THE REAL THIRD RAIL ISSUE:

Continuing to Believe That Pilot Training Requirements Will Get Changed **OR** That There is Some Other Airline/Aircraft Fix to the Conundrum –

Because Small Community Air Service is an Entitlement?

March 2022

SWELBAR·ZHONG CONSULTANCY

William S. Swelbar
Chief Industry Analyst
The Swelbar-Zhong Consultancy

BOYD GROUP INTERNATIONAL
AVIATION FORECASTING & CONSULTING

Michael Boyd
President and CEO
Boyd Group International, Inc.

Executive Summary

Whether by statute or regulation, regional airlines, network airlines, small community airports and their representatives face a very real conundrum. Given the scarcity of qualified pilots, regional airlines are asking themselves: Do I fulfill my Essential Air Service (EAS) obligations to the government and break the terms of my contracted flying with the network airlines? OR Do I fulfill my contractual obligations with the network airlines and break the terms of my EAS flying? This commercial reality is about to become a reality for politicians at all levels of government.

There are many reasons why the regional airline industry and small community air service are at a crossroads. Fundamental to it all is the number of airports within each carrier's respective network that take commercial air service for granted. The business is changing. Major airlines' pre-COVID small community service was expensive to operate. Redundancies need to be eliminated from the post-Pandemic system as too many airports receiving commercial air service lie within a reasonable driving distance of one another. Finally, there are not enough pilots to fly the 2019 network anyway.

The number of small community airports with commercial service was always going to decline as aircraft became larger, making service at many markets served in 2019 financially unsustainable. However, it is the shortage of commercial pilots in 2022 that ensures MORE non-hub and Essential Air Service (EAS) airports will have LESS scheduled air service going forward.

This thought paper is not about the radical overnight change in first officer qualification requirements that took place in 2013. It assumes that the 1,500-hr. rule is here to stay; union support and lawmakers' trepidation at anti-safety headlines will see to that.

This thought paper looks very closely at the third rail issue of consciously deciding to shutter ticket counters, holding rooms, and other Part 139 requirements at numerous airports because of a lack of trained pilots, the fact that today's aircraft are larger than many communities can support and that there is a shift in consumer travel patterns underway. There is no airline/airplane fix to the small community air service conundrum. The only real remaining solution then is to better match the infrastructure with the size of airplane being flown today.

Many airports will need to be re-purposed because even in a best-case scenario, the 2019 level of regional service cannot be achieved. And some consumers will be disenfranchised as well.

The highway has been and remains the first mode utilized to access the air transportation system for millions of passengers today. In fact, the tactic of luring air travel consumers to use the highway system to access the air transportation grid was so successful three decades ago that the U.S. Department of Transportation dubbed the strategy and its impact on markets as the **"Southwest Effect."** If it was a good strategy then, it remains a good strategy today.

The thought paper is not about the fact that there are too many airports with commercial air service in the system. It is about the expectation that commercial air service will forever be provided. One of the many challenges of this thought paper is to help all stakeholders fully understand, appreciate, and embrace is to dissuade the age-old thinking that an airport's relevance can only be measured by having commercial flights. Airports around the country have lost commercial service and not one of the communities served by that airport has vanished from the map. The same was true of railroads eliminating a stop as well.

To provide context on today's regional airport system is to recognize that its design and commensurate expectations of commercial service occurred 15 years before the interstate highway system was completed.

In the Lower 48 states, there are 302 nonhub and Essential Air Service (EAS) airports as defined by the FAA that were studied. **Of the 302, 260 lie within 180 miles** of a large, medium, and small hub airport. No airports outside of the Lower 48 states are included based on their unique circumstances. Of the 302 airports, 55 are EAS airports and 247 are considered nonhub airports by the FAA. Of the 260 airports that lie within the mileage assumption, 43 are EAS airports and 217 are considered nonhub airports by the FAA.

There are 83 nonhub airports that lie within 180 miles of the defined larger airports that have fewer than an average of 3 departures per day by the network carriers and/or Southwest. Of the 83, 57 lie within 180 miles of at least 3 larger airports that also receive less than 1 average daily departure. It is this group of airports that absolutely are considered candidates for consolidation into a regional airport. It is assumed that airports cannot compete with alternative airports with less than 3 frequencies per day on average.

Of the 82 EAS airports in the lower 48 states that lie within 180 miles of a larger airport, 48, or 59%, have at least 3 larger airports inside of that mileage band. Still troubling is that the average number of departures by airlines that can provide the greatest connectivity are less than 1.

At the end of the day, it is simple: Either the rules change regarding the training of first officers and the overnight production of a right-sized aircraft the network carriers might employ, or small community airports will continue lose commercial service. Neither are going to happen soon enough, if ever. Pilot unions do not care about small community air service. Legislators and some other industry stakeholders do. And much of this is about unintended consequences.

Contact the Authors

William S. Swelbar
The Swelbar-Zhong Consultancy
Swelbar@Swelbar-ZhongAir.com
703-625-1130

Michael Boyd
Boyd Group International
MikebB@aviationplanning.com
303-674-2000

Table of Contents

SWELBAR·ZHONG CONSULTANCY

BOYD GROUP INTERNATIONAL
AVIATION FORECASTING & CONSULTING

The Swelbar-Zhong Consultancy and Boyd Group International Have Not Been Compensated for This Thought Paper.

Just Because We Are Thinking About it, Does Not Mean We Are Advocating for it.

Common Sense Says That There is No Aircraft Technology or Airline Fix to the Conundrum Facing the Small Community Air Service.

Nobody on Capitol Hill is Willing to Touch the 1500-Hour Rule for Fear of Being Linked to Negative, Anti-Safety Headlines.

Airline Pilot Labor Does Not Care About Small Community Air Service Despite the Fact That the Sector Delivered 42 Million Passengers to Mainline Carrier Flights in 2019.

Therefore, the 535 Lawmakers on Capitol Hill Will Finally Have to Accept That the Pilot Training Rules Put into Effect in 2013 Are Accelerating What Has Been Inevitable: All Airports Cannot Be Served.

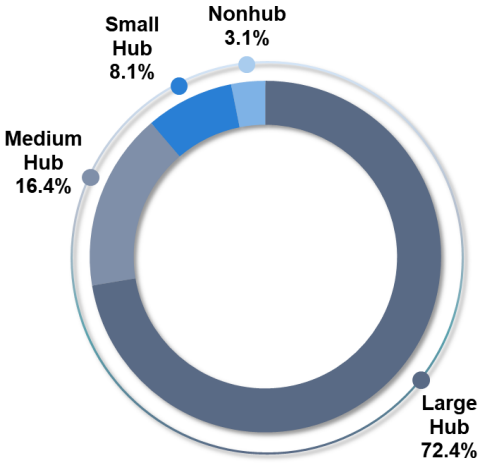
We Can Either Do Something About it OR Soften the Landing for Some by Accepting a Tradeoff of Long-Held Beliefs That Need Changing …

… OR We Can Let the Market Continue to Speak its Harsh Message.

1 Critical Definitions and Primary Data Source

Throughout this thought paper references to categories, or sizes, of airports as defined by the Federal Aviation Administration (FAA) are prevalent. The definition is based on the number of passengers enplaned at U.S. airports. The chart below shows how the FAA defines/designates airports.

FAA Definitions of Airports by Hub Size
Percent of 2019 Passenger Enplanements by Hub Size



	Large Hub	Medium Hub	Small Hub	Nonhub
FAA Definition (Pct. of Total U.S. Enplanements)	>1%	>0.25%	>0.05%	<0.05%
Number of Airports	30	32	72	302*
Share of Total U.S. Enplanements	71.0%	17.0%	8.6%	3.4%
High (Enplanements in Millions)	ATL – 53.5	BNA – 8.9	MEM – 2.3	
Low (Enplanements in Millions)	PDX – 9.8	CHS – 2.4	FAR – 0.48	

*Airports in lower 48 states only.

Primary Data Source for Analysis:

As in every analysis prepared by The Swelbar-Zhong Consultancy, our trusted source for airline-related data is Airline Data Inc.

Acknowledgements:

Analysis: Albert Zhong, Senior Industry Analyst, The Swelbar-Zhong Consultancy

Production: Derek Marazzo Graphic Design

2 Preface

The U.S. commercial airline industry is often referenced as the most regulated deregulated industry in the world. Sadly, today's commercial space is not immune from language unearthed in the Airline Deregulation Act of 1978 governing some small community air service and framing the remainder. Augmenting that historical language with new "safety regulations" adopted in 2013 governing what defines a qualified airman or woman to sit in the right seat of an air carrier aircraft. An unintended consequence is that the U.S. regional airline industry in 2022 could not produce the same level of 2019 service without certain variables in the air service equation having to be compromised.

Whether by statute or regulation, the best hope for small community air service as we knew it in 2019 becomes a zero-sum game in 2022. The regional sector will be smaller whether because of pilots or not having the right-sized regional aircraft. The regional jet aircraft that remain in the network will be shifted to fly the most profitable missions. Little if any growth can be expected in the regional space.

The number of small community airports with commercial service was always going to decline as aircraft became larger, making service at several markets served in 2019 financially unsustainable. However, the shortage of commercial pilots in 2022 ensures that MORE nonhub and Essential Air Service (EAS) airports will have LESS scheduled air service going forward.

The term "safety" has become the curtain that organized pilot labor will hide behind and remain beholden to a belief that training hours should have been increased six-fold overnight following a February 12, 2009, turboprop accident in Buffalo, NY. If we are going to accept that the 1,500-hr. rule is unchangeable then many airports must embrace a less-than-ideal outcome.

3 The Available Pilot: The Small Community Conunudrum is Real

This thought paper is not about the radical overnight change in first officer qualification requirements. It assumes that the 1,500-hr. rule is here to stay; union support and lawmakers' trepidation at anti-safety headlines will see to that.

Pilot unions do not care about small community air service — but elected officials do. So do airports and even airlines, albeit to a lesser extent as costs are on the rise to provide the service. Based on the assumption that pilot training requirements will not change then, a simple supposition is at the fore: There are not enough pilots to replicate the 2019 commercial air service network — meaning stations and frequencies will be less — in 2022.

There are regional airlines that serve small markets subsidized by the government as part of the EAS program and smaller markets served as part of a contractual relationship between a network airline and the regional partner. The markets contracted by the mainline carrier to fly to smaller communities are served without subsidy. Given that individual pilot time is finite and regulated, something must give, and the lesser producing airports stand to lose their commercial service.

The federal government and regional airlines face a very real conundrum: If there are not enough pilots, do they stop flying to EAS markets contracted for with the government so they can fulfill obligations with mainline partners, or do they satisfy their EAS obligations and break terms with the co-branded network carriers?

Legislators will loathe the commercial airport in their districts losing service because their inherent belief is that their constituents are entitled to scheduled airline service. Many airports will need to be re-purposed because even in the best-case, a 2019 zero-sum outcome cannot be achieved. And some consumers will be disenfranchised as well.

This thought paper looks very closely at the **third rail issue of consciously deciding to repurpose numerous airports** because of a lack of trained pilots and the fact that today's aircraft are larger than many communities can support. Difficult decisions confront every stakeholder that assumes the 44-year-old promise of small community air service by the federal government will continue forever.

A Railroad Industry Example of Legislation to Consider

In the late 1970s, Congress worked diligently to pass the Staggers Act. The legislation proved to be critical by enabling a loss-making freight rail industry to discuss freely with stakeholders the kind of changes that would be needed to turn the industry's fortunes around. That legislation was a major contributor in assisting the industry in remaking itself and becoming an enviable profit-making one.

Some of the fixes had to do with infrastructure. Short line railroads were born.

Other fixes had to do with vendor relationships and how to better do business. **As part of the process to address the many factors contributing to the freight rail industry's losses, the railroads and their stakeholders were granted numerous antitrust immunities to discuss sensitive commercial issues.**

There are many factors that point to a smaller network carrier airline industry in terms of connectivity in a post-pandemic world simply because aircraft size is getting bigger. This might mean that certain hubs may shrink. Smaller hubs mean less connectivity possibilities. Less connectivity equals reduced service levels at the nation's smaller airports previously dependent on service to a respective connecting hub. And now, there are an insufficient number of pilots to fly the networks desired.

ADD IT UP, AND A CLEAR NEED TO PRIORITIZE AIRPORT INFRASTRUCTURE PROJECTS EMERGES.

AIRLINES, AIRPORTS, AND THEIR RELATED SUPPLY CHAINS SHOULD BE GRANTED IMMUNITY TO DETERMINE WHERE INVESTMENT IS NEEDED AND WHERE FINITE RESOURCES SHOULD BE SPARED.

4 Industry Context:
Today's Regional Airline Role

Certain relics of past legislation remain that distort air service and the expectations many have for commercial air service. In 1977, the year before the airline industry was deregulated, U.S. commercial airlines carried 240 million passengers. By 2019, the industry that emerged under the legislation change carried 927 million passengers. A change in the framework governing the industry was not the sole contributor that caused it to grow by nearly four times over that time span, rather a myriad of innovations would take place as U.S. commercial aviation evolved in the post-deregulation era.

Many things have contributed to industry's explosive growth – some can be analytically-explained; others cannot. Of those that cannot, the following list is not intended to be exhaustive as there were too many permutations and nuances to mention. Rather we will limit the list to certain factors that economist Michael E. Levine, the right-hand man for the father of deregulation Alfred Kahn, would often cite.

1) A wave of mergers and **consolidations.**

2) A higher-than-expected degree of **vertical integration** in the industry, especially as demonstrated at the level of **commuter airlines.**

3) The dominance of **hub-and-spoke systems.**

4) The surprisingly **complicated fare structure** which has become characteristic of deregulated markets.

