

APPENDIX E:

FACILITY NEEDS ASSESSMENT

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Aviation Management
Consulting Group

Operator Facility Needs Assessment

Mead & Hunt

Northern Colorado Regional Airport

February 20, 2019



February 25, 2019

Mr. Ryan Hayes, C.M.
Project Manager Aviation Services
Mead & Hunt
1743 Wazee Street, Suite 400
Denver, Colorado 80202

RE: Facility Needs Assessment

Dear Mr. Hayes:

Pursuant to our engagement, Aviation Management Consulting Group (AMCG) has completed an Operator Facility Needs Assessment for the Northern Colorado Regional Airport. This report conveys key findings, and observations.

The Facility Needs Assessment analyzes general size requirements and location attributes necessary for the successful operation of Fixed Base Operators and Specialized Aviation Service Operators.

We are pleased to have been called upon to conduct this assessment. Please contact me if you have any questions about this report. Thank you for the opportunity to be of service.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bryan E. Johnson". The signature is fluid and cursive, with the first name being the most prominent.

Bryan E. Johnson, A.A.E.
Consultant

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I. LIMITING CONDITIONS

This report is subject to the following conditions and to other specific and limiting conditions as described by the AMCG team in this report.

1. The data utilized in compiling this report was provided by and/or obtained from sources considered reliable and authentic. Aviation Management Consulting Group (AMCG) has accepted the information provided by and/or obtained from others without audit or cross verification. As such, AMCG assumes no liability for its accuracy or correctness.
2. The estimates, conclusions, and projections contained in this report are included to assist the reader in understanding the uniqueness of the aviation services industry. As assumptions are a necessary component of future projections, the assumptions made in this report are based upon reasonable and prudent estimates. These estimates are, however, subject to unforeseen and unpredictable influences such as, competition, local, regional, national, and global economies, fuel supply volatility, pricing, and discounting, quality of management, supervision, and operating-level employees, and the implementation of effective sales, marketing, and promotional programs. Therefore, actual outcomes may vary from the estimates, projections, and conclusions contained herein.
3. It is intended that this report be considered as a total product, the components of which must not be considered independently.
4. Compensation for preparing this report is not, in any manner, contingent upon the conclusions suggested or drawn herein.
5. This report is made for the client to whom it is addressed and is delivered to the client on the condition that it is to be used by the client only for the purpose stated in the report. No reliance is to be placed on this report for any other purposes.
6. Neither all nor any part of this report (especially any conclusions reached or the identity of the individuals or the firm with which they are connected) shall be disseminated to the public through the advertising media, public relations media, news media, sales media or any other public means of communication without prior written consent and approval of the individuals or the firm.

II. FACILITY NEEDS ASSESSMENT

AMCG evaluated the facility needs of commercial aeronautical operators at Northern Colorado Regional Airport (Airport) based on the Airport's current infrastructure, discussions with Airport management and the Airport's Minimum Standards for the Provision of Commercial Aeronautical Activities. Additionally, AMCG has also evaluated the land and facility requirements for commercial aeronautical operators for five benchmarking airports.

Based on data available from various sources including the Federal Aviation Administration (FAA), state and local agencies, and Airport management and staff, a profile of the Airport has been developed. The Airport profile provides the basis for establishing the criteria and parameters for identifying benchmarking airports.

The selection of benchmarking airports is typically based on a number of criteria. For the Airport, the selection of benchmarking airports was based on historical activity levels, total based aircraft, the presence of a precision instrument approach, runway length, total airport acreage, and FAA National Plan of Integrated Airport Systems (NPIAS) classification. Parameters were then established in each of these areas to facilitate the selection process.

