



Airport Assessment

Rowan County

Mid-Carolina Regional Airport

July 8, 2022



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Valerie Steele, C.M., ACE, ASC
Airport Director
Mid-Carolina Regional Airport
3670 Airport Loop
Salisbury, North Carolina 28147

RE: Airport Assessment

Dear Valerie:

This report conveys Aviation Management Consulting Group's (AMCG's) observations, opinions, findings, and recommendations relating to the airport assessment of Mid-Carolina Regional Airport (Airport) for Rowan County (County).

AMCG evaluated the planning, development, operations, finances, and management of the Airport to develop short-term and long-term recommendations that, in AMCG's opinion, are most consistent with a best practices approach considering the circumstances that exist at the Airport and the conditions that exist in the market as of the effective date of this report. In addition to the short-term and long-term recommendations, AMCG identified current initiatives in process for the Airport.

AMCG is pleased to have been called on to conduct this assessment and provide the associated recommendations. Please contact me if you have any questions pertaining to the findings or opinions conveyed in this report.

Helping your aviation management excellence,

A handwritten signature in blue ink, reading "D.C. Benner".

David C. Benner, C.M.
Managing Consultant
Aviation Management Consulting Group, Inc.

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I. EXECUTIVE SUMMARY

Scope of Work: This report conveys AMCG's observations, opinions, findings, and recommendations relating to the airport assessment of Mid-Carolina Regional Airport (Airport).

Table 1 – Assessment Recommendations

	Areas	Details
Current Initiatives	Revenue Enhancements	Implement market-based aeronautical rental rates (based on <i>Airport Rent Study</i>) and cost-recovery fees (based on <i>Airport Fee Study</i>)
	Rules and Regulations	Implement new <i>Rules and Regulations</i> and implement utilization of a <i>Non-Commercial Self-Fueling Permit</i>
	Minimum Standards	Adopt new <i>Minimum Standards</i> and implement utilization of a <i>Commercial Operator and Lessee Application</i> and <i>Commercial Operator Permit</i>
	Advisory Body Bylaws	Update and codify new bylaws to increase effectiveness of Advisory Body
Short-Term Recommendations	Agreement Compliance Review	Organize and review existing agreements to ensure accuracy of expiration dates, reversion protocols, and rent basis
	Agreement Templates	Develop new agreement templates - commercial/non-commercial agreements, T-hangar/executive hangar license agreement
	Accounting Protocols	Implement accounting protocols to establish independent Airport and FBO departments
	Fuel Pricing Program	Develop fuel pricing program to include appropriate fees and target margin (jet and avgas) with discount program
	FBO Services Enhancements	Enhance FBO services and amenities that cater to transient customers and implement marketing outreach program
	Airfield Inspection Protocols	Develop airfield self-inspection program and implement daily, documented airfield inspections
	Tenant and Community Engagement	Implement tenant and community engagement program including operational discussions for safe practices related to skydiving operations
	Leasing/Rents and Fees Policy	Outline leasing practices (including reversion and subleasing) and policy for establishing rents and fees
	Annual Hangar Inspection Protocols	Conduct annual hangar inspection (with Fire personnel) to ensure compliance
Long-Term Recommendations	Terminal Area Plan	Develop a comprehensive plan to determine location and layout of east side development
	Airport Operations Manual	Develop Airport Operations Manual based on 14 CFR Part 139 and incorporate the Airfield Inspection Protocols.
	Airport Master Plan	Update <i>Airport Master Plan</i> no later than 2028
	North T-Hangars (T1 - T20)	Negotiate new agreements with definitive expiration and reversion protocols
	Environmental Compliance	Update and implement current environmental practices compliant with legal requirements
	Information Management System	Implement electronic management system including property (lease) management
	Security Enhancements	Conduct a security review and analysis to identify short- and long-term security systems and protocols
	Airport Staffing Plan	Analyze current/future staffing needs to ensure adequate staff to support the operation and management of the Airport and FBO
	Inclement Weather Procedures	Formalize protocols during periods of inclement weather
	Air Traffic Control Tower Development	Monitor aircraft operations to determine if planning and construction of an Air Traffic Control Tower is feasible

II. INTRODUCTION

A. Scope of Work

Aviation Management Consulting Group (AMCG) conducted an airport assessment (Assessment) of Mid-Carolina Regional Airport (Airport) for Rowan County (County). The primary goal of the Assessment is to develop a series of recommendations intended to enhance the Airport's overall planning, operational, financial, and managerial performance while positioning the Airport for future growth and development. AMCG's observations, opinions, findings, and recommendations are consistent with a best practices approach, considering the circumstances that exist at the Airport and the conditions that exist in the market.

B. Project Approach

AMCG conducted an evaluation and assessment of the planning, development, operations, finances, and management of the Airport. Specifically, AMCG reviewed historical documentation and current practices related to the (1) airport sponsor organization, (2) airport organization, (3) airport planning, management, and compliance documents, (4) airport operations, (5) airport airside land infrastructure, (6) aviation products, services, and facilities, (7) airport facilities, (8) airport environment, (9) community environment, (10) general environment, and (11) airport finances. The most significant observations, opinions, and findings, detailed in this report, consist of the top 10 areas (in the short-term and long-term) in priority order. Additionally, AMCG identified current initiatives in process for the Airport.

AMCG's recommendations are designed to provide a foundation for future development and operational improvements at the Airport. **It is important to note that AMCG conducted an assessment focused primarily on airport operations and management and secondarily on airport planning, development, and finances.**

To achieve the scope of work, representatives of AMCG (David Benner – Managing Consultant and Katie Gainer – Senior Aviation Analyst) conducted a site visit from Monday, February 21st, 2022 – Wednesday, February 23rd, 2022, which included the following:

- meetings with County representatives, Airport and Fixed Base Operator (FBO) management/staff, Airport Advisory Body representatives, commercial aeronautical operators at the Airport, and tenants of the Airport,
- tour the Airport to understand the current operation, management, and development, and
- hosted a public meeting for stakeholders (commercial aeronautical operators, tenants, users, and interested parties) to provide additional input and answer related questions.