5) The importance of **frequent flyer programs.**

6) The significance of **travel agents** and the **proliferation of incentive payments to them.**

7) The role of **Computer Reservation Systems (CRSs).**

8) The emphasis in firm strategy on **gaining and keeping control of airport slots and gates.**

9) The **high casualty rate among new entrants.**

It is consolidations along the way; the vertical integration between the regional carriers and the network carriers; hub and spoke systems; frequent flyer programs; and the control of airport gates and slots that help explain the growth of the industry that incorporates the regional airline sector and the consumer benefits and choice that integration fostered.

THE ONE AREA LEVINE DID NOT INCLUDE THAT IS MOST PERTINENT TO SMALL COMMUNITY AIR SERVICE TODAY IS THE GROWTH IN THE NUMBER OF SEATS PER DEPARTURE BEING DEPLOYED INSIDE OF RESPECTIVE CARRIER NETWORKS.

Hub-and-spoke systems began appearing around the country as a network model that most efficiently gathered and redistributed passengers throughout each carrier's system. Small commuter/regional airlines supported the building of hubs and spokes by connecting small communities and rural areas to and from the hub city using smaller aircraft. The number of seats per departure offering that service to the hub city were initially 9; then 19; then 30; and then 50 and today up to 76.

Those same small communities that were once served by turboprop aircraft that seated between 9 and 30 passengers per flight are now served with 50-seat jet aircraft--the smallest configuration in most carriers' networks. Simply thinking of the economics to generate an 80% load factor in today's world -- based on the increase from 30 to 50 seats, each small community with some level of scheduled air service needs to produce an additional 16 passengers per flight every day. That is easier said than done.

The trend in aircraft size is clear. The 50-seat aircraft is too big to be profitable for many small communities. It also provides an inferior product compared to larger regional aircraft that can economically accommodate two classes. These are the major reasons why they are being phased out of the networks of American, Delta, and United.

The wages paid to the pilots flying the regional aircraft have increased by nearly 50% since 2015. The increase in wages plus the price of oil as this is written—above $90/barrel--means the economics do not work to serve all the smaller communities that were on 2019's route map.

Another elephant in the room, however, is that there are not enough qualified pilots available to fly the aircraft that the air carriers would like to deploy to the nation's smaller airports. This only compounds the issue. The economic decision is a very easy commercial decision for the airlines: park the smallest aircraft because of its cost per seat to operate and fly the larger aircraft because it can generate more revenue. The cost of operating a 50-seat aircraft or a 76-seat aircraft is negligible when one considers that the larger regional aircraft can generate 50% more revenue.

Facing this financial decision, airlines will of course decide to park the smaller aircraft and use pilots assigned to those smaller jets to fly the larger airplanes.

For the first 35 years of deregulation, the commercial airline industry was populated with airmen and women who flew for one of the arms of the military. The military was the assumed training ground for commercial pilots. Today, the military is being forced to innovate and find financial mechanisms to retain the pilots they recruited and trained who might consider leaving for the commercial side.

If airports want to be credited with yesterday's math of the economic generation that commercial air service bestows on local, state, national, and global geographies, then tough decisions are imminent. Fix or don't fix the third rail issues. Afterall, it is fast becoming a zero-sum equation that is shifting downward.

Because markets evolve naturally most economic impact calculations have imbedded assumptions about levels of service. The concern of the authors of this thought paper are that yesterday's service levels of at least 3 departures per day are being reduced to something less than 3. **The loss of time-of-day service likely results in an exponential decline in economic generation along the lines of what the "S-Curve" might suggest about market share. That is not the purpose of this thought paper, however it seems important to consider.**

For legislators and trade associations and small communities that take commercial air service for granted, any discussion along these lines has been/is a third rail issue.

We submit that **doing nothing creates the real third rail issue.** Just like consolidation in any commercial space creates efficiencies by ridding a business of redundancies, the same should/can be true if infrastructure is better adjusted to match the realities of the marketplace.

There are too many airports that need smaller airframes to sustain profitable service. There are not enough of the right-sized aircraft with trained pilots for all to remain a dot on the airline map. A system can be devised that will provide for greater consumer and regional/local economic benefits. But it will require stakeholders with long and myopic memories to agree that a commonsense variable needs to be added if the zero-sum equation is to be solved.

The table is now set for discussion.

1. **The aircraft desired by airlines to serve small community airports are too big for 100+ airports receiving commercial air service today.**
2. **Even if there were a desire to fly the smaller regional jet, there are not enough pilots to satisfy the level of flying desired by the government or contracting carriers.**
3. **There are federal requirements to serve certain airports classified as Essential Air Service (EAS) airports that are not essential today .**
4. **Commercial air service airports most often point to airlines as the problem stakeholder. Today's situation is an airport problem too—and a government one as well. Airports and government have skin in this game with "skin" defined as promises and outdated expectations bestowed on members and constituents.**

ANY FIX WILL REQUIRE ALL STAKEHOLDERS COMING TO THE TABLE WITHOUT SOME COMPROMISE IN POCKET IS UNACCEPTABLE.

5 Introduction, Purpose and Motivation

5.1 Introduction

There are many reasons why the regional airline industry and small community air service are at a crossroads. Fundamental to it all is the number of airports within each carrier's respective network that take commercial air service for granted. The business is changing. Major airlines' pre-COVID networks were expensive to operate. Redundancies need to be eliminated, and there are not enough pilots to fly the 2019 network anyway.

As aircraft size grows, not all airports can economically be served. Commercial entities seek to best match supply and demand. Why doesn't the airport infrastructure seek to consolidate to find efficiencies that cannot be found applying 40-year-old thinking?

At this juncture in the industry's maturation cycle, the confluence of events is totally different when it comes to providing commercial air service to all airports. Historically, pilot shortages timed with the end of an economic cycle and were dampened in the downturn. Not this time.

Prior to 2017, regional carriers were used as an arbitrage tool to average down total network pilot labor costs. That's over, too. Recently, pilots at regional carrier PSA were offered up to $187,500 in bonuses. This industry is a pattern bargainer despite what the economics might say.

Customers want larger (read: two-class) aircraft. They don't mind driving to find it. A region with one commercial airport would be better served if available seats might match consolidated demand rather than 3 individual airports with a few daily frequencies to/from each of them. Further, the old way of thinking only works to fragment demand. Fragmentation of airline markets has been proven to be a less than desirable structure for both the provider and the industry's stability.

Small communities cannot satisfy their demand base with 2 frequencies per day. They cannot begin to retain their local traffic with multiple options available within a reasonable driving distance. Potential re-purposing of some small airports will result in more economic generation than scant air service for the sake of air service produces.

The air service promise the U.S. government made to small markets that was necessary to get the Airline Deregulation Act (ADA) passed in 1978 has run its cycle. The government ensured that small communities remained served through the pandemic. Now, there are no more CARES Act protections on the way that will artificially underwrite commercial air service either.

That promise the ADA created was the Essential Air Service (EAS) Program. Given the structural changes this industry has survived over the past 40+ years, what was deemed "essential" in 1978 is NOT today's "essential". Back then, the interstate highway system was 15 years from completion thus less of an option to access the air transportation grid. That point alone should define for anyone gripping the third rail that the regional system as we know it cannot operate in perpetuity. It is but a hope in 2022.

5.2 Purpose

Today, revamping networks to better reflect demand and ensuring there are enough pilots in the pipeline is far more essential than ensuring 400+ communities in the Lower 48 have at least one flight to a hub. One purpose of this thought paper is to ask decision-makers whether data- supported common sense can be injected into the discussion about what to do about small community air service as the small jet phases out.

The small regional jet (RJ) fleet did many things over its life cycle. It introduced increased hub competition where turboprops did not have the range to fly outside of 400 miles. Small RJ flying was a labor arbitrage tool to average down pilot costs that was necessary as labor cost pressures escalated. It was consumer friendly at its inception as compared to turboprop service. It was also a critical tool in keeping small communities connected, often providing competitive service while most of the industry was forced to restructure in bankruptcy.

Then the industry consolidated during an oil spike and a global recession that challenged balance sheets for all and demonstrated that the combinations produced an outcome that was greater than the sum of the parts. [This statement is a critical takeaway for readers that ignore consolidation's benefits.] Frequencies at many airports were reduced in the name of redundant flying but presence was maintained. In bankruptcy, carriers were more easily able to win access to the more preferred larger RJs that consumers desired.

The penultimate chapter in the small RJ book is reducing the number of hubs served from any airport yet still maintaining some carrier presence at that airport. This is happening today and will continue. With the pilot supply situation, the final chapter titled market exit will be written for some. SkyWest is asking to vacate EAS markets because of a lack of qualified pilots. To continue with the government subsidy program means that they cannot fulfill the contractual obligations with their mainline partners.

For airports, the emotions are many. Memories are long. Expectations are too high in assuming that service to all small communities will continue in perpetuity as the deregulators promised. Finally, the U.S.'s Big 3 hub-and-spoke airlines-- American, Delta, and United—have reached a maturation point where they can no longer be everything to every airport.

The ultimate point in writing the paper is to remind airports that they do more that move passengers.

The New Economy tells us that just-in-time logistics are not going away.

We also need to rethink the calculation of economic impact.

Just because and airport is not connected by scheduled airline service does not relegate its community to irrelevance. It just begs the question: if frequencies fall below an average of 3 per day, is too much credit for economic generation being conferred to the small local airport?

INNOVATION — NOT TWO SCHEDULED FLIGHTS PER DAY TO THE NEAREST HUB — IS WHAT WILL BRING JOBS TO A COMMUNITY.

5.3 Motivation

The primary motivation behind this paper is to help others see what we see and to put numbers in decision-maker's hands that support outcomes many do not want to talk about. The numbers do not lie. The trend lines are not suddenly going to ascend after their steep descent over the past decade.

There are many other motivations: After more than 80 years in and around the industry we have been frustrated by inertia. We are frustrated by the NIMBY concept that propagates that low public acceptance of change is OK. We have been energized by the industry's resilience and innovation. At the end of the day, airlines have mobile assets. Airports do not. Without airlines, there is no commercial service—read, no economic generation—at an airport.

It is expensive to be a commercial air service airport. In today's world, the return on that investment (ROI) is most likely not commensurate with the risk. For most airports designated as EAS, nonhub primary, or nonhub nonprimary there is insufficient demand to make for a sustainable service to all points the consumer demand. That is why the air travel consumer drives to find the specific service it seeks. Available service, product, and its price are easily found.

There must be a better structure looking forward than what the data suggests. Just because we are talking about it does not mean we are advocating for it. But what if a trade association came up with a plan where consolidating three airport assets resulted in a better economic generating outcome than what 3 airports produced individually? This would help airports adapt to the New Economy while retaining the asset's economic generation capabilities. That is what is important. All that changes is that states and legislators and trade associations must accept that in some cases regions will be the nodes on airline maps, not some community with less than 100,000 inhabitants and less than 10,000 enplanements.

Some regional air service for the sake of air service is only a band-aid. Yet air service without interline agreements and code-sharing attributes by regional carriers is promoted as a community and consumer win. IT IS NOT. That way of thinking has good money chasing bad service that will never provide an investable ROI if the real assumptions used are based on today's realities.

6 What This Thought Paper is About

The simple fact is this paper is making abundantly clear that the use of alternative airports is already happening—and has been for decades. Every small airport knows this. That is why airports engage consultants to perform leakage studies – an analysis of some community's local population that are presumed to be captive passengers of the local airport that instead are driving to an alternative airport in search of a service with a product and a price that meets the air travel consumer's needs and wants. Assuming local passengers should be captive is fraught with error.

Southwest Airlines used/uses low prices at all its airports that are within a reasonable driving distance from one or more local airports to poach traffic. The strategy was wildly successful even when the network carriers had the right-sized aircraft and sufficiently trained crew to serve small communities. In fact, it was so successful that the U.S. Department of Transportation studied the competitive strategy that Southwest employed dubbing its impact on markets as the "Southwest Effect". Simply, and as a matter of fact, the highway has been and remains the first mode utilized to access the air transportation system.

Surely what was accepted in 1990 is not being rejected today by the airports that benefited or a government that applauded the innovation and consumer choice conferred as an outtake of deregulation.

This paper should also make clear that not all airports are created equal. Further it points to the fact that there is not a one size fits all solution to individual airport market vacuums. This paper should also scream caution at funding all airports because that is what has been done forever.

Once the industry gets back into a post-pandemic and sustainable growth mode, there will be infrastructure needs that might not have been evident pre-COVID. Should we really be handing out $1 million to any airport with 10,000 enplanements, as is the case today?

Why not combine the disparate $1 million(s) into $3 million and build out a facility that better satisfies a region's needs? Such an approach would make 1 + 1 + 1 >3.

Moreover, it will prove to be "essential" to providing the very best airport infrastructure going forward – free of ghosts' past with long memories. The million dollar pay days provide for a disproportionate windfall to many small community airports when demand is gravitating to areas not previously considered and away from others.

We need to think about the taxpayer's ROI as decisions are made to fund the airport system. Monies are finite and not all airports are created the same. Mindsets among all stakeholders involved in these funding decisions should at least accept that.