- The Airport is utilized by the general aviation segment of the market. As such, airports with significant air carrier operations were not considered comparable.
- For the 12-month period ending December 31, 2018 (as reported on the FAA Master Record 5010), general aviation itinerant operations at the Airport totaled 56,000. As such, the range for itinerant operations was established at 42,000 to 70,000.
- The number of based aircraft at the Airport as of December 31, 2018 (as reported on the FAA Master Record 5010) was 255. As such, the range for based aircraft was set at 70 to 430.
- The Airport has two runways, one of which is 8,500 feet long. Airports with at least one runway that is 6,000 feet or longer were considered comparable.
- The Airport has 1,065 acres of land. Airports having total acreage between 500 and 1,700 acres were considered comparable.
- The Airport is classified as a Primary Commercial Service Nonhub airport in the FAA NPIAS. As such, airports ranging from General Aviation classification to Primary Commercial Service Nonhub (with a primary focus of general aviation) were considered comparable.

Based on the criteria and parameters identified, AMCG has developed a list of five benchmarking airports which, in the opinion of AMCG, are considered comparable to the Airport, as follows:

Benchmark Airports			
Airport	Identifier	Location	Number of FBOs
Arlington Municipal Airport	GKY	Arlington, Texas	1
Charles M. Schulz – Sonoma County Airport	STS	Santa Rosa, California	2
Coeur d’Alene Airport – Pappy Boyington Field	COE	Coeur d’Alene, Idaho	2
Rocky Mountain Metropolitan Airport	BJC	Denver, Colorado	2
Texas Gulf Coast Regional Airport	LBX	Angleton, Texas	1

In addition to the land and improvement requirements for each commercial aeronautical operator, AMCG analyzed the related location attributes associated with each operator at the Airport as well. AMCG evaluated the needs of Fixed Base Operators (FBOs) and Specialized Aviation Service Operators (SASOs), which are considered likely to be located at the Airport. In addition to the FBO, the SASOs considered during this process are as follows:

- Fixed Base Operator
- Aircraft Maintenance Operator
- Avionics or Instrument Maintenance Operator
- Aircraft Rental or Flight Training Operator
- Aircraft Charter or Management Operator
- Aircraft Storage Operator
- Limited Aircraft Services and Support Operator
- Experimental Aircraft Services and Support Operator
- Other Air Transportation Services for Hire Operator
- Commercial Airline Service

Currently, the Airport is served by an FBO (Fort Collins – Loveland Jet Center), aircraft maintenance operators (The New Firewall Forward and Professional Aircraft Services), an avionics and instrument maintenance operator (Avionics Specialist, LLC.), flight training and aircraft rental operators (The Flying School and Leading-Edge Flight Training), and an aircraft charter operator (Trans Aero Helicopters).

A. Fixed Base Operator (FBO)

An FBO is a commercial operator engaged in the sale of products, services, and facilities to include, at a minimum, the following aeronautical activities at the Airport: aviation fuels (jet fuel and avgas) and aircraft lubricants; passenger, crew, and aircraft ground services, support and amenities; aircraft maintenance; and aircraft parking, hangar, office, and shop. AMCG recommends relocation of the fuel farm to either the north or south ends of the Airport. While the location of the current fuel farm is convenient, the current fuel farm’s location impedes future growth, especially regarding air carrier operations.

The Airport’s current FBO provides the products, services and facilities as required within the Airport’s Minimum Standards. It is significant to note that industry wide there are approximately 3,300 plus airports with one or zero FBOs (91.7% - based on 2017 numbers). AMCG’s opinion is that a second FBO is unlikely in the short-term based on current fuel volumes, aircraft operations, based aircraft as well as the significant capital and financial obligations necessary for such facilities.

Table 1 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by an FBO at the Airport:

Table 1 – Fixed Base Operator (FBO)

Fixed Base Operator						Current Size (SF)	
Facility Needs	Aircraft Type		Component			Recommended Size (SF)	Ft. Collins Loveland Jet Center
			Commercial Improved Land (total leasehold)			140,000	448,423
			Apron			70,000	297,760
	Single Engine Piston		Terminal Building			4,000	2,500
	Multi Engine Piston		Customer areas			4,000	3,194
	Turboprop		Administrative Area (Aircraft Maintenance)			500	258
	Turbojet		Maintenance Area			500	868
			Maintenance Hangar			7,500	N/A
			Hangar			15,000	22,360
			Fuel storage facility (gallons)			30,000	30,000
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns	
	Adjacent to main facility	Central location	Yes	Yes	Primary (landside and airside)	Yes (10)	

B. Aircraft Maintenance Operator (SASO)

An Aircraft Maintenance Operator is an operator engaged in providing aircraft maintenance, parts, accessories, and related components (as defined in 14 CFR Part 43) and sheet metal repair for aircraft other than those owned, leased, and/or operated by and under the full and exclusive control of the operator.

