east of Richmond, the state capital. Other population centers in relation to **New Kent County's** boundaries are Williamsburg (15 miles southeast), Petersburg (25 miles southwest) and Newport News (45 miles southeast).

The county lies in the Virginia Coastal Plain and has a land area of 212 square miles. Major rivers include the Pamunkey, York and the Chickahominy.

The county's proximity to Richmond has attracted a number of "commuter" residents. Many **New Kent County** residents work in the adjacent urbanized Henrico County, but desire to reside in a county with a more "country-like" setting. This trend is expected to continue in the foreseeable future.

In the autumn of 1994, the county was successful in its quest to locate a horse racetrack (Colonial Downs) within its boundaries. An earlier county-wide referendum showed the residents' interest in having such a facility to foster economic growth. **NKC** is approximately 10 miles west of Colonial Downs, which is slated to open in 1996.

Airport Ownership and Operation

NKC is owned by **New Kent County**. The county acquired ownership from a private owner, Mr. A.C. Worley, in 1974. Mr. Worley is presently the airport manager and the fixed base operator (FBO), dba Worley Aviation, Inc.

Worley Aviation's lease as the FBO/manager expires on December 31, 1994. In anticipation of the lease expiration, the county has placed advertisements for an FBO and has updated the FBO minimum standards with assistance from the Consultant. Further discussion regarding airport management issues is contained in **Section 3** of this work paper.

1.7 Airport Activity

Based Aircraft and Annual Operations

Airport activity level is an important element when the **VADOT** and the **FAA** consider funding improvements at public airports. An activity level is measured by two elements: Based aircraft and annual operations.

Based aircraft are aircraft stationed at an airport on a permanent basis. Annual operations are the total number of take-offs and landings by all aircraft at the airport over a one year period. Airport operations at **NKC** are divided into two categories: Local and itinerant.

Local operations are operations conducted within a 20 mile radius of the airport. Itinerant operations are operations conducted beyond 20 miles.

Table 4

NEW KENT COUNTY AIRPORT

BASED AIRCRAFT & AIRCRAFT OPERATIONS

Year	Based Aircraft	Annual Operations
1960 (1)	7	n/a
1968 (1)	23	n/a
1973(1)	62	24,800
1978(2)	35	n/a
1983(2)	40	8,972
1987(2)	43	25,250
1988(3)	55	29,485
1992(4)	59	18,350
1994(5)	31	n/a

Sources:
1. Airport Master Plan, dated June 1974, by Deberry, Nealon & Davis.
2. Richmond Regional Airports System Plan, dated November 1988, by Aviation Planning Associates with Campbell and Paris.
3. Virginia Air Transportation System Plan, 1989
4. FAA Form 5010, Airport Master Record, dated 6/4/93,
5. Worley Aviation, Inc., March 1994.

n/a: Data not available

For most of the past 25 years, the recorded based aircraft level at **NKC** has fluctuated significantly. These fluctuations were mainly attributed to the economy and cyclical turnover of aircraft owners basing at the facility.

After experiencing increasing numbers of based aircraft in the '80s and early '90s, the level of based aircraft has again declined. FBO/manager data for March, 1994, lists 31 based aircraft at **NKC**. With the exception of only one aircraft, a Cessna 310, all the aircraft based **NKC** are single engine types (as of March, 1994).

Aircraft operations at **NKC** grew steadily from 1983 to 1988. However, both itinerant and local operations have declined over the past years from 28,495 in 1988 to 18,350 in 1993.

The decline in airport activity may be attributed to the rising costs of operating general aviation aircraft and subsequent reduction in recreational flying and flight training. Competition from other Richmond area general aviation airports (particularly Hanover and Chesterfield County) is also a contributing factor in the decline in airport activity at **NKC**. Those airports offer longer runways, wider runway/taxiway separations, newer and more serviceable/accessible GA facilities and a wider range of services for aircraft and their pilots/ passengers.