7 What This Paper is Not About

This study is not about continuing to reward staid thinking. It is not about a walk down memory lane. It is not about punishing airlines because they cannot be everything to everybody in a post-pandemic world. It does not embrace that the passenger facility charge (PFC) is right for all airports based on the criterion that money needs to be invested judiciously, not because one airport or another might qualify based on some archaic piece of language found in the bowels of the FAA. **It is not about doing away with EAS either.**

It is also not advocating for fewer airports. It is asking decision-makers to seriously think about what the best airport architecture is to satisfy the future consumer's needs and wants given the maturation point along the industry's cycle. A different consumer is on the way, and it is not the Baby Boomer generation that has likely shaped much of today's architecture and thinking. It is the Gen X's, Y's, and Z's that will undoubtedly demand something different. They are not the population comprising the smaller communities either.

8 Market Evolution and Common-Sense

This thought paper is about common sense at its very foundation. It also makes clear how the many unintended consequences that prior legislation is causing will impact several small community airports.

What is air service? It either provides access to and from points around the globe, or it creates a consumer imperative to fly somewhere. In each case, air service must possess certain factors that meet consumer needs and at a minimum is superior to other transportation alternatives. Air service does not necessarily need to begin or end at the local airport closest to the consumer.

In many cases, the economic and demographic makeup of the community served by the local airport is not sufficient to attract the entirety of all air service the consumer demands. Today, this fact causes numerous air travel consumers to use the highway to travel to an alternative airport with more service options to access the air transportation system.

What is consistently missed in virtually all air service development studies and proposals is that "air travel" is more than just the flights involved. The air transportation system is multi-modal. Every trip via commercial aviation involves at least two surface access segments and at least one flight between the passenger's origin airport and the destination airports.

It is the combination of the two modalities – air and ground – that determine the relative time value of a specific air service option. Total trip time to complete the entire journey should be a critical determinant in choosing an itinerary. Yet most air travel consumers and air transportation analysts only consider the air portion.

An example of the total trip time concept involved Laughlin-Bullhead City on the Nevada/Arizona border that used a Small Community Air Service (more in Section 6) grant to subsidize an American Airlines service to its Phoenix hub. Another alternative for consumers to consider was a 90-minute drive to Las Vegas (LAS). On paper, the 50-minute flight was superior.

The Small Community Air Service grant simply assumed that taking a flight was certainly better than a drive through the desert. However, when total trip time was considered in "real time", that flight to Phoenix could not time-compete with the combination of a 90-minute drive to LAS and the choices awaiting the Laughlin/Bullhead City air travel consumer to a myriad of points

Just because there are flights at the local airport should only be but the first consideration regarding the veracity of scheduled air service as the first mode of access into the system. Often time it is not.

The Latest Communication Channels – 1960s

BOYD GROUP INTERNATIONAL
AVIATION FORECASTING & CONSULTING

The communication channels that were relied upon during the 1960s also happened to be the decade that much of the U.S. airline/airport network architecture was being designed and put in place. Whereas those communication channels like the typewriter, the television, the telephone, and the fax machine are still used, each have undergone uncountable numbers of transformations to meet the demands of business and the consumer.

What hasn't changed at its core technology is commercial air transportation. Airplanes still fly at the same speed. The need for physical proximity to do business is much less given the innovations in communication channels. The air travel time-efficiency has deteriorated significantly relative to these new derivatives that are rendering short-haul modes of air service uneconomic.

The business base and consumer needs that supported small airliners in the 1980s have both disappeared. This means the machinery that provided mainline airline connectivity to several rural communities is gone, too. This thought papers focuses on the airframe finding the same fate as the turboprop aircraft have: the 50-seat and less jet.

Markets evolve either naturally or an exogenous event impacts the trajectory of that market's lifecycle (think 9/11). Short-haul, intra-regional service with independent commuter airlines is but a very small piece of the U.S. commercial aviation system. Simply, regional industry economics have changed. The consumer's needs and wants are undergoing change. The business communication needs have changed.

These structural changes are compounded by the fact that the time-efficiency of shorter-haul travel cannot compete with the computer on speed to market. The fact is, just about every attempt to initiate new short-haul service over the last twenty years has failed. There is no independent turf-based regional airline industry, any more like there was through the 1980s. The vertical integration with the larger network carriers significantly altered the marketplace for the small regional air service provider.

The goal for today's government policy is to assure that communication connectivity with the rest of the nation and the globe is robust. Air travel is but one communication channel. When it comes to contemporary small community air service, the highway is the first mode of access to the air transportation grid for many today. The local/regional airport simply cannot compete with alternatives within a reasonable driving distance with a longer menu of schedule offerings.

AS POPULATIONS SHIFT, BUSINESSES MORPH, AND CONSUMERS AGE, ACCESS HAS NO ONE DEFINITION. IT IS TIME TO THINK ABOUT THINGS REGIONALLY

As the trend in aircraft size continues to increase, there was always going to be less small community air service than was provided in 2019 – a level that was smaller than in 2015. There are any number of rural communities in the Lower 48 states that will still require some form of air service. However, as economics change for the worse when it comes to profitably serving small communities, the good news is that the commercial air service industry is re-thinking itself as well.

We still have the network airlines that are responsible for connecting nodes large and small around the world. It is the network carriers that have been the lifeline to the air transportation system historically. Now most are too small for the same network carriers to continue serving. But if regions were to carefully assess whether it would be better off with one airport instead of three, an opportunity will likely present itself where the air service channel gets better than the sum of 1 + 1 +1.

New "Impulse Traffic" airlines are expanding their reach. These airlines are primarily focused on leisure destinations and often call home to some small community airports in the U.S. While the service provides access, these airlines do not have connectivity for sale. But their success demonstrates clearly that these airlines satisfy a certain segment of consumer demand.

Giving up the ghost that small community air service is the only channel that keeps certain population bases relevant is a 2022 myth that needs to be dispelled. There is life after a network carrier service might decide to vacate a market. Economics will have likely made that decision as airlines do not like to exit markets all together.

Section 6 will explore that life after. But in conclusion, every local politician and airport board member has a fiduciary duty to ensure that the local airport, or maybe the airport as part of a larger region, is maximizing its economic production.

9 Trends Analysis

9.1 The Covid-Induced Recovery of the Airline Industry

At this writing, the U.S. airlines have all announced their earnings for CY 2021 and their initial outlooks for 2022. The good news for 2021 -- the industry stopped burning cash (internal and external cash inflows exceeded outflows). This is a critical first stage in any recovery. It was hoped that the industry might begin the transition to a full profitability stage in 2022, but that has been slowed by the impact of the Omicron variant that in turn slowed a more immediate return of business and international passenger traffic.

Much has been made during the COVID Era about the quick return to 100% of domestic leisure travel. New dots on the airline maps have appeared and others have gotten bigger. The return of domestic leisure is important in that it reflects the desires of the air travel consumer to fly. But the total industry is much more than Florida, Texas, Arizona, Hawaii, and Nevada, to name a few. The recovery equation's product is made up of three variables: Domestic Leisure + International + Business Travel = A Full Recovery. The industry is not there.

Because business and international travel have not fully recovered, the downline impacts on all sectors of an airline's product offerings are impacted. The pre-COVID domestic network in the U.S. filled 15% of its seats with passengers traveling to/from international destinations. Domestic and international first and business class seats were filled with business travelers that typically pay disproportionately and in turn cross-subsidize other parts of an airline's network enabling the domestic system to add service and enhance competition. To provide context, in 2019, American, Delta, and United Airlines carried nearly 42 million passengers to/from the small community airports in the U.S. most often to their respective connecting hubs.

The Big 3 network carriers (American, Delta, and United) spent more than $21 billion purchasing capacity from numerous regional airline operators to carry those 42 million passengers to/from their respective connecting hubs. At the outset of the pandemic, no one truly knew how to plan for the event other than the fact that the events of 9/11 taught the industry the need to build and borrow to have as much liquidity as possible to weather the unknown storm. No one truly knew how revenue might be generated during the Pandemic Era – if at all.

In a need to reduce costs, the U.S. airline industry offered early retirements, extended leaves of absence, and other options to employees based on a never-before seen reality – passenger demand on a day in early April fell to less than 5% of the same day in the prior year of 2019. Fewer passengers mean smaller airline networks. Smaller networks mean that some hubs where passengers connected to other flights would be smaller. Smaller hubs mean that the same number of connecting opportunities critical to make small community air service profitable would be fewer.

The return of passenger demand during the Pandemic Era has been uneven. Strong in some months and not in other months. Strong in some geographies and not in others. It is very difficult to staff any business where the peak months are extreme multiples of other months. There was a large peak in demand during the months of June, July, and August of 2021. The peak exposed the fact that the industry did not have sufficient manpower to produce the same product delivered in 2019. The lack of manpower impacted jobs requiring both skilled and unskilled labor.

Significant attention in this thought paper focuses on pilots, but mechanics, dispatchers, air traffic controllers, and many other frontline-workers positions need to be considered as well. Pilots are highly skilled and require years of training to garner the number of hours required to sit in a first officer chair in an airliner carrying passengers. As consumer demand was peaking, airlines rushed to bring aircraft back into service. That also meant matching pilot skills with an aircraft type. Pilot labor, and other labor, would prove to be less than necessary to deliver scheduled service as promised to the consumer.

For airlines to find more pilots that meet the statutory requirements to perform commercial service, two methods are available: 1) begin to train a pilot corps; or 2) poach pilots with the necessary requirements from other airlines.

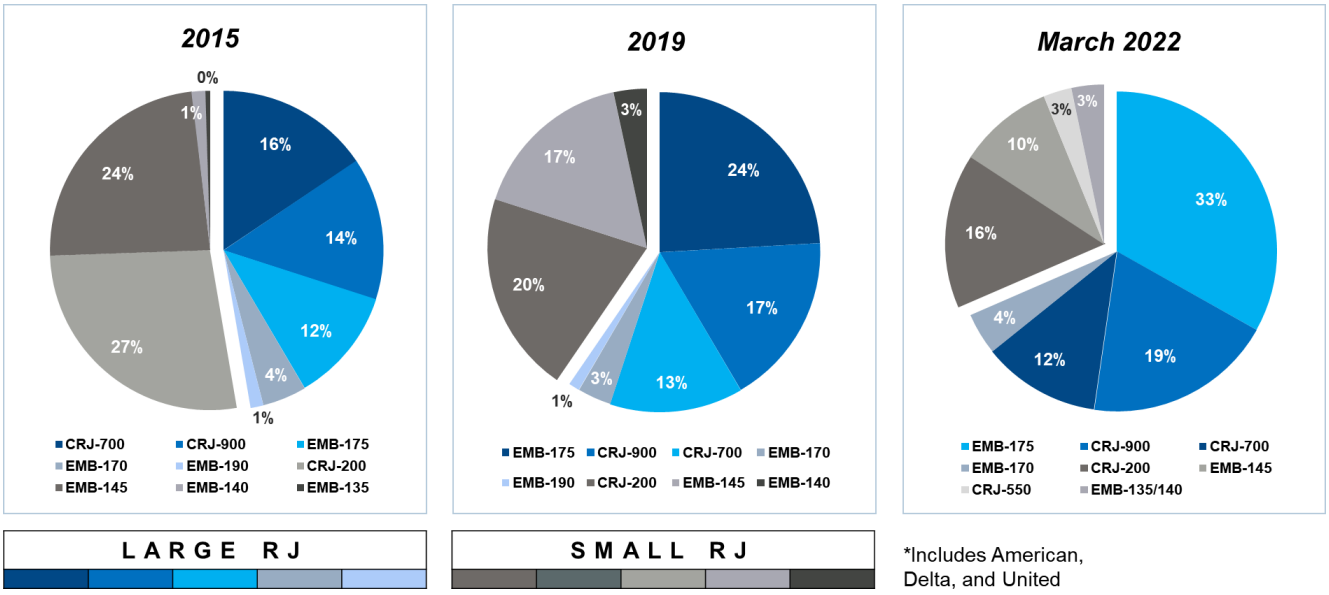
Because it can often take up to four years to fulfill the training requirements, demand is forcing the airlines to poach pilots. Some carriers are looking as far as Australia. Others are simply poaching pilots flying small aircraft for regional airlines in the U.S. The larger airline flies larger aircraft that provides for more pay and likely better benefits than they could ever realize by staying at a regional airline.

9.2 Larger Aircraft Address the Economics and Improve the Consumer Benefits

The trend toward the regional sector flying aircraft with up to 76 seats has been underway for a decade or more. The more seats an airline can offer, the more advantages to the carrier and consumer. More seats give the airline an opportunity to better maximize revenue on any given flight and that might even include the ability to offer some lower fares that a smaller seating configuration might not be able to offer.

