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## Transformation of Terminal 3 at Phoenix Sky Harbor Finishes with North & South Concourses

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## Where Do We Go From Here?

While we have never before experienced a COVID-19 pandemic, and its related health and economic consequences, we can draw on previous disruptors to guess what happens in the future of aviation—and don't let *anyone* tell you that it's anything more than an educated *GUESS*.

This is what we do know to date (in mid-April as we go to press): Airlines are flying planes with few passengers, and they're cutting flights and expenses accordingly. As a result, airports also have few passengers and are losing huge revenues in fees. Washington passed the CARES Act, pumping \$10 billion into airports.

Here is what we can expect to happen short-term: Airlines will adjust flights, destination cities and purchases to match current loads rather than what they expect to see in 12 months. Business and leisure travel will be tepid. Airports, in turn, will try to match services to current passenger traffic by reducing expenses as they're able.

Sobering, yes? Most definitely. So, here's my call to action: Now's the time to prepare for the future by continuing projects already in progress or starting new projects with AIP or CARES Act monies. Better days *are* ahead. In time, we will get back to, and ultimately

exceed, 2019 volume. And we'll need airport infrastructure ready to serve it.

Pushing ahead with projects during a downturn is not easy. But if history has taught us one lesson, it's that the trajectory of air travel is not a flat line. Over time, it's only gone in one direction, up! After 9/11 and following the Great Recession of 2008, there were many examples of airports that kept programs in place to increase capacity. Did they regret their decisions five years later? Not anyone I've talked to. There were also airports that postponed or cancelled programs to increase capacity, and many were never able to build fast enough to catch up.

As we navigate the latest, toughest, challenge airports have seen in a while, it's important to resist the temptation or pressure to respond with knee-jerk reactions. It takes great leadership, compassion, intelligence and resolve to maintain a long-term outlook by continuing to build and improve our airports for the future.

As always, thanks for reading. Cheers,

*Paul*



PAUL BOWERS, PUBLISHER

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# Transformation of Terminal 3 at Phoenix Sky Harbor Finishes with North & South Concourses

BY JENNIFER DAACK WOOLSON



Before design of the \$590 million Terminal 3 Modernization Project at Sky Harbor International Airport (PHX) in Phoenix began in 2013, about 30 stakeholders held a workshop to establish goals for the project. Consensus within the group was to “create a world-class facility that was value-oriented, efficient and created a sense of place.”

Check.

Check.

And check.

When Component 1 of the terminal modernization project was completed in December 2016, it already was clear that the project was headed in the right direction. Updates included a new consolidated security checkpoint, overhauled heating/venting/air conditioning systems and vertical circulation systems, additional common-use airline ticket counters,







## PHOENIX SKY HARBOR INTERNATIONAL AIRPORT

### FACTS & FIGURES

**Project:** Terminal Modernization

**Location:** Phoenix Sky Harbor Int'l Airport

**Scope:** All new South Concourse with 15 gates; renovated North Concourse with 10 gates (Phases 2 & 3)

**Total Cost:** \$590 million

**Funding:** Financed with passenger facility charges such as parking, concessions & tenant fees. No local tax dollars were used.

**Timeline:** South Concourse opened Jan. 2019; North Concourse opened Feb. 2020

#### PHASE 2 & 3

**Design Builders:** HuntAustin (joint venture)

**Prime Architect:** DWL Architects + Planners

**Exterior Architecture:** SmithGroup

**Interior Architecture/Seating:** Corgan

**Civil Engineering:** Dibble (Airside North Concourse); Stantec (Airside South Concourse)

**Hydrant Fueling:** Argus

**Structural Engineering:** Advanced Structural Engineering/kpff Structural

**Mechanical/Plumbing/Electrical:** LSW Engineers

**Special Systems, Info Technology, Security:** LSW Engineers

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**Life Safety/Fire Protection:** Jensen Hughes

**Acoustical/Audio-Visual/Paging:** NV5

**Airside Planning/Aircraft Parking:** Landrum & Brown

**Passenger/Systems Modeling:** TranSolutions

**Survey/Utility Investigation:** CK Group; TRACE (both small business enterprises)

**Signage:** 115 Degrees West

**Vertical Transportation:** Gannett Fleming/VTX

**Baggage Handling System:** BNP Associates (schematic design & review); Pteris (design/build sub under HAJV)

**Geotechnical Engineering:** Speedie & Associates

**Passenger Boarding Bridge:** JBT

**Temporary Modular Walls:** McCain Walls



more baggage handling capacity and all new interior and exterior finishes.

“Terminal 3 has been completely transformed,” says PHX Director of Aviation Services James E. Bennett. “We are setting a new standard and level of service for our customers. The design also provides our customers a welcoming and inviting experience. It’s open and bright and offers incredible views.”

Bennett is referring to what may be the most noticeable change to passengers: the sweeping views of Camelback Mountain, Piestewa Peak, South Mountain and the downtown Phoenix skyline. High-tech floor-to-ceiling glass highlights the city in all directions to give passengers a sense of place, while nine skylights filter and balance natural sunlight.

### Managing a Moving Train

As the main terminal project wrapped up, attention turned to Components 2 and 3 of the modernization program. They included the addition of a post-security lobby (known as a terminal processor) with concessions, retail and club space not previously available post-security, as well as demolition and reconstruction of the South Concourse and extensive renovations in the North Concourse.



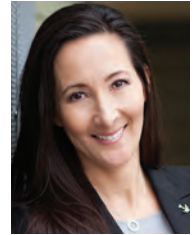
JAMES E. BENNETT

The ultimate goal was to absorb all airlines from the outdated Terminal 2 to improve efficiency throughout the airport. Terminal 3 is now home to 11 airlines: Air Canada, Alaska Airlines, Boutique Air, Contour Airlines, Delta Air Lines, Frontier Airlines, Hawaiian Airlines, JetBlue Airways, Spirit Airlines, Sun Country Airlines and United Airlines.

The two concourses’ 25 gates were built to be common-use, giving airlines the flexibility of using gates on either concourse.

All three phases of construction were accomplished while PHX remained fully operational for passengers. “That was challenging, and everyone went in knowing it would be,” says Sandy Kukla, president of DWL Architects + Planners, who served as design project director for the modernization program.

Due to its complexity, the project was broken into three components. This approach provided essential flexibility for the schedule and budget, says Ward Helm, P.E., special projects administrator for PHX. “We set this project up in a manner that we didn’t have to commit to each component until



SANDY KUKLA



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The new South Concourse includes 15 gates.



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*New artwork includes this pair of enormous aviator sunglasses, which reflect images and activity in the arrivals atrium.*

time went on,” Helm explains. “We committed to the terminal upgrades, and then if we felt things were going well, we could start component 2; and if that went well, then we start component 3.”

Because the three components depended on shared systems, the project team planned all three phases of construction at once to save money and headaches.

“You can think of the three components as three different buildings, but they are not three totally distinct buildings,” Helm says. “The way the central plant works, for example, all ties in.” To ensure contractors were tackling the right steps in the right order, the design/build team developed a project definition manual to outline an efficient approach to the large, complex initiative.

As each step came up on the schedule—a roof removed here, a wall moved there, a system shut down—the team prioritized two key goals: maintaining airport operations and keeping passengers safe and secure. That required well-orchestrated collaboration among designers, planners, contractors and airport personnel.

Anne Kurtenbach, special projects administrator for PHX, was in charge of stakeholder engagement during the project. She says the key to keeping things moving smoothly was managing expectations from the very beginning. “We have a good system here where we are open and collaborative,” she notes. “We communicate, we overcommunicate, and then we go back and communicate again. That contributed to our success because we were able to lay out the plan for people so they knew what to expect.”



ANNE KURTENBACH

### New Passenger Amenities

When the new terminal processor and South Concourse opened in January 2019, the terminal was officially renamed the John S. McCain III Terminal 3, in honor of the former Arizona Senator and naval aviator.

Demolition of the original South Concourse started in early 2017, followed by construction of the new 15-gate concourse. The new area includes a 7,500-square-foot Delta Sky Club and the PHX Play-aviation Park for kids.

# MONETIZING

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A colorful terrazzo floor helps brighten the South Concourse Bridge.



In addition, the airport added two new pieces of public art to the concourse. Teresa Villegas, an Arizona artist, created *Light, Love, Life*, a colorful terrazzo floor for the South Concourse Bridge. David Lipski's *Aviators*, a pair of oversized sunglasses that reflect Phoenix's ever-present sunshine, hangs in the arrivals atrium.

Both the South and North concourses—as well as the post-security lobby—offer an array of shops and restaurants, including local favorites such as the San Tan Brewing Company and Ajo AI's Mexican Café.

Kurtenbach and airport personnel combed through customer comments and considered industry trends to select amenities true to PHX's moniker: America's Friendliest Airport. "As passenger characteristics have changed over time from primarily business travelers to more leisure travelers and families, passengers have come to expect certain amenities," she says.

Features of the Terminal 3 Lobby and new concourses include:

- a video relay service for hearing- and speech-impaired travelers on Level 4 at the Information Counter in the lobby;
- hearing loop connectivity in all gate areas and holdrooms to help passengers with hearing aids hear announcements;
- family restrooms and nursing mothers' rooms on each concourse;
- relief areas for the growing number of passengers traveling with service or comfort animals;
- access to power outlets from every seat; and
- free high-speed WiFi throughout the buildings.

Both concourses also offer different, more casual and modern styles of seating.



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Designers specified several different styles of seating.

That includes pods of soft seating as well as high-top tables with power and USB connections for passengers working on laptops.

As prime architect, it was DWL's task to ensure all of these amenities were organized and accessible with easy wayfinding. Kukla says the team used different finishes to help passengers recognize where they would find certain amenities, from vending and ATMs to restrooms and video monitors.

### New Look for North Concourse

Opened for its first flights in February 2020, the North Concourse project included 10 common-use gates, all new interior and exterior finishes, enhanced food and beverage variety, and many of the same customer amenities as the South Concourse.