During the on-site meetings, current practices, challenges, and issues were discussed, including, but not limited to, the following:

- Airport/FBO operations and maintenance practices
- Staff roles and responsibilities
- Mission and vision for the Airport
- Value of the Airport to the community and region
- Strengths, weakness, opportunities, and threats for the Airport
- Goals and aspirations for the Airport
- Airport advisory body models
- Commercial aeronautical operators and major users of the Airport
- Management and facility improvements
- Airport current and future land use
- Airport marketing plan

To complete the Assessment, AMCG reviewed all available documents provided by the County. The most pertinent and contemporary documents include the following:

Management and Planning:

- Current organizational structure and job descriptions
- Airport Advisory Body Bylaws (amended January 14, 2020)
- Airport Layout Plan (2016)
- Airport Master Plan (2008)
- Airport Certificate of Insurance (effective date July 1, 2021)
- Airport Land Use Plan (October 3, 2016)
- Transportation Improvement Program (2020 – 2026)
- Rowan County Airport Minimum Standards and Requirements
- Strategic Plan (including mission, vision, values, goals, and objectives)
- Chapter 21: Zoning, Rowan County Code of Ordinances (October 17, 2016)
- Stormwater Pollution Prevention Plan (January 15, 2011)

Rents, Fees, and Financial:

- Hangar numbering protocols and property maps
- Current rent role (November 3, 2021)
- Fuel Discount Program
- Rates and Fees Schedule (towing, hangars, conference room)
- Asset Inventory (2021)
- Budget Analysis (2022)
- Income Statement (2021)

Operational:

- Fuel Volumes (2017 – 2021)
- NCDOT Pavement Condition Index
- Lease agreements (land, T-hangar, executive hangar, Limited FBO)

III. BACKGROUND

A. Community Overview

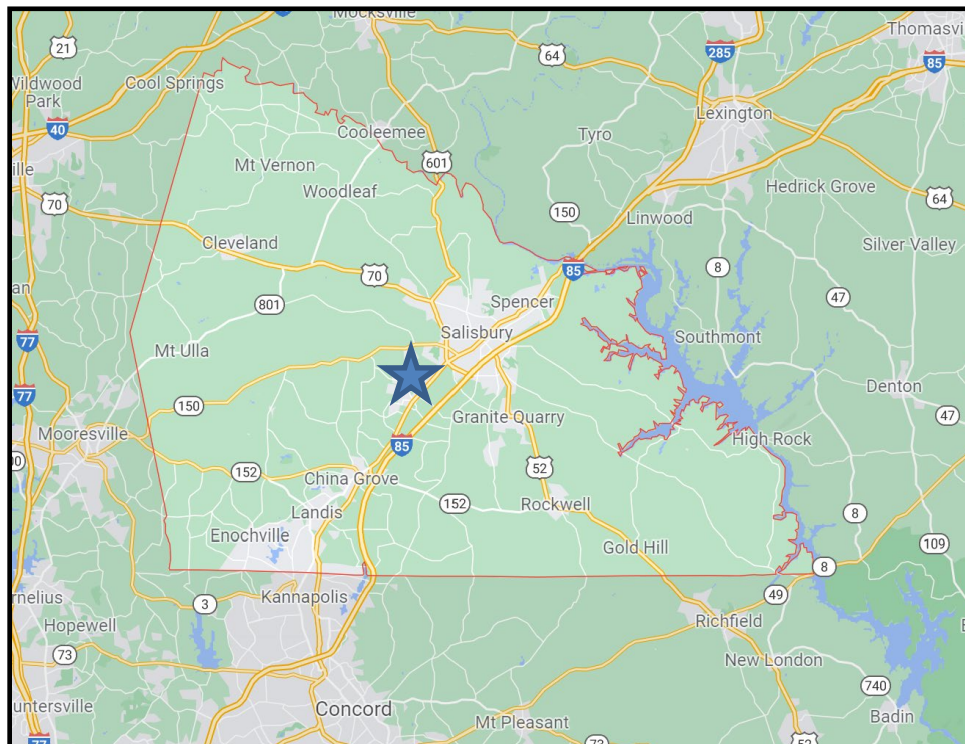
1. Airport Sponsor

The Airport is owned and operated by the County with an Airport Advisory Board made up of five members serving three-year terms. These members consist of two pilots (or airport tenants) and three members of the business community appointed by the County Board of Commissioners. The purpose of the Airport Advisory Board is to advise and make recommendations to the County Manager and the Board of Commissioners on policy matters as it relates to the operation and management of the Airport.

2. Geographic Location

The Airport is located approximately four miles southwest of the City of Salisbury (City) central business district and within the County. As identified in Figure 1, the County is centrally located between Lexington and Concord, North Carolina.

Figure 1 – Geographic Location



3. Demographics

The population of the City has increased a total of 0.6% which results in a compounded annual increase of 0.1% from 33,524 in 2014 to 35,540 in 2020 (U.S. Census Bureau estimate).

The population of the County has increased a total of 1.5% or a compounded annual increase of 0.3% from 138,246 in 2014 to 146,875 in 2019 (U.S. Census Bureau estimate).

4. Business and Industry

The largest employment sectors of the City and the County are (1) educational services, health care and social assistance, (2) manufacturing, and (3) retail trade. These employment sectors account for approximately 55.9% of the employment in the City and 46.8% of the employment in the County.

5. Economic Factors

The civilian labor force of the City has increased from 13,504 in 2014 to 13,856 in 2021 (U.S. Census Bureau), which represents a total increase of 15.5% or a compounded annual increase of 2.9%. The civilian labor force of the County has increased from 63,884 in 2014 to 64,309 in 2021 (U.S. Census Bureau), which represents a total increase of 5.6% or a compounded annual increase of 1.1%.