Share of Departures by Regional Aircraft Type

– NETWORK CARRIERS* ONLY



*Includes American, Delta, and United

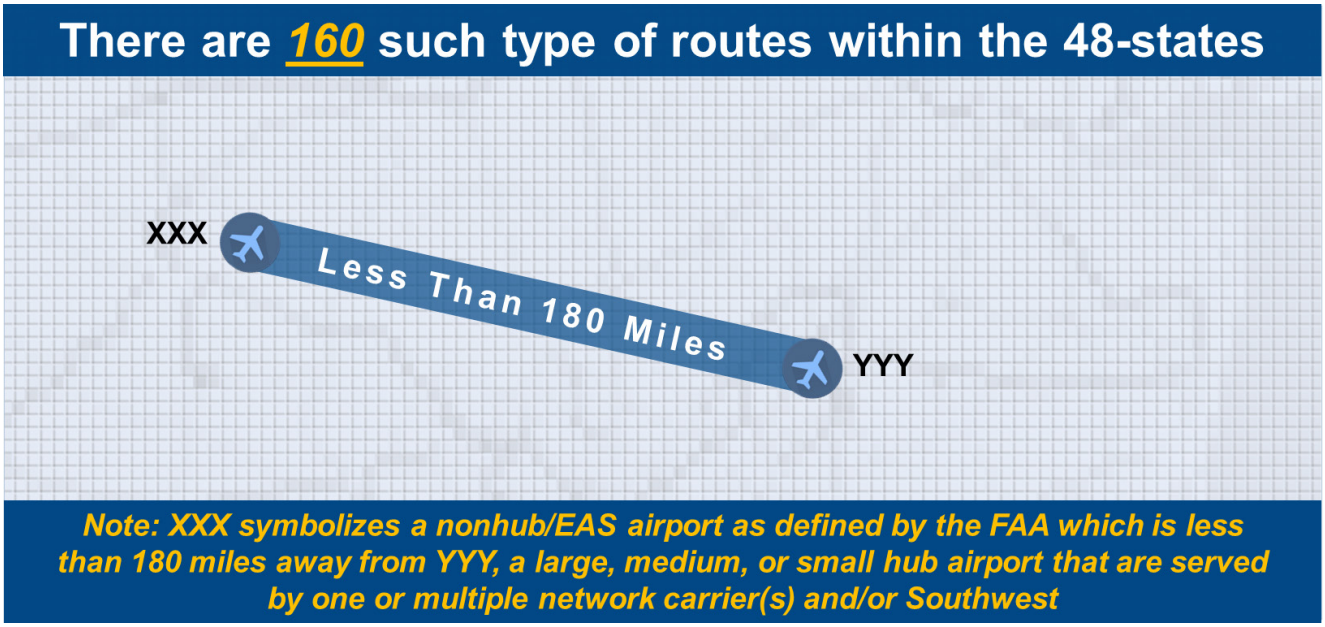
Source: US DOT T-100 database; Airline Schedules, via Airline Data Inc. online portal.

In 2015 small communities were served by small regional aircraft (seating configuration of 50-seats or less) that comprised 52% of the departures flown by the regional airlines. Today, that percent has dropped to 32%. Departures are used because that is the critical variable for a small community air service to best accommodate demand – particularly demand impacted by an irregular operation.

The example is if a businessperson wants to use the local airport and only two departures per day are offered to/from a network carrier's connecting hub airport and a service disruption occurs, the local airport cannot find the business passenger an alternative flight to his/her destination until the next flight arrives and it may be full.

Most likely, that businessperson will have booked his/her travel at an alternative larger airport within a reasonable driving distance to best ensure that travel can be completed. History is important to remember. Virtually all small community air service on airline maps today and promised in perpetuity by the government to get the Airline Deregulation Act passed began 15 years before the interstate system of highways was completed. The highway is, and has been, the first access mode to enter the air transportation system for decades. This is not new.

A Pilot Shortage Makes Redundant Service Offerings by Airlines at All Airports Within a Reasonable Driving Distance Of Each Other Imprudent



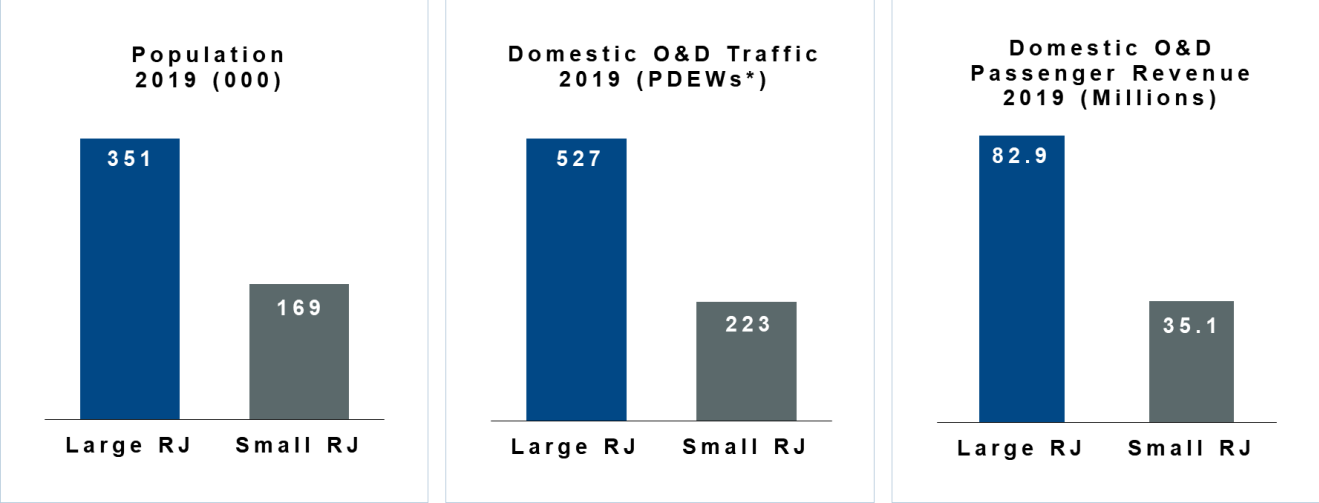
9.3 Not Every Airport Has Demand That Can Support Larger Airplanes

This thought paper has already shown that small regional jet aircraft provide a much smaller proportion of regional services being offered today. At this juncture, there are also no regional aircraft flying the missions being flown in 2022 being produced, let alone considered. Whether the fact that pilot labor costs have increased significantly, or that the price of a barrel of oil is more than $90, or that research and development costs of a small regional aircraft cannot be reasonably amortized over time – there is no commercial airframe smaller than 65 seats being contemplated.

Another factor is that communities that have been dependent on the small jet for their access to the air transportation grid, there are stark differences in the economic and demographic makeup of small communities receiving service with regional aircraft today. For example, in 2019:

- Airports that receive at least 90% of their service today on regional aircraft with 50 seats or less have average populations of 169,000 people; and airports receiving most of their service on regional equipment of 70-seats or more serve communities with average populations of 351,000.
- Airports that receive at least 90% of their service today on regional aircraft with 50-seats or less produce 223 passengers per day on both incoming and outgoing flights; and airports receiving most of their service on regional equipment of 70-seats or more generate traffic levels of 527 passengers per day each way.
- Airports that receive at least 90% of their service today on regional aircraft with 50-seats or less produce $35 million in passenger revenue; and airports receiving most of their service on regional equipment of 70-seats or more generate traffic levels of nearly $83 million.

Average Market Size by Regional Aircraft Group
– POPULATION, DOMESTIC O&D, AND DOMESTIC REVENUE



* PDEWs = Passengers Per Day Each Way.
Source: Population: Woods & Poole Economics 2019; Domestic O&D and Revenue: US DOT, DB1B database.

9.4 Schedule Density is in Decline Reducing the Utility of Some Airports

The term schedule density is an airline term that sounds complex, but it is not. Schedule density is the number of flights per day at each local airport as well as the average number of points served to/from the local airport.

Each American and Delta serve fewer airports where the predominant piece of equipment is 50-seats or less measuring March 2022 with CY2015. United appears much different as the numbers suggest that they are serving many more airports with the small jet. Pre-pandemic, United's strategy was to close its own

structural market share gap in smaller markets when compared to American and Delta. In addition, a number of those small markets added are subsidized under the EAS program.

Schedule Density:
At Airports That Receive at Least 90% of Their Service
With Regional Aircraft Configured With 50-Seats or Less

	Number of Airports			Average Number of Hubs Served per Airport			Average Number of Daily Departures to Carrier Hubs per Airport		
	March 2015	March 2019	March 2022	March 2015	March 2019	March 2022	March 2015	March 2019	March 2022
AA	75	47	33	1.3	1.3	1.1	3.2	2.7	2.5
DL	49	43	45	1.2	1.2	1.1	2.3	2.4	2.1
UA (Exclude 550)	80	89	94	1.5	1.4	1.3	2.7	2.2	1.8
UA (Include 550)	80	89	100	1.5	1.4	1.4	2.7	2.2	1.7

Post-pandemic, United, like American and Delta, has said in no uncertain terms that it will be getting out of the small jet business for economic reasons and to enhance the product for customers. Not only is the decrease in the number of airports important, but the most significant trend is also that the average number of hubs served with small regional jets is in decline as are the average number of daily departures to the network carrier's connecting hub. As mentioned earlier, the number of departures to/from any small community is critical, particularly in retaining the business traveler at the local airport.

These are the numbers that will continue to erode and ultimately make the carrier irrelevant. Or might the airline simply ask, can I pull out of this market and force the remaining passengers to the highway to fly on the airline from an alternative airport? Or might the airline decide that its market presence in a region is such that investment in service should be made in another geography?

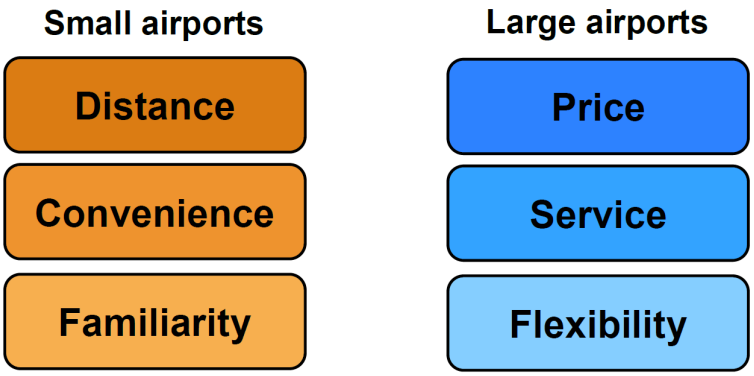
This defines exactly where the industry is in March 2022 and—unless something gives on either the regulatory or the legislative sides of the air service equation--is where the industry will land in the immediate future.

IT IS EITHER MORE PILOTS OR LESS INFRASTRUCTURE.
IT IS NOT COMPLICATED.

10 A Taxonomy of Small Community Airports

As written by Michael D. Wittman: Trends and Market Forces Shaping Small Community Air Service in the United States, Michael D. Wittman, and William S. Swelbar, MIT International Center for Air Transportation, 2013.

The taxonomy of small-community airports: which airports may be at risk of future service loss? Before examining small community airports that are at risk of future service loss, it is first worthwhile to consider why a passenger would choose to fly out of a smaller airport instead of a large hub. The chart below summarizes some of the tradeoffs passengers face when choosing between departing from a small/nonhub airport or large/medium hub airport. Passengers who choose to fly from small airports often do so to take advantage of a sense of convenience: perhaps the smaller airport is closer to home, offers shorter security or check-in lines, or a smaller terminal footprint that is easier to navigate.



Conversely, passengers who choose larger airports often do so because these airports have a larger range of flights and connections from which to choose, fares may be lower, and there may be more flexibility to reschedule itineraries during periods of delays, cancellations, or other irregular operations. Passengers in multi-airport regions evaluate each of these factors when weighing which airport to use for departure, and airport managers often attempt to influence the choice through advertising touting their airport's ease of use (for smaller airports) or range of options and amenities (for larger airports).

PASSENGERS IN MULTI-AIRPORT REGIONS EVALUATE EACH OF THESE FACTORS WHEN WEIGHING WHICH AIRPORT TO USE FOR DEPARTURE.

AS SCHEDULE DENSITY AT MANY LOCAL AIRPORTS CONTINUES TO DECREASE, THE HIGHWAY WILL BECOME INCREASINGLY IMPORTANT FOR AIR TRAVEL CONSUMERS TO ENTER THE SYSTEM.

11 Airport Proximity of Smaller Airports to Other Larger Airports

Of all the writing and analysis included thus far in this thought paper, this section will prove to be the most controversial and likely debated. Some will say that 180 miles is too long for passengers to drive to find an alternative flight. That may be true if geography and seasons were the sole determinants assumed.

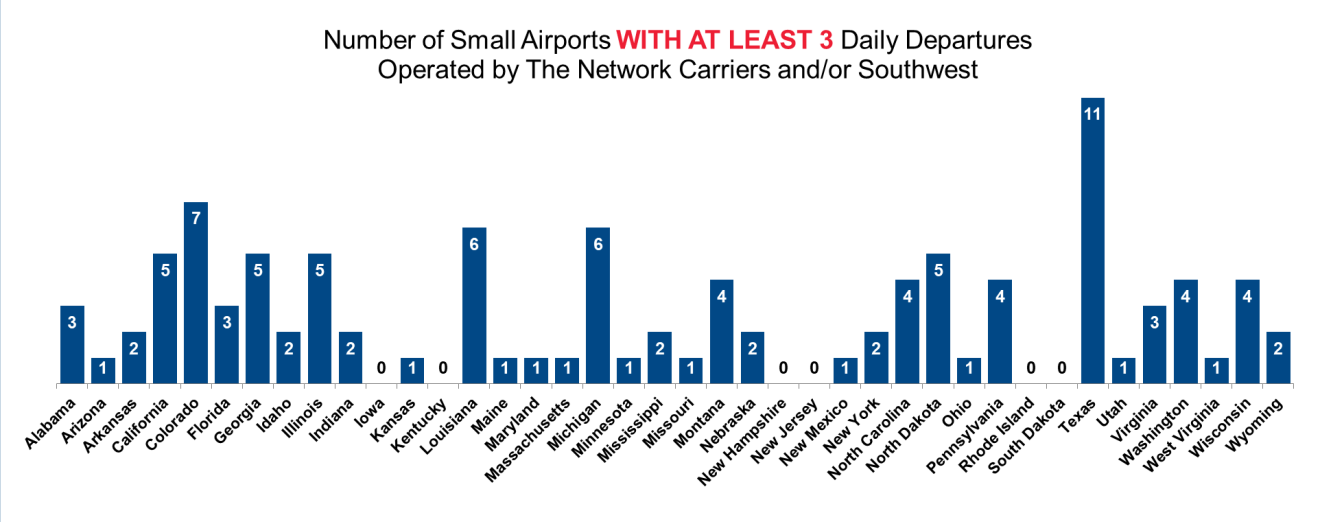
Along the same lines, to qualify as an EAS airport, 71 miles or more from a large or medium hub airport is considered the outer boundary for driving. That is too short a distance to assume as the limit people will drive to find the service they need—or want.

