Audit of the Governance and Operations of the Logan/Cache Valley Airport

Final Report

Prepared by:
Dr. Mike Jones
Swelbar-Zhong Consultancy
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Client Confidential

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Executive Summary

This audit report outlines the current physical, aeronautical, and economic conditions of the Logan/Cache County Airport. It finds the airport operating below expectations and its potential. The report includes a series of recommended actions which will begin to restore the airport to financial health.

In brief, the findings demonstrate that:

a. The airport is barely noticeable as an asset to the community, contributing merely $17.7 million dollars to the $7.4 billion economy of Cache County.
b. The evidence suggests airport management consistently has ignored the needs of corporate clients, visitors, businesses on the field, the aviation program operated by Utah State University, and the general public.
c. The physical layout and facilities of the airport are barely adequate for the customers it serves today and completely inadequate for future needs.
d. Evaluated as a business, the airport would be unsustainable. Its operational deficiencies are severe, its financial health is unsustainable, and its support from the community is non-existent.
e. Compared to peers, the airport is performing poorly. The airport is operating with obsolete facilities, is not financially self-sufficient, and has safety issues.
f. The root cause of this condition is two-fold: ineffective governance from the Airport Authority, compounded by a lack of support from the elected city council members of Logan and the elected commissioners of Cache County.

The main finding of this report is that time has run out. The tank is empty. The well has run dry. Major changes are needed urgently.

Recommendations

The detailed recommendations from this study are presented in Section 5. In brief, the optimal plan of action is:

(a) One sponsor (either the City or the County) should transfer their portion of the ownership of the airport to the other, thereby unifying the governance of the airport.

(b) The airport should be reconstituted as an "enterprise zone" under the laws of Utah and become responsible for its own operations, staff, policies, prices, and finances.

(c) The new enterprise zone should be governed by an independent, expert and autonomous Airport Authority serving as the "board of directors."

(d) The first task of the new Airport Authority will be to define new goals for the airport. This audit recommends one such goal would be to increase the *Total Economic Impact* of the airport by 50-75% over the next five years.

(e) The Airport Authority should implement a new operational model, develop new revenues, deploy new resources, and make major capital investments to prepare it to serve the Cache County community in the 21st century.

Outcomes

The financial outcomes forecasted by the study are summarized in Section 6. It is highly likely that this plan will return the Logan/Cache County Airport to financial health. Specifically, it will take the airport from a forecasted loss of $156,000 in 2024 to healthy revenues just shy of $2.3 million and a profit (EBIDTA) of $500,000 in 2030. The revised governance structure will help the airport boost its total economic impact, improve its operations, enhance public safety, and grow with the community is serves.

A Personal Note from the Author

This study was full of surprises. The conditions are the Logan/Cache County Airport were much more complex than the author had anticipated. Exploring the situations dispassionately and evaluating the best options for the future also was an intricate balancing act. There is no doubt: fixing the airport will be a challenge. But the author is confident LCCA has the people and the resources to get it done. People of good will, working together with integrity and respect, will can resolve even these most intricate problems properly, safely, affordably and relatively quickly.

However, the author would like to apologize to the readers, in advance, for the length of this document. It would have been easier and faster to write more briefly, skipping explanations, using aeronautical buzzwords, and space-saving acronyms. However, the audience for this report includes individuals who may not be familiar with the technologies of airports and aviation. As such, the author reluctantly has included explanations and sidebars which, it is hoped, will make the analyses and rationales more clear. For those already familiar with these topics, the author begs forbearance.

The author also is concerned that some the criticisms presented in this audit may be perceived to be overly harsh or an indictment on the performance of specific individuals. Nothing could be further from the intent. While the conclusions are accurate and the findings clear, none of these observations are intended to impugn in any way the diligence and hard work by the members of the Authority, the airport manager(s), the airport consulting engineers, or the owners, operators, and employees of businesses at the airport. Everybody has done their best under very challenging circumstances.

Lastly, this audit will include numerous discussions of airport-related contracts, leases, and ordinances and recommend certain action related to those documents and agreements. The author is not an attorney and makes no claim to any expertise regarding the laws of the State of Utah. As always, the participants should seek proper legal counsel before selecting a plan of action.

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Section 1:
Methodology of This Study

This study used a wide array of data sources to assemble the conclusions presented here. The sources include more than seventy interviews conducted over three months with local corporate leaders, officials at the Utah State Department of Aviation, officials involved with state, county, and city economic development, regional managers at the Federal Aviation Administration (FAA), airport managers locally and at peer airports, local corporate and private pilots, the educators and staff at the Utah State University, and Bridgerland Technical College. The complete list of interviews is included in the Executive Summary.

Additionally, this study integrated data from a wide variety of sources, capturing a unique perspective on the health and efficacy of the airport. These sources included:

- FAA data, including FAA Form 5010 submissions which is an annual submission to the FAA by the Airport Authority which documents the number and types of airplanes on the field, the traffic the airport supports, and certain geographic and operational information;
- Data from the U.S. Census, which was used to measure and compare the levels of economic activity in Cache County and among peer airports;
- Satellite data measuring land use patterns, which was used to measure the degree of industrial development within the County and among the peer airports;
- Airport traffic data for every single airplane and every single flight into and out of LCCA in 2023, as tabulated by VirTower LLC;
- Parcel sizes and ownership from the Cache County G.I.S. system;
- Airport leases, as exemplified by those on file with the Airport Manager;
- Airport contracts with Leading Edge and other companies;

- The Logan/Cache County Airport web site;
- Contracts, prices and performance data from peer airports in Utah;
- The airport budget as presented by the County, plus financial data from the County regarding airport income and expenses restated using managerial accounting techniques, and
- New academic research from the University of Florida regarding the governance of airports.

This report provides specific and detailed operational, legal, marketing, budgeting, pricing, and managerial remedies which could strengthen the airport's financial health and improve flight safety. This audit has five major sections, as follows:

a. Section 2 is a *Status Report*: A review of the airport's history, facilities, equipment, resources and operations as they stand today;
b. Section 3 is a review of *Problem Areas*: An itemized review of the specific situations and dilemmas with which the airport is dealing;
c. Section 4 spotlights the root cause of the airport's problems;
d. Section 5 lists the *Recommendations*: It includes organizational and operational improvements which will resolve the problems noted above; and
e. Section 6 presents the *Financial Outcomes*. This offers a revised financial perspective, given the recommended changes outlined above.

Several appendices are included with this report memorializing certain academic research and other information used in the audit which the audience might find helpful.

Lastly, a biography of the author is included at the close of this report.

Section 2:
Status Report: The Airport Today

This portion of the report will document the status of the runways, taxiways, buildings, equipment and facilities of the Logan/Cache County Airport which are used to serve customers. It will also review comments on the future growth expected for Cache County. The purpose of this summation is to clarify and establish a benchmark for any and all readers regarding the conditions at the airport.

For those who have not visited the airport, here is the shortest of summaries: the Logan/Cache County Airport barely — just barely — meets the needs of the customers using the airport today. While meeting minimum standards, it is far from modern, efficient, or safe. The facilities are unsuitable and inadequate to support the growth forecasted for this region in the next few decades.

History

The Logan/Cache County Airport (hereinafter "LCCA") is a general aviation airport located in Cache County, Utah. The Logan-Cache Airport was first established in the 1920s northwest of Logan City[1]. One of the first aviators in Cache Valley was Floyd D. Hansen, who was raised in near-by Mink Creek, ID. In 1928 Hansen returned to Cache Valley with an Eaglerock biplane. Due to Hansen's enthusiasm and untiring efforts, in 1929 the Logan Chamber of Commerce finally supported the construction of an airport on land otherwise unsuitable for farming. Within a few years, marshland on the northwest end of Logan was drained and cleared. The City even funded the relocation of a drainage canal and several bridges. Initially the airport offered two unpaved runways.

By 1933 the Logan-Cache County Airport had become a potential aviation destination, with forty-two visiting aircraft. In 1938, Hansen was hired by the United

[1] The author is grateful for the historical information about the airport available at the USU Library. See: http://exhibits.usu.edu/exhibits/show/cacheair/pioneers

States Postal Service to fly the first airmail out of Cache Valley. During WWII, the Cache Valley Flying Service trained aviators for the military. The company employed fifty-five instructors and had a fleet of fifty planes at its peak, and by June 1944 had trained over 3,000 aviators. During that period a third runway was added along with upgraded support facilities including an extension of the main runway to 5,900 feet. After the war, the military donated the airport to the County.

Figure 1: A photo of an Army Air force trainer over Cache Valley, from the World War II era. Courtesy USU Archives.

Hansen remained involved with the airport throughout the war. In 1946, he was appointed manager of the Logan-Cache County Airport, a position he held until his retirement in 1972.

Commercial airline service began with Western Air Express on August 22, 1946, carrying both passengers and airmail. But the size of the market limited the success of these services. All through the 1950s and '60s, passenger service struggled to make a profit flying into Cache Valley, but various small airlines continued to serve the area on and off until 1970.

Improvements slowly arrived over the post-war decades. These included expanding the parking apron and upgrades to the airfield lighting system enabling safer night operations. Runway 17/35 was reconstructed in the mid-1980s and eventually

lengthened to slightly over 9,000 feet. The airport access road was moved to its present location about 1990.

Other noteworthy improvements include the installation of an automated weather reporting system (AWOS) in 1999 which allows pilots in the air to ascertain the exact weather conditions at the airport even when the airport was closed. A modern Instrument Landing System (ILS) was installed in 2006 which enables properly-equipped aircraft to land safely in all but the very worst weather conditions.

In terms of governance, originally the airport was owned by Cache County and managed by the county commissioners. Since 1992 the airport has been managed by the Logan/Cache County Airport Authority. This entity was created through an Interlocal agreement between Cache County and Logan City.

County Economic Prospects

The airport serves as the aeronautical gateway for all of Cache County. Given that prominence, it is prudent to consider the economic situation of the county it is designed to serve.

The consensus of all the respondents surveyed is that the growth Cache County has enjoyed in the past twenty years will continue unabated for at least the next two or three decades. Cache Valley is the fastest-growing community in Utah, and Utah is the fastest growing state in the U.S.

Most agreed that Cache Valley's growth will continue. *"The whole state is growing fast, over-run by Californians. There are more multi-billion dollar companies in Cache County than probably in the whole rest of Utah."* Another respondent mentioned, *"Utah is almost recession-proof; we're now the #1 state for economic growth."*[2]

Another businessperson was equally confident about investments in the Valley. *"We're doubling our capacity in the next decade. We'll double our revenue as well. We're going to continue to invest in the valley, that won't change."* Another company also was

[2] Readers should note that in this report, to clearly distinguish respondent comments from technical terms, research, or definitional phrases, direct quotes all will be presented both in quotes and italics.

sanguine about the local economy: *"Lots of big industries here, lots of demand. Our [volume] will grow 40% over the next ten years."*

Census data suggest that growth has been averaging 4% per year and that rate has been generally constant. However, for many people in the county *"Growth is a four-letter word."* In the future, Cache County will see higher density and less sprawl, but *"there are a lot of moving parts"* in trying to predict the future.

Even today sprawl has become a problem. Over the past two decades, it appears that the individual towns of Cache County have merged into one metroplex, even though 80% of the county's population remains in the City of Logan. Even more than in the rural area, the expectation is that growth in Logan is going to get busier, not slower, as the city moves from "development" to "re-development." Several people voiced the conclusion that *"Logan is pretty much built out."*

Any new developments, and certainly any heavy industry, most likely will be in the more rural parts of the county as the City of Logan will focus on the redevelopment of older buildings. One positive redevelopment example cited by several respondents was the demolition of an old strip mall to create space for a Target super-store.

This growth has very positive effects on the community. *"We've gone from exporting our young people to importing them. We've gone from an agricultural community to a high-tech industrial one."* The general consensus is this growth is going to continue and feature high-tech jobs, clean industries, good pay, and ultimately a labor shortage. *"If you're family-oriented and like the outdoors, this is a great place to live."*

Other respondents are less convinced the focus will remain on Logan and instead move outwards in the County or even neighboring counties. *"The whole area is growing, not just Cache County but Brigham City and so on,"* one respondent said. *"It is not a localized phenomenon just around Logan."*

What is the upper limit? One respondent estimated the county will peak around 200,000 persons. *"[Geographic] factors will probably limit Cache County growth in 20 years, so it will never exceed more than 50% greater than the population we currently have (currently 137k, so max out at 200K)."*

Growth Factors

The first driver of growth is the excellent quality of life available in the valley. People who enjoy an outdoor lifestyle are attracted to the environment in Cache Valley. *"It's got beautiful scenery, plenty of open space, and a great place to live,"* one respondent smiled.

The second catalyst is Utah State University. The University attracts people and uses advanced research to find new answers to old problems. This level of innovation attracts investments and is self-reinforcing, which creates plentiful jobs. Several people cited start-ups like Space Dynamics and EP Systems as examples of the future businesses and careers in the valley. *"Utah State [University] is a great feedstock for new tech workers,"* one person explained. *"We get great local engineering talent from Utah State, and a great skilled workforce from B-Tech, especially for techs and mechanics."*

The third catalyst is the stability of the economy in the region. Unlike other regions, one respondent explained, *"Logan is very stable economically; the highs and lows are very subdued. The diversity of our industry is a bulwark against economic turmoil."* This assertion is generally correct: Cache County has a wide diversity of industry, including aerospace, finance, high-tech, biomedical, agricultural, and food processing. This is a balanced economic "portfolio" and since the growth is mainly organic, there is no obvious force which could alter this vector of growth.

Limits to Growth

Almost every respondent also noted there are or will be limitations to the growth, and a number of respondents asserted the current rate of growth is not sustainable. First, as big as the valley is, there is but a finite number of buildable acres. *"The valley is only so wide,"* one person noted.

Another problem is water *("All of Utah has water problems"* one respondent laughed) because Utah is the second driest state in the Union. Some felt that Cache County won't hit a wall — at least in the near future — because the County has first access to water from the Bear River.

Another issue is the difficulty in finding and housing talented workers. The fact that Cache County's small population makes it a great place to live also means there is a small pool from which companies can find the employees they need. Competing for those employees makes them more expensive. This shortage of labor may be caused, in part, by the lack of housing. *"Housing has gone out of reach of the pay scales in the County."* Several respondents were concerned about housing costs. *"Housing prices are climbing and insurance makes it very expensive to live here, so that may cramp the growth some."*

Other issues were mentioned by fewer respondents, including air pollution caused by winter inversions. One person mentioned Cache County is under an air quality watch by the EPA for pollution during winter weather inversions. *"In the winter, the air here can be worse than LA.,"* he said.

Another economic inhibitor might be the lack of electrical power. Logan, like many cities in rural America, operates their own electrical system. *"Capacity is tight, and expansion is complicated,"* was one complaint.

Balancing all these conflicting trends is a challenge, but the general conclusion is that Cache County will have the room and resources to grow for the next twenty years (at least). If this is true, the demands upon the airport will grow as well.

Airport Geography and Boundaries

Today, the airport is set on 734 acres of bottom land at an average elevation of 4,456 feet. Most of this terrain are seasonal wetlands. The airport is within the city limits of Logan, just west of the towns of North Logan and Hyland Park.

To the east of the airport, any growth or expansion is limited by a Union Pacific rail line heavily used to transport freight. To the south, the airport is bounded by Airport Road. To the north, Public Highway 4200 North sits just off the end of Runway 35. To the west there are approximately 2,000 acres of boggy cattle land.

One issue at the airport, which will be discussed in greater detail below, stems from the fact that the available land owned by the airport is almost completely built-out. While 700 acres sounds generous, once one subtracts the runways, taxi ways, and

restricted safety zones, only about forty acres ever were available for offices, workshops and hangars. That resource is almost completely exhausted. Very few spaces remain for new facilities and most of those are of awkward shape and location. One option would be to use the land upon which the old, abandoned runway sits, but there is no convenient and affordable access to that area.

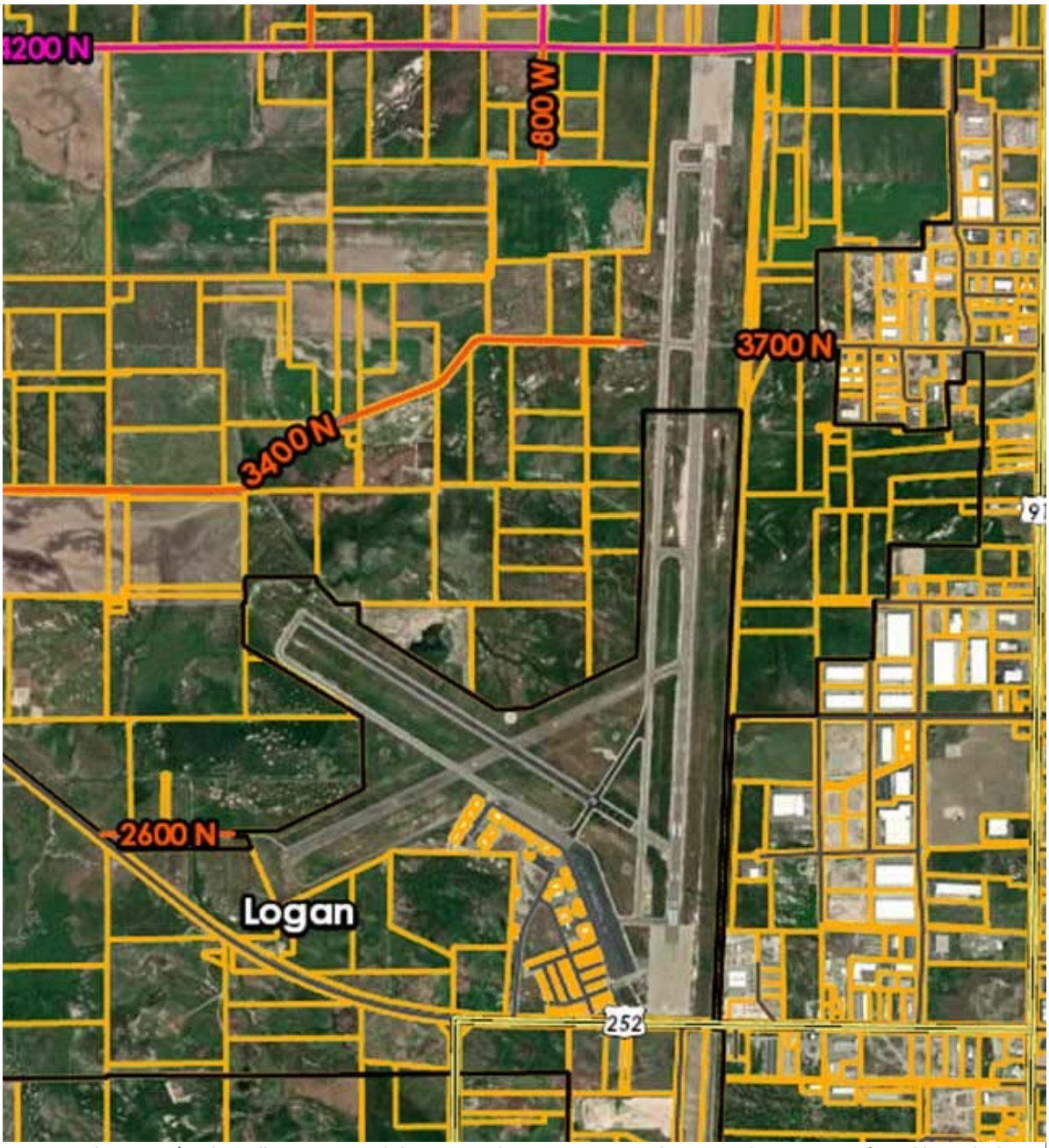


Figure 2: The Logan/Cache Valley airport and the surrounding property parcels. Notice the Union Pacific rail line which runs exactly parallel to the north/south runway. The cluster of properties near the "Route 252" designator are the 109 hangar ground leases.

There is other good news: the airport has some of the best avigation easements and encroachment protections of any airport in Utah. Also, the State just passed a new law specifying that any new zoning rules must be in compliance with the needs of the local airports (preventing non-compatible uses).

Runways and Ramps

The principal runway is termed "Runway 17/35" and runs generally north/south, parallel to the railroad tracks. The runway is 9,020 feet long, 100-feet wide, and is free of approach obstructions. The runway surface is asphalt in "excellent" condition with at least a decade or more of useful life remaining. However, the markings on the runway — a vital safety feature — are faded and worn from years of snowplow activity and should be refreshed.

In addition to the main runway, there is a secondary runway running northwest/southeast. This runway is termed "Runway 10/28." It is 4,075 feet in length. It is restricted to daylight operations only because of lack of runway lighting and taxiway lighting. Despite this limitation, this shorter runway is valuable because it allows pilots to choose the optimal (safer) runway for landing and departing depending upon the prevailing winds. It also helps to "offload" traffic from the busy main runway. For example, it can be used for sailplane activity in summer months. A secondary runway is a major asset to any airport and should be preserved and protected whenever possible.

It is noteworthy that when it was originally constructed, this secondary runway intersected with the main runway. More modern airport design criteria later judged that "overlap" to be a safety hazard. As such, that runway has been shortened and while it still has a paved connector to the main runway it technically no longer intersects with the main runway.

There is a third runway at the airport, a vestige from the days of military training. This runway has been abandoned and is no longer maintained. However, it is used from time to time for specialized aeronautical training exercises. The acreage it occupies is very valuable and could be an important zone for growth if access to the area was improved.

For night operations, the airport uses industry-standard runway lighting. The lighting system is described by the FAA as a "medium intensity approach lighting system with runway alignment indicator lights." It is in good operating condition.

The airport has a modern instrument landing (ILS) system and several GPS-based instrument approaches which allows traffic to arrive in inclement weather. The ILS approach is noteworthy because it is the most precise type of instrument approach available today and allows arriving traffic to land in all but the worst weather.

At every airport, the main parking and fueling area is termed "the ramp." At LCCA, the ramp is in front of the larger hangars and is approximately 2,000 feet long, which is generous for an airport of this size. The ramp is generally in poor condition with extensive fractures and "alligator" cracking. Foreign object debris is widespread and poses a hazard to engines, airframes and people when it is disturbed by jet blasts or prop wash.

Hangars and Other Facilities

There are 99 hangars on the field, almost all of which have been built with private funds for private use. There is no formal "terminal" building as the general public might expect. Hangar development has been perking along slowly and includes several hangars currently under construction or recently completed. These are on airport land and leased to tenants under "ground leases" which typically run thirty or more years.

Additional construction will be challenging. As noted above, despite the airport's size, most of the land owned by the airport has already been developed as runways, taxiways, parking aprons, or aircraft hangars, or as restricted "buffer areas" around those facilities. There is very little land remaining, and what remains is expensive and awkward to access.

Figure 3: A recent photo of the airport and environs, with labels. Courtesy the Utah Soaring Society.

The Airport Authority

The Airport Authority is comprised of a seven-member board which includes, by ordinance, the following persons:

- the Mayor of Logan
- two members appointed by the Mayor
- the Cache County Executive
- two members appointed by the County Executive
- and a seventh at-large member appointed by the other board members.

The Mayor and County Executive serve during their terms in elected office. The other five members serve for a period of two years and may be reappointed. The members of the Authority select one of their members to serve as Chairperson of the Authority. There are no term limits. It is noteworthy that there are no requirements for any of the members of the Authority to be pilots, or to be knowledgeable about airport

operations, aviation law, aeronautical activities, or even demonstrate general business expertise.

While the Airport Authority would seem to be an independent body, in actuality it has little autonomy. The budget is too small and jointly controlled by the City and the County, although the day-to-day administration is a County function. There is no formal airport staff. There is no marketing, no business planning, no teamwork with the public schools, no collaboration with businesses, or outreach the community. The users of the airport see this weakness:

- *The airport is the 'front door' to Cache Valley, but the City and the County treat it like a dumpster. Neither want to contribute to running it; the airport needs to be owned by one or the other."*
- *"The Airport Authority has no power, it's useless."*
- *"The airport authority really is just an advisory board because the County Executive is the person with the money and really calls all the shots."*
- *"John Kerr is wonderful, but they need somebody new, somebody business-oriented, who can solve the fight between the City and County."*
- *"The airport is hindered by a very limited budget, under-funded and under-appreciated by the community."*
- *"The politicians on the Board don't know aviation. Every time we get a new mayor, I have to re-educate them on the value of the airport to the community."*
- *"The airport [is] always on the edge of being too cheap for what it needs. It's barely keeping things together. We've just limped along for years… that's not right."*

Recent research has found that the most successful airports are operated by "professional and engaged" airport authorities. Measurements of superior governance are twelve simple behaviors which can be tabulated from an airport's web site. In the Florida research, across 235 airports the average score was just 3.1 points. Only 84 airports scored above average. The Cache County airport web site scored three points.

In short, both by financial results, academic measures, and community observations, the LCCA Airport Authority is not performing well. In academic terms the Airport Authority would be considered "an ineffectual principal." Approximately 20% of

all airport authorities fall into this condition. In this case, audits such as this report can be used to identify remedies to enable the changes needed to get the airport back on course.

There is one other problem for the Authority. Shared ownership (or "split ownership") found at the airport is a challenge. Different political entities may have difficulty synchronizing their different political ambitions, divergent resources, and conflicting priorities, and these can change over time. One respondent noted, *"[Running the airport is] a fight between the City and the County, and the City hates the airport. A couple of times the airport has tried to arrange an airshow at the field, but the City wanted to charge the airport $75 an hour for cops. The expense is just too much."*

There are other problems with the divided loyalties caused by the split ownership. Members of the Airport Authority appointed by one owner may be expected to deliver policies or accomplishments for their political masters ("Don't spend any money!") which might diverge from the overall needs or goals of the airport.

One other troubling issue is simply synchronizing the efforts of the two distinct councils. The Authority may need to make decisions requiring approvals from both the city and the county (say, a financial guarantee), and simply getting on their agenda and making multiple presentations can be a clumsy process at best.

It is also noteworthy that LCCA's chosen method of airport governance is *one of the least successful forms which could be chosen*. Recent research from the University of Florida has found that airports operated with little autonomy, such as LCCA, under-perform their peers. In contrast, airports operated by professional and engaged airport authorities out-performed city-run airports by a factor of twenty times. This research is summarized in Background Paper 4, attached to this report.

Numerous other governance options are available to operate the airport. There also is a significant body of research on the optimal organizational design for public airports. Two of the most relevant and informative are *"Airport Governance and Ownership"* published by the National Academies of Sciences, Engineering and Medicine, 2009; and *"A Guide to Evaluating Airport Governance Structures*" also by the National Academies,

2022. Both are available on-line. Both offer numerous suggestions for improving the performance of an airport through improved governance.

Table 1: LCCA 2024 Budget, Synthesized from the County Format

Item	Income	2024 Budget	2024 No Public Funds
5	Ground Leases	111,200	111,200
7	Landing Fees	5,500	5,500
9	Fuel Flowage Fees	36,000	36,000
12	Contribution - Cache County	100,000	
13	Contribution - Logan City	100,000	
14	Other Income	13,500	13,500
15	**Total Revenues**	**366,200**	**166,200**
	Expenses	**2024**	**2024**
16	Employees, Full-Time	79,200	79,200
17	Employees P-T: Ops, Actg., Cust Svc	44,900	44,900
18	Employee Benefits	45,200	45,200
24	Equipment Maint & Supplies	25,000	25,000
25	Minor Equipment, Non-Capital	6,000	6,000
26	Buildings & Grounds	21,800	21,800
27	Snow Removal	65,000	65,000
30	Utilities	27,000	27,000
32	Communications	5,000	5,000
33	Fuel for Equipment	10,000	10,000
34	Legal (Aeronautical)	30,000	30,000
35	Legal (Administrative)	5,000	5,000
36	Airport Engineering (Non-grant, non-Master Plan)	22,000	22,000
41	ARFF Training & Certs	33,000	33,000
42	Other 2 (7 items)	103,400	103,400
47	Total Expenses	522,500	522,500
48	**Net Profit/Loss**	**(156,300)**	**(356,300)**

Airport Revenues

The revenues which fund the airport are derived from four sources: leases of land and buildings, fuel flowage fees, airplane parking fees (usually termed "tie-down fees") and taxpayer subsidies. Each of these will be explored in detail, below, but the question of taxpayer subsidies is a crucial issue.

The airport is subsidized by both Logan City and Cache County, currently at the rate of $100,000 annually each. The subsidies are required since the operating revenues are inadequate to sustain the airport. The airport itself has no power to tax or bond for additional funding. The day-to-day administration of the airport — purchasing, payroll, financial reporting, human resources, etc. — is provided by the County for a small fee.

Traffic and Aeronautical Activities at LCCA

Some readers may be surprised to learn that the LCCA airport is the second busiest airport in the State of Utah, second only to Salt Lake City International. An automated aircraft traffic system produced by VirTower LCC tabulates the traffic at LCCA under contract with the State. VirTower data shows the airport hosted 109,245 operations in 2023. This equates to roughly 300 take-offs and landings each day, although the volume of traffic is highly seasonal.

Numerous aeronautical activities are conducted at the airport. First and foremost is flight training, conducted by two busy flight schools. Additionally, corporate aviation and charter flights are common, including the increasingly popular "fractional ownership" option. Other activities mentioned during interviews include air ambulance operations, forestry, agricultural aviation (crop dusting and such), aerial surveys, photography, private flying (usually described as "general aviation") and aircraft maintenance. All of these activities support local business including the factories, hotels and restaurants in the area, as well as the institutions of higher learning.