Business, Industry and Private Use

Almost 85 percent of the operations **NKC** are <u>local</u> flights. That translates into a high amount of flight training (touch-and-go's, etc.) and recreational flying. At most GA airports, business flying is predominantly itinerant. Since only a small amount (15%) of the operations are itinerant, **NKC** currently does not realize a high amount of business flying.

According to the FBO/manager, only 13 of the 31 (45%) aircraft based at **NKC** (March, 1994) are used for business/industry purposes. Five of those aircraft are owned by the FBO and used for rental, charter and training. The remaining aircraft are used for private flying purposes.

1.8 Owner/Pilot/Business Surveys

The Consultant is currently tabulating and evaluating the surveys. Results will be contained in this sub-section in subsequent reports. Some perfunctory observations have been made by the Consultant and will be discussed with the Commission at the Work Paper #1 review meeting.

SECTION 2

FORECASTS

2.1 Airport Role

The level of forecasted activity for an airport is tied to the role that it is designated to serve. The FAA's publication entitled "National Plan of Integrated Airport Systems (NPIAS)", Virginia Air Transportation System Plan and Richmond Regional Airports System Plan all identify **NKC's** role as being a general aviation (GA) airport.

The federal and regional system plan lists **NKC's** service level as being a GA airport. The state system plan lists **NKC** as a "community" GA airport.

All three system plans list **NKC's** designated role as a "general utility" airport, meaning that the physical airfield facilities would remain status quo. No reference is made in the three system plans of changing **NKC's** status to a "reliever" airport for Richmond International Airport (which meets the FAA's NPIAS criteria for a "relieved" airport).

According to the NPIAS, the criteria for an airport to become a reliever airport are: "1. The reliever airport must provide substantial capacity, or instrument training relief, as evidenced by: (a) A current activity level (or, in the case of a new airport or an airport that is slated for major improvement, a forecasted activity level) of at least 50 based aircraft, or 25,000 annual itinerant operations, or 35,000 annual local operations; or, (b) the FAA Regional Administrator has determined that the airport is a desirable location for a reliever airport." (Quote from Chapter 2, p. 5, 1991 edition of the FAA's NPIAS.)

Until very recently, **NKC** has had over 50 based aircraft. From 1988 to 1992, the number of based aircraft at the airport ranged from 55 to 59. This level of activity alone should have made the airport eligible for reliever status in the NPIAS and the state and local system plans. The Consultant notes that: 1. There is instrument airspace overlap constraints due to **NKC's** proximity to Richmond International Airport (RIC) and; 2. further extension of R/W 10-28 may be cost prohibitive due to existing environmentally sensitive areas. **NKC** does have ample airfield capacity and areas in which land side facilities (i.e. hangars, apron, etc.) can be expanded to accommodate demand from small GA aircraft owners.

It is the Consultant's opinion that **NKC** has the potential to adequately serve a "niche" GA market in the Richmond region. This market is comprised of smaller GA aircraft owners that do not require extensive airfield facilities (i.e. 4,000 ft. or longer runways, electronic landing aids, etc.) at their airport.

What is important to these owners is an airport with quality T-hangars, good and friendly FBO services and easy vehicular access to their residences, Richmond and local attractions.

Although **NKC** currently does not meet the reliever airport criteria, activity levels in recent years indicate that the level of reliever eligibility can be achieved. The airport's proximity to downtown Richmond, the advent of the horse racetrack and continued residential growth in **New Kent County** are good reasons to assume there will be sufficient aviation demand at **NKC** so it can again realize the reliever eligibility activity level in the near future. The state and regional system plans have forecast activity levels for **NKC** that will exceed reliever criteria by 1998.

Positive actions need to be taken at **NKC** to revive the prior activity level. Regional based aircraft/pilot/business surveys conducted as part of this master plan indicate that facilities and services lacking at **NKC** include....

(The Consultant will complete this sub-section after tabulation and evaluation of the based aircraft/pilot and business surveys).

