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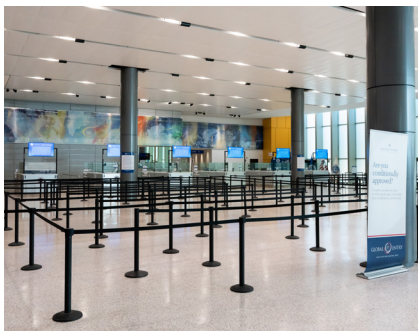
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Publisher
Paul H. Bowers
 paulbowers@airportimprovement.com
 262.510.7832

Editorial Director
Rebecca Douglas
 rebeccadouglas@airportimprovement.com
 815.621.4525

Social Media Director
Holli Fourniquet
 holli@holtcreativegroup.com

Creative & Production Director
Becker 505, LLC - Chad Becker
 chad@becker505.com

Circulation Director
Lisa Monday
 lisamondays@airportimprovement.com

Webmaster
Matt Tews
 matttews@airportimprovement.com

Contributing Writers
Scott Berman, Michelle Gardner,
Chris Jones, Nicole Nelson, Paul Nolan,
Jodi Richards, Kristen Rindfleisch,
Mike Schwanz, Kristin V. Shaw,
Ken Wysocky

Advertising Sales
Samuel Bowers
 samuelbowers@airportimprovement.com
 262.347.9595

Bill Baumann
 billbaumann@airportimprovement.com
 609.610.5400

Vicki Jensen
 vickijensen@airportimprovement.com
 414.331.9768



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It's the Journey

Over the years, we've published thousands of stories about airport projects. Discovering the *right* projects is a key part of what we do. Ideas for stories come from sources as diverse as the projects themselves. Among our top sources are you, the airports and their consultants and suppliers. A healthy number of stories also start from press releases or local news outlets. From there, we cull the list and choose a wide variety of projects for a given issue.

In many regards, it's a leap of faith as to how a story will turn out. Certainly, the scope of the project is important. But a lot depends on the interviews—what questions our writers ask and how sources respond. Do sources give one-word answers, or are they more comprehensive and engaging? The dialogue between writer and interviewee makes a huge difference because our articles go well beyond what is offered in a press release or basic project summary story.

Our best work is when we have a story *within* a story to tell—when you're not sure if the airport or project partner will overcome difficult obstacles or clear all of the hurdles that were in the way.

Two articles in this October issue are perfect examples. The first is a tale of perseverance from Southwest Wyoming Regional Airport (RKS), and you might want to read it around a crackling campfire, preferably with the sound of coyotes howling in the background. If I've piqued your interest, flip right to Page 8. The other story chronicles the revitalization of Coleman A. Young Municipal (DET), an airport that was on life support but has come back in a big way. It starts on Page 34.

In both articles, you get the details of what has been accomplished, and which consultants and suppliers helped make it happen. Not to be overlooked, however, is the tenacity and vision that both airport leaders exhibited to conquer the many challenges they encountered. What they're doing is inspiring, and it's our honor to share their stories with you.

Cheers!

Paul



PAUL BOWERS, PUBLISHER

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New Terminal Supports Recent and Looming Growth at Southwest Wyoming Regional

BY CHRIS JONES



A dramatic tale recently unfolded in a rugged corner of the U.S. Mountain West. Its storyline features the widening development of remote mountain lands, a contested financial dispute and just a touch of political and financial intrigue.

Although it sounds like a plot from the popular TV saga *Yellowstone*, this is actually the latest chapter in the history of Southwest Wyoming Regional Airport (RKS), the aviation gateway to a rural region in Sweetwater County that's enjoying a multibillion-dollar boom.

This September, the small airport in Rock Springs, WY, excitedly unveiled an expanded and fully renovated 34,000-square-foot terminal with its first-ever passenger boarding bridge and baggage conveyor system. Behind the scenes, however, the redevelopment process was arduous for RKS.

Planning for the \$44 million expansion began nearly a decade ago and initially called for upgrading and widening an aged, austere terminal building. But after construction was well underway—and following an unforeseen, yearlong interruption—airport leaders changed course and opted to gut the facility and begin largely anew. Aside from the structural supports and a few HVAC units and boilers that had been replaced just before the terminal renovations began, almost nothing is left of the old facility.

The sole holdroom was tripled in size to accommodate up to 130 departing travelers, and outside the aircraft parking apron was reconfigured to better support dual gate operations. Improvements beyond the perimeter fences included an expanded parking lot and a new circulation roadway, plus better crosswalks, lighting and wayfinding.

Fire suppression systems and data connectivity were also modernized, and the terminal went from only three wireless access points to more than 20. Television monitors jumped from two up to a dozen, and advanced security cameras were installed throughout the site.

"We're coming from the 1970s to 2025 really quickly," says Airport Director Devon Brubaker. His staff of nine handles everything from customer service and firefighting to fueling and baggage handling for all commercial flights and those at an adjacent fixed-based operator.



DEVON BRUBAKER

Welcome to Boomtown

Commercial service is provided by United Express operated by SkyWest Airlines, with two nonstops a day to Denver International



Airport (DEN), a primary hub for United Airlines. One of the two runways at RKS is slightly more than 10,000 feet. Such length is necessary due to the airport's ultra-high elevation of 6,764 feet above sea level—more than one-quarter mile higher than the Mile High City of Denver.

Located along a remote stretch of Interstate 80, Sweetwater County, WY, is home to about 40,000 residents. That's expected to increase soon, however, thanks to nearly \$12 billion in ongoing investments within the area. There's talk of another \$15 billion in potential developments now under consideration, and Brubaker says upgrading the airport was purposefully timed to stay ahead of an expected surge in travel demand.

Energy is what's powering that optimism. The Cowboy State has long

been known for its coal, natural gas and oil reserves. The state's petroleum association reported three years ago that Wyoming had more than 10,000 producing oil wells, nearly 18,000 producing natural gas wells, four oil refineries and more than 30 operating natural gas plants. Transmission infrastructure crisscrosses the state from corner to corner.

Further job growth in this sector is likely after the U.S. Geological Survey recently announced that the Mowry Composite Total Petroleum System—a series of underground geological formations beneath and around Sweetwater County—possesses a previously undiscovered 473 million barrels of oil and 27 trillion cubic feet of gas.

Fossil fuels have competition, too, as southwestern Wyoming has also

FACTS&FIGURES

Project: Terminal Modernization & Expansion

Location: Southwest Wyoming Regional Airport (RKS), in Rock Springs, WY

Airport Operator: Rock Springs-Sweetwater County Airport Board

Size: 34,000 sq. ft. of expanded & renovated floor space

Cost: \$43.9 million

Funding: \$27 million from FAA; \$10 million in grants & loans from Wyoming Business Council; \$2.5 million in Bipartisan Infrastructure Law funds; \$2.5 million allocated by Wyoming governor's office; \$1.3 million from city of Rock Springs & Sweetwater County

Master Consultant, Civil Engineering: Ardurra

Architecture, Building Engineering, Environmental & Planning: Mead & Hunt Inc.

General Contractor: Q&D Construction

Baggage System: G&S Airport Conveyor

Passenger Boarding Bridge: Oshkosh AreroTech

Automated Exit Lane: Record USA

Security & Access Control: Genetec

Prefabricated Temporary Terminal: Sprung Structures

Temporary Wall Units: SwiftWall

Curtain Wall: Manko, installed by DJ's Glass

Seating: Arconas; Allsteel

Primary Tenant: United Express

2024 Passenger Volume: Approx. 43,000

Everything from passenger screening to baggage claim was housed in a temporary facility from Sprung Structures during construction.



welcomed next-generation energy resources headlined by TerraPower, a venture backed by Bill Gates that is building the nation's first commercial advanced nuclear power plant in Kemmerer, WY. Although the city is 90 miles west of Rock Springs, RKS is its closest commercial airport.

TerraPower's \$4 billion project broke ground in June 2024 and a year later, its backers announced another \$650 million in investments led by Gates, South Korean manufacturer HD Hyundai and tech giant NVIDIA Corp. Its first plant is expected to come online in 2030.

Separately, the nearby town of Granger is home to Frontier Infrastructure's Sweetwater Carbon Storage Hub, a \$50 million carbon capture project aiming to store more than 350 million metric tons of carbon dioxide by injecting the pollutant into geological reservoirs miles underground. The project's first two wells, respectively more than 16,000 and 18,437 feet deep, were recently completed, with work on a third well slated to soon follow.

Additionally, Sweetwater County is the world's largest depository of trona, a mineral used as a raw material for soda ash. It's a key component for the manufacture of toothpastes, soaps and detergents, as well as glass parts used in electric vehicles and solar panels.

The world's five most-productive trona mines are already in the region. Beyond that, Pacific Soda's Dry Creek Trona Project and rival WE Soda Ltd.'s Project West are separately building two more facilities capable of collectively processing 9 million tons of trona annually—enough to boost the region's current output by nearly 50%.

Hundreds, if not thousands, of full-time jobs—and potential air travelers—are expected to follow.

Lastly, Wyoming is a decidedly red state, with Republicans holding a nearly seven-to-one advantage in voter registration during last year's presidential election. Those political leanings and a traditional emphasis on outdoor recreational opportunities such as shooting and hunting have made the state a haven for the U.S. gun manufacturing industry.

Three years ago, Rock Springs welcomed a firearms production facility from Florida-

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based Kel-Tec CNC Industries that was expected to employ up to 250 workers upon complete buildout. At the time, the company's chief executive officer said he'd only commit to the community if RKS would continue to press United to bump its schedule up to twice-daily DEN service—a change that came to fruition in early summer 2024.

"Air service was a really important component of that recruitment," Brubaker notes.

Spending millions of dollars to capture hoped-for growth was a difficult choice, particularly coming off the COVID-19 pandemic. But Brubaker believes long-term dividends are certain to follow.

"In 2020, I told the airport board, 'We can tap our brakes just like everyone else, or we can keep our foot on the gas pedal with the idea air travel is going to come back eventually and we need to be ready for it.'" Brubaker explains. "They made the decision to move forward."

Ardurra served as master consultant for the terminal project and also handled both landside and airside civil engineering, including water, sewer and stormwater conveyance.

According to Carson Rowley, a project manager with the firm's aviation team, improvements at RKS weren't merely speculative. He says they were necessary to meet today's operational standards, and more so, to secure customers' willingness to fly locally.



CARSON ROWLEY

"Salt Lake is the closest big city, and I think in the past there's been a perception that that was the better way to travel," Rowley explains. "The (prior RKS) building was just doing the most with what they had—a lot of Band-aid fixes to manage the situation.

"With the new building, all of the needs are met."

A Rocky Road to Growth

In late 2023—roughly a year after construction began—work came to a standstill when the Rock Springs-Sweetwater County Airport Board sued Sletten Construction of Wyoming after the contractor tried to increase its proposed guaranteed maximum price.

Sletten reportedly threatened to halt work unless its originally bid price was increased by \$7 million. The airport board's complaint requested the court to force Sletten to complete the job under the originally agreed-upon terms. That legal dispute eventually delayed construction for nearly a year before it was settled in December 2024, and Sletten was terminated from the project, reported *SweetwaterNOW*, a Rock Springs news outlet.

Once that hurdle was cleared, RKS still faced an uncertain path. It had a half-completed building and no contractor. Working with the FAA, Brubaker was directed to reapproach other companies that had originally submitted bids. In that process, Reno-based Q&D Construction emerged to resurrect the project from a lengthy dormancy.

Sletten's plans had the airport remaining open within a portion of its terminal as renovations occurred around day-to-day

operations. But Q&D indicated the remaining timeline could be reduced by a full year if the airport would relocate all operations to a temporary facility.

"After such a long delay, getting this thing turned over as quickly as possible was definitely a key element for this project to be successful," explains Q&D Aviation Vice President LaMonte Forgays. "The half-and-half approach was really not realistic."



LaMONTE FORGAYS

Q&D had been using Sprung Structures for temporary facilities on its projects for nearly 20 years, beginning with a terminal renovation at Reno International Airport (RNO) in 2008. Following a visit to the company's corporate headquarters in Salt Lake City, Brubaker agreed to move everything—from check-in and TSA screening to baggage claim and car rentals—into one of the company's 9,000-square-foot tensioned fabric structures located near the airport's parking lot.

Engineers from Mead & Hunt crafted an associated layout, and the tentlike space was quickly outfitted with temporary wall panels from SwiftWall to subdivide its functional areas. Construction was expedited while the traffic in the temporary terminal facility never skipped a beat.



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"In three months, we went from, 'This is a good idea' to 'It was delivered and we're building it,'" Forgays says. "People thought the Sprung Structure was the new (terminal)."

"It's actually better than what we moved out of," adds Brubaker. "Over nearly a year, I haven't received a single public complaint."

Even after that move shaved a year's costs from the ledger, the overall price of the project had increased significantly—due to post-COVID inflation and having to redo some interior work damaged by exposure to the elements during the yearlong construction pause. With a revised total cost of nearly \$44 million, RKS was \$22 million short on funds as work was set to resume.

"There were a lot of questions about whether we could pull in the funding," Forgays recalls. "Devon [Brubaker] pulled all the levers he could pull and was able to find it."

Brubaker asked the Rock Springs City Council and Sweetwater County Commission each to pledge the funds needed to resume construction. Although he hoped to subsequently find other sources of money, all involved recognized the scale of the ask.

"Twenty-two million (dollars) isn't a lot of money for many municipalities, but this would have been the largest project in each of their histories, even if they split the costs," Brubaker says. "And they still said yes."

He attributes that support as payback for lengthy efforts to build relationships and trust.

"It was a rabbit out of a hat," Brubaker quips. "But we'd spent years telling the story and sharing the vision of why the airport is so critical to our economic success. Ultimately, that resulted in unanimous support from all parties."

Brubaker never had to call in those markers, though, because he secured additional support from the state and FAA that relieved the city and county of most of their financial commitments to the expansion.

"There were definitely some times when the (financing) gap looked large, but Devon has a way of leveraging things," Rowley says admiringly. "Being able to get all of those partners to see the same vision...it's just crazy. He's very good at his job."

Aviation – A Remote Interest

The first flights to Sweetwater County, WY, date back more than a century when a seven-week, coast-to-coast-and-back air race flew onto a newly cleared landing strip on the cliffs overlooking the Green River in 1919. The popularity of that event spawned a series of local air races that fostered an ongoing fascination for flight among residents of an isolated community that even today requires a nearly four-hour drive to reach Cheyenne, the state's largest city.

In the 1920s, growth of the then-nascent U.S. air mail industry led to the development of an air terminal four miles north of Rock Springs. In turn, its presence helped make Sweetwater County the primary stopping point for pilots flying between Cheyenne and Salt Lake City.

A decade later, Boeing and other companies began offering passenger service coinciding with air mail flights. As more people took to the skies, a new airport capable of handling that era's larger metal airframes was built east of Rock Springs, where Southwest Wyoming Regional Airport (RKS) remains today.

Given the small population of the airport's catchment area, outside factors have heavily influenced air service at RKS for decades—and continue to do so today. A boom in energy development sparked record passenger traffic in 2012, with approximately 56,000 passengers reported that year. But air travel dipped a year later when oil and gas production slowed throughout the state.


When Devon Brubaker was hired as airport director at RKS in 2015, the airport had a low profile and its marketing efforts

had "become stagnant," he recalls. Like a politician stumping for votes, Brubaker routinely promoted the airport before community residents and business leaders. Airport staff became regulars at local chamber of commerce luncheons, county fairs and anywhere else they could sing their airport's praises before residents.

"There was a marketing budget that wasn't being spent," Brubaker explains, noting that RKS didn't even have a presence on Facebook.

At its peak, RKS enjoyed up to five combined departures per day by SkyWest Airlines (flying for United Airlines) and Delta Air Lines. Still, high fares kept many locals from flying.

Within his first month on the job, Brubaker made a seven-hour drive to St. George, UT, to meet with SkyWest Airlines and told the carrier's planners that his trip would have cost more than \$900 had he come by air. The anecdote was helpful in building a business case that demand at RKS would improve if carriers could provide greater value on United-branded Denver connections.

"We did all of those things and the numbers skyrocketed," he says, noting that enplanements grew by nearly 60% from 2016 to 2019. Then, the COVID-19 pandemic led to severe setbacks at airports worldwide. Once travel resumed broadly in 2022, air service at RKS gradually returned; and this August marked the 26th consecutive month of year-over-year passenger growth at the airport. 

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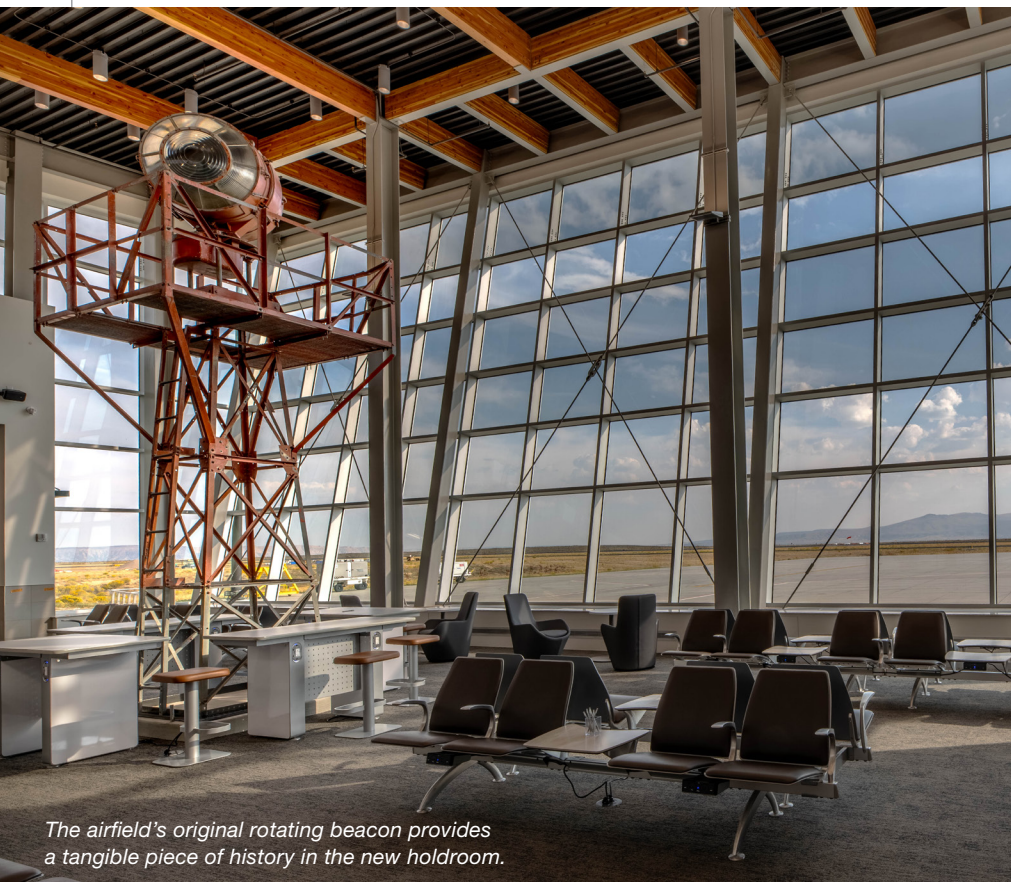
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The Cavalry Arrives

Even though Q&D Construction's headquarters is in Reno, more than 700 miles and two states away from RKS, the company was eager to take on the airport's half-completed project.