As identified by the U.S. Bureau of Labor Statistics, the unemployment rate of the City was estimated at 4.3% and the unemployment rate of the County was estimated at 3.6% (for March 2022). The County had a lower unemployment rate in comparison to the City and the U.S. national unemployment rate of approximately 3.7% (for March 2022).

B. Airport Overview

1. Airport Description

The Airport, which consists of approximately 400 acres of land, has one runway, as follows:

- Runway 02/20: 5,501 feet long and 100 feet wide, asphalt in good condition.

The Airport does not have an Air Traffic Control Tower but is served by one Instrument Landing System (ILS) for Runway 20 and multiple non-precision approaches (LOC, NDB, and RNAV-GPS). The Airport is designated a General Aviation Airport in the Federal Aviation Administration (FAA) *National Plan of Integrated Airports System (NPIAS)* and a Regional Airport in the FAA *General Aviation Airports: A National Asset* study.

Access to the Airport is secured by fencing with locking pedestrian and vehicular gates. The vehicular gate adjacent to the FBO terminal building remains open while attended.

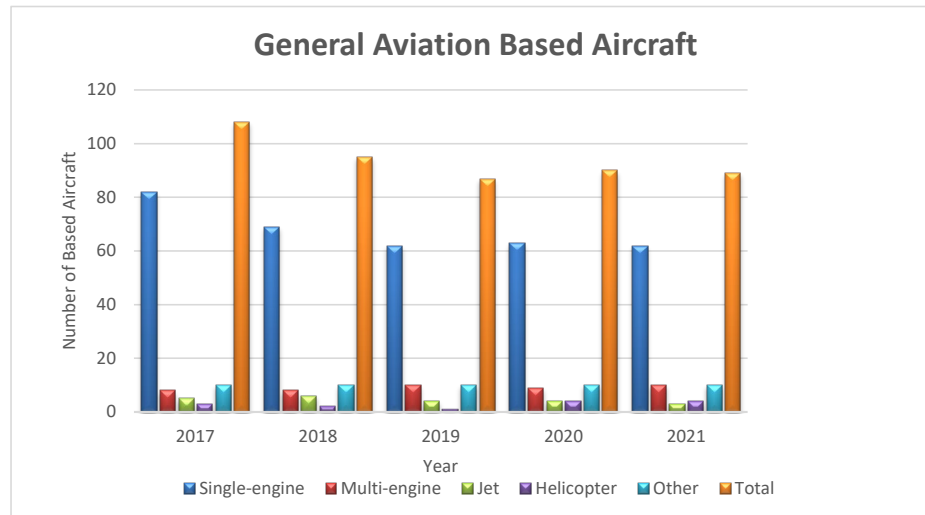
2. Airport Operations

Total aircraft operations at the Airport were approximately 51,000 in 2020, as reported by the FAA Master Record 5010. Total general aviation aircraft operations consisted of approximately 20,000 local operations (or approximately 39%) and approximately 25,000 itinerant operations (or approximately 49%). The remaining 6,000 operations (or approximately 12%) consisted of air taxi and military operations.

3. Based Aircraft

Figure 2 illustrates the number of based aircraft at the Airport from 2017 to 2021, as reported by the FAA Master Record 5010.

Figure 2 – General Aviation Based Aircraft



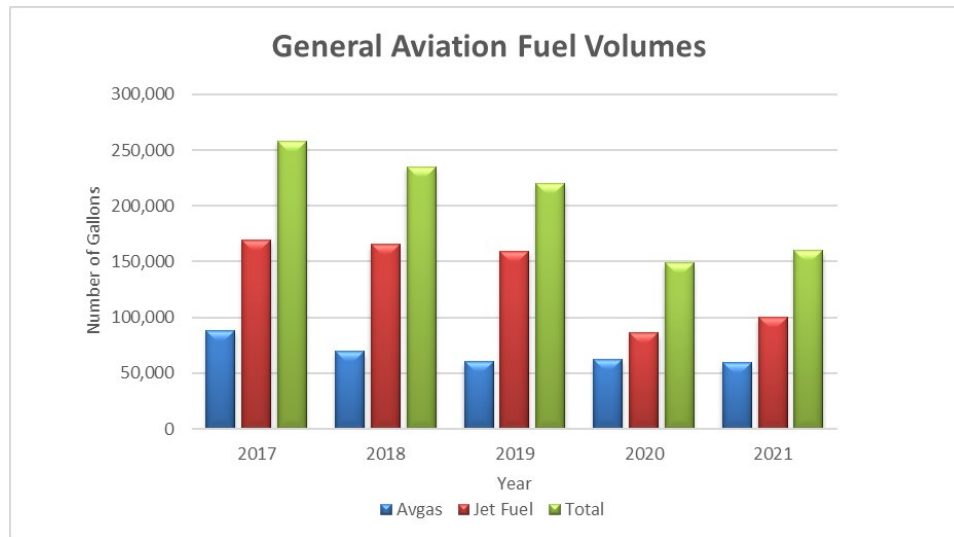
As shown in Table 2, 89 aircraft are currently based at the Airport. From 2017 to 2021, the number of total aircraft based at the Airport has decreased a total of 17.6%, or a compounded annual decrease of 4.72%.

Table 2 – General Aviation Based Aircraft

General Aviation Based Aircraft							
Year	Single-engine	Multi-engine	Jet	Helicopter	Other	Total	% Change
2017	82	8	5	3	10	108	N/A
2018	69	8	6	2	10	95	-12.0%
2019	62	10	4	1	10	87	-8.4%
2020	63	9	4	4	10	90	3.4%
2021	62	10	3	4	10	89	-1.1%

4. Fuel Volumes

Figure 3 depicts total general aviation fuel volumes (by type – jet fuel and avgas) at the Airport from 2017 to 2021, as reported by Airport management.

Figure 3 – General Aviation Fuel Volumes


As depicted in Table 3, total general aviation fuel volumes decreased from 257,919 gallons in 2017 to 159,706 gallons in 2021, which represents a total decrease of 38.08% or a compounded annual decrease of 11.29%. Since 2020, total general aviation fuel volumes have increased a total of 7.5%. Additionally, approximately 65.86% of the general aviation fuel volume is jet fuel.