2.2 Aircraft Identification

Existing Based Aircraft Forecasts

Published forecasts for **NKC** based aircraft are included in the NPIAS (published, 1991), Virginia Air Transportation System Plan (VATSP; published, 1989) and the Richmond Regional Airports System Plan (RRASP; published, 1988). These forecasts are shown in **Table 5.** The 1974 Airport Master Plan also contains based aircraft forecasts, but the 20-year old date of these projections subjects them to question. The wide range of difference in the projections is attributable to different sources of base year data and forecasting methodologies employed.

Table 5

NEW KENT COUNTY AIRPORT

BASED AIRCRAFT FORECASTS

Year	NKC Based Aircraft		
	NPIAS	VATSP	RRASP
a	40	55	46
b	40	75	52
c	40	88	56
d	n/a	111	62

Years: a: (Actual) NPIAS=1990; VATSP=1988; RRASP=1987
b: (Forecast) NPIAS=1995; VATSP=1993; RRASP=1992
c: (Forecast) NPIAS=2000; VATSP=1998; RRASP=1997
d: (Forecast) VATSP=2008; RRASP=2010

(The Consultant will complete this sub-section after tabulation and evaluation of the based aircraft/pilot and business surveys).

2.3 Aircraft Operations

Aircraft Operations Forecasts

Forecasts of **NKC** annual aircraft operations are included in the NPIAS, VATSP, RRASP and the 1974 Airport Master Plan. The 20-year old date of the 1974 Master Plan projections subjects those numbers to question. The operations forecasts included in the three system plans are shown in **Table 6.** The wide range of difference in the operations forecasts is attributable to different sources of base year data and forecasting methodologies employed.

Table 6

NEW KENT COUNTY AIRPORT

AIRCRAFT OPERATIONS FORECASTS

Year	NKC Annual Operations		
	NPIAS	VATSP	RRASP
a	13,000	29,485	25,250
b	15,000	39,225	29,146
c	16,000	45,556	31,880
d	n/a	56,757	39,720

Years: a: (Actual) NPIAS=1990; VATSP=1988; RRASP=1987
b: (Forecast) NPIAS=1995; VATSP=1993; RRASP=1992
c: (Forecast) NPIAS=2000; VATSP=1998; RRASP=1997
d: (Forecast) VATSP=2008; RRASP=2010

(The Consultant will complete this sub-section after tabulation and evaluation of the based aircraft/pilot and business surveys).

SECTION 3

AIRPORT MANAGEMENT

3.1 Importance of Airport Management

New Kent County has a significant investment in the **New Kent County Airport (NKC)**. The return on that investment depends largely on how well the facility is managed. Good management is the key to success of any airport.

The expertise and dedication of the individuals involved in airport management are important factors. Significantly, the first step in addressing the subject of airport management is to establish a formal management structure. Many different arrangements can be used for airport management. The "best" choice has to be made by each owner of that particular airport (**"sponsor"**) based on local situations, needs and priorities.

3.2 Policy-Level Management and Control

Local governments have several alternatives for airport management and control, including:

- Direct management as a function of government;
- delegation of some, or all of the powers and duties to an airport officer, or a board (frequently referred to as an "airport commission" or "airport committee") and;
- establishment of an "airport authority" with independent decision-making jurisdiction.

3.3 Approaches at Similar Airports

Direct Management by Local Government

This alternative focuses responsibility on local elected officials. It is designed to ensure that decisions relative to the airport are consistent with overall policies and priorities for the county ("sponsor"). This arrangement facilitates the use of all the resources of the local government for the benefit of the airport. However, local officials may not have the time or expertise necessary to address every airport issue in sufficient detail to affirm sound airport management.