Steve Rao, design team director for DWL, notes that some of the design plans were limited because the project was a renovation vs. a rebuild. The space doesn't have the soaring ceilings of the South Concourse, for example. But thanks to a structural surprise and a little innovation, the design team was able to add a bit of extra headroom.



STEVE RAO

Rao explains that the 30-plus-year-old building had a lot of large concrete beams and coffered ceilings that were about 10 feet high. During demolition, crews discovered that the heavy concrete beams in the ceiling were decorative. "There was another concrete beam above them in the true structure, so we could remove them [the lower set]," he says. "It really helped open everything up."

A new public art installation on the north connector bridge also enhances the renovated concourse. *Phoenix Light Threshold*, designed by James Carpenter, features 750 reflective blue and gold aluminum cells that act like a light-gathering beehive along the west wall of the bridge.

### Benefits Behind the Scenes

New finishes and stunning views are on full display for passengers in the transformed terminal. But what they don't see took just as much planning.

For example, all the concession spaces have back-of-house corridors to keep trash and supply deliveries out of passengers' sight. This shift also will help preserve the new high-end floors and front-of-house finishes.

An improved baggage system that uses conveyors to transport bags out to the apron area eliminates the need for airline personnel to cart them there. To reduce emissions and use of fossil fuel, electric ground service equipment is used for cart travel that is still needed. PHX is supplying charging stations, and the airlines are converting their gas-powered equipment.



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The North Concourse features new concessions, with hidden corridors to keep supply deliveries and trash disposal out of passenger thoroughfares.

With the North Concourse renovation complete, the airport will apply for LEED (Leadership in Energy and Environmental Design) Silver Certification for the entire Terminal 3 Modernization Project.

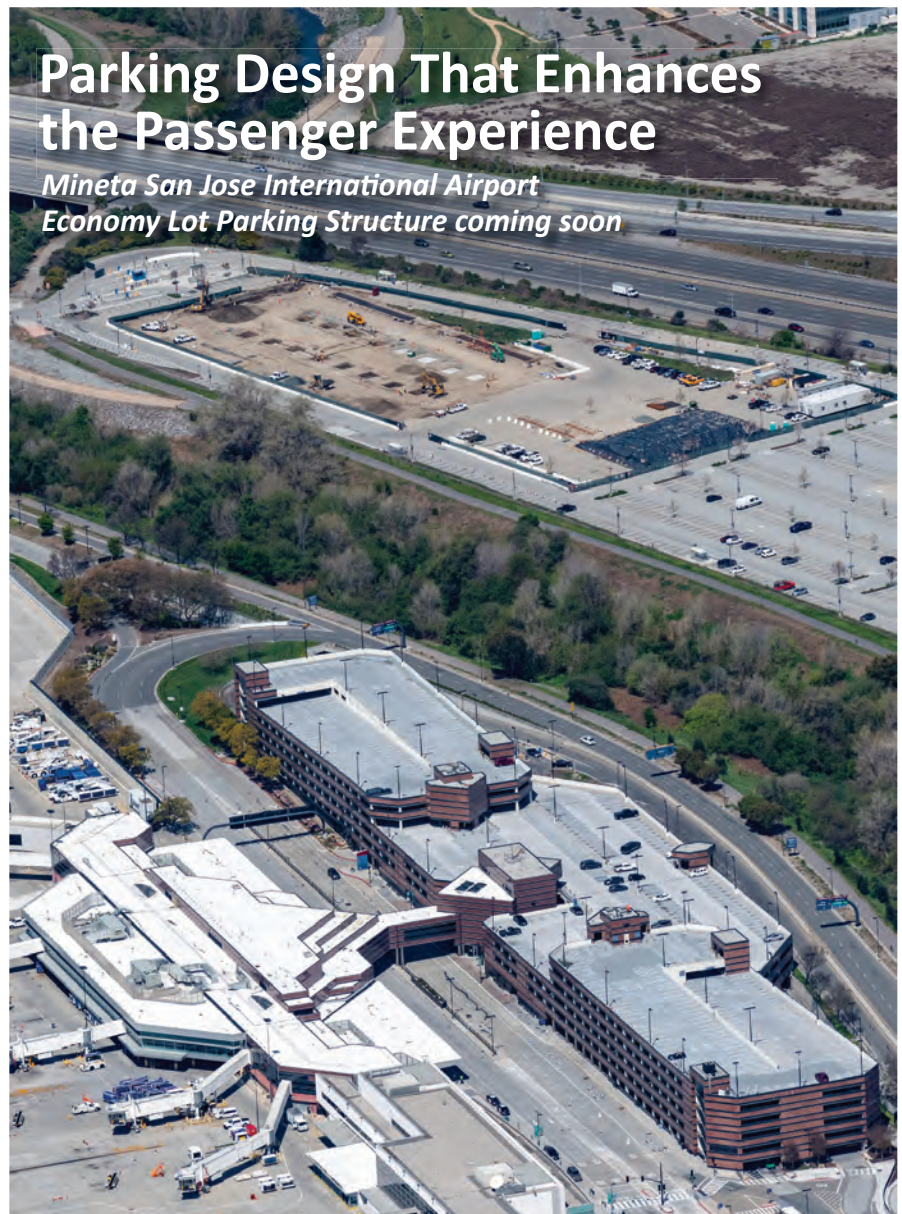
Another change passengers may not notice is that all gates in both concourses are now common-use, just like the ticketing counters in the terminal. Although this gives the airlines less marketing and branding, it also means they don't have to maintain space or equipment.

“Our goal is to deliver world-class customer service to every customer every day,” Bennett says. “This includes our airline partners. Common-use allows us to maximize our operations in the terminal and adapt as needed. By building the terminal to be flexible, it makes the airport more efficient and benefits both us and the airlines we serve.”

### What's Next

Now that the Terminal 3 project is coming to a close, the next dominoes are falling. In February 2020, Terminal 2 was permanently closed and all the airlines were relocated to Terminal 3. Next up is demolition of the Terminal 2 concourse. That area will be paved to provide extra ramp space for overnight parking and to facilitate access to the west side of Terminal 3's new South Concourse.

Another big renovation project is on deck for Terminal 4's eighth and final concourse. And PHX is up for the challenge. “As a result of this project, we've set a new bar at Sky Harbor for the design of our facilities and what our passengers and stakeholders have come to expect,” says Kurtenbach. “We're already embarking on additional terminal projects, and Terminal 3 is the new standard in terms of finishes, design, layout, flow, characteristics. This has been a transformation and a look into the future of what our facilities will look and feel like.” 



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## FACTS & FIGURES

**Project:** Ongoing Public/Media Relations

**Location:** Philadelphia Int'l Airport

**Staff:** 10-member Communications Dept.

**News Releases Issued in 2019:** 35

**2019 Social Media Activity:** 892 tweets; similar volume on Facebook & Instagram

**Podcasts Produced in 2019:** 18

**New Event in 2020:** Media Day, attended by 13 representatives from 10 media outlets

**Event Objective:** Provide background about the airport, its facilities, staff & goals to local, regional & industry media; facilitate contact with communications dept.


**Catalyst:** High turnover in local reporters who were familiar with the airport

**Result:** 6 stories (print, broadcast & web)



# Best Practices for Public & Media Relations

BY SCOTT BERMAN

 By their very nature, airports require nimble communication teams. One day, it's a routine personnel announcement or upbeat ribbon-cutting ceremony; but the next can bring an all-out media frenzy about COVID-19.

The topics airports must address run the gamut, and so do their communication strategies. But there are common threads that run through effective public and media relations departments: They are open, proactive and responsive about issues that affect their facilities, passengers, business partners and communities.



ROCHELLE "CHELLIE" CAMERON

Rochelle "Chellie" Cameron, chief executive officer of the Philadelphia Division of Aviation, considers it essential for key members of airport C-suites to be willing, able and ready to participate in strategic public relations. Philadelphia International Airport (PHL) and Philadelphia Northeast Airport (PNE) are both under her purview.

"Airport executives are part of a robust team of subject matter experts who represent airports in all public capacities," says Cameron. "At PHL, we are fortunate to have leaders who can speak intelligently to our strategy and vision at industry conferences, in media interviews and to the public at large.

"The return for the airport," she adds, "is a consistent and polished brand narrative that creates a sense of trust and expertise for the public."

Cameron frequently "walks the talk" by fielding questions from reporters, speaking at public events and sharing her expertise at industry conferences. She even hosts a monthly podcast, which can be found on Apple Podcasts, Podbean, Spotify and the airport's website.

## Industry Leaders

Airports Council International-North America (ACI-NA) recently recognized several airports with awards for excellence in marketing, communications and customer

service. San Francisco International (SFO), Pittsburgh International (PIT), and Reno-Tahoe International (RNO) were among those acknowledged for outstanding public relations.

Brian Kulpin, vice president of Public Affairs at RNO and chair of ACI-NA's Marketing Committee, notes that his airport emphasizes accessibility, balance, planning, speed, consistency and versatility. "When it comes to working with the media, for example, we make sure that we don't hide behind our iPhones and computers," says Kulpin. "We want to be accessible, in-person, whenever we can."



BRIAN KULPIN

Building and maintaining relationships with media personnel can help tremendously during a crisis, or when a negative story emerges, he adds. "The media will know you; they'll have confidence in your

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messaging,” Kulpin explains. “If you don’t build the face-to-face, in-person relationships, you will pay a price when things get hot.”

RNO establishes and nurtures its media contacts by remaining accessible, balancing robust social media efforts with ample face-to-face interactions, and imbedding reporters in activities such as the airport’s tri-annual disaster drill for FAA Part 139 certification.

Last year, the RNO communications team executed an intense, three-month program to inform the public and lawmakers about the crucial need to keep open a freeway access ramp that serves the airport. When rapid growth and new development inspired support for closing the ramp, RNO assertively told its story by explaining the essential nature of the ramp and detailing the negative effects of a potential closure. As a result, 85% of public comments about the issue were in support of keeping the airport access ramp open. The final outcome: The ramp remained opened—and RNO subsequently won an ACI-NA award for its public relations efforts.