Table 3 – General Aviation Fuel Volumes

General Aviation Fuel Volumes				
Year	Avgas	Jet Fuel	Total	% Change
2017	88,588	169,331	257,919	N/A
2018	69,296	165,521	234,817	-9.0%
2019	60,937	159,247	220,184	-6.2%
2020	62,393	86,216	148,609	-32.5%
2021	59,346	100,360	159,706	7.5%

5. Commercial Operators

The County serves as the fixed base operator providing fueling (jet and avgas), line services, and aircraft parking (hangar and tiedown). Multiple commercial operators provide, on a combined basis, aircraft maintenance, aircraft rental, flight training, and skydiving operations.

IV. CURRENT INITIATIVES

A. Revenue Enhancements

AMCG recommends implementing market-based aeronautical rental rates (based on the *Airport Rent Study*) and cost-recovery fees (based on the *Airport Fee Study*).

As outlined in the FAA *Airport Sponsor Assurances*, it is incumbent on the County to develop a rents and fees program that makes the Airport as financially self-sustaining as possible given the circumstances that exist. The most direct manner to address this obligation is to implement fair market rents and cost-recovery fees which ensure the Airport is generating necessary revenues to cover expenses, fund future projects, and maintain adequate financial reserves.

As such, AMCG recommends the County implement the findings of AMCG's *Airport Rent Study* for the aeronautical land and improvements leased from the County. To derive the opinion of market rent, rental rates on a comparative basis for similar land and improvements at comparable and competitive airports (and at national and regional airports) were analyzed to support a market based rental rate. Additional information pertaining to the methodology and process can be reviewed in Airport Cooperative Research Program (ACRP) Report 213 – *Guidebook for Estimating Market Value and Establishing Market Rent at Small Airports*.

AMCG also recommends the County implement the findings of AMCG's *Airport Fee Study* to establish aeronautical fees designed to help recover the operating expenses and non-operating uses of funds that have been and are anticipated to be incurred by County relating to the planning, development, operation, management, and marketing of the Airport.

It is important to note, if the County leases land and/or improvements for non-aeronautical uses, an appraisal should be conducted to determine the market value and/or market rent based on the local market.

B. Rules and Regulations

AMCG recommends adopting the new *Rules and Regulations* to establish new foundational documents for the management and operation of the Airport.

One of the most important elements of effective airport management is to ensure Primary Management and Compliance Documents (PMCDs) are established and current to guide the management, operation, security, and maintenance of the Airport. The development of these critical documents requires commitment from the airport sponsor and staff to ensure the resulting policy documents are reasonable and appropriate for the Airport. The current PMCDs (*Rules and Regulations* and *Minimum Standards*) need to be updated to reflect contemporary industry best practices. Additionally, the *Rules and Regulations* and *Minimum Standards* should be two separate but complimentary documents.

As such, AMCG recommends implementing new *Rules and Regulations* as developed by AMCG. In conjunction with *Rules and Regulations*, the County should utilize a *Non-Commercial Self-Fueling Permit* for any entity conducting non-commercial self-fueling on the Airport.

The *Rules and Regulations* will set forth the rules and regulations for the safe, orderly, and efficient operation and use of the Airport as well as outline the general provisions and defined words that are common to all PMCDs. The purpose of *Rules and Regulations* is to protect public health, safety, interest, and welfare on the Airport and to restrict any activity or action that would interfere with the safe, orderly, and efficient operation and use of the Airport. The *Rules and Regulations* will also clearly delineate acceptable practices related to aircraft maintenance within hangars, storage of non-aeronautical items within hangars, and using hangars for housing and/or sleeping purposes.

Upon adoption of new *Rules and Regulations*, AMCG recommends the County revise Chapter 6 of the existing Code of Ordinances to eliminate duplication and ensure consistency.

C. Minimum Standards

AMCG recommends adopting the new *Minimum Standards* to establish new foundation documents for the management and operation of the Airport.

One of the most important elements of effective airport management is to ensure PMCDs are established and current to guide the management, operation, security, and maintenance of the Airport. The development of these critical documents requires commitment from the airport sponsor and staff to ensure the resulting policy documents are reasonable and appropriate for the Airport. The current PMCDs (*Rules and Regulations* and *Minimum Standards*) need to be updated to reflect contemporary industry best practices. Additionally, the *Rules and Regulations* and *Minimum Standards* should be two separate but complimentary documents.

As such, AMCG recommends adopting new *Minimum Standards* as developed by AMCG. In conjunction with *Minimum Standards*, the County should utilize a (1) *Commercial Operator and Lessee Application* for an entity interested in engaging in commercial aeronautical activities or leasing and/or improvements as well as a (2) *Commercial Operator Permit* for those entities providing commercial aeronautical activities.

The *Minimum Standards* will set forth the minimum requirements that need to be met as a condition for conducting commercial general aviation aeronautical activities at the Airport. The purpose of *Minimum Standards* is to provide a fair and reasonable opportunity, without unjust discrimination, to applicants to qualify, or otherwise compete, to occupy available Airport land and/or improvements and engage in authorized commercial general aviation aeronautical activities (including independent activities).

The *Minimum Standards* will also clearly delineate the proprietary exclusive rights currently exercised by the County (i.e., commercial aircraft fueling, aircraft line services, and commercial aircraft storage).

Upon adoption of new *Minimum Standards*, AMCG recommends the County revise Chapter 6 of the existing Code of Ordinances to eliminate duplication and ensure consistency.

D. Advisory Body Bylaws

AMCG recommends updating and codifying new Airport Advisory Body (AAB) Bylaws to increase the effectiveness of the AAB.

The AAB was formed by the County to assist and advise the County Board of Commissioners (Board) to “ensure that the Mid-Carolina Regional Airport is maintained and developed in such a manner that will continue to be a high-quality aviation facility for its [Airport] users and a good neighbor in the community, recognizing that both the users and community may change as Rowan County continues to grow and develop.” The AAB, by virtue, is advisory in nature and consists of five members serving three-year terms. The members consist of two pilots (or airport tenants) and three members of the business community appointed by the Board.