The arbitrary assumptions made using mileage and average frequencies per day have likely overstated the number of consolidation candidate airports in a state like Wyoming. Similarly, it has likely understated the number and type of consolidation candidate airports in the Commonwealth of Virginia and other states where proximity is less than 180 miles and there are more than 3 average frequencies per day from a subject airport.

Any analysis of airport systems within a state will require subjective analysis to augment any objective assumptions made. **As a result, the list of airports included in the appendices and identified as consolidation candidates have only been listed as a result of objective criterion, nothing subjective has been applied.**

Of the 302 nonhub and EAS airports studied, 260 lie within 180 miles of a large, medium, and small hub airport. No airports outside of the Lower 48 states are included based on their unique circumstances. Of the 302 airports, 55 are EAS airports and 247 are considered nonhub airports by the FAA. Of the 260 airports that lie within the mileage assumption, 43 are EAS airports and 217 are considered nonhub airports by the FAA.

Nonhub and Essential Air Service Airports by State

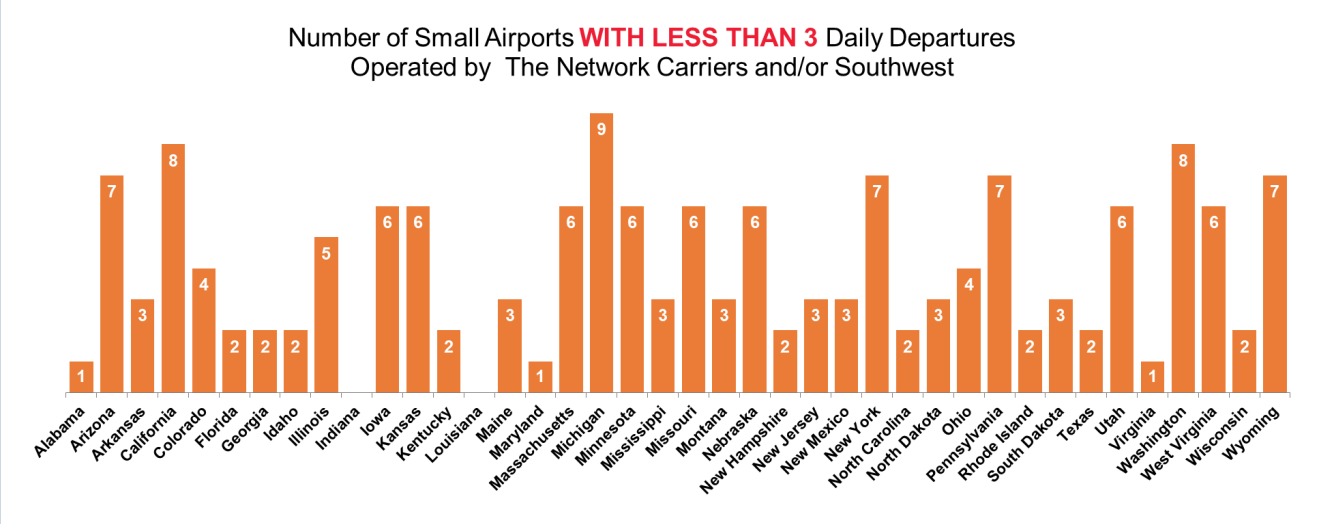


Given the state of regional air service in March 2022, airports receiving 3 or more departures per day on average by either a network carrier or Southwest are reasonably served and have the best chance of being able to reaccommodate demand in the event of a service disruption. Airports in the states of Texas, Colorado, Louisiana, and Michigan have the most commercial air service airports that meet this criterion.

On the other side of the daily service level criterion by the network carriers and Southwest are those state systems that have commercial air service airports with less than 3 average daily departures. This service level is suboptimal and are considered airports that cannot retain traffic that is likely driving to find an alternative airport for their travel.

The states with the most airports meeting this criterion are Michigan, California, Washington, Arizona, New York, Pennsylvania, and Wyoming. [The authors appreciate that there are unique attributes of a state like Wyoming that should be considered.] Also, states from the chart above like Iowa, Kentucky, and South Dakota should also be considered as they have no nonhub or EAS airports with 3 or more average daily departures.

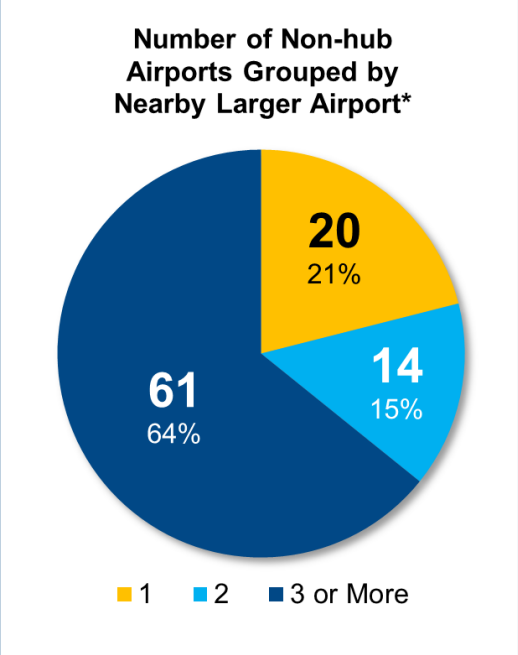
Nonhub and Essential Air Service Airports By State

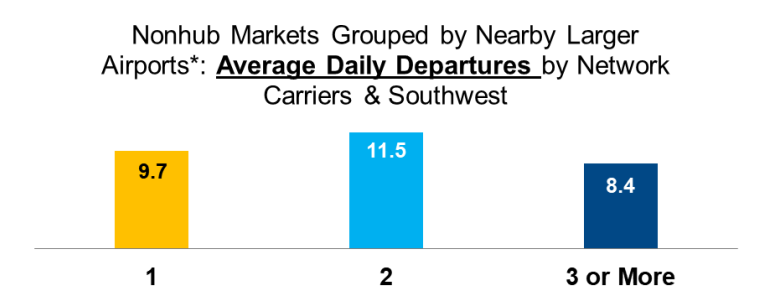


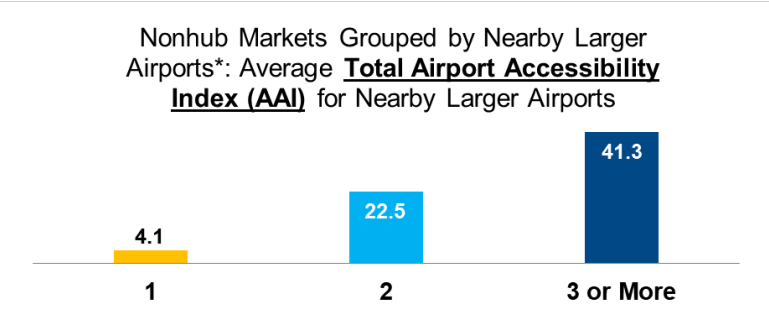
11.1 Non-EAS Nonhub Airports

Among the 217 airports studied that do not qualify as an EAS airport, 95 receive commercial air service from either the network carriers, Southwest, or both, at least 3 times per day on average. Of the 95 nonhub airports considered to be well served in this post-pandemic network, 61, or 64% of those airports are within 180 miles of at least 3 larger airports that have an average of 8.4 departures per day into the system and are considered to possess well above average access into the air transportation system as measured by Swelbar-Zhong Consultancy's Airport Accessibility Index (AAI).

Airport Proximity Analysis: Nonhub Airports WITH 3 OR MORE Daily Departures by the Network Carriers and/or Southwest





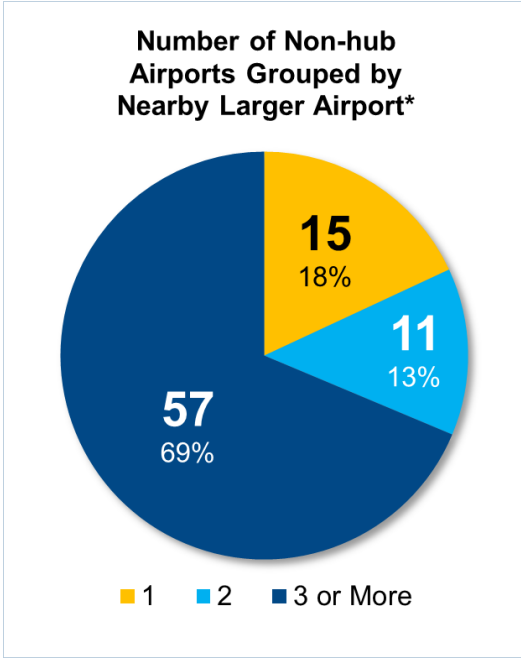


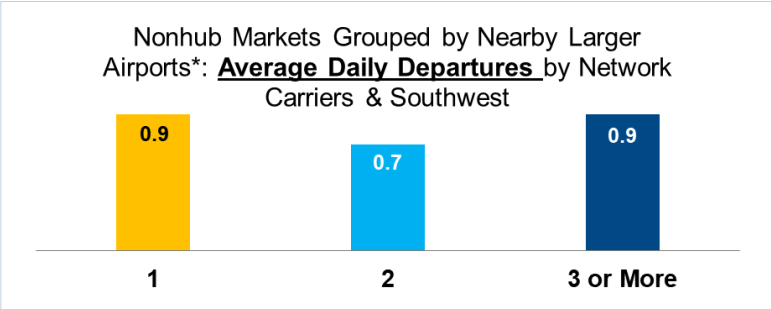
*Defined by the FAA as Large, Medium, and Small Hub airports within 180 miles of the local airport.

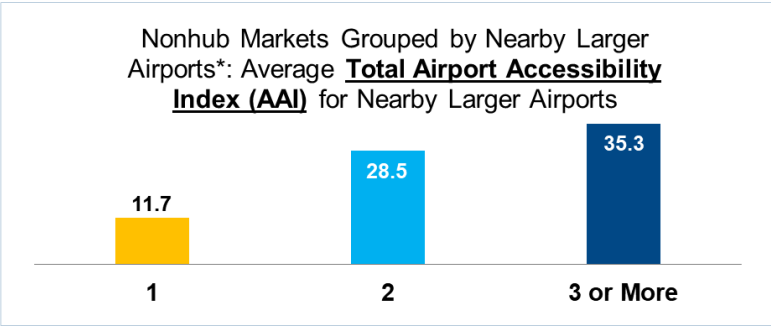
On the other hand, there are 83 nonhub airports that lie within 180 miles of the defined larger airports that have fewer than an average of 3 departures per day by the network carriers and/or Southwest. Of the 83, 57 lie within 180 miles of at least 3 larger airports that also receive less than 1 average daily departure. It is this group of airports that absolutely are considered candidates for consolidation into a regional airport.

The average access as measured by the AAI suggests that much better accessibility to the system is possible through consolidation of multiple airports with less than 3 average daily departures each into one that would likely have much better service levels. By pooling a region's traffic rather than fragmenting it, there will be some combinations that will not only have higher levels of service for the region's air travel consumers to choose from, but carrier choice is also likely.

Airport Proximity Analysis: Nonhub Airports WITH FEWER THAN 3 Daily Departures by the Network Carriers and/or Southwest







*Defined by the FAA as Large, Medium, and Small Hub airports within 180 miles of the local airport.

11.2 Essential Air Service Airports

The benefits of the Essential Air Service program are/have been many. Its genesis is 1978 and its longevity was supposed to be ten years. It has been reworked and its criterion changed several times since. The program is a constant target for some legislators looking to find areas of the budget to cut as the FAA Reauthorization bill is renegotiated. Another renegotiation of that bill will begin soon as either an extension of the current bill or a new bill will be required by October 2023.

Of the 82 EAS airports in the lower 48 states that lie within 180 miles of a larger airport, 48, or 59%, have at least 3 larger airports inside of that mileage band. Still troubling is that the average number of departures by airlines that can provide the greatest connectivity are less than 1. However, what is troubling may very well be a catalyst for airport consolidation. Small communities need air service to connect in order to maximize any economic generation from the service. While additional network access is possible as measured by the AAI, these communities need to consider the benefits that a network carrier or Southwest can bring to a region.

Again, the data clearly shows that many airports in the category are receiving air service for the sake of air service. Not air service with codeshare and interline attributes. The negative consequences of very low service levels at multiple airports within a region fragments the potential market that consolidation would create.