The industry organization also recognized the public relations program at SFO. One of its standout efforts was a campaign celebrating the Lunar New Year—an important holiday given the large number of Chinese passengers who fly into SFO to visit North America.

Marketing and Communications Director Charles Schuler explains that the campaign’s goal was to position SFO as a welcoming and convenient gateway airport. To do so, the airport’s International Marketing & Route Development team worked with Aviareps, a marketing and public relations agency in China, to organize a social media livestream and distribute media kits to Chinese news outlets. SFO also worked with the U.S. office of Hylink, a Chinese advertising and media company, to activate a livestream on Weibo, China’s microblogging social media platform that is similar to Twitter. Because 2019 was the Year of the Pig, one key element was the light-hearted, yet strategic, story of Lilou, the SFO Wag Brigade therapy pig. “LiLou is a favorite with both domestic and international travelers and represents SFO’s welcoming nature,” Schuler notes.



CHARLES SCHULER

A full year later, footage of young travelers interacting with the friendly animal is still visible on Facebook.

**Post & Monitor**

Sharing videos and images on Livestream and Weibo was a particularly cost-effective portion of SFO’s campaign. It is also a sign of how important social media has become to public relations.

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That said, *monitoring* social media can be just as important as posting to it. Florence Brown, communications director for the Philadelphia Division of Aviation, emphasizes that airports need to know what people are saying and sharing about them on platforms such as Twitter, Instagram and Facebook.

Brown considers an airport's social media accounts its "first line of defense." As such, she recommends using listening tools to monitor postings for negative issues that could escalate.

For example, apps such as the Khoros, SproutSocial or HootSuite alert airports when people air grievances on social media. By communicating promptly and directly with posters, airports can resolve complaints before they evolve into news items that may or may not be accurate, Brown explains. Social media listening tools can also help find posts with upside opportunities, she adds.

Social media engagement is a core component of how PHL evaluates its public relations efforts. That is, when the airport publicizes information, the communications team tracks how many times it appears on social media platforms—specifically, how



FLORENCE BROWN

many posts, re-posts, comments and likes it inspires. The team also measures coverage by traditional media, such as newspapers and broadcast outlets.

### Collaborative Communication

In addition to handling its own publicity, PHL helps promote developments at PNE, its local general aviation counterpart. For instance, PHL posted an announcement last year when PNE secured a \$9 million Airport Improvement Program grant for runway reconstruction; and again this January, when PNE tenant Leonardo Helicopters won a \$650 million contract to supply training helicopters to the U.S. Navy.

In other collaborative projects, PHL and Frontier Airlines held a joint news conference in January 2019 to announce five new routes; and officials from the airport, city and TSA convened for a media event last November to honor the service of TSA and PHL employees.

In 2018, PHL ventured into an increasingly popular media sector, when Cameron began hosting a podcast about various accomplishments of airport employees. Initially, the podcasts were produced as an internal communications vehicle. Now, the issues and audiences it addresses are wider, with a variety of guests discussing industry trends.



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## Media Day Yields Positive Press Coverage

This January, Philadelphia International Airport (PHL) hosted its first-ever Media Day to inform press members about its facilities, staff, priorities and projects. The event lasted about three hours and included presentations from airport executives and behind-the-scene tours of the airfield and terminals.

It was not a news conference or media availability, notes Florence Brown, communications director for Philadelphia's Division of Aviation. Instead, the goal was to provide background information to editorial staff and news personnel about PHL, its functions and services.

Another objective was to provide contact information for the airport's communication department. Due to a considerable amount of recent turnover at local and regional media outlets, some news outlets were "no longer versed in who the airport is and what we do," explains Brown.

In total, 13 people from 10 local, regional and industry media organizations attended the event. Despite a detailed agenda, some attendees showed up expecting a news conference rather than the backgrounder event described in their invitations. So the PHL communications team rolled with the punches and worked with attendees on individual stories.



"The outcome was still exactly what we had hoped," reflects Brown, noting that the event prompted informative stories by six print, web and broadcast outlets. Perhaps more importantly, PHL's Media Day helped expand the knowledge of some reporters who didn't have much previous experience with the airport. "We were able to get our key messaging in front of them," notes Brown.

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Last year, Cameron published 18 episodes; in the first few months of 2020, she covered the airport's in-terminal health and wellness options and provided a behind-the-scenes look at its capital development program.

In addition to acknowledging employee achievements and promoting operational milestones, the communications department at PHL works to "put a face on" the complexities, responsibilities and goals of the airport—and to do so strategically. As Brown explains it, "We stand as the front line of defense regarding anything that happens at the airport, whether it's under our purview or not."

The Communication Department that forms that line of defense includes 10 employees: Brown and three public affairs specialists, an administrative officer, administrative assistant, photographer/videographer, special events coordinator and public relations supervisor.

### Pardon the Dust

Construction and renovation projects, which are among the most conspicuous airport news, require deft communication strategies

and tactics. Building new facilities or improving old ones often entails approval issues, traffic concerns, financial implications, and change for passengers, airlines, tenants, employees and other stakeholders. Media is a key tool for addressing such topics and issues proactively.

At PHL, media efforts about capital development focus on why the airport is taking on a given project. The standard focus is on regional growth and enhancing the customer experience, notes Brown. And the dual themes have been getting quite a workout.

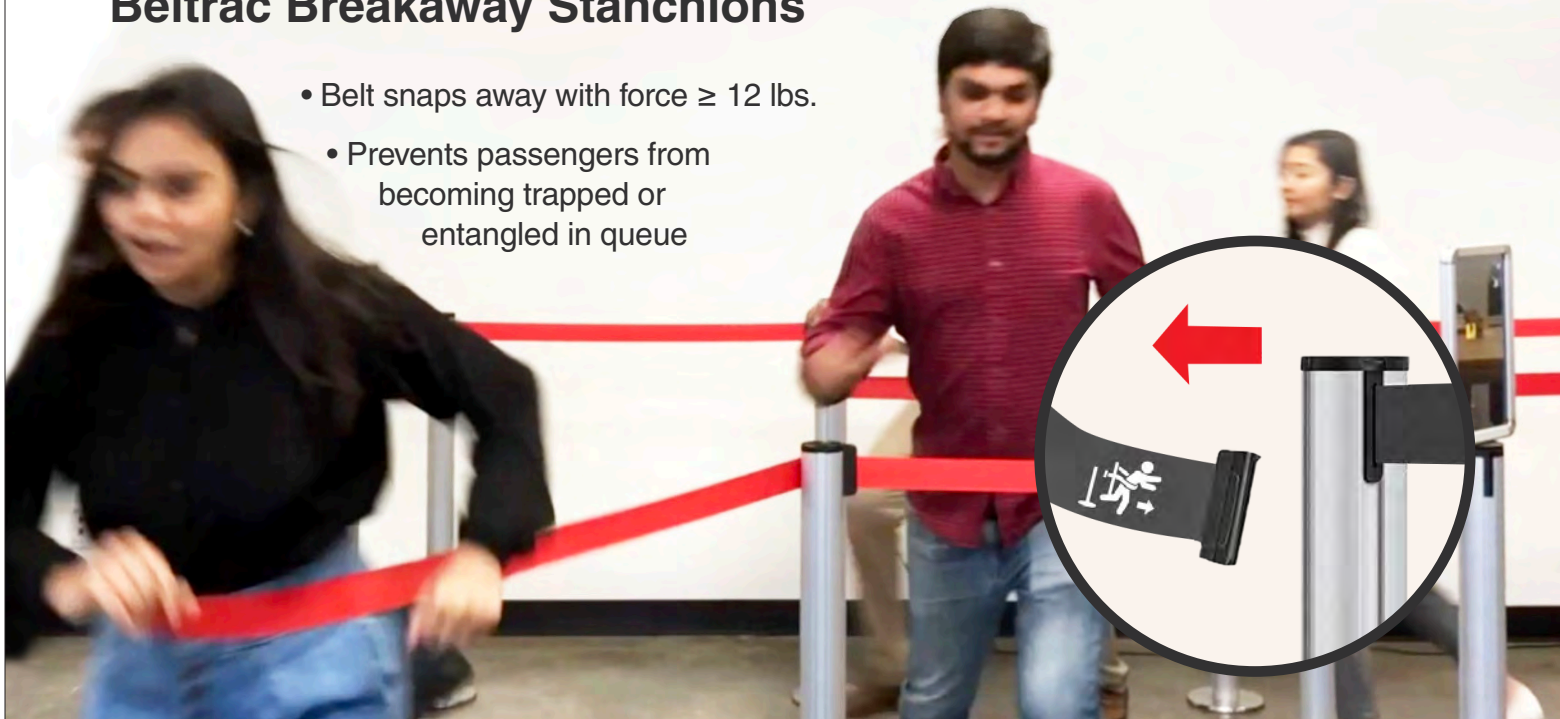
In recent months, PHL has cut the ribbon for a runway expansion project; announced \$1 million in state grants to improve commuter rail platforms; and implemented a traveler safety project that includes new crossing signs, warning lights, bus shelters and curb ramps.

But the public and media are interested in more than capital development projects. Whatever news arises, PHL and other airports must use sound communication strategies to guard their reputations, keep key publics informed and maintain focus on long-term objectives. 

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# Dallas Fort Worth Int'l Hosts Runway Repair Training

BY ROBERT NORDSTROM

## DFW

### FACTS&FIGURES

**Project:** Airfield Concrete Joint & Surface Repair Training

**Location:** Dallas Fort Worth Int'l Airport

**Trainer:** D.S. Brown Co.

**Attendees:** DFW airfield maintenance workers, in-house quality control/quality assurance personnel, design code & construction staff; outside pavement contractors

**Benefits:** Onsite training was more convenient & less costly for airport; active airfield provided realistic work conditions for attendees



Earlier this year, Dallas Fort Worth International Airport (DFW) partnered with one of its long-time vendors to provide two days of airfield pavement and joint repair training at the airport. About 30 DFW pavement maintenance workers and in-house quality control/quality assurance personnel attended the first full-day session on Jan. 29. The following day, members of its Design Code and Construction staff joined contractors from around the country for similar training.