When construction resumed, the contractor deployed two superintendents—one from Nevada and one a local hire—to run its operations in Wyoming. About 90% of the subcontractors it hired were locals, with up to 75 workers onsite at peak. Project managers traveled from Reno one or two times a month and used videoconferences to further coordinate.

Q&D's risk assurance bondholders were initially leery of the company taking on a partially finished job, but Forgays credits designers at Mead & Hunt for their detailed efforts to mitigate any associated risks. That process began by building a status report showing exactly where things stood at the time Q&D joined the project, from progress of various tasks down to all onsite and preordered inventory. Q&D also sought to return Sletten's subcontractors to the project if they agreed to rebid their initial contracts; this helped ensure warranty protections weren't jeopardized.

"There was a lot of front-end work," Forgays notes. "We were able to collaboratively create that line of what's ours and what was not our obligation to go back and fix."

Mead & Hunt handled design work for the terminal's architectural, structural, mechanical, electrical, plumbing and communications systems. Geoff Mohney, a project manager with the firm, had never been



GEOFF MOHNEY

involved in a project that swapped general contractors midway through. He says a steep learning curve was made easier in part by the obvious nature of the older terminal's most-glaring needs.

"The existing building was far too small," Mohney says. "If you had a full flight going out, the holdroom was packed—standing room only."

Bottlenecks also obstructed movement between ticketing and an undersized

 An advertisement for FOD*BOSS. It features a yellow Toyota pickup truck with "AIRSIDE SAFETY" and "TOYOTA" on its side, parked on an airfield. A worker in a high-visibility vest is standing next to a large black banner that says "THE FOD*BOSS" in yellow letters. The background shows an airport tarmac with planes and hangars under a cloudy sky.

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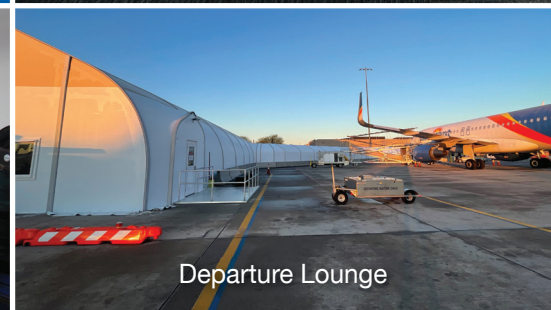
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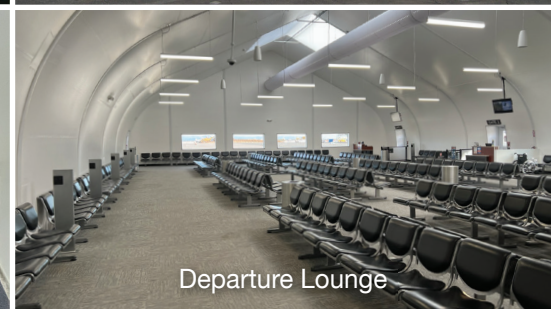
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Departure Lounge

A new boarding bridge from Oshkosh AeroTech will shield passengers from harsh winter weather.



TSA checkpoint, as well as the gating area where deplaning passengers often ran into crowds of outbound travelers awaiting their turn to board. Mohney describes the prior holdroom as “uncomfortable,” with too few seats, inadequate space in the restrooms and very limited amenities.

Mead & Hunt sought to fix these shortcomings with the new design. In addition to Gate 1’s new passenger boarding bridge from Oshkosh AeroTech, the adjacent Gate 2 supports ground loading. Concession spaces were included both pre- and post-security, and counterspace was added for a third rental car company in addition to incumbents Avis and Budget.

Rowley looks forward to the pragmatic benefits of the enclosed jet bridge. “If you ever spend any time in Rock Springs, you know

(avoiding) the wind and the bitter, bitter cold in wintertime will allow for better customer service and more efficiency in loading.”

Aesthetics were also emphasized. A covered driveway was removed to capture more natural lighting near the terminal entryways. On the secure side, a massive Manko curtain wall in the holdroom frames spectacular views across the airfield and beyond.

“Some say Southern Wyoming is not a scenic place, but it really is, especially when you take it in and look at it,” Mohney remarks. “Being able to see Aspen Mountain and the often-dramatic skies, to see that view with planes taking off and landing...it’s really pretty.”

Landing New Businesses

The airport encompasses nearly 1,250 acres, 450 of which could still be developed for non-aviation purposes. To that end, the Wyoming Business Council contributed \$10 million in loans and grants to RKS to maximize the airport’s potential for further economic development. Gov. Mark Gordon added another \$2.5 million from the state that matched federal funds Wyoming received through the 2021 Infrastructure Investment and Jobs Act.

Brubaker put the funds to use by adding a 4½-mile natural gas main and a low-pressure sanitary sewer system. Now, he says just one more upgrade is needed to fully unlock the airport’s potential.

Because RKS is located more than seven miles outside of the city limits, it lacks a pipeline to the local water supply. Trucks transport all of the airport’s water, 6,000 gallons at a time, before it’s treated onsite to ensure drinkability. Brubaker says a \$70 million project to address that issue is in the planning phase, pending funding.

“We added as many elements as possible that would benefit not just the terminal but the airport long-term,” Brubaker says. “(Water connectivity) is the last remaining hurdle for us.”

As he reflects on the recent terminal development, Brubaker recalls fondly how his small team, small community and stakeholder partners pulled together to complete a difficult task. It truly is an epic story for all who participated.

“We overcame adversity that I would argue no other airport has had to overcome,” he says. “I’ll remember how the team rallied and rescued a project from failure to success.” ✈️

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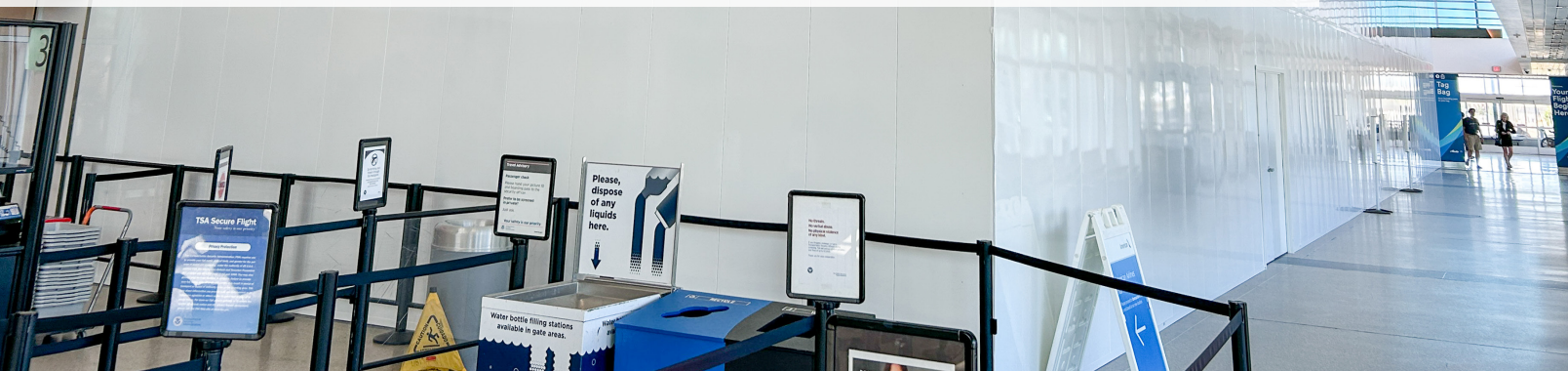
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Huntsville Int'l Develops Master Plan for Wayfinding and Signage

BY MIKE SCHWANZ

FACTS&FIGURES

Project: Wayfinding & Signage Master Plan

Location: Huntsville Int'l Airport, in AL

2024 Operations: 1.64 million

Cost: \$1.3 million for master plan, design & preliminary construction; \$1 million for final construction

Funding: FAA Grants

Master Plan Development: April 2024-April 2025

Remaining Timeline: Final design details & initial construction fall 2025-early 2026; remaining construction scheduled to start mid-2026

Master Plan & Design: Gresham Smith

Virtual Display Subconsultant: Arora Engineers

Key Benefits: Establishing comprehensive plan to improve wayfinding for passengers; new signage, lighting & virtual displays will brighten & modernize terminal; improved signage for curbside, garage & airport roads will increase efficiency and cost-effectiveness; minimizing risks



As passenger traffic at Huntsville International Airport (HSV) grew steadily in recent years, officials realized they had an issue that had to be addressed. Signage at the Alabama airport was making it difficult for passengers to navigate through the facility.

"There was a big need for this," states Jim Flowers, chief design and construction officer at HSV. "Over the years, we did a few projects that impacted wayfinding. However, some of our oldest signs are 35 years old and became more difficult to maintain. They no longer serve our passengers well."



JIM FLOWERS

Instead of making piecemeal improvements, management decided to start from scratch and revamp *all* airport signage for better consistency—from approach roads and curbside areas to the terminal, gates and parking garage.

With funding approval from the Huntsville-Madison County Airport Authority, the airport hired Gresham Smith to develop a comprehensive master plan for wayfinding and signage. Plan development spanned April 2024 to April 2025, and the Authority approved the plan in May 2025.

Gresham Smith began its process with a wayfinding assessment of the entire airport. "We spent two days walking the airport to familiarize ourselves with passenger flow and identify problem



areas,” says David Park, the firm’s senior environmental and graphic designer. “Then, our design team held several meetings with key stakeholders from the airport. Each department, including Executive, Marketing, Security, IT and others identified wayfinding issues that were not readily apparent during the site walk, and were able to provide customer comments. This initial assessment took us three months.”



DAVID PARK

Blueprint for Improvements

The following is an abbreviated list of issues identified:

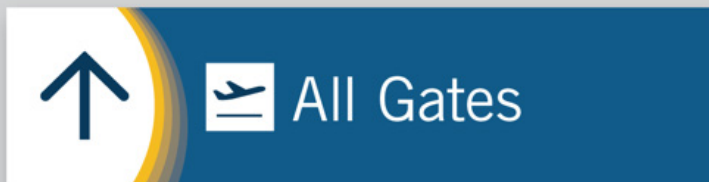
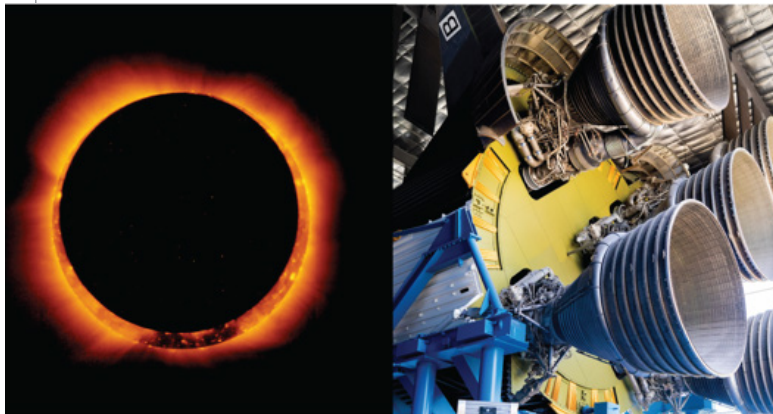
- Overhead roadway signs for vehicles have reflective messaging and borders, but the backgrounds are nonreflective. This makes them less conspicuous and harder to read at night.
- When motorists approach the parking ticket plaza, they don’t have enough time or information to make price-based decisions about their various parking options.

- Garage signage is not sufficient for helping drivers remember where they parked.
- Vertical transitions inside the terminal are not well marked, making it difficult for passengers to easily identify the correct path.
- There are too many signs in the concourse; some list secondary destinations that do not need to be included.

Flowers considers the full list to be one of the most valuable parts of the master plan Gresham Smith created for the airport. “We now have a blueprint to improve several areas within our signage and wayfinding system,” he explains.

Funding and Execution

The airport is tackling its goal of improving wayfinding for customers in three stages: master plan development, which is already complete; final design details and initial construction, occurring this fall and early next year; and final construction, which is expected to start in mid-2026.



Aerospace images provided inspiration for the new signage design.

The first two stages are being funded with a \$1.3 million grant from the FAA. The airport plans to apply for another \$1 million FAA grant to pay for final construction.

Big Vision, Small Details

The new graphic style Gresham Smith recommended for signage was guided by visioning exercises it conducted with airport staff. During these sessions, employees highlighted the U.S. Space and Rocket Center in Huntsville and a strong high-tech industry presence throughout the region as important factors in the airport's personality/culture. The consultant then presented three options, and HSV management selected the graphic theme that visually hinted at a solar eclipse and rocket engine nozzle, which became known as "the spotlight."

In subsequent meetings, stakeholders got a preview of sign details, such as sizes, fonts, kerning and colors. "After designing a basic family of signs for each area of the airport, we overlaid them on photos and created before/after passenger journey sequences so that airport officials would know exactly how they would look," Park says.

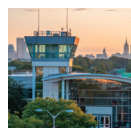
To reinforce the need for improvement, the consultant showed airport staff examples of existing signage that is confusing. "We

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were using different symbols for the same thing, such as nursing stations and handicapped signs,” Flowers laments.

Next, the design team leveraged Gresham Smith’s experience at other airports and applied a set of guiding principles the firm has developed over the years to specific wayfinding issues in all public areas at HSV. Key objectives were providing solutions that will ultimately enhance customer safety and providing information to customers in an easily digestible format, exactly when and where they need it. Park notes that when changes are implemented, passengers will be equipped with the knowledge they need to enjoy a more efficient and less stressful experience throughout each segment of their journey.

Foundational Strategies

The consultant’s design and wayfinding team was guided by an Airport Cooperative Research Program (ACRP) survey of 1,000 international travelers that highlights the importance of visual, verbal and virtual communication. Respondents ranked static signage, landmarks and intuitive building layouts (visual elements) as the most important aspect of wayfinding, followed by direct communication with staff (verbal). The third-most import factor (virtual) starts before travelers arrive at the airport, with social media and pre-trip planning on the airport website, and continues onsite with check-in kiosks, flight information displays and dynamic/interactive signage.

When advising HSV, Gresham Smith underscored the need for coordination and collaboration among airport groups responsible for the various communication methods: The Wayfinding Committee for visual elements; airport staff and Information Desk volunteers for verbal communication; and multiple airport departments for virtual communication via touchscreen displays, dynamic information boards/video walls, website content and social media channels.

The airport’s subject-specific master plan also emphasizes the “four Cs of wayfinding”:

Continuity – Park explains that each decision point for guests is essentially a link in the airport’s wayfinding chain. If guests reach a decision point and the information they need is missing or unclear, the wayfinding chain is broken. This can cause confusion and undermine confidence in the rest of the wayfinding system, he adds.

Connectivity – Airport wayfinding and signage systems are also analogous to a spider web, where every strand of the web is connected. Gresham Smith encouraged HSV to consider how making changes to one part of its wayfinding system will affect the rest of the system.

Confirmation – Identification signage helps assure guests that they have arrived at their desired destinations within the airport.



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New garage signage was one of several improvements recommended by Gresham Smith.

Pairing each directional sign with a corresponding identification sign is an underlying strategy in the HSV plan.

Consistency – Park emphasizes that consistency is the backbone for all aspects of wayfinding. From the moment passengers enter the airport until they board their plane, information must be on target and presented in a consistent manner. This applies to spoken words, written directions/signage, and content on the HSV website and other virtual systems.

Together, the four Cs are fundamental principles for delivering the right information at the right place.

The Dominance of Digital

Like many other airports, HSV uses digital displays to deliver frequently changing information in real time. Park notes that building such elements into the wayfinding system provides HSV with operational flexibility that delivers a high level of service to its customers.

The consultant suggests using digital systems for content such as the location of concessions on maps, and rotating airline positions in the ticketing lobby or curbside. “Customers seeking

information that requires frequent updates are more likely to trust the information coming from a digital source,” he adds.

Determining the preferred display technology for specific space —LCD flat panels or direct view LEDs (DVLED)—is a big part of the digital strategy at HSV. Park explains that LCD flat panel displays are preferred when high resolution is required for up-close viewing, while large-format video walls that will be viewed from a distance are better served by DVLED technology. In general, large displays can have a dramatic visual impact; at HSV, they also help reflect the region’s high-tech industries.

Not surprisingly, the airport uses a mix of both types. The flexibility of digital systems allows it to communicate crucial information inside the terminal, at the curbside, along roadways and in the parking garage.

Arora Engineers worked as a subconsultant of Gresham Smith on the coordination and design of HSV’s digital display strategy. “We examined passenger flow and potential congestion points, and then offered guidance,” says Heath Kolman, vice president of the Special System Practice for Arora. “We reviewed all the displays in the terminal as well as curbside, the parking garage and entrance roads. Then we made suggestions on what types of monitors should be used, and where to put them.”

Naturally, the project required close collaboration with HSV’s Information Technology staff. “In most cases, they already had equipment hardware that could accommodate new software, if upgrades were needed,” Kolman continues. When software upgrades required new hardware, Arora recommended specific systems.



HEATH KOLMAN

Arora also evaluated existing electronic video information display systems—the Flight Information Display System (FIDS), Baggage Information Display System (BIDS) and Gate Information Display System (GIDS)—and determined that associated software will not need to be changed.

More Work Ahead


Implementation of the wayfinding master plan that HSV approved in May 2025 will continue throughout this fall. Once again, the airport hired Gresham Smith; and its personnel are currently preparing detailed construction documents that specify the size, design, materials and quantity of new signage and monitors, along with exactly where each should go. The project team expects to finish final design plans and complete preliminary construction in early 2026.

As before, Gresham Smith hired Arora as its subconsultant for the display elements.

“This work includes firming up the final design of specific signs, including location and mounting requirements,” Kolman says. “We are doing all the specs, including font, size and pixel pitch. We expect to finish by late 2025.”