Delegation to Commission or Committee

An airport commission permits local governments the benefit of additional expertise. It promotes more thorough review of issues and decisions that affect the successful operation of the airport. Through active members who are knowledgeable about aviation and area needs, an airport commission ensures that airport users and the sponsor have more opportunities to influence decisions regarding the airport. However, most airport commissions have limited authority to make final decisions. The division of responsibility between an airport commission and local government officials can lead to confusion and delays in decision making. The membership of some commissions may be subject to frequent turnover, causing a loss of continuity of leadership.

Airport Authority

In some situations, an airport authority offers the best opportunity for decisive management of an airport. Decision making responsibility is assigned to an independent board appointed by the local government. Continuity is assured by staggered terms. The authority can establish and implement multi-year plans for the airport. An authority can be especially useful in expediting decisions when the airport is owned by more than one local government. Some airport authorities have the power to levy ad-valorem taxes. However, most must rely on local government for any funding that exceeds the revenues generated by airport operations. An airport authority must depend on the local government for zoning and for coordination of the airport with other public facilities and services. An airport authority must make special efforts to coordinate with local elected officials and to ensure that the authority's decisions are consistent with the overall policies and priorities of the local government.

3.4 Management Alternatives

FBO/manager

The success of an airport in serving a sponsor is, to an extent, related to the success of an FBO's business on that airport. Therefore, an FBO has an incentive to ensure that the airport is well managed. If an FBO provides a full range of services, then employment of a separate airport manager may be an unnecessary expense for the sponsor. However, the FBO's first priority must be the success of his business. The interests of the airport and the sponsor may not always be consistent with the FBO's interests. Even when a joint FBO/manager arrangement has proven mutually beneficial, subsequent declines in the FBO's business can lead to declines in the overall quality of airport management.

Therefore, under the FBO/manager option, it is extremely important that the contract clearly specify the FBO's duties and responsibilities. It is equally important that the financial arrangements accurately and fairly reflect those duties and responsibilities. The sponsor does not want the FBO to focus, for instance, on flight training at the expense of service to itinerant aircraft. It is not reasonable, however, to expect an FBO to provide complimentary services for airport visitors unless the costs of those services were considered as part of the contract negotiations.

Airport Manager

An independent airport manager avoids the potential conflict of interest that is inherent in the FBO/manager option. However, this arrangement requires an additional direct expense for the sponsor. An airport manager is needed for large airports with extensive facilities, scheduled passenger service and/or multiple FBO's. However, a salaried airport manager may be the only option for an airport without sufficient activity to support a profitable FBO. Even when a separate airport manager is not essential, the benefits to the sponsor may justify the expense to ensure that the governing body's policies are implemented and its priorities addressed.

Variations

Several interrelated factors should be considered in providing for day-to-day management of the airport. Variations of the two basic options described may be appropriate. One variation is the employment of a part-time airport manager or the assignment of part-time responsibility for airport management to a full-time employee of local government. This can be especially beneficial in coordinating the other units of local government. They may be able to assist with the operation and maintenance of the airport.

Another variation where the airport does not generate enough business to support a full-service FBO is for the local government to supplement the FBO's income to compensate for the FBO serving as airport manager. Another variation to maintain the "profit incentive" is for the sponsor to employ an airport manager and offer supplemental pay for revenues generated in excess of a set amount.

3.5 Existing Airport Management

NKC is owned by the **County of New Kent, Virginia.** Its management and day-to-day operations are the responsibility of Worley Aviation, Inc. (the FBO) under an original ten year lease dated 24 January 1984.

The original lease entitles Worley Aviation exclusive use of the terminal, all hangars and residential rental property (farmhouse) on the airport. Revenue generated from the sub-rental of airport facilities leased to Worley Aviation, Inc. is kept by the lessee. As rent payment to the county for its lease of airport facilities, Worley Aviation manages and maintains the airport (mowing, snow removal, repairs, etc.) without cost to the county. Worley Aviation pays the county $ 1,500 per year (inflation adjusted) for electric service to the airfield lights and visual aids. Over the past three years, Worley Aviation has reported a combined loss of $100,000 from its FBO/manager arrangement at **NKC**.