In all, approximately 100 people received classroom instruction and hands-on lessons from D.S. Brown Co., a company that specializes in engineered products for transportation infrastructure such as airfields, bridges and highways. Trainers focused on concrete joint compression seal repairs, concrete spalling repairs and

operation/maintenance of the company's compression seal equipment.

"Holding the training at DFW made it much easier for our staff and local contractors to attend," says Jud Piner, the airport's infrastructure maintenance manager. "A number of national contractors that will likely perform work at the airport in the future also participated."



JUD PINER

Demonstrations and hands-on sessions were held at DFW's busy airfield to provide realistic work conditions for attendees. The airport barricaded a section of its southeast hold pad so instruction did not interfere with ongoing operations.





### Onsite Curriculum

Training was divided into four sessions. During the first, trainers outlined the various types of joint sealants and spall repair materials, and explained the science behind the products and recommended installation techniques. They also discussed the benefits, limitations and life expectancies of hot-pour filler, silicone with backer rod and preformed compression seals. For spall repair, training focused on site preparation, mixing and application of Delpatch™, the company's proprietary two-part polyurethane patching material, and PaveSaver™, a non-shrink epoxy-based elastomeric concrete patching material.

Attendees then moved to DFW's Maintenance Building for a session about the Kompressor™, D.S. Brown's proprietary compression seal machine. "They learned what to do, what not to do, how to clean it—everything one might encounter on an airfield job," says Uriah Carpenter, the company's regional sales manager.

After a lunch break, attendees moved out to the airfield for hands-on demonstrations about joint sealing. Specific

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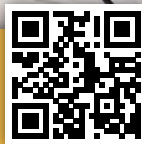
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topics included preparation techniques such as saw cutting, blowing and cleaning. To begin the session, instructors purposely set the company's compression seal machine incorrectly to demonstrate issues attendees would encounter if they overstretched a seal—for instance, installing 100 feet of seal into 200 feet of concrete joint. "Then, trainers made the proper adjustments on the machine and had participants take over to install the seals properly," says Carpenter.

"It was a very hands-on experience," he emphasizes. "We wanted participants to put their hands on the machine, install some compression seals, see what could go wrong and learn how to do it right."

The final session was a hands-on segment about installing spall repair materials. Trainers coached attendees about saw cutting, jackhammer work, cleanup and mixing/application.

#### Win-Win

Typically, D.S. Brown conducts training for pavement contractors every few years at its facility in North Baltimore, OH. Onsite training at an active airfield was a new approach. When company personnel approached DFW about holding a session at the airport, management saw a number of potential upsides.

"We have large and complex projects at the airport and rely on the technical knowledge of our quality control staff and contractors. With several airfield projects in progress and more planned for the future, it is to our advantage to have trained technicians in the local contracting community," explains Piner. "Our pavement maintenance staff learned proper techniques for concrete patching when using D.S. Brown's or similar concrete patching products. Also, our in-house quality control staff were able to learn first-hand the proper compression seal installation techniques so they could better evaluate the work of contractors."

Other than providing access to its facility and airfield, DFW did not incur any other costs. D.S. Brown provided 12 instructors, training materials and equipment, and paid for hotel accommodations and meals of attendees who did not live in the Dallas area.



Both consider the arrangement a win-win: DFW reduced its cost for training airfield maintenance and quality control staff, and D.S. Brown increased the realism of its hands-on sessions.

“By doing the training at the airport, participants gained on-site experience working with joint seals and spall patching,” Carpenter says. “With aircraft taking off, landing and taxiing right next to us as we worked, instructions and questions had to be shouted out, creating a real-life work atmosphere.”

In two days, trainers and attendees performed 22 spall repairs and replaced a couple hundred feet of joint seals. Carpenter notes that the small sections of pavement improvements may help DFW personnel evaluate the company’s repair materials, but their real value is what they taught attendees. The purpose of the training was to correct and improve installation procedures, provide equipment training and offer recommendations about pavement repair, he advises.

Dave Richards, highway operations manager for a concrete contractor in Utah, particularly valued the equipment sessions. Even though Richards has worked with the company’s compression seal machines for



DAVE RICHARDS



years, he still found the training worthwhile. “I’ve broken them down to nuts and bolts and put them back together, but I wanted to make sure I wasn’t missing anything. And I did learn a few new things. Although we haven’t done work at the airport to date, anything is possible since we do have a Fort Worth office.” ✈️




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# New ARFF Training Center at

BY VICTORIA SOUKUP

 There's a new Midwestern location for aircraft rescue and firefighting (ARFF) training, and it's the only site in the U.S. where personnel can practice on and in a full-size Boeing 777.

The new training center is located at Appleton International Airport (ATW) in northeast Wisconsin. The \$14 million facility is a partnership between the airport and a local technical college. The center is located on 20 acres of airport land, and faculty from Fox Valley Technical College provide the training. Officials from both organizations expect the center to attract students from around the world.

Classes will include standard FAA-required courses and annual live fire recertification as well as custom training for individual airports and other agencies seeking ARFF instruction. Courses were scheduled to begin in May, but were temporarily postponed due to the COVID-19 crisis.

"The collaboration between the airport and Fox Valley Technical College is what makes this program so special," says Airport Director Abe Weber. "Other regional training centers offer the standard ARFF training curriculum. But here, because we partnered with Fox Valley Technical College, we can offer other training in areas such as water rescue, wildlife control, structural firefighting, law enforcement, firearm training, EMS certifications and driver operator training. The possibilities are almost endless. An airport's training dollars will go that much further by coming to Appleton versus sending staff elsewhere. And that's a big deal."



ABE WEBER

Because the new ARFF Training Center is located within 700 yards of ATW's runways, special precautions are taken to make sure that the sight of fire doesn't alarm passengers looking out the windows of arriving and departing aircraft. The air traffic controllers receive a detailed training schedule so they know when to alert pilots about live burn exercises. The pilots, in turn, forewarn their passengers and explain that fires are controlled training exercises and not actual emergencies.

## Right Place, Right Time

The idea for a new ARFF training center initially emerged about a decade ago, when Fox Valley Tech and ATW began discussions about building a training center for police and security personnel on airport land. The school's Public Safety Training Center opened in January 2015, but a facility for ARFF training remained on the backburner until five years ago, when Weber learned that regional ARFF training centers in Duluth, MN, and Battle Creek, MI, were closing.





# Appleton Int'l

"That's when we put a business plan together and took it to the FAA in Chicago," he recalls. "We had a lot of infrastructure in place because of the Public Safety Training Center, and we had an operator [Fox Valley Technical College] that could take over and run the facility once complete. It was all nicely wrapped into one single package."

Two years ago, FAA approved the project and issued a \$12 million grant to finance construction and equipment purchases; the Wisconsin Bureau of Aeronautics funded the remaining \$2 million. "The state immediately understood this project would support airports throughout Wisconsin, and help decrease training costs," Weber explains. "Plus, many communities offer mutual aid support to their local airport; ATW ARFF provides all firefighters access to aircraft rescue training courses."



## FACTS&FIGURES

**Project:** Aircraft Rescue & Firefighting Training Center

**Location:** Appleton (WI) Int'l Airport

**Facility Operator/Training Provider:** Fox Valley Technical College

**Cost:** \$14 million

**Funding:** \$12 million from FAA; \$2 million from state

**Facilities:** 9,000-sq.-ft. building; 19,000-sq.-ft. drive-on wet deck with 96 burn zones

**Full-Size Training Props:** Boeing 777 & Cessna Skyhawk, by Kirila Fire

**Training Vehicle:** 2019 Oshkosh 6x6 Global Striker, with extendable turret & piercing tip

**Courses Offered:** Standard FAA-required ARFF training; custom ARFF programs; swift water rescue, firearm, EMS & other associated training

**ARFF Curriculum Overview:** FAA Great Lakes Office

**Architectural Engineering:** Omni Associates

**Building Contractor:** SMA Construction Services

**Of Note:** Only ARFF training center in U.S. with full-size Boeing 777



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Previously, the nearest ARFF training center was at Blue Grass Airport in Lexington, KY.

## Keepin' It Real

The training center at ATW includes a 19,000-square-foot wet deck with 96 burn zones and two specialized aircraft fire trainers: a Boeing 777 widebody and a Cessna Skyhawk.



LENNA BOGGS

Both aircraft training props were manufactured by Kirila Fire. Lenna Boggs, the company's proposal coordinator, notes that the full-size Boeing prop allows firefighters to practice entering a burning aircraft and fighting fires in the fuselage, cargo area or cockpit. "It's so spacious

that they receive actual search and rescue training with the B777," says Boggs. "This type of aircraft provides realistic training situations with a live fire. And while not every airport has B777 traffic, the B777 is a popular aircraft."



BEN SOKOL

By adjusting the fuel flow to various burn zones, technicians can fully engulf the B777 or just light individual portions such as the wings, cockpit, landing gear, engines or other specific interior and

exterior areas. "It's pretty specific and very impressive," says Ben Sokol, ARFF program instructor at Fox Valley Technical College. "The wet deck has a controlled drainage and filling area, and infrared camera images projected into the control room allow for flame control and monitoring. The detailed control allows instructors to create any aircraft fire scenario required, and the command system logs the scenarios and performance to create a training log."

To increase the realism of training exercises, the airliner prop is equipped with piercing panels, actual B777 and Airbus 380 doors, and an interior smoke generation unit. Kirila added a smoke generation unit because the burn zones on ATW's wet deck are fueled by propane, which does not produce smoke.

"Smoke impedes vision," Boggs explains. "In order for firefighters to gain experience and confidence in a fire when they can't see, or breathe without a breathing apparatus, we need to make the situation as real as possible and still keep the training safe."