The airport plans to hire installation contractors by summer 2026 and finish construction by the end of 2026.

Flowers foresees two major benefits for HSV passengers when construction is completed. "First, the new edge-lit signs will light up the terminal and jump out at you. They will drastically change and modernize the overall appearance, while also improving the wayfinding experience," he says.

"Second, the signage in our primary parking garage will be brighter and more user-friendly, making it much easier for people to get from their car to the terminal. We also are planning to build a second parking deck with 1,400 more spaces, and we will use the same signage for that structure as well." 



Digital displays are an important part of the airport's signage strategy.

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Form and Function Featured in New Parking Garage at O'Hare Int'l

BY PAUL NOLAN



Operational efficiency and the customer experience are too important for North American airports to live by the mantra “form over function.” So the Chicago Department of Aviation went for both when planning the new Terminal 5 parking garage at O'Hare International (ORD).

Form was important, more so than usual, because the new six-story structure would block visitors' view. Previously, travelers approaching the airport from Interstate 190 saw the recently renovated Terminal 5, complete with a modern glass entryway and decorative colored lighting. Now, they see the new parking facility.

“Since we were losing the visual to the terminal, we wanted to make sure the garage was something that would be visually appealing,” says Jeff Randerson, assistant commissioner for the Chicago Department of Aviation.

Designed by SCB, the \$191 million garage is clad in corrugated metal siding with helical ramps at both ends of the structure—an upgraded alternative to the boxy, no-frills appearance of most concrete parking structures.



JEFF RANDERSON

“One probably doesn't think of parking garages being high-profile pieces of architecture, but it dawned on us from the get-go that unless we put everything underground, this was going to have a powerful impact on the public perception of the airport given its size and location,” explains SCB Design Principal Martin Wolf. “There was a strong impetus to do something different design-wise rather than view it as simply a utilitarian building.”



MARTIN WOLF

The firm has designed other parking garages in Chicago that incorporate similar metal panel facades as well as some with translucent glass facades. Cladding the ORD garage with diagonally placed metal siding not only provided a more aesthetically appealing appearance, it also proved to be cost-effective compared to more conventional cladding systems, Wolf notes.

Growth and Evolving Use

The garage, which opened last fall, provides the first covered parking for Terminal 5—1,704 spaces in all. Previously, the terminal

was served solely by a surface lot with 946 spaces. Although the new garage was built on a portion of that lot, 636 of its spaces were preserved. An enclosed pedestrian bridge on the first level of the garage connects it with Terminal 5.

Construction of the parking garage came on the heels of a \$1.3 billion expansion and renovation of Terminal 5 that was completed in early 2023. That project added 350,000 square feet and 10 new gates, increasing the terminal's capacity by 25% and expanding passenger amenity space by 75%.

Randerson, a 28-year employee at the Chicago Department of Aviation, explains that Terminal 5 didn't require much long-term parking when it opened in 1993 because it was used primarily for international flights. But that changed in recent years, starting in 2018, when domestic carriers began operating from Terminal 5. Current domestic operators in the terminal include Frontier, Southwest, Delta, Avelo and Sun Country.

The Terminal 5 expansion and parking garage are both part of O'Hare 21, a long-term curb-to-gate transformation of the airport's entire terminal complex recently projected to cost \$7.6 billion.

Designed to Meet Demand

The new parking facility is a cast-in-place concrete structure with six rectangular floor plates between helix ramps at both ends—one ascending on the west end, the other descending on the east end. Wolf explains that the circular ramps, commonly called "speed ramps," provide a more efficient flow of traffic than the sloped ramps found in most parking garages. Incorporating helix ramps also uses space more efficiently and reduces sharp turns for drivers, he adds.

"It was not obvious in the early planning stages that this structure would be six stories," Wolf shares. "We were interested in preserving the view of the existing terminal, and investigated how that might be facilitated by keeping the garage low and on a broader footprint."

That strategy didn't pan out because of limited available land and the commitment airport officials made to airlines regarding the number of parking spaces that would be added for Terminal 5. That meant the garage needed to be built up rather than out. Planning ahead, project designers allowed for a second phase of construction with up to 1,450 additional parking spaces if/when more capacity is needed.

Construction began in late 2022, led by the joint venture firm AECOM Hunt Clayco Bowa as construction manager at risk. A total of 189 participating contractors were part of the effort, including 47 minority-owned firms and 39 women-led firms. One of the more time-consuming challenges was relocating underground utility line before construction began.

Ultimately, building vertically instead of horizontally provided an added feature: prime views of the airfield and Chicago skyline from the top floor of the garage.

From a sustainability standpoint, the garage includes 48 electrical vehicle charging stations, with capacity to add more if there is demand from customers.

Metropolis and associated subcontractors designed, procured and installed the parking access and revenue control system. The company leveraged its years of experience at ORD and other airports to ensure that the new garage worked in concert with existing operating systems and would serve future needs as well.

Enhanced Security Feature

Leveraging technology, designers equipped the garage with Park Assist, an automated guidance system from TKH Security that uses cameras and smart sensors to provide drivers with real-time information about available parking spaces. According to airport personnel, it is already improving efficiency and helping increasing revenue.

The system also includes Park Surveillance, an optional software upgrade

FACTS&FIGURES

Project: New Parking Garage

Location: Chicago O'Hare Int'l Airport, Terminal 5

Size: 6 levels

Capacity: 1,704 spaces in garage; 636 more in adjacent surface lot

Projected Cost: \$191 million

Funding: General airport revenue bonds backed by future airline fees & charges

Features: Real-time space availability system; enclosed pedestrian bridge that connects with Terminal 5; 48 charging stations for electric vehicles

Grand Opening: Oct. 2024

Construction Manager at Risk: AECOM Hunt Clayco Bowa

Architect: SCB

Structural Engineering: Thornton Tomasetti

Structural Engineering/Civil: Milhouse Engineering & Construction

Participating Contractors: 189, including 47 minority-owned companies & 39 women-led firms

Concrete Contractors: F.H. Paschen; Sachi Construction; Allen Prestwood

Mechanical Contractor: Ochoa Mechanical Group

Electrical Contractors: Connelly Electric; Sonoma Underground; Chicago Voice & Data

Plumbing Contractors: Great Lakes Plumbing & Heating; Reyes Group

Automated Parking Guidance System: Park Assist by TKH Security

Access & Revenue Control System: Metropolis

Key Benefits: Added parking capacity for terminal's growing domestic traffic; covered spaces; view of airfield & Chicago skyline from top floor

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that allows ORD personnel to keep a closer eye on what happens in the garage from a property and safety perspective. The surveillance add-on feature uses the same equipment as the baseline Park Assist system. Each camera-based sensor, installed above the drive lanes, can monitor up to six parking spots. Cameras can be programmed to be motion-activated or record footage continuously.

Darrell Brantley, director of Airport Programs, North America, for TKH Security, notes that video footage is stored for up to 90 days, which provides a practical window of time to investigate incidents and respond to claims. Rather than relying on secondhand reports or grainy hallway footage, parking staff can review what occurred in and between the spaces where a vehicle was parked.

"At O'Hare, every monitored space is covered by the HD cameras integrated into our parking guidance system, giving operators clear, verifiable video of what happens in and around vehicles," Brantley explains. "This not only resolves incidents faster, it prevents many from happening in the first place."

The added video coverage can also help take the guesswork out of mystery damage to vehicles, potentially leading to lower insurance premiums for the airport. "The system records exactly what occurred—whether it's a hit-and-run, vandalism or theft—giving O'Hare's parking team and travelers the clarity they need," he adds. "It's about turning speculation into facts."

According to Brantley, Park Surveillance could save ORD millions of dollars in time, resources and legal fees spent trying to determine the cause of property damage taking place in the garage.

PHOTO: CHICAGO DEPARTMENT OF AVIATION



The new garage includes 48 charging stations for electric vehicles, with capacity for more if needed.

Combining the company's two Park Assist products creates a "safer, smarter parking environment," he summarizes. "At O'Hare, this means better risk management for the airport and a more secure experience for every traveler who parks there."

Final Touches

An online reservation system similar to what is already in place for ORD's other parking facilities is expected to be operational for the new Terminal 5 garage by the end of this year. In the meantime, automated payment machines are available and there are two attendants stationed at the exit who can accept payments as well.

Another pending project, also expected to be finished later this year, is the construction of flyover decks—essentially an entrance and exit ramp connected to the second level of the garage for passenger drop-off and pick-up. The ramp will allow visitors to drive up an elevated roadway, cross over the parking garage, drop off or pick up passengers, and make their way back down to the highway.

Tiffany Hannigan, project manager with the Chicago Department of Aviation, expects the garage project as a whole to be completed slightly under budget, despite increased construction costs associated with the COVID-19 pandemic. ✈️



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Why That Ceiling-Mounted Light in the Parking Garage Might Be the Best Security You Didn't Notice

To manage risk, improve response, and protect reputation, parking garage operators are turning to a camera-based parking technology

Airport parking garages serve a practical purpose. But when it comes to safety and incident resolution, many facilities fall short. Damage claims, theft, and disputes are often difficult to verify, largely because much of the area within a garage is unmonitored.

Traditional parking garage surveillance setups, most commonly located at entrances, elevators, and stairwells, don't provide a complete view. As a result, what happens in and between parked vehicles is out of sight when questions arise. According to a recent study, nearly 70% of drivers who experience damage in parking facilities never discover the cause.

Park Surveillance technology addresses that gap. Integrated into a camera-based parking guidance system, called the Park Assist Solution, the system embeds HD video capabilities into the same smart sensors that help travelers locate available parking spaces. Each sensor, installed above the drive lane, monitors up to six parking spots space by space. It can record footage continuously or based on motion, capturing activity where it's most needed.

"The Park Assist Solution with Park Surveillance has significantly enhanced our coverage in our garages and has proven to be instrumental in providing a full scope of events during incidents such as thefts, accidents, vandalism, or vehicle break-ins. Traditional parking garage setups often lacked adequate coverage across all areas, resulting in unsubstantiated claims due to insufficient coverage," said a client in Southern California, June 2025.



"Video is stored for up to 90 days, giving parking operators a practical window to investigate incidents and respond to claims. Rather than relying on secondhand reports, parking staff can review what actually occurred in and between the spaces where a vehicle was parked," said Darrell Brantley, Director of Airport Programs, North America, TKH Security.



"This type of footage can clarify questions that might otherwise lead to lengthy investigations or legal disputes. Some operators have used it to verify damage, disprove false claims, or support law enforcement in more serious cases. Others report that the visible presence of overhead cameras alone has helped reduce the frequency of incidents," said Brantley.

"Park Surveillance is increasingly viewed as a tool for overall risk management. Facilities with this kind of monitoring in place are often better equipped to address complaints, protect customer trust, and manage liability. At a time when trust and reputation can be shaped by a single online review or social media post, having access to verifiable facts gives parking operators a meaningful advantage. If a guest claims their vehicle was hit, or something

was stolen, it's no longer a matter of speculation—it's a matter of record," said Brantley.

The technology also contributes to broader operational improvements. When paired with software that tracks parking space usage and dwell time, surveillance footage can be part of a larger data set used to inform business decisions, signage placement, or staffing strategies. That context matters in environments where space is limited and pressure is high to keep traffic flowing smoothly.

From the parker's point of view, visible surveillance contributes to a sense of safety, influencing parking choices and long-term behavior.

The practical outcome is a shift in how garages function, allowing them to be more proactively managed. Video coverage provides not just documentation, but a means of understanding how facilities are being used and where issues are likely to occur.

For many operators, the decision to invest in expanded surveillance isn't just about resolving problems. It's about reducing the number of problems in the first place. ■

tkhsecurity.com/us/



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Austin-Bergstrom
International Airport

Austin Int'l Welcomes International Arrivals With Open Arms, More Queuing Space and New Baggage Carousels

BY KRISTIN V. SHAW



Austin, TX, has been booming for the last couple of decades, with continued growth predicted into 2060. In turn, Austin-Bergstrom International Airport (AUS) is executing a plan to double its capacity to more than 30 million annual passengers by the early 2030s.

The airport achieved a major milestone toward that goal this summer when it finished a \$13.8 million project to improve facilities for international arrivals in the Barbara Jordan Terminal. The results unveiled in June feature expanded baggage claim and passenger processing areas to increase capacity and reduce wait times for international travelers. One major element was adding two new

Siemens baggage carousels that can flex to serve both international and domestic flights. An existing carousel was also reconfigured to accommodate oversized luggage of international passengers, and eliminates the need for time-consuming, labor-intensive manual handling.

The airport also worked closely with U.S. Customs and Border Protection to significantly upgrade its facilities and add more processing booths for greater efficiency. An expanded queuing and processing area gives arriving international passengers about 5,000 more square feet of elbow room.

Overall, the project modified 20,600 square feet of space in the Barbara

Jordan Terminal and is the first major step of Journey With AUS, the airport's long-term multibillion-dollar expansion program. Plans, which are still evolving, include a new Arrivals and Departures Hall as long as 2½ football fields, and the addition of a midfield concourse that will add 20-plus gates and connect to the Barbara Jordan Terminal through an underground tunnel. In true AUS fashion, one of the guiding principles for the multi-decade development program is to continue offering passengers an authentic Austin and Central Texas experience.

"This project [the International Arrivals Improvements project] is a defining example of how we're shaping the future



of air travel in Austin,” said AUS Chief Executive Officer Ghizlane Badawi in a June press release. “The enhancements to our international arrivals experience significantly improve efficiency and comfort for passengers today, while laying the foundation for a more globally connected and passenger-focused airport of tomorrow. It’s just the beginning of what the Journey With AUS expansion program will deliver for our community, our passengers, our partners and our stakeholders.”



GHIZLANE BADAWI

Maintaining Service

Rohini Kumarage, who was promoted from project manager to implementation officer during the International Arrivals Improvements project, served as the primary hands-on project manager for the first main component of Journey With AUS program. Moving forward, she will manage other project managers more than the projects themselves.

Kumarage emphasizes that the airport still had to accommodate international



ROHINI KUMARAGE

FACTS&FIGURES

Project: Improving International Arrivals Facilities

Location: Austin-Bergstrom Int'l Airport, in TX

Major Components: 2 new baggage carousels, 1 reconfigured; expanded Customs queuing & processing areas

Cost: \$13.8 million

Funding: Airport cash reserves; current & future airport revenues; future revenue bond proceeds; FAA grants

Timeline: Initial discussions started in 2019; key contracts awarded in March 2024; project completed June 2025 (2 months ahead of schedule)

Component of: Journey With AUS expansion program

Architect/Designer: Gensler

Building Envelope Consultant: Engineered Exteriors

General Contractor: Whiting-Turner

Baggage Handling Consultant: AECOM

Structural Design: Structures

Baggage Carousels: Siemens

Key Benefits: Baggage claims can accommodate simultaneous international flights; carousels can flex between serving domestic & international flights; larger & enhanced international arrivals area; reduced wait times because passengers now clear Customs before claiming checked bags

and domestic arrivals while crews executed improvements in the baggage claim area. “The airlines were very concerned that the construction would impact their domestic travelers, and they wanted to know how many baggage claims we were going to shut down,” she recalls. “We made the commitment that at any given time, we would not shut down more than one bag claim at a time.”

Crews installed one of the new carousels before removing a smaller existing unit that was no longer meeting the airport's needs. During that process, AUS staff transferred domestic bags to other baggage claim areas to make sure that airlines could accommodate both domestic and international passengers without any hiccups.

Timing was tricky with up to 11 international flights arriving at AUS daily—some no more than one hour apart. Previously, backups in baggage handling occurred if international flights overlapped due to delays. With only one baggage carousel, the airport could not mix the incoming baggage from international flights. Staff had to wait until all bags from one flight were removed from the carousel before loading bags from the next flight.

“Now we don’t have that issue because we have multiple baggage claim carousels,” Kumarage says.

The airport also changed the order of operations, so to speak, for arriving international passengers. Previously, they were required to pick up their checked bags first and then proceed to Customs. Now, incoming travelers clear Customs first, and then pick up their bags.

Badawi reports that passengers appreciate this change, because the process is now faster. “Because they get processed by CBP [Customs and Border Protection] first, their bags are already there by the time they come to the carousel,” she explains.

Now, if a British Airways flight arrives at the same time as a KLM flight, passengers have more room to line up in the expanded Customs facility, and they can be routed to separate bag claims without delay.

“The airport faced a unique challenge: finding a way to accommodate both domestic and international passenger traffic in the same space at different times for baggage claim,” explains Kumarage. “Working with AECOM as the baggage handling

Who Doesn't Love a Good 'Dillo Drop?

On May 19, passengers waiting for their checked luggage at Austin-Bergstrom International Airport (AUS) were surprised and delighted when a bin brimming with stuffed armadillos slid onto the carousel at Baggage Claim 6. The airport was giving away plush versions of “Armie the Armadillo,” the mascot for its long-term expansion and development program, and guests buzzed with excitement.

The so-called 'Dillo Drop was staged to highlight three new baggage carousels added during the International Arrivals Improvements project. To stoke interest, the airport's social media team sent out a somewhat cryptic warning about an “armadillo infestation” in the Baggage Claim area just before the bin of giveaways began circling on the new carousel. Staff members were also on hand to explain who Armie is and record video of the scene to promote it afterward on Facebook, Instagram, X, LinkedIn and YouTube. (Visit youtu.be/xlD0sl1Ha4A for a sample video.) The event even garnered local news coverage.

Follow-up posts from the airport encouraged travelers to watch for other 'Dillo Drops throughout the summer. As of early September, there had already been two.



Just three days before the successful giveaway, AUS made another clever announcement on social media. This time, it promoted the expansion of its Customs processing area by noting that international passengers would soon have 5,000 more square feet for queuing—enough space for 103,000 tacos.



subject matter expert, we evaluated the facility capacity based on flight arrival curves and developed a 'swing claim hall' solution, the first of its kind in the U.S. This innovative approach enhances flexibility, maximizes efficiency and improves the experience for arriving AUS travelers."

Local Support

Whiting-Turner and Siemens, with AECOM's recommendation, led the charge and tasked Gensler, the architect for Whiting-Turner, with preparing design drawings and specifications. Gensler joined the project with more than three decades of experience at AUS, and, in fact, was part of the joint venture that designed the 660,000-square-foot Barbara Jordan terminal 25 years ago. It also designed Austin's tallest downtown-skyscraper.

"We worked on the nine-gate expansion, the West infill project and the international arrivals area, so we feel very invested in Austin and in Austin's airport," says Gensler Project Manager Adrienne Perlman. "We're really proud to have a center of excellence for aviation here in Austin."