A Failed Airport Improvement Program

Until the end of the 20th Century, LCCA enjoyed an active program of investments to improve the airport and enhance safety. The most prominent of these was the extension of the runway in the earliest part of this century, almost doubling its length.

This enables all but the biggest and heaviest aircraft to operate safely out of LCCA, even on the hottest summer day. At more than 9,000 feet, the main runway at LCCA stands out as an unusually long runway and in excellent condition. Such an asset should make the airport extremely attractive to numerous businesses and opportunities.

However, in the past twenty years capital improvements and grant activity has ground to a halt. Despite the assurances of the prior Airport Manager and the Chairman of the Authority that there is a long list of projects under development, in the opinion of the author these projects are paltry in scope, irrelevant in capabilities, and excessively delayed in implementation. Few, if any, of the projects listed in the Airport Improvement Plan enhance the mission of the airport nor improve its economic performance. They are too little, too late.

The general rule of thumb for airport success is simple: ***an airport without a major construction project is an airport that is one that is failing.***

LCCA hasn't had a major construction project in years.

Taxpayer Subsidies

LCCA airport receives $200,000 in subsidies from Logan and the County each year. This is a problem for several reasons. In terms of general aviation airports, it is entirely possible for airports to operate in an economically self-sufficient manner on a day-to-day basis. Airports, both large and small, urban versus rural, busy or tranquil, can and should be structured to prosper without endless grants from their government sponsors. Peer analysis of other airports in Utah confirm this, as shown in Table 2, below, and is amplified in Table 4. The fact that LCCA needs a large influx of taxpayer cash on an annual basis is *prima facie* evidence that something at the airport is not being operated properly.

That said, it should be acknowledged that no airport can afford the capital investments of modern aeronautical infrastructure. Whether it is building new hangars, renovating a terminal building, or lengthening a runway, these projects are too expensive for pilots and operators to fund on their own. Airport improvements are

Table 2: Peer Airport Comparison of Revenue Sources

Item	Typical G.A. Airport	LGU Actual	Ogden	Cedar City	Spanish Fork	St. George
Fuel Sales/Flowage	60%	10%	0%	17%	8%	4%
Hangar Rents	25%	0%	6%	0%	0%	15%
Ground Leases	5%	30%	58%	21%	83%	0%
Airline Fees	0%	0%	0%	9%	0%	17%
Ramp Services	5%	4%	0%	0%	9%	0%
Landing Fees	5%	2%	9%	21%	0%	0%
Public Parking	0%	0%	9%	0%	0%	60%
Government Subsidies	0%	**54%**	18%	9%	0%	0%
Misc.	0%	0%	0%	23%	0%	4%
	100%	100%	100%	100%	100%	100%

ferociously expensive to build and sustain. The increasing number of users, the improvements in technology, the ever-higher expectations for safety, the introduction of new engineering capabilities, and evolving customer requirements keep redefining the standards, which raises costs even higher. The fact that airport construction projects are government contracts, with all the paperwork, obligations and transparency they require, certainly adds to the fact that airport construction projects are expensive.

Many airport improvements can be funded through airport grants from the FAA, the state, or other agencies. Nonetheless, these almost always come as “matching” grants, requiring the sponsors of airports to pay 5%, 10%, or even more of the cost of a major project. Airport sponsors should fully understand this is the reality of modern, safe air travel. Sponsors should be ready to fulfill their portion of the obligation as the needs of the airport require.

The savvy airport sponsor will understand the details of the airport’s latest “Airport Improvement Plan” (the “AIP” is a document that shows the current and future buildings on the airport, which is required by the FAA) and make the long-term plans required to fund their portion of the capital projects as they come due. Airport Authorities should update their AIP plans annually and brief their Sponsors on the forecasted obligations and timelines.

Commercial Air Service

It can be stated, without fear of contradiction, that Cache County has zero chance of getting commercial airline service within the next ten to twenty years.

In the past twenty years, the LCCA has made two efforts to attract commercial carriers. Reportedly spending in excess of $500,000, the airport hired "air carrier consultants" which prepared studies of the economy and the population of the region and used that data to model potential demand for air travel routes. Options included flights to Salt Lake City, Las Vegas, Denver, southern California and even as far as Phoenix. These models then were used to "pitch" the benefits of LCCA to selected airlines. None of these efforts produced the desired results.

First, Logan is simply too close to Salt Lake City International (about 75-90 minutes by car) and people within the region are accustomed to driving long distances, even for groceries or entertainment. As one respondent mentioned, "*LGU has no chance of getting commercial service. It's in the same situation as Ogden, UT, which gets commercial service and then loses it every three years. In Utah, people will drive fifty miles just to get groceries; driving ninety minutes to Salt Lake City isn't even noticed.*"

Another issue is the size of the Cache County market. As attractive as the community is, the population is merely 145,000 people. An airline flight is only profitable when at least 80% of the seats are filled and the smallest aircraft used in commercial service today are 50-seat jets (and even they are being phased out as uneconomically small). If an airline was to operate with just one departure a day, it would need to generate at least eighty seats a day —40 seats inbound, and 40 seats outbound — an unlikely accomplishment for such a small community.

The population of Cache County classifies it as a small "catchment area" for airline services not financially supported by the "Essential Air Service" grants[3]. It is common in airline demand studies to use catchment areas as a market-potential

[3] "Essential Air Service" is a Federally-stipulated program which subsidizes air service to remote but important locations, like Jackson Hole, WY. In Utah, three airports are participants: Cedar City, Moab, and Vernal. The program is still operational today but is closed to the addition of new cities. Ref.: https://www.transportation.gov/policy/aviation-policy/current-list-eligible-eas-communities

planning tool. Originally used by geographers to document the flow of rainwater into streams and lakes, the term has been expanded to describe a geographic area (as measured by distance, time or some other degree of effort) surrounding a focal institution, such as a museum, sports arena, convention center, or a retailer. That area is the zone from which it can expect to attract a target population for its services.

Governments and businesses use catchment area planning to ensure suitable access to public services[4] such as fire departments, bus services, outreach to the homeless[5], etc. For example, a retailer might know that majority of the customers of its stores live within one mile of a store location. The catchment area would be described as a circle with a one-mile radius.

Unlike retailing, selecting the optimal catchment area for an airport is a challenge. Scholarly research has determined that for general aviation airports, such as LCCA, the catchment area has a radius of fifteen miles. That contrasts sharply with large commercial airports which have catchment areas measured in hundreds of miles. Catchment areas are defined by the unique utility of the airport, as measured by the proximity of competing airports, driving times, the number of served destinations, flight frequencies, fares, and the availability of nonstop services. A key component of the catchment area is access, so reliable public transit or speedy four-lane highways expand catchment areas while rural roads or impassable geographies (mountain ranges) shrink them. Cache County clearly is within the catchment area of Salt Lake City International.

One remedy for a lightly-populated catchment area is to serve as a tourist or business destination. In Utah, excellent examples can be found in Cedar City and St. George. Under traditional measurements, neither of these communities would be sufficiently large to support commercial air service. But both are attractive "destinations" with national parks, festivals and other delights sufficient to stimulate demand. Unhappily, and as lovely as it is, the Cache Valley lacks a prominent destination such as "Dollywood" or a beach to attract enough travelers to catch the eye of an airline.

[4] Source: https://en.wikipedia.org/wiki/Catchment_area#Defining, on Sept. 21, 2022
[5] Source: https://opendata.dc.gov/datasets/DCGIS::human-services-catchment-area/about, on Sept. 21, 2022

Competition is a factor in airline planning as well. To accommodate the need for frequent travel to and from Salt Lake City International, Cache County businesses have developed a robust network of taxi and bus services which are competitively priced. These services would undercut the pricing power of an airline offering.

Moving beyond geography, the airport lacks the proper infrastructure for commercial air service. The airport lacks an air traffic control tower, which is not essential but highly desired by the airlines. The airport lacks anything resembling an airport terminal and has no facilities for accommodating check-in services, baggage handling services, or security systems. There is insufficient parking for passenger vehicles, and the access to the airport off Airport Road is a safety hazard. The development and construction of such facilities would be a multi-million dollar investment with an uncertain utilization. In prior years, remedies for these deficiencies were considered for LCCA, but *"There was community push-back about making changes at the airport for the airlines."*

Of particular note is the cost of airport security. Since 9/11, the cost of airport security has skyrocketed. The Transportation Security Agency (TSA) estimates the cost of deploying TSA security services to a new airport is in excess of $1 million annually, which would be paid by the community, usually through airport fees. Given all the choices airlines have, it is not surprising they passed on the opportunity to serve LCCA.

Aside from the airport infrastructure and the local economy, the airlines have other reasons to avoid LCCA. One of the most critical factors is the "opportunity cost" of serving a region. Opportunity costs are defined as the economic losses suffered by a company when it deploys its limited resources to serve a market that is not as profitable as other opportunities. In this case, the opportunity cost is generated by a lack of pilots.

There is a severe shortage of pilots and maintenance people available to the airlines. With just a few exceptions, every airline flight requires at least two pilots, no matter how large or small the aircraft. Using the "two flights a day" model mentioned above, those two pilots might be used to fly eighty people from LCCA to Salt Lake City (out and back, 40 people each way = 80 seats) producing marginal profits. Alternatively, they could be used to fly 200 people from New York to Los Angeles. This means the

opportunity cost of serving LCAA is not the mere lack of profits from a short-haul flight, but the missed opportunity of serving 200+ people on a longer, busier route. Until the airline staffing shortages are addressed, or until Cache County becomes a much bigger market, or until the community wishes to subsidize commercial airline service with seven-figure grants to the airlines, the opportunity cost of serving LCCA will consistently force airlines to look elsewhere.

Community Relevance

As noted above, the primary reason citizens support any local airport is for the connectivity offered by commercial air service. Since LCAA lacks that strong benefit, the airport suffers from a lack of relevance to the community at large. The consensus among the respondents to the interviews was that most citizens don't even know (much less care) about the airport. This condition is exacerbated by the indisputable fact that the economic contribution of the airport to the community is insignificant. One respondent said, "*Most people in Logan don't even know we have an airport; the airport doesn't do anything for the average person. No airshows, no fly-ins, no restaurant, no playground… no community out-reach. Yet we have this massive space and room for development."*

Another interviewee explained the situation this way: *"One-third of the town knows the airport and supports it; one-third of the town only cares about commercial service, and the other one-third would ask, 'What airport?'"*

Another added, *"The airport has been a hot potato over the years. Some people don't think the airport justifies the contribution they're making."*

One member of the Authority lamented this condition. *"We haven't been doing a very good job of telling people who and what we [the airport] is,"* he said. *"They need to know the airport is a critical link in the Valley's infrastructure."*

The facts are plain: the airport has not been doing a good job either reaching out to the community nor stimulating the local economy. Peer analysis of the 2020 Utah airport economic impact study suggests LCCA is woefully underperforming in terms of total economic impact. The airport is attributed with creating 194 jobs and $17.7 million

in economic impact. Nearby Ogden claims 2,626 jobs and $300 million in economic impact. Table 3, below, shows that when an estimate is made by adjusting the results for the size and scope of the economic activity of Cache County, the population, the degree of industrial development, the airport facilities such as the length of the longest runway, and other control variables, the result suggests a well-managed LCCA airport should generate a total economic impact in the range of $82.3 million.

The difference between $17.7 million and $80 million is a measure of the failings of the airport. The airport is only performing at about 25% of its potential. Given this finding, it is no surprise the community neither knows nor cares about the airport. The Airport Authority should revisit its development plans and set a near-term goal of boosting its total economic impact to $30 million in the next five years.

The issue of total economic impact is further discussed in the Appendices and in the goal-setting discussions of Section 5.

Table 3: Comparison of the Total Economic Impact of LCCA and Peer Airports

Airport ID	City	Total Jobs	Total Economic Impact	Community Imperv. Area	Economic Intensity ($/SqMi of Imperv Surf)	Governance Score	Longest Runway	Land Area (Acres)	Based Multi Engine Aircraft
SLC	SALT LAKE CITY	124,407	$11,484,143,000	539	$132,587,588	8	12,002	7700	69
OGD	OGDEN	2,626	$328,102,000	253	$97,267,095	5	8,107	720	25
SGU	ST GEORGE	1,936	$177,779,000	93	$59,624,182	4	9,300	1204	20
CDC	CEDAR CITY	990	$112,665,000	82	$17,811,992	2	8,652	1040	3
VEL	VERNAL	208	$26,839,000	82	$13,671,568	3	7,000	393	1
LGU	LOGAN	194	$17,717,000	131	$40,337,033	2	9,010	739	16
SPK	SPANISH FORK	151	$16,085,000	259	$100,085,286	6	6,500	345	13
	Average of Peers		$132,294,000	154	$57,692,025	4	7,912	740	12
	Advantage of Peers Compared to LGU		*62.2%*	*117%*	***143%***	***200%***	*88%*	*100%*	***78%***
	Revised Logan Eco Impact		**$82,286,868**						
	Correlations with Total Economic Impact:			*0.44*	*0.53*	*0.73*	*0.45*	*0.99*	*0.70*

Commercial Engagement

Just as a successful airport should reach out to the citizenry of its community, a successful airport also should be reaching out to the businesses and organizations in

that community to find new ways to serve those entities. That's the single fastest way for an airport to bolster its total economic impact. In the instance of LCCA, the airport has a strong story to pitch: adequate aeronautical infrastructure and numerous success stories on the field in the form of the two flight schools and six corporate flight departments.

But this story is incomplete. To the best knowledge of this researcher, the airport has never had a program to attract businesses to the airport nor support the ones it has. The airport never has had a plan to install the infrastructure which businesses need, such as acres of land, road access, taxiway access, water, sewer, gas, and electricity. The airport lacks an individual authorized to make deals with businesses in a timely manner. It lacks an approved airport plan showing the locations of suitable commercial developments. It lacks a "strawman" agreement as to the general terms, capabilities, and timelines that businesses might consider in an investment analysis. It lacks a checklist of requirements. In fact, the airport even lacks a program to appreciate, support and cultivate the businesses it already has.

Customers and business operators have forsaken any hope the airport might help them with their business needs:

- *"What we really need is more businesses at the airport, more business development, creating activity and making new jobs."*
- *"There has long been an interest in having businesses on or close to the airport. But there hasn't been any emphasis on an industrial center."*
- *"EP Systems wanted to be on the airport, but they 'couldn't find space' for them."*
- *"One guy wanted to bring a freight business here and build 100,000 sq ft hangar. But the Board wouldn't put in a sewer line."*
- *"There even was community push-back about making changes at the airport for the airlines."*

In short, this airport consistently says "no" to its current users and prospective customers. It should be no surprise those businesses take their patronage elsewhere.

Part 139 Status

It is important to understand that the LCCA operates as a Category "D" airport under Part 139 of the FAA regulations. This portion of the report will discuss the cause, implications and costs of sustaining Part 139 status.

Part 139 is the federal regulation that controls the operations of airports with commercial service, such as Salt Lake City International. Part 139 regulations describe with great specificity the vital safety and performance requirements of commercial airports. Failure to comply with these regulations will result, in the worst case, of the cancellation of the Part 139 service which means commercial aircraft would be barred from using the airport.

Part 139 status originally was developed and has been sustained by LCCA in the forlorn hope of attracting commercial air service. This impacts almost every aspect of the airport. First, the airport needs to be properly staffed. As one FAA expert commented, *"[For Part 139 status to be retained] the field needs 'sufficient and qualified' personnel to ensure programs are being executed and managed correctly… The airport staff must be trained and know the [FAA] circulars."* The particular circulars include airfield maintenance, which includes grass and mowing, signs, markings, safety areas, lighting, transition surfaces, protected areas, even prairie dog fences. Other circulars include airport security, the runway condition — particularly runway braking condition — and maintenance in Airport Circular AC-150-30, Runway Self-Inspection, Wildlife Management, and Emergency Plans. Part 139 status also requires the daily inspections of the runways and taxiways, and the recording those results in a logbook.

— *The Rationale for Part 139 Status*

Since airline service isn't coming to Logan, a thoughtful taxpayer might wonder if the expense of sustaining Part 139 operations — staffing, driver training, security cameras, runway inspections, wildlife control, snow control and ARFF, to name just a few — are worth the expense. Today, the only reason LCCA retains the Part 139 status is for the convenience of Utah State University.

The USU football team plays an average of sixteen games every autumn, eight "home" games and eight "away" games. For the distant games, the University charters a commercial airliner which flies the team and staff to the game, generating four operations for each game. (The plane arrives empty, picks up the team, and departs, which is two operations. A few days later the aircraft brings the team back and then departs empty, which is another two operations). For home games, the opposing school often arrives in Logan in the same manner. For these thirty-two operations, this study estimates the airport spends roughly $150,000 annually. USU does not reimburse any of those expenses except for the direct expense of the firefighters' duty time.

Three particular features of Part 139 status are of a concern in this report. The first is snow control, the second is emergency response, and the third is airport security.

— *Part 139 Snow Control*

Cache County receives an average of 55 inches of snow annually. Currently, snow removal from the runways and taxiways is provided by Cache County under contract to the airport. The snow removal equipment is owned by the airport and remains on the facility year-round, except for trips to maintenance. The airport owns two old dump trucks which it uses for plowing, plus two wide plows on tractors, and one unreliable "snow eater" which is believed to be fifty years old.

Customers of the airport see the deficiencies of the obsolete equipment, particularly the corporate flyers who fly in the worse weather. One respondent noted, *"The biggest hurdle is the out-dated snow equipment. The County people waste an hour just trying to get the machinery to work."* Other comments included:

- *"Snow removal equipment is an issue, [the equipment is] old and tired and not up to the job… Last year was a complete disaster."* Still others added:
- *"They desperately need to update their snow handling equipment; they need a new plow and a self-propelled broom."*
- *"[The airport needs] to improve their snow removal equipment, as well as to take better care of the equipment it has."*

The snow control protocols of the FAA (termed "the TALPA standards") were re-written in 2016. These updates raised the standards for snow control for Part 139 airports, but LCCA did not use that opportunity to upgrade their snow control methods.

Fundamental to this discussion is the recognition that "snow plowing" is not "snow control." Snow plowing simply means moving most of the snow off the paved surfaces. Snow control is a more rigorous process with higher performance standards.

To summarize a very complex issue, snow "plowing" is deficient in two ways. First, as a plow moves along a paved surface is does not completely remove all the snow. A thin layer of snow remains between the edge of the plow and the pavement. This snow has now been compacted by the weight of the plow and truck. It also has been melted, ever so slightly, by friction from the plow, and when that liquid re-freezes it turns to ice.

Second, a snowplow only moves the snow about as far as the width of the plow, which is fine on a highway but problematic on a 100-foot-wide runway. The limited ability to move the snow means each plow is required to make multiple trips up and down the runway to clear the surface. The end result are piles of snow along the edges of the runway and the taxiways. These icy berms are a threat to aviation because ice is much harder than aluminum and any contact will be damaging to the airplane. One respondent noted, *"Last year, there were many times when there wasn't enough wingtip clearance to taxi past the snowbanks. That's just wrong."*

Snow berms and mounds also are a hazard because they can cover runway lighting and taxiway edge lights, requiring workers to dig out the lights with shovels. Another respondent commented, *"I flew 25 days last year when I couldn't see the taxi lights. The airport should have been shut down for snow. If anybody else had tried to land, they would have crashed."*

The modern term of "snow control" is an effort by the FAA to draw attention to the more complex requirements of airports and winter precipitation. For example, it is a common procedure to sand and salt highways to aid traction. But sanding a runway is prohibited because gravel can damage aircraft, propellors and jet engines. When plows are used, the plows should push the snow *into the center* of the runway and taxiways.

From there, it is removed by a “snow eater” which is a giant cousin to the snowblowers seen on driveways everywhere.

Figure 4: The LCCA snow control equipment is old, in poor condition, and insufficient for modern Part 139 operations. From left to right: the old snow-eater, two runway plows, and two highway style plows.

The type of snow changes the equipment and the standards. Plowing is reserved for moving only the heaviest snow. Lighter accumulations, especially of “dry” snow (which won’t make snowballs) are best removed with huge “snow brooms.” Booms are much safer than plows because they clean down right to the pavement and do not leave an icy substrate on the tarmac.

An ice-covered runway is a hazard to aviation as it degrades the braking condition. During snowstorms, braking condition reports are prepared by the Airport Manager and should be issued hourly. A typical report shows the braking condition at the touch-down zone, the center of the runway, and the roll-out zone at the end.

Braking condition reports on a clean, dry runway would be “5-5-5.” On a rainy day it might be reported as “3-3-3.” Many operators and flight schools are prohibited from

operating on runways which are not “3-3-3“ or better. This means corporate flyers — coming home from a distant location late at night — may be forced to divert inconveniently if the runway is not in acceptable condition. As one corporate flyer stated, *“[They must fix] snow removal procedures; if they [airport manager] closes the airport for snow removal we may be stuck at a distant airport, waiting to get in.”*

It would be reasonable for a reader to question if this situation is common, rare, or merely hypothetical. One also might query the degree to which snow poses such an extreme risk that it justifies major capital expenditures.

There should be no doubt: this risk is real, in northern Utah it is common, and deficient snow control can kill people.

One pilot mentioned, *“During pre-flight planning [for a flight home], the braking report at LGU was ‘3-3-3’ and I was expecting normal braking. Turns out, that braking report was twelve hours old. The actual RBC (runway braking condition) was NIL… It took 6,000 feet to stop the plane. The airport manager should have been updating that condition every hour or even more.”*

Figure 5: An example of a modern snow "broom" used to completely remove light snow from runways.

Figure 6: A modern "snow eater" typically found at modern airports. These systems prevent dangerous berms of snow from accumulating at the edges of runways.

One last factor affecting the snow control issue is the maintenance of the antique equipment at the LCCA. It is completely unacceptable for expensive machinery to be stored in the open air for years at a time. It is vital that the airport protect their equipment and offer a facility for maintenance. An old hangar could serve as an equipment storage and maintenance facility if that was the only roof available, but a better answer would be the deployment of a proper equipment garage. A typical machinery storage garage is shown in Figure 7.

It has been reported that grants to replace the snow control equipment are scheduled for 2025 and a maintenance shed is budgeted for 2027. But, given the history of LCCA budgets, there are great doubts those grants and their required matching funds will be implemented as scheduled.

Figure 7: A typical airport equipment maintenance facility. The high doors allow expensive snow removal equipment to be stored inside, protected from the elements. The LCCA capital budget includes a maintenance shed but the funding has never been provided.

— *Part 139 ARFF*

As one might expect and hope, Part 139 rules require speedy airfield rescue and fire fighting (ARFF) responses for aeronautical emergencies. At large commercial airports, entire fire departments may be observed near the busy runways, and these are staffed 24-hours a day. At smaller airports the emergency equipment needs to be available but only staffed when passenger-carrying commercial air traffic is expected to land and depart. That is the situation found at LCCA.

The airport contracts with the Logan Fire Department for ARFF staffing. Approximately 33 people in the Department are ARFF-certified. There is a specialized piece of ARFF equipment, called a "Stryker" engine made by the Oshkosh Corp., permanently based in a garage at the airport. When a commercial flight operation is expected, the fire department deploys three people to the field, which is the minimum staffing for the Stryker. They arrive on scene at least thirty minutes before the scheduled arrival and remain in place until thirty minutes after the plane has departed.

The Stryker is an interesting machine. Purchased in 2012, it has a life expectancy of just fifteen years because it is the "primary" response unit. FAA rules require it to be replaced in three years at a cost of about $1 million, most of which could be funded with an FAA grant. The unit has a total of twenty miles on the odometer. Nonetheless, the tires have exceeded their shelf-life and need to be replaced, at a cost of roughly $8,000

each. According to the Logan Fire Dept, the specialized Stryker is too large, too heavy, too slow to be used off-airport, so it has no value in civilian applications.

ARFF equipment, training and consumables are all very expensive. The firefighters wear silver-colored 'proximity gear' which needs to be replaced every five years, at about $3K per person. Bunker gear, air systems and 'turnout' gear needs to be refreshed regularly. ARFF training is complex. Firefighters need training in eleven distinct areas for ARFF responses (see FAA Circular C-150-5210-7-c) which costs roughly $1,000 per person per year and is only available at Helena, Montana or Casper, WY.

"A new truck will cost a million dollars and will need $50K in consumables," according to Rich Schorder, of the FAA. *"It's very hard to keep a machine more than 15 years because the systems on the truck will not be up to modern standards and the manufacturers won't keep spare parts available."*

Figure 8: Airport Authority Chairman John Kerr checks out the LCCA "Stryker" fire fighting and rescue engine. Despite only having 20 miles on the odometer, this machine will need to be replaced within three years or the airport will lose Part 139 status. Another concern is the tires have a shelf-life, these have expired and need to be replaced at a cost of $8,000 per tire.

— *Part 139 Airport Security*

It is no secret that airport security is a challenging problem. The Transportation Security Agency (TSA) is the fastest-growing agency in the federal government. Airports are spacious and unwieldy; in some countries (the UK, Japan, Singapore, and China to name a few) they are protected by armed police in guard towers, staffed twenty-four hours a day. The owners of aircraft have reasonable expectations of modern, efficient and sufficient security for their multi-million dollar investments. Airports are often targets of political protests and yet they need to be accessible to the public and to pilots. Plus, it is indisputable that airplanes are interesting to watch. All of this makes it difficult and expensive to keep airplanes and airports secure in a free society.

Part 139 rules established numerous requirements for airport security, including sufficient fencing, electric gates, and driver training for anyone bringing or using a vehicle on the field. Since the airport does not have commercial airline service, the TSA-style security systems deployed at commercial airports are not available at the Logan/Cache County Airport. Indeed, the floorspace for such services simply is not available. When a USU football flight is scheduled the "security area" is established in the garage which houses the Stryker fire engine.

On a typical day at LCCA, security is extremely lax. Multiple vehicles drive through security gates after the first driver in line has opened it. The gates are secured with keypads, but there is only one code on the field which means individual movements (entrances and exits) cannot be tracked or isolated. Several respondents confirmed the security code on that keypad hasn't been updated in decades, which means that people who no longer should have access the airport still could wander on to it. Lastly, there are no security cameras anywhere on the field.

But perhaps the simplest but most egregious deficiency is the lack of driver training. Airplanes and ground vehicles are not the best of friends. Even small aircraft are as valuable as a super-premium luxury vehicle. They are loaded with highly flammable aviation fuel. There also are tugs, fuel trucks and other operational vehicles transiting the field with limited maneuverability and restricted visibility. And student pilots barely know anything at all.

Because of all these factors, auto driver training is mandatory for Part 139 status, but it has neither been offered nor required at LCCA for years. If there was an accident on the field, it may be that the airport's insurance would void the coverage due to the lack of official driver training, as required by federal regulations.

Respondents were vocal about the lack of security, driver training and the safety issues these deficiencies raise:

- *"The other day, I just stood at the gate and told drivers 'my code wasn't working' and <u>everybody</u> let me in. That's a HUGE violation."*
- *"Driver training doesn't exist. There are untrained drivers crossing the field. I've seen some crazy stuff."*

A number of changes are required and will be documented in detail in Section 5.

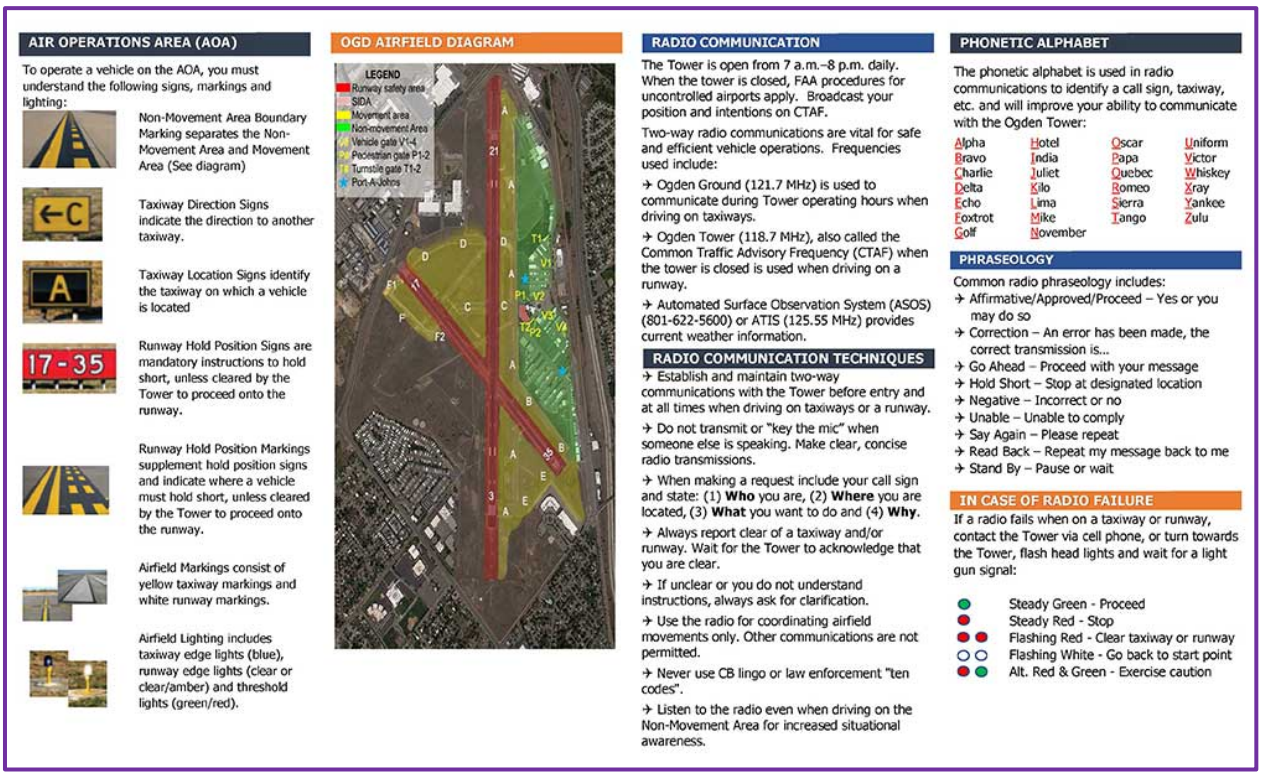


Figure 9: A portion of the driver training literature used at the Ogden airport. Driver training is mandatory at Part 139 airports, but it has never been offered nor enforced at LCCA. This deficiency poses a number of safety and security risks.