The current lease expires 31 December 1994. Under the original document, the lease can be extended through 31 December 2004 if agreed to by the lessor (**New Kent County**) and the lessee (Worley Aviation). The county has opted not to extend the current lease, and informed Worley Aviation in writing of its decision.

3.6 Development of Operational/Management Standards

In light of these events, the Consultant, as part of his scope of services for this feasibility study, has assisted **New Kent County** in promulgating rules and regulations relating to a new FBO/manager arrangement at **NKC.** The Consultant researched several management contracts, leases and minimum standards from other GA airports. The Consultant also provided its professional opinion and drafted suggested documents for the county's use.

Minimum standards for FBO activities at the airport were prepared by the Consultant and submitted to the county. The county finalized minimum standards for FBO operations at **NKC** and published a request for proposal for an FBO/manager (advertised in November 1994).

(All documents relating to the new FBO/manager arrangement will be appended to the draft and final feasibility reports. Most of the documents are in the draft stage and are not available for inclusion in this draft work paper).

3.7 Recommendations

A commission type of management is present at **New Kent County** through the auspices of the **New Kent County Airport Advisory Commission.** Although the commission currently has an "advisory" capacity, the basic structure is in place for formulation of a more "empowered" governing body.

The Consultant suggests that continuation of an FBO/manager arrangement is best suited for the airport. If the airport develops, aircraft operations increase and the number of based and itinerant aircraft exceeds those anticipated in five years, then the situation should be reassessed. At that time, a full time or part time, independent manager may be hired/appointed.

When the new FBO/manager lease is written, the county should be sure that the following items are addressed:

- Establishment of policy, rules and procedures;
- establishment and maintenance of open and continuous communications between commission and FBO/manager;
- establishment of a rent payment considering that the county is entitled to a fair market rate for leasing of airport facilities, and recognizing that the size of the airport and its facilities limit the revenue generation capability of an FBO;
- setting and holding of monthly commission meetings at the airport at a set day and time;
- proper and comprehensive distribution of commission meeting agenda in advance of each meeting;
- invitation of FBO/manager to attend each commission meeting to present her/his reports;
- commission's continuous monitoring of total airport operations, including income and disbursements, with requirements for monthly accounting;
- allowance for FBO/manager to operate airport on a day-by-day basis, with availability of commission personnel for periodic consultation and policy decisions;
- provision for each commission member to be periodically briefed on airport operations;
- involvement of commission members in airport functions so as to be knowledgeable enough to present the airport "story" to civic and citizens' organizations and;
- an active interest among commission members and local officials in promoting the airport, its facilities and services.

The Consultant also recommends that the advisory commission's role be increased, and that it should act for the county on all matters dealing with operations and maintenance of the airport except expenditures of funds and legal matters. It should make recommendations to the county in relation to needed improvements and repairs at the airport, and their respective costs.

The Consultant recommends a more definitive step: Formal action by the county to establish the present "advisory" commission as a fully recognized "airport commission."

The commission should maintain overall control and overview of airport operations, including FBO activities. Monthly reports should be given to the county by the commission -- in person and in writing -- so the county can be informed about the airport and what improvements are necessary.

The management structure at the airport should be sound, firm and consistent. Under the FBO/manager system, the FBO should report directly to the airport commission while still under fiscal and legal responsibility to the county.

In addition to setting a definitive management structure, the commission should monitor the FBO to ensure that the newly adopted "Minimum Standards for Fixed Base Operators" is adhered to. The new minimum standards will be available to all who would aspire to operate on the airport.