AMCG recommends implementing recommended revisions to the Bylaws to (1) enhance the form and function of the AAB to align with the intent and purpose of an advisory body and (2) increase the effectiveness and useability of the existing Bylaws. When properly structured and focused, advisory bodies play an instrumental role in establishing policies and guiding future development of an airport. An airport advisory body can provide critical guidance and recommendations to the Board in conjunction with the Airport Director.

V. SHORT-TERM RECOMMENDATIONS**A. Agreement Compliance Review**

AMCG recommends reviewing established agreements to ensure the current tenant and leased premises (land and/or improvements) are accurately identified, rental rates are updated as quickly as possible to reflect current Airport rents and fees, and the agreement has not expired.

The County has a significant number of short-term license agreements (i.e., less than one year) and long-term lease agreements (i.e., greater than one year). Given the nature of short-term license agreements, the County can implement necessary updates in a more timely manner.

There are agreements which include a specific adjustment date to the rental rate which is inconsistent with other agreements. FAA Sponsor Assurance #22 states “each fixed-base operator [or tenant] at the airport shall be subject to the same rates, fees, rentals, and other charges as are uniformly applicable to all other fixed-base operators [or tenants] making the same or similar uses of such airport and utilizing the same or similar facilities.” The rental rate for Lease #18, #19, and #21 was set by the original agreement in through Year 15 (2029). However, Lease #20 has expired which can create disparity between rental rates upon entering a new agreement. Lease #50 is a ground lease within a nested row of T-hangars while the remaining T-hangars are leased on a month-to-month, retail basis.

B. Agreement Templates

AMCG recommends developing new license and lease agreement templates for aeronautical uses that reflect contemporary legal requirements for leasing land and/or improvements at the Airport.

Based on AMCG’s review of existing lease agreements, the County and tenants (current and prospective) would benefit from updating existing agreement templates to be consistent with contemporary language and industry best practices. New agreement templates could accommodate commercial and non-commercial aeronautical activities on a short-term basis (license agreement) or long-term basis (lease agreement) while serving as a basis for negotiation with current and prospective tenants.

C. Accounting Protocols

AMCG recommends the County create two financial departments within the Airport account (Account 4540 Airport) to enhance Airport fee determinations and FBO fuel margin analysis.

As outlined in the Airport Fund regular budget, all revenues and expenses related to the operation and management of the Airport and FBO are consolidated in one account (Account 4540 Airport). A consolidated financial approach is problematic in two key areas:

- Difficulty in establishing cost-recovery fees to specifically recover the costs being incurred by the County relating to the planning, development, operation (including maintenance and repair), management, and marketing of the Airport.
- Difficulty in determining an appropriate fuel pricing margin (including payment of a fuel flowage fee to the Airport department) to cover the costs and expenses of operating, managing, and marketing the FBO.

In the alternative to the current approach, AMCG recommends creating two financial departments consisting of the Airport and the FBO. While this approach will require County and Airport management to make informed allocations of certain expenses to each department (e.g., payroll, utilities, rent, capital expenditures, etc.), the County will be able to appropriately analyze the financial performance of each department. By conducting a financial performance of each department, the County can establish cost-recovery fees to recover the costs and expenses of the Airport as well as establish a fuel pricing margin to recover costs and expenses of the FBO as well as a target profit margin.

D. Fuel Pricing Program

AMCG recommends the County restructure the current fuel pricing program while implementing a fuel flowage fee consistent with the *Airport Fee Study*.

AMCG understands the fuel pricing program utilizes target margins but does not include a fuel flowage fee paid by the FBO to the Airport. Additionally, Airport documentation conveys two different fuel discount programs included in the *Rowan County Airport Minimum Standards and Requirements* and *Fuel Discount Program*. Both programs are based on volume purchases. However, the fuel discount program conveyed in the *Rowan County Airport Minimum Standards and Requirements* utilizes a cost-plus basis for all customers while the *Fuel Discount Program* utilizes a retail price discount basis for based and transient customers.

Based on discussions with Airport management and staff, the target margins do not appear unreasonable, but the target margins are based on past practices rather than current financial performance of the FBO.

The County should adopt a fuel pricing program consistent with industry best practices that includes a fuel flowage fee and target margin. The per gallon fuel flowage fee should be charged to any entity dispensing aviation fuel at the Airport. A restructured target margin approach based on current financial performance of the FBO will permit better financial forecasting. While the County can monitor retail fuel pricing in comparison to other surrounding and competitive airports, the target margin approach will correlate the retail fuel price and the wholesale purchase price by the County.

Additionally, the County should ensure all documented discount programs are consistent. Fuel pricing discount programs are common within the industry focused on based tenants and transient customers (using volume discounts). Combined with an enhanced marketing program, the County could offer discounts to weekend customers or during special events.

E. FBO Services Enhancements

AMCG recommends the County enhance FBO services and amenities that cater to transient customers and implement a marketing outreach program.

The FBO services currently offered by the County address typical areas including fueling (jet and avgas), ground handling, passenger and crew services, and aircraft parking and storage. The FBO also has access to the Airport terminal building which provides a customer area, lounge, restrooms, flight planning room, and crew rest area. Additionally, it was expressed multiple times through discussions with stakeholders that the attitude and helpfulness of FBO personnel was an asset. The FBO could further leverage the Airport's strengths and opportunities while managing and eliminating weaknesses and threats.

AMCG understands a key aspect of the FBO marketing program is fuel pricing. While this is an effective strategy, the County could leverage additional services and amenities targeted at transient customers to expand the FBO reach. For example, if a transient customer arrives after-hours (between 8:00 p.m. and 8:00 a.m.), the Airport terminal building and related amenities (restrooms, crew rest area, etc.) are not accessible. Providing access to necessary amenities (e.g., restrooms and crew rest area) along with access to the vending machines could be a simple way to ensure needs of transient customers are exceeded. Dependent on the manner in which services and amenities are added for transient customers, additional personnel may be necessary (Section VI. Long-Term Recommendations, H. Airport Staffing Plan).