Airport Businesses

In terms of airport customers, the flight base of operations (FBO) for the airport has been subcontracted to Leading Edge Aviation, owned by Mr. Scott Weaver. This

relationship extends, by contract, through to 2047. Leading Edge rents four types of property from the airport:

1. The "terminal building" for the airport FBO, which is an old, metal-sided building near the parking lot. The FBO waiting area is used by transient aircrews and their passengers, and to house the operations of a small flight school.
2. Several hangars on the field, housing their own aircraft and transient aircraft.
3. A larger hangar for aircraft maintenance.
4. The fuel farm from the airport to sell fuel to USU, base customers and visiting aircraft.

(This report will examine more closely the details of the relationship Leading Edge in a separate section, below.)

Other businesses on the field are limited. The airport has six corporate flight departments, which are the aeronautical divisions of local companies. These groups own and operate aircraft for the benefit of their respective corporations. In general, these companies are challenging users of the airport's facilities, including night operations and operations in the most demanding weather conditions.

There are two flight schools on the premises, the largest of which is the Aviation Department of the Utah State University (USU). The smaller operation is managed by Leading Edge Aviation, mentioned previously. Together, these organizations keep more than sixty aircraft and helicopters on the field. While they generate the preponderance of traffic at the field such traffic is usually only during the most benign weather conditions.

Lastly, there are approximately ninety privately-owned, privately-operated "general aviation" aircraft on the field. These generally fly infrequently and do not constitute a significant portion of the traffic in and out of the field.

What's Missing?

It is noteworthy to consider the businesses and organizations *which are not* found on the field.

Other than Leading Edge and the maintenance services operated by USU for their own aircraft, there is no aircraft maintenance nor any avionics maintenance ("avionics" is a term for the specialized electronic systems used on airplanes). There are no charter operators based at the field, although NetJets and other fractional operators visit the field from time to time. The nearest chapter of the Experimental Aircraft Association is in Odgen. There are no aeronautical retailers ("Sporty's Pilot Shop" being the finest example), no catering companies, aircraft manufacturers, parts manufacturers, drone companies, nor specialty manufacturers making parachutes, aircraft lighting, or furnishings for aircraft.

In terms of government agencies, there are no military contractors on the field. The Civil Air Patrol doesn't have a squadron at LCCA. Other than two small "outside the fence" buildings (one rented to the County elections bureau) there are no government facilities using the airport, such as an air traffic control tower, the FAA, forest fire fighting groups, local police, state police, or air ambulance services. The nearly universal absence of these commonplace users is problematic.

It also is noteworthy that there are almost no public facilities on the field for non-pilots. For example, there is no restaurant on the field. The airport is rarely used for public events such as airshows, fly-ins, concerts, foot races, car shows, or other public events which benefit from large, flat, open-air spaces. There is no airplane observation area and no place for food-trucks to park and visitors to watch the activity of the airport. The general public, it seems, can subsidize the airport but is not welcome to visit.

Aircraft Hangars

LCCA has ninety-nine hangars on the field, some of which date back to the Second World War. These hangars are controlled through 109 leases between the airport and tenants (the remainder are ramp leases, farmland leases and other minor arrangements).

The largest of these facilities are nine hangars used by USU to protect their fleet of approximately fifty fixed-wing and rotary-wing aircraft. USU also leases one space for offices and classrooms, although some hangars also house offices.

Leading Edge uses several hangars, including one recent addition which is equipped with a privately-built 100-foot tower designed and constructed, it has been reported, to FAA air traffic control standards. This tower has heating, air conditioning, a gas fireplace, an elevator, and expansive views of the entire airport. This tower has been used for bungee jumping.

Figure 10: One of the larger hangars on the field is this handsome building, a remnant of the Second World War. It houses corporate aircraft used by a Logan company which has customers across the entire U.S.

The corporate flight departments house their aircraft in hangars, leaving approximately seventy hangars of various sizes for privately-owned general aviation aircraft.

The airport allows private individuals to design, build and maintain their own hangars. This avoids the expense of having the airport fund the construction of these facilities and is allowed in consideration of an annual “ground lease” payment. It also limits the airport’s ability to generate revenue.

Figure 11: One of the more modern hangars on the field is rented by Leading Edge. This hangar has a unique feature: an observation tower reportedly built to FAA control tower specifications. Until recently, the tower was used for bungee jumping.

The airport has a poor record-keeping system. The ground leases are stored in carboard boxes in the airport manager's office. According to a spreadsheet developed by the airport manager, 82 leases are current and 25 have expired; the status of the remaining leases could not be determined. This system should be automated and standardized.

Ground-Side Facilities and Non-Aeronautical Buildings

Arriving at the airport by highway instantly introduces a visitor to the first of many glaring safety issues: the airport lacks a safe and professional entrance from Airport Road (Highway 252, also called West 2500 North). The airport entrance is hard to see and difficult to access, especially from the west. The geometry of the entrance is inappropriate for such a busy highway. At rush-hour the exit from the airport is unsafe, particularly for drivers attempting to turn to the east, back towards the City of Logan and the USU campus.

The signage into the airport is poor. The sign is too small, often covered by snow, and is not illuminated. At the least, the intersection needs a traffic light. Visitors notice the traffic hazards:

- *"The airport entrance, off the highway, is unsafe. The turnoff from the highway is poorly marked."*

- *"The exit from the airport ought to have a stoplight, for safety."*

Once on the airport property, there are no directional signs or maps for visitors; there are no attractions, no restaurant, no public viewing area, nor amenities of any sort. Everything is behind barbed wire and automatic gates. There is insufficient parking for visitors, students and pilots. What parking can be found is congested, the pavement is in poor condition and poorly marked, and unless the visitor has experienced the airport before there are no signs or guidance to guide them to their destination. To the inexperienced public the airport is about as welcoming as a small prison.

The fact that so much of the traffic at the airport includes USU students is an opportunity for the airport to be a good neighbor and to reduce carbon emissions with bus service to and from the campus. Apparently, this has been discussed previously but the "no spend" rule killed the project. Even parking lot improvements have been abandoned:

- *"There was a plan to pave a bus turnaround area, but the airport wouldn't pay for it."*

One shocking discovery — and that word is not used lightly — is the condition of the old World War II control tower. This prominent three-story structure is attached to an equally old single-story building rented by USU for offices, waiting room and instructional areas. The tower is in derelict condition, with windows blown out by high winds, water damage, probably roof damage, perhaps asbestos, and other deficiencies such as electrical issues. It has been reported that financing of $100,000 was sought to restore the tower after the wind damage but those funds have not been forthcoming. This prominent structure, one of the most visible elements of the entire airport, has been abandoned and rotting on the ramp.

Lastly, and as a relatively minor issue, inside the perimeter of the airport but on the far side of the access road are two small buildings. There was very little information available on these structures. One apparently is rented by the airport to the Election Bureau; it is believed they store equipment in the building. The other was used for a private business; the status of that business could not be determined at this time. The buildings appear to be only in fair condition and offer no strategic value to the airport.

Figure 12: The World War II control tower, adjacent to the USU administrative offices. The control tower has been allowed to deteriorate. It will be expensive to restore or remove, either way.

Hangar Utilization Issues

Airports are required by FAA grant assurances to ensure, to the best of their ability, that the aeronautical resources of the airport are used for aeronautical purposes. This is one reason, for example, the ARFF Stryker truck cannot be removed from the airport to fight other fires. The same is true for airport lands and hangars, even hangars built with private funds and privately-owned, as long as they are built on airport land.

The normal manner in which this is enforced is with hangar inspections. Usually these are conducted by the airport manager or designee and scheduled at a convenient time for the tenant. The inspectors usually visit with the hangar owner, ensure there is a flight-worthy aircraft in the hangar, and that no signs of diversions are readily observed. Sometimes the fire marshal is invited to be sure no unsafe conditions have been created

or accumulated over the years. Hangar inspections normally happen bi-annually; under normal conditions they are neither a burden on the staff nor the tenant.

At LCCA, there have been few, if any, hangar inspections in the past years. The cause of this neglect may be primarily due to management changes, managerial inexperience, and lassitude in the performance of this essential duty.

A related problem at LCCA is the fact that many large “corporate” hangars (designed for jets) are used to house the USU training fleet. The small airplanes do not need forty-foot ceiling heights. The fact these airplanes are housed in enormous hangars is a missed opportunity for LCCA to rent those hangars to bigger airplanes that need those spaces (see Figure. 15).

As a final note: many respondents shared anecdotal stories of the mis-use of hangars, and offered instances of hangars filled with non-aeronautical equipment, cars, or non-flightworthy airplanes. This has three negative effects. First, it deprives the airport of fuel sales. It minimizes the benefits of the airport to the community. Lastly, it violates the FAA grant assurances. These conditions need to be remedied.

Figure 13: This large, modern hangar would be ideal for a corporate customer, which would pay thousands of dollars each month to house their aircraft. While USU needs hangars, the vertical space is wasted on USU's fleet of small aircraft.

Communications and Other Airport Equipment

For the second-busiest airport in the state, there are a surprising number of equipment deficiencies which affect the safety and operations of the airport. For non-pilots, these might seem to be minor inconveniences, but pilots will find these shortcomings alarming.

The airport is served by an automated weather reporting system (AWOS) which is a standard feature at almost all public general aviation airports. This system is crucial to airport safety in that it allows pilots preparing to arrive at the airport to receive up-to-the-minute reports of winds and weather. The AWOS system is old and unreliable. One pilot at the airport reported, *"There have been many days when the AWOS was down or reporting inaccurate numbers. Net-net, we're flying in unsafe conditions a large part of the year."*

Topography plays a factor as well. The AWOS is located at a point about 3,000 feet from the south end of the runway (which was near the center-point of the original runway). When the main runway was extended early in the 21st century, the AWOS was not relocated even though the additional runway extended into marshlands which are prone to fog. As such, the AWOS can report clear skies and unrestricted visibility overhead, while pilots arriving at the north end of the runway experience poor visibility.

In terms of communications, the airport has been assigned one frequency for all air-to-air communications. This is unsafe for three reasons. First, there is a large volume of traffic terminating at LCCA, and every approach requires at least four radio calls. For the 50,000 landings each year at LCCA, that equates to roughly a quarter million radio transmissions, and each one is essential to the safety of flight. Second, many of the pilots at LCCA are novice or student pilots, which means they are unfamiliar with radio procedures. Their transmissions are hesitant, slower and often incomplete, which further congests the single frequency. Lastly, the frequency is shared with eight other airports in the region, and so all the operations at those other airports exacerbate an already crowded condition.

Pilots notice this deficiency. One commented, *"The radios and safety systems are inadequate; 122.8 is too crowded with [radio] traffic from Preston and eight other airports; it's a safety issue."*

Another issue is the lack of air traffic control (ATC) services. ATC separation and routing is provided by Salt Lake City Center. Because of the curvature of the earth and the fact that radios only transmit along the line-of-sight, pilots on the ground or at low altitudes cannot talk with air traffic control. One pilot mentioned specifically, *"There's no radio contact with [air traffic control] below 700 feet AGL."* For the second-busiest airport in Utah, this is a major safety deficiency, especially with student pilots and commercial airline traffic (the USU football situation).

The risk caused by the lack of communications is increased during bad weather, when pilots need to activate instrument flight plans before entering the clouds. Usually this is accomplished with a separate radio channel called "Clearance Delivery" which communicates directly with air traffic control. At less busy airports a Remote Communications Outlet (RCO) is a slower but less expensive option. An RCO basically allows a pilot to activate a phone call from the cockpit radio (usually clicking the radio five times on a special frequency) and activate the flight plan verbally. Either of these options would be suitable for LCCA.

Today, however, pilots are required to use their personal cell phones to call "Cedar City Radio" which is the local Flight Service (the FAA's regional weather service). Cedar City then coordinates with ATC and issues the departure clearance to the aircraft. Since obtaining a departure clearance from Flight Service requires the aircraft to be at the end of the runway with engines running, this time-consuming process is inconvenient and expensive, especially when burning jet fuel. Pilots can be tempted to simply depart in borderline weather conditions and hope they can reach ATC on the radio and activate the flight plan in the air before climbing into instrument conditions. This is a risky and dangerous procedure, especially when ATC is busy with a Salt Lake City "push."

In addition to the lack of communications in and around the airport, there is no radar coverage over the airport until traffic reaches more than 700 feet above ground

level. This means that ATC in Salt Lake City has no idea which, if any, aircraft have just taken the runway and are departing into their already-crowded airspace until the aircraft shows up on the radar. Similarly, it means that ATC can only provide traffic separation services to pilots until they are on final approach, at which point they descend below the radar and are "on their own." This is extremely dangerous and completely unsuitable for the second-busiest airport in Utah.

Electric Aircraft Systems

LCCA is at a unique nexus of aviation history. First, USU is one of the largest operators of Diamond Star aircraft in the country. Second, EP Systems, a local start-up company, has just announced (on May 1st) the commercialization of a new product: a battery which will enable ninety minutes of continuous flight, which is enough for flight school operations. Diamond Aircraft is planning to use EP's new battery in their all-electric eDA40, creating a cost effective "green" option for pilot training. The eDA40 is a derivative of the existing DA40 used by USU and will be the first certified electric airplane. At the current time, the airport has no capability to recharge these batteries.

However, the operation of the airport includes an electric Ford F150 pick-up truck. A recharging system has been purchased using a state grant and, when installed, will be used to recharge the vehicle electric aircraft.

Fuel Systems

As an overview, LCCA sells both jet fuel ("Jet-A") and aviation fuel for piston-powered aircraft ("100LL" or "avgas"). Both products are delivered to the airport on eighteen-wheel tanker trucks and pumped into the storage tanks of the "fuel farm." From time to time, fuel is pumped out of the fuel farm into smaller fuel delivery trucks, which ferry the fuel on to the ramp and pump it into airplanes upon request. The fuel farm is owned by LCCA but leased to Leading Edge Aviation. The fuel delivery trucks on the field also are owned and operated by Leading Edge.

The fuel farm is from 1968 and is not up to modern standards. The fuel tanks are single-wall units adjacent to the airport access road. They do not feature the spill containment barriers required on modern fuel farms. Part 139 also requires automated valves and shutoffs for fueling, but the current system does not have those features. It also appears there is insufficient electrical power to upgrade the current facility.

Figure 14: The LCCA fuel farm was installed in 1969. It is too small and functionally obsolete. It does not comply with modern Part 139 fuel farm standards.

One smaller problem stems from the fact that fuel is not available when the FBO is closed. This limits the utility of the airport for operators needing 24/7 availability. There also are questions about the quality and sufficiency of the ramp fuel delivery fuel trucks operated by Leading Edge. There are five of these vehicles. In the experience of this researcher, fuel trucks at other airports are never seen covered in plastic tarps as they are at LCCA. Upon questioning, Scott Weaver, the owner of Leading Edge, commented he protects his trucks in this manner to protect them from the elements.

Figure 15: Three of the five Leading Edge fuel trucks. The company covers their trucks with plastic tarps, as shown here. This has never been observed elsewhere and raises questions of the functionality of the trucks and the purity of the fuel they pump.

Grant Assurances

Every airport which receives FAA funds must agree to a contract with very specific covenants, generally termed "the grant assurances." There are 39 specific assurances, based on 26 federal laws, six executive orders and 24 specific FAA regulations. These are very complex and the subject of many books and articles.

The assurances generally endure for twenty years past the date of the last expenditure. Some of the assurances may have been radical when they were first promulgated but are generally benign today, such efforts to protect the environment, equal opportunity, and conditions for contractors at the airport. But several of the grant assurances speak to serious issues at LCCA.

One grant assurance requires that an airport allow any and all businesses which wish to provide services to customers on an airport ("special aeronautical service organizations" or SASOs) must be allowed to compete freely and generally without restrictions. The sole except is in the case where the airport itself holds to itself a function as a "proprietary exclusive" service. In short, the airport cannot favor one company over another, and cannot grant a monopoly unless the airport itself is the monopoly holder. Otherwise, the airport must operate as a level playing field, open to any and all and favoring none.

Similarly, access to a publicly-funded airport cannot be abridged by imposing either physical or financial barriers which favor or penalize one group over another. In the eyes of the FAA, airports are public resources paid with public funds, and should be available to all with relatively few limitations.

In the case of LCCA, perhaps the most pressing grant assurance is the obligation to operate the airport in an economically sustainable manner. This is understood to mean that the Sponsor (the owners of an airport) must do everything in their power to ensure the financial structure of the airport allows it to survive into perpetuity. This has been tested numerous times and prohibits (for example) a city from charging an airport onerous "overhead" fees for accounting or human resources functions. A sponsor also cannot sequester airport-generated funds and redeploy them elsewhere for the benefit of off-airport operations. But perhaps most importantly, an airport is required to charge reasonable fees for the services it offers in order to ensure its fiscal sustainability.

The Master Plan Revision

As noted above, Armstrong Engineering (now acquired and rebranded as Lochner Engineering) is the airport's technical consultant. They are a fine company, highly qualified, and with an excellent reputation. Armstrong is currently involved in a $350,000 revision to the airport's Master Plan.

An airport master plan is a comprehensive, long-range study of every aspect of an airport. From runways and taxiways to passenger terminals, hangars, aprons, parking facilities, and more, the plan (a) evaluates every facility of the airport and its current condition, (b) takes traffic data and community input to determine likely changes in the traffic and utilization of the airport in the next decade or two, and (c) revises the Airport Layout Plan so the physical plant better matches the forecasted changes. One could envision a Master Plan as a "road map" for the future adaptions needed by the airport to meet the forecasted demand for aeronautical services.

Master Plans are expensive, large, comprehensive and detailed. For example, every single tree, tower or building around the airport will be surveyed precisely, to determine if that object could interfere with airport operations. The runway(s) will be tested and

inspected. Major airport-owned buildings will be inspected. A typical master plan for a general aviation airport is over 600 pages and includes dozens of detailed schematic charts, maps, and elevations.

The problem at LCCA stems from the inappropriate guidance (or, more precisely, the lack of guidance) offered to Armstrong/Lochner about the future of the airport. Airport consultants will not, as a matter of policy, recommend new or different courses of action. They only respond to the direction they receive from their client. If the client has a strong vision of what the airport could become, the consultant will build a strong plan. If the client has a limited vision or none at all, the consultant usually will produce a "business as usual" master plan, with a handful of unfunded visionary suggestions to add a bit of sex-appeal.

The plan Armstrong/Lochner is producing assumes a "business as usual" model. However, as has been documented in this report, the LCCA airport is failing. The pattern is congested, customers are unhappy, the infrastructure is failing, the lack of investment is chasing customers away and leaving unmet demand, there has been no thought given to resolving the operational or governance issues at the airport, and serious safety issues are looming. A "business as usual" Master Plan will simply forecast more of the same, into a steadily deteriorating future.

Section 3:
Problems with the Airport Today

The previous section of this audit attempted, with a broad brush, to paint a picture of the general conditions and services found at LCCA; basically, a status report.

This next portion of the report will dive more deeply into the operations of the airport. It will explore in detail the manner in which the day-to-day operations of the LCCA are conducted. It will critically evaluate LCCA's ability to safely and cost-effectively satisfy customer needs. In short, this section will identify problem areas as well as systems which are operating well.

Problems with Congestion in the Traffic Pattern

The airport is home to 109,245 operations annually, about 51,000 take-offs each year, about 51,000 landings, and the remainder "touch-and-go" operations. LCCA is the second busiest airport in the state of Utah, second only to Salt Lake City International.[6]

This data is highly reliable and precise because it is collected by an automated system operated by VirTower LLC, out of Florida. Their data collection system was installed at the airport in 2022 using funding from the State. The system uses the ADSB beacon data transmitted by most aircraft to track the movement of those aircraft in the vicinity of the airport. Their tally includes all landings, take-offs, and touch-and-go operations, including 2,072 operations by helicopters, 43 operations from government/military aircraft, and 124 operations from "unknown" aircraft (aircraft not found in the FAA's aircraft registry). Approximately 74,000 of the operations at the

[6] A minor note for future discussions with VirTower: several on the Authority noticed the number of take-offs did not match very closely to the number of landings. Neither VirTower nor this researcher can explain this discrepancy and it is worth investigating in an effort to improve the quality of the data. It is possible the helicopter operations at the flight school did not taxi or fly through the "starting gates" digitally defined in the VirTower software, and so were not tabulated as an operation. LCCA and VirTower should review the digital "gates" and fine-tune them.

airport are from aircraft associated with Utah State's aviation program. Another 7,000 operations are related to the flight school operated by Leading Edge.

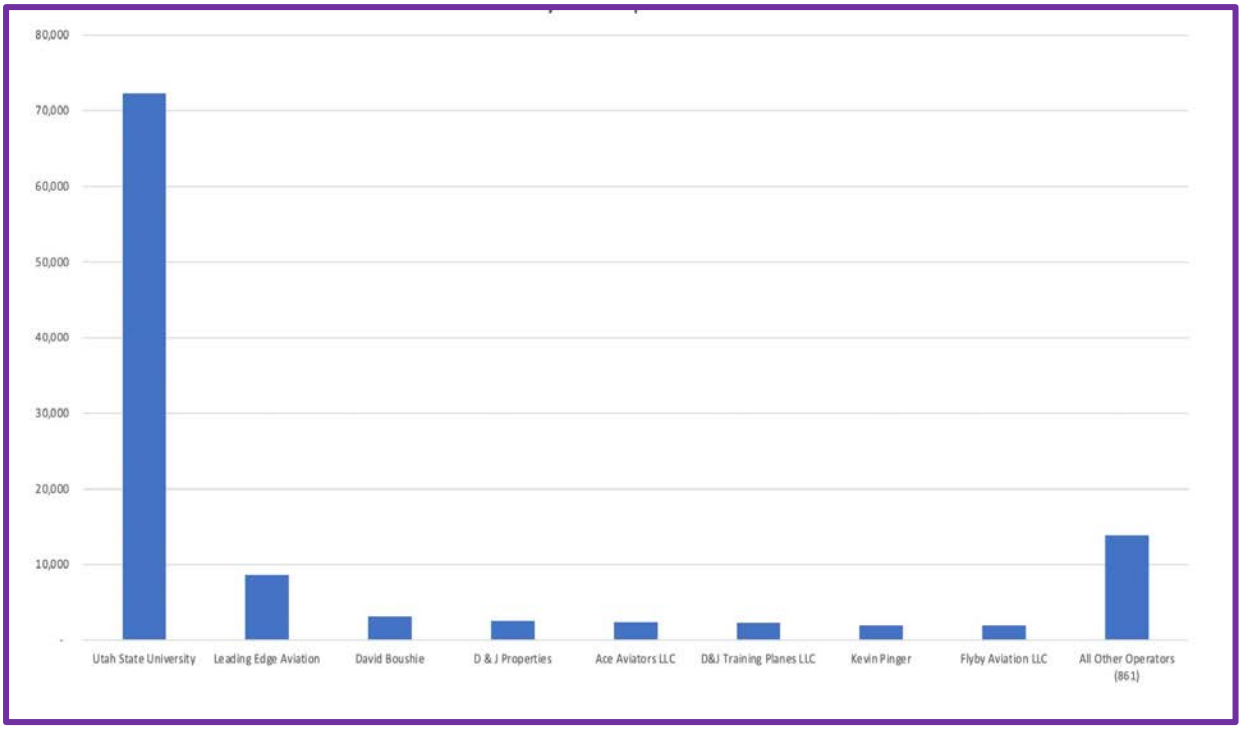
Importantly, until the VirTower system was installed, no one at the LCCA airport knew the accurate number of operations. In fact, the airport's Form 5010 filing with the FAA indicates approximately 40,000 operations — less than 40% of the actual number. There could be many reasons for this discrepancy, but it is a serious deficiency. One respondent noted, *"The airport never reported all that flying activity accurately on their FAA 5010 report. Somebody was fudging the numbers."*

The single biggest user of the airport is the aviation program operated by Utah State University, generating about 73,000 operations last year. Conversations with Utah State report their student body has grown from 100 pilot-students each year to more than 400 students. USU is aiming for more than 500 students in the near future. USU is one of the top three users of the remarkable Diamond Star two-seat training aircraft in the entire country. USU is certainly the biggest and best flight school in Utah, the birthing ground of thousands of new (and desperately needed) airline pilots and may well be one of the Top Ten flight schools in the entire nation.

This flurry of training activity crowds the airport and will be reviewed in closer detail, below. But it has other ramifications. First, the USU fleet of aircraft is large and growing. USU has hired approximately 100 instructors and administrators to properly implement this program. USU operates a very large aircraft maintenance facility and employs dozens of mechanics and experts to keep their planes and helicopters airworthy. USU has identified "blocks" of airspace in the north, west and south of the airport as "training zones" dedicated to a single aircraft at a precise time of day. These blocks enable students to practice the required maneuvers in isolation and safety. But, with the growing student body, these blocks are becoming congested, and the routes to and from the training zones are even more crowded. Because of this physical limitation, USU is expanding to other airports. For example, Carbon County is building a dedicated hangar and training facility at no cost to USU.

Having an active flight school of this size is an enormous asset to LCCA and the community. The USU school speaks to the reason any community has an airport: to be

Table 4: The Principal Operators of Aircraft at LCCA in 2023



an engine of economic growth and opportunity for the entire community. The flight school directly creates jobs, as noted above. It also creates opportunities for the young people in the program, pointing them in the direction of prestigious and high-paying careers in the airlines, corporate aviation, or the military. As one respondent noted, *"The USU flight school is pretty good. I see the business they bring to this community, it's important."*

The USU flight school also touches all of the non-flying people in the region, because it increases the value of housing, keeps the stores busy, puts heads on pillows in the hotels, and certainly supports the bars and restaurants of the community. This flight school should be encouraged, cultivated, and honored at every chance the airport gets.

There are problems which stem from operating a busy airport. An airport burdened with a hundred thousand annual operations is going to experience higher levels of traffic pattern congestion, especially with inexperienced pilots in the air. A related matter is the very serious question of flight safety.

In terms of congestion, local pilots are very familiar with the delays caused by a busy traffic pattern. It takes ten to twelve minutes for a single aircraft to "fly the pattern" which is to say, to depart the field, climb to the proper altitude, fly crosswind, turn downwind, turn to base, fly the final approach, and finally land. A standard general aviation pattern at a non-towered airport can accommodate three or four aircraft in the pattern. If the number exceeds that limit, the pattern gradually "stretches." It enlarges both upwind and downwind, as pilots cautiously add distance buffers between the various aircraft.

Having aircraft of different speeds and capability, and pilots of differing experience levels, exacerbates this "stretching." Stretching the pattern delays pilots on the ground, waiting to depart. One corporate pilot reported, "*One time we needed to use Runway 35 and I had to wait 30 minutes to find a break between the student pilots to get into the air."* This can get expensive, especially when an aircraft is burning Jet-A, and cause airplanes to miss their departure window and delaying their arrival at some distant destination.

A busy pattern can add delays in the air, as arriving aircraft have to join the line and wait their turn. This can be problematic when a jet aircraft, flying at 160 knots, joins the pattern behind training aircraft flying at 80 knots.

One of the ways students and instructors perfect their flying skills while improving the efficiency of their flight training is with both "touch-and-go" and "stop-and-go" operations. In a "touch-and-go" the aircraft settles down on the runway briefly, applies full power, and departs back into the sky without slowing to any significant degree. A "stop-and-go" is similar but more time-consuming as the aircraft is brought to a complete stop, reconfigured for take-off, and then departs. Both of these maneuvers avoid the expensive delays caused by taxiing off the runway, rolling to the end of the runway, and then sequencing for another departure.

Both touch-and-go and stop-and-go operations are a standard skill of every pilot, inherently safe, and recognized as a prudent training technique which saves time and money. However, when the pattern is crowded, the delay caused by a stop-and-go can disrupt the steady routine of arrivals and departures because they require the aircraft to

remain on the runway for a period of time — 30-60 seconds — and everyone else in the sky and on the ramp has to wait. As one respondent complained, "*[When] a student [pilot] does a stop-and-go it screws up the whole process. It's super-frustrating."* This type of problem could be better managed if there was an air traffic control tower at the airport.