The Cessna training prop provides students with experience fighting fires in exterior landing gear, engine/prop areas and cockpit/cabin spaces.

Sue Morris, design engineer with Kirila, notes that the Cessna and Boeing trainers are both made of Corten, a durable weathering steel that can withstand high temperatures from fire. The B777 alone required more than 1 million pounds of Corten steel to fabricate and is so large, it had to be trucked from Kirila's plant in Ohio in six different sections.



SUE MORRIS



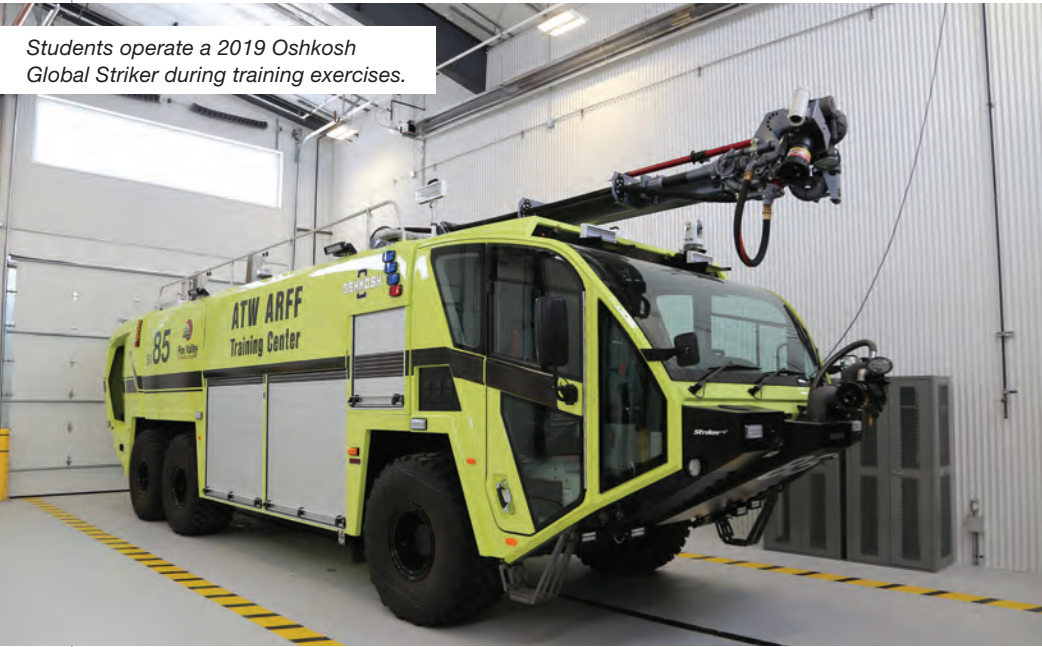
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Students operate a 2019 Oshkosh Global Striker during training exercises.



The shell was assembled on site and now sits inside the drive-on wet deck, which provides students with 360-degree access to it.

Technicians control the adjustable features of the aircraft and wet deck from a room that overlooks the live burn area. The control room is on the second floor of a 9,000-square-foot building that also contains a traditional classroom, three apparatus bays and a smaller bay used for equipment storage and maintenance.

One of the apparatus bays is designated as a “dirty classroom.” It allows instructors to begin a lesson in the classroom, move students outside for a related hands-on experience, and then end with a review session back in the classroom—*without* having students clean up or take off their gear.

### Driver's Ed

A 2019 6x6 Global Striker, from Oshkosh Airport Products, is also used to enhance the training experience at ATW. The nearly 40-foot ARFF vehicle features a high-rise extendable turret with piercing tip, and can carry 3,000 gallons of water.

“This was a new truck built for the school,” says Jack Bermingham, senior



JACK BERMINGHAM

ARFF product manager for Oshkosh. “The value in having this piece of equipment at the training center is that it is the same type of equipment many U.S. airports already have. When students complete their training at ATW, they are able to use a truck they are familiar with.”

The truck’s “Snuzzle” provides students with valuable experience penetrating an aircraft exterior to discharge firefighting agents inside. The training vehicle is also equipped with the K-Factor visual aid that helps operators use the Snuzzle more effectively, notes Bermingham.

Oshkosh, a global leader in firefighting equipment, is located in Oshkosh, WI, just 20 miles from Appleton.

### Broad Community Benefits

Weber notes that the new ATW ARFF Training Center could not have been created without the involvement of Fox Valley Technical College. “They were an instrumental piece in this,” he relates. “Being able to add onto their Public Safety Training Center facility provided us with impressive cost savings. We didn’t have to build new parking lots or bring in new water lines or new electrical services—everything was already on site. And we didn’t have to construct all new classrooms or facilities other than our new building. Everything else was already on site. We

## ARFF Training Options

Standard courses offered by the new ARFF Training Center at Appleton International Airport (ATW) in Wisconsin include:


- ARFF Academy 1, a two-week class that includes Airport Firefighter and Driver/Operator training
- FAR 139 Annual Refreshers for Hand Line Operations and ARFF Apparatus/Exterior Operations
- Municipal Response to ARFF
- Driver/Operator ARFF; and
- Airport Firefighter, which meets Part 139 requirements.

Courses are taught by faculty from Fox Valley Technical College.

“We can also customize any type of training a specific airport or firefighting agency wants,” notes Ben Sokol, ARFF program instructor for the school. “If a customer requests other training, we can do it through our Public Safety Training Center or the college.”

Typically, the center maintains a ratio of one instructor for every six ARFF students. But airports can reduce training costs by bringing their own certified safety officers to assist the school’s instructors.

just had to add to what was already there.”

Weber expects the new training facility to profit the airport and surrounding Fox Valley region. “We’re providing a service to our community as well as a massive economic impact by drawing firefighters from around the globe to Appleton,” he explains. “These individuals will stay in our hotels, rent our cars and eat in our restaurants. That’s what I am most excited about. If this facility puts more people on airplanes to land at our airport and come into our community, that’s a benefit for all of us.” 





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# Long Beach Airport & Airline Partners Phase Out Fossil Fuels for Ground Support Equipment

BY PAUL NOLAN

Every new airport executive wants to hit the ground running and complete projects that are electrifying. In her first year as director of Long Beach Airport (LGB), Cynthia Guidry pulled it off—literally.

When Guidry arrived at the Southern California airport, LGB had already approved a project to install 15 electric chargers for airline ground support equipment. In fact, the project was just going out to bid when she assumed the helm last July. Completing the \$1.4 million construction project while serving passengers and avoiding operational disruptions was like baptism by fire.

But she pulled it off early this year, and now all 11 of LGB's commercial gates are fully electrified. As a result, the airport is on track to decrease harmful nitrogen oxide emissions by nearly 2,000 pounds per year by 2023. Southern California is especially



CYNTHIA GUIDRY

attuned to reducing nitrogen oxide emissions, due to their link with air pollution.

Personnel from LGB's Engineering Department note that the new PosiCharge units provide numerous operational benefits. In addition to being faster and more efficient than previous chargers, they recognize each specific battery type and charge accordingly to prolong the life of individual batteries. The new equipment also includes a feature that sends email alerts and notifications about the health of the chargers and fleet equipment, usage data, etc. A cable management system helps prevent vehicles from rolling over and damaging cables.

Guidry is quick to credit the airport's staff and airlines for their roles in the project. "It took the carriers as well as our team to make this program successful," she says. "Our airline partners were a vital part of the entire project. Communication was essential. We talked with the carriers early in the planning stages and throughout, and they were always supportive in wanting to do it."







long beach  
airport



## FACTS&FIGURES

**Project:** Gate Electrification

**Location:** Long Beach (CA) Airport

**Scope:** 15 new electric chargers for ground support equipment to cover all 11 commercial gates

**Cost:** \$1.4 million

**Funding:** Airport revenue (pending expected approval of VALE grant, passenger facility charges will be used)

**Designer:** HNTB

**Contractor:** Royal Electric

**Charging Stations:** PosiCharge

**Samples of Electric Equipment:** Ground power units from ITW GSE; preconditioned air units from TLD; belt loaders from TUG Technologies; Lektro pushback/tow vehicles from JBT

**Airline Participation:** American, Delta, Hawaiian, JetBlue & Southwest agreed to convert their ground support equipment to electric

**Notable Progress:** Southwest has converted more than 80% of its ground support equipment at LGB; JetBlue's fleet at the airport is more than 55% electric

**Expected Impact:** Reducing nitrogen oxide emissions by nearly 2,000 pounds/year by 2023



Guidry left her position as deputy executive director at Los Angeles International Airport, where she had worked for 18 years, to accept the top spot at LGB.

**Going All In**

The electrification project was paid for with airport revenue, but LGB applied for an FAA Voluntary Airport Low Emissions (VALE) grant to help defray most of the cost and also allow the airport to use passenger facility charges.

The project stemmed from a need that arose more than two years ago to upgrade the airport's charging stations. However, instead of replacing the existing five units, LGB invested in 15

new charging stations—with the express support of its carriers (American Airlines, Delta Air Lines, Hawaiian Airlines, JetBlue Airways and Southwest Airlines). As a block, the carriers agreed to invest in electric ground support equipment, which aligned with their respective corporate goals.

“If an airport is willing to provide the infrastructure, and they approach us with an opportunity to lower emissions through conversion to electric ground support equipment, we are typically willing to do it depending on our need to refresh the fleet and the regulatory environment,” says Adam



ADAM WALTERS

Walters, environmental manager of Southwest's Environmental Services Team. “We want to take advantage of those opportunities because we recognize the long-term savings involved with electrification.”

Walters reports that Southwest has electrified about 27% of its eligible ground support equipment nationwide, but its fleet at LGB is more than 80% electric (among the highest in the country for the airline).

As part of its effort to electrify at LGB, Southwest purchased six electric baggage tugs that had been taken out of use at nearby John Wayne Airport (SNA) in Orange County. Airline personnel managed to nab the equipment just before it went to auction.