The County could also work with existing Aircraft Maintenance Operators at the Airport to ensure call-out services for line maintenance are readily available. Focusing on FBO amenities will help develop and further the FBO's (and Airport's) brand.

As outlined in the existing Minimum Standards, the County is exercising its proprietary exclusive right for commercial aircraft fueling. In the future, the County could conduct an *FBO Options Analysis* to identify the potential options pertaining to the development, operation, and management of the FBO from a County, customer, and financial perspective.

F. Airfield Inspection Protocols

AMCG recommends developing an airfield self-inspection program based on 14 Code of Federal Regulation (CFR) Part 139 protocols and implement daily, documented airfield inspections.

The safe and secure operation of the Airport is the most critical component of airport management. Unsafe conditions can have catastrophic consequences for aircraft operators, Airport users, and the surrounding public while creating immense liability exposure for the County. It is extremely important the County document and expand the current airport safety self-inspection program monitoring specific Airport conditions to identify unsafe conditions for prompt corrective actions. Self-inspection is a primary responsibility of the County as the airport sponsor.

AMCG understands self-inspections occur but are not documented daily. Further, AMCG recognizes the Airport is not a 14 CFR Part 139 certified but believes a daily self-inspection program based on 14 CFR Part 139 is the best way to ensure the safe operation of the Airport.

Primary attention during the airfield inspection should be given to critical safety items such as pavement areas, safety areas, markings, signage, lighting, aircraft rescue and firefighting, fueling operations, navigational aids, ground vehicles, obstructions, public protection, hazard management, and airfield construction. The airfield inspection program should ensure the Airport is inspected at least daily including during the hours of darkness. AMCG understands Airport staff conduct airfield inspections, but it is not documented.

The FAA has developed standards for airport safety self-inspection programs under 14 CFR Part 139 for airports capable of serving air carrier operators. While these requirements are mandatory for airports holding a 14 CFR Part 139 Airport Operating Certificate, the regulations contain many safety practices the FAA recommends for use at all airports. FAA Advisory Circular (AC) 150/5200-18C *Airport Safety Self-Inspection* provides guidance for the development of an effective self-inspection program.

G. Tenant and Community Engagement

AMCG recommends the County implement a tenant and community engagement program including operational discussions for safe practices related to skydiving operations.

During discussions with multiple stakeholders, AMCG understands there are concerns and apprehension related to the skydiving operations occurring at the Airport. Also, involvement from the tenant community appears to be limited.

Outreach should be designed to inform and engage the tenants regarding the Airport, aircraft operations, and use of surrounding airspace. Effective outreach efforts should embrace extensive use of social media to reach a broad spectrum of the tenants (and community). Further, Airport management and staff should continue conducting outreach efforts including:

- In-person communications: continue returning all calls related to complaints about the Airport and consider implementing a call-log to identify recurring issues as well as initiating contact with tenants that have not participated in other engagement efforts.
- Tenant meetings: while tenant meetings have historically not been attended by tenants, reinstate quarterly tenant meetings (potentially in conjunction with AAB meetings) to provide an opportunity for updates to tenants and receive feedback.
- Community meetings: continue attending community meetings to actively receive input and present information related to the Airport and the Airport's initiative (including services offered to the public and economic impact to the community).
- Airport open house: host an annual Airport open house that is free and open to the public to improve awareness and educate the public on the Airport.

H. Leasing/Rents and Fees Policy

AMCG recommends the County establish a Leasing/Rents and Fees Policy to outline leasing practices (including reversion and subleasing) and a policy for establishing rents and fees.

In addition to the updated *Minimum Standards and Rules and Regulations* as well as the new lease agreement templates, the County should develop a *Leasing/Rents and Fees Policy* to set forth, through a policy, the parameters for leasing airport land and improvements at the Airport. Additionally, this document would outline the process for establishing and adjusting rents and fees. This type of document is based on a "best practices" approach and is used throughout the industry. It is tailored to meet the needs and requirements of the Airport by outlining the key terms and conditions for negotiating long-term agreements (including reversion and subleasing) as well as leasing County owned improvements (e.g., Hangar Lessee Application, waitlist protocols, etc.).

While the County is currently conducting and *Airport Rent Study* and *Airport Fee Study*, this policy would solidify the market-based approach for rents and cost-recovery methodology for establishing fees.

I. Annual Hangar Inspection Protocols

AMCG recommends the County implement annual hangar inspections conducted by Airport management or staff along with the Fire Chief to ensure lease compliance and safety.

AMCG understands the County has recently conducted hangar inspections for the first time in many years. AMCG recommends the County establish an annual program to inspect all hangars (tenant-owned and County-owned) to ensure tenant compliance with their respective agreement, *FAA Policy on the Non-Aeronautical Use of Airport Hangars*, the updated *Rules and Regulations*, and that all equipment and hazardous materials are properly stored and/or removed from the premises. Such inspections are critical to eliminate potential hazards that could impact the safety of other tenants and the public.

VI. LONG-TERM RECOMMENDATIONS

A. Terminal Area Plan

AMCG recommends the County develop a Terminal Area Plan to determine location and layout for development east of Runway 02/20 which maximizes functionality for transient customers.

The layout of the commercial aeronautical service area of the Airport appears to be inefficient and lacks focus. Additionally, there is inadequate on-site landside parking for the commercial aeronautical operators. The area is constrained and lacks sufficient space for future development, especially for landside infrastructure improvements. One of the critical elements of a successful airport is a well-defined and well organized “terminal area.” Typically, the terminal area gives arriving transient customers their first impression of the community. This area should be modern, well-organized, attractive, and inviting. The terminal area should be designed in such a way as to easily accommodate a wide range of aircraft, commercial aeronautical activities, and space for landside infrastructure (e.g., vehicle parking areas, access road, etc.).