Table 2 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Aircraft Maintenance Operator at the Airport:

Table 2 – Aircraft Maintenance Operator (SASO)

Aircraft Maintenance Operator						Current Size (SF)		
Facility Needs	Aircraft Type		Component		Recommended Size (SF)	New Firewall Forward	Professional Aircraft Services	
	Single Engine Piston	Commercial Improved Land (total leasehold)				10,890	47,858	5,718
		Apron				4,500	13,144	Non-exclusive
		Customer/Administrative/Maintenance Areas				1,200	5,620	708
		Maintenance Hangar				3,600	8,568	5,010
Turboprop	Commercial Improved Land (total leasehold)				21,780	N/A	N/A	
	Apron				10,000	N/A	N/A	
	Customer/Administrative/Maintenance Areas				1,200	N/A	N/A	
	Maintenance Hangar				7,500	N/A	N/A	
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns		
	Adjacent to main facility	Close proximity to FBO	Yes	Yes	Primary (landside and airside)	Yes		

C. Avionics or Instrument Maintenance Operator (SASO)

An Avionics or Instrument Maintenance Operator is an operator engaged in the business of maintenance or alteration of one or more of the items described in 14 CFR Part 43, Appendix A (i.e., aircraft radios, electrical systems, or instruments) for aircraft other than those owned, leased, and/or operated by (under the full and exclusive control of) Operator on the Airport. Avionics or Instrument Maintenance is typically divided into two classes, “benchwork” and “beyond benchwork”. Benchwork services do not include removal or replacement services and therefore do not require hangar facilities.

Table 3 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Avionics or Instrument Maintenance Operator at the Airport:

Table 3 – Avionics or Instrument Maintenance Operator (SASO)

Avionics or Instrument Maintenance Operator						Current Size (SF)		
Facility Needs	Aircraft Type		Component		Recommended Size (SF)	Avionics Specialist		
	Benchwork Only							
	Single Engine Piston	Commercial Improved Land (total leasehold)				10,890	N/A	
		Customer/Administrative/Maintenance Areas				1,200	N/A	
		Turboprop						
Turbojet								
Beyond Benchwork								
Single Engine Piston	Commercial Improved Land (total leasehold)				32,670	9,600		
	Apron				10,000	N/A		
	Customer/Administrative/Maintenance Areas				1,200	900		
	Maintenance Hangar				7,500	8,700		
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns		
	Adjacent to main facility	All locations	Not necessary	Yes (beyond benchwork)	Secondary (landside and airside)	Yes (beyond benchwork)		

D. Aircraft Rental or Flight Training Operator (SASO)

An Aircraft Rental Operator is a commercial operator engaged in the rental of aircraft to the general public. A Flight Training Operator is a commercial operator engaged in providing flight instruction to the general public.

Table 4 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Aircraft Rental or Flight Training Operator at the Airport:

Table 4 – Aircraft Rental or Flight Training Operator (SASO)

Aircraft Rental or Flight Training Operator							Current Size (SF)		
Facility Needs	Aircraft Type		Component			Recommended Size (SF)	The Flying School	Leading Edge Flight Training	
	Single Engine Piston	Commercial Improved Land (without hangar)					10,890	N/A	N/A
		Commercial Improved Land (with hangar)					21,780	6,411	2,788
		Apron					4,500	Non-exclusive	Non-exclusive
		Customer/Administrative Areas					500	1,411	2,788
		Turboprop					360	N/A	N/A
		Maintenance Area							Shared with New Firewall
Hangar					3,600	5,000			
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns			
	Adjacent to main facility	All locations	Yes	Yes	Primary (landside)	Yes			