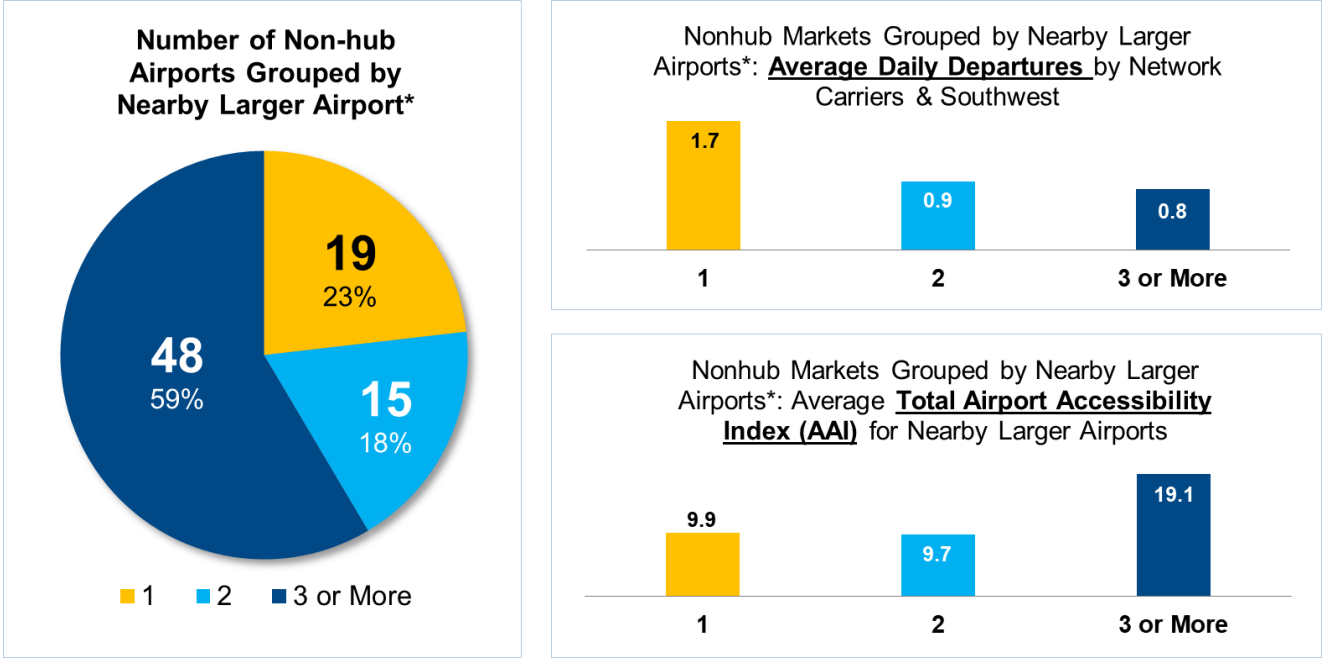
The U.S. domestic network has matured to a place where all small community air service cannot be sustained. This includes the ability to serve all airports that meet the EAS definition too. **For legislators, the predicted is meeting reality** as regional air service providers cannot retain qualified pilots to fly the service that they have contracted with the network carriers to fly AND perform flying they have contracted

with the federal government to fly under the EAS program. Not every legislator should be banking on service in his/her district in the coming year or more.

This has been talked about over the past decade. As the aircraft sizes began to increase, they would grow to a level that not all small communities could support financially. That was an inevitable outcome -- with or without enough trained airmen and women. Now we do not have the trained pilots to perform the flying the industry provided in 2019. Therefore, the timeline for small communities to lose service has only been accelerated.

It is interesting to note that any changes that might help to maximize small community air service are hindered by prior legislation. Legislation passed in 1978 and knee-jerk legislation passed in 2013 where the unintended consequences were made clear to the decision-makers on Capitol Hill. Changing one variable of the equation will help, but the system was always going to be smaller primarily because of aircraft size. Changing both pieces of legislation would still result in a small community air service system with less scope than in 2019.

The Proximity of Essential Air Service (EAS) Airports to a Larger Airport



*Defined by the FAA as Large, Medium, and Small Hub airports within 180 miles of the local airport.

11.3 Re-Defining "Essential"

What is today's "essential" when it comes to commercial air service? The interdependent relationship of economic development and having commercial air service has been studied, discussed, and accepted as gospel on many levels. Accepting that economic development lies at the heart of any local community's need to be connected in order to be a relevant node on the global trading map should appreciate that air service cannot provide what the internet can in the year 2022.

Air service cannot come close to the timeliness needed to win business in many industries; to submit a proposal immediately that an unplanned disaster might require; and certainly, cannot replace anything transaction oriented. Populations with small community air service was done before the interstate highway system was built. This fact alone should give policy makers pause to step back and evaluate the infrastructure needs against contemporary aircraft technology and shortages that are sure to limit levels of small community air service going forward.

11.4 Is the Eas Program Still Good Public Policy?

Examples #1 and #2: EAS flights at Muskegon, MI barely attain a 45% load factor on the 50-seat jets flown by United Express to Chicago. Consumers find that the substantial service levels at Grand Rapids, MI to be far superior. They drive to Grand Rapids.

A similar example can be found at Pueblo, CO. Pueblo has two scheduled daily EAS-supported flights to Denver it cannot compete with the array of low-fare, ULCC, and network carrier service options at Colorado Springs. They will drive to Colorado Springs.

In each of these examples, the subject community has excellent air service. The air travel consumers in Muskegon use the highway to access air service offerings at Grand Rapids and those in Pueblo do the same to fly to/from Colorado Springs.

The EAS program is good policy in certain geographies. However, much of the program continues to propagate the assumption that simply having unconnected scheduled air service for the sake of air service generates economic activity along the same lines it did more than four decades ago. In 2022, connectivity comes in many forms. Robust broadband service will generate more economic activity for a rural community than two flights a day to/from a network carrier hub.

Example #3: In January 2022, SkyWest announced it would not pursue further participation as the EAS operator at Ogdensburg, New York. As required, the U.S. Department of Transportation subsequently issued a request for proposals for the service SkyWest requested to vacate. The offers on the table to replace the vacated SkyWest service are: 1) one respondent is proposing two flights per day with a 9-seat aircraft to either Albany or Syracuse; and 2) another operator proposes flying to Westchester County.

EAS IN MANY CASES SUPPORTS SERVICE THAT CONSUMERS SIMPLY CANNOT OR WILL NOT USE.

EAS Proposal at Ogdensburg, NY

The program is broken. Should Ogdensburg choose either one of these proposals, the residents of Ogdensburg and the surrounding area will get just what the program allows – whatever little demand that exists will get service with no connectivity to the air transportation system. Yes, the proposals fit the criterion of the EAS program but sadly the program does not maximize the utility of the air travel consumer – it just allows the mayor to brag about having air service for the sake of having air service. Finally, service to Ogdensburg is less about the inhabitants of Ogdensburg and more about providing service to passengers north of the border.

Example #4: Today, still very much caught in the vortex of a pandemic, small community air service is struggling. Schedule density for many is on the decline yet necessary to compete with air service at an alternative airport within a reasonable driving distance. There is no better example of a small community caught in the throes of commercial activity that is resulting in lost air service to the south and the unintended consequences of public policy to the north.

The most interesting aspect of this example is that the architect of the EAS program was the long-time congressman from the 8th district of Minnesota – Jim Oberstar. Oberstar's home was in the Hibbing-Chisolm area that is roughly 50 miles northwest of Duluth.

Nonhub airports like Duluth have been fighting for survival and air service wins for more than a decade. As Duluth loses service to Minneapolis/St. Paul, a 3-hour drive to the south, should we be subsidizing air service in Hibbing, and even Brainerd, each less than 100 miles away or is this an example of where consolidating airport infrastructure should be considered?

Providing subsidies to an airport confers a competitive advantage that is undermining other infrastructure inside of a region that the government funds as well. This is yet another area that needs to be considered as we think about the optimum air service system for the next four decades.

11.5 Industry Commentary Before Congress and the Current State of Regional Service

On December 15, 2021, several U.S. airline executives testified before the Senate Committee on Commerce, Science, and Transportation. The hearing was called to examine the impact of the Payroll Support Program funding issued to the commercial airline sector during the height of the Pandemic, including the effect on the airline industry's workforce, as well as the effects of airline operational performance on American consumers.

During the hearing, United CEO Scott Kirby made several comments on the current state of regional airline service and the ability to sustain service to all markets. Kirby plainly told the committee that as of the day of the hearing, United had the equivalent of 100 aircraft parked due to a shortage of pilots. Again, Kirby plainly told the committee that United cannot serve all the small communities on its desired network because of the pilot shortage.

FINALLY, KIRBY SAID: "I'M A LITTLE LESS OPTIMISTIC THAT THAT SITUATION IS GOING TO REVERSE ITSELF IN THE NEAR TERM UNLESS WE DO SOMETHING TO INCREASE THE SUPPLY OF PILOTS."

As of the hearing, United had announced it was departing several small communities, including a few within EAS program. Kirby's very best response that could be considered a potential fix came in response to a question from Sen. Jerry Moran (R-Kan.) regarding the EAS program.

Kirby proposed redirecting EAS funding to pilot training as a longer-term strategy to help shore up the supply of pilots. The United CEO said,

"AS MUCH AS WE LIKE GETTING EAS MONEY WHEN WE FLY TO MARKETS, I'D MUCH RATHER TAKE THOSE FUNDS AND PUT THEM INTO THE INFRASTRUCTURE TO CREATE TRAINING FOR PILOTS, AND TO BUILD A ROBUST PIPELINE THAT MAKES IT EASY FOR PEOPLE WITH AN APTITUDE BE A COMMERCIAL AIRLINE PILOT TO GET THE TRAINING, TO GET THE SKILLS THAT THEY NEED."

In 2022, "essential" is the need to train enough pilots to ensure the maximum number of small community airports are served. Essential is to maximize the consumer benefits by providing an infrastructure that satisfies the needs and wants of the air travel consumer.

In the 44-year-old EAS language, essential was defined and designed to get the Airline Deregulation Act passed as concern for continued service was expressed by the smallest airports that received service under a regulated regime.

An airport was deemed essential if it was being served at the time the ADA was passed. That 44-year-old definition is not today's essential. Training pilots is. Therefore, the maximum number of consumers can find their desired air travel product within a reasonable driving distance – not that the maximum number of airports are served – many with unattractive service levels that do not and cannot meet the consumer's needs and wants.

Finally, many will think that the EAS program is impervious. As mentioned in the Preface, something must give as all service the regional airlines have contracted to fly either under subsidy or contract cannot be flown today because of a shortage of pilots. On February 2, 2022, SkyWest Airlines, the largest regional airline in the U.S. filed a notice of its intent to reduce the number of daily frequencies in 16 designated EAS markets by 2. In an additional two EAS markets, SkyWest filed notice of its intent to reduce the number of daily frequencies it provides by 5.

The decision to reduce frequencies should be simple to understand and appreciated as the band- aid it is. Any reduction in frequencies saves on pilot time that will enable SkyWest to maintain service elsewhere in its portfolio of contracted for flying. This action is less than optimal, but better than an outright exit from a market.

12 Simple Questions for Any Stakeholder

Associated Facts Necessary to Answer Questions:

- **The highway is the first mode of access to the air transportation grid for many today.**
- **The regional airport simply cannot compete with alternatives within a reasonable driving distance with a longer menu of schedule offerings.**
- **As populations shift, businesses morph, consumers age, access has no one definition. Regional thinking can have benefits.**
- **Do 3 flights a day generate the same economic activity as an alternative use of the airport might? Maximizing/optimizing economic generation should be a higher priority that local officials expending precious capital to chase air service for the sake of air service.**

1) Has any community ever disappeared because it lost air service?

2) Connectivity for small and rural markets to the trading map is a central tenet of today's government policy. Hasn't technology, and the advent of the internet, connected rural America in more and better ways than commercial airline service did 20 years ago when face-to-face was the only real way to conduct commerce?

3) Are 3 or less flights per day of commercial service to a connecting carrier hub maximizing/optimizing the economic contribution of the facility than an alternative use of that facility might?

4) What is more important to a community: maximizing/optimizing economic generation potential or securing air service?

5) Does your strategy emphasize thinking regionally? By consolidating commercial service to/from a region that previously enveloped multiple airports, the best new equation will conclude that: 1 + 1 > 2? Or that, 1 + 1 + 1 > 3?

6) Assuming the above equation is correct, then doesn't More Service + More Seats = Greater Consumer Benefits for the **region's** inhabitants?

13 Re-Purposing – It Isn't a Bad Word

13.1 An Established Foundation for Growth

The U.S. has arguably the best airport system in the world. This matrix of facilities range in size from Miami International down to general aviation facilities located in Nocona, TX.

Airports are not simply a combination of physical assets like terminals, hangars, and runways. Airports are economic generators. That role has been a truism for the last four decades and will be for the next four decades as local, state, and national economies transform to meet the requirements of the New Economy.

One of the many challenges of this thought paper is to help all stakeholders fully understand, appreciate, and embrace the scope and scale of the airport system in place and the potential to adapt and to dissuade thinking that an airport's relevance can only be measured by having commercial flights. Airports around the country have lost commercial service and not one of the communities served by that airport have vanished from the map. The same is true of railroads eliminating a stop as well.

The fundamental understanding to take away from this thought paper is that local, state, and national expectations are that small community air service will remain in perpetuity. That air travel consumers only want to use any community's local airport. The highway has been the first access point to the air transportation grid for decades. The dynamic that stems from a consolidating infrastructure is practiced every day.

Faced with that certainty, small communities across the nation must begin to consider ways to capitalize on the value of their local airport should scheduled air service be forced to exit the market. The historic view that airports are public utilities but only have value when served by a for-profit entity needs to change.

Look at today's economy. It is not dirty manufacturing. It is Just-In-Time logistics-based and leveraged by technology. No commercial air service, past or present, can replicate the speed.

Small community airports that might lose air service can also support a lot more than harboring some GA airplanes and/or being an FBO. Communities and regions now have the responsibility to explore new applications that can generate jobs and economic growth that results in a tax base greater than 3 flights per day to a network carrier's hub. More business was done in that community on the internet every day than was done by those arriving on a commercial flight. It's thinking outside the runway with your region's economic development group assisting.