ADRIENNE PERLMAN

Perlman says she appreciates that AUS opted to use a design-build delivery method for its International Arrivals Improvements project. "With a construction manager at risk project, it's a typical design-bid-build process," she explains. "The design team writes up all the documents, works with the owner to get what they need; then the owner puts it out for bid and selects a contractor, usually at the lowest price."

The owner enters into one contract with the architect and another separate agreement with the contractor. However, the contractor and architect don't have any kind of contractual connection with each other. In that type of relationship, the two companies are inherently at odds, says Perlman.

"In a design-build situation, we're all one team and we can all work together and deliver everything together instead of fighting against each other," she contrasts. "Working with Whiting-Turner [the general contractor] has been a real joy and a pleasure. They understand aviation architecture, they understand the clients, they understand the city of Austin, and we worked fabulously together to deliver this project."

Case in point: The firms finished the \$13.8 million project on budget and two months ahead of schedule.



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Kumarage extends the cooperative spirit of AUS' recent design-build experience to her industry peers. "Every airport has challenges, but if we sit down and work as a team and come up with ideas, there are ways that we can overcome these challenges," she reflects. "If other airports have similar challenges, we are more than happy to sit and talk with them about this project."

Coming Home to AUS

With improvements in place to reduce wait times for arriving international travelers, it's clear to airport officials that more development is needed to accommodate future growth. Design of a larger arrivals and departures hall to expand capacity even more is currently in progress with SOM (Skidmore, Owings & Merrill)—just one of many projects in the works. Journey With AUS will touch practically every part of the airport in some way, from new midfield taxiways on the airfield to renovated restrooms along the concourses.

"Austin is a city that's not dying; it's a city that's growing," Perlman says. "That growth—even though a lot of us who have been here for a long time might grumble about it—is a good thing. It keeps us fresh, and it keeps everything happening around us. That's what makes Austin special, and the airport itself has tapped into that spirit."

She emphasizes that it's important for local passengers returning from trips to feel at home in the airport. "It has a distinctive Austin, Texas, flavor that is unique to anywhere else in the world," she says. "When I come home from an international trip, I feel like I'm welcomed into the city of Austin. As soon as I get off the plane, I see evidence of Austin all around me." ✈️

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Coleman A. Young Municipal Gets a Motor City Makeover

BY MICHELLE GARDNER

FACTS&FIGURES

Project: Redeveloping & Modernizing Facilities

Unique Challenges: Decades of decline; city bankruptcy

Location: Coleman A. Young Municipal Airport, Detroit, MI

Owner/Operator: City of Detroit

Size: 300 acres

Age: 98 yrs. old

Annual Operations: 60,000

Based Aircraft: 145

Airport Employees: 11

Key Milestone: Receiving FAA approval for Airport Layout Plan in 2022

Investment: \$84 million for infrastructure improvements over 10 years

Funding: 90% FAA, 5% state, 5% city

Airport Study: Avion Solutions Group LLC

Airport Consultant: Kimley-Horn

Key Development: Airspace Experience Technologies is developing large-scale eVTOL aircraft onsite; 2 tenants (Avflight & MyFlight Tours) broke ground for multimillion-dollar facilities this year; Runway Safe is under contract to provide Engineered Materials Arresting Systems on both ends of primary runway in 2027; B.O. Davis Aerospace Technical High School will begin holding classes in remodeled passenger terminal in 2027



With crumbling infrastructure, cemeteries on three sides and its Airport Layout Plan lying dormant for decades, Coleman A. Young Municipal Airport (DET) in Detroit had pretty much been left for dead. Lately, however, there are promising signs of a resurrection thanks to local support and up to \$70 million in federal funding and \$4 million in state support for improvements over the next 10 years.

Just two years after Jason Watt was hired as director of the city-owned airport, Detroit declared bankruptcy. Not surprisingly, plans to modernize, or even maintain, the airport were not priorities for beleaguered leaders desperate to find ways to cut and/or monetize the city's holdings. As an enterprise fund facility, DET was considered expendable, and city officials wanted to explore alternative uses for the land it occupied.

Conversely, Watt saw great potential in DET because it is the closest airport



JASON WATT

to downtown Detroit and just 10 miles from the U.S./Canada border. The Detroit native just needed to convince the mayor and city council that DET could be a viable asset for the city, state and beyond. "The airport is an add-on feature to a thriving, robust city," Watt explains. "I needed the city to get to a thriving robust phase for them to put the proper attention that was needed at the airport."

Building Coalitions and Consensus

When the city came out of bankruptcy in December 2014, Watt needed a solid team around him to keep the airport alive. Some employees left during the bankruptcy, which he describes in retrospect as an opportunity to hire new talent for the mission ahead.

Despite little to no financial investment in DET from the city, several private groups stepped up to help maintain operations at the airfield widely known as Detroit City Airport. Key supporters included the Friends of Detroit City Airport; Tuskegee Airmen National Museum; the



local chapter of Black Pilots of America; and B.O. Davis Aerospace Technical High School, which was previously located at the airport but has maintained ties since it was moved in 2013.

Watt explains that he and the various groups have built very strong relationships during his 14 years as airport director. "Honestly, I feel like promises were made, and I'm going to deliver on those promises and make sure this airport will be everything it should have always been for the city," he reflects.

In February 2016, Alex Gertsen, senior director of Airport Advocacy and Vertical Infrastructure for the National Business Aviation Association (NBAA), got a call from a flight department at DET regarding the city's desire to close the airport and repurpose the land for non-aviation use. Knowing that Detroit's mayor and other city



ALEX GERTSEN

politicians had to be persuaded against shuttering valuable aviation infrastructure that might never return, NBAA supported some quick coalition building that included the airport users, based tenants and the FAA.

As part of the coalition, an ad-hoc education association was formed, because education is a big focus of what was already happening at DET and an important part of the vision Watt and other supporters have for its future. The airport's connections with B.O. Davis Aerospace Technical High School and the Tuskegee Airmen (the airport's namesake, Coleman A. Young, was himself a Tuskegee Airman) helped win over some city council members, and facts about the airport's economic benefits added objective data. There were also compelling legal arguments against closing DET associated with its obligations regarding certain land purchased with federal funds.

At the time, the airport's main runway, 15-33, was at the end of its

20-year lifecycle and needed an overlay. Although the city was still undecided about what to do with the property overall, Watt convinced the mayor to invest in DET after long discussions about airport infrastructure and moving forward with next-gen air mobility systems and other innovative technologies. After the \$3.5 million city-funded runway overlay was completed in July 2017, the city was fully on board with revitalizing the airport, he relates.

Concept, Condemnation and Community

Watt credits councilman Scott Benson of District 3 for creating an airport task force on the City Council not only to shape the future of DET, but also to understand what airports do and what DET could do for the east side of Detroit. Task force meetings helped spread the word about developing the airport and garnered the community support necessary to make it happen, Watt explains.

In 2017, the city commissioned an extensive viability study of the airport by Avion Solutions Group LLC. One of the resulting recommendations was to decommission Secondary Runway 7-25 to open up 86 acres of airport property for future industrial development. The runway was, in fact, decommissioned in November 2024 and crews are removing all airfield pavements, etc. so the land can eventually qualify for non-aeronautical use.

Gertsen acknowledges the challenging nature of deciding to close one of DET's runways, and shares the prevailing logic. At 3,700 feet, 7-25 would have had to be shortened significantly to meet FAA standards and would have lost its utility. As such, the land it occupies could provide more value to the airport if used for hangars; an aircraft maintenance, repair and overhaul shop; or the field's fixed-base operator (FBO). One drawback, however, is that flight training is now impacted on days when winds are significant.

For decades, the FAA has required the city of Detroit to acquire property east of the airport to bring the airfield's footprint into compliance with federal standards. Beginning in 1994, the city began

acquiring 70 acres of land that included approximately 25 homes, a church and a playground that were too close to the runway centerline and necessary for airport expansion. Lack of funding and other delays halted progress until the effort resumed in 2022.

Watt notes that the Uniform Relocation Act was used to acquire properties through condemnation, and owners received just and fair compensation. In some cases, new homes were purchased. "I believe airports have to be good neighbors," Watt emphasizes. "They felt like they had been forgotten, and it was an honor to tell them they weren't."

The property acquisition program is slated to end later this year.

Moving Forward

Completing an updated Airport Layout Plan was critical to securing grant money for the many infrastructure improvements that are needed.

"City Airport had been chugging along any way that they could by paying out of pocket for maintenance and improvements," explains Colin Wheeler, project manager for DET consultant Kimley-Horn. "That limited their ability to invest, and there really

wasn't a lot that had been invested since they lost commercial service in the early 2000s."

There were a few electronic records available to ready the Airport Layout Plan for approval, but flooding damaged or destroyed all physical records and drawings stored in the basement of the former terminal building. "A lot of information that would have been helpful for us was now not available," Wheeler laments.

Nevertheless, he and Kimley-Horn gritted on, eventually securing conditional approval for the Airport Layout Plan from the FAA and Michigan Department of Transportation (MDOT) in July 2022. Achieving this huge milestone allowed DET to start focusing on grant-funded and other projects it wanted to pursue.

The initial challenge for Wheeler was understanding the 98-year-old, 300-acre property. One major (and disheartening) discovery was that almost all major utilities for the entire east side of the city are buried around and adjacent to the airport.

Cemeteries located north and south of the primary runway were another key issue, and one of the main reasons DET could



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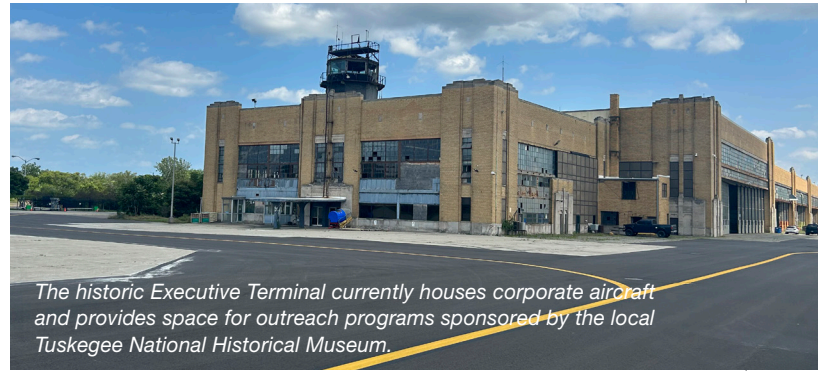
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not secure standard approval for its Airport Layout Plan. The cemeteries are so close, the airport's runway safety areas do not meet FAA standards.

At Wheeler's behest, a subconsultant inquired about the cost of acquiring the property and learned that the cemetery to the north is one of the city's oldest, and many prominent local figures are buried there. "Obviously, there is the political nightmare of digging up graves and relocating them and all the news that comes along with that, so it was kind of a non-starter," Wheeler recalls.

However, through the Airport Layout Plan process and substantial coordination with both MDOT and FAA, the team concurred that installing an EMAS (Engineered Material Arresting System) on both ends of the runway would be a viable, effective way to move through those challenges. Runway Safe is under contract to supply the EMAS beds, with installation expected in 2027. Wheeler suspects that no other general aviation airport in Michigan has an EMAS and notes that MDOT provided invaluable guidance to justify and coordinate the specification.

With plans for the EMAS in place, FAA approved the airport's 20-year Airport Layout Plan in September 2022 and is



The historic Executive Terminal currently houses corporate aircraft and provides space for outreach programs sponsored by the local Tuskegee National Historical Museum.

coordinating with DET to allocate about \$9 million for the design and construction of the EMAS, with potentially tens of millions in additional funding beyond that project. Making the EMAS project a top priority was a key provision.

Watt emphasizes that DET will meet all FAA airport design criteria after the \$9 million federally funded EMAS beds are installed. "And that will be probably the first time ever," he muses. Preliminary design and environmental work for the project have already started. Construction is scheduled for spring to fall 2027.



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Improving the main runway in 2017 was a key turning point for the airport.

Historic and Future Partnerships

Groundbreaking ceremonies for two multimillion-dollar tenant facilities are strong, visible signs of renewal at DET.

MyFlight Tours, a national helicopter tour operator, broke ground on its headquarters building this April. The Detroit company was founded in 2019 and expanded operations throughout the U.S., but decided to make DET its home base. The company's new 12,000-square-foot facility is expected to open later this year, marking the airport's first large-scale development in more than 50 years.

Gertsen, from NBAA, considers DET's proximity to the city center a major factor in the company's success providing

popular and affordable tours in Detroit. "Reaching downtown by air takes only two minutes!" he emphasized after flying the tour route. "This provides city residents and visitors with an incredibly unique opportunity to take a seven-minute round-trip flight out of DET and to see the magnificence of Detroit from the air, while strengthening the value proposition of the historic airport."

Avflight, the airport's FBO, is also building a new facility at DET. After operating on short-term leases and working out of the old passenger terminal since 2011, the city rewarded the loyal FBO with a 30-year leasehold in May 2024. This June, Avflight promptly broke ground on a 5,000-square-foot terminal, 20,000-square-foot heated hangar, and an attached 1,440-square-foot parking garage.

Watt speaks highly of the airport's 14-year relationship with Avflight. "They are very committed and willing to do just about whatever it takes to make sure this airport is successful. I couldn't have done this without them," he says, adding that Avflight was especially helpful during the city's bankruptcy.

Joe Meszaros, vice president of Operations for Avflight, says the company is honored to play a leading role in revitalizing the airport with its recent investment. "We are committed to working hand-in-hand with the city and our partners to ensure DET continues to serve as a catalyst for economic growth and a source of pride for the community," says Meszaros.

Vertical Flight and Emerging Tech

Watt is excited about the potential for eVTOL (electric vertical takeoff and landing) aircraft and other next-gen technologies to create an ecosystem that will help DET survive and thrive. He cites Airspace Experience Technologies, a company that has been developing large-scale, low-emissions eVTOL aircraft at the airport since 2017, as a key partner that is helping propel DET forward.

Despite this excitement, it's not lost on Watt that Detroit is famous for manufacturing



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cars. He seems to reconcile his native pride in the Motor City by working to help it remain No. 1 in U.S. for mobility in general—cars or eVTOL. “That’s Detroit’s bread and butter,” he says. “The innovations we can do here at the airport will help us stay in that dominant space. We are committed, the entire city is committed, so that we don’t lose our place.”

Gertsen points out that being close to downtown will make DET a crucial asset for advanced air mobility operations, and foresees a bright future for the airport adding value to the city and region.

Various next-gen technologies developing at DET should dovetail nicely with educational initiatives being implemented at the airport.

Aviation Education Corridor

In 2023, DET was on the short list of locations for an eVTOL manufacturing plant but came in second despite offering approximately \$285 million in financial incentives from the city of Detroit, the Michigan Economic Development Corporation and other stakeholders. Although the loss was devastating for the airport and city, Watt says it ultimately provided the opportunity to develop aviation and aerospace education locally, with an eye on expanding throughout southeastern Michigan and beyond.

Two initiatives are already in the works with Washtenaw and Wayne counties for high-level educational programming to help their youth become pilots, aviation maintenance technicians and even airport directors. Not yet willing to name names, Watt reports that he and city officials are negotiating with a very large aviation maintenance school about building a facility at DET.

In addition, B.O. Davis Aerospace Technical High School is returning to DET after being away for more than a decade and will be located in the airport’s former passenger terminal. The Detroit Public Schools Community District will pay \$14.5 million to renovate the 60,000-square-foot facility into classrooms and hands-on environments for the specialty high school.

Watt says these education programs will help open the door for business development at the airport. “Essentially, it is my job is to make sure the community is utilizing their own airport,” he remarks. “This is what my community wanted for this airport, and it’s my job to figure out how to make all that work.”

The Tuskegee Airmen National Museum has had a long-term presence at DET and will continue to be an important player. In addition to providing scholarships, the group offers pilot training, maintenance training, drone instruction and other aviation-related courses to local youth at no cost.



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The facility currently under construction for MyFlight Tours is the first new vertical structure at the airport in more than 50 years.

The education component is personally significant for Watt because it provides workforce development and opportunities for Detroit youth. “I actually fell in love with aviation right here at this airport at 16 years old when I went up on a flight from a school now being refurbished,” he reminisces.

Phoenix Rising

Watt’s goal is to make DET a world-class business aviation airport and a good neighbor. His strategy is understanding what customers and the community want, and making money while providing it. The airport lost a lot of traffic to local competitors over the years, and he plans to win it back through revitalization.

“If you’re going to make a commitment to the community, you have to ride it out and deliver; and that takes time,” he reflects. “Just never give up. Follow through with commitments.”

Looking in from the outside, NBAA’s Gertsen is encouraged by the success building at DET. He credits Watt and the coalition that formed early on for helping the mayor and other key stakeholders recognize the immense value of aviation infrastructure and the bright future that investing in the airport will bring—connecting the city, providing education opportunities, jobs, innovation and growth.

Wheeler, from Kimley-Horn, has been surprised and heartened by hearing people in the industry speak about the airport in a positive light. “There is now hope and excitement regarding DET,” he remarks. “The right people are trying to do the right things for the airport and the city.”

Plenty of work remains for Watt and his staff of less than a dozen employees. “My airport is in the middle of a transformation, just as the city of Detroit is,” he says. “We will be like a phoenix rising.”

Ever the good ambassador, Watt welcomes all to come see how far the city and its growing general aviation airport have come. “It’s a beautiful city and I am ready to invite the world back,” he says warmly. “It’s been absolutely the most rewarding journey of my life. We’re having a lot of fun.”

In 2027, DET will celebrate its 100th anniversary with a gala—perhaps the perfect time for a visit. ✈️



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Asheville Regional Builds New Terminal on Top of Its Existing Facility

BY PAUL NOLAN



Large or small, landside or airside, all airport construction comes with unique challenges. As one of the fastest-growing airports in the United States, Asheville Regional (AVL) in North Carolina is battling a particularly formidable set of circumstances. The mission for President/Chief Executive Officer Lew Bleiweis and his team: demolish their woefully undersized terminal and rebuild a larger version on the same footprint...*without* interrupting service.

If that strikes you as a difficult feat, you're not alone.

"We think this is one of the most complex aviation projects that is going on in the country," says John Baumeister, operations manager for construction manager at risk Hensel Phelps. "I have not done something like this on such a small footprint."

In June, AVL and its project partners completed Phase 1 of the two-phase \$370 million terminal expansion. Select demolition and



LEW BLEIWEIS



JOHN BAUMEISTER

other preliminary work for Phase 2 will move forward in the next several months, but construction of the second half of the terminal cannot begin until the new air traffic control tower has been commissioned. Crews broke ground on that \$50 million project in January 2023, and completion is expected in spring 2026.