E. Aircraft Charter or Management Operator (SASO)

An Aircraft Charter Operator is an operator engaged in on-demand common carriage for persons or Property (as defined in 14 CFR Part 135) or operates in private carriage (as defined in 14 CFR Part 125) on the Airport. An Aircraft Management Operator is an operator engaged in the business of providing Aircraft management including, but not limited to, flight dispatch, flight crews, or Aircraft Maintenance coordination to the public on the Airport.

Table 5 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Aircraft Charter or Management Operator at the Airport:

Table 5 – Aircraft Charter or Management Operator (SASO)

Aircraft Charter or Management Operator						Current Size (SF)
Facility Needs	Aircraft Design Group		Component		Recommended Size (SF)	Trans Aero Helicopters
	Single Engine Piston		Commercial Improved Land (without hangar)		10,890	N/A
	Multi Engine Piston		Commercial Improved Land (with hangar)		21,780	90,858
	Turboprop		Apron		4,500	43,674
	Turbojet		Customer/Administrative Areas		500	7,754
			Maintenance Area		360	N/A
		Hangar		3,600	12,000	
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns
	Adjacent to main facility	All locations	Yes	Yes	Primary (landside)	No

F. Aircraft Storage Operator (SASO)

An Aircraft Storage Operator is an operator that develops and/or owns or leases an aircraft storage facility and/or associated office or shop space and sells (or subleases) such space to entities engaging in commercial or non-commercial aeronautical activities.

Table 6 outlines AMCG's opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Aircraft Storage Operator at the Airport:

Table 6 – Aircraft Storage Operator (SASO)

Aircraft Storage Operator						
Facility Needs	Aircraft Design Group		Component		Size (SF)	
	Single Engine Piston		Commercial Improved Land (total leasehold)		21,780	
	Multi Engine Piston		Apron		8,000	
			Hangar		6,400	
	Turboprop		Commercial Improved Land (total leasehold)		32,670	
	Turbojet		Apron		12,500	
		Hangar		10,000		
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns
	In close proximity to main facility	All locations	No	Yes	Secondary (landside and airside)	No

G. Other Commercial Aeronautical Operators (SASO)

Other commercial aeronautical operators pertain to other SASOs engaging in limited aircraft services and support activities, miscellaneous commercial services and support activities, or air transportation services for hire activities.

Limited Aircraft Services and Support are defined as limited Aircraft, engine, or accessory services and support (e.g., cleaning, washing, waxing, painting, upholstery, propeller repair, etc.).

Table 7 outlines AMCG's opinion of the facility requirements necessary (at a minimum) and location attributes desired by a Limited Aircraft Services and Support Operator at the Airport:

Table 7 – Limited Aircraft Services and Support Operator (SASO)

Limited Aircraft Services and Support Operator						
Facility Needs	Aircraft Design Group		Component			Size (SF)
	Single Engine Piston		Commercial Improved Land (without hangar)			10,890
	Multi Engine Piston		Commercial Improved Land (with hangar)			21,780
	Turboprop		Apron			12,000
	Turbojet		Customer/Administrative/Maintenance Areas			1,200
			Maintenance Hangar			10,000
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns
	In close proximity to main facility	All locations	No	No	Secondary (landside and airside)	As Needed

Experimental Aircraft Services and Support are defined as construction assistance to owners of experimental and/or amateur-built Aircraft (as defined in 14 CFR Section 21.191).