Speaking globally, an airport with a hundred thousand operations and lacking a control tower is a dangerous environment. This is simply too many airplanes and too many inexperienced pilots in too small a space. Many pilots commented on this dangerous situation:

- *"The airport is two or three times [over] its maximum safe capacity. The FAA would be shocked and amazed at the congestion."*
- *"Every time you go up, you take your life in your hands. Amazing we haven't had an accident yet."*
- *"Twin Falls doesn't have nearly the traffic as LGU, but they have a control tower. Safety is a worry."*
- *"The traffic at LGU is insane. LGU has five times the traffic of Pocatello, and Pocatello has a tower."*
- *"It's a mid-air collision just waiting to happen."*

Problems with Airport Staffing

In theory, the airport is operated by the Airport Authority but in practice it is staffed and managed by county employees. The airport has one full time employee, with the title of "Airport Manager." The airport has two part-time employees that assist with airport maintenance such as mowing. Unlike most airports, no one has been assigned the title or the responsibilities of "customer service." The airport also has no responsibilities for finance and administration, as those services are provided by the County. This is a flawed organizational design.

Typical tasks managed to the LCCA Airport Manager include grass/lawn maintenance, snow removal, and general maintenance. These duties are not appropriate for an airport manager. An airport manager should be (a) working with and listening to

clients, especially the USU Aviation program, (b) liaising with the airport engineer, state agencies, and federal departments to win grants and speed their deployment, (c) brainstorming plans for the airport's future, and (d) representing the airport to the public. Mowing isn't a manager's tasks.

Having the Airport Manager mowing acres of grass or plowing miles of snow is an expensive waste of a valuable resource. As one respondent noted, *"The airport needs a professional airport manager, not a greenskeeper. Somebody who knows the industry and knows how to get grants."* Another, similar comment was: *"[What] is frustrating is the lack of a professional staff; the communication to the community is lacking, the employee infrastructure is lacking."*

At LCCA, specialized airport services are provided by contracted providers, such as an airport engineering firm (Armstrong, now acquired by and rebranded as Lochner Aviation) and airport traffic data collection (VirTower LLC). Some of the snow removal tasks are provided by the County and financial services (purchasing, payroll, etc.) which are administered by the County Finance Dept. Invoices for land leases apparently are sent by the Administrative Assistant to the County Executive. The airport budget is developed by the County as well. The airport has little, if any, autonomy in terms of administration.

The lack of a customer-oriented staff has hindered the development of positive relations with tenants and visitors. It also has added costs, as these employees are classified as county employees and are paid customary county wages and benefits. There also is no permanently-staffed office at the airport to represent the airport to customers, to hear complaints or record suggestions. As one respondent commented, "*"Nobody knows how to contact management at LGU, nobody knows how to reach John Kerr. There's no process, no office, no clear steps to take to get anything done… Nobody at LGU is even thinking like that."*

Problems with Employee Training

Two other items deserve mention. First was the surprising discovery that there has been no formal training for the airport managers and/or employees about the

airport and proper procedures (or for the Authority members, as well). Managing and operating an airport is a significant responsibility and a complex task, not to be assumed lightly. There are legal, financial, operational, safety, and infrastructure ramifications. Members of the Authority should be aware of the difference between a Master Plan and an Airport Layout Plan; the differences between a ROFA, a RPZ and a RSA in airport layouts; they should know the airport budget, know of "avigation easements" and "grant assurances," and be familiar with the FAA Airport Circulars, such as AC 150/5300-13B on airport design and AC 150/5280-2 on Part 139 airports, which includes LCCA.

Customers see the lack of professionalism and the lack of training:

- *"It would be great if they would make this airport a modern, welcoming place for flying, but it's not."*
- *"They should start running it like a business."*
- *"We've run into more obstacles at this airport than any other."*
- *"The airport seems to have no idea of what corporate customers and flight operations really need."*
- *"[Corporate customers are] looking for an airport that is run like a business, and Cache County isn't there."*

Apparently, any training which was delivered was accomplished with "on the job" training. This is insufficient for a professionally-managed facility. There are numerous training options the Authority could use, including offerings from the State, airport management training at USU, and professional agencies such as the American Association of Airport Executives (AAAE) which offers a full and very rigorous certification program. In in these modern times, employees should be coached on "re-inventing" themselves which means to be continually learning new programs and new processes. However, this emphasis on personal improvement is lacking at LCCA.

Problems with Managerial Continuity

A successful airport authority also should be concerned with succession planning and continuity. The management team at LCCA has no depth; no "bench" from which to

pull a second team. An excellent example of the problems this causes is that the newest Airport Manager was needed so urgently he was hired by the Chairman of the Airport Authority without the advice and counsel of the other members of the Authority. Airport Authorities as a body should interview and consider any new airport manager, and also any direct reports to that manager.

It is also significant that some members of the Authority lack aeronautical expertise, which limits their ability to contribute to the discussions of the Authority. A few members of the Authority confessed they have never been to the airport nor toured its facilities. It is even more surprising that the Airport Authority doesn't meet at the airport, observing and participating in the facility it is supposed to be managing.

The Authority should have in place a low-key but ceaseless effort to identify and recruit new candidates for the Authority. Each of those candidates should have specific skills and expertise which the other members of the Authority might lack. In this manner, over time a Board or Authority can be assembled which is well-informed on aeronautical issues and able to "hit the ground running" on issues of importance.

Problems with Ramp Fees

Airport user fees are common but vary from airport to airport. Many airports impose ramp and tie-down fees on transient aircraft, especially those which remain overnight. Frequently these fees are waived if fuel is purchased, but not always. Ramp fees and overnight parking fees can be an excellent source of revenue at a busy "destination" airport such as St. George, Utah.

Fees for brief, transient flights are problematic and tend to discourage visits from private aircraft. Hypothetically, suppose a student pilot from Ogden was flying a cross-country solo flight and stopped at LCCA. Perhaps the student briefly stepped out of the aircraft to report his progress by cell phone to his instructor and to freshen up. At some airports (Johnston County, PA, Heber City, Utah) the student would be charged a $10 ramp fee. This seems a bit severe.

On the other hand, one could imagine a corporate aircraft stopping at LCCA for a series of business meetings. The crew might wait at the airport and perhaps use a crew

car to get lunch. Passengers and crew would depart later the same day. It would be unreasonably generous not to apply a ramp fee in this instance. The owner of a corporate aircraft can afford a modest fee and the airport deserves compensation for the facilities used.

Ramp fees and overnight parking fees often are waived by FBO staff in exchange for the purchase of fuel. It is in the FBO's interest to sell more fuel, and the FBO does not profit from a ramp fee which is forwarded to the airport. As one might expect, Leading Edge has no motivation to aggressively collect ramp fees. LCCA does not benefit from any ramp fees Leading Edge collects, if it collects any at all.

Problems with the Pilot Association

Somewhat unexpectedly, one problem at LCCA is the lack of any sort of pilot association. This is slightly unusual, especially in light of all the complaints the author collected about the airport and its operations.

While no official statistics can be discovered, many airports have volunteer "advisory boards." Some, such as Ogden, Utah, have full-fledged associations with officers, by-laws, web sites, and membership dues. While these associations may be problematic for an airport manager — many complaints — they offer a clear and abbreviated mechanism for hearing pilots' concerns as well as communicating news and updates out to those customers. For all these reasons, the lack of a pilot's association should be remedied as quickly as possible.

Problems with the Airport Offices

The airport has a dearth of the typical amenities expected at most general aviation airports. As briefly mentioned above, while there is a room designated as an "office" at the airport, there are no signs signifying its presence and no personnel assigned to staff it with whom customers can meet and chat. There are no posted office hours and there is no operational reason for the office to exist. There are no computers, no invoicing system, no ability to collect payments or issue receipts. It is a dead zone.

Problems with Public Amenities

Similarly, the public comforts expected at better airports are lacking. There is a "pilot lounge" adjacent to the so-called office, but it is a dismal facility, cold, dingy, and uninviting. No signage is visible to make people even aware the facility exists. One respondent noted, *"The pilot lounge is disgusting: no toilet paper, no towels, full garbage cans, never been cleaned, it's just a mess. In contrast, Bear Lake Apt has a lovely lounge with computers!"* [Note: Since that interview, it has been reported to the author that the lounge has been cleaned.]

Of the airport at large, there is no comfortable passenger lounge or waiting room. There are no conference facilities or meeting rooms in which visitors could work while waiting for their flights. There is no kitchen and no hospitality services, and the lavatories are dismal. There is no public transportation. As one business leader reflected on the reasons not to use LCCA, he said, "*The big problem – there are no rental cars or ground transportation at the airport. So even if somebody did come on a charter flight, I'd have to arrange special ground transport for them; without that, they'd be stuck.*"

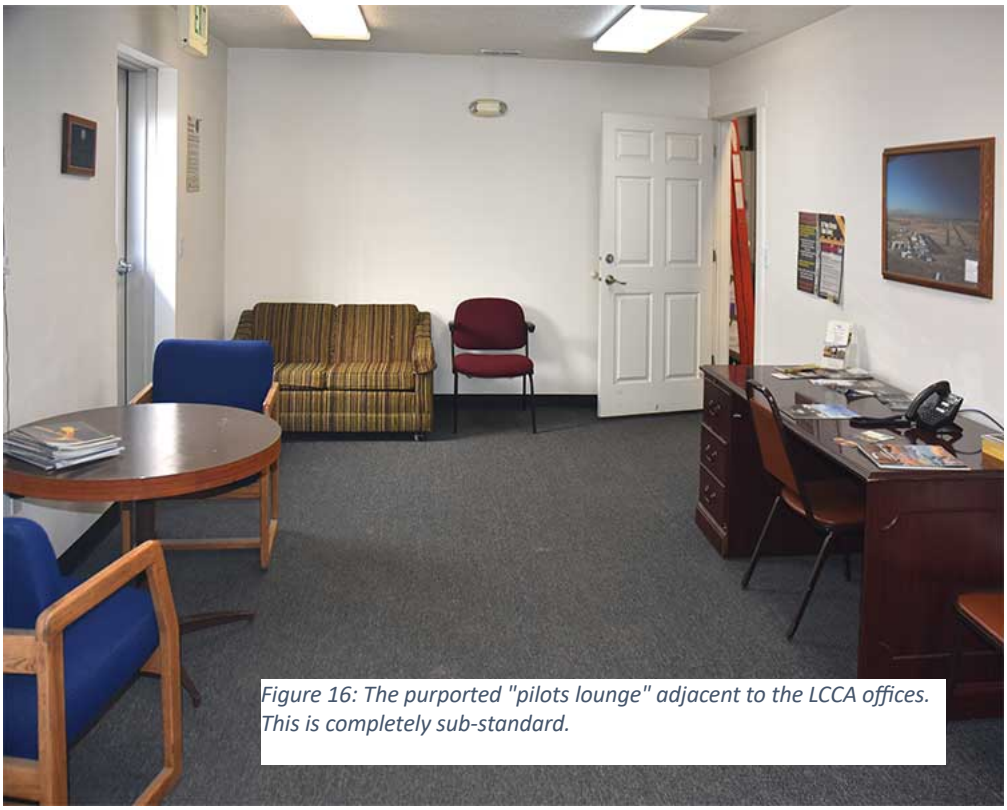


Figure 16: The purported "pilots lounge" adjacent to the LCCA offices. This is completely sub-standard.

One might expect such services from a more customer-oriented airport, but since the airport has out-sourced the Fixed Base of Operations (FBO) to Leading Edge Aviation, it would also be reasonable to expect Leading Edge to provide them. Since they have not (as will be explained below) there is an enormous gap of missing services through which the airport's customers have fallen.

Problems with the FBO

The Fixed Base of Operations (FBO) should the "front door" to any general aviation airport and, in a larger sense, to the surrounding community. When one thinks of making a great first impression on the affluent decision-makers who travel by private aircraft, one would aspire to have the nicest FBO and make a great first impression. In the case of LCCA, the FBO is Leading Edge and, in general, the performance of that company can only be described as marginal.

As noted above, the contract included no performance standards or customer satisfaction requirements. It included no requirement to act as an agent for the airport and collect landing fees or overnight fees. It included no requirement for investments such as terminal upgrades or improvements. The FBO sets its own hours of operation. Outside of these hours, fuel, engine oil, and other necessary services are not available. These hours do not appear to be competitive with peer airports in Utah.

The building which houses Leading Edge is properly located, roughly in the center of the main airport ramp. It consists of two areas: a waiting room/office, and an aircraft maintenance hangar. The building is owned by the airport and rented to Leading Edge.

The waiting room/office is shared between transient passengers, base customers, transient flight crews, and the students and instructors of the Leading Edge flight school. It can be very crowded and noisy. While the space suffices for flight instruction the area has none of the features expected by today's corporate visitors.

Specifically, both exterior entrances into the building are industrial and grimy. The FBO lacks a comfortable passenger lounge or waiting room. There are no FBO-managed conference facilities or meeting rooms in which visitors could work while waiting for their flights. The FBO has no kitchen and no hospitality services, and the

lavatories are dismal. The furniture is old, the ceilings low, and the décor is unappealing and industrial. The whole "vibe" of the Leading Edge FBO is more reminiscent of a "frat house" than elegant professionalism.

As for the flight crews which wait in these conditions for their passengers to arrive, there is no proper, semi-private pilot lounge with amusements (a TV with Netflix or equivalent), digital games, a pool table, or reading area) or sleeping quarters, and no hygiene facilities (shower facilities for pilots are *de rigueur* across the country).

Figure 17: A general view of the waiting room at the Leading Edge FBO. This is not the environment in which affluent decision-makers would want to wait for their aircraft. It is completely inadequate, but the contract does not specify better performance.

The better FBOs at airport all across the country have made these amenities standard. Many offer fresh fruit or freshly-baked cookies to visitors and pilots. And all of the best FBOs collect customer satisfaction scores of one sort or another, so they can judge their performance. Leading Edge strikes out on all of these criteria.

The pilots who deal with Leading Edge on a day-to-day basis notice these deficiencies:

- *"The airport needs a vastly improved FBO facility, a modern customer lounge, a pilot lounge, a hangar to overnight a medium-sized jet or a Pilatus."*
- *"The LGU terminal is very small and very drab… [Scott Weaver] said the airport won't let him improve his terminal or his hangar."*
- *"A larger, better terminal and hospitality would be a big plus."*
- *"The FBO building is dated, it's like walking back into the 1960s."*
- *"The FBO ramp is a mess… It gets jammed when new planes arrive… Plus, the FBO just puts their trucks wherever they want. The fire truck is often blocked… There's no oversight at all. It's like the wild west out there."*
- *"There are no rental cars or ground transportation available at the airport, so even if somebody did come on a charter flight, they'd be stuck."*

Additionally, the airport delegated fuel sales to Leading Edge. This will be discussed in detail in the following section.

Figure 18: This is the exterior appearance of the Leading Edge FBO at LCCA. It is dreary and industrial. This deficiency cannot be blamed on Leading Edge; the airport owns this building and leases it to the FBO.

Figure 19a, b, and c: Three modern FBO terminals. These three buildings are much better examples of the types of facilities corporate flyers expect when they arrive at an airport. These buildings are modern, fresh and welcoming. They have comfortable waiting rooms, hospitality services, handsome lavatories, and facilities for waiting pilots. LCCA should aspire to offering premium customers a welcoming environment of this sort. The design and construction of a new terminal should be included in the new Master Plan for the airport.

Problems with Fuel

In 2017, the Airport Authority approved a thirty-year lease with Leading Edge to manage fuel sales at the airport. The goal and rationale of this decision was to avoid the expense and hassles of operating the FBO. Since the airport traditionally hired the least expensive airport manager it could find (in an effort to protect the airport's fragile budget) the three persons who have had that job in the past three years have had little experience at hiring, supervising and scheduling, delivering performance reviews, balancing the books, testing the fuel quality, and the hundred other chores required to safely and profitably operate an airport or an FBO. The decision to "outsource" the FBO was plausible.

However, the arrangement for fuel sales that was concluded in 2017 was (and remains) a bad deal for the airport. It deprived the airport of *the* single most important source of revenue.

Leading Edge sells approximately 450,000 gallons of fuel annually. At published prices that generates approximately $3 million in revenue for the FBO. However, at 8¢ per gallon, the airport only receives $36,000 from those fuel sales, or about 1% of the revenues flowing to Leading Edge. A better contract would have inflation adjustments or other mechanisms to keep the airport whole financially.

At this point, it may be prudent to offer a general discussion of the economics of fuel at general aviation airports. Airports fundamentally are gas stations with really, really long driveways. At a typical general aviation airport about 60% of all their revenues stem from fuel sales. That roughly breaks down to 40-50% of the airport's total revenues being from Jet-A sales. Another 10-20% of total revenues are from the sale of "aviation gas" which is 100-octane, lightly leaded, blue-tinted fuel for piston-powered aircraft.

At a typical airport, a reasonable estimate would be that 5% of the customers fly turbine-powered aircraft. Jet-A is sold to the operators of those aircraft, which typically are more powerful than piston aircraft and consume larger quantities of fuel. As just one example, the popular corporate jets made by Gulfstream have a fuel burn of 500

gallons/hour[7]. So, while there are fewer customers for Jet-A, the physics of flying at 400 miles per hour require they buy and burn vastly more fuel.

In contrast, it may surprise many readers that avgas is a "loss leader" for many airports and is not a highly profitable product. Most piston-powered aircraft only carry small quantities of avgas and consume it at a miserly rate, typically 8-12 gallons/hour. For example, the Cessna 172 — the most popular general aviation aircraft ever made — only carries between 42-53 gallons of fuel, depending upon the model. The Diamond DA-40 aircraft used by the Utah State Aviation school carry 50 gallons. Since no prudent pilot ever flies their aircraft to zero fuel, the result is that each avgas fuel transaction is for a relatively small number of gallons (perhaps 20 gallons might be an average) and of a relatively low dollar value. But each transaction still requires a driver, a fuel truck, maintenance of that truck, and an invoicing system. By the time the direct costs of the whole system are tabulated, the miniscule profits derived from 100LL sales evaporate.

The FBO contract with Leading Edge was deficient and naive on many levels. It contained no requirement to benchmark fuel prices to surrounding peer airports to help keep fuel affordable at LCCA. As such, 100LL fuel and Jet-A at LCCA is more expensive than at many peer airports across Utah (see Table 6 on Page 86 for details).

Additionally, the contact did not require Leading Edge to join (or at least to honor) Jet-A fuel discount programs. These programs are used by corporate flyers to earn discounts on Jet-A fuel and are industry standard. Several corporate customers reported they could not use their discount programs at Leading Edge.

The contract specified a "fuel flowage" fee as rent for the fuel farm. When the contract was signed, the fuel-flowage fee was 6¢ per gallon. Leading Edge voluntarily raised this rate to 8¢ in 2022. Peer airports are charging 50% higher rates (12¢ per gallon). While fuel flowage fees do not begin to compensate for the direct loss of fuel revenues, in this case the discrepancy is substantial.

[7] While these details are beyond the scope of this audit, it should be noted that fuel burn varies by the size of the aircraft, the speed of the plane, and the phase of flight. For example, a Boeing 747-400 burns seven gallons of fuel *each second* during take-off. The long-range Boeing 787 carries 37,000 gallons of fuel which enables it to fly 18-24 hours non-stop, burning roughly one gallon of fuel every two seconds.

Even Mr. Weaver, operator of Leading Edge, acknowledges the limitations of the fueling services the company provides. *"Self-service fuel would be a big plus. There was self-serve 100LL here ten years ago, don't know how they ever approved such a bad installation, but it was a competitor [to Leading Edge] who went away. Since then, the airport has said 'no' to self-service fuel twice; in fact, about ten years ago I had a construction crew ready to go and the airport manager stopped him. Five years ago I had new plans but the Airport Authority killed it."*

In short, the decision to out-source fuel sales had the effect of starving the airport of urgently needed income.

Problems with Hangars

As noted above, the airport itself owns relatively few hangars on the field. Instead, the airport has allowed private individuals to rent parcels of land and build their own hangars. This is a widely-used model at many airports and, when deployed properly, can help an airport grow and prosper. In the case of LCCA, however, the model has been used incorrectly. This failure has hampered the successful operation of the airport and impaired its financial sustainability.

In general, there is a large unsatisfied demand for aircraft hangars across the entire U.S. As a measure of this demand, Cedar City Airport is adding 250 new tee hangars and executive hangars over the next seven years. Appendix 5 of this report is an article reporting on private hangar construction in New Mexico where dozens of new hangars are being constructed. Even small airports are finding hangar rentals to be profitable; the privately-owned airport in Williamsburg, VA just added eighteen new hangars for the cost of $1.8 million; all are rented at competitive rates and the hangar waiting list suggests there is demand for more.

Hangars can be described by their shape and capacity:

- Because of their scarcity and the abundance of general aviation aircraft, clean "tee hangars" suitable for general aviation aircraft rent for $300-$700 per month, depending upon their location, size, features and the community (newer hangars are pricier, and airports near large cities have higher rents). A

reasonable estimate for a general aviation aircraft tee hangar (40x40 sq. ft., or 1,600 square feet) would produce $5,000 in annual market rents for the hangar's owner ($3.13 sq. ft.).

- An "executive" hangar (60x60 sq. ft.) is a larger facility which would house a medium twin-engine aircraft or a small jet. It would produce $20,000 in annual market rents for the hangar's owner ($5.55 sq. ft.).
- A modern "corporate hangar" of 100x100 sq. ft. with high ceilings, lavatories and offices would rent for $70,000 or more annually ($7.00 sq. ft.). This can be observed in Table 5, where the column entitled "Tenant's Real-World Income/Year" estimates the revenue available to tenants who own a hangar but sub-lease it to other plane owners at market rates. In general, hangars are very low risk and highly profitable investments.

Construction costs vary widely but invariably increase proportionately with size. Tee hangars can be built for about $100,000 each; a modern corporate hangar of 100x100 sq. ft. with lavatories and offices would cost $1.8 million. Most hangars take roughly fifteen years to recoup their construction costs at which point they become highly lucrative "cash cows."

Figure 20: An artist's rendering of some of the new hangars being constructed with private investment funds at the at the Double Eagle II Airport (KAEG) in Albuquerque, New Mexico. If acreage was available, this model could be used at LCCA.

Some airports are either unable or unwilling to finance the construction of hangars, but pilots need hangars to protect their valuable aircraft. The "ground lease" system is a popular option to resolve this dilemma. Ground leases allow the airport to add hangars (and customers) without the burden of financing the construction of the hangars. The total income for ground leases from all hangars at LCCA is just about $100,000 annually (ignoring farmland rentals, minor office space rentals, etc.)

For those unfamiliar with the term, a "ground lease" is an arrangement where the airport typically charges a flat fee for the rental of a few acres of unimproved land for a reasonable period of time (thirty years is common; more than fifty years is prohibited by the FAA). Once a lease is agreed upon, the tenant designs and builds the hangar at their own expense and enjoys the use of that facility for the duration of the lease.

The hangar can be used in any way the owner chooses — housing the tenant's private aircraft, as a workshop to build an airplane, or to rent to other pilots for their aircraft — as long the use of the space is a *bona fide* aeronautical use. In the event that a hangar is no longer needed (a fairly common circumstance), the hangar may be sold at market rates and the ground lease transferred to the new tenant.

At LCCA, an analysis of the available ground leases suggest most are priced in the range of $0.25 per square foot per year, generating an average rent of $980 rent per hangar per year.[8] The lowest rent for which a copy of the lease is available is $180 annually for a hangar spanning 48 by 38 feet (1,824 sq. ft.), which is a cost of $0.09 per square foot.[9] The most expensive hangar rent for which documentation exists in the files is $4,099 annually for a hangar with the dimensions of 100x137, or 13,700 sq. ft., which equates to $0.299 per sq. ft.

NOTE: It has been reported that it is the policy of the airport to increase hangar rates annually, and for the 2024 rate on July 1st the minimum ground lease rent will rise to $0.22 per square foot. However, the airport budget does not reflect such

[8] This computation can only be considered an estimate because the ground lease files in the airport manager office are incomplete. Data on the leases and fees paid by sixteen tenants were missing from the airport files.

[9] It should be noted that these rates were produced by inspecting the paper leases on file in the Airport Manager's office and show the initial starting rent, not the rent after annual adjustments (if any). These files were not properly stored or organized; a number of parcels had no documentation at all. This is a serious managerial issue and needs to be remedied at the earliest possible time.

progressions. Additionally, the wide range of ground lease rents suggest this has not occurred in earlier years. However, for the sake of this discussion, this author will not dispute the asserted plan.

Peer analysis is a useful benchmark and allows a meaningful comparison of the ability of LCCA management to operate the airport in a financially sustainable manner. Peer analysis from surrounding airports suggest LCCA's current ground lease rents are far below the rates of other airports. A rate closer to $0.42 per square foot would be competitive and more fair to the community which funds LCCA.

Problems with the Sale and Transfer of Hangars

Hangars also frequently change ownership and serve as investment vehicles. Even with recent inflation, a simple metal hangar without plumbing or insulation can be built for $30,000. A hangar built for $20,000 in the 1990s might sell today for twice or three times that price. In the airport manager's rental records, two recent sales were noted. Both were 40x40 foot box hangars (1,600 sq. ft.) and both sold for $35,000 each. There are sixteen such hangars on the field, with ground leases producing from $240 and $416 annually.

Owning a hangar is a low-risk investment because the persistent shortage of hangars means one can always find a tenant at market prices. Hangars of this size will rent for $4,000 to $6,000 per year, depending upon the airport, the condition and any amenities. Over the course of a 35-year ground lease, such a holding could produce $175,000 in total income. After paying 35-years of ground leases valued at $14,560, even allowing for modest inflation, the hangar offers a net profit to the leaseholder of $160,440 before property taxes. In short, since market rental rates for hangars can be easily adjusted for inflation and market demand, and because the scarcity of hangars means even the most modest hangar will always find a tenant, buying/building a hangar and re-renting it at market rates provide a virtually risk-free investment with returns in the range of 391% or more over the life of the ground lease.

Hangar sales are highly significant benchmarks because they are (a) a concrete manifestation of the true value of the hangar in an open market; not an estimate,

appraisal or approximation, and (b) they chronicle in dollars and cents the profit foregone and flowing to another party. In the case of LCCA, an asset which the airport values at $14,560 actually is worth far more, and is generating ten times more revenues for the leasee. This may not qualify in a court of law as “unjust enrichment” but it certainly is unfair to the taxpayers who continually fund the airport and create this opportunity.

Problems with Hangars Ground Leases

The LCCA ground lease contracts are flawed in at least seven ways. First, ground leases work best when the airport operates the fuel concession. In this manner, having more planes on the field means there are more customers who will, in aggregate, buy more fuel. The ground lease model allows a hangar to be a “loss leader” in marketing terms. While the airport foregoes profits from hangar rents, more airplanes on the field generate additional fuel sales. However, since LCCA delegated the fuel concession to Leading Edge, the “loss leader” model does not apply. The cost of investing in infrastructure to support additional ground-lease hangars cannot be justified economically (although it could be justified for other reasons).

Second, there are no controls on the quality or appearance of the hangars. As such, LCCA has evolved into an unattractive conglomeration of industrial hangars with different styles, colors, vintages, and designs. While this shortcoming is an unusual oversight (because it does not allow the airport to present itself in the most positive and attractive manner) it is not a factor in the airport’s current financial condition. Nonetheless, any future ground leases should include design and maintenance criteria.

Third, rent is only charged on the area covered by the building itself, that is, the square footage ground lease only applies to the area covered by a roof. This is unfair and unwise because the construction of each hangar requires the airport to reserve for the tenant many more square feet than merely the area under the roof. Each hangar requires ramp space, taxi lanes and fire-stop zones between buildings which may more than double the acreage covered by the hangar itself. While it is true the private individual carries the expense of building the hangar, the airport still is burdened with

the significant expense of building taxi lanes and installing infrastructure. Peer analysis suggests a better and more equitable computation is to include all of the square footage involved in the leased parcel.

Fourth, the current ground leases limit their ability of the airport to raise the rents; it has been reported that for 2024 the minimum price for hangars will be 22¢ per square foot of enclosed space. It has been reported that the ground leases with higher prices will also be raised, but this author sees no evidence of this process.

Fifth, most of the leases are long and, in some cases, extremely long, with automatic renewals. These factors degrade the airport's ability to operate in a financially sustainable manner.

Sixth, the leases do not allow for any profit-sharing between the tenant and the airport when a hangar is sold. As noted above, at market rates, modestly-priced hangars are a remarkable investment, almost risk free and cash-flow positive in a few years. These are extremely valuable and lucrative investments. In the effort to supporting the financial sustainability of the airport as well as fairness to the taxpayers who fund the airport, some measure of profit-sharing would seem reasonable. A good resolution would be some form of a "top off" payment due to the airport when a hangar is transferred.

The seventh and most critical flaw in these leases is that they do not include the reversion of the hangar back to the airport at the end of the lease. This oversight was an intentional decision by the Airport Authority and was justified for two reasons. First, under Utah law, it has been reported that any property lease with a right of reversion requires the landowner (in this case, the airport) to pay property taxes on that space. Second, in the expressed opinion of the members of the Authority, hangars nearing the end of their leases often are allowed to deteriorate by their owners. The impact is that, by the time the lease is up, the hangar needs expensive repairs which may not be economical.