The existing air traffic control tower is more than 62 years old and located within the existing terminal, which also dates back to the early 1960s. The new tower will be an entirely separate structure.

The new terminal is the primary component of AVL Forward, a \$420 million capital improvement program that has been a long time coming for the air gateway to Western North Carolina. Throughout the years, the region has become a popular vacation destination, with tourists flying into AVL to enjoy the Blue Ridge Mountains, top-rated mountain biking and the region's vibrant arts scene, foodie culture and frothy lineup of craft breweries.

As Bleiweis explains, it took AVL nearly 60 years to hit the 1 million annual passenger mark. But after it surpassed that seminal milestone in 2018 and again the following year, the airport quickly exceeded 2 million annual passengers in 2023. With 43% growth in 2019, AVL would have likely served more than 2 million passengers in 2020 had it not been for the COVID-19 pandemic, adds Bleiweis.



"We're not the only airport in the U.S. experiencing this type of growth, but we're one of the few," he remarks. "We saw what was coming down the road and knew we needed to increase the size of the terminal building."

Half at a Time

Beginning in 2023, the airport began operating out of the south half of the terminal so crews could demolish the north half and rebuild in the same area. The new facilities and a temporary TSA passenger checkpoint opened in stages this summer—a strategy that will be repeated in Phase 2.

The new ticket lobby opened on June 11, followed by the new second-floor North Concourse on June 25. The new concourse's eight gates were operational by the end of July. Phase 2 will add four more. Under its previous configuration, AVL had a total of seven gates.

Phase 1 of the expansion project also added an updated central energy plant located north of the terminal. This removes all cooling and heating equipment from the terminal itself.

The recently completed North Concourse, which totals 150,000 square feet, features newly designed spaces, modern amenities, several new food service



FACTS&FIGURES

Project: New Terminal

Location: Asheville Regional Airport, in NC

Size: Nearly 327,00 sq. ft.

Cost: \$370 million (Phase 1 cost about \$228 million)

Funding: Federal & state grants; public bonds; airport user fees & non-aeronautical revenue

Construction: 2023-late 2027 or early 2028 (Phase 1 completed June 2025)

Key Components: Additional ticketing counters & airline office space; expanded TSA checkpoint; larger hold rooms; increase from 7 to 12 gates; new baggage handling system with larger carousels; new concessions; larger restrooms; nursing mothers' room; new seating with electrical plug-ins; new central energy building

Associated Project: \$50 million FAA Tower

Construction Manager at Risk: Hensel Phelps

Architecture & Interior Design: Gresham Smith

Owner's Representative/Construction Manager: Parsons

Mechanical & Electrical Engineering: AME Consulting Engineers

Special Systems & Fire Protection Engineering Design; Code Consulting: Arora Engineers

Outbound Baggage Handling System: Automatic Systems Inc.; Brock Solutions

Boarding Bridges: thyssenkrupp

Electrochromic Glass: SageGlass

Seating: Arconas; Furniture Planners Inc.

Key Benefits: Improved passenger experience; increased operational efficiency; additional space for expanded commercial service



options and views of mountain landscapes through floor-to-ceiling electrochromic glass that auto-tints as the sunlight changes. Installing roughly 19,000 square feet of SageGlass allowed the airport to capitalize on one of the region's top natural assets without suffering the negative effects of glare or excessive heat gain.

The new facility is a tantalizing preview of the final product: a two-story, two-concourse, 12-gate terminal spanning 275,000 square feet. By contrast, the original terminal was 150,000 square feet after several updates throughout the years.

Phase 2 of the expansion project is underway with demolition in parts of the south half of the original terminal; construction is expected to be finished by early 2028.

It Started With a Vision

The airport worked closely with Gresham Smith on the new terminal design, repeating its previous collaboration on a multistory parking garage. Because the team was essentially starting with a blank slate, it conducted "decision visioning workshops" with a wide range of stakeholders, from airport staff and airport authority members to business leaders and the general public.

"You start with all kinds of pictures and thought imaging to come down to what you're actually looking for in your final design," Bleiweis explains.

The planning team intended to hold traditional public meetings but instead had to pivot to virtual versions due to the COVID-19 pandemic. It also sent out questionnaires and received more than 4,000 responses from community members.

The goal was to determine how the airport could become a reflection of the area AVL serves, explains Brad Sucher, senior vice president at Gresham Smith.

Receiving input from the community early in the process helped architects land on a theme/mission statement for the two-phase project: "a modern gateway humbly rooted in timeless natural beauty." In turn, that led to color palettes and tactile materials that represent western North Carolina.

"The driving question we asked ourselves whenever we made decisions was, 'What is the essence of this building?'" says Sucher. "That's how we knew whether something we chose was suited to be part of this project."

Gresham Smith steered the interior design decisions with assistance from the airport and key stakeholders. A stone and metal-clad vestibule welcomes visitors into the expanded ticketing area on the ground floor. After checking in, passengers continue through the temporary security checkpoint and proceed to the upper level. There, the column-free design creates a spacious and airy environment, with natural light

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An expanded ticketing lobby with more service counters will help serve tourists and other travelers.



and unobstructed views along the entire length of the North Concourse. A pattern in the terrazzo flooring that mimics rivers in the region helps lead travelers to the gate areas.

There are eight different types of seating in a variety of shapes, sizes, fabrics and textures. All, however, include charging units for electronics—an important amenity for passengers.

No detail was too small to consider. For instance, the project team asked a new mother to try several rocking chair options before selecting one for the new nursing mothers' room.

Visual and Functional Improvements

Bleiweis reports that the recent terminal makeover has been immediately impactful for customers. Some passengers who regularly fly into AVL said the improvements initially caused them to pause and question whether they had landed at the wrong airport. To ease the transition, airport staffers and volunteers were stationed throughout the new facility during the opening weeks to answer questions and help travelers find their way.

While many visitors comment on aesthetic improvements, the new concourse also features less noticeable, but important, operational upgrades such as a new baggage handling system with upgraded checked baggage inspection. According to airport personnel, the average processing time for a bag to travel from ticketing through screening and to the baggage makeup unit is just three minutes. The new makeup unit is twice the size of the temporary belt that airlines used during construction. Plans for Phase 2 call for a second baggage makeup unit and an outbound oversized baggage belt to further increase capacity and efficiency for the airlines and TSA.

The airport also purchased new jet bridges from thyssenkrupp. Fixed portions of the boarding bridges were designed so tug traffic can pass underneath them to travel between the baggage makeup units and gates. The bridges vary in length (some two tunnels,

others three) to accommodate a wide variety of traffic, from small regional jets to full-sized Group III aircraft such as 737s and A320s.

Travelers are using a temporary TSA checkpoint until Phase 2 of the terminal project is completed. The permanent one will feature six lanes, with room to add two more if needed. Last year, growing passenger volume prompted the addition of a fourth screening checkpoint to accommodate the increase.

A temporary loading dock was used to receive supplies during Phase 1. A new dedicated dock with its own access road will be constructed during Phase 2 so delivery vehicles will not add to traffic on the main road into the terminal.

Planning and Design | Program & Construction Management Facilities Management | IT | Asset Management

AVL PHASE 1 TERMINAL MODERNIZATION PROJECT:

Arora proudly led Special Systems and Fire Protection Engineering design and provided code consulting services as a subconsultant to Gresham Smith.

- Special systems included structured cabling systems, EVIDS, public address/audio paging systems, etc.
- Fire protection included wet and dry water-based sprinkler and standpipe systems.



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An Extra Advocate

The airport hired Parsons as project manager for both phases of the terminal reconstruction. During Phase 1, Vin Del Nero led an onsite team that included himself, an IT technician and a project manager who coordinates with the construction partners.

As Del Nero describes it, Parsons served as an extension of AVL so airport staff could focus on their own everyday responsibilities. On a practical level, he reviewed funding authorizations, change orders and the schedule, and advised airport management when dates were slipping or there were questions about the process.

"This project was one of the most challenging I've ever had to deal with because it has such a small footprint," Del Nero notes.

To help compensate for the size constraints, AVL leveraged temporary facilities. Three gates operated out of modular buildings after the north half of the terminal was no longer usable, and rental car counters were removed and housed in a temporary structure south of the terminal.

Having an outside project manager proved especially helpful when original plans to rebuild the south end of the terminal first had to be scrapped because COVID-19 delayed construction

of the new air traffic control tower. As a result, the airport had to keep the existing tower in operation and pivot instead to building the north end of the terminal during Phase 1.

"It's a good thing we had a contractor and a client that understood it all," Del Nero reflects.

Maintaining a continual flow of clear information was emphasized to keep the project on time and on budget. All key stakeholders met weekly initially and more often when needed—sometimes multiple times per day.

"The lines of communication must stay open, and that was very simple with this client," Del Nero says. "If we needed something answered, it would get answered quickly. Problems we've had with other projects occurred when the lines of communication stopped. [The AVL project] certainly had its challenges, but we talked them out and worked through them."

Undeterred

Some of the most disruptive challenges were caused by Hurricane Helene, which devastated western North Carolina in late September 2024. Although the airport suffered minimal damage, it became a hub for delivering rescue supplies throughout the region.

CONTINUED ON PAGE 50

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From the C Suite

Lexie Farmer, chief operating officer of Asheville Regional Airport (AVL), played a vital role in completing Phase 1 of the airport's \$370 million terminal rebuilding project, and her continued leadership will be critical to ensuring Phase 2 goes smoothly.

Prior to joining the executive team at AVL in spring 2024, Farmer worked as airport operations director for Charlotte Douglas International Airport (CLT). Before that, she held leadership positions at several other airports, including General Mitchell International (MKE) in Milwaukee, Dane County Regional (MSN) in Madison, WI, and Hartsfield-Jackson Atlanta International Airport (ATL).

In this Q&A, Farmer talks about the importance of working with experienced partners, lessons from the project's first phase and the importance of celebrating the intermediate milestones as a team.

AI: Building a new terminal on the same footprint as the existing terminal while also keeping the airport operating seems



LEXIE FARMER

unfathomable. Was there a model or any precedent for the approach you took?

LF: This was the main reason we chose to do this project via construction manager at risk. This project delivery method is best for complex projects with challenging phasing. My experience was similar at CLT with the terminal lobby expansion project. It built new and renovated old while continuing to operate. However, the easy part of that job was that it did not include gates or jet bridges. This challenging project is also the main reason for selecting Parsons as program manager. Their team helped manage the Raleigh-Durham International Airport (RDU) Terminal 2 replacement and Terminal 1 modernization program.

AI: The AVL team and all its partners in this project have emphasized the importance of candid and frequent communication to stay on time, on target and develop creative solutions when they're needed. What is the secret not only to generating that type of back and forth, but also being able to act quickly and reach agreements when pivots are necessary?

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LF: Having weekly OAC [owner-architect-contractor] meetings and weekly construction site walks to monitor the progress. As we got within a few months of opening, we added weekly touch bases between the contractor, designer and the owner to make sure we were addressing high-priority items. There also was a mutual respect between the parties and encouraging everyone to think outside the box to address challenges.

AI: *The second phase of this project involves demolishing the remaining half of the existing terminal and building the second half of the new one. What are the most important lessons from the first phase that you are taking into the second phase?*

LF: Whatever plan you come up with, there will be something that can and will cause a roadblock that you didn't see coming. Two big challenges were the elevator/escalator and fire inspections. These were items that timing is sometimes out of your control, so the lesson we've learned is to plan space between the inspections and public opening to ensure approval and certificate of occupancy are obtained with more ease in the process. Another lesson we learned is to give the concessions more time to upfit their space so their teams have adequate time for training in the space before opening to the public. Although there are many

more, the last lesson learned that I'll share is to make certain that in Phase 2 we have complete phasing and temporary construction plans. This will help us better understand the impacts early so we can mitigate.

AI: *Are there one or two things that were on your wish list for the new terminal that you had to let go of?*

LF: I would have liked to see an updated canopy from the terminal to the parking garage and additional passenger boarding lifts for the transportation of wheelchairs and other large items, as we only have one in each concourse.

AI: *Airport executives and their teams get little time to bask in the joy of a completed project because there is always another one on the to-do list. What steps did you take in this first phase of the project to ensure your team recognized their achievement?*

LF: From someone who has worked many construction projects that lead to opening new facilities, I love the fact that the AVL executive staff made sure the employees got to have *their* reveal and party before any other planned reveal. It was really touching and made the employees appreciate their role in making this happen. ✈️



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CONTINUED FROM PAGE 47

Constructing the new terminal temporarily took a back seat to helping communities that were ravaged by the storm. Even so, Phase 1 of the project was completed on time and on budget.

Other significant challenges stemmed from changing the original architectural plans to accommodate passenger growth that surpassed planners' initial expectations. For example, the airport is expanding its central TSA checkpoint from four to six lanes (with the capability to bump up to eight lanes if necessary). It's also adding a third luggage carousel to the baggage claim area that will be built during Phase 2.

Gresham Smith not only focused on achieving the right look and feel for the facility, it also prioritized programming and creating future flexibility.

"Fleet mixes are changing; airlines are upgauging," Sucher explains. "We needed the new terminal to serve smaller aircraft in the near term, but we also needed to be able to double those holdrooms and gates to make a single position for larger aircraft. We looked at every operation inside of that facility to see how we could scale up to match peer airports in the region in the most sensible and flexible manner."

Project partners never had to compromise what they hoped to achieve with the new terminal despite the unique challenge

of "building on top of, next to, around, underneath and adjacent to the existing operation," he emphasizes.

"It did drive the ultimate layout and configuration of the terminal," he adds, "but we never let [the result] stray from the essence of what we wanted this facility to be. We never changed decisions because of a phasing reason. We always found a solution around that."

It's a daunting task for an airport to keep pace when passenger volume doubles in a mere five years. That's why AVL's new terminal is designed to handle 4 million annual passengers and grow beyond that, including additional gates if needed.

In the meantime, the North Carolina airport is capping its number of airlines to five and restricting overall daily flight volume until the new terminal is completed. Additional airlines, however, are waiting for approval to begin service at AVL.

Bleiweis acknowledges that it's scary to think about how quickly the airport could reach 4 million passengers per year. But that's what makes operating one of the fastest-growing airports in the country so much fun. ✈️

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Internal Operational Readiness Division Benefits Los Angeles Int'l

BY JODI RICHARDS



 *"The reward of work well done is the opportunity to do more."*

This adage from Jonas Salk certainly applies to airport infrastructure improvements. As soon as crews finish building a new facility or system, you have to implement it into existing operations—another major undertaking.

That's when some airports turn to an Operational Readiness, Activation and Transition (ORAT) specialist. Los Angeles International (LAX), however, largely

handles such matters through an inhouse Airport Operational Readiness (AOR) Division, with limited support from outside consultants.

Tasked with handling ORAT for new facilities and ongoing projects, the AOR Division was formalized after successfully delivering key projects beginning in 2017, and has continued to demonstrate its benefit at the busy airport.

Lessons learned during construction of the Bradley West project set the stage for

improving the overall delivery process. "In terms of project deliveries for LAX, it was challenging," reflects AOR Manager Teresa Sarullo.

Mike Christensen, assistant general manager, Airports and chief airport development officer of Los Angeles World Airports (LAWA), concurs. "From my perspective, there were a number of projects that were not being



TERESA SARULLO



delivered in a way that really allowed the easy transition from constructed project to operating facility," he says.

Christensen explains that ORAT is a systematic, multi-disciplinary approach to support the successful introduction of new infrastructure and ensure that all facets are fully functional and ready for operation from the first day of service. When he introduced the concept to airport management in 2017, ORAT was still relatively new to the aviation industry in the U.S. At the time, it wasn't well understood that implementation took organizational support, time, education, teamwork and patience.



MIKE CHRISTENSEN

FACTS&FIGURES

Project: Developing Internal Operational Readiness Division

Location: Los Angeles Int'l Airport

Owner/Operator: Los Angeles World Airports

Current Division Staff: 15

Current Active Projects: 10

Division Formed: 2017

Consulting Partners: Jacobs; M2P; Simpson & Simpson

Scope Management Software: Citiri

Key Strategies: Early involvement; collaborative team approach; stakeholder involvement; continuous support post-launch

Key Goals: Successful introductions of new infrastructure; ensuring all facets are fully operational 1st day of service; cost-effectiveness; minimizing risks



A familiarization walk of the automated people mover provided a strategic preview for airport police.

“ORAT works on basic principles of establishing clear operational requirements at the onset of a project so that the expectations of the project sponsor are well communicated with the designers and the delivery agents,” Christensen explains.

To help demonstrate its benefits to LAWA's Executive Committee, the AOR Division was introduced as a pilot program with consulting assistance from Jacobs. The first assignment for the new division was to support the \$1.7 billion Midfield Satellite Concourse North, an extension of the Tom Bradley International Terminal. This project included the connecting of underground tunnels under taxiways, a feature that required extra planning and contingency options. Further complicating matters, the COVID-19 pandemic caused supply chain issues and delays that led to changes in the scope and timeline. Needless to say, introducing a new process to the team *after* the complex project had already kicked off was not an easy task.

“We had to jump in and develop an implementation plan for that project,” relates Melvin Price, ORAT National Practice Lead for Jacobs. “It was new for not just our team, but also for the people we were engaging.”

Sarullo notes that the project faced huge complexities and challenges, but they reaped benefits, including the development of standard operating procedures just for the tunnel itself regarding what to do in an emergency.

The AOR team's ability to manage through unprecedented chaos and activate the new facilities was all the proof that LAWA executives needed to see the benefit of ORAT.



MELVIN PRICE

“It was successful enough that our CEO at the time made the decision to apply the ORAT process to every project that was in delivery,” Christensen notes.

Having the endorsement of the chief development officer who was delivering the project was a tremendous benefit for the newly formed division, Price adds, emphasizing the benefit of leadership buy-in. Opening Midfield Satellite Concourse North during the COVID pandemic was the team's “launch point for success,” he relates.

From there, the AOR Division continued bringing more projects online, each with its own implementation processes, and some on concurrent timelines. From terminals to airport police stations and automated people movers to parking facilities, Price emphasizes that the ORAT process is integral to successful openings, regardless of the size or scope of a project.

“What we do in Airport Operational Readiness is go above and beyond,” Sarullo summarizes.

Enterprise Involvement

Leaders recruited employees with project delivery experience and subject matter experts from across the airport to form the internal ORAT team. “The idea was that this would be a LAWA-led division and we would have a representative from each of the top stakeholders,” Sarullo explains.