As such, AMCG recommends the County develop a Terminal Area Master Plan in conjunction with the Transportation Improvement Program (dated December 2019). AMCG believes the planning effort should take a focused approach to develop a comprehensive plan to improve the overall layout and functionality of the commercial aeronautical service areas of the Airport. This plan should identify specific space for Airport management, FBO services, aircraft and vehicle parking, as well as additional areas for commercial aeronautical services (new or relocated operators).

B. Airport Operations Manual

AMCG recommends developing an Airport Operations Manual to enhance and guide the Airport management and staff in operating the Airport consistent with industry best practices.

It is important for the County to develop an Airport Operations Manual to document and guide Operations personnel with best practices for operating and maintaining the Airport.

Additionally, the County should implement training protocols for all Operations personnel. The *American Association of Airport Executives* (AAAE) has extensive airport operations educational programs designed to train airport operations personnel on day-to-day airport operations from fixing runway lights to conducting airport safety inspections. Airport Certified Employee (ACE) training programs (including Airport Operations, Airfield Lighting Maintenance, Safety Management Systems, Security, etc.) increase knowledge and understanding of Operations staff. The Airport Safety and Operations Specialist (ASOS) programs (basic and advanced) are designed to increase the knowledge and understanding of airport operations personnel to ensure airports operate safely and meets FAA requirements. Both industry-recognized training programs are highly recommended.

C. Airport Master Plan

AMCG recommends the County conduct an Airport Master Plan update commencing no later than 2028.

As stated in Section 1.2 Study Purpose of the *Rowan County Airport Master Plan*, the planning horizon ends in 2028. The Airport also conducted an *Airport Layout Plan Supplemental Information* in 2016.

The FAA recommends Airport Master Plans be updated every 20 years to reflect the contemporary environment. During the Airport Master Plan process, an evaluation of current and forecasted airport activity, facility requirements, and various alternatives for the Airport will be conducted. An updated Airport Master Plan would provide guidance for future development which will satisfy aviation demand in an environmentally and fiscally responsible manner while adhering to FAA safety design standards. Alternative development scenarios would be devised, each satisfying projected needs in a unique way. Through a coordinated review by the County, the FAA, airport users, and the public, a recommended development concept would evolve to serve as a guide to realistic and achievable airport development well into the future.

D. North T-Hangars (T1 – T20)

AMCG recommends the County negotiate new agreements with a definitive expiration date and reversion protocols for the North T-Hangars (T1 – T20).

The North T-Hangars (identified as T1 – T20) were originally constructed and financed by the County. In early 1998, the County utilized an *Agreement for Estate of Years and Ground Lease* (Agreement) providing each lessee the “exclusive and assignable right to the interior closed space” of the T-Hangar upon a one-time payment of \$22,500 by the lessee. While this approach is not typical for T-Hangars, the term provisions of these Agreements is highly problematic as an expiration date is not defined. The specific language related to term in Section 1 is outlined below:

- “The hangar designated in this Agreement is, in all respects, personal property and based on construction estimates to have an useful, economic life of forty (40) years. The actual life shall be determined as being the length of time in which the group of ten (10) hangars maintains compliance with North Carolina State Building Code for safe enclosure of aircrafts.”
- “The building representing the ten (10) “T-Hangars” shall be declared out of compliance and uninhabitable when at least four (4) individual hangars are separately determined to be uninhabitable. At such time, the entire building shall be determined to have no further useful, economic life and value.”

Based on an economic life of 40 years, the term would expire in 2038. However, there are many examples of T-Hangars at airports in the United States being utilized well beyond a 40-year period. As such, the current Agreement does not have a defined expiration date.

Chapter 12: Review of Aeronautical Lease Agreements of FAA Order 5190.6B Change 1 (effective date of November 22, 2021) discusses recommended lease term:

- “Most tenant ground leases of 30 to 35 years are sufficient to retire a tenant’s initial financing and provide a reasonable return for the tenant’s development of major facilities.”
- “Leases that exceed 50 years may be considered a disposal of property in that the term of the lease will likely exceed the useful life of the structures erected on the property.”
- “FAA offices should not consent to proposed lease terms that exceed 50 years.”

Section 12. Sale and Assignment of the Agreement states “The Lessee shall have the unqualified right to sell and/or assign the estate for years as set forth in this Agreement to any third party with the further stipulation that Rowan County be notified in writing of such sale and/or assignment in order to ensure future compliance and enforcement with respect to the obligations contained in this Agreement.”

As it relates to the North T-Hangars, AMCG recommends the following:

- Implement a specific inspection protocol of the North T-Hangars pertinent to North Carolina State Building Code to determine if any T-Hangars are uninhabitable.
- Enter negotiations with North T-Hangar tenants to amend the existing Agreements (and assignments) to include the following:
 - Require written consent of the County prior to any sale, assignment, or transfer (including transfer of outstanding stock, equity, or certificate of membership or interest).
 - Defined expiration date of the Agreements (and assignments) and reversion of improvements (not including personal property) to the County.

E. Environmental Compliance

AMCG recommends contracting with an environmental consulting firm to conduct a thorough review of the Airport's existing Storm Water Pollution Prevention Plan (SWPPP) and all related environmental documents to ensure full compliance with legal requirements.

The existing Airport SWPPP was finalized January 15, 2011. In the Preface of the SWPPP, it states "The SWPPP represents a 'living' document, which must be routinely updated and revised to reflect changes at Rowan County Airport." It is AMCG's understanding that facilities have been constructed since 2011 at the Airport which are not reflected in the current SWPPP. The County should update the SWPPP as necessary and ensure compliance with applicable stormwater sampling and reporting requirements.

Additionally, the County should develop an environmental compliance plan to provide operational and regulatory environmental guidance for the Airport Director and Airport Operations personnel. During development of the environmental compliance plan, the County should identify which entities, in addition to the County, which need to develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) Plan. The SPCC Plan establishes protocols to prevent and respond to a discharge of petroleum products into navigable waters, storm drains, or vegetated areas.