Both of these rationales are flawed. It would be simple to add an additional term (and widely used elsewhere) to the lease that specifies the lease-holder pays the property tax on the entire parcel, either to the airport as a pass-through to their annual rent or

directly to the government. A quick Google search for “hangars for sale” will document the fact that most of these hangars show the property tax due annually on the land and the building on the plot.

As for the deterioration of the hangar, most ground leases have terms which stipulate the conditions under which the hangar must be returned to the airport. If those conditions are not met — say, if the hangar is dilapidated, or unsafe, or no longer commercially usable — a proper lease requires the tenant to demolish the hangar and return the property to the airport in the condition it was in when the lease was originally signed. This is just common-sense protection for the airport. The fact that these simple and straightforward terms were not included in the ground lease agreements has been deleterious to the overall economic health of the airport and probably are a violation of the FAA grant assurances.

Table 5 documents with nineteen examples the financial implications from increasing the ground lease revenues. Table 5 is based on actual hangars, leases and rents at LCCA. In the examples shown, the initial rents paid to the airport for the ground leases total $21,000 annually. In 2024, the rent for all ground leases is planned to rise to $0.22 per square foot, which will raise that revenue figure to about $30,000.

If the ground leases were increased to peer airport rates ($0.42 per square foot) the income produced rises to $58,000 annually, a 171% increase over the rents LCCA is charging today. This would be even further enhanced if a rent was charged for the entire parcel.

The right-hand column of Table 5 shows the expected “market rent” for that hangar, if the tenant opted to rent the hangar to a third party. The ten-fold difference in the collected rents is a concern; it is a. missed opportunity for LCCA to repair its financial picture.

Table 5: Revenues Lost by Deficient Ground Leases

Leaseholder	Hangar Type	Hangar Description	Hangar Size (Sq. Ft.)	Estimated Plot Size (Sq. Ft.)	LCCA Annual Rent, $/Sq Ft	LCCA Annual Rent, Covered Area Only, Per Written Leases	LCCA Annual Rental Income @ 22¢/Sq Ft	LCCA Annual Rental Income @ 42¢/Sq Ft	Tenant's Real-World Income/Year
1	G.A.	25x48	1,200	2,078	$0.22	$260	$457	$873	$3,756
2	G.A.	40x40	1,600	2,263	$0.17	$272	$498	$950	$5,008
3	G.A.	40x40	1,600	2,263	$0.17	$272	$498	$950	$5,008
4	G.A.	40x40	1,600	2,263	$0.26	$416	$498	$950	$5,008
5	G.A.	41x40	1,640	2,841	$0.17	$278	$625	$1,193	$5,133
6	G.A.	40x45	1,800	3,118	$0.21	$373	$686	$1,309	$5,634
7	G.A.	40x50	2,000	2,828	$0.20	$398	$622	$1,188	$6,260
8	G.A.	40x50	2,000	2,828	$0.21	$422	$622	$1,188	$6,260
9	G.A.	42x48	2,016	2,851	$0.21	$417	$627	$1,197	$6,310
10	Executive	60x50	3,000	5,196	$0.21	$621	$1,143	$2,182	$16,650
11	Executive	60x80	4,800	8,314	$0.26	$1,248	$1,829	$3,492	$26,640
12	Executive	70x70	4,900	6,930	$0.26	$1,250	$1,525	$2,910	$27,195
13	Executive	70x70	4,900	6,930	$0.27	$1,299	$1,525	$2,910	$27,195
14	Executive	75x75	5,600	7,920	$0.22	$1,232	$1,742	$3,326	$31,080
15	Executive	80x80	6,400	9,051	$0.46	$2,957	$1,991	$3,801	$35,520
16	Corporate	100x100	10,000	14,142	$0.17	$1,700	$3,111	$5,940	$70,000
17	Corporate	100x119	11,900	16,829	$0.17	$2,040	$3,702	$7,068	$83,300
18	Corporate	120x100	12,000	16,971	$0.21	$2,532	$3,734	$7,128	$84,000
19	Corporate	120x131	15,720	22,231	$0.21	$3,277	$4,891	$9,337	$110,040
						$21,263	**$30,326**	**$57,895**	**$559,997**

Problems with FBO Services for Larger Aircraft

Complex turbine-powered aircraft often need special services to operate properly. A common request is for a "power cart" to run the HVAC and lighting on larger planes in lieu of using the aircraft engines. Other requests are for lavatory sanitation services and catering services. The FBO, Leading Edge, provides these services for a fee but none of the revenue flows back to the airport itself. The fact that LCCA does not and cannot support the needs of these customers is a serious shortcoming and diminishes the fiscal sustainability of the airport. The FBO lease should acknowledge these services and include payment to LCCA a portion of these service fees as part of the FBO's rent.

Problems with Other Administrative Tasks

As noted above, the County has the responsibility for the general administration of the airport, including Purchasing, Payroll, Human Resources, the I.T. infrastructure, and so on. The planning for facilities upgrades and paperwork for grants are all handled by the airport's engineering consultant, Armstrong. Since few, if any, members of the

Authority have strong aeronautical expertise or experience in the development of grants, this forces the airport into an undue and expensive reliance upon its consulting engineer.

Peer Analysis Comparisons

It would be fair and reasonable for a skeptical reader to challenge the number and scope of the problems identified in this section. One could ask if the analysis was too strident or the regulatory standards too high. One could ask if the expectations simply were too onerous for what is, basically, a small airport in a relatively rural community.

To resolve this question, the study included interviews with the airport managers at five other airports in Utah. These airports were selected as peer comparisons of LCCA by the members of the Airport Authority. Using a structured questionnaire, the interview perused comparisons on more than twenty different factors. The results are presented in Table 6 on the following pages.

It shows that in most aspects LCCA is under-performing in comparison to its peers.

Table 6. Peer Airport Comparisons Using 22 Performance Factors

Peer Analysis of Airports Comparable to Logan/Cache County

Characteristic and Source	Spanish Fork Muni	Ogden Muni	Hurricane	St. George Regional	Cedar City Rgnl	Logan
Utah DOA - Total Economic Impact ($ Millions)	$16.1	$328.1	$7.3	$177.8	$112.7	$17.7
Airport — # Based Multi-Engine A/C	13	25	1	20	3	16
Airport – Total Annual Ops	27,264	113,663	8,552	80,105	123,550	109,245
Airport – Longest Runway (Ft)	6,500	8,107	3,282	9,300	8,652	9,020
Airport – Commercial Ops	0	229	0	6,580	0	38
Commercial Ops Notes	None	Had it, lost it, just got it back. Breeze Airlines to Orange Cty, CA 4 flights/week	None	Four airlines, serving SLC, Denver, Pheonix, Dallas, and parts of California	Limited under the "Essential Air Services.". Skywest/Delta, to SLC, 12x week.	None
Satellite - Economic Development, as measured by Impervious Areas in Catchment Zone (Sq. Mi.)	259	253	94	93	82	131
Satellite - Economic Development (%)	37%	36%	13%	13%	12%	19%
Census - Economic Intensity ($ Millions/Sq Mi of Imperv Surf)	$100,085,286	$97,267,095	$59,999,221	$59,624,182	$17,811,992	$40,337,033
Governance Model	Airport Authority. 7 members: 5 airport users, 2 city council. Meet monthly. Agenda set by Airport Manager. About half the members "very" involved in helping.	No Authority. Works directly for city council. "This could be a great airport... an economic powerhouse." Also: "Our minimum standards are too subjective, have no way to enforce 'soft' requirements. Need to be made more specific and precise."	Airport Authority, no other data.	No Authority. Works directly for city council.	No Authority. Airport works for city council, through City Manager. ALSO: Airport Advisory Board, and an Airline Advisory Committee.	Airport Authority. Seven members. Reports to both City Council and County Commissioners
Governance -- "Active and Engaged" Mngt Score:	6	5	1	4	2	3

Peer Analysis of Airports Comparable to Logan/Cache County

Characteristic and Source	Spanish Fork Muni	Ogden Muni	Hurricane	St. George Regional	Cedar City Rgnl	Logan
ARFF Services and equipment?	None. Fire Dept. is just 60 seconds away, extremely fast response.	1 - Rosenbauer Panther, 2012. New engine in budget for 2027. Airport has 1 Firefighter on-site and 12 city FFs trained and certified	None Reported	2 Oshkosh Strikers, more than required	1 Old Engine, purchased 2007. New Engine scheduled for 2025; cost $910K PLUS $210K ancillary expenses. No ARFF on premises except when commercial air service is active.	1 - Oshkosh Stryker. 33 Firefighters trained. No ARFF on premises except when commercial air service is active.
FBOs on the field?	1 FBO; Utah Aviation. 100LL = $6.26/gal.	3 FBOs. Skyshare, Kemp, and Mountai Valley. 100LL = $6.60/gal.	No Data.	2 FBOs; Millionaire 100LL = $5.77/gal., Sandstone Aviation 100LL = $5.75/gal.	Sphere One Aviation. 100LL = $6.54 gallon. Works well with the airport. High turnover. "They're really stuck on servicing the flight school." Performance deficiencies cited almost daily.	Leading Edge. 100LL = $6.96/gal.
Fuel Gallons Delivered Annually	625,000 gals./year	1,500,000 gals./year	No Data.	1,250,000 gals/year	1,000,000 gals/year	
Commuity Outreach and Airport Events	Monthly airprt brekfast, speaker series about aviation; Airshow every Sept with 20,000 visitors; Wings-and-Wheels events with races down taxiway. "Our airshow every Sept get gets 16-20,000 visitors. Cosst us about $150K to organize, any profits are re-invested back into the show for next year. We get aerobatics, 12-15	Young Eagles 2x annually	None.	ROTC event 1x/year. Western Warbords sponsors a 2-3 day airshow every year. Young Eagles events 2x a year. Toys-for-Tots event; brings 60 airplanes to "deliver" gifts. Pancake breakfast everty Saturday, "Town hall meeting and barbecue" every other month, gets 45-60 people.	Fly-in Pancake breakfast 1x in the summer, big event, draws 1,000 people. Occasional events, like Terminal renovation grand re-opening. Also, occassional airport bingo night, draws 50-100 people.	None
Businesses on the Field (other than FBOs)	UVU has a big flight school with 30+ a/c; six OTHER flight schools on the field with 4-15 a/c each. Also: 2 research companies, 1 drone maker, and 7-10 flight departments.	1 Avionics company recruited by airport, good reputation, seems to be succesful 3 A&P shops on the field, working outside of the FBO services	No data.	2 FBOs with maint. 1 Museum 3 small flight schools 1 avionics shop 2 Restaurants 4 Car rental agenicies 1 Food kiosk	Souther Utah Univ. Flight School, 300 students, 50+ a/c. "The largest helciopter school in the nation." CyberJet, Small maker of jet a/c. AirTanker F/F base, servces all of Southern Utah, plus Col & Nev.	USU Aviation Flight School, 400 students, 60 a/c. FBO also has flight school. 6 Corporate flight depts. No other commercial or business activity

Peer Analysis of Airports Comparable to Logan/Cache County

Characteristic and Source	Spanish Fork Muni	Ogden Muni	Hurricane	St. George Regional	Cedar City Rgnl	Logan
Landing fees? Serviced by? Exemptions?	None yet due to resistance from flight schools	Using Virtower and Vector. "They've been very good." $1.25 per k/lbs, over 12K max gross weight, and no base customers regardless of weight	No Data.	No Data.	No landing fees for a/c under 12,000 pounds. Otherwise, $1.30 per k/lbs.Missing revenue from corporate a/c, but FBO claims they will start collecting "soon."	None.
Ground Lease Policies	135 hangars on the field, 200 (!!) under construction. 3 developers build 40, 60 and 100 hangars respectively. "Provo isn't building hangars, Nephi is too far away, and Heber is too unfriendly."	Until 2023, they were "perpetual." Changing to max 40 years, no further extensions. Numerous lawsuits, airport has won every one. Migrating hangars to "Facilities leases" raising rent 6 or 7-fold. 16 hangars converted so far, out of 250 or so. Tenants don't pay property taxes nor maintenance. If hangar unsuitable due to condition, owner is required to demo it, usually costing $4/sq ft.	No Data.	138 hangars on ground leases; 13 more under construction; adding ramps for 28 new locations (used BIL money).	3 hangars owned by City, 40+ hangars on ground leases. Rates: 30¢/sq ft for plain hangars, 40¢ sq ft for hangars with utilities. Note that square footage INCLUDEs set backs and ramp spaces. Hangars revert back to City after 45 years, policy now changing to never revert back.	109 leases on the field. 30-50 years. Usually automatic renewal. No reversion. Average rents 25¢ psf
Recent Grant History	$4.2M rehab of full-length taxiway. Southside of the airport is fully developed, all new development is on north of the runway. Working with FAA and state to get funds for new ramp, $8M for new taxiway for the northside. Starting application for ATC tower, expect it to be ready 2030.	10 years of projects in the pipeline. $10M state grant to remove a waste dump on the field and convert it to usable space. $1.1M for new snow equipment. $4.5M for new apron on west side of the field.	No Data.	4 current projects: road improvements, terminal enhancements, purchase of surrounding land, new contract control tower. Total: about $20M. ALSO: Used "Community Project Development Grants" - Federal dolars; can be used for safety, capacity, security, or environmental improvements; but any project must be AIP eligible.	Airport budgets for a "Construction Fund" like a savings account to fund matching grants. Try to have a big project every year. Commercial terminal expansion, $5M., using BIL funds. New Snoweater, $850K. Remarking runway $150K. Runway life extension treatment, (2026) $1.6M. Big project: Contract ATC tower, hopefully in 2030 or so.	Airfield signage replacement; possibel refurb of Taxiways in 2025.
Average Annual Snowfall	51 inches	65 inches	3 inches	3 inches	52 inches	55 inches

Peer Analysis of Airports Comparable to Logan/Cache County

Characteristic and Source	Spanish Fork Muni	Ogden Muni	Hurricane	St. George Regional	Cedar City Rgnl	Logan
Snow Control Equipment	2 airport plow trucks 1 plow tractor City handles the runway No snoweaters or brooms	2 Oshkosh trucks w/ 30-ft plows 1 Broom 2 Front-loaders w/ snowblowers 1 Standalone Snoweater	No Data.	1 Broom, 1 Snowbox blade, goes on their Front-end Loader	1 truck with 18-foot plow 1 City Plow (on order) 1 Oshkosh Snoweater (from 1950!) 1 large payloader with V-plow for aprons 1 pick-up truck for parking areas	2 plows, one ancient snow-eater, two wide plows.
Airport Budget	Undeveloped Land Leases: $360K (8¢ sq ft) Ground Leases: $191K (42¢ sq ft) Tie Downs: $60K Fuel Flow: $50K Total Revs: $650K	Hangar Ground Leases: $650K Fuel Flow Fees: $150K Facility Rents (New Hangar Leases): $70K Landing Fees: $100K Parking: $100K Total Revs: About $1,100K Total Exp: About $1,300K City subsidiezes annually	No Data.	Parking: $900K Rental Cars: $650K Airline Fees: $450K Ground Leases: $400K Other Conces: $100K Fuel Flow: $100K Total $2.4-$3M annually	Gravel Pit Sales: $150K Ground Leases: $121K Landing Fees: $120K Fuel Flowage: $100K Office Rent (FAA): $56K Concessions (Hertz): $55K Airline Pax Fees: $53K Misc.: $75K Total: $730K Airport makes $50K profits	Ground Leases: $100K Fuel Flowage: $35K Subsidies: $200K Total Revs: $335K

Section 4:
Root Cause Analysis

There is no reason for any government to operate an airport except that the airport, in some manner, shape or form, enhances the economic life of the community it serves. This audit finds the Logan/Cache County Airport has failed in that mission.

Root Cause

It is the conclusion of this audit that the Airport Authority itself is the fundamental problem at LCCA. The Airport Authority has insufficient resources with which to work because the airport receives too little support from city or county, which do not want to use public funds even if those funds would attract commercial air service, generate new revenues, or reduce the airport's dependence on public funds. The members have insufficient aeronautical expertise to manage the airport prudently. They have insufficient managerial latitude to resolve airport problems. Because they often are busy at their day jobs, they have little "bandwidth" to focus on the airport's issues. And, because the members of the Authority represent two different entities (the City and the County), the members of the Authority are ineffective because the bifurcated ownership induces conflicting priorities and constituencies.

The net result of this condition is that the airport is not managed like a business. It does not use modern for-profit business tools, does not price services accurately, and does not maximize the potential of the airport. Most critically, the airport has relinquished the largest and more lucrative sources of revenue (fuel sales and hangar rentals) but retained all the costs (pavement maintenance, snow control, Part 139 compliance, etc.) so it probably is in violation of the FAA grant assurances.

Under these conditions, it is reasonable to conclude the airport as constituted today will never prosper and never contribute to the economic growth of Cache County.

Section 5:
Remedies and Recommendations

Given the governance and administrative failures documented at the Logan/Cache County Airport, this report presents a set of interdependent recommendations, decisions and policies which will reverse that trend. These recommendations, while not painless, will foster the growth of existing businesses at the airport, attract new opportunities to the airport and the community, enhance existing revenue streams, develop new ones, and gradually convert the airport into an engine of economic growth and opportunity for the benefit of all the citizens of Logan and Cache County

This portion of the report will recommend corrective actions in three batches. The first group of suggestions deals with immediate issues pertaining to the governance of the airport. The second tranche of recommendations deal with finding new sources of funds needed to accomplish the mission of the airport. The third cluster of recommendations involves becoming more customer-oriented and preparing for the future.

It's important to acknowledge the not all of these recommendations may be adopted in the sequence envisioned here. Some may be harder than others. Some even may prove to be unfeasible. That's understood. But some movement in the right direction is essential in all of these areas, otherwise the dysfunction which has burdened the airport for the past two decades will continue unabated.

The Governance Recommendations

In this first group of recommendations, the primary goal is to develop a mode of governance that is autonomous, competent, and responsive. This will involve a series of four changes. First, the two owners of the airport need to consolidate ownership. The enabling Airport Authority ordinance needs to be revamped to improve the operating

parameters of the Airport Authority. The membership of the Authority must be modernized, making the management of LCCA mor professional, and the airport must begin using the proper tools used by for-profit businesses everywhere.

— ***Recommendation 1: Consolidate Ownership***

The split ownership of the airport should be ended. In June 1858, President Abraham Lincoln famously predicted, “A house divided against itself cannot stand.” That situation exactly applies to the dilemmas faced by LCCA. The two owners have different budgets, different constituencies, different political pressures, and different long-term goals.

The ownership should be consolidated at one entity (either the city or county, whichever one feels more capable and willing to support the capital investments the airport will need). This probably can be accomplished through a revision to the ordinance which created the Airport Authority. The surviving entity will benefit from being able to direct the future plans of the airport without consulting another body which may have conflicting obligations. In turn, the departing entity will benefit as it will avoid all the future capital calls and subsidies the airport will need over the years. It also vacates whichever seats it had been assigned on the Authority.

— ***Recommendation 2: Establish an Enterprise Fund***

Once the Sponsorship issue is clarified, the airport should be converted to an autonomous, quasi-public enterprise fund under the laws of the State of Utah. The Airport Authority will serve as the “board of directors” of that entity. The Authority will be directed to operate the airport in a modern, for-profit, financially-sustainable manner. The airport will operate independently from any City or County functions. The airport will have its own legal, financial, engineering, and administrative functions. Perhaps most importantly, it will be able to move from “fund accounting” to a modern, for-profit managerial accounting mode using inexpensive tools such as “QuickBooks.”

— ***Recommendation 3: Reconstitute the Airport Authority***

One of the most important efforts to revive LCCA is to revamp and reconstitute the Airport Authority, starting with its membership. Members of the Airport Authority should be appointed by the surviving Sponsor for fixed terms. The Authority should consist of five or seven members and serve in a volunteer (unpaid) capacity. It is envisioned that terms would be for four years, appointments would be staggered, term limits would be highly recommended, and appointments should be apolitical.

According to recent research, approximately 20% of all airport boards are ineffective, including the one operating LCCA. An ineffective authority diminishes the airport's ability to serve the public and operate in a financially sustainable manner.

There are several causes of such ineffectiveness. Often, airport board members attempt to serve on behalf of the political allies who appointed them, which defeats the autonomy of the authority. In other designs, members are appointed to represent specific geographies within the community, which creates divided loyalties and often the candidates are not individuals best-informed on aeronautical issues. In a few instances, airport councils are elected by the public, which fails because good campaigners may not be knowledgeable of the details of airport operations and are more likely to respond to voters than the needs of the business.

Selecting the right people who will bring an expanded network of resources and information is crucial to the success of this plan. For example, many successful airport authorities include representative(s) from local economic development agencies, either as full members or as non-voting experts. In this case, either the Logan Economic Development team or the Cache County Economic Development team might be an excellent choice. They would help link the airport to the economic opportunities within the region.

Several other criteria should be applied when considering nominations:

- First, it is absolutely vital that members be selected for their commitment to the work of the airport. LCCA faces serious problems. Fixing them is going to require far more effort than merely appearing for a meeting once a month.

Volunteers must have available bandwidth and be willing to accommodate a demanding schedule.

- Second, elected politicians should be prohibited from serving on the Airport Authority. Elected officials have different priorities and different constituencies, and to serve in both government and on the Airport Authority would be a conflict.
- Third, members should not be selected as "representatives" of specific cities, towns, counties, customers, or other organizations (it has been suggested that USU should have a seat on the Authority). Trying to create a representative process on the airport boards introduces conflicting loyalties, can politicize the group, and distract the authority from its single focus of making the airport the most successful facility it can be.
- Fourth, no more than 50% of the membership of the Authority should be customers or pilots based at LCCA. Many of the solutions to the problems facing LCCA will involve policies and decisions which will be unpopular with the base-customers of the airport. It would be naive to expect members to consistently vote against their own pocketbooks as the Authority struggles to resolve its financial woes.
- Fifth, term limits should be included in the by-laws of the Authority. Over the years, every manager develops habits and assumptions based on their prior experiences. These can become the "accepted wisdom" of the group and limit the considerations of new ideas and new plans. No person should remain on the Authority more than ten years without a break in service.

The existing Sponsors and the current Authority should begin an active recruiting program to find people with skills marketing, business, financial management, civil engineering, knowledge of aeronautics, insurance, law, and especially aviation law.

■ *Sidebar: Supervising the New Airport Authority*

There is a concern that a new and autonomous Airport Authority might violate the public trust through exuberance, corruption or ineptitude. This is a reasonable

concern but should not preclude the establishment of the airport enterprise fund nor the reconstitution of the Airport Authority. After all, the airport has been operated as part of the County government for thirty years, but is almost bankrupt, is seriously dysfunctional, and clearly under-achieving. In short, being part of a governmental agency is no guarantee of public performance. In this case, academic research also has shown such an arrangement usually will diminish public performance.

Instead of retaining the airport as part of a government agency, a better plan is to subject the proposed enterprise fund to various checks-and-balances to assure the achievement of goals and to prevent the misuse of public resources. In this instance, there are six constraints.

- First, the Airport Authority should be required to report back to the Sponsor and the public at least once a year on their activities and progress. These planning sessions should include discussions defining the mission of the airport, setting intermediate goals, justifying capital expenditures, and the measurement of progress towards achieving those goals.
- Second, all airport meetings should be in public meeting rooms at the airport and open to the public, subject to Utah "sunshine" laws, and recorded and published promptly.
- Third, the airport would be subject to annual financial audits, as are all public entities.
- Fourth, the surviving Sponsor would retain a vote on any long-term indebtedness, as such debt would usually require confirmation of authority from the loan originator.
- Fifth, the members of the Authority would be subject to failure of reappointment and certainly subject to the power of the bully pulpit, giving the Sponsor slow but sure oversight of the long-term performance of the airport.
- Sixth, the most egregious cases of corruption always entail the possibility of criminal prosecutions.

As noted earlier — and unlike private sector businesses — the traditional profit-and-loss statement is neither the primary index of an airport's success nor even the most vital one. The airport should not be managed merely for profit. The best measure used by savvy airport managers is to track and bolster the *total economic impact* of the airport. The Authority should focus on activities and investments which will increase the airport's economic impact, attract more flying traffic, boost fuel sales, and make the airport relevant to the non-flying public.

— ***Recommendation 4: Professionalize Management***

As noted above, as an enterprise fund the airport will be independent of any of the traditional government agencies. This is because the airport, as opposed to a government department, is a competitive business. It has customers, not constituents. Those customers can choose to take their business elsewhere, depriving the airport of revenues and opportunities. The airport should never be operated as part of a government agency or be burdened with the constraints and operating procedures of a government bureaucracy.

The Airport Authority would supervise the mission and operations of the airport through the Airport Manager. The airport manager should be responsible for the day-to-day operations of the airport. Neither the airport manager nor any airport employees should be city or county employees or use public employee benefits. The airport should operate a separate payroll system (such as ADP), its own financial accounting system (Quickbooks), its own benefits and incentives, bank accounts, grant programs, purchasing, contracting, hangar rentals, legal services, invoicing and so on. Research has clearly indicated the more autonomy the airport enjoys the better it will perform.

The new airport organization will be tasked with two mutually-reinforcing goals: to operate the airport enterprise fund such that it needs no public monies to fund daily operations, and do so in a manner which increases the *total economic impact* of the airport as quickly as possible, commensurate with the resources available. Because the airport is operating so poorly today, a near-term goal of a 50-75% improvement seems a modest and reasonable goal — the bar is pretty low.

— *Recommendation 5: Set Better Goals*

As noted previously, every organization needs a rudder, a direction, a goal. It is the premise of this research that the best goal for LCCA is the *total economic impact* of the airport as measured periodically by the State of Utah using economic impact studies.

Boosting the *total economic impact* of the airport is a critical goal because it is the best way for the airport to speak to the community it serves. Many airports are surrounded by chain link fences and barbed wire. Sternly-worded signs caution "unauthorized people" to stay away. Pilots speak their own language of flight which can be incomprehensible to non-pilots and create a barrier to a friendly and welcoming environment. Airports, especially Part 139 airports, are not friendly places.

But "friendly and welcoming" is an essential condition for success in a for-profit endeavor. Airports should be organizations that help their communities. People protect the things they love, and they only love the things they know. The non-flying population of Cache County needs to be educated about the benefits of the airport and all the different ways in which the airport helps the community.

Figure 21: Airports in general (and Part 139 airports particularly) are hostile environments. The Airport Authority should work to change that impression.

It may be helpful at this point to describe four general activities which will generally boost the *total economic impact* of the airport:

- First, "helping the community" can take many forms, but "airport days", STEM camps, and EAA "Young Eagle" events are excellent examples. The airport also should constantly be seeking new ways to speak to non-flyers. Special note: community outreach programs generally do not manifest themselves as quantifiable measurements, but that does not minimize the importance of these activities.

- The second accomplishment is to cultivate more aeronautical activity on the field, such as finding ways to help the USU Aviation program grow and prosper or helping the corporate flight departments on the field to expand and succeed. This requires well-paid and well-trained employees to be motivated to discover new customer needs and find ways to satisfy those needs.
- The third accomplishment is an active program to attract *new* aeronautical businesses to the field, probably in conjunction with the County's economic development team. This creates a thriving and self-reinforcing economic ecosystem which grows, invests, adds jobs, and in so doing creates new wealth within the community.
- The fourth accomplishment looks for opportunities at the airport to add local attractions for the community, where people will congregate and interact, all within the milieu of general aviation. An airport restaurant is a classic example but far from the only one. Fixing the old control tower at LCCA and converting it into an observation area would be an excellent and unique capability. Allowing food trucks in the parking area around the old control tower also would boost community awareness and support.

Sidebar — Problems Caused by the Lack of Goals

Airport work is the tyranny of the urgent. It's an entire industry built on speed. Most days, it's a blur of decisions, opportunities, struggles, mistakes, corrections, and dreary chores. Beneath the flurry of activity, the phone calls, zoom meetings, the budgets, and good intentions are a thousand small decisions that cumulatively steer the trajectory of the organization.

But a ship without a rudder isn't going anywhere. Setting a course is the first order for the pilot of any airplane. Goals are the tools used by modern managers to provide direction to a team. Goals give unity of purpose and direction to everyone's efforts.

Therefore, it should be stated without equivocation that every organization and every task needs a goal. Goals are defined by the mission. The mission is structured to implement the vision of the team. Hence, the first objective of this audit is three-fold: to identify the vision, the mission, and the near-term goals for the organization. These three tools — a vision, a mission, and intermediate goals — are essential for every organization and every manager because the progress, tactics and the allocations of resources then can be judged against them.

After five months of interviews and discussions, it can be asserted without fear of contradiction that LCCA has no defined goals, no mission, and no vision to help guide either the Airport Authority or employees in their day-to-day decision-making.

— ***Recommendation 6: Create a Vision for the Airport***

A vision statement is an aspirational declaration of progress and change, the statement of what the organization hopes to achieve. It provides direction and purpose for the organization. It is the rallying cry for all stakeholders working together and, over time, a clear and inspiring vision can and will have a great cumulative impact.