13.2 Assessment of Existing Facilities for Future Use

The task in front of airport and community planners is to match the trajectory of emerging economic changes to the specific facilities inside and outside the fence. Most people have not heard of Erie Municipal Airport. It is a small GA airport just north of Denver. Inside its fence are some T-hangars, an FBO, and not much more. Then you might notice a building that houses Rocky Mountain Propeller. It has no airplanes. But it does overhaul propellers and components for customers around the world. These types of aeronautical-related businesses are the harbinger of opportunities for airports to transform into more diversified business centers.

New aircraft require new skills and facilities. The airline pilot situation has been explained. Unfortunately, it is but one shortage. Aircraft and powerplant technicians – formerly known as mechanics – are going to be in increasingly short supply as entirely new electric aircraft come online.

This brings up the question whether the FBO and support facilities are equipped to handle these. An opportunity for establishing training facilities is present in areas large and small. Today's local airplane mechanic will likely not have the skills necessary to fix the technology that sits on drawing boards or is being prototyped today.

This is not a minor issue. Airlines, leasing companies, and maintenance, repair, and overhaul (MRO) providers are in short supply of skilled technicians. There are hundreds of air taxis and short-haul commuter aircraft to be delivered in the next decade that will require skills likely not found today.

Innovative thinking will require planning to transition from a basic GA airport to an aviation-related economic jobs generator. This thought paper cannot be a weathervane predicting precise wind direction that will direct each disenfranchised airport's path to transformation. That path be dictated by local and state political leadership and policy-making that enable that transformation. Any way the situation is assessed, there is one truism: the economic weather is changing.

Likely, it is logistics, and related air cargo opportunities that might be the most quickly attainable commercial revenue replacements for rural airports in the future. Historically, air cargo was relegated to commodities that were either high value or time sensitive. An example of high value in the 1980s might have been flat screen televisions.

They represented new technology and were therefore considered to be high value air cargo because there was a need to get them to market rapidly. In today's high-technology economy, televisions, like airfares, are one of the very best consumer bargains available. The fierce competition to build better televisions led to a significant reduction in price. As a result, high tech televisions today are most often found in containers making the 28-day transoceanic voyage from a loading dock to breaking down the container at its final distribution point.

In the last five years, complete changes in product logistics have sparked huge demand for transporting goods by air. The reason is less about the value of product and more about the consumer want to receive the product immediately. Pioneered by Amazon, this new way also represents changes in the need for warehousing. Manufacturers and wholesalers do not want to incur the higher costs of carrying inventory and are always looking for warehousing space.

In the coming years, this system can likely develop further. Logistics to rural areas have always been a challenge. However, there are many small airports that have excellent road access within their region. In the future, they can become logistics distribution points. Because the need is for speed of delivery. There is plenty of concern by many stakeholders how rural America will receive their Amazon orders when there are no pilots. Whether an ATR-72 freighter arriving daily, or an unmanned vehicle multiple times per day, virtually every region will require a distribution center.

13.3 General and Business Aviation

Smaller rural facilities dependent on revenues generated by general and business aviation will need to monitor multiple sectors. Whereas there is strong growth on the horizon in the space, the growth will occur in different strata's than the traditional ones. This is but one area where re-purposing will become an imperative. Simply, as scheduled air service is exiting some airports it is being joined by certain portions of general aviation as well.

Re-purposing the local airport might replace that vacuum and take advantage of the growth occurring in the mid-to-upper end of the business aviation space ranging from light twins to the rare financial atmosphere of intercontinental business jets such as the G-650, the Cessna X, and even the Boeing BBJ. All are areas to watch. While their growth is being measured off a small numerical base today, these sectors might be that lure to attract skill maintenance technicians that can provide service to several sectors.

RATHER THAN AN AIR SERVICE DEVELOPMENT PLAN – COMMUNITIES IN TRANSITION SHOULD BE CONSIDERING A BUSINESS AVIATION DEVELOPMENT PLAN.

This approach to airport re-purposing should be now considered an imperative for small airports whether scheduled commercial service has exited, or the local airport is hanging on having service with 3 or fewer departures per day. Other GA revenue streams are in danger of extinction as well including the obvious eventual elimination of all 100LL aviation gasoline.

This is combined with the fact that entry-level general aviation is being stymied by costs on a steep trajectory. Nonetheless, an exciting array of post-commercial service re-purposing options for small airports.

13.4 The Value of Small Community Airports and a Complete Rethink of the SCASD Program

In 2002, Congress passed legislation that established the Small Community Air Service Development Grant (SCASD) program. The program's purpose was to provide funding that small airports could use to attract new or additional scheduled air service; to support and/or augment existing service; and help the airport work to alleviate "higher than average fares." Attempting to artificially alter the economics of a market rarely works. One might say that the SCASD program's foundation was based on a range of misconceptions and mis-directions.

The program did have some airports that benefited in a significant way. Unfortunately, when markets are altered artificially, much of the scheduled air service that was attracted via the grant program discovered that when the funds were exhausted the airline found a better opportunity elsewhere. Some larger airports like Spokane, Sarasota-Bradenton, Albany, and others were awarded money that did assist in attracting new service.

Given the air service conundrum that many small communities face, Congress needs to re-think and re-purpose the SCASD program, and make it available to small community airports that have lost commercial air service. Rename SCASD to the Small Community Airport Economic Development Grant program. Its purpose would be to fund projects that would help remake the airport losing commercial service a platform to attract new business.

The criteria are imagined to be much tighter than the SCASD program. It would entail more work, effort, and expertise on both sides of the table. Essentially most SCASD applications are for underwriting new air service. It is envisioned that the new economic assistance program can only be secured with a sound business plan, a job creation target, a meaningful increase in the tax base, and of course would be required to meet certain financial goals.

It is likely that additional monies would be needed more than the $20 million that funds SCASD today. Should any savings be derived from a re-engineered EAS program that better fits reality, and after training pilots, mechanics, dispatchers, and air traffic controllers then helping a community replace whatever revenue from less than desirable commercial air service should be explored.

One might conclude that the SCASD program has run its course. Aircraft are getting bigger. It was one thing to assist a turboprop service. It is another thing to assist jet service. The costs are significantly different. As the small jet becomes extinct, it would be a misguided intent to attempt to land commercial air service at even all small communities served in 2019 -- regardless of whether the consumer will use it.

14 None of This Should Be New – Quantifying the Obvious

The inevitability of some small communities losing service has been accelerated by a Pandemic and the collateral damage done to the commercial aviation industry's workforce that produced 2019 service levels.

WHEN IT COMES TO FUNDING AIRPORT INFRASTRUCTURE IMPROVEMENTS, ONE SIZE DOES NOT FIT ALL.

All airports defined by the FAA as nonhub primary or an EAS facility do not, and cannot, drive outsized economic results alone. **We are aware that statement, or its inherent supposition, touches a third rail.** However, the industry is left with few, if any, alternatives to maximize small community air service needs and wants.

There are many more relics that need to be considered for change as well. Among them:

- Just because an airport enplanes 10,000 passengers, should that airport be entitled to $1 million in FAA funding? Put another way, does the ROI justify such funding in every instance?
- Just because an airport had commercial air service in 1978, should it be entitled to commercial air service today? Today's shortage of economic inputs into the economic generation equation would suggest that the answer is no.
- Should the government be subsidizing EAS airport service that lies within 180 miles of a struggling nonhub airport that is not being subsidized? The government conferring an economic advantage to what is likely a lesser populace that undermines the potential of a non-subsidized airport is not good public policy.
- When small community airports become disenfranchised from the commercial air service grid, what existing regulations governing that airport imposed by the FAA, or another regulatory body could be altered that would reduce costs to the affected airport? Removing any shackles that might accelerate an airport's rebirth should be considered. After all, in a commercial restructuring, debt and other obligations are often forgiven.

The COVID-19 Pandemic Era has exposed many industry weaknesses. Unlike other pandemics, geopolitical, political, or macroeconomic events along the industry's lifecycle, never has the industry suffered through a near zero-demand period. The regional sector has been forced to be agile, nimble, and forced to change like no other sector of the commercial air service industry. This pandemic era is no different.

The industry has avoided discussing permanent fixes for decades. Only this time is different. It starts with aircraft being deployed that are too large to profitably serve all, if not most, small community markets.

There are no aircraft on the drawing board that would better match airline seat offerings with low levels of demand.

Wages paid today at the regional level have increased significantly over the past 5+ years and make some historic flying unprofitable. Now there are not enough trained pilots to fly schedules for regional carriers and others where they see commercial opportunity. Ultimately, this workforce shortage will impact other sectors of the industry as well.

At the end of the day, it is simple: Either the rules change regarding the training of first officers and new, small regional aircraft are developed quickly, or small airports lose commercial service. Pilot unions don't care about small community air service. Legislators and some other industry stakeholders do. While the consequences of past legislative actions were unintended, the end result will be fewer small community dots on airline maps.

IMAGINE IF DISCUSSING A THIRD RAIL ISSUE AND ADDRESSING SOME UNCOMFORTABLE STRUCTURAL ISSUES PRODUCE A REGIONAL AIRPORT THAT IS A MUCH BETTER ECONOMIC GENERATOR THAN IT WAS RECEIVING NETWORK CARRIER SERVICE TWICE A DAY TO ONE HUB?

THE LOCAL ECONOMY WOULD BE BETTER OFF. AND IF THAT LOCAL ECONOMY FINDS A WAY TO ATTRACT OTHER BUSINESS AND THRIVE – COMMERCIAL AIR SERVICE JUST MIGHT RETURN.

APPENDIX I

Small Community Airports Served By Network Carrier-Branded Regional Aircraft

SWELBAR·ZHONG
CONSULTANCY

Notes:

- Based on March 2022 schedules.
- Asterisk * denotes EAS airports.
- *Small RJ Markets are* defined as airports where departures performed by 50-seat RJs or less account for at least 90% of an airport's domestic total departures. The analysis excludes CRJ-550 departures flown under the UA code (unless otherwise noted).
- *Large RJ Markets are* defined as airports where departures performed by 50+ seat RJs account for at least 90% of an airport's domestic total departures.

Small RJ Markets

– 30 Nonhub & 3 EAS Airports

ABI - Abilene, TX	LAW - Lawton/Fort Sill, OK
ACT - Waco, TX	LCH - Lake Charles, LA
ALO - Waterloo, IA*	LSE - La Crosse, WI
ART - Watertown, NY *	MLU - Monroe, LA
AZO - Kalamazoo, MI	MQT - Marquette, MI
BPT - Beaumont, TX	PGV - Greenville, NC
CLL - College Station, TX	RST - Rochester, MN
CMI - Champaign, IL	SBY - Salisbury, MD
CWA - Mosinee, WI	SCE - State College, PA
DBQ - Dubuque, IA	SJT - San Angelo, TX
DRT - Del Rio, TX	SPI - Springfield, IL
FLO - Florence, SC	SPS - Wichita Falls, TX
GCK - Garden City, KS	SWO - Stillwater, OK
GGG - Longview, TX	TOL - Toledo, OH
GRI - Grand Island, NE *	TXK - Texarkana, AR
HTS - Ashland, WV	TYR - Tyler, TX
ISP - Long Island Islip, NY	

Group Average

2019 Population: 253,086 **2019 PDEWs: 241**

Large RJ Markets

– 48 Nonhub Airports

ACV - Eureka/Arcata, CA	EWN - New Bern, NC	MRY - Monterey, CA
AMA - Amarillo, TX	FAR - Fargo, ND	MSO - Missoula, MT
ASE - Aspen, CO	FLG - Flagstaff, AZ	OAJ - Jacksonville, NC
AVL - Asheville, NC	FSD - Sioux Falls, SD	ORH - Worcester, MA
BFL - Bakersfield, CA	GJT - Grand Junction, CO	RAP - Rapid City, SD
BIL - Billings, MT	GNV - Gainesville, FL	RDM - Redmond, OR
BIS - Bismarck, ND	HHH - Hilton Head, SC	ROW - Roswell, NM
BOI - Boise, ID	HOU - Houston Hobby, TX	SAF - Santa Fe, NM
BRO - Brownsville, TX	HPN - White Plains, NY	SBA - Santa Barbara, CA
COU - Columbia, MO	IDA - Idaho Falls, ID	SBN - South Bend, IN
CRW - Charleston, WV	ITH - Ithaca, NY	SBP - San Luis Obispo, CA
CSG - Columbus, GA	LBB - Lubbock, TX	SGU - St. George, UT
DAB - Daytona Beach, FL	LGB - Long Beach, CA	STS - Santa Rosa, CA
DRO - Durango, CO	MAF - Midland/Odessa, TX	TLH - Tallahassee, FL
ECP - Panama City, FL	MFR - Medford, OR	XNA - Fayetteville, AR
ERI - Erie, PA	MLB - Melbourne, FL	YUM - Yuma, AZ

Group Average

2019 Population: 466,250 **2019 PDEWs: 1,212**

Small RJ Markets

– 38 Nonhub & 7 EAS Airports

ABR - Aberdeen, SD *	CSG - Columbus, GA	LSE - La Crosse, WI
ABY - Albany, GA	CWA - Mosinee, WI	LWS - Lewiston, ID
AEX - Alexandria, LA	DHN - Dothan, AL	MGM - Montgomery, AL
APN - Alpena, MI	DLH - Duluth, MN	MLU - Monroe, LA
AZO - Kalamazoo, MI	EKO - Elko, NV	MQT - Marquette, MI
BGM - Binghamton, NY	ESC - Escanaba, MI	PIH - Pocatello, ID
BJI - Bemidji, MN *	FWA - Fort Wayne, IN	PLN - Pellston, MI
BQK - Brunswick, GA	GFK - Grand Forks, ND	RHI - Rhinelander, WI *
BRD - Brainerd, MN *	GTF - Great Falls, MT	RST - Rochester, MN
BTM - Butte, MT *	GTR - Columbus, MS	SCE - State College, PA
CDC - Cedar City, UT *	HIB - Hibbing, MN *	SGU - St. George, UT
CIU - Sault Ste. Marie, MI	IMT - Iron Mountain, MI	TVC - Traverse City, MI
CNY - Moab, UT	INL - International Falls, MN	TWF - Twin Falls, ID
COS - Colorado Springs, CO	ITH - Ithaca, NY	VLD - Valdosta, GA
CPR - Casper, WY	LAN - Lansing, MI	XWA - Williston, ND