The Consultant recommends that the county and airport advisory commission insure that the duties and responsibilities of the FBO/manager be clearly defined in the new lease/contract. The airport advisory commission should monitor the activities of the FBO and see to it they are properly and consistently carried out. The following listing suggests some items that should be covered:

- Attendance, unicom and ramp monitoring seven days a week during daylight hours;
- availability and accessibility in event of emergencies or special duty at any hour, any day;
- maintenance of airport areas, including runway, apron, hangars, fencing, roads/parking, lights and grassed areas;
- answering telephone and aircraft communication devices;
- cleaning offices, terminal and hangars;
- minor electrical repair work;

- maintaining runway/taxiway/apron lighting, windsock/segmented circle and other visual aids;
- moving, parking and storing of aircraft in hangars and on apron;
- fueling and performing servicing of transient aircraft and;
- cutting grass and maintaining landscaping for a neat, clean airport appearance.

The Keys to a Successful General Aviation Airport

Regardless of the formal management arrangement, most successful general airports in Virginia have some common characteristics:

- An active board (legislative committee, airport commission or committee) with members who advocate, in equal measure, the interests of the airport, the users of the airport and the sponsor;
- elected officials who understand the importance of the airport as part of the area's infrastructure and are willing to provide financial, legislative and political support;
- a skilled and aggressive airport manager and/or FBO which puts satisfying the aviation customer as its first and foremost goal;
- a clear, mutual understanding of respective duties and responsibilities for all aspects of airport management and;
- frequent and effective communication among those with airport responsibilities.

SECTION 4

WORK PAPER # 1 SUMMARY

The summary of the findings relating to **New Kent County Airport (NKC)** that are contained in this work paper include:

- Existing R/W 10-28 has the required length to serve 100% of small aircraft (12,500 lbs. or less) in the U.S. general aviation fleet that have less than 10 seats;

- presence of Resource Protection Areas (RPA's) immediately off the runway ends will likely make any further extension of R/W 10-28 cost prohibitive due to environmental impact mitigation;

- the condition of existing airport facilities range from good (terminal) to poor (the south T-hangars);

- **NKC** has the ability to achieve a future role as a general aviation reliever for Richmond International Airport in the near future because: 1. Its activity level exceeded eligibility criteria a few years ago; 2. it has ample airfield capacity and space for support facility expansion and; 3. state and regional forecast activity levels for 1998 are in excess of eligibility requirements;

- an FBO/manager type arrangement should continue for at least the next five years; while at the same time the advisory commission becomes more "empowered";

- the present Airport Advisory Commission should have more "official" functions and empowerment;

- the feasibility study Consultant has assisted the county in preparing a proven set of Minimum Standards for Fixed Base Operations at **NKC** and;

- in the new FBO/manager lease agreement, a payment arrangement should be structured that considers a fair market rate for the county for leasing of airport facilities and recognizes the size of the airport and its facilities limit the revenue generation capability of an FBO.

ATTACHMENTS

NEW KENT COUNTY AIRPORT

AIRPORT AND RUNWAY DATA

Airport elevation	123 feet
Mean daily maximum temperature of the hottest month	76.00 F.
Maximum difference in runway centerline elevation	13 feet
Length of haul for airplanes of more than 60,000 pounds	1000 miles
Wet and slippery runways	

RUNWAY LENGTHS RECOMMENDED FOR AIRPORT DESIGN

Small airplanes with approach speeds of less than 30 knots	300 feet
Small airplanes with approach speeds of less than 50 knots	810 feet
Small airplanes with less than 10 passenger seats	
75 percent of these small airplanes	2400 feet
95 percent of these small airplanes	2940 feet
100 percent of these small airplanes	3490 feet
Small airplanes with 10 or more passenger seats	4040 feet
Large airplanes of 60,000 pounds or less	
75 percent of these large airplanes at 60 percent useful load	5270 feet
75 percent of these large airplanes at 90 percent useful load	6700 feet
100 percent of these large airplanes at 60 percent useful load	5500 feet
100 percent of these large airplanes at 90 percent useful load	7350 feet
Airplanes of more than 60,000 pounds	Approximately 6000 feet

REFERENCE: AC 150/5325-4A, RUNWAY LENGTH REQUIREMENTS FOR AIRPORT DESIGN.