The airline has also purchased a number of new units in the last few years: three electric ground power units from ITW GSE, two electric preconditioned air units from TLD and six electric belt loaders from TUG Technologies. The modern diesel pushback tugs it uses at LGB will eventually be converted to electric, and the electric baggage tugs from SNA will be replaced with new units.

**Early Commitment**

“When we started serving Long Beach in 2016, we committed to electrify as much as possible,” explains Larry Pitts, Southwest's station



LARRY PITTS

operations manager at LGB. Pitts welcomed the airport's subsequent charging station project because airlines had to compete for overnight charging time when there were only five stations available. It would have been impractical for Southwest to add more electric ground support equipment if extra chargers were not installed, he explains.

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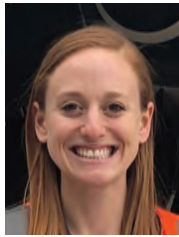


According to Pitts, LGB not only met Southwest's need for more charging stations, it also bent over backward to accommodate the airline's operational needs during the associated construction. "When they install these things, they have to bring in cranes and there is a lot of coordination and communication," he remarks. "I was very impressed with how they worked to make it as seamless as possible."

Naturally, airlines eliminate fuel costs when they electrify ground support equipment. But many expect to save even more money on vehicle maintenance. "There are no leaky engines, no disposal of waste when changing fluids and parts," explains Walters. "It's definitely more than just saving on fuel."

### A Preference For Electric

The move to electric vehicles is also popular with ground crews. An internal survey at JetBlue found that more than 90% of employees prefer electric ground support equipment to vehicles powered by fossil fuels. "They're quiet, clean and reliable," says Sara Bogdan, manager of sustainability and environmental social governance for the airline.



SARA BOGDAN



David Farias, general manager of system ground services for JetBlue, notes that the airline converted several diesel engine units to electric even before the airport initiated its charging station project. Now, the majority of its belt loaders and baggage tugs at LGB are electric. In 2016 and 2017, JetBlue purchased two electric pushbacks, and added more electric units later in



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2017. Currently, about 55% of its ground support equipment at LGB is electric.

Bogdan reports that JetBlue is on pace to beat its goal of converting 40% of its nationwide ground support fleet to electric by 2025 and 50% by 2030. When deciding where to invest in electric vehicles, JetBlue considers the size and age of existing fleets, as well as which airports have the interest, ability and funding to partner on conversion projects. As Bogdan sees it, the move to electric ground support equipment is a “slam dunk” from a community *and* business perspective.


But commercial airlines aren’t the only tenants making the switch. JBT reports that it has supplied six Lektro vehicles to various general aviation businesses at LGB. Operators use the all-electric, towbarless units to push aircraft back from gates and tow them about the tarmac.

### Wait, There’s More

New charging stations and electric ground support equipment are important

components of LGB’s larger effort to reduce emissions from non-aircraft mobile sources. It is one of five commercial airports in the South Coast Air Basin that recently finalized a collaborative agreement with the South Coast Air Quality Management District. In addition to greening ground support equipment, the group’s Air Quality Improvement Plan sets voluntary targets for renewable energy, sustainable design, clean construction practices and clean fleet goals for airport-owned vehicles.

“This is just part of the many things we want to do,” Guidry says of the recent charging stations project.

Construction of a new ticketing area, the next phase of terminal improvements, is expected to earn LEED Silver certification. The airport also is installing solar panels on a parking garage and adding more electric charging stations for customers’ vehicles. 





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# Space Constraints, Rapid Growth Spark New Cargo Facilities at Ontario Int'l

BY KRISTIN V. SHAW



## FACTS & FIGURES

**Project:** New Cargo Facilities

**Location:** Ontario (CA) Int'l Airport

**2019 Cargo Volume:** Almost 782,000 tons

**Project Scope:** 2 Tension Fabric Structures

**Building Sizes:** 150 ft. x 376 ft.; 160 ft. x 437 ft.

**Combined Capacity:** 126,320 sq. ft.

**Total Cost:** \$12.3 million (including sewer, septic, electrical, site work, demolition, etc.)

**Timeline:** Notice to proceed received Dec. 2018; tenants moved in Jan. 2020

**Construction of Buildings:** 12 weeks (excluding concrete foundation slab)

**Structure Design & Materials:** Legacy Building Solutions

**Facility Design:** T.Y. Lin Int'l

**Construction & Vendor Management:** Jacobs

**General Contractor:** AMG & Associates

**Inspection & Material Testing:** RMA Group

**Labor Compliance Enforcement:** Meadows Consulting

**Key Benefits:** Faster construction than traditional steel buildings; airport can move structures to new locations



Ontario International Airport (ONT) in southern California is bustling with cargo activity from big-name carriers such as FedEx, Amazon and UPS. In fact, ONT is the West Coast air and truck hub for UPS Airlines and a major distribution point for FedEx Express.

Short on space for its rapidly growing cargo business, Ontario International Airport Authority (OIAA) is developing additional areas of the airfield for cargo operations. It also recently built two new facilities in an existing cargo area between the International Arrivals Terminal and main passenger terminal. To expedite construction and ensure future flexibility, it opted for tension fabric buildings.

The project ultimately cost \$12.3 million, including demolition of old buildings and the addition of water and utility services to new areas. The series of changes was set into motion a few years ago when FedEx began outgrowing its facilities. That created a chain reaction of infrastructure improvements that affected several key cargo tenants.

In June 2018, OIAA approved a new 30-year lease with FedEx for 50+ acres on the northwest quadrant of the airfield—nearly three times the land it currently occupies on the south side. In addition to building a larger sorting center, staging area and support facilities, the shipping giant is investing \$100 million to improve aircraft parking aprons. It also agreed to add perimeter fencing and landscape its new area.

This February, OIAA demolished four aging buildings previously occupied by Southwest Airlines Cargo and Amazon Air/Majestic Terminal Services to create ramp space and taxiways for FedEx's new facilities. Southwest and Amazon /Majestic, which both support Amazon Prime deliveries, moved into the airport's new fabric structures in January. Meanwhile, FedEx continues construction on its new building, and plans to move in later this year. Until then, it continues to operate from its current facilities on the south side.

James Kesler, who heads cargo and development for ONT, explains that the





multi-step reorganization was designed to enhance, support and increase the efficiency of operations for multiple tenants. “Cargo is an important part of the airport’s business,” he adds.

Last year, ONT handled nearly 782,000 tons of cargo and served about 5 million commercial passengers.

Mark Thorpe, OIAA’s chief executive officer, notes that the airport is a vital link in product deliveries throughout the U.S. and beyond because a considerable share of the overseas cargo shipped into the nearby Los Angeles-Long Beach harbor is subsequently transferred to planes that fly out of ONT.

### Now’s the Time

Several consecutive years of substantial increases in cargo business preceded ONT’s recent infrastructure improvements. Since 2016, volume has grown more than 20% every year.

On a macro level, the airport knew it wanted to replace four contiguous facilities with two new separate buildings, and maintain about the same total square footage. But the available site was small and constrained by the airfield and existing critical facilities, so Kesler called in T.Y. Lin International for the design and Jacobs, a longtime consultant at ONT, to provide



JAMES KESLER

construction management services. Knowing the project would be complex, OIAA officials wanted a team that could kick off the project quickly, and Jacobs already understood the airport’s objectives for improving cargo operations from working on previous projects. Naturally, a fair amount of juggling was required to keep business running smoothly for cargo operators affected by the domino-style changes.

“Due to the nature of this project, our biggest challenge was the timeline to completion,” says Joie Edles Yanez, who served as project manager for Jacobs. “There were several contractor design-build elements to the project, utility relocations and permitting efforts—all of which require time. These proved to be challenges to our fast-tracked schedule.”



JOIE EDLES YANEZ

The team had to get creative to mitigate schedule constraints, and it required all hands on deck from the contractor and subcontractors, adds Edles Yanez.

“We had the support and influence of the airport authority to expedite issues that could have greatly impacted our schedule,” she says. “We maintained quality of the building construction through regular inspections and constant communication with the contractor. Daily field meetings between Jacobs, OIAA operations



Two large tension fabric facilities were constructed in 12 weeks, excluding the concrete slab.



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and the contractor team focused on safety, access and upcoming work activities. To move quickly, we all had to be on the same page.”

The recent cargo area initiative was the largest project completed at ONT since the airport was acquired by the city of Ontario and San Bernardino County in 2012.

**Why Fabric?**

ONT’s new cargo facilities needed to be durable, yet temporary because the area they currently occupy will eventually become part of a much larger development. That led OIAA to consider non-traditional building styles.

The project team was familiar with two fabric pavilion structures Legacy Building Solutions built at Cincinnati/Northern Kentucky International Airport (CVG) to support cargo operations for DHL Express. The buildings’ wide aisles and large openings for quick access to stored materials were particularly appealing, so ONT invited the company to respond to its request for proposals—and ultimately selected Legacy as its provider.

The new structures have solid steel frames made of fabricated I-beams, and are covered in high-tech PVC fabric. “The buildings are made to withstand even Mother Nature’s fits, but are still light enough to relocate when it’s time to do so,” remarks Sara Davis, a building and project design consultant with Legacy. “As technology changes, so has the fabric industry. At this point, we have fabric with a 30-year life expectancy and a 25-year warranty. A few years back, a fabric structure lasted only five to seven years. Now, it’s like a Crock Pot—you can set it and forget it. Based on scientific tests they have run, the structures can last even longer than metal buildings.”



SARA DAVIS

Kesler notes that ONT’s new cargo facilities leverage natural ventilation and light. “The new buildings are as cool or even cooler than the previous buildings,” he reports.

The project team was particularly drawn to Legacy’s ability to tailor buildings to precise specifications. “It’s not a cookie-cutter building manufacturer with a set of standard sizes for you to choose from,” explains Kesler.

In other words, it’s more haute couture than off-the-rack. And ONT definitely needed custom designs.