The size of the AOR Division has fluctuated over the years. Currently, there are 15 staff members working on about 10 projects throughout LAX. Specific roles that support various functional areas of readiness activation include:

- AOR lead;
- stakeholder manager;

- operations subject matter expert;
- facilities subject matter expert;
- IT and safety/security subject matter expert;
- Familiarization, induction and training manager;
- trials manager;
- mobilization and move subject matter expert;
- administrative manager; and
- scheduler.

As Sarullo describes it, team members act as advocates to ensure every stakeholder has a seat at the table. From concept to planning and design, through construction and post-construction, subject matter experts become critical participants in the successful deployment of an asset because they will ultimately receive the facility or system.

“For project delivery teams, their sole purpose is to keep work moving on schedule and on budget. Integrating the needs of a stakeholder sometimes presents challenges,” Price explains. “That’s where we come in—to make sure they’re always fully represented as we go through each phase of a project.”

Because it is an enterprise team, the AOR Division is able to work on multiple projects at the same time, build on the

organization’s internal knowledge and provide consistent support and expertise. “We benefit from driving it internally, with expertise that is customized to our airport,” Christensen explains.

Having an in-house team can also allow better integration with other airport divisions and stakeholders. “Project delivery and operational readiness are two sides of the same coin,” Price says. “You have someone delivering the project, but then you need someone to help deliver that to the people.”

“Our focus is to make sure everything we do is getting the stakeholder operationally ready,” Sarullo adds. “That entails familiarizing them with a project from the beginning, getting their input for the design and making sure they understand how it’s going to work and be received for the current operation.”

The Process

According to Sarullo, the time invested in a typical project breaks down to roughly 25% for planning, 20% for design, 45% for construction and 10% for closeout. And while the cost varies, ORAT services usually account for about 0.6% of a project’s budget.

Price says the AOR team is guided by four principles: people, processes, systems and facilities—all the aspects that need to be accounted for to ensure a successful opening and beyond.

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Sarullo explains that there are three essential AOR processes to enhance readiness and build stakeholder confidence:

- Concept of Operations—a high-level blueprint of the use of the system or project that outlines the intended operations, key stakeholders and their roles
- Familiarization, Induction and Training to provide sufficient and varied opportunities for stakeholders and end-users to become familiar with the facility, equipment, systems, processes and procedures.
- Operational trials that test and validate processes, systems, equipment and training in a simulated operational environment.

Standard phases include: initiation, planning, design, construction, transition and operations.

The AOR team's responsibilities and processes include

- engaging stakeholders;
- coordinating and leading stakeholder working groups;
- executing familiarization, induction and training activities and trials;
- supporting project governance; and
- guiding readiness activities.

"If we don't have a good Day One operation, it colors the entire transition from construction into operation," Christensen warns. At LAX, support from the internal ORAT division doesn't end after Day One. The team stays plugged into a project for three to six months to assist and provide support if challenges arise.

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Tracking and Transparency

While it may or may not sound like a simple process, ORAT relies heavily on detailed information tracking and collaboration among multiple departments. The AOR division that operates at LAX uses the Citiri software platform for storing and organizing all collected data. The system's reporting functions help team members keep stakeholders informed.

"It's all about planning, preparing for the operations and minimizing the potential for disruptions," explains Ortez Gude, chief executive officer of Citiri Inc. The software is designed to help project owners manage all operational components of a capital program and "de-risks projects by providing real-time operational data, reducing surprises and improving project execution."

LAWA uses the software to manage trials, systems integration testing and operational testing. The system also helps the team track personnel through the training process, develop standard operating procedures and collect feedback.

"You need to manage the engagement and communications with all partners involved or influenced by a project, and our software manages, soup-to-nuts, all the things that you need to do from an operational standpoint," Gude says.

Citiri includes a dedicated portal for stakeholders to access an incredible volume



ORTEZ GUDE

of real-time information about a given project. "LAWA really excels at stakeholder engagement," Gude shares.

An executive dashboard allows Sarullo and her team to showcase all the efforts that support a given project. "Everything is very transparent," she says. Tools, including a readiness assessment matrix, are important to communicating project status to leadership of various stakeholders.

"In order for the executive team to make pivotal decisions, the operational readiness team needs to provide information in real time," Gude emphasizes. "You don't want to make decisions on something that's out of date or incomplete."

Full Project Partnership

Since its inception, the AOR team has evolved to become a true partner for the full lifecycle of a project. "We've come full circle from being a pilot program to a fully fledged division within



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Tug trials are one of many operational tests the inhouse AOR team conducts.

LAWA working on the extension of the project where we got our start,” Price reflects.

Christensen says ORAT “really shines” on terminal projects, because they are among the most complicated building programs at an airport, with multiple moving parts and stakeholders. “It’s an extraordinarily complex piece of infrastructure, so [the AOR team] has the ability to better align in the beginning of the process, monitor through the process and ensure the complex network of stakeholders and systems are all in alignment and ready for Day One.”

“The benefit to LAWa is, as soon as the project is in planning, we start working with the Airport Development Group to align with and support them so we can be successful,” Sarullo says.

Originally, ORAT responsibilities were nested within the Development Group, but they were transitioned to Operations around 2021, which Christensen says works better at LAWa. “Developing and delivering complex infrastructure in an airport environment is very challenging,” he relates. “The Operations Group is totally focused on successful operations

once a facility is delivered, so there was more alignment once we made that change.”

Staffing for an ORAT team needs to be carefully chosen, advises Christensen. “This group has to be extraordinarily collaborative and communicative because it’s touching bases with so many different stakeholders,” he explains. Flexibility and adaptability in responding to project challenges and changes are also critical.

Evolution of AOR

After seven years and roughly 12 successful project activations, Sarullo says the AOR Division of LAWa has proven that ORAT methodology can help minimize risks and operational disruptions while enhancing the overall airport experience when opening or expanding facilities. It aligns stakeholders with the testing of processes, facilities and systems to optimize for smooth operations on Day One and beyond, she adds.

Sarullo and her team have continued to develop and refine ORAT processes to provide the best possible support for airport projects. They also

developed and regularly update an AOR Procedures Manual that acts as a blueprint to inform all airport partners of the purpose and value of their respective divisions.

“Every single day, it’s about improvement and bringing value to the airport, engaging with everybody,” Sarullo explains.

With the variety and ongoing volume of projects at LAX, no day is typical for the AOR team. “There’s always so much excitement,” she remarks. “There are challenges, but every single day we ask, ‘How do we improve for our team, and how do we improve for our stakeholders.’”

According to Price, strong and steady support from airport leadership has helped foster success for the AOR Division. Early program involvement, a collaborative team and continuous post-launch support ensures cost-effectiveness and customized expertise systemwide, he adds.

“LAWa’s approach to operational readiness, including stakeholder engagement and transparency, is a best practice for other airports to emulate,” Gude concludes. ✈️



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Dallas Fort Worth Int'l Deploys Electric Hybrid ARFF Vehicles and Builds New Fire Stations

BY SCOTT BERMAN



Dallas Fort Worth International Airport (DFW), known throughout the industry for offering firefighting training to other airports and municipalities, is undertaking two major initiatives to further modernize and enhance its aircraft rescue and firefighting (ARFF) facilities and fleet. Together, the initiatives represent an investment of about \$156 million.

While some of the changes represent significant achievements on the environmental front, department leaders emphasize the primary gains in response time and safety.

On the equipment front, the airport recently replaced all eight of its diesel ARFF vehicles with 11 new vehicles—six electric hybrids and five diesels—that all will only use fluorine-free foam. This

June, DFW became one of the first airports in the United States to deploy electric hybrid ARFF technology when its Fire-Rescue Department took delivery of a Striker® Volterra™ Hybrid Electric. True to the department's mission of prioritizing response and safety, the new 6x6 accelerates from 0 to 50 mph in less than 25 seconds— 28% faster than the diesel version of the equivalent vehicle. Subsequent deliveries of other Global Strikers followed, and the final two vehicles arrived in August.

On the facilities front, DFW is in the process of consolidating fire and rescue operations currently housed in four separate locations into two more modern stations that are now under construction and expected to be operational next year.

The recent fleet and ongoing facilities projects both have many elements, but one clear priority. “What it all boils down to is performance,” says DFW Fire Department Chief Dan White. “It’s performance first, under all circumstances. Everything else is icing on the cake.”

The airport makes decisions about technology and resources based on years of experience, he adds “Everything here starts with ‘safe and secure’ to select the best possible tools and training to perform at the highest possible level when called for.”



DAN WHITE



FACTS&FIGURES

Projects: New ARFF Vehicles & Facilities

Location: Dallas Fort Worth Int'l Airport

Passenger Volume: 87.8 million in 2024

VEHICLES

New Fleet: 11 Striker® ARFF vehicles

Cost: \$26 million

Vehicle Mix: 6 Striker® Volterra™ Hybrid Electric 6x6s; 5 diesel Striker ARFF vehicles (two 6x6s with 65-foot Snozzles®; two 4x4s with roof turret nozzle systems; one 4x4 with 50-foot Snozzle®)

Vehicle Manufacturer: Oshkosh Airport Products

Local Dealer: Siddons Martin Emergency Group

Timeline: Entire fleet purchased in Sept. 2023; 1st hybrid delivered in June 2025, remaining 10 arrived by Aug. 2025

Key Benefits: Hybrid models have quicker acceleration, with reduced carbon emissions & noise; entire fleet uses fluorine-free foam to avoid PFAS exposure; consistent cab layout & controls throughout fleet for smooth transition from vehicle to vehicle for response crews

FACILITIES

Project: Fire Station Modernization

Strategy: Replace 4 separate stations with 2 more modern facilities

Component of: \$12 billion DFW Forward capital improvement plan

Facility Size: 48,000 sq. ft. each

Cost: \$130 million

Funding: \$76 million FAA grant; \$5 million via 2022 Federal Appropriations Act; airport capital improvement funds

Architect: PGAL

General Contractor: JE Dunn

Slated for Operation: 2026

Key Benefits: Faster response to fires & other airfield incidents; charging infrastructure for new electric hybrid ARFF vehicles

New Stations

The infrastructure changes have been unfolding for some time. The two new ARFF stations, each with 48,000 square feet of space, were included in the airport's master plan that was approved in 2017 and updated in 2020. The \$130 million project currently underway is replacing DFW's four 50-year-old stations with two new stations, each with 48,000 square feet of space. Naturally, both will be equipped with charging systems for the new hybrid vehicles. Charging infrastructure will initially provide 240 volts, but will be capable of providing up to 480 volts depending on future needs such as more use or a larger fleet.

Project architect PGAL describes the new stations as a "critical" project for the airport.

The new East ARFF Station will replace existing stations 1 and 3; the new West ARFF Station will replace 2 and 4. White notes that there will be no changes in staffing or deployments, aside from existing firefighters working out of the new station locations.

Both new stations are expected to be operational next year, with demolition of the old facilities to follow. No plans have been announced regarding what DFW intends to use those land parcels for in the future.

For White, the bottom line is that the new stations will mean faster access to runways and taxiways. Amplifying that effect: faster new vehicles.

Innovative Fleet

As for the new Strikers, DFW had a bit of luck on its side because the airport's existing diesels were reaching the end of their natural lifecycles just as the first electric hybrid Striker ARFF vehicles were coming on the market in 2023. At that time, the oldest ARFF vehicles in the airport's fleet were from 2013, with others deployed in 2015. Also, the FAA approved fluorine-free foams for airports in 2023. "The timing was fortuitous for us," White remarks. "We were going to replace this fleet no matter what, and the timelines aligned well."

The airport bought 11 new ARFF vehicles in September 2023 for a total of \$26 million. The entire fleet consists of various types of Global Strikers

Both new stations are expected to be operational in 2026.



PHOTO: DFW

manufactured by Oshkosh Airport Products. Fully six of the new vehicles are cutting-edge electric hybrids.

The electric vehicle technology checks at least three boxes for airports, says Jack Bermingham, Business Unit director for Oshkosh Airport Products. The first is performance. Electric vehicles, such as the ones deployed at DFW, are faster to the scene and highly maneuverable, Bermingham points out. The new models also have various performance and cab design advantages, he adds.



JACK BERMINGHAM

The other two boxes: helping reduce the airport's carbon footprint and reducing emissions and noise exposure for firefighters—with no performance degradation, Bermingham emphasizes. “Depending on duty cycle, training regimen and other factors, you can save 75% of diesel fuel [using hybrid technology], while generally adding to sustainability initiatives,” he advises.

The electric hybrids use battery power for the vast majority of their operation, but combine electric and diesel engine power when response crews need quick acceleration to speed to the scene of a fire or other incident. That battery-engine combination happens without additional input from the operator, Bermingham notes. In a similar vein, DFW's new hybrids contain an auto-eject feature for the plug-in chargers that prevents overcharging and enables ARFF personnel to pull the vehicles out of stations as quickly as possible, without having to manually disconnect the chargers.

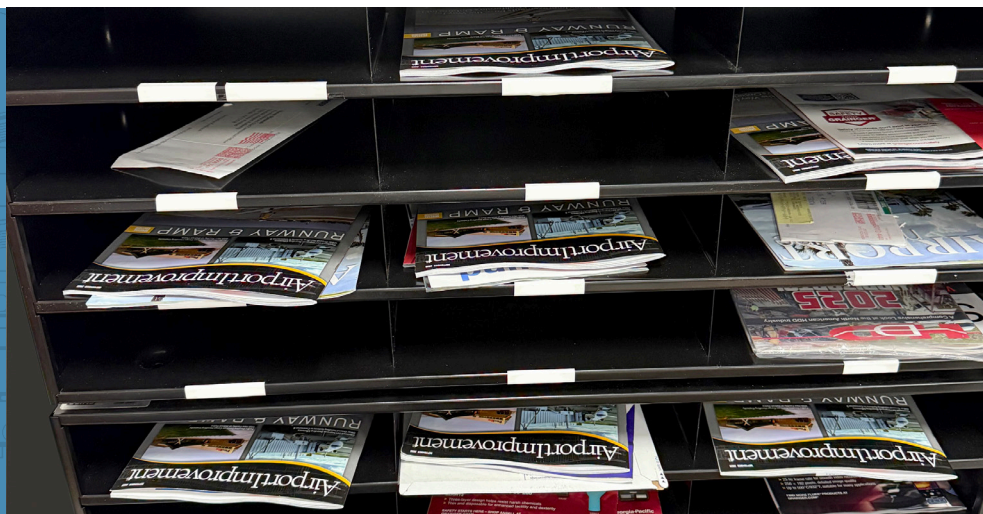
New foam is another major environmental and safety improvement. The airport's entire fleet—hybrids and conventional diesels alike—dispense fluorine-free foams, therefore avoiding exposure to per- and polyfluoroalkyl or PFAS, the so-called forever chemicals.

Bermingham reports growing worldwide interest in electric ARFF vehicles, noting sales of Striker Volterras in 2023 to King

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County International-Boeing Field in Seattle, Western Sydney International Airport in Australia and Japan's Air Self-Defense Force, as well as last year to Paris-Le Bourget Airport.

"We put a lot of emphasis on the user experience to make sure the operator doesn't have to rethink how to operate an ARFF vehicle," Bermingham explains. "The main operation of the vehicle is identical to our conventional vehicles."

Even though DFW has varying models of Oshkosh's Global Striker ARFF vehicles, the controls to operate them all are consistent, which helps operators move smoothly among various vehicles as needed. "The cab and compartment layout and configurations are the same," Bermingham says.

Oshkosh and the local dealer, Global ARFF in Waxahachie, TX, conducted week-long training sessions on-site at DFW in April 2025 (before the vehicles were delivered).

Instruction on operating electric hybrid vehicles has not been added to the course selection at the well-known DFW Fire Training Research Center, which last year trained about 2,000 airport and municipal firefighters from around the world. However, one of the airport's new conventional diesel ARFF vehicles is stationed at the center to help address the performance and application of fluorine-free foam.

Always Evolving

Change is rarely easy, yet DFW continues to forge ahead into new areas of ARFF response. Bermingham praises the airport, particularly White and his team, for re-thinking their strategy from a fleet and fire station perspective. In fact, he describes DFW as "a technological innovator and leader," also noting that it has the single-largest fleet of electric ARFF vehicles in the world.

In terms of the new stations, White says that they are part of a broader, long-term plan. "We anticipate that eventually there will be another station added to the north [of the main terminal area]," he shares. No timeframe has been set for that project because it will depend on triggers such as passenger volume.

Other pending projects include construction of an airfield access bridge for the West Station and a new 2,600-square-foot fumigation facility, both designed by PGAL. The firm is also helping relocate a detention pond.

Whatever additional changes come, White emphasizes that the primary focus will remain the same. "We're seeking a performance edge," he explains. "And we have to do that in a safe, measured, calculated and responsible manner, knowing that we may be a reference point for the industry." ✈️

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PHOTO: MARYLAND AVIATION ADMINISTRATION

Runway Renewal at Martin State Improves Safety and Efficiency

BY KRISTEN RINDFLEISCH



When Martin State Airport (MTN) in Maryland finished reconstructing its sole runway last fall, the nearly \$35.9 million project provided much more than fresh asphalt. The newly rebuilt runway, revamped taxiway system and desperately needed lighting improvements provide a smoother, safer airfield for MTN's diverse general aviation and military traffic.

Runway 15-33 was originally built in 1940 and had received several modifications and overlays over the decades since. But by 2023, the surface had significant distress, uneven grades and frequent drainage issues. Taxiways also needed revamping, and the lighting system was prone to failure.

To tackle the airfield work, MTN opted for the traditional design-bid-build method and partnered with Michael Baker International and Airport Design Consultants Inc. for planning and design; Johnson, Mirmiran & Thompson for construction management and inspection; and P. Flanigan and Sons as the prime construction contractor.

Communication and Strategic Scheduling

For MTN, completing the project was as much about keeping airport users safe and informed as it was about construction logistics. "We have over 200 tenants here, with many different operational needs and capabilities," says Chief of Operations and Maintenance Harold Fowler. "So, the importance of communication and scheduling was not taken lightly."



HAROLD FOWLER

Owned and operated by the Maryland Aviation Administration, MTN is a reliever for Baltimore/Washington International (BWI) and joint civil-military airport. As a result, it has a wide variety of users, including the 175th Wing of the Maryland Air National Guard, major defense contractors including Lockheed Martin and Northrop Grumman, several flight schools, a variety of corporate operators and multiple helicopter units for law enforcement and medevac providers. The airport worked hard to make sure all were informed about the timeline and potential impacts of construction. "It goes a long way to ensure the preservation of safety," Fowler notes.