6 DECEMBER 1994

NEW KENT COUNTY AIRPORT

AIRPORT DESIGN AIRPLANE AND AIRPORT DATA

Aircraft Approach Category B
Airplane Design Group I (Small Airplanes)
Airplane wingspan . . . . . 48.99 feet
Primary runway end is nonprecision instrument > 3/4-statute mile
Other runway end is nonprecision instrument > 3/4-statute mile
Airplane undercarriage width (1.15 x main gear track) . . . 14.00 feet

RUNWAY AND TAXIWAY WIDTH AND CLEARANCE STANDARD DIMENSIONS

	Airplane	Group/ARC
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is not treated as a factor:		
VFR operations		700 feet
VFR operations with intervening taxiway		700 feet
VFR operations with two intervening taxiways		700 feet
IFR approach and departure with approach to near threshold		2500 feet less 100 ft for each 500 ft of threshold stagger to a minimum of 1000 ft.
Runway centerline to parallel runway centerline simultaneous operations when wake turbulence is a factor:		
VFR operations		2500 feet
IFR departures		2500 feet
IFR approach and departure with approach to near threshold		2500 feet
IFR approach and departure with approach to far threshold		2500 feet plus 100 feet for each 500 feet of threshold stagger.
IFR approaches		3400 feet
Runway centerline to parallel taxiway/taxilane centerline	149.4	150 feet
Runway centerline to edge of aircraft parking	125.0	125 feet
Taxiway centerline to parallel taxiway/taxilane centerline	68.8	69 feet
Taxiway centerline to fixed or movable object	44.3	44.5 feet
Taxilane centerline to parallel taxilane centerline	63.9	64 feet
Taxilane centerline to fixed or movable object	39.4	39.5 feet
Runway protection zone at the primary runway end:		
Length		1000 feet
Width 200 feet from runway end		500 feet
Width 1200 feet from runway end		800 feet
Runway protection zone at other runway end:		
Length		1000 feet
Width 200 feet from runway end		500 feet
Width 1200 feet from runway end		800 feet
Departure runway protection zone:		
Length		1000 feet
Width 200 feet from the far end of TORA		250 feet
Width 1200 feet from the far end of TORA		450 feet

Runway obstacle free zone (OFZ) width	250.0	250 feet
Runway obstacle free zone length beyond each runway end		200 feet
Approach obstacle free zone width	250.0	250 feet
Approach obstacle free zone length beyond approach light system		200 feet
Approach obstacle free zone slope from 200 feet beyond threshold		50:1
Inner-transitional surface obstacle free zone slope		0:1
Runway width		60 feet
Runway shoulder width		10 feet
Runway blast pad width		80 feet
Runway blast pad length		60 feet
Runway safety area width		120 feet
Runway safety area length beyond each runway end or stopway end, whichever is greater		240 feet
Runway object free area width		250 feet
Runway object free area length beyond each runway end or stopway end, whichever is greater		300 feet
Clearway width		500 feet
Stopway width		60 feet
Taxiway width	24.0	25 feet
Taxiway edge safety margin		5 feet
Taxiway shoulder width		10 feet
Taxiway safety area width	49.0	49 feet
Taxiway object free area width	88.6	89 feet
Taxilane object free area width	78.8	79 feet
Taxiway wingtip clearance	19.8	20 feet
Taxilane wingtip clearance	14.9	15 feet

Threshold surface at primary runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	250 feet
Width of surface at end of trapezoidal section	700 feet
Length of trapezoidal section	2250 feet
Length of rectangular section	2750 feet
Slope of surface	20:1

Threshold surface at other runway end:

Distance out from threshold to start of surface	0 feet
Width of surface at start of trapezoidal section	250 feet
Width of surface at end of trapezoidal section	700 feet
Length of trapezoidal section	2250 feet
Length of rectangular section	2750 feet
Slope of surface	20:1

REFERENCE: AC 150/5300-13, AIRPORT DESIGN.