Because the new buildings would be located close to the runway, they had to be less than 55 feet tall, per FAA 7460 regulations regarding above ground-level contours. There were additional height restrictions because they would be located near the aircraft approach area. The project team consequently specified a stepped roof to maximize the facility’s interior capacity without infringing on the runway’s glide slope area. When reviewing bids, Kesler and the team discovered that Legacy was only fabric building company that could create the stepped roofline they wanted.

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Several years of substantial increases in cargo volume prompted ONT to add more facilities and rearrange key tenants.



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Designing the structures proved challenging for the company because the new buildings had to provide the same total square footage as their predecessors, but their shape was determined by surrounding buildings and required distances from the runway and vehicle service road.

Per the airport and Jacobs' specifications, both buildings are enclosed on three sides, with rollup doors on the fourth. Davis notes that Legacy buildings can have bi-fold doors, bottom rolling doors, hydraulic doors, fabric doors, or one end wall that is completely open.

Because ONT didn't have to choose a standard off-the-rack building size, it didn't pay for space it didn't want or need, she adds. Similarly, ONT's tenants won't pay to heat or cool extra space.

"We literally design each building for the exact height and footage the customer wants, and then it's engineered and installed, which provides efficiency and cost effectiveness all in one," says Davis.

Typical construction time for a single Legacy building is eight to 10 weeks. The two new cargo structures at ONT were built in 12 weeks. The company's average cost for tension fabric buildings is \$17 to \$20 per square foot, installed.

Davis fully expects cargo volume to continue increasing for ONT and other airports. "As the demand increases for products to arrive the next day, that increases demand on airports," she reasons.

### Ready for Another Growth Spurt

Kesler reports that Southwest, Amazon Air and Majestic are all pleased to be operating out of new facilities. (The previous buildings they occupied were constructed in the '90s.) Moreover, their new location, on the south side of the airport, positions them closer to the ramp, which translates into shorter tug distances and more efficient operations.

"Our cargo providers are saving fuel cost and time, which means they could serve another flight or two because they don't have to drive so far," says Kesler. "And, of course, it allows us to continue to serve our tenants and make room for more."

Edles Yanez, from Jacobs, considers the recent cargo project a symbol of the changes occurring at ONT: "Old buildings reflecting the former Ontario Airport are being torn down and new ones are being erected, proving why Ontario earned the title of fastest-growing airport in the United States [from *Global Traveler* magazine]." ✈️

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# Montréal-Trudeau Int'l Builds Facility to Enhance Flow of Connecting Passengers

BY JODI RICHARDS

**YUL**

Montréal-Trudeau  
International  
Airport

## FACTS&FIGURES

**Project:** Connection Centre

**Location:** Montreal-Trudeau Int'l Airport

**Owner/Manager:** Aeroports de Montreal

**Cost:** \$50 million

**Timeline:** Construction began in 2017; Phase 1 opened Dec. 2019; Phase 2 slated to open late summer 2020

**Design Architect:** Jodoin Lamarre Pratte architects Inc.

**Construction Manager:** Pomerleau

**Building Structural Engineers:** NCK

**Mechanical & Electrical Engineers:** Tetra Tech

**Telecommunication Engineers:** SNC-Lavalin  
Telecom

**Video Surveillance & Access Control:** SNC-Lavalin  
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 Montréal-Trudeau International Airport (YUL) opened the first phase of its new two-story Connection Centre last December. The diamond-shaped facility, which is elevated over an airside road, will soon centralize processing for all passengers arriving on transborder and international flights en route to airports elsewhere in Canada and throughout the world.

Facilities completed during Phase 1 are already serving passengers who arrive on U.S. and international flights, and then connect to Canadian and international destinations (other than the U.S.). Phase 2, scheduled for completion by the end of this summer, will add specific facilities for passengers arriving on international flights who are bound for the U.S. After Phase 2 is finished, YUL will add a vertical block that integrates all connecting routes and separates international and domestic passengers.

The \$50 million project is funded wholly by ADM Aéroports de Montréal, the airport authority that manages, operates and develops YUL and International Aerocity of Mirabel (YMX).

The new Connection Centre at YUL is opening against the backdrop of increasing traffic levels. The airport's overall passenger volume has been rising for several years, and connecting traffic is fueling much of the growth. Last year, YUL served more than 20 million travelers, an increase of 4.5% over 2018. Of those travelers, 20% were connecting passengers—a segment that has grown by an average of 9.2% every year since 2016.

Niki Elias, assistant director of airport infrastructures for Aéroports de Montréal, describes the new Connection Centre as an essential asset for air service development that will confirm YUL's status as a key hub for international travel. Nearly 1 million connecting passengers are expected to use the facilities as a gateway to China, Turkey, the Middle East, Japan and North Africa.

The overarching goal for the addition is to provide connecting passengers with a

more fluid and expedient journey. Specific objectives include: increasing processing capacity; centralizing connection processes; improving passenger orientation and overall customer experience; and ensuring flexibility of facilities.

"It is important for an international airport to have a significant share of connecting passengers for the development of new routes and to ensure its competitiveness," says Elias. The new Connection Centre is designed to help achieve both outcomes.

In 2019, YUL served 152 destinations, 90 of which were international.

## Features & Challenges

Located between gates 72 and 56 at the junction of the transborder and international jet bridges, the new Connection Centre includes 36 Primary Inspection Kiosks. This makes the flow of transit passengers arriving at YUL more efficient, Elias explains.

Level 2 includes a new CATSA checkpoint for passengers connecting to international destinations. Above, on Level 3, the connection hall houses Customs operations operated by the Canada Border Services Agency for those passengers connecting to domestic destinations. Counters here are specially designed to accommodate passengers who require extra assistance.

The 3,000-square-meter facility is elevated above an airside roadway—a configuration that presented formidable challenges for engineers and construction crews alike. Structural engineers from NCK rose to the occasion by suspending the all-steel building from the roof above with an inventive system of beams and columns to prevent sway. Because the suspended structure would not enjoy insulation benefits from the ground below, the heating system was more important than usual to maintain a comfortable ambient temperature inside the Connection Centre.

Construction required great attention to the airport's ongoing operational requirements. Elias reports that careful coordination during airside work led by Pomerleau ensured the safety and security of the 13,000 employees who work at YUL and the 55,000 travelers who pass through it on an average day.



NIKI ELIAS

“To fully appreciate the scope, it is necessary to understand the reality of an airport environment that is, by definition, a place that never closes,” she comments.

### Symbolic Shape

The Connection Centre was specifically designed to convey Montreal’s welcoming character. Because the facility serves transit passengers, the airport wanted the aesthetics and layout to leave passengers with a “memorable impression of their short stay in our city,” explains Elias.

Jodoin Lamarre Pratte architects Inc., which led the design efforts, focused on making the new facilities bright and relaxing to evoke the hospitable culture and charm of Montreal, Quebec and Canada. “We tried to give a good taste of Montreal, but in a very short time for people just passing through,” says Nicolas Ranger, a senior partner with the firm. “This small taste will hopefully entice them to come back and spend more time in the territory.”



NICOLAS RANGER

“A connection center is a place of passage, a crossroads, a hub between a multitude of possible destinations,” Elias adds. “This function inspired the architectural team to create a triangular grid where lines intersect, converge and diverge.”

Airport management wanted to visually link the new addition to YUL’s existing terminal, but also make it clear that the Connection Centre has a different function than the rest of the airport. Designers consequently opted for a triangular shaped envelope, which differs from the horizontal orientation of existing facilities. “It’s a dynamic and different shape that reflects different directions travelers can take when passing through Montreal,” Ranger explains. “It was a way of expressing the short and dynamic passage of travelers into the architecture.”

The design also pays homage to Canada’s distinctive geography. The façade, which features a grid of full and empty spaces, portrays the landscape of the Canadian Shield when viewed from the air.

The interior features local and Canadian materials, including Atlantic black granite flooring, birch wood wall panels and a “green wall” of live foliage. A large skylight provides natural light for the largely wide-open space.

“We wanted a warm building, a warm feeling when people are coming in,” says Ranger. “But it is linked to our territory as well.”

Common materials and color palettes between the existing and new buildings allow the facilities to complement one another. “We didn’t want to go too far from the existing design, but wanted it to have its own distinctive character,” he adds.

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The 3,000-square-meter addition was designed to be flexible and facilitate different processes for various travelers connecting through YUL. An open floor plan with efficient vertical circulation routes between the two levels allows the airport to adapt the space as traveler needs evolve, Ranger points out.

Sustainability was also a key consideration for the project, as it is with all airport authority projects, notes Elias. For example, a green wall was installed near the waiting area before Customs controls to improve air quality and reduce stress for passengers. It is also strategically placed against the main mechanical shaft, allowing for connection to the ventilation system and air humidification. Plants in the green wall are illuminated by artificial lighting on the ceiling.

A solar wall on the south façade of the westernmost part of the facility leverages sunlight to heat the air and ventilate the building. This sustainability feature will reduce the use of the HVAC system and lower associated energy costs.


**Project Partnership**

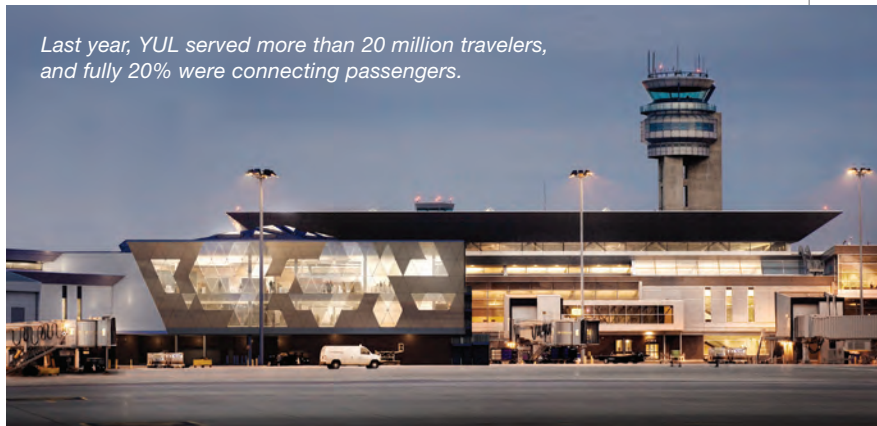
Elias emphasizes that active involvement of all operating partners is key for this ongoing project. She says that partnership was vital to the successful commissioning of Phase 1—from space design and new passenger processes, through active operation.