Knowing the project would include heavy trucks coming and going, a guillotine-style concrete breaker demolishing old pavement, and significant construction noise during nightly runway closures, Fowler also prioritized communicating with the surrounding community. To keep local residents informed about project activities and updates, the airport added a landing page on its website. "It's important that we maintain a good relationship with our neighbors," Fowler emphasizes.

Remaining functional during construction required careful planning. Work began in

April 2024 with normal airfield operations during the day and nightly closures for milling, paving, lighting installation and signage work. Helicopter operators such as Baltimore City and County Police, Maryland State Police and medevac companies continued their missions throughout the project, even during nightly runway closures.

In July 2024, the airport executed a 21-day full closure to complete the final two asphalt lifts and bring its new lighting system online. The Guard and other tenants were notified several months in advance so they could plan alternate flight activities while no runway was available at MTN. After the full shutdown period in July, night closures resumed through September for grooving and finishing work, with full completion in late October 2024.

"The work performed under this contract will ensure this major piece of infrastructure at MTN will serve tenants well into the future," remarks Niqui Clark, deputy chief engineer with Maryland Aviation Administration.



NIQUI CLARK



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JMT is proud of our successful partnership with the Maryland Aviation Administration for the Runway 15-33 Rehabilitation at Martin State Airport



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FACTS&FIGURES

Project: Full-Length Runway Rehabilitation

Location: Martin State Airport, in Middle River, MD

Owner: Maryland Aviation Administration

Associated Projects: Narrowing runway; removing 3 taxiways; reconstructing 2 taxiways; realigning 1 taxiway; new lighting & airfield signage

Runway: 6,997 ft.

Realigned Taxiway: 1,103 ft.

Cost: \$35.9 million

Funding: Dept. of Defense & state grants

Construction: Apr.–Oct. 2024, with 21-day closure in July

Civil Design/Planning Lead & Construction Administration: Airport Design Consultants Inc. (ADCI)

Owner's Representative, Construction Management & Inspection: Johnson, Mirmiran & Thompson (JMT)

Prime Engineering Design & Construction Administration: Michael Baker Int'l

Prime Construction Contractor: P. Flanigan & Sons

Project Review/Planning: FAA

Electrical Construction: Glenelg

Electrical Services: Brown-Tisdale

Civil Engineering, Light/Signage Survey Layout: iCivil Inc.

Partnering Facilitator: Crew Consulting Group

Geotechnical Engineering: DMY Engineering Consultants Inc.

Lighting: MRS Airfield Lights & Supply

Trucking Services: Alfredo Trucking; Antonio's Trucking; Gordon K. Jones Trucking; Henson Trucking, LLC; Powells Trucking Co. Inc.; SS Trucking; Wilshire Trucking Corp.

Landscaping: Empire Landscaping LLC

Survey Layout: KCI

Hydro Excavation: EcoTech Hydro Excavation

Concrete Pavement Construction: Machado Construction Co.

Electrical & Stormwater Structure Construction: Priority Construction

Asphalt Milling: Shaddai Milling LLC

Concrete Breaking: Atlantic Breakers

Airfield Pavement Sweeping: B&J Sweeping

Quality Assurance Asphalt Plant

Testing: Specialized Engineering

Grooving: Cardinal Int'l

Pavement Markings: Zone Striping Inc.

Paving Fabric: Petromat MPG-100

Paving Fabric Installation: American Paving Fabrics

Key Benefits: Enhanced safety; extended runway lifespan; improved infrastructure

Overnight closures helped crews keep the project on schedule.



PHOTO: MARYLAND AVIATION ADMINISTRATION

Because MTN is a joint civil-military airport, it was able to combine state grants with funding from the U.S. Department of Defense. This allowed the airport to complete the entire project at once rather than phase it over several years, Fowler notes.

A Narrower, Safer Runway

The construction scope at MTN was extensive. The full 6,997-foot length of Runway 15-33 was milled, rebuilt with multiple lifts of asphalt, and grooved to improve traction. In some sections, up to six asphalt lifts were needed to rebuild the profile and cross slopes.

American Paving Fabrics Inc. installed PetroMat paving fabric over old concrete areas to reduce stress and mitigate reflective cracking. Tracy Hollida, project manager with Airport Design Consultants Inc., notes that project designers initially considered rubblization or removing the existing asphalt to complete a crack-and-seat. Both strategies, however, were dismissed due to the high water table, environmental impacts, cost and/or operational impacts to the single-runway airport.



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Although the previous published length of Runway 15-33 had been 6,995 feet, the pavement actually stretches to more than 8,100 feet from end to end. The updated runway design optimizes the current usable length and allows for future expansion and use. "The Maryland Aviation Administration also has a desire to maximize the published length of the runway to 8,000+ feet to align with the existing pavement," comments Cedrick Johnson, project principal with Airport Design Consultants Inc. "Increasing usable runway length would provide better opportunities for Maryland Air National Guard missions."



CEDRICK JOHNSON

The width of the runway was decreased from 180 feet to 150. The original wider version was designed for past military needs, but the current FAA standard of 150 feet was deemed sufficient for current and future operations at MTN. "Varying widths were coordinated with the FAA, and all stakeholders settled on the 150-foot width with 15-foot paved shoulders," explains Keith Fritz, senior engineer with Airport Design Consultants Inc. Shoulders were



KEITH FRITZ

limited to 15 feet instead of the standard 20 feet to minimize environmental impacts near Chesapeake Bay. The 5 extra feet on each side was regraded into turf after existing lights were removed.

Although the width change may sound minor, it has significant strategic implications. "Decreasing that width of the runway brings us into the FAA standards, which helps going into the future if we wanted to request FAA funds for any type of work on the runway," Fowler explains.

For the Operations team, a narrower runway means less surface to plow during winter storms, which employees already benefited from last winter.

Beyond rebuilding and narrowing the runway, the project reconstructed taxiways A and C to current FAA standards and realigned Taxiway C to a perpendicular orientation, eliminating a confusing five-way configuration. Taxiways B, D and S were removed to improve safety and reduce pavement maintenance. "The removal of those taxiways made things safer and less confusing," Fowler reports.

Lighting Upgrades

Another pressing issue was airfield lighting. Because of a notably high water table at MTN, the former electrical system for lighting

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was often underwater. “We would have outages very frequently,” Fowler recalls. “We were kind of just chasing it—trying to find where the issue was. It became unreliable, so that was becoming a safety issue.”

Repeated lighting failures were inconvenient for all tenants, but the outdated system also impeded night training for the Air National Guard because staff could not dim the runway lights to very low settings. “That was a key aspect of their preparation they weren’t able to do,” Fowler relates.

This and other shortcomings were fixed when the entire airfield lighting system was updated with new fixtures, new cabling, an upgraded vault and a modernized control system. All runway and taxiway edge lights were replaced with LED fixtures, new conduit and base cans were installed and a network of junction cans was added in the infield to make maintenance safer and easier.

Additionally, crews rebuilt the homerun cabling to the lighting vault, reconstructed the duct bank system and updated the airfield lighting control system with new hardware and software. Planning ahead, designers included homerun duct banks and a parallel communication duct bank sized to support future needs of the FAA Air Traffic Control Tower. New signage was added throughout the airfield to reflect the new taxiway layout.

Thanks to recent improvements, night training is now more realistic and rigorous for the Guard, and civilian pilots can depend on MTN’s airfield lighting, too. “Our lighting system was beginning to become an unreliable aspect of the runway, so having it completely replaced significantly upgraded our service capabilities and eliminated a maintenance headache,” Fowler remarks.

Innovative Measures

Early in the project, the engineering design team leveraged robust geotechnical investigation, including dynamic cone penetrometer testing, pavement cores and 13 standard penetration test borings. “This informed decisions on pavement rehabilitation strategies, such as avoiding crack-and-seat methods in favor of geosynthetic fabric overlays,” explains Jeffrey Kolb, senior



JEFFREY KOLB

associate and technical manager of Aviation with Michael Baker International. The chosen approach balanced durability with the need to limit extended runway closures, he adds.

Engineers also used mobile LiDAR to capture high-resolution survey data during one of the overnight runway closures. This allowed the design team to generate highly accurate base maps and align the rehabilitation plan precisely with existing conditions, Kolb explains. Using LiDAR accelerated design development and minimized the risk of conflicts during construction, especially in areas where geometry and grading adjustments were critical to meeting FAA and Unified Facilities Criteria standards.

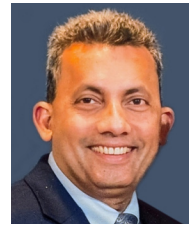
Complex Scope and Circumstances

Rehabilitating Runway 15–33 and other associated improvements presented a series of challenges from planning through construction. With cross-slopes measuring less than 1% in many areas, the runway had long suffered from inadequate drainage. To correct the issue, designers raised the centerline area to improve water runoff—an adjustment had to be planned carefully. “The raised profile of the runway also had to be balanced with the asphalt material cost to build the runway higher, so the project budget was not exceeded,” notes Tom Varughese, director of the Maryland Aviation Administration Office of Engineering and

Construction. Because the asphalt sat on top of a structurally sound concrete base, additional strengthening was not needed; instead, the focus was on achieving proper grades. Adjusting the runway grades, in turn, required reworking the profiles of connector taxiways to match the new elevations.

Grading also directly affected the fit of new edge lighting and, ultimately, reopening the runway on time after the 21-day closure. The contractor, construction manager, design team and Aviation Administration worked together closely and continually reviewed survey data against the planned lift sequence. Adjustments were made in real time and relayed to field crews to keep paving work on schedule and finish with grades that matched design specification.

Contractors got a jump on the overall project schedule by installing the duct bank early since it is outside active runway and taxiway areas. “Completing this work in advance of the spring start for night closures took some construction tasks off the to-do list,” recalls Mark Tiger, construction manager with Johnson, Mirmiran & Thompson. This



TOM VARUGHESE



MARK TIGER



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Project designers had to accommodate the operational needs of general aviation and military aircraft.



PHOTO: AIRPORT DESIGN CONSULTANTS, INC.

allowed electrical and general crews to move more efficiently once the main rehabilitation began and provided valuable momentum for the lighting and signage upgrades.

Realigning and rehabilitating connector taxiways to meet the operational requirements of both civilian and military users was critical. “The rehabilitation ensured that both sides—Taxiway F

(civilian) and Taxiway T (military)—were integrated into the design, supporting seamless operations across the airfield,” Kolb notes.

Narrowing the runway width from 180 feet to 150 created challenges for lighting installation. Typically, edge lights are placed into the pavement, but that would have complicated the process at MTN. “The existing runway concrete was extremely hard, so much so that it had previously damaged rock wheel equipment,” Kolb explains. “To avoid disconnected pavement strips and extensive rock wheeling (over 16,000 feet), transformer cans located in the turf and connected to edge light base cans were used instead, minimizing runway shutdown time.”

Nevertheless, excavation to install the conduit and base cans was tricky due to large aggregate in some areas just below the concrete. “The electrical contractor sped up the operation by cutting the limits in advance, which required more time for the activity but kept pace for the mill-pave pattern,” recalls Paul Shank, chief engineer and chief of the Maryland Aviation Administration Division of Planning and Engineering.



PAUL SHANK

Other complicating factors included long lead times for electrical components, unexpected survey discrepancies and heavy rain during the 21-day closure that required around-the-clock work to keep the project on schedule.

A tragic event outside the airport also added to the complexity. After Baltimore's Francis Scott Key Bridge collapsed, asphalt trucks had to reroute through city tunnels, creating nightly logistical challenges sometimes compounded by sporting events and scheduled lane closures. Suddenly, managing material deliveries and the paving schedule was a whole new game.

Lessons Learned

For Airport Design Consultants Inc, the project underscored the value of pairing thoughtful design with close stakeholder coordination. Key elements included the stress-relieving

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*Image taken at Denver International Airport, showing SWARCO Road Marking Systems sprayable MMA.

membranes for long-term protection against reflective cracking, and the extended 24/7 runway closure to help crews complete critical work safely and efficiently. "The decision to 'rebuild in place' rather than perform a full-depth reconstruction allowed the runway to remain open daily during most of the construction," adds Hollida.

Kolb, from Michael Baker International, says other airports can learn from MTN's emphasis on designing for both current and future conditions, conducting thorough geotechnical analysis before committing to a strategy and integrating electrical upgrades with long-term infrastructure plans. He also highlights the value of formal partnering sessions with all stakeholders to capture lessons learned, share concerns and improve coordination. For joint-use airports, he recommends early collaboration between civilian and military users to ensure airfield geometry and standards support both missions.

As the airport's Chief of Operations and Maintenance, Fowler's biggest takeaway was the importance of early and frequent communication with all project stakeholders and the community. "If everyone is aware of things that are happening, that works to eliminate some of the potential hazards," he remarks. Effective communication goes a long way to protecting safety, operations and relationships, he adds.

Results of the airfield upgrades have been widely praised. Tenants say they appreciate the smoother, better-draining runway and improved lighting. "We've gotten great reviews from the pilots," Fowler reports. "The removal of those non-standard taxiways has made operations safer and less confusing."

What's Next

Construction has begun on a new ADA-compliant air traffic control tower with more space and full airfield visibility for air traffic control tower staff. It will replace the airfield's current tower, which was built in 1940 and is one of the oldest in the United States.

Looking further ahead, plans are underway to add charging infrastructure for electric aircraft and more corporate hangars. A major expansion of the Glenn L. Martin Aviation Museum, which is located at the airport, could turn the facility into one of Maryland's premier aviation attractions.

With a renewed runway, modernized airfield lighting and additional improvement projects already underway, MTN is positioned to serve the general aviation community and support the nation's defense missions well into the future. ✈️

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Syracuse Hancock Exceeds Small Hub Expectations With Big-Airport Concessions

BY NICOLE NELSON

FACTS&FIGURES

Project: Expanding Concessions

Location: Syracuse Hancock Int'l Airport, in NY

Operating Entity: Syracuse Regional Airport Authority

New Concessions: Escape Lounge SYR (June 2023); QDOBA Mexican Eats (Feb. 2025); Einstein Bros. Bagels (May 2025)

Lounge Leaseholder: CAVU

QDOBA & Einstein Bros. Bagels Leaseholder: Gideon Tool Management Services

Pop-Up Concessionaire: Local Chick-fil-A

Debut: Fall 2024

Initial Frequency: Twice monthly

Key Benefit: Improving the passenger experience



Despite being a relatively small player in the concessions marketplace, Syracuse Hancock International Airport (SYR) isn't afraid of punching above its weight class.

For years, the Syracuse Regional Airport Authority was repeatedly told that, "lounges don't really happen in small hub airports." But officials persevered to develop one anyway, turning 2,800 square feet of space that was not generating any revenue into an award-winning lounge for SYR's growing passenger base.

They also managed to add two national restaurant brands—QDOBA and Einstein Bros. Bagels—plus recurring pop-up

appearances from the local Chick-fil-A restaurant.

The "big-airport" lineup at SYR all started with a common-use passenger lounge. "There was beautiful potential for concessions and a lounge that was just sitting behind a wall that was otherwise being used for storage," explains Jason Mehl, chief commercial officer for the Airport Authority.

The project began by testing the waters at several industry conferences and trade shows. After determining that there was, indeed,



JASON MEHL



interest among developers in opening a lounge at the joint civil-military airport in upstate New York, the Airport Authority issued a request for proposals in 2021. By June 2023, CAVU debuted Escape Lounge SYR in the airport's terminal connector under the managerial hand of Gideon Toal Management Services, a certified Airport Concession Disadvantaged Business Enterprise (ACDBE).

Making an Escape

Trevor Way, director of corporate development and brand delivery with Gideon Toal Management Services, says SYR's lounge delivers "right-sized intimacy" with a local Adirondacks feel. Artwork from Syracuse University gives a nod to the 33 colleges and universities in the airport's catchment



TREVOR WAY

area, and local fare includes prime beef brisket and barbecue sauce from local Dinosaur Bar-B-Que, with Utica Club, a premium local pilsner-lager served on tap.

"The Syracuse lounge may be one of our smaller locations across the United States, but it delivers the same Escape Lounge hallmarks—quality culinary options, comfortable seating, reliable Wi-Fi and attentive service—scaled for the local market's flight schedule and passenger mix," says Way. "CAVU has also leaned into subtle regional touches in menu planning and hospitality style, so it feels like Syracuse, not a generic lounge stamped into place."

In fact, Escape Lounge SYR was one of only two North American locations to win 2024 Priority Pass Excellence Awards based on traveler reviews. (VIP Lounge Aguascalientes at Jesus Teran Peredo International Airport in Mexico took top honors for the continent.)

"There are Priority Pass lounges all over the country, and the world, actually, and our little tiny airport—Syracuse—earned Highly Commended honors among the best-rated lounges of the year,"

notes Linda Ryan, the Airport Authority's Terminal Concessions and Advertising manager.



LINDA RYAN

Ryan credits Gideon Toal Management Services for its strong leadership and enthusiasm in enhancing passenger amenities and expanding options at SYR.

"Our concessions experience here at Syracuse was probably less than par," says Ryan of the airport's previous era. "But once the lounge got here, we saw what Gideon Toal Management Services could do. It was apparent they created a whole new culture in concessions, and I think everybody felt it when they walked through the door."

Broader Partnership

When SYR received \$20 million for its terminal expansion project through New York's Upstate Airport Economic Development and Revitalization Competition, expanding concessions was an associated requirement. That prompted management to once again collaborate with Gideon Toal Management Services.

"We were looking for a partner to develop two brand new [food and beverage] concepts, so it was quite an achievement to find somebody that wanted to do just that," says Mehl, explaining that prime concessionaires often want *all* concessions at small airports rather than a select few. "But with the relationship we established with Gideon Toal Management Services operating the lounge, we were successful in partnering once again. We felt comfortable with them, and they felt comfortable with us—enough so that they were willing to swoop in and say, 'Yeah, let's take that chance.'"

In addition to operating the two new concessions, Gideon Toal Management Services is also the franchisee.

"As we worked alongside the airport team and CAVU, we developed a strong working relationship and a clear understanding of



The first additional food and beverage location opened this February.

SYR's passion and vision for the airport," says Way of Gideon Toal Management Services. "When the Authority released a concessions RFP, we saw an opportunity to add complementary quick-service brands that would meaningfully improve choice and speed for travelers."

The management company proposed and was ultimately awarded QDOBA Mexican Eats and Einstein Bros. Bagels—concepts that together cover early-morning through late-day demand at the airport. The new options opened in February and May 2025, respectively. Since then, Way reports that Gideon Toal Management Services has continued to grow partnerships and culture, with a focus on local hiring, consistent service and thoughtful coordination to enhance the overall guest experience at SYR.