F. Information Management System

AMCG recommends conducting a thorough review of all Airport related documents (hardcopy and electronic) and purge all documentation that is no longer relevant, archive all documents useful for future reference, and convert to a fully electronic document library.

Airport personnel must have current documentation (electronic or hardcopy) readily available to perform each role's responsibilities. While the current Airport office has combination of electronic and hardcopies of leases, some of the hardcopy documents may not be current or useable. After reviewing all available Airport documents (hardcopy and electronic), Airport personnel should determine which documents are no longer relevant and purge from the system. Any documentation useful for future reference should be appropriately organized in a fully electronic document library with hardcopy backup for redundancy.

Additionally, the County leases a significant number of hangars to end users and would benefit from a fully electronic property management system.

G. Security Enhancements

AMCG recommends contracting with an airport consulting firm to conduct a security assessment of the Airport and develop a security plan and emergency plan reflective of contemporary industry best practices.

Providing a secure Airport operating environment for based tenants and transient operators should be of paramount importance for the County. AMCG noted deficiencies in Airport security measures including lack of sufficient video monitoring systems, non-functioning keypad access control, and lack of personnel coverage to conduct on-going security patrols. This approach may open the County to liability exposure in the event of a security breach. The following is a list of items that should be considered during the security assessment:

- Install perimeter fencing (where needed) that conforms with FAA standards.
- Enter into an agreement with local law enforcement (or engage a security firm or hire staff) to conduct periodic security patrols.
- Develop/implement security patrol procedures.
- Install wireless cardkey access system (with card-in/card-out protocols).
- Develop/implement Airport Identification Badge system.
- Install video monitoring at vehicle and pedestrian access gates and alongside strategic perimeter fencing.

Following the assessment, a security plan and an emergency plan should be developed and implemented. While the security plan will focus on procuring necessary equipment and ensuring the Airport is operated safely and securely, the emergency plan will establish policies, responsibilities, and procedures required to minimize the effect of an emergency on airport operations and reduce loss of life and property.

The County should train Airport management and staff, fire rescue, and other public safety agencies and develop safety protocols and response to airport emergencies. This training ensures Airport management and staff have a thorough knowledge of safety and security practices relating to aircraft and vehicle operations as well as emergency response procedures. Additionally, Airport management and staff must fully understand potential security issues, concerns, and threats and be trained to identify unusual conditions or situations, notify appropriate agencies, and file necessary reports.

H. Airport Staffing Plan

AMCG recommends developing an Airport and FBO staffing plan to manage the operation and management of the Airport and FBO based on industry best practices.

Airport staff currently report to the Airport and Transit Director (Airport Director). Within the Airport department, staff is divided into FBO (Manager, Office Assistant, Services Supervisor, and part-time Line Personnel) and Airfield Grounds (Supervisor and part-time Grounds Personnel). The job descriptions for Line Personnel as well as Grounds personnel include performance of security checks and reporting unusual activity. However, neither position indicate an essential job function of conducting airfield inspections.

As the County enhances FBO services (Section V. Short-Term Recommendations, E. FBO Services Enhancements), staffing needs may change. As such, the County should conduct a staffing analysis to ensure all responsibilities of the Airport and FBO are addressed (e.g., airfield inspections) and personnel are readily available to support new FBO enhancements for each shift.

I. Inclement Weather Procedures

AMCG recommends the County develop inclement weather procedures that address the approach, triggering events, personnel, equipment, and timeframe related to snow and ice removal.

While the Airport is in a more temperate climate and snow/ice removal is not a common practice at general aviation airports, AMCG understands that the County has not adopted inclement weather procedures for the Airport. However, tenant feedback and potential disruption to aircraft activity warrants formalizing inclement weather procedures to ensure the County and Airport management have a basis for decision making and tenants fully understand the process, capabilities, and limitations of the Airport.

Formalized inclement weather procedures are necessary to establish a protocol for dictating who, what, when, and where inclement weather procedures will occur. Snow and ice removal should only be conducted by County personnel or a County authorized vendor. AAAE is a valuable resource in providing guidance in developing these plans with consideration given to the capabilities and limitations of the County. AAAE hosts an annual winter operation seminar designed to provide airport operators guidance to implement a well-rounded approach to winter operations training needs. A formalized plan ensures that snow and ice will be removed in accordance with FAA standards and industry best practices which will significantly reduce the County's liability exposure and tenant feedback.

J. Air Traffic Control Tower Development

AMCG recommends the County continues collaborating with the Air National Guard (and FAA) for potential development of Air Traffic Control capabilities.

The Airport does not currently have an Air Traffic Control Tower and is therefore characterized as an “uncontrolled airport” by the FAA. Pilots communicate on a common radio frequency to alert other pilots of their position and intentions. Although most general aviation airports in the United State are uncontrolled and have operated safely for years in that environment, substantial data exists regarding the value of Air Traffic Control Towers. The presence of an Air Traffic Control Tower enhances the safety of airports that experience growth in operations, changing fleet mix toward a higher percentage of turbine aircraft operations, and/or consolidation of varied aeronautical activities (e.g., skydiving).

AMCG recommends the County continue to work closely with the Air National Guard (and FAA) to explore potential options for installation of an Air Traffic Control Tower.

VII. ACRONYMS

AAAE	American Association of Airport Executives
AAB	Airport Advisory Body
AC	Advisory Circular
ACE	Airport Certified Employee
ACRP	Airport Cooperative Research Program
AMCG	Aviation Management Consulting Group
ASOS	Airport Safety and Operations Specialist
CFR	Code of Federal Regulation
FAA	Federal Aviation Administration
FBO	Fixed Base Operator
ILS	Instrument Landing System
NCDOT	North Carolina Department of Transportation
NPIAS	National Plan of Integrated Airports Systems
PMCD	Primary Management and Compliance Documents
SPCC Plan	Spill Prevention, Control, and Countermeasures Plan
SWPPP	Storm Water Pollution Program