Group Average

2019 Population: 151,192 **2019 PDEWs: 252**

Large RJ Markets

– 23 Nonhub Airports

AGS - Augusta, GA	IDA - Idaho Falls, ID
ASE - Aspen, CO	ILM - Wilmington, NC
BGR - Bangor, ME	LGB - Long Beach, CA
BMI - Bloomington, IL	MFR - Medford, OR
BUR - Burbank, CA	OAJ - Jacksonville, NC
ELM - Elmira/Corning, NY	ORH - Worcester, MA
EUG - Eugene, OR	PSC - Pasco, WA
EVV - Evansville, IN	RAP - Rapid City, SD
FAT - Fresno, CA	RDM - Redmond, OR
FAY - Fayetteville, NC	SUN - Sun Valley, ID
HHH - Hilton Head, SC	XNA - Fayetteville, AR
HLN - Helena, MT	

Group Average

2019 Population: 369,406 **2019 PDEWs: 1,331**

Small RJ Markets

– 61 Nonhub & 33 EAS Airports

ABE - Allentown, PA	DEC - Decatur, IL *	LBF - North Platte, NE	PUB - Pueblo, CO *
AEX - Alexandria, LA	DIK - Dickinson, ND	LBL - Liberal, KS	RDD - Redding, CA
ALS - Alamosa, CO *	DVL - Devils Lake, ND *	LCH - Lake Charles, LA	RIW - Riverton/Lander, WY
AMA - Amarillo, TX	EAR - Kearney, NE *	LEX - Lexington, KY	RKS - Rock Springs, WY
ATW - Appleton, WI	EAU - Eau Claire, WI *	LFT - Lafayette, LA	ROA - Roanoke, VA
BFF - Scottsbluff, NE *	ECP - Panama City, FL	LIT - Little Rock, AR	SAF - Santa Fe, NM
BFL - Bakersfield, CA	ERI - Erie, PA	LNK - Lincoln, NE	SBN - South Bend, IN
BIS - Bismarck, ND	FLG - Flagstaff, AZ	LRD - Laredo, TX	SGF - Springfield, MO
BRO - Brownsville, TX	FNT - Flint, MI	LWB - Lewisburg, WV *	SGU - St. George, UT
BTM - Butte, MT *	FOD - Fort Dodge, IA *	LWS - Lewiston, ID	SHD - Staunton, VA *
BTR - Baton Rouge, LA	FWA - Fort Wayne, IN	MBS - Saginaw, MI	SHR - Sheridan, WY
CAE - Columbia, SC	GCC - Gillette, WY	MCW - Mason City, IA *	SHV - Shreveport, LA
CAK - Akron, OH	GPT - Gulfport/Biloxi, MS	MEI - Meridian, MS *	SLN - Salina, KS *
CGI - Cape Girardeau, MO *	HLN - Helena, MT	MKG - Muskegon, MI *	SPI - Springfield, IL
CHA - Chattanooga, TN	HOB - Hobbs, NM	MOB - Mobile, AL	STS - Santa Rosa, CA
CHO - Charlottesville, VA	HPN - White Plains, NY	MOT - Minot, ND	SUX - Sioux City, IA *
CKB - Clarksburg, WV *	HRL - Harlingen, TX	OGS - Ogdensburg, NY *	TBN - Fort Leonard Wood, MO *
CMX - Hancock/Houghton, MI	HYS - Hays, KS *	OTH - North Bend, OR	TXK - Texarkana, AR
CNY - Moab, UT	JAN - Jackson, MS	PAH - Paducah, KY *	VCT - Victoria, TX *
COD - Cody, WY *	JLN - Joplin, MO *	PBG - Plattsburgh, NY *	VEL - Vernal, UT *
CRW - Charleston, WV	JMS - Jamestown, ND *	PIA - Peoria, IL	VPS - Ft Walton Beach, FL
CYS - Cheyenne, WY	JST - Johnstown, PA *	PIB - Laurel, MS *	XWA - Williston, ND
DAY - Dayton, OH	LAR - Laramie, WY *	PRC - Prescott, AZ *	
DDC - Dodge City, KS *	LBB - Lubbock, TX	PSC - Pasco, WA	

Group Average

2019 Population: 235,678

2019 PDEWs: 470

Large RJ Markets
– 7 Nonhub Airports

ASE - Aspen, CO	GUC - Gunnison, CO
BGR - Bangor, ME	SAV - Savannah, GA
BIH - Bishop, CA	SUN - Sun Valley, ID
EYW - Key West, FL	

Group Average

2019 Population:	100,262	2019 PDEWs:	977

APPENDIX II

Nonhub and EAS Airports With FEWER THAN 3 Average Daily Departures Performed By Network Carriers, and/or Southwest

Considered Possible Candidates For Consolidation

2019 Enplanements | Number of Larger Airports Nearby

SWELBAR·ZHONG
CONSULTANCY

Alabama		
MOB* - Mobile, AL	22,826	5
Arizona		
1G4 - Peach Springs, AZ	18,201	1
DQS - Whitmore, AZ	7,767	1
GCN - Grand Canyon, AZ	57,906	2
IFP - Bullhead City, AZ	120,494	2
PGA - Page, AZ	36,380	0
PRC - Prescott, AZ *	27,729	2
SOW - Show Low, AZ *	4,560	3
Arkansas		
ELD - El Dorado, AR *	4,057	2
HOT - Hot Springs, AR *	4,829	2
HRO - Harrison, AR *	4,923	4

* All commercial service will be moved to BFM in 2024

California		
CEC - Crescent City, CA *	9,137	2
HHR - Hawthorne, CA	3,370	8
MCE - Merced, CA *	6,816	6
MMH - Mammoth Lakes, CA	17,397	4
RIV - Riverside, CA	6,593	8
SCK - Stockton, CA	101,148	6
SMX - Santa Maria, CA	24,252	7
SQL - San Carlos, CA	5,065	5

Colorado		
ALS - Alamosa, CO *	7,559	2
CEZ - Cortez, CO	8,719	0
PUB - Pueblo, CO *	12,213	2
TEX - Telluride, CO	5,392	0

Florida		
FXE - Fort Lauderdale, FL	7,202	8
VRB - Vero Beach, FL	14,188	10

Georgia		
MCN - Macon, GA *	17,025	4
PDK - Atlanta, GA	9,227	7
Idaho		
PIH - Pocatello, ID	43,542	1
TWF - Twin Falls, ID	51,361	2
Illinois		
BLV - Belleville, IL	153,112	1
DEC - Decatur, IL *	8,489	4
MWA - Marion/Herrin, IL *	11,053	2
RFD - Rockford, IL	116,668	5
UIN - Quincy, IL *	9,950	3

Iowa		
ALO - Waterloo, IA *	23,478	4
BRL - Burlington, IA *	8,062	3
DBQ - Dubuque, IA	38,020	6
FOD - Fort Dodge, IA *	8,370	5
MCW - Mason City, IA *	8,161	4
SUX - Sioux City, IA *	47,066	3

Kansas		
DDC - Dodge City, KS *	4,947	1
FOE - Topeka, KS	3,127	4
GCK - Garden City, KS	25,056	0
HYS - Hays, KS *	14,758	1
LBL - Liberal, KS	6,902	0
SLN - Salina, KS *	15,676	2

Kentucky		
OWB - Owensboro, KY *	18,430	5
PAH - Paducah, KY *	17,973	0

Maine		
AUG - Augusta/Waterville, ME *	5,432	4
BHB - Bar Harbor, ME *	9,287	1
RKD - Rockland, ME *	6,773	3
Maryland		
HGR - Hagerstown, MD	29,080	8
Massachusetts		
ACK - Nantucket, MA	134,384	6
BED - Bedford, MA	8,240	10
EWB - New Bedford/Fall River, MA	4,258	10
HYA - Hyannis, MA	24,185	6
MVY - Marthas Vineyard, MA	52,534	9
PVC - Provincetown, MA	10,571	6

Michigan		
APN - Alpena, MI	12,394	0
CIU - Sault Ste. Marie, MI	24,380	0
CMX - Hancock/Houghton, MI	24,953	0
ESC - Escanaba, MI	19,055	0
IMT - Iron Mountain, MI	22,206	0
IWD - Ironwood, MI	5,151	0
MBL - Manistee, MI *	362	4
MKG - Muskegon, MI *	19,722	6
PLN - Pellston, MI	28,892	0

Minnesota		
BJI - Bemidji, MN *	30,396	1
BRD - Brainerd, MN *	22,523	2
HIB - Hibbing, MN *	18,292	1
INL - International Falls, MN	17,740	0
STC - St. Cloud, MN	21,753	2
TVF - Thief River Falls, MN *	4,803	1

Mississippi		
MEI - Meridian, MS *	19,759	3
PIB - Laurel, MS *	11,639	3
TUP - Tupelo, MS *	16,874	5

Missouri		
BKG - Branson, MO	25,541	4
CGI - Cape Girardeau, MO *	11,817	3
CPS - St. Louis, MO	3,745	1
IRK - Kirksville, MO *	5,244	4
JLN - Joplin, MO *	47,986	5
TBN - Fort Leonard Wood, MO *	5,891	4

Montana		
BTM - Butte, MT *	25,926	1
HVR - Havre, MT	3,343	0
WYS - West Yellowstone, MT *	8,972	1

Nebraska		
AIA - Alliance, NE	3,065	0
BFF - Scottsbluff, NE *	16,957	1
CDR - Chadron, NE	4,233	0
GRI - Grand Island, NE *	70,481	1
LBF - North Platte, NE	16,081	0
MCK - McCook, NE	2,123	0

New Hampshire		
LEB - Lebanon-Hanover, NH *	10,198	7
PSM - Portsmouth, NH	61,870	7
New Jersey		
MMU - Morristown, NJ	2,708	12
TEB - Teterboro, NJ	7,007	11
TTN - Trenton, NJ	461,816	13
New Mexico		
CNM - Carlsbad, NM *	5,217	3
CVN - Clovis, NM *	5,319	1
HOB - Hobbs, NM	27,765	2
New York		
ART - Watertown, NY *	22,475	5
BGM - Binghamton, NY	38,081	12
MSS - Massena, NY *	5,045	3
OGS - Ogdensburg, NY *	26,907	4
PBG - Plattsburgh, NY*	125,253	5
SLK - Saranac Lake/Lake Placid, NY *	4,770	4
SWF - Newburgh, NY	267,851	14

North Carolina		
NC1 - Gastonia, NC	3,140	9
USA - Concord, NC	179,911	9
North Dakota		
DIK - Dickinson, ND	23,813	0
DVL - Devils Lake, ND *	6,908	1
ISN - Williston, ND	68,781	0
Ohio		
BKL - Cleveland, OH	12,741	6
LCK - Columbus, OH	153,743	8
LUK - Cincinnati, OH	27,598	6
TOL - Toledo, OH	124,014	5
Pennsylvania		
AOO - Altoona, PA *	3,651	6
BFD - Bradford, PA *	4,291	6
DUJ - DuBois, PA *	5,827	6
IPT - Williamsport, PA	20,427	14
JST - Johnstown, PA *	6,216	7
LBE - Latrobe, PA	156,341	6
LNS - Lancaster, PA *	5,710	11

Rhode Island		
BID - Block Island, RI	16,895	11
WST - Westerly, RI	18,281	11
South Dakota		
ABR - Aberdeen, SD *	29,548	2
ATY - Watertown, SD *	11,681	2
PIR - Pierre, SD	14,518	0
Texas		
GGG - Longview, TX	27,149	0
VCT - Victoria, TX *	5,721	4
Utah		
CDC - Cedar City, UT *	24,238	1
CNY - Moab, UT	16,514	0
ENV - Wendover, UT	8,463	1
OGD - Ogden, UT	16,160	1
PVU - Provo, UT	110,255	1
VEL - Vernal, UT *	12,657	1

Virginia		
SHD - Staunton, VA*	17,574	9

Washington		
ALW - Walla Walla, WA	49,192	1
BFI - Seattle, WA	17,950	2
EAT - Wenatchee, WA	64,614	3
ESD - Eastsound, WA	7,239	1
FRD - Friday Harbor, WA	11,504	1
KEH - Kenmore, WA	3,254	2
LKE - Seattle, WA	27,333	2
YKM - Yakima, WA	68,451	4

West Virginia		
BKW - Beckley, WV *	8,669	3
CKB - Clarksburg/Fairmont, WV *	41,791	5
HTS - Ashland, WV	108,513	5
LWB - Lewisburg, WV *	12,727	5
MGW - Morgantown, WV *	6,726	7
PKB - Parkersburg, WV *	5,145	5

Wisconsin		
EAU - Eau Claire, WI *	24,254	2
RHI - Rhinelander, WI *	27,196	1

Wyoming		
COD - Cody, WY *	41,208	1
CYS - Cheyenne, WY	16,696	2
GCC - Gillette, WY	29,480	0
LAR - Laramie, WY *	18,990	1
RIW - Riverton/Lander, WY	6,912	0
RKS - Rock Springs, WY	24,056	1
SHR - Sheridan, WY	9,080	0