Growth Opportunity

Airport and concessions personnel report that both new food and beverage options have been well received, with passengers and operators alike expressing excitement about the airport locations.



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"The Syracuse market represents a fresh growth opportunity for QDOBA as part of our broader expansion into the Northeast," says Shannon St. Clair, manager of Non-Traditional Business Development for the international chain. "The airport serves a loyal and local customer base, offering QDOBA the chance to build brand affinity with both residents and travelers alike."



SHANNON ST. CLAIR

St. Clair notes that the company's entry into SYR came through a strategic partnership with an ACDBE-certified franchisee—Gideon Toal Management Services—that shares a deep passion for both the QDOBA brand and the Syracuse community.

To be sure, SYR is small compared to Denver International, Hartsfield–Jackson Atlanta International and other major airports where QDOBA operations are located. But St. Clair reports that it is "holding its own" overall. Given the smaller scale at SYR, the company focuses on operational excellence and guest satisfaction (rather than gross sales) as key performance indicators. And St. Clair reports that the results at SYR are very promising so far. "It continues to see strong engagement from travelers and airport employees alike, and benefits from a more intimate setting, which allows for personalized guest interactions and a boutique-style experience," she remarks.

Pop-Up Option

Another "big-airport" concession at SYR is Chick-fil-A.

Twice a month on Thursdays, a local operator for the popular quick-serve chicken chain stages a pop-up location in the airport's pre-security Grand Hall. The pared-down menu features chicken sandwiches, salads and nuggets, plus cookies for dessert.

The pop-ups began last fall and might be expanding soon. "We are hoping to add additional days to our schedule, especially as we start to transition into the holiday season," says Taylor Cannon, director of Catering and Marketing for the Chick-fil-A in Cicero, NY.



TAYLOR CANNON

Like many others, the business initially experienced a significant learning curve about operating in an airport environment. Disappointing visibility/exposure was one of the main challenges. "We have since installed a custom wall wrap and implemented a more consistent social media presence, and our sales have now doubled," Cannon reports.

Apparently, Chick-fil-A had to make a few adjustments to make it in the big league of airport concessions—even at a small airport like SYR. ✈️



The airport unveiled both new concessions with fanfare.





Drone Program Lifts Off and Boosts Operational Efficiency at Tulsa Int'l

BY KEN WYSOCKY



Project: Aerial Drone Program

Location: Tulsa Int'l Airport, in OK

Drone Missions: Inspecting airfield pavement, facility roofs & perimeter fences; performing wildlife surveys; monitoring progress of infrastructure projects; completing security audits; sending real-time footage of emergency response drill to regional FAA office

Cost: Nearly \$31,000 for 4 units

Funding: Airport revenue

Drone Manufacturers: Autel Robotics; Skydio Inc.

Capabilities: Photo, video & thermal imaging; telephoto & wide-angle views

Requirements: Operator's license; FAA certificate of waiver

Approved Operators: 6

Program Timeline: Early 2022-present

Key Benefits: Safer rooftop & airfield inspections; ability to access hard-to-reach areas of perimeter fences; detecting air leaks from facilities; freeing employees to perform other tasks

Tulsa International Airport (TUL) is leveraging aerial drones to take its inspections and maintenance to new heights of effectiveness, efficiency and safety.

The Oklahoma airport has invested nearly \$31,000 to purchase four drones since early 2018 and is still discovering new uses for them. Trained operators fly the remote-controlled units to inspect airfield pavement, perimeter fencing and facility rooftops. Other missions include land assessments, wildlife surveys and security audits.

Last May, TUL deployed one of its drones to livestream a training exercise that simulated an airplane crash with the added complication of a train carrying hazardous materials near the airport perimeter. This allowed personnel at the FAA Southwest Regional Office in Fort Worth to watch crews from the airport and several local agencies responding to the mock accident in real-time—a first for

the FAA office and airports across the region.

"I'm surprised at the number of ways we've found to use the drones," says Michael Dahl, airfield operations agent and unmanned aerial system coordinator. "They've been really beneficial. Our drone program has really advanced and grown during the last two years."



MICHAEL DAHL

Cole Brown, director of Operations at TUL, is absolutely amazed at the drones' capabilities. "The sky is the limit for what you can do with drones at an airport," he says. "They've proven to be more useful than I ever imagined."



COLE BROWN



Three of the drones TUL uses were manufactured by Autel Robotics: an EVO II Pro 640T that cost about \$4,600 when it was purchased in late 2023 and two earlier EVO II Pro models that cost approximately \$2,700 and \$3,400 (the latter is equipped with a thermal camera).

The fourth unit, an X10 model from Skydio Inc., was purchased this July for \$20,000. It was more expensive because it has advanced features, including regular and thermal-imaging cameras. Dahl notes that having several capabilities in the same unit increases efficiency because operators don't need to make separate flights to achieve multiple missions.

Program Takes Flight

The airport's current drone program began in 2022, when a couple of Operations agents decided to use two drones, purchased around 2018, for more than just taking photos. Then Dahl took over the program and completely revamped it.

"I started thinking about how we could utilize them to make our jobs easier," he recalls. "Over time, we've looked at what we do and integrated the drones into those operations whenever possible."

After obtaining a commercial operator's license and an FAA certificate of waiver that allows certain kinds of drone flights that would otherwise be prohibited, Dahl first used the drones for airfield pavement inspections, supplementing the FAA-required inspections performed daily by an agent in a pickup truck.

"The perspective from 50 to 75 feet up is a lot different, as you can imagine," Dahl explains. "You see things you otherwise might not see."

Drone operators also can record photos and videos during flights. Comparing current images to those taken, say, one year ago can reveal progressive pavement deterioration that otherwise might go undetected, Dahl notes.

Other Applications

The drone program eventually expanded to include tasks such as wildlife surveys. This allows the Operations staff to be more proactive than reactive about deer, coyotes, birds, etc.

"By using the thermal camera, we've spotted wildlife close to the airfield that we otherwise wouldn't have seen because it was dark," Brown points out.

"We've also spotted people stealing copper at off-airport properties."

The airport also uses drones with thermal cameras to inspect the rooftops of hangars, the terminal and other structures. The cameras detect heat loss, allowing crews to make energy-saving repairs.

The Engineering Department recently requested drone flights to help monitor progress on two construction projects: a taller air traffic control tower and an updated International Customs Facility. The airport expects to complete the approximately 45,000-square-foot, \$41 million Customs facility later this year. The roughly \$112 million, 257-foot-tall control tower is scheduled to be completely operational in early 2027. The contractor building the control tower requested daily drone flights. It reviews photos taken during them to identify and address safety infractions.

The drones periodically take videos of both projects to update board trustees at the Tulsa Airports Improvement Trust, which manages and operates the city-owned airport.



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The airport continues to find new uses for its four drones.



Eyes in the Sky

Dahl also deploys drones to perform security audits throughout the airfield, including the cargo ramp used by global shippers such as DHL and UPS. Delivery trucks are required to enter and leave this area one at a time, with gates at the security checkpoint closing behind each vehicle before another one passes through.

“We can fly a drone and watch to be sure they’re using proper security measures,” Dahl explains.

Additionally, the aerial units allow Operations staff to examine areas of the airport that are inaccessible by pickup truck during bad weather, such as portions of the perimeter fence.

“We can fly a drone out there and find things like an animal dig-under or downed barbed wire,” he explains.

To maximize the return on TUL’s investment, any airport stakeholder can request a drone flight by filling out an online form. “If we can accommodate a request, we make it happen,” Dahl says. “We’re leveraging high-resolution drone photos and video footage to help our director of Real Estate and Business Development promote and share information about the more than 700 acres of available airport land with

prospective companies. We also use the drones to create engaging content for the Marketing team to share on social media.

“Our goal is to utilize the drones as much as possible to support a wide range of airport initiatives.”

The Operations Department keeps a log of all drone flights so officials know the type and date of inspections, as well as how many flight hours operators are compiling. Aside from Dahl, five other Airfield Operations agents with operator’s licenses fly the equipment, and have logged about 780 hours of flight time since 2022.

Learning Curve

The drones are operated from a handheld control tablet equipped with a joystick and color monitor. Dahl, who taught himself to fly them, describes TUL’s units as easy to operate. That said, he estimates that it takes 80 to 100 hours to get fully comfortable maneuvering the drones and maximizing their capabilities.

“It takes some time to learn how to fly them, for sure,” he reflects.

The drone operators at TUL are expected to log at least eight hours of flight time each month to keep their skills sharp.

They aren’t allowed to operate drones more than 250 feet above ground level, and are required to maintain contact with the air traffic control tower. Furthermore, drones aren’t allowed to fly over an active movement area unless it’s closed, which requires a NOTAM (Notice to Airmen).

“We have to tell the air traffic control tower where we’re going to fly, how high and for how long,” Dahl explains. “If it impacts air traffic, they’ll ask us to do it later. But most of the time, if we aren’t in any approaches or departures for active runways, they have no problem with us putting up drones.”

Due to their cost, TUL used a competitive bid process to purchase the drones. Hedging against a potential federal ban on using drones built in China, the airport specifically selected a brand made in the United States for its latest acquisition.

The X10 from Skydio is also the largest of the airport’s four drones. It weighs about 4½ pounds with a battery on board and is approximately 5½ inches tall and 25½ inches long. The wingspan is 31 inches, though the wings fold to reduce the amount of space needed for storage.

Top horizontal speed for the X10 is 45 miles per hour and maximum flight time is 40 minutes.

The cameras include gee-whiz features such as a telephoto lens that allows operators to read license plates from 800 feet above ground. In addition, the thermal camera can detect a person on a rooftop in complete darkness and can even reveal surface temperature differences even on very hot days, according to the Skydio website.

Improving Operational Efficiency

A precise return on investment for the drones is difficult to quantify. But Brown says there is no doubt they’re helping TUL save money by reducing expenses. For example, the airport installed additional insulation in buildings that drone photos showed were leaking heated and conditioned air. Logically, that will translate into lower utility bills.

"We can't see heat or cool-air loss with our eyes, but the drones' thermal cameras can show us where it's occurring," Brown remarks.

The drones also improve productivity by performing tasks usually handled by employees. That gives them time to do other work, he adds.

Workplace safety is another consideration. "We don't have to put employees up on a roof unless it's absolutely necessary," Brown explains. "So there's a safety benefit, too."

Practice Makes Perfect

Dahl encourages airports interested in launching their own drone programs to provide as much detail as possible when applying for an FAA certificate of waiver.

Beyond that, he recommends a lot of practice. "Get out there and log flight hours and get a little better every day," he advises.

To that end, Dahl invites personnel from other airports to shadow TUL's experienced drone operators. "They're more than welcome to come and see what we do," he says.


Brown says it's important to support employees like Dahl who are passionate about the evolving aerial technology and interested in creating a drone program.

"We do whatever we can to provide the resources needed," he says. "You have to trust that your people will utilize the resources you make available to them to the best of their ability."

Endless Possibilities

Overall, Dahl says drones are helping TUL Operations employees do their jobs better. "They provide us with different perspectives that enhance our capabilities, instead of just doing things like we have for decades," he explains. "They reflect how this industry is innovating every day."

Looking ahead, Dahl has been talking to personnel at a Canadian company called Niricson about drone-compatible technology that can identify pavement defects not visible from above. "It can detect cracks under the pavement and create a three-dimensional model of a runway, for example," he says. "Airports could save a lot of money by nipping problems in the bud."

"It's just another example of the endless possibilities for drone usage," Dahl continues. "I think we're just scratching the surface of what they can do." 

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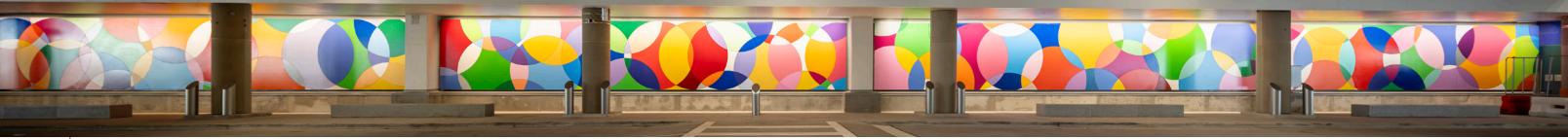


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Giant Geometric Welcome

 As arriving passengers exit the new International Central Processor at George Bush Intercontinental Airport (IAH), they are welcomed to Houston in style with a vibrant abstract mural.

Stretching more than 220 feet along the parking garage adjacent to Terminal E, *Continuous Motion* by Graciela Hasper adds momentum and bold color to an otherwise dull, perfunctory space. “Her use of geometry and rhythm reflects the energy of Houston and the constant movement of an international airport,” says Alton DuLaney, chief curator of Cultural Affairs for the city of Houston.

The mural is comprised of four large sections that together form a continuous puzzle-like design. Within the individual sections are 322 unique painted metal elements, each cut from stainless steel and finished in one of more than six dozen colors. The thin lines that form the intersecting circles are actually half-inch gaps between each element.

The project spanned more than three years from initial commission to final installation this summer. Hasper spent most of that time creating scale drawings and paintings at her studio

in Buenos Aires, and then flew into IAH as needed to collaborate with staff at the airport and Metalab, the Houston-based company that engineered and fabricated her piece locally.

Continuous Motion works in concert with two other pieces specifically created for Terminal E. *Unexpected Spaces* by Marta Chilindron is a series of flat suspended glass forms representing sunlight, foliage and water that float above the vestibules guests pass through to enter and exit the departures lobby. *Horizons Spectrum* by Vargas-Suarez Universal, another long exterior mural, is a series of powder-coated aluminum aircraft panels over steel armature on the wall of the departures level garage. His artwork juxtaposes giant barcodes from IAH baggage tags with route arcs and small laser-etched images of airplanes.

This curated trio and nine other permanent installations were commissioned by Houston Airports for \$6 million in conjunction with the International Terminal Redevelopment Program. Funding was provided through a city ordinance that dedicates 1.75% of capital improvement project budgets for the airport and other city-owned properties to public art. ✈️



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Have We Come Full Circle?

 Over the past several years, I have wondered if we have come full circle, where the Professional Engineer (P.E.) is the only eligible profession to lead an Engineering and Airport Planning and Development Department or Engineering and Planning Department. This is because many postings for these positions list only P.E.s in their "Preferred Requirements," while other professionals with designations such as AIA (American Institute of Architects) or AICP (American Institute of Certified Planners) are rarely mentioned.

Amazingly, the answer to this question was given by the federal government in response to the U.S. Urban Renewal and National Highway Era, from the 1940s to the 1970s. During that time, interrelated programs aimed to revitalize urban areas by demolishing buildings and homes deemed to be substandard and, in turn, redevelop them with new construction and roadway connections to other cities.

The programs brought significant national economic benefits, but also social upheaval and environmental decay. Such issues prompted criticism from individuals such as Jane Jacobs, Robert F. Williams, John Francis and Charles Young, not to mention non-profit groups like the Environmental Defense Fund, the Natural Resources Defense Council (NRDC) and the Sierra Club.

So, what is the connection between this history and today's trend of airports hiring engineers to lead their Planning, Development and Capital Improvement departments?

The Urban Renewal and National Highway programs embodied an era of weak planning. However, the activism they inspired led to a spate of federal regulations that require a multi-stakeholder planning process with a wide spectrum of input from various professions to help identify impacts before construction. Such associated legislation included the National Environmental Policy Act (1969), the Clean Air Act (1970) and the Resources Conservation and Recovery Act (1976). Within the aviation sector,

regulations included Order 1050, 5050-4b, AC 150/5070, AC 150/5300-13, just to name a few. The AAAE *Body of Knowledge* modules chronicle the history of airport development with corresponding federal acts, orders and advisory circulars.

In my opinion, an Airport Planning and Development Department does not necessarily need a P.E. to lead it, but a professional uniquely knowledgeable in planning, organizing and fulfilling federal requirements to shepherd the capital program from inception to implementation.

What does that entail? It starts with visioning, which yields ideas that need to be translated into actionable goals and objectives through planning. When executed, the tasks/projects outlined during planning should create outcomes that achieve the vision and goals initially identified.

One crucial part of the planning process is identifying the most feasible location to construct capital projects. This is the bread-and-butter skillset of a "pure airport planner," and it is often overlooked! The ideal site for a new facility enables it to connect seamlessly with the overall airport fabric, and operational efficiencies can abound.

New facilities are too often arbitrarily placed just to be near available green space. On the contrary, a professional planner develops a land use plan or facilities plan that groups compatible uses next to each other and thus promotes future growth of those uses, while also reducing incompatible uses that would create costly relocations in the future.

This brings to mind cities like Chicago, Dallas, Denver and Houston, which all needed to build new airports outside of their city centers largely because they failed to protect/plan the surroundings of their original airports to accommodate future growth.

It is critical to infuse planning techniques to avoid the need to relocate major assets in the future. Take, for instance, the "Barn" at Phoenix Sky Harbor (PHX), a two-story structure built nearly 20 years ago on beachfront property between the airport's landside and airside areas—a prime location for terminal expansion. For



Sheldon Daisley, AAE, AICP, has been an airport planning practitioner for the past 25 years and is currently grants


planning manager for a multi-airport system in the southwest U.S.. Previously, he worked on the consulting side of the business for Parsons Brinckerhoff Aviation and HNTB. During that time, he developed master plans, land use plans, land use ordinances, facility plans and/or environmental assessments for several major U.S. airports.

years, the Barn has housed office staff (not a revenue-producing function). Now, however, the building must be demolished before the end of its lifecycle to make room for more lucrative uses.

Another example is the Rental Car Center at George Bush Intercontinental Airport (IAH) located south of Runway 9-27 at the northern edge of undeveloped property. If it had instead been co-located with a nearby EcoPark and Ride facility on the southern edge of IAH, the airport would have a multi-use transportation node in the south, thus leaving this area for future runway or terminal expansion.

All said, planning is just as important as engineering—for vertical structures and flat work, too.

A Capital Improvement Program needs to be structured not only for operational functionality, but also to meet federal requirements and be environmentally sound. It benefits, not only from engineers, but a plethora of subject matter experts to address the entire process from visioning and planning through construction and operational readiness for opening day.

Two of my early mentors—Jill Tiedt, AICP and Arnold Rosenberg, P.E.—stressed that airports are much like cities and assured me an urban planning degree would apply well to a career developing airports. They were absolutely right. 

Note: The views expressed in this article are solely those of the author, not his current or former employers.



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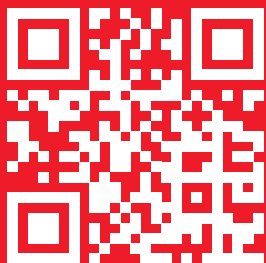
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