A vision statement is neither a budget nor a condition. It is an ideal; a destination. Great organizations have visions that speak to action. Everything that happens at the airport, either in public, in the office, on the ramp, or in a meeting, should be focused on making the vision a reality. The vision should reflect what the organization could achieve. The vision defines the change the Authority wants to accomplish.

But the LCCA airport has no money. Its infrastructure is worn. It is landlocked. It has almost no staff. It has no support from the public. How can such an organization assert any sort of vision?

In the 18th century the German poet, Johann Wolfgang von Goethe, wrote “Dream no small dreams, for they have no power to move the hearts of men.” That was great advice two hundred years ago and is exactly right for the Airport Authority today. The Airport Authority should not think too small. The Authority should be directing LCCA with an overarching vision statement which defines the benefit it aspires to deliver to the community and people it serves.

It answers the question, why should Cache County have an airport at all?

— *Recommendation 7: Craft an Action-Oriented Mission Statement*

A mission statement is subordinate to the vision. A mission builds on an organization's vision and explains the manner in which the organization will achieve its goals. If a vision is a destination, then a mission is the roadmap to that destination.

A mission should accomplish three specific things. First, it should speak clearly and unequivocally of the promise of the airport to its customers. Next, a mission should communicate a competitive advantage; "what our airport does differently." In that manner it justifies why any pilot, business or organization should choose LCCA. Lastly, the best missions are action-oriented. It should communicate exactly what the airport does and the impact it wants to make.

It's easy to write a vague, spineless mission statement that will be ignored. Crafting a great mission statement is tough. The best mission statements are brief and specific. They shape the organization's operations and activities. They create an environment that encourages everyone to produce high-quality work. They help employees set high standards for themselves. They help a team maintain its focus even during times of crisis or unexpected events. The best mission statements are lived by the team, day in and day out, and not just displayed as wall decor.

It's hard for somebody to see the horizon when they're deep in the trenches, plowing the snow or mowing the grass. A short, punchy, memorable mission statement helps people move from the specific crisis-du-jour to the long-term goals of the team.

It's convenient to think on mission statements being like the steel frame of the skyscraper, upon which the stone and glass of the building hangs. Mission statements, like steel girders climbing into the sky, form both the "why" and "how" of an organization's existence. Mission-driven organizations align the team's effort, guide individual employees, shape priorities, and define the quality of the organization's performance.

Sidebar: Using the Vision and the Mission

Having a vision and a mission is a useless "word salad in a picture frame" if they are not used every day, for every decision. Some suggestions from successful organizations offer concrete guidance on ways to use these tools:

- ***When Developing Strategies.*** Missions direct and mold the team's brand, and ripple through into specific business strategies. The mission will be the cornerstone upon which every element of the team's action plan will rest.
- ***When Marketing.*** Marketing is the tactical, day-to-day expression of the mission statement, as evidenced by meetings with customers, pages on the web site, speeches to the Rotary Club, or presentations to the County Commissioners. Mission statements communicate a team's values to their community and generate interest in the solutions the airport is suggesting. Every marketing tactic should be a reflection of the roadmap outlined in the mission statement.
- ***When Hiring.*** Emphasize the mission statement in the job description. A strong, clear, purposeful mission statement will attract talented people and entice them to get involved with the organization.
- ***When Spending.*** If the Authority adopts the recommendations in this report, there will be significant changes in revenues and capital projects. Each of those expenditures should be examined under the harsh light of the mission statement.
- ***When Conducting Performance Reviews***. Management should reward employees when they make decisions that embody the vision and mission of the organization.
- ***When Handling Complaints***. A good mission statement helps employees work through delicate problems with customers or vendors by focusing the outcome of the issue in the light of the mission.
- ***When Making Any Decision.*** It should be a quality control function for any decision to compare the outcome of the decision to the vision and mission. If

the decision doesn't pass the test, it shouldn't happen. If it does pass the test, then figure out a way to do it, even if the money isn't there today.

— ***Recommendation 8: Define Tactical Milestones***

Short-term tactical goals are the managerial translations of the tasks which need to be accomplished to bring the mission to fruition. A goal provides an interim, short-range result that can be achieved with the resources at hand. Generally, goals might take a few hours or a few months, not longer. Operationally speaking, the best goals are the sub-components of the larger, long-term mission. Goals serve as mile markers on the path to fulfilling the vision of the team.

In the experience of this writer, and as they pertain to LCCA, the best goals should have the following characteristics:

1. Defined by the Airport Authority,
2. Be independently measured,
3. Be quantitative and precise,
4. Be stable over time
5. Require specific actions and accomplishments, and
6. Be unable to be "gamed."

The Airport Authority should dedicate an entire authority meeting to developing a consensus on a vision, a mission, and near-term goals. The Stafford Regional Airport in Virginia has done an excellent job in this matter and could serve as a template (see: https://staffordairport.com).

■ ***Sidebar — A Strawman for Better LCCA Goals***

To kick start the discussions at LCCA, the following "strawman" is presented:

- ❖ Vision: To deploy the aeronautical facilities and resources of the LCCA to be a magnet for prosperity in Cache County.
- ❖ Mission: To use the airport as an engine of economic growth and opportunity, creating jobs and careers for all the people of Cache County.
- ❖ Goals:

1. To increase the total economic impact of the airport, as measured by the State of Utah, to $30 million annually by 2029 (five years).
2. To generate sufficient new revenues that LCCA can operate without taxpayer subsidies by 2027.
3. To create an environment in which Utah State University can grow to a capacity of 500 students/year.
4. To reduce the carbon footprint of the airport 25% by 2029.
5. To be the first airport in the state to offer advanced air mobility services.
6. To operate in perpetuity without a single major accident caused by a deficiency of the airport.

— ***Recommendation 9: Move the Authority Offices to the Airport***

In the very short term, the Authority should budget for some inexpensive physical improvements at the airport which will make a significant difference very quickly. These include:

- Create a real face for the airport by building a professional office, establishing office hours, and being available to answer questions and hear complaints.
- Convert the useless "pilot lounge" into a conference room.
- Install superior WIFI service in the new office and conference room.
- Hire a customer service person to answer the phone and field questions.
- Install the most humble of kitchen equipment: a refrigerator, a coffee pot, and a microwave oven. Bring fresh donuts every day to share with visiting pilots.
- Hang a "welcome" sign outside the office.
- Have employees take AAAE airport training.
- Move all Airport Authority meetings to the airport.

— ***Recommendation 10: Move the Airport Authority Meetings***

Effective immediately, all Airport Authority meetings should be held at the airport. If there was only one of these many recommendations that the Authority is able to implement, ***this one is the single most important change you can make.*** Clean out

the dysfunctional "pilot lounge" and equip it with some used conference room furniture. Buy an inexpensive videophone system. Come to the airport and listen and learn. Also, work with the base customers to establish a Pilot's Association.

The Revenue Recommendations

This second batch of recommendations involve the issue of finances. Money is the "secret sauce" that makes airports work, and for too long LCCA has operated on a parsimonious budget. This tranche includes seven separate recommendations to bolster the airport's finances.

— *Recommendation 11: Revamp Ground Leases*

The single biggest weakness in the LCCA financial picture are the deleterious terms and conditions found in the hangar ground leases. The time has come to establish the right terms which will help put the airport on a strong financial footing and, over time, build a busier, healthier airport.

- First, the ground lease rents for parcels with hangars on them should be increased to the rates used at peer-airports in Utah, which is about $0.42 per square foot. Ground lease rents for undeveloped property (land which could have a hangar but does not) will be twice the price of the hangar rate, to encourage the development of aeronautical facilities.
- Second, ground leases must include more reasonable terms for changing the lease rents, including the removal of the arbitrary limitations on the size of rent changes, the schedule for those changes, and adjustments for inflation and cost-of-living.
- Third, ground lease rents will be redefined to include the entire rented parcel, including areas between hangars, parking ramps, auto parking areas.
- Fourth, all privately-owned hangars will revert to the airport after 30 years.
- Fifth, all ground leases will include the provision that the tenant is responsible for property taxes for both the hangar itself and the leased grounds.

- Sixth, tenants must be available for routine hangar inspections at reasonable notice, to ensure the hangars remain in compliance with airport codes and lease terms, health codes, fire codes, and building codes, and that they are being used for *bona fide* aeronautical purposes.
- Seventh, tenants will be obligated to ensure no hazardous materials unrelated to aeronautical operations are stored or used within the hangar, and any hazardous materials related to aeronautical operations are of minimal quantities, properly stored, correctly labeled, and well-protected.
- Eighth, all hangars will be required to be maintained in proper aeronautical condition, with roofs in reasonable shape, doors in operational condition, floors clean and uncontaminated from hazardous materials. If a hangar is found to be in derelict condition, the owner will be required to demolish it and clear the site, returning it to "natural condition" and returning the ground lease to the airport.
- Ninth, if and when a privately-owned hangar is sold, the selling ground lease tenant will remit to airport 10% of the value of the transaction to the airport.

The schedule and the revenue from this plan are summarized in Table 7, below.

— ***Recommendation 12: Airport-Owned Hangars***

The airport should consider building hangars with its own finances and renting them at market rates. As noted above, these can become cash-positive in four or five years, depending upon rents and demand. Additionally, the airport should plan on a few hangars reverting to airport ownership as old ground leases expire. These, too, should be refreshed and rented at market rates.

— ***Recommendation 13: Support the USU Flight School***

As noted earlier, USU is using the airport in two ways. First, it is operating a large flight school on the airport as an educational program for students involved in pilot training. Second, it requires the airport to maintain the expensive Part 139 status so it can offer to athletes the perquisite of flying to football games on a chartered jet. These are two separate issues.

Table 6: Estimated Increases in LCCA Revenue from Improved Ground Leases

Year of Expiration	# of Leases	Baseline: Total, Current Annual Rent	Fcstd Rent at Market Rates	Addition Annual Revenue ($)	Change (%)	2024	2025	2026	2027	2028	2029	2030	2031
Unk.	6	$7,534	$23,721	$16,187	215%	$23,721	$24,432	$25,165	$25,920	$26,698	$27,499	$28,324	$29,173
6/30/09	1	$392	$1,646	$1,254	320%	$1,646	$1,696	$1,747	$1,799	$1,853	$1,909	$1,966	$2,025
6/30/16	1	$798	$1,676	$878	110%	$1,676	$1,726	$1,778	$1,831	$1,886	$1,943	$2,001	$2,061
6/30/18	2	$660	$1,848	$1,188	180%	$1,848	$1,903	$1,961	$2,019	$2,080	$2,142	$2,207	$2,273
6/30/21	2	$735	$2,058	$1,323	180%	$2,058	$2,120	$2,183	$2,249	$2,316	$2,386	$2,457	$2,531
6/30/23	5	$6,486	$14,339	$7,853	121%	$14,339	$14,769	$15,212	$15,668	$16,138	$16,623	$17,121	$17,635
6/30/24	4	$2,680	$6,468	$3,788	141%	$6,468	$6,468	$6,662	$6,862	$7,068	$7,280	$7,498	$7,723
6/30/25	7	$7,498	$18,947	$11,449	153%	$7,498	$20,101	$20,704	$21,325	$21,965	$22,624	$23,302	$24,002
6/30/26	4	$2,993	$7,385	$4,392	147%	$2,993	$3,053	$8,070	$8,231	$8,478	$8,733	$8,995	$9,265
6/30/27	9	$5,227	$11,686	$6,459	124%	$5,227	$5,332	$5,438	$13,153	$13,547	$13,954	$14,372	$14,804
6/30/28	9	$20,629	$41,692	$21,063	102%	$20,629	$21,041	$21,462	$21,892	$48,332	$49,782	$51,276	$52,814
6/30/29	7	$6,935	$11,359	$4,424	64%	$6,935	$7,074	$7,215	$7,359	$7,507	$13,564	$13,971	$14,390
6/30/30	13	$6,478	$12,760	$6,282	97%	$6,478	$6,607	$6,739	$6,874	$7,011	$7,152	$15,693	$16,163
6/30/31	6	$3,958	$7,434	$3,476	88%	$3,958	$4,037	$4,118	$4,200	$4,284	$4,370	$4,457	$7,434
6/30/32	15	$5,965	$47,972	$42,008	704%	$5,965	$6,084	$6,206	$6,330	$6,457	$6,586	$6,717	$6,852
6/30/39	1	$508	$1,050	$543	107%	$508	$518	$528	$539	$549	$560	$572	$583
6/30/41	2	$4,642	$9,240	$4,598	99%	$4,642	$4,735	$4,830	$4,926	$5,025	$5,125	$5,228	$5,332
6/30/43	2	$5,532	$8,106	$2,574	47%	$5,532	$5,643	$5,756	$5,871	$5,988	$6,108	$6,230	$6,355
6/30/47	3	$7,767	$16,024	$8,257	106%	$7,767	$7,923	$8,081	$8,243	$8,408	$8,576	$8,747	$8,922
Grand Total	**99**	**$97,417**	**$245,411**	**$147,994**	**152%**	**$129,888**	**$145,261**	**$153,855**	**$165,292**	**$195,591**	**$206,913**	**$221,134**	**$230,336**
Incremental Revenue Over Baseline				$147,994		$32,471	$47,845	$56,438	$67,875	$98,174	$109,496	$123,717	$132,919

This audit finds the USU flight school is a strong program, with a marvelous history and a bright future. The USU aviation program could be the heart — "the ground zero" as one respondent remarked — of commercial aviation in Utah, producing thousands of skilled and motivated pilots who go on to serve the businesses and airlines of this country. USU Aviation is a major component of the LCCA's paltry *total economic impact* and should be protected and cultivated.

That said, the quantity and frequency of flight training activity at the airport stimulated by USU students is a significant portion of the traffic at the airport, a burden on the other users of the airport, and a significant driver of costs at the airport.

This audit recommends that LCCA and USU develop a strategy to enable USU to pay its fair share of airport operating costs. This probably will be in the form of landing fees (described below) but with the recognition that the University has legal restrictions on changing prices and it may take some time to work those costs and fees into the academic budget.

— ***Recommendation 14: Strike a New Deal with USU on Part 139 Costs***

As documented above, there can be no argument that the requirement to maintain the airport's Part 139 status inflicts high costs upon the airport, estimated to be $150,000 per annum in the firm of continuous inspections, overtime expenses, paperwork and FAA reporting and planning requirements, additional ARFF requirements, and snow control expenses. However, those services produce little, if any, concomitant benefit to the airport, to the airport's tenants, or the community at large. They only serve to benefit the athletic teams and enthusiastic alumnae of USU.

This audit recommends that LCCA should begin negotiations with USU to develop a program where USU pays most (if not all) of the Part 139 compliance costs. The new president of the University, Dr. Elizabeth (Betsy) Cantwell, is an aerospace engineer from the University of Arizona. Almost certainly she will understand this request and appreciate the complexities of it. Failing to reach an agreement on this matter, LCCA should relinquish its Part 139 status to reduce the financial and operational burden on the airport and its other customers.

— *Recommendation 15: Initiate a Landing Fee Program*

There can be no hiding the fact that landing fees are loathed by all aircraft owners, pilots and operators. Outside of commercial airlines and airports, landing fees are rare in the U.S. and paid by few. They also are unevenly enforced and often used by FBOs to encourage fuel sales. Landing fees also can be punitive and force pilots and operators to take their traffic elsewhere, as is happening at Heber Airport in Utah and could happen at LCCA.

But there can also be no hiding the fact that LCCA has forsaken all the revenue-producing functions at the airport (in the name of avoiding spending any money), while retaining all the cost-producing tasks. This is an unsustainable business model. Airport

Table 7: One Option for Landing Fees at LCCA Airport

Option 1: Landing Fee on All Planes and Flights				
Aircraft Category	**# of Landings (Incldg. T&G)**	**Hypothetical Weight (lbs)**	**Est. Landing Fee***	**Total Revenue***
A1 - Small Single Engine or Very Light Twin (~3,000 lbs.)	57,634	2,500	$ 3.75	$ 216,128
A2 - Heavy Single Piston or Single Turbine (~5,000 lbs.)	374	4,500	$ 6.75	$ 2,525
B1 - Light Twin (~7,000 lbs.)	111	7,500	$ 11.25	$ 1,249
B2- Medium Twin (~10,000 lbs.)	231	12,000	$ 18.00	$ 4,158
B3 - Heavy Twin (~16,000 lbs.)	16	17,000	$ 25.50	$ 408
C1 - Light Jet (~10,000 lbs.)	9	12,000	$ 18.00	$ 162
C2 - Medium Jet (~30,000 lbs.)	98	40,000	$ 60.00	$ 5,880
C3 - Heavy Jet (>50,000 lbs.)	17	80,000	$ 120.00	$ 2,040
D1 - Military	18		$ -	$ -
Helicopter (~4000 lbs.)	499	3,500	$ 5.25	$ 2,620
UKN	185	n/a	n/a	n/a
Grand Total	**59,192**			**$ 235,169**

customers have getting a very good deal for decades while the airport was left holding the short straw.

Peer analysis also reports that neighboring airports have begun adopting landing fees, including St. George, Provo, Ogden, Bountiful, and Canyonlands. The Cedar City airport probably will implement landing fees in 2025.

Therefore, to remedy this situation this audit recommends the implementation of landing fees. These fees will be paid by all aircraft of all sizes, conducting all operations (including touch-and-go operations and stop-and-go operations). The fee should be based on the max gross weight of the aircraft. A recommended price is $1.50 per thousand pounds max gross weight (rounded up), per operation. The process will be automated and based on the VirTower traffic data collection system. The actual billing procedure will be managed by Vector Systems. The only exemptions will be for Young Eagle flights, emergency medical and air ambulance flights, and charity flights ("Pilots for Paws", "AngelFlight", "Compassion" flights, etc.).

The Airport Authority can expect strident push back against any meaningful proposal to impose landing fees. As one instructor at USU said, *"I wouldn't nickel-and-dime my students to fund this airport.*"

— *Recommendation 16: Collect Ramp Fees and Overnight Fees*

Outside of landing fees, many airports implement user fees, especially for transient visitors. These include ramp fees, tie-down fees, and overnight fees, especially on transient aircraft. These often are administered by the FBO and equally often are waived with the purchase of fuel. Since LCCA does not benefit directly nor significantly from the purchase of fuel, the loss of these revenues is impactful.

This audit recommends using the VirTower data and the Vector billing system to devise optimal schedules for ramp fees, tie-down fees, and overnight fees which do not discourage traffic but generates a meaningful quantity of revenue.

— *Recommendation 17: Reclaim Fuel Revenues*

Leading Edge is the FBO at LCCA and handles all the fuel sales. As noted earlier, this produces about $36,000 in revenue to the airport in the form of "fuel flowage fees",

which is about one percent of the FBO's revenue from fuel. Fuel flowage fees are a poor model upon which to base an airport's revenue when the airport does not have the high-volume customers of commercial airlines. Allowing Leading Edge to acquire the fuel franchise at LCCA was a poor decision by the Airport Authority which seriously impaired the ability of the airport to generate needed revenues and operate in a financially sustainable manner. Nonetheless, it is the condition with which the airport must live, at least in the near-term.

This audit recommends LCCA immediately revising the Leading Edge contract to raise the fuel flowage rate to $0.12 per gallon, which matches peer airports in Utah. It further recommends the airport invest in an airport-owned self-service fueling system which could be used by both corporate (Jet-A) and general aviation (100LL) aircraft. Such a system will cost about $600,000 and may not be grant-eligible. However, it can be financed by vendors or leased, which minimizes the upfront capital expense. Such a system could be immediately profitable and amortize the capex within three or four years. This will also minimize the need to replace or refurbish the current fuel farm.

Figure 22: This illustrates a typical "self-serve" refueling system. It has two tanks, one for Jet-A and one for 100LL. It processes payments using a credit card reader.

Plan for the Future — Build for the 21st Century

This last tranche of recommendations involves the physical reconstruction of the airport to better meet today's needs as well as to accommodate the newly-evolving needs of a 21st Century economy. It involves twelve specific recommendations, as follows.

— *Recommendation 18: Begin Urgent Infrastructure Repairs*

Almost every aspect of the physical structures at LCCA are past their expected service life. The single best example of this derelict condition is the old air traffic control tower adjacent to the USU offices. This landmark is highly visible from roads, runways and parking areas but is in such dreadful disrepair that it creates a very poor first impression.

This audit recommends the new Airport Authority direct Armstrong (the airport's consulting engineer) to speedily conduct an audit of all of the non-aeronautical infrastructure of the airport, including buildings, electrical, water, sewer, and gas

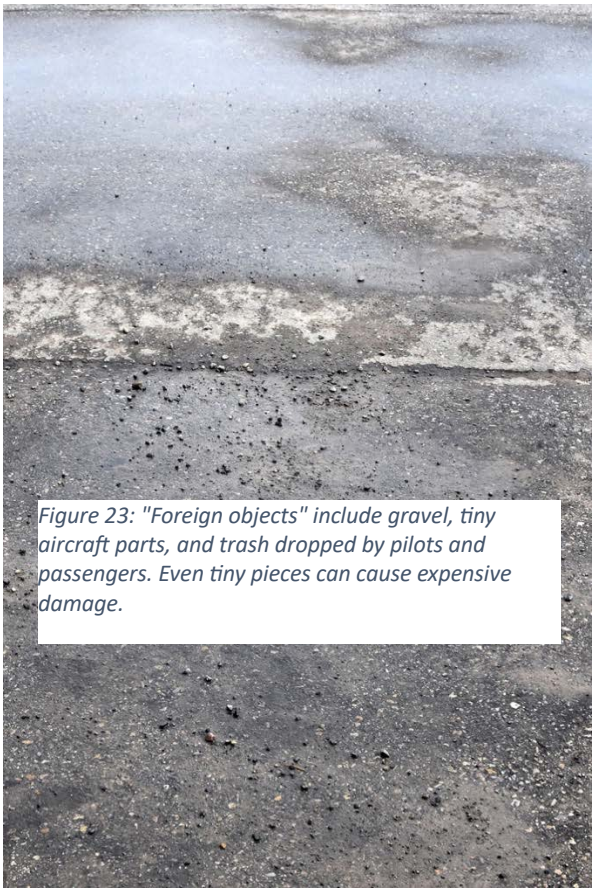


Figure 23: "Foreign objects" include gravel, tiny aircraft parts, and trash dropped by pilots and passengers. Even tiny pieces can cause expensive damage.

availability, producing a census of the assets and a summary of their condition. It further recommends the Authority dedicate a portion of the new revenues described above to be deployed immediately to fund repairs to those assets, starting with the old control tower (estimated budget: $100,000). Other items on the list definitely should be the airport offices and the dreary “pilot lounge” ($20,000), a public airport viewing area ($5,000), improved parking (cost undetermined), and build a restaurant at the location of USU’s current offices, featuring the old control tower as an attraction ($1 million).

On the airside of the field, the airport should establish a FOD Control Program ($10,000), refresh and fund pavement control and marking program ($150,000), and upgrade LCCA’s snow control capabilities ($1.5 million).

Figure 25 introduces an inexpensive tool which can eliminate FOD. This is called a "FODBuster."

— *Recommendation 19: Add Capacity with Taxiway Repairs*

One significant deficiency of the airport is the deteriorating taxiway which serves the secondary runway. While the runway itself is in satisfactory condition, the taxiway is

suffering severe pavement cracking. It is sufficiently rough and uneven that it can no longer be plowed during snow removal operations which forces the airport to close the secondary runway during the winter months. This greatly diminishes the usefulness of that runway, decreases safety, and decreases the overall capacity of the airport. As one respondent mentioned, it *"has completely failed, so it can't be used by bigger planes, and smaller planes are forced to back-taxi, which is dangerous."* Other taxiways also are in deteriorating condition. *"Taxi lane Bravo reconstruction is delayed because they're banking state funds until they have sufficient savings, probably in 2030, but it will be even more expensive then."*

Some taxiways are scheduled to be rebuilt in 2025 with a grant from the Federal BIL funding, but they should never have been allowed to deteriorate this severely. Additionally, the anticipated grant may not materialize. As one respondent reported, "*It has caused a controversy because [the grant is] going to require a 90:10 match, which means funding from the County, which is unlikely. Some people think it should be a private/public partnership, but there's no way to generate revenue from a taxiway to stimulate a private investment."*

— ***Recommendation 20: Upgrade Airfield Lighting***

The main runway and taxi way are supported by appropriate runway lighting. As these words are being written, new airport signage is being deployed at the airport. These are good improvements, but there is more to do.

In recent years, many airports have been investing in new LED lighting systems. Old-style halogen lights are significantly less expensive than LED lights on a per-bulb basis. But halogen lights use far more energy, have a shorter operational life, and require more maintenance to ensure burned-out bulbs are replaced in a timely manner. In recent years the FAA has begun funding grants for new LED technology.

It would be prudent to consider upgrading the runway and taxiway lighting at Cache County to use this newer, "greener" and more cost-effective technology.

— ***Recommendation 21: Upgrade Security***

As described above, the security protocols at LCCA have failed on a number of levels. If these issues are not cured, the risk of a severe problem (theft of aircraft or components, vandalism, accidents, or terrorism) will be and remain high.

This study recommends (1) the airport replace the keypad gate access systems with key fob systems for tighter, more personalized, and more accountable security. (2) High-quality video surveillance should be installed at every gate and on the ramps. (3) The airport should create and enforce a comprehensive driver training program.

— ***Recommendation 22: Fix the Self-Storage Problem***

The inappropriate use of airport hangars for non-aeronautical uses remains a problem, although the exact scope of the problem cannot be determined without a comprehensive census of every hangar.

This study recommends the airport review the airport's rules and regulations, especially those for the aeronautical use of hangars, and update them as required. It also should communicate those rules to tenants. The airport should begin hangar inspections at the earliest opportunity. Inspections should include fire safety, hazmat storage, building code compliance, and the presence of an airworthy aircraft. These inspections will ensure there are more aircraft flying at LCCA and enhance the financial health of the airport.

— ***Recommendation 23: Fix the Radio and Radar Problems***

There are numerous problems with the radio congestion at LCCA which the Authority should immediately address.

(1) Congestion on the UNICOM frequency. It is relatively easy to move the airport UNICOM channel to another frequency; it requires the completion of a single form with the FAA. No fees are required, and no equipment needs to be replaced.

(2) The lack of low-altitude radar coverage is a significant safety issue. This could be resolved with an ADSB repeater located in the vicinity of the AWOS or the

FBO. The FAA should be willing to provide this equipment once they realize the magnitude of the problem at LCCA.

(3) The inability to contact Clearance Delivery from the ground (except by cell phone) is both a productivity and a safety issue. Working with the FAA, the airport should be able to get a local repeater radio installed to provide a clearance delivery channel to Salt Lake City Center.

(4) Lastly, the AWOS should be relocated. This is a dangerous situation and the AWOS should be relocated to provide more accurate, "worst case" data.

In short, these are easy issues to fix. The only acceptable condition, for the second-busiest airport in the state, is to offer pilots high-quality communications and impeccable radar coverage at all times and all altitudes.

— ***Recommendation 24: Upgrade the FBO***

As described above, the Leading Edge FBO facility is a pale shadow of the facilities found at peer airports. The FBO has none of the features expected by today's corporate visitors or flight crews. Perhaps most egregiously, the FBO tracks no customer satisfaction metrics. Unhappily, the FBO building is the property of the airport and only leased to Leading Edge, which makes it difficult for the ownership of Leading Edge to invest heavily in upgrades.

This audit recommends that the new Airport Authority work with the airport engineer to find the best location for a new FBO/airport terminal and dedicate approximately $8 million to fund the construction of a proper facility.

— ***Recommendation 25 Improve Highway Access***

This study has found the highway access to the LCCA airport is unsafe, especially during busy hours. The entrance is in the wrong place; Airport Road is extremely busy; visibility is poor; signage is poor, and making a left turn out of the airport during rush hours is perilous.

This study also has found that access to the land upon which the abandoned runway sits is extremely limited. There is a parcel of about ninety acres between the

current airport entrance and the abandoned runway which blocks convenient and efficient access to the abandoned runway.

This audit recommends LCCA, in conjunction with the City of Logan and the State Dept. of Transportation, acquire the six parcels comprising approximately ninety acres to the southwest of the airfield and use it to improve road access to the airport (see Figure 26). The entrance road should be reconfigured to be at the traffic light situated at the intersection of West 1000 N and West 2500 N (Airport Road), which would be a significant safety improvement and improve traffic flow. Signage should be improved. The remainder of the land would open access to the abandoned runway for the USU aviation super-campus, additional hangars, industrial development and commercial services.

Figure 26: The two yellow curves propose a new entrance into the airport which will be more efficient and improve traffic safety.

—Recommendation 25: Add a Control Tower

The LCCA airport is the second busiest airport in Utah, second only to Salt Lake City International. This presents a very real danger because of five overlapping conditions: (a) the volume of flights, (b) the relative inexperience of the student pilots, (c) the lack of radar coverage and/or ADSB repeaters in the area, (d) the congestion on the UNICOM radio frequency, and (e) the number of corporate flights using LCCA. The Authority should have a very real concern about aeronautical safety at the airport. The best remedy is to take steps to acquire and operate an air traffic control tower at the airport.

The FAA is neither building nor staffing new control towers, but a system called a "contract tower" is available. To get on the FAA's contract tower list takes three to six

years, a feasibility study, and proof of need. This typically is managed by the airport's engineering consultant.