Table 8 outlines AMCG's opinion of the facility requirements necessary (at a minimum) and location attributes desired by an Experimental Aircraft Services and Support Operator at the Airport:

Table 8 – Experimental Aircraft Services and Support Operator (SASO)

Experimental Aircraft Services and Support Operator						
Facility Needs	Aircraft Design Group		Component			Size (SF)
	Single Engine Piston		Commercial Improved Land (without hangar)			10,890
	Multi Engine Piston		Commercial Improved Land (with hangar)			21,780
	Turboprop		Apron			4,500
			Customer/Administrative/Maintenance Areas			1,200
			Maintenance Hangar			3,600
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns
	In close proximity to main facility	All locations	Yes	No	Secondary (landside and airside)	Yes

Other Air Transportation Services for Hire are defined as non-stop sightseeing flights (flights which begin and end at the Airport and are conducted within a 25-statute mile radius of the Airport); flights for aerial photography or survey, firefighting, and power line, underground cable, or pipe line patrol; helicopter operations relating to construction or repair work; or, other related air transportation services for hire.

Table 9 outlines AMCG’s opinion of the facility requirements necessary (at a minimum) and location attributes desired by Other Air Transportation Services for Hire Operators at the Airport.

Table 9 – Other Air Transportation Services for Hire Operator (SASO)

Other Air Transportation Services for Hire Operator							
Facility Needs	Aircraft Design Group		Component			Size (SF)	
	Single Engine Piston			Commercial Improved Land (without hangar)			10,890
				Commercial Improved Land (with hangar)			21,780
	Multi Engine Piston			Apron			4,500
				Customer/Administrative/Maintenance Areas			1,200
	Turboprop			Maintenance Hangar			3,600
Location Attributes	Vehicle Parking	Location	Street Frontage	Adjacent Hangar	Visibility	Available Tiedowns	
	Adjacent to main facility	All locations	Yes	No	Primary (landside)	Yes	

H. Advancements in New Aircraft Technology

Advancements in aerospace and aircraft manufacturing include 3-D printed metal components for certain jet and piston engine types, metal powder atomization, and additive metal parts. In addition to how aircraft and engines are being developed and manufactured, new types of alternative fuels have been introduced as an effort to reduce the amount of petroleum-based fuels used by airplanes, today.

Alternative fuels which include sustainable alternative jet fuels (SAJF), battery (electrical only), solar, and a hybrid-electric (jet and electric power – combined) will not change the demand and need for airports but may require the Airport to amend policy and compliance documents. These include the Airport’s minimum standards, rules and regulations, fee policies and alternative types of infrastructure (bulk storage). Autonomous and ride-share aircraft may increase hangar storage requirements; therefore, such transformation needs to be thoughtful and truly reflect the appropriate change based on market demand.

Based on industry research, alternative fuels can be successful over the long-term if the fuels are (1) sustainable in terms of reducing net life-cycle carbon emissions relative to conventional fuels as well as (2) enhance environmental, societal, and economic factors. However, it is important to note, not all alternative fuels will result in a net reduction in life-cycle carbon use. For example, extraction or use of the source material utilized in developing alternative fuels can have a greater net carbon impact than use of conventional fuels.

The Airport's success and potential impacts with advancements in new aircraft technology will be attributed to further understanding the industry trends at all levels. These may include federal, state, and local regulation and legal considerations as well as the industry drivers for development and concepts in the areas of electric propulsion or electric vertical takeoff and landing (eVTOL), and simplified vehicle operations (SVO).

I. Future Outlook

Based on AMCG's understanding of the strategic outlook for the Airport, the development of the remote air traffic control tower, and along with the preceding analysis, AMCG believes that the Airport should consider a market/demand analysis to validate and vet the different types and kinds of commercial aeronautical operators are more probable at the Airport.

It is significant to note AMCG has not conducted a market assessment/feasibility analysis which would determine if the current level of demand exceeds the current capacity at the Airport and in the immediate vicinity based on the general conditions, trends, and demographics in the market.

AMCG believes the Airport's future development goals should consider the following:

- Secure air service to utilize the existing passenger terminal building.
- Encourage retention of existing commercial aeronautical operators and preserve the area on the north side of the Airport for future facility development.
- Explore opportunity for land acquisition to eliminate need for operators to operate "through-the-fence".

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