The cost is the big issue, which can be millions of dollars. For example, the construction costs for a tower with suitable visibility, proper electrical capacity, telephones, radios, and radar will be about $15 million. Annual operating expenses will be about $1 million. Plus, there is a dire shortage of qualified air traffic controllers to staff a new facility (air traffic controllers are allowed to retire at age 55). Alternatively, a "seasonal tower" using retired but licensed ATC controllers is a good option, faster to implement, and less expensive.

Figure 27: The "bungee tower" build for a private individual is now empty and unused. It may serve as an excellent and inexpensive avenue to begin air traffic control operations at LCCA.

This audit recommends the implementation of an air traffic control tower at LCCA immediately. It is possible the "bungee tower" could be repurposed to this use.

Members of the Airport Authority should become familiar with the VirTower traffic data and use it to petition the FAA for emergency access to the contract tower process. In the interim, the Authority should negotiate with State and Federal agencies and legislators for special "earmark" funding for a seasonal tower, which would run six months each year. A mid-air collision would be a catastrophic but avoidable outcome.

— *Recommendation 26: Create a "USU Aviation Campus"*

The USU Aviation program should be the shining star at LCCA. The program has 50 airplanes, ten helicopters, more than one hundred instructors and technicians, and hundreds of students, all sprawled across eight hangars and buildings. As noted earlier in this report, this is an inefficient use of precious hangar space, a poor learning environment, and inflicts odd opportunity costs upon both USU and LCCA.

One quirk of the program is that it does not house the entirety of the USU aviation programs. USU houses a variety of aviation and aeronautical programs on the main campus, such as "airport management" and "aircraft dispatching," which could be located at LCCA but are not.

This audit recommends USU and LCCA work together to bring everything to the airport and consolidate all their aeronautical classes in a state-of-the-art training facility built on the abandoned runway. This new facility will bring all their classroom activities, all their private one-on-one lessons with flight instructors, all their administrative support, all their simulators and all their aircraft into one aviation super-center. This will improve efficiencies, make the USU program even better than it is, and free up the airport's valuable corporate hangars for other (more profitable) uses. As noted above, the new president of USU, Dr. Cantwell, is an aerospace engineer who supervised a 1,268 acres technical park at the University of Arizona. She should be very receptive to this concept.

— *Recommendation 27: Market the Airport*

It is incumbent upon the Airport Authority to develop a program to engage with the public about the airport, with the goal of making the airport relevant to the non-flying community within Cache County.

The single best answer is to cultivate businesses, organizations and the general public. For example, there should be an active pilot's association at the airport, and their suggestions should be valued and considered.

Even more vividly, during the interview phase of this study, the author discussed airport operations with many of the most prominent local businesses — Cache Valley

Electric, Campbell Scientific, EP Systems, Federal Express, and so on — and without exception they cited instances where the airport could have helped them grow in ways other travel options did not permit. The Airport Authority, in conjunction with the County's Economic Development team, should have an active program to find and cultivate these relationships.

One very simple example: Campbell Scientific makes automated weather reporting systems (AWOS) of various types, including those used at airports around the world. It would be easy and productive to entice Campbell Scientific to set up a "field testing center" at LCCA where all of their capabilities could be demonstrated and calibrated to the "official" airport AWOS.

Another idea: LCCA could work on an aviation STEM program with the local school system, using a curriculum already developed by AOPA that features airplanes and engineering.

Another idea: given that Cache County is the "small satellite" capital of the world, is there room and reason to have a "small sat" facility at LCCA? The Airport Authority should be working with Space Dynamics and other companies to find ways to leverage those companies along with the myriad of attractive elements of Cache County into greater economic activity at the airport.

Another idea: Working with USU, LCCA could host an "aviation day" or "Famous Utah Pilot" Day with an open house at the airport. This could attract parents, families, and airplane enthusiasts to the airport.

Another idea: Many airports operate airshows that generate substantial goodwill for the airport. An excellent example is at Spanish Fork which sponsors a medium-sized airshow every summer. This event attracts 20,000 visitors, helping to fill hotels and restaurants. One of the main attractions at this show is performer Brad Wursten, a Logan native and a LCCA customer. With almost 4,000 hours of experience, Wursten flew his custom MX2 aircraft from LCCA to Spanish fork for the 2023 performance. Could he be enticed to fly an exhibition at LCCA?

Another idea: Aviation museums can be strong attractions for airports. St. George is the home to the Western Sky Aviation Warbird Museum, located right on the grounds

of the St. George Regional Airport. The Piper Museum is located on the airport in Lock Haven, PA. The International Women's Air & Space Museum is on the airport in Cleveland, Ohio and celebrates Amelia Earhart, Ruth Nichols, Bessie Coleman, Harriet Quimby and many others. LCCA could focus on some unique aspect of aviation in Utah and make that a feature of an attractive museum, such as the B-29 in World War II.

Another idea: Fly-in events are popular with the public. At St. George, they are sponsoring a visit from two classic warbirds: the B-29 *Doc* and the C-47 *That's All, Brother.* The B-29 is truly unique and is one of only two flying B-29 bombers left in the world. The C-47 is one of the two dozen or so surviving "gooney birds" and an exemplar of perhaps the finest aircraft every built. These two aircraft will offer cockpit tours and

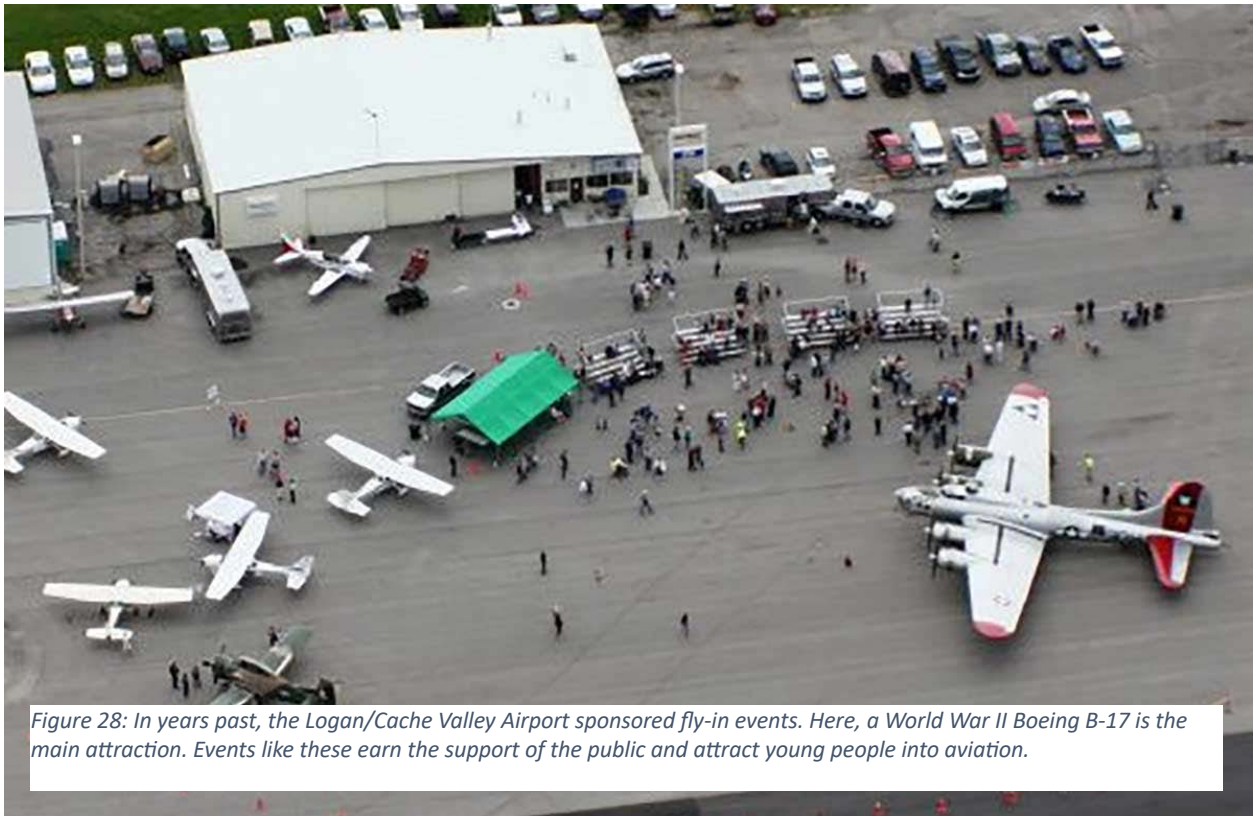


Figure 28: In years past, the Logan/Cache Valley Airport sponsored fly-in events. Here, a World War II Boeing B-17 is the main attraction. Events like these earn the support of the public and attract young people into aviation.

flights. Here's the secret to these events: this is an "opportunistic" event made possible because these airplanes were transiting the area on their way to other, larger airshows. These operators are thrilled to be able to stop, showcase their airplanes and talk to the public at very reasonable terms. These types of events are highly replicable at LCCA.

Another idea: Events that mix classic cars and planes can draw big crowds. Spanish Fork has races between cars and planes down their runway during their airshow. Another example is the "Aviation and Autos" event at the airport in Middleton, Wisconsin every August. This event is a fundraiser for medical services. The Stafford Regional airport in Virginia has a similar event (https://staffordairport.com/air-fest-2023/).

Another idea: One of the simplest and best ways to make the airport a larger part of the community is with a strong web site and social media. At just four pages on the County web site, the LCCA website is very weak and scores just three points on a twelve-point website engagement scale. The web site needs to be moved out of the county system and be converted into a stand-alone site. The email addresses of the airport staff

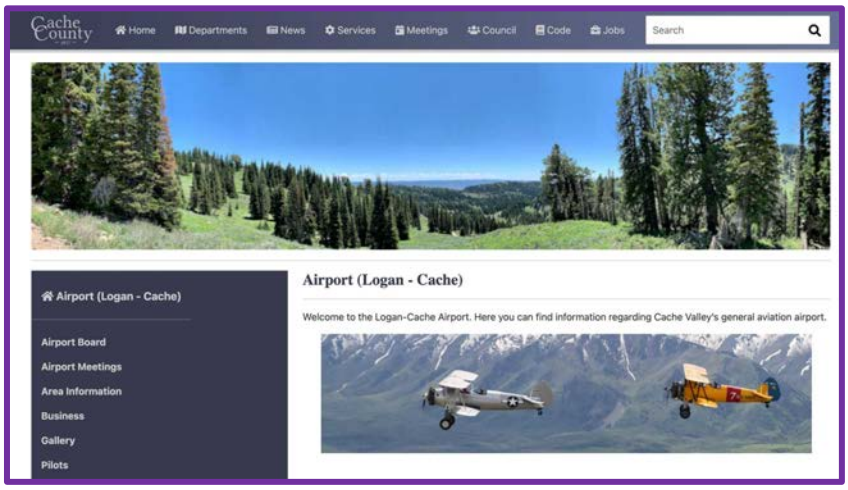


Figure 29: The LCCA website is uninteresting and uninformative. It is four pages on the County web site. It should be made an independent web site with exciting, fresh content that will stress the benefits of the airport to the public.

need to become airport-related email addresses instead of ".gov" addresses. The site needs to be kept fresh and relevant, with numerous updates and additions. It should identify and profile the airport team members, including relevant contact information. The airport authority meeting schedules should be published (which they are) along with the ***operational*** video links to join the meeting remotely. Minutes of meetings need to be published promptly. Airport documents need to be on the web site, along with news and photos of activities (construction?) and events (fly-ins).

As the web site grows, airport-related businesses could be profiled on the site, economic opportunities on the airport could be identified, and businesses that visitors

could patronize could be featured on the site, along with links to explore the community.

Related to this project would be an effort to link with a marketing class at USU and have the students in the program help LCCA with social media and marketing.

— ***Recommendation 28: Build Utah's First VertiPort***

"Advanced Air Mobility" using semi-autonomous electric helicopters and aircraft will be arriving soon. This will be the biggest innovation in aviation since the development of the jetliner in 1958. AAM has the potential to truly change the world in a radical way, such as flying passengers from LCCA to Salt Lake City International in 18 minutes. Over $200 billion has already been invested in AAM technologies, more than

Figure 30: Electric helicopters will be a big step towards an environmentally-friendly air taxi services. They could offer non-stop service from Logan to Salt Lake City in 18 minutes. LCCA should be in the forefront of this innovation.

250 companies are working on the technology, and the FAA has a stated goal of certifying the first AAM aircraft in 2025. Indeed, Salt Lake City International already is

planning the construction of that airport's vertiport, adjacent to the public parking garage. Perhaps more relevantly, the high-value market for urgent (organ transplant), hazardous (radioactive) or restricted (controlled substances) cargo could be accomplished faster and very competitively, if AAM-Cargo facilities were available at LCCA.

This study recommends LCCA begin the design and construction of a vertiport to serve the KLGU-KSLC feeder route, targeting operations in 2028. This facility should be constructed on or near the abandoned runway.

— ***Recommendation 29: Develop a Visionary Master Plan***

Once the newly-constituted Airport Authority has developed a general consensus on these long-range plans, it should then revisit the new Master Plan with Armstrong (now Lochner) Airport Engineers. The revised Master Plan should include some or all of these recommendations, as adopted by the Airport Authority.

— ***Recommendation 30: Become an Engine for Aerospace Innovation***

Across the U.S., hundreds of companies are looking to aviation for the "next big thing" which will allow them to lower their costs, improve their services, or offer a benefit their competitors cannot match. Amazon, Fedex, UPS, big pharma, biotech companies and other innovators all are looking for high-speed logistics.

One great example is in Lakeland, Florida. Like LCCA, Lakeland had a very long runway but almost no commercial activity; unlike so many Florida airports, it is not near the beach or a popular attraction. But the airport team knew their central location and long runway were valuable assets to the right company. Within a few years, Amazon built an enormous Prime warehouse. This new shipping facility hosts forty jet operations every day. It supports hundreds of high-paying local jobs — not just people moving boxes, but people fixing planes, planning logistics, working on the I.T. infrastructure, and much more — all of which ripple through the Lakeland economy every day.

Figure 31: The Lakeland, FL airport was an economic ghost town until their airport authority began marketing the field to industry. Now it hosts a huge Amazon facility and forty jet operations daily, adding millions to the airport's economic contribution.

Another highly relevant example from the news this week: EP Systems, a company based in Cache Valley next to the airport, has just announced a new and better battery for light aircraft which allows up to ninety minutes of flight without burning avgas. This battery will be deployed in the next generation of the Diamond Star training aircraft used by USU Aviation. Those electric aircraft will be quieter and "greener" than current aircraft, allowing the airport to reduce its carbon footprint.

To resolve this issue, the airport should begin planning for an aeronautical industrial park that features the infrastructure that businesses would need who would benefit from being co-located at the airport. The airport should team with high-tech companies in the Valley and also with USU, who's new president operated a facility similar to this for the University of Arizona. The potential for this concept is illustrated in Figure 32, below.

Once those plans are developed, the airport should formally liaison with county economic development groups and begin seeking new business opportunities which create jobs and make the airport relevant to the community. This program would be a major contributor to turning the airport into an engine of economic growth and prosperity for all the residents of Cache County. In fact, one could see how, with a little foresight, LCCA also could support the aeronautical needs of businesses in Box Elder County, Rich County, Franklin County, and even Preston, Idaho.

Aggressive airports with strong management, sufficient infrastructure and an interest in economic development will attract these companies. LCCA should be one of those airports.

This study recommends LCCA explore the acquisition of the 1,100 acres of land west of the airport for a high-tech aerospace and "small sat" industrial park, similar to the huge "Tech Park" owned and operated by the University of Arizona. This would create space for the facilities for logistics tenants or aeronautical companies who need runway access, like USU, EP Systems, Amazon, UPS and Fedex. This also would create the optimal location for a control tower with great visibility near the center of the airport and better access to the vertiport.

The Budget for the First Steps of the Vision

The budget for this 21st century vision would approximate the following:

- Acquire the 90-acres west of the airport access road, relocate airport entrance ($2 million, most from State DOT)
- Build 30 new airport-owned hangars ($3 million)
- Build a USU Aviation Center ($6-$16 million, depending)
- Begin marketing the airport to businesses ($100,000)
- Build a modest, modern terminal building suitable for corporate visitors ($8 million)
- Build a vertiport for commuter service to Salt Lake City Intl. ($5 million.)
- Begin the design and land acquisition for the LCCA Tech Park ($10 million).

(Hypothetical airport layout plan presented on the following page.)

Figure 32: The proposed "aerospace high-tech park" at LCCA Airport. The north end of the airport would house logistics centers. USU could move to the west and a dedicated runway. The "vertiport" would be near the relocated front gate.

Section 6:
Financial Results

This portion of the study will quantify the expected results of these action items and recommendations for LCCA are modeled in Tables 8 and 9. The assumption will be outlined below:

Table 8 shows the impact of running the airport as an enterprise zone but with no other major changes operationally. Readers should note that the 2024 data is the official airport budget, restated into managerial accounting format but otherwise unchanged from the County budget system. Table 9 is built on Table 8, but adds the revenue and cost impacts of offering self-service fuel.

Lines 1-4 memorialize the assumptions embedded in the model. Flight activity will continue to grow 3% per year, fuel flows will grow as shown, and the fuel flowage fee will increase to $0.12 per gallon.

The model builds on the 2024 starting point but was then fine-tuned to reflect additional revenues as recommended in Section 5. These include a jump in the ground lease revenues shown on Line 5, and a few hangars are converted to airport-owned hangars and produce market rents. Landing fees are introduced in 2025 (Line 7). At some point in 2025, USU and LCCA reach an agreement to partially fund Part 139 costs, shown on Line 8. Lines 12 and 13 shows the gradual ending of government subsidies.

The expense model changes less drastically. In 2025 and beyond a true airport staff is hired and begins serving customers. Landing fee collection costs are documented in Line 31 (Vector Systems). Since the airport is assumed to be an enterprise fund by 2025, legal fees will be carried by the airport. The cost of the projected dispute over ground leases is included in the legal fees estimated in Line 34.

The model in Table 9 assumes 50% of the fuel sales will be self-service at competitive prices. Line 18 reflects these new revenues. Line 25 tabulates the cost of goods sold which is, in this case, almost completely fuel.

Additional expenses are required to manage this process. In 2025, more full-time employees are added. Credit card costs become significant at 4% of the fuel sales (Line 29). Additional legal fees are anticipated, but overall the model shows the airport producing an EBIDTA in excess of $500,000 in year five of the program.

It is proper to mention that these revenue and expense models do not capture all of the expenses forecasted for the revamped airport. For example, these forecasts do not include amortization or depreciation, which could be significant. However, those are non-cash expenses and less germane to the discussion at hand.

(Note: the line numbers vary slightly between Table 8 and Table 9 because of calculations not shown in the tables related to modeling the new fuel business.)

Tables 8 and 9 are presented on the following pages.

Table 8: Five-Year Base Line Budget for LCCA Airport, with Revenue Enhancements

Line	Assumption	2024	2025	2026	2027	2028	2029
1	Annual Growth in Flight Activity -		3%	3%	3%	3%	3%
2	Fuel Flows (Gals.)	450,000	463,500	477,405	491,727	506,479	521,673
3	Fuel Flowage Fee	$ 0.08	$ 0.12	$ 0.12	$ 0.12	$ 0.12	$ 0.12
4	Assume: Property Taxes are a pass-through						
	Income	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
5	Ground Leases	111,200	245,411	252,773	260,357	268,167	276,212
6	Airport-Owned Hangar Rents		38,400	76,800	115,200	153,600	158,208
7	Landing Fees	5,500	176,167	181,452	186,896	192,502	198,278
8	USU Athletic Support		50,000	100,000	150,000	150,000	150,000
9	Fuel Flowage Fees	49,500	69,360	71,276	73,249	75,281	77,375
10	Other (3 Items)	13,500	13,740	13,987	14,242	14,504	14,774
12	Contribution - Cache County	100,000	100,000	100,000	-	-	-
13	Contribution - Logan City	100,000	-	-	-	-	-
15	Total Revenues	366,200	679,338	782,301	785,701	839,551	860,073
	Expenses	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
16	Employees, Full-Time	79,200	81,576	84,023	86,544	89,140	91,815
17	Employees P-T: Ops, Actg., Cust Svc	44,900	66,000	88,000	90,640	93,359	96,160
18	Employee Benefits	44,676	53,127	61,928	63,786	65,700	67,671
24	Equipment Maint & Supplies	25,000	25,750	26,523	27,318	28,138	28,982
25	Minor Equipment, Non-Capital	6,000	8,000	10,000	12,000	14,000	14,000
26	Buildings & Grounds	21,800	22,454	23,128	23,821	24,536	25,272
27	Snow Removal	65,000	66,950	68,959	71,027	73,158	75,353
28	Weed Control Chemicals	12,000	12,360	12,731	13,113	13,506	13,911
30	Utilities	27,000	27,810	28,644	29,504	30,389	31,300
31	Landing fee Collection Costs	-	35,233	36,290	37,379	38,500	39,656
33	Fuel for Equipment	10,000	10,300	10,609	10,927	11,255	11,593
34	Legal (Aeronautical)	30,000	60,000	25,000	15,000	10,000	10,000
36	Airport Engineering (Non-grant)	22,000	22,660	23,340	24,040	24,761	25,504
41	ARFF Training & Certs	33,000	33,990	35,010	36,060	37,142	38,256
42	Insurance	18,000	18,540	19,096	19,669	20,259	20,867
45	Logan F.D. Stand-by Fees	5,000	5,150	5,305	5,464	5,628	5,796
46	Non-Capital Improvements	55,000	56,650	58,350	60,100	61,903	63,760
47	Total Expenses	534,500	645,769	650,538	661,406	677,824	697,310
50	Other (11 Items)	35,400	45,790	47,582	49,409	51,278	52,685
48	**Net Profit/Loss**	**(168,300)**	**33,569**	**131,763**	**124,296**	**161,727**	**162,763**

Table 9: Five Year Projection with Revenue Enhancements AND Self-Serve Fuel Sales

	Income	2024	2025	2026	2027	2028	2029
13	Ground Leases	111,200	245,411	252,773	260,357	268,167	276,212
14	Airport-Owned Hangar Rents	-	38,400	76,800	115,200	153,600	158,208
15	Landing Fees	5,500	176,167	181,452	186,896	192,502	198,278
16	USU Athletic Support	-	50,000	100,000	150,000	150,000	150,000
17	Fuel Flowage Fees	36,000	41,715	28,644	29,504	30,389	31,300
18	Revenue, FBO Fuel Sales	-	1,488,994	2,983,781	3,048,708	3,140,170	3,234,375
21	Contribution - Cache County	100,000	100,000	100,000	-	-	-
22	Contribution - Logan City	100,000	-	-	-	-	-
23	Other (3 Items)	13,500	17,785	18,319	18,868	19,434	20,017
24	Total Revenues	366,200	2,158,472	3,741,769	3,809,532	3,954,262	4,068,390
	Cost of Goods Sold	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
25	All Fuel, Combined	-	1,042,296	2,088,647	2,134,096	2,198,119	2,264,062
	Expenses	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**
26	Employees, Full-Time	79,200	163,152	336,093	346,176	356,561	367,258
27	Employees P-T: Ops, Actg., Cust S	44,900	132,000	132,000	135,960	140,039	144,240
28	Employee Benefits (36%)	44,676	106,255	168,514	173,569	178,776	184,139
29	Credit Card Costs	-	64,754	66,697	68,698	70,759	72,881
35	Equipment Maint & Supplies	25,000	25,750	26,523	27,318	28,138	28,982
36	Minor Equipment, Non-Capital	6,000	8,000	10,000	12,000	14,000	14,000
37	Buildings & Grounds	21,800	22,454	23,128	23,821	24,536	25,272
38	Snow Removal	65,000	66,950	68,959	71,027	73,158	75,353
39	Weed Control Chemicals	12,000	12,360	12,731	13,113	13,506	13,911
41	Utilities	27,000	27,810	28,644	29,504	30,389	31,300
42	Landing Fee Collection Costs	1,100	35,233	36,290	37,379	38,500	39,656
45	Legal (Aeronautical)	30,000	60,000	60,000	25,000	15,000	10,000
46	Legal (Administrative)	5,000	5,150	5,305	5,464	5,628	5,796
47	Airport Engineering (Non-grant)	22,000	22,660	23,340	24,040	24,761	25,504
52	ARFF Training & Certs	33,000	33,990	35,010	36,060	37,142	38,256
53	Insurance	18,000	36,000	37,080	38,192	39,338	40,518
57	Non-Capital Improvements	55,000	56,650	58,350	60,100	61,903	63,760
61	Other (15 Items)	35,400	66,290	78,365	83,497	85,693	87,954
58	Total Expenses	525,076	945,458	1,207,026	1,210,918	1,237,826	1,268,782
59	**Net Profit/Loss EBIDTA**	**(158,876)**	**170,718**	**446,097**	**464,519**	**518,317**	**535,546**

Appendices

The following documents are included as references for readers, to improve the understanding of the terms and processes described in this audit report.

Appendix 1:
When Governments Run For-Profit Business

This appendix will discuss recent research which measures the proficiency and efficiency of governments attempting to run for-profit businesses.

The Power of the Org Chart

Organizational design is a fascinating academic discipline and a profitable arena for high-priced consultants. But, stripping away all the mystique and buzz words, at the simplest point organizational design simply describes the shape and layout of an organization chart.

Organizational charts are important. Organizational structure is concerned with power, decisions, and directions. The structures they portray are the foundation of the power of the proposed organization; it gives one a place to stand. Structures define which decisions can be made and who has the power to make them. Structures stabilize teams from the ebb and flow of daily turmoil, providing durability and longevity to a team. Structures synchronize the work of all the individuals inside the organization and minimizes the influence of renegades who might take an organization in an undesirable direction. A good, well-fitting structure is important for the performance, efficiency, morale, and effectiveness of organizations.

But organizational structures evolve over time, testing for adaptations which enhance "survival." Modern academic literature has shown there are both good and bad organizational designs, each producing differing outcomes. The general conclusion is that the success of an organization is directly proportional to the "quality of the organizational fit" with the organization's mission and culture.

Here's the crucial finding: the structure of a government organization is ill-suited and poorly fitting to the environment of a competitive, for-profit business.

Government v. Business

At the local level, each city or town makes different choices about the services the citizens will require. These vary significantly from community to community depending upon budgets and philosophies. Some towns deal with just the basics: schools, police, streets, perhaps sewer and water services. Other municipalities invest in public pools, hiking and biking trails, sophisticated recycling services, downtown festivals and development programs. As such, each community sets its own goals and performance standards, and their organizational charts reflect those differences.

Numerous academic studies have documented that governments have difficulty managing for-profit businesses. This is because there are vast differences in the ways in which for-profit businesses and governments operate. Unlike a for-profit enterprise, a classical government agency:

- Has a highly restricted mission and a narrow zone of authority, such as issuing passports or motor vehicle licenses,
- Is more concerned with fairness in the provision of services,
- Is more stable in their operations over time,
- Serves more intangible social goals (“public safety”),
- Lacks competition, and operates in a monopolistic mode,
- Has less incentive to seek cost reductions, and
- Tends to be more procedural and bureaucratic.

In contrast, enterprise organizations are more dynamic, more focused on learning, targeted on satisfying the needs of their customers, have greater scope of action with fewer restrictions, have performance-based budgets and incentives, compete on an equal footing with other private companies, can execute contracts, buy and sell property, operate under their own corporate names, and will close if they cannot compete.

At the core of this conundrum is the fact there is a profound difference between customers and constituents. Government agencies are supervisors of their constituents, issuing (or withholding) licenses and permits to shape constituent behaviors in ways the constituents must tolerate but may not enjoy. Many government agencies (e.g., the Motor

Vehicles Department) are managers of regulatory tasks (e.g., issuing drivers licenses) for which the immediate client may not be the true beneficiary (public safety on the roads).

For example, few free-market companies could survive with a business model based on the forced compliance demanded by the building inspector, the tax appraiser, or the health department. Does the Motor Vehicles Department respond to customers' needs as quickly and sensitively as, say, American Express? Do fire departments have "customers" in the same way that Walmart does? Clearly, most of the functions performed by government are very different than those performed by the commercial sector, and each has evolved practices and procedures optimal for the challenges they face.

Governing Boards

It is useful to recall that most private-sector Boards attempt to include among their members persons with relevant skills and/or experience. This is not true in public service. The principal skill of by an individual in government is the ability to get elected.

Municipal airports are an excellent example of the blurry line between the public and private sectors. In a classical corporate environment, shareholders delegate their authority to a board of directors which, in turn, deputizes a manager to run the organization in the interest of the shareholders. The chain of command, from the boss to the staff to the customer, is razor sharp.

In contrast, consider the talents, power, training and motivations of the principals attempting to run a government-owned small airport. The ultimate governing bodies are city councils populated with persons who, quite rightly, respond to public pressure rather than strategic organizational needs or economic incentives.

It is likely that those principals will be ill-informed about the voluminous legal, regulatory, financial, and technical nuances of airport operations. Information flows up and down the organization hierarchy will be hindered. Performance benchmarking will be rare. Employee incentives will be minimal, suppressing customer-focused decision-making. Those employees directly tasked with running the airport will not be incentivized to find new markets or technologies. Industry "best practices" will neither

be examined nor disseminated, employees will not go to industry seminars or trade association meetings. Perhaps most tellingly, goals of the airport will be poorly configured and improperly monitored, so weak performance may continue for years.

It is important to acknowledge that the weak performance of public officials in running for-profit businesses is not a reflection of the people themselves. Most are dedicated officials, trying to do the right thing for their constituents. They work hard and have the best intentions. Their efforts are derailed by the system in which they are working which simply is unsuited for the job they have been asked to perform. In short, a Council's ineffectual performance and lack of awareness regarding airport matters ("They don't know what they don't know," to paraphrase Secretary of Defense Donald Rumsfeld) will generate an emphasis on maintaining the "good enough" status quo for as long as it can, as opposed to dynamic innovation and delighting the customers.

Accounting Procedures as a "Straw Man"

The assertion that governments are ill-suited to running for-profit businesses is an essential element in this report and, as a fundamental assertion, deserves a degree of skepticism and scrutiny. A good technique to test this assertion is to pick a function performed by both types of organizations and compare them operationally. One representative and well-explored example might be the accounting systems used by the two types of organizations, and while this discussion is lengthy it is probative.

Generally, for-profit management accounting systems serve two functions. First, it is the principal management tool by which a firm's operational condition is judged on a day-to-day basis. Second, it is the long-term scorecard by which success is defined at the end of the year. The rules and procedures of "managerial accounting" play a key role in the design, administration, and operation of organizations. Stock prices, tax liabilities and SEC enforcement actions hinge of the quality and probity of the managerial accounting procedures used by a company.

In contrast, municipal accounting systems almost invariably use "fund accounting" which is a form of accounting focused more on accountability and less on profitability. The focus of fund accounting is to monitor revenue inflows — including

taxes, fees, fines, and grants — and link those to the process on which those funds are spent. Unlike for-profit business, monies cannot easily be moved from one fund to another. In fact, in most municipal systems, a budget is defined in law by the "budget ordinance." Variations from expected spending require changes to that ordinance, with public meetings and votes by the appropriate public officials.

It is appropriate to consider the effects of an inappropriate accounting system, such as imposing a fund accounting system on a for-profit business. The effects of poor "fit" ripple through a firm. Managers will not receive timely financials and may not have confidence in the relevance or accuracy of those reports. Key performance indicators (KPIs) would not be collected, computed, or disseminated. Pricing and purchasing decisions would be based on erroneous data. The firm's ability to set reasonable strategic goals, track benchmarks, measure progress and make data-driven decisions would be degraded.

Other problems will appear. Financial statements and the management procedures prepared for government agencies are quite different than those prepared by for-profit organizations. An integrated fund accounting system typically cannot compute gross profit, does not offer tools for margin analysis, does not model the cost-of-goods sold, and is poorly structured for frequent price changes (aviation fuel prices change daily at the busiest airports). Municipal accounting systems do not have "customer-friendly" features such as app interfaces and loyalty cards, nor do they offer discounts to high-volume customers. A system that smoothly generates annual property tax bills can be very clumsy if it needs to quickly generate a fuel invoice or accept credit card payments. A poor-fitting accounting systems could lead to major financial losses and, in the worst case, possibly even bankruptcy.

This analysis is not merely hypothetical. The *Utah News Dispatch* has just reported the Ogden airport has "lost money" for seventeen years in a row[10]. While it is difficult to infer the details from a news summary, it would not be surprising to discover

[10] Sourced on April 30, 2024: https://utahnewsdispatch.com/2024/04/18/ogden-hinckley-airport-losing-millions-audit-finds/#:~:text=The%20Ogden%2DHinckley%20Airport%2C%20a,said%20Andrew%20Poulter%2C%20l

that (a) the Ogden airport tis managed using a fund accounting system and (b) the years with the deepest losses also were the years with the largest capital projects on the field.

There is another airport, in Pennsylvania, which has "lost money" year after year *for thirty six years,* according to the City Manager. This seems improbable, as the airport was selling fuel for $6 a gallon and buying it for $4 a gallon. Investigation found the airport purchased a full load of aviation gas at the end of every flying season (usually in October) because the tanks were nearly empty and discounts were available for buying in larger quantities. But the airport didn't sell that fuel until the following spring. The timing differential between these two events caused the airport to show a "loss" at the end of the year (the value of fuel sold minus the value of the fuel bought) even though the *unsold* inventory was still in the tanks and perfectly usable.

A managerial accounting system would have accommodated this timing issue easily; the City's fund accounting system could not.

Profits and Losses in Fund Accounting

The problem gets even more complex when major capital projects are involved. Fund accounting systems record the expense of long-term capital improvements as they occur rather than amortizing them over their expected lifespan. This process produces extreme swings in profit and loss, rendering a typical profit-and-loss statement meaningless, and may be the source of the problems in Ogden.

Consider a mid-sized airport which generates $5 million in annual revenues and produces $100,000 in profits each year. Further assume that management decides the runway needs to be repaved, for a cost of $10 million. 90% of those repairs will be funded by federal grants, but the airport will need to contribute $1 million from its own resources.

In a managerial accounting system, this transaction is trivial. The grants and expenses for the runway will be recorded as capital items and noted on the balance sheet, but not impinge upon the income statement.

In the world of fund accounting, extraordinary outcomes result. First, the $9 million federal grant will be shown as *revenue*, misleadingly causing the airport to have

ballooned into a $14 million business ($5M + $9M = $14M). Secondly, the $10 million paid for the repaving will be treated as an *expense*, causing the airport to record a deficit (loss) of $900,000. Both conclusions would be incorrect in a commercial setting but are completely correct under fund accounting. This means almost all of the common financial benchmarks used in the commercial sector — profits, losses, management ratios like the return on assets, etc. — will be misleading, inconsistent, and unstable when used by for-profit businesses run by governments.

Financial reporting is just one function of a business. Consider the extra complexities needed to manage ill-fitting purchasing systems, payroll processes, incentive programs, human resources procedures, and legal services. For other examples, the benefits paid to city employees are usually far more generous than those found in the private sector. The list of public holidays is far longer. The requirement to "bid" contracts diminishes the ability to use knowledgeable local suppliers. The inability to use commonplace incentive packages ("pay for performance") undermines competitive energies. All of these put the municipal airport at a financial disadvantage.

However, some airports are permitted by their political owners to operate with a higher degree of autonomy. These airports generally use commercial-style management systems ("Titan", "Total FBO" and "Atlas" are leading commercial examples). These can produce P&L statements, track key performance indicators, and deploy financial tools appreciated by customers (Bluetooth billing). In these cases, customer service will be rewarded, and customers will return to those airports.

In short, the best-run airports generally are those operated at arm's length from the local government.

Appendix 2:
Using Economic Impact Studies to Set Management Goals for Airports

As noted in Appendix 1, traditional financial measures such as profit or return on investment are unreliable in the airport industry because the "fund accounting" mechanisms used by governments do not relate income and expenses, nor do they segment capital expenditures from operating expenses. A better process, and one of the recurring themes of this report, will be to suggest a different tool for managing an airport. The best statistic widely available and consistently computed is to use the *total economic impact* of the facility. But before that argument can be made, it is useful to understand "economic impact" and the way it is measured.

Economic Impact Models

Economic impact is a reliable, well-proven measurement developed in the 1930s to measure the impact of one economic entity upon another. Since these tools are at the heart of this analysis it is reasonable to briefly explain the derivation of this data.

Economic impact is typically measured using "input-output" models. Input-output models were first developed by Russian economist Wassily Leontief in the 1930s in an early attempt to quantify the complex relationships found in inter-dependent economic systems. Leontief's crucial contribution was to recognize an economy was composed of distinct sectors, and each sector both accepts inputs from the other sectors and sends outputs back into them as well. No sector is an island; each sector depends on others. In 1973, Leontief won the Nobel Prize for this work.

While input-output models are complex, their conceptual simplicity, the ability to elucidate the complexity of large-scale systems, and the well-known concept of "multiplier effects" (described below) make them a widely-accepted tool by both practitioners and academics. It is a powerful methodology for assessing not only the direct impacts of an observed economic process but the exogenous impacts of

disruptive events, as long as the focal economic systems have measurable interdependencies. Because of this power, flexibility and conceptual simplicity, I-O models have been used for more than fifty years to study the ebb and flow of an enormous variety of activities, including:

- The effect of a new convention center on tourism spending in Orlando, FL (Braun, 1992)
- The economic impact of the 9/11 terror attacks (Santos, 2006)
- The adequacy and efficiency of public schools in Utah (Kuhns, 1973)
- The regional social, economic, and environmental effects of a flood control system in Arkansas (Liew & Liew, 1980)
- The changes in greenhouse gas emissions resulting from international trade (Wiedmann, 2009)
- The impact of tolls on trucks on the German autobahn (Yu, 2018)
- The environmental impacts of coal-fired electricity development in Australia (James, 1983)
- The effects of a major earthquake (Kim, Ham & Boyce, 2002), and
- The effects of tourism expenditures (Frechtling & Horvath, 1999)

I-O modeling has many attractive features. Unlike "pure" statistical forecasting techniques, a precise theoretical model is not necessary because I-O modeling is a data-driven exercise. Missing values are less critical in I-O models; smaller values can be ignored. Lastly, data can be expressed in any metric (tons, miles, kilowatts), but monetary values are often preferred as they are easily expressed, consistent, easily converted and highly understandable.

Airport Eco-Impact Models

In the United States, the Bureau of Economic Analysis (BEA) aggregates input-output data on the U.S. economy. The summaries are updated annually and provide information on 71 industrial categories. More detailed input-output benchmarks are produced every five years for 405 industrial groupings. BEA's industry groupings generally follow the North American Industry Classification System (NAICS) descriptors.

Generally, the BEA data are the "controlling sources" used by commercial input-output systems when companies develop their proprietary input-output models.

The FAA has found the commercial IMPLAN® input-output economic model to be useful in assessing the effects of airport investments. Developed in 1976, IMPLAN was one of the earliest computerized economic impact modeling systems. IMPLAN uses the BEA data and supplements it with data from the Department of Agriculture, the Bureau of Labor Statistics, the Department of Commerce, the U.S. Census, and international data for 37 industries in 64 countries. 36 states and three countries have concluded that economic impact is a valid measure of an airport's contribution to their economies, and 26 states use the IMPLAN model for their economic impact studies of their airports, including Utah.

Components of Input-Output Models

There generally are three major components of any economic impact model: direct impacts, indirect impacts, and induced impacts. These will be explained as follows:

Direct impacts are the actual spending by the target sector (the airport), and include the wages, benefits, spending and other economic outputs that can be attributed to each individual airport. Importantly, this includes activities not just any spending by the airport itself, but also all the spending by the companies and individuals based at the airport, such as flight schools and airport restaurants. Normally, direct impacts are based on data collected by an airport manager using a standardized form.

The *indirect economic impacts* are those that develop as a result of the direct impacts, specifically looking down-stream at people, companies and/or industries that benefit from the focal activity. For example, fuel is delivered by truck to small airports. Some small proportion of the total economic activity of those trucking companies goes to support that airport's activity and accumulates as an indirect impact associated with that airport. Similarly, the accounting, insurance, security, maintenance, and legal services used by aircraft owners, operators and airports are classified as indirect

impacts as well. Indirect impacts are collected by consultants or a State using a survey of the specific companies identified by the airport manager.

Induced impacts are the third type of economic energy added into the ecosystem. Induced impacts are the multiplying "ripple effect" of spending on services, supplies, wages and profits earned in the course of both the direct and indirect economic activities. This is often described as the "household" spending impact. Induced impacts are computed using the IMPLAN (or other) input-output models.

An Indiana airport economic impact study (2012, page 6) offers a pertinent example: "If a flight instructor takes his or her paycheck and buys lunch at a local restaurant, that money supports the payroll for the waiter, cook, and busboy at the local restaurant. [They…] in turn spend their paychecks on childcare, groceries, or other items, continuing the cycle until those dollars may eventually leave the community." Direct and indirect spending splash into the local economy, creating ripple after ripple, until the ability to discern the ripples is eventually lost in the background noise.

Modeling Procedures

A simple I-O model can be conceptualized as a spreadsheet: inputs on the left, outputs along the top, and sums either along the bottom and the side tabulating the total inputs and outputs for each sector.

When modeling airport economic flows, most studies begin collecting the raw data with a survey of each airport manager. That person provides the details of the airport spending which become the "direct impacts" of that airport. The manager further provides a list of airport vendors and customers. Those people and firms are contacted, their industry is determined, and the portion of their spending, employment, and revenue attributable to the airport is collected. This becomes the indirect impacts.

All of these observations are fed into one of the popular input-output models to develop an estimate of the "ripple effect" induced impacts across all the industrial categories, which are summed into an estimate of the total impacts. Some states also survey airport pilots and passengers and incorporate those expenditures into their

economic impact studies. The final output of these models can be expressed as jobs created, income earned, or total economic impact.

The decision calculus is simple: if an airport is closed, the stimulus provided by those three types of spending — the direct, indirect and induced impacts — would be lost to the community, just as surely as closing a factory costs a community jobs.

Given that background and as noted above, this analysis suggests that small general aviation airports should be measured by the total economic impact each airport delivers to the communities they serve, as measured by input-output modeling techniques.

Higher levels of economic impact are most commonly found in airports operated by independent, professional and engaged Airport Authorities. The research suggests that changing the mode of governance of the airport will improve its economic impact and its overall performance, adding wealth and prosperity to the community it serves.

Appendix 3:
Alternative Funding Sources

This audit outlines numerous changes and improvements for the airport. Many of these involve significant investments, and in times of tight budgets it would be prudent for the cautious taxpayer to ask about the sources of funding. This Appendix is a summary of some of the traditional and some unconventional funding sources available to airports.

AIP Grants

One program available to this airport are Airport Improvement Program funds (AIP grants). Every public airport of any significant size in the country is entitled to $150,000 of these Federal funds annually. These funds must be used for airport improvements and cannot be diverted to operating expenses. The definition of "airport improvements" is broadly defined which makes these funds highly useful. If the sponsor (the City) formal notifies the Dept. of Aviation, these funds can be "banked" for up to three years and then combined to fund to larger projects.

This this program usually will fund between 80%-95% of a project cost, including some engineering costs. Projects which may be candidates for these funds include runway and ramp repairs, safety projects, improved airport lighting, and self-fueling capabilities.

As one example, a self-fueling system would add a new source of revenue for the airport. While it is hard to quantify the upside effect of increased fuel sales, The cost to design, bid and install a medium-sized self-fueling system is roughly $600,000. Assuming the standard 90:10 of matching funds, a 10% match of $60,000 would be recovered within the first year. It is therefore conceivable that improved management of the fuel sales with self-fueling capability will significantly improve airport finances.

Non-Aeronautical Funding

The Dept. of Aviation is not the only organization in as state with grant funds. Other airports have successfully tapped funds from the Economic Development Authorities for projects which will create jobs and benefit the community. For example, in Utah the Department of Environmental Protection has funds for the protection of forests and wetlands. There are regional visitor bureaus in every state which are charged with attracting tourists and commercial visitors; these organizations are able to offer grants to facilities which will enhance their mission. Museums may be eligible for separate funding from the State and historical societies. Educational funds could be used if an airport were interested in promoting the art and the science of aviation, perhaps through an airport-based STEM program with the public schools. The Department of Defense has funds available through the Civil Air Patrol and other entities. While access to these funds is less assured than AIP funds, those pockets can be deep and help leverage projects over the finish line.

Earmarks

Another source of funding is to reach out to State and Federal legislatures and request dedicated funding for specific projects. This activity, typically termed “lobbying” has an unsavory reputation but is highly effective. Governments are labyrinths intentionally designed to shield legislative activities from prying eyes. While lobbyists have terrible reputations, a good one is a friendly burglar who can unpick those legislative padlocks. Lobbyists help win funding, alert industry to invisible threats, and generally secure a seat at the table for their clients. While G.A. airports may only get the scraps thrown on the floor, scraps are better than nothing at all. If and when the City decides to use its leverage with elected officials and develops a comprehensive plan of action, experience suggests State funds may be found to facilitate major upgrades. It is highly likely that each state airport council has a lobbyist team under contract and available to client airports.

Appendix 4:
Small Changes at G.A. Airports
Produce Big Impacts for Communities

(Press Release, Sept. 2023)

(Washington, DC) 84% of the nearly 5,000 public-use airports in the U.S. are owned by cities, towns and counties. New research from the University of Florida has found that approximately 54% of them are delivering sub-par performance due to simple mismanagement. This condition costs each local airport an average of $20 million annually in lost economic impact.

While most Americans are familiar with the big commercial airports, the vitality and success of smaller airports also is important, both locally and nationally. The total economic contribution of G.A. airports is in the range of $100-$150 billion annually. If all of the under-performing airports were operating near their theoretical potential, those numbers would increase by about $35 billion.

“Some small airports are great, but many are economic ghost towns. Because they’re owned by governments they can linger like zombies for years, without anybody making an effort to fix the problems,” said Dr. Mike Jones, the principal researcher of the study. Jones feels these failures are a missed opportunity. “Airports should be dynamic; they should be economic engines actively helping towns to grow, to create jobs and businesses, and help young people find careers.”

Jones’ research measured the difficulties governments have in managing for-profit businesses.

“Governments try to provide a basic level of service to everybody in a fair and impartial manner, like the Department of Motor Vehicles or the Post Office,” Jones notes. “Meanwhile, for-profit businesses do the exact opposite, trying to thrill a narrowly-defined group of target customers. That kind of niche-marketing just isn’t in the DNA of a government agency. They don’t have the organizational structures, the vocabulary, or even the reward systems to make it work.”

In short, to have a successful local airport, Jones found it needs to be removed as far as possible from traditional government structures and processes.

"I have heard of politicians making perfectly logical decisions which were completely wrong for an airport," Jones said. "A great example is closing the FBO at 5pm, or on public holidays, because all government offices close at 5pm and on public holidays. Another example is forcing the airport to use clumsy fund accounting systems which can't even produce a profit and loss statement."

Comparison of Airport Economic Impact Outcomes, by the Type of Management Organization Deployed at Each Airport

State	Airport Authority?	# Airports	Airport Average, Total Aircraft Operations/Year	Sum by State, Airport Total Eco_impact
FL		104	68,729	$354,716,683
	No Airport Authority	76	63,326	$304,868,684
	Yes, There Is an Airport Authority…	28	83,395	$490,018,393
	...It's a Strong Authority	26	88,085	$525,875,231
	...It's a Weak Authority	2	22,422	$23,879,500
NC		69	27,018	$335,162,029
	No Airport Authority	36	21,632	$81,241,944
	Yes, There Is an Airport Authority…	33	32,893	$612,165,758
	...It's a Strong Authority	20	43,151	$987,497,500
	...It's a Weak Authority	13	17,112	$34,732,308
VA		62	24,829	$102,748,516
	No Airport Authority	32	22,322	$17,945,281
	Yes, There Is an Airport Authority…	30	27,504	$193,205,300
	...It's a Strong Authority	15	37,776	$360,305,333
	...It's a Weak Authority	15	17,232	$26,105,267
Grand Total, All States		235	44,900	$282,498,396

Jones and his colleagues found a dozen organizational and operational decisions that airports could implement which would dramatically boost their success. Airports which used the optimal organizational design produced economic returns **twenty times greater** than the poorly-managed airports. Even after controlling for population, economics, geography, and airport facilities, the airport using some or all of their organizational recommendations out-performed the improperly managed airports by more than 60% (see table, left).

A surprising finding from this study was that about 20% of the airport authorities under-performed. Further investigation showed that those airport authorities rarely met, didn't update the airport web site, didn't publish their contact information or biographies, didn't publish minutes of their Authority meetings, and otherwise behaved in a manner Jones describes as "unprofessional and unengaged."

"People should look at what's going on at their airport," Jones coaches. "If there's not a construction project going on every summer, then something's wrong."

Deploying an optimal organization design is a simple management decision with profound consequences. The improvement that decision engenders raises the total economic impact of an average airport from about $30 million to over $50 million, creates hundreds of new jobs and millions of dollars in incremental wages.

Jones explained. "What's unique, what's really new here, is this study actually quantifies the havoc created by an inappropriate organizational chart. It defines the cost of having a boss who either doesn't care about the business or doesn't know the business. Knowing how much money is lost can justify the effort and investment to change the system."

Appendix 5:
Privately Funded Hangar Development

REAL ESTATE

Hungry for Shelter in New Mexico

A New Development Project Is on Track to Add 46 Hangar Spaces at Double Eagle II Airport In Albuquerque

By Grant Boyd August 28, 2023
(HTTPS://WWW.FLYINGMAG.COM/DESTINATIONS/REAL-ESTATE/)(https://www.flyingmag.com/author/grant-boyd/)

Kenny and Jack Hinkes are the driving force behind High Flying Hangars at the Double Eagle II Airport (KAEG) in Albuquerque, New Mexico. This multiyear project has been a labor of love for the father and son, who are both pilots and real estate professionals.

"There are hangars, and then there are hangars," Kenny Hinkes said. "We are building the hangars that we would build for ourselves. They are an all-steel

building with a concave, concrete floor that goes to a floor drain. Then they are coated with hard deck fuel and hot tire-proof epoxy finish. That floor is the centerpiece of the hangar because now you have a place where you can wash, not only your airplane, but you can keep the whole hangar clean. There is also a three-quarter bathroom with hot water. Right now, there is only one bathroom at the airport. And it's far away, depending on where you [have your hangar]."

The anticipated addition of 87,000 square feet of hangar space (spread between four rows) at the airport solves a problem experienced by the developers and dozens of other pilots.

"I got my private pilot license in 1970 and have been an active aviator for 53years," Kenny said. "Fast forward, [and] I have five adult children. When the kids were little, we had family airplanes. They were mostly Bonanzas, but we also had a Cessna 205 and a 414. Even though we would fly and take trips to lots of places, none of the kids showed any interest in learning to fly. I always felt like that's something that's an internal process that you don't put on any body else."

Although it didn't happen right away, strong aviation influences during childhood eventually left their mark on Jack Hinkes.

"We started going to Oshkosh in 2006, and it was always a lot of fun," Jack said. "But it wasn't until maybe 2017 that I started to think, 'Wow. Maybe I messed up and should have learned to fly when I was younger!' So, I kept saying that I wanted to do it, buy a plane, and have my dad teach me how to fly, since he's a CFI. But he would say, no, you have to really want it, and if you still want to do it later on, we will."

Jack added that 2019 was the year when he finally had the time and resources to make his dream of flying a reality. He and his father set out to buy a trainer, settling on a red Skyhawk that they flew to Albuquerque from Northern California.

"Once we got it home, I called the local FBO at Double Eagle Airport," Jack said. "I told them that I just bought a plane and was looking for hangar space, a T-hangar. The front desk person who answered kind of laughed at me and told me that they would put me down on the list. She said that there were about 57 people in front of me on the list.

"With how long the waiting list was, it was possible we never would have gotten in. Because the way it works out there is that people have friends and, whenever someone leaves a hangar, their buddy ends up in their old space, and the list

never gets served. So, we ended up putting the plane in a community hangar [at Albuquerque International Sunport (KABQ), 11 nm away]. This was nice, because it's full service, and they will pull the plane out, fuel it, and whatever. But you can't do any maintenance on your plane or wash it. It's a very controlled environment."

The Hinkeses' airplane was at this facility for six months before they decided here should be the option to keep their aircraft at their preferred home base. "Let's go build some hangars, Jack!" is how the elder Hinkes remembers beginning a course-setting conversation in May 2020.

"My background is real estate development. I build office buildings, condominiums, and shopping centers," Kenny said. "I get that process, and it's something that's very familiar to me. So, we went over to the city of Albuquerque's office and met with the aviation department. They were very excited for us to build hangars."

The High Flying Hangars project now stands as a testament to the father-son duo's tenacity. From that initial meeting, it would take three years of active discussions to negotiate and approve lease terms mutually beneficial to the developing team and the city.

"Without going into all that detail, the federal funds that the government gives the sponsor are generally funneled almost exclusively to the large, international airports that are served by the airlines," Kenny Hinkes said. "And the general aviation airports are definitely [secondary in] that system. So, we learned quickly that this was going to be an interesting process to navigate a lease and find a lender that understood how to finance construction and long-term, permanent financing for hangar buyers on leased land. I'm knowledgeable about how bankers think, since I've dealt with them for years, so we structured a deal that's very compatible with community banks and credit unions. Our buyers all have 20-year, fixed-rate financing, if they need it.

"The other issue is title insurance. If you go to most GA airports, the people that are buying and selling hangars, quote, unquote, are just exchanging money in a handshake. They typically don't have a real, constructive, equitable title to that improvement. It's just a gentleman's agreement, and that's why it's hard to get financing in most of those scenarios. We were able to get a recorded lease, a recorded sublease, [and] a recorded survey that gives title companies and lenders

the kind of security that they need. With this, they feel comfortable advancing permanent funds to our buyers.

"We are excited about the project and have 46 hangars that we will develop over the next few years. We've sold out the first row and are taking reservations on the second row. Every month, we send out a newsletter to our buyers letting them know where we are at in the process. A recent response to our newsletter from a husband-and-wife team is priceless. They are both pilots and wrote to me that they are already so excited that they are decorating their hangar."

As evidenced by the lengthy list the two encountered for their 172, Kenny said there is a voracious appetite for hangars in New Mexico's most populous city.

"People are hungry for shelter," he said. "I tell people this all the time, and it's true for our development. There are people on the sidelines wanting to either upgrade from their older airplane or get into aircraft ownership. But they are not going to buy anything unless they have a great place to keep it. They are not going to leave a new plane outside...We just got a call from a local business owner who bought a new plane, saying that he needed some where to keep it right away. We are bringing in new permanent residents to Double Eagle Airport who do not presently exist because there is no shelter."

The duo also pointed out the development is beneficial to the airport community in many ways, in addition to the obvious advantage of capturing some of the local demand for aircraft storage space.

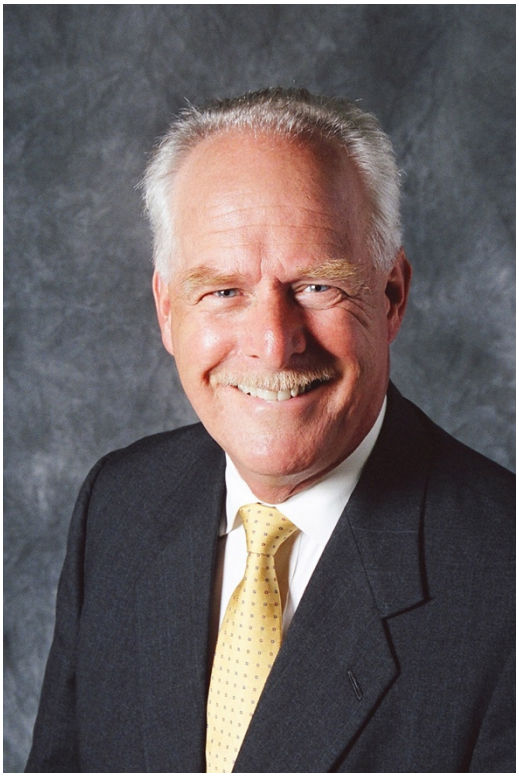
"This is such a good thing for this airport because there are old, existing T-hangars that people are going to come out of and move into our development," Kenny said. "That is going to free up some space for people that aren't ready to buy a hangar that would like a space to lease. Since there's nothing available right now, it will open up opportunities for people at different price points to have shelter for their planes. It is going to bring more maintenance and fuel sales to the local FBO. So, we have seen this as a really symbiotic relationship and a good thing for Double Eagle Airport."

Grant Boyd

Grant Boyd is a private pilot with eight years of experience in aviationbusiness, including marketing, writing, customer service, and sales. Boydholds a Bachelor's and a Master's of Business Administration degree, bothfrom Wichita State University, and a Doctor of Education degree fromOklahoma State University. He was chosen as a NBAA Business Aviation"Top 40 Under 40" award recipient in 2020.**(https://www.fl yingmag.com/author/grant-boyd/)**

Appendix 6:
About the Author

The Swelbar-Zhong Consultancy is a boutique firm in Washington, DC which provides industry analysis to aeronautical companies, airlines and airports of all sizes. Most of the firm's efforts involves benchmarking airport performance, analyzing strategies and measuring impacts. The firm also serves as a trusted, expert voice on industry issues. It is often cited in the *Wall Street Journal, Aviation Week & Space Technology*, and other prominent media. Dr. Jones is the general aviation consulting associate with the firm, specializing in the needs and issues of smaller airports.



Dr. Michael Jones has enjoyed a forty-year career in business, first in marketing with AT&T and then with a start-up industrial company. He has worked in more than 60 countries, published more than forty technical articles, and has presented at industrial conferences on four continents.

Dr. Jones has served for eight years on the Pinehurst (NC) Airport Authority, most recently as chairman. He's a veteran of the U.S. Air Force, a 4,000-hour commercial pilot, and is a well-known aviation writer.

He earned his doctorate at the University of Florida (2023). He earned his master's degree at Columbia University (M.B.A., 1976) and his bachelor's from Grove City (PA) College (B.A., 1973).

Interested parties can reach Dr. Jones at PilotMike2012@gmail.com.