“All key partners were involved during the preparations for commissioning (sprints), including operators, airlines and security teams, as well as communications and maintenance teams,” Elias specifies. “Many sprints took place at the same time to maintain engagement and ensure the effectiveness of efforts.”

Preparation for commissioning took approximately three months.

Several methods and processes were used to ensure that the new facilities would meet operational expectations, she adds. Building Information Modeling was used during the design phase to simulate processes in a three-dimensional virtual space. Later in the schedule, stakeholders participated in onsite visits and pre-operational simulations. The Canada Border Services Agency, CATSA, Air Canada and Air Transat also worked in close partnership on the Connection Centre project and validation process.

The Canada Border Services Agency and CATSA will be the main operators in the facility. 



*Last year, YUL served more than 20 million travelers, and fully 20% were connecting passengers.*



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# Ocala Int'l Builds New Terminal to Match Stride of Regional Growth

BY JODI RICHARDS



## FACTS & FIGURES

**Project:** New General Aviation Terminal

**Location:** Ocala (FL) Int'l Airport

**Owner:** City of Ocala

**Total Size:** 17,500 sq. ft. (15,000 sq. ft. for terminal; 2,000 sq. ft. for restaurant)

**Support Projects:** Parking lot expansion; stormwater system improvements

**Total Cost:** \$7.3 million

**Funding:** \$3.6 million in U.S. Dept. of Transportation grants; \$2 million from FBO tenant Sheltair Aviation; \$1.6 million in airport funds

**Construction:** Dec. 2018-Jan. 2020

**Design/Build Contractor:** Ausley Construction

**Design Criteria for Conceptual Design;**

**Architectural & Civil Engineering:**

Michael Baker Int'l

**Mechanical & Fire Protection:** Michael Baker Int'l

**Electrical & Plumbing:** VoltAir

**Next Project:** \$5.2 million main taxiway rehabilitation

**Contractor:** DAB Constructors Inc.



When general aviation customers taxi up to the new terminal at Ocala International Airport (OCF) in northcentral Florida, there is no doubt they're in horse country. The stone-clad building is topped with a barn-style cupola, and the entrance from the ramp area is lined with small statues of jockeys.

But the new 17,500-square-foot terminal is more than a nod to the equestrian industry that fuels the local economy. The \$7.3 million investment also reflects a thriving spirit of partnership and collaboration at the city-owned Part 139 airport. With input from the community and tenants, funding from the state, and a public/private agreement governing its fixed base operator (FBO), the new general aviation facility will play a vital role supporting regional growth, explains Airport Director Matthew Grow.



MATTHEW GROW

The new terminal, which opened in late February, includes facilities for Sheltair Aviation (the airport's resident FBO), two conferences rooms, space for future tenants and a 2,000-square-foot restaurant that is slated to open in late 2020.

"It's a little different than your typical general aviation terminal," says Grow, noting that the rental car vendors also operate out of the new facility. "We like the idea of the one-stop shop," he explains. "Having the rental cars in the same location as the airport operations and FBO was important. Economically, it made sense to build one building to house all those needs."

The airport's original 1962 configuration included a 6,000-square-foot terminal, a separate FBO facility and an airport administration building spread out over 1,500 acres. "Basically, all the prime services on the airport were fragmented," Grow relates. "We had absolutely no vacancies whatsoever."

In its early decades, OCF offered scheduled commercial service from Eastern Airlines and Allegheny Airlines, but that ended in the '80s, when the industry moved toward the hub-and-spoke system. The terminal building was consequently repurposed to house car rental agencies, which was and still is a booming business for OCF. "We're a general aviation airport with three stand-alone car rental companies: Hertz, Avis and Enterprise," Grow points out. "That's pretty uncommon for a general aviation facility."





## Pacing Local Growth

Using local parlance, one could say that funding limitations caused the project to be slow out of the gates, but it definitely picked up speed in the final stretch.

The need for a new terminal dates back to the early 2000s, when regional growth, heavily driven by the equine industry, increased business traffic at OCF. As a result, city officials applied for grants from the Florida Department of Transportation (FDOT) in 2005 to add a control tower and build a new terminal. They also wanted to improve the impression OCF made on arriving and departing visitors, adds Grow.

At the time, however, the state only had funds for one project. The Ocala City Council chose to add a control tower and wait for a new terminal. The airport's \$3 million tower opened in 2010, and the subsequent recession delayed construction of a new terminal longer than anticipated.

Ultimately, the project was revived in 2016. "The business traffic really demanded it," Grow explains. "We needed to do something to accommodate the increase in business jet traffic and create some additional office space for lease to help other aviation business to expand at the airport."

Before the new terminal was built, a parking lot expansion and related infrastructure improvements set the stage. In addition to adding about 100 parking spots, the project improved organization and flow by adding short-term parking and



PHOTO: RICH MONTALBANO

a 45-space ready-return lot for the rental car companies. The project also improved the landside entrance to the terminal and added a three-lane overhang.

The airport addressed stormwater issues by installing drainpipes in the parking lot and under land north of the terminal. Together, these preliminary improvements cost \$1 million. "We built the parking lot, and infrastructure was sized to accommodate future growth," says Grow. "But we also had a limited budget."

Like many airports, OCF had a record year in 2007. Its FBO pumped more than 1 million gallons of fuel and the airfield logged 100,000 operations. Unfortunately, the effect of the recession was brutal for the airport, and both measures fell by 50%. "It was a big hit," Grow recalls. But after several years of steady upticks, OCF logged 77,000 operations and sold 930,000 gallons of fuel in 2019. Before the COVID-19 pandemic, Grow predicted that the airport would either meet or exceed its 2007 peak this year.

Under contract with the city, Michael Baker International analyzed OCF's existing facilities and operations to help size its new terminal for future growth forecasts. Architects determined that a 17,500-square-foot terminal with space for airport administration, FBO facilities, conference rooms, a restaurant and a handful of additional tenants would fit the bill.

Grow notes that designing a facility of that size and scope with the airport's budget was no easy task. "It was extremely close, but we were able to do it."

### Construction & Design

Contractors began readying the project site in December 2018, with demolition of the existing terminal. Due to the previous terminal's age, the airport conducted a hazardous materials survey before demolishing it, and contractors followed associated EPA guidelines.

Michael Baker International Aviation Planners conducted a sight line study to ensure that the height of the new terminal would not impede views from the air traffic control tower. Vertical construction of the new building began in February 2019, and the certificate of occupancy was issued in January 2020.

Separating construction of the new terminal from day-to-day operations at the airport proved easier than usual, because many of OCF's main services were fragmented. The airport brought in temporary office trailers to accommodate car rental operations and also built a temporary car wash pad. "All three rental car companies provide significant revenue to the airport, so we wanted to make sure they were well taken care of," says Grow. "And it was difficult for them on occasion."

Previously, proceeds from car rentals accounted for almost 25% of OCF's total annual revenue. With contracts renegotiated for the new terminal, Grow expects that number to increase to 40% going forward.

The new terminal includes several visual nods to the local equestrian industry. In fact, each of the 20 jockey statues that line the airside entrance represents a specific thoroughbred farm from the area.

Architect William Hayward Jr., with Michael Baker International, says it was important to capture the region's character when designing the new terminal. "The equine industry is very prevalent in the community, so the cupola of the building takes on the character you would see in a horse barn," Hayward explains.



WILLIAM HAYWARD JR.

The exterior façade includes stone to create a rustic look. Interior materials were chosen for durability and maintainability—key factors for a public-use facility, notes Hayward.

Grow is particularly fond of the expansive lobby, which includes exposed roof trusses about 50 feet overhead and a 1947 North American Navion aircraft that hangs in the open space. "It's the first impression we were hoping to achieve when we initially set out in the design, and I think we nailed it," he reflects.

From a capacity standpoint, project planners sized the new terminal to meet forecasted traffic for roughly a decade. Designers also built in provisions that will facilitate an addition to the north if/when more room is needed. At some point, the city would

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like to add a Customs facility, and the south end of the terminal could accommodate outdoor seating and/or future growth for the restaurant.

“We’ve got options, and we’ve built that into the project and the site plan,” says Grow.

The building design features a central corridor or spine that will easily allow for future expansion, notes Hayward. Moreover, critical utilities are located outside the footprint of where those expansions would occur. “We planned for growth and anticipate some growth,” he comments. In addition, the lobby and meeting rooms were designed to accommodate multiple user groups.

Construction of the new terminal cost \$6.8 million, and pre-design work, permitting and other associated costs brought the design/construction total to \$7.3 million. The city paid for the project with \$3.6 million in FDOT grants, \$2 million from Sheltair Aviation and \$1.6 million of airport funds.

“We wouldn’t have been able to do the project without Sheltair’s support,” Grow emphasizes. In 2015, the city entered into a public/private partnership with the FBO for a 30-year lease. Sheltair agreed to buy out the remaining portion of the previous FBO’s lease, build a hangar with at least 10,000 square feet of space, and pre-pay \$2 million in rent to help fund construction of the new terminal. Sheltair’s facilities inside the new building include offices, a crew lounge, quiet lounge and flight planning areas.



PHOTO: RICH MONTALBANO

The new terminal includes two conference rooms.

### Inclusive Design Process

Community involvement and buy-in was important to city and airport officials. “We didn’t want to design the building in a vacuum,” says Hayward. “We wanted this to be a building everyone could be a part of and be proud of.”

The team at Michael Baker began by developing a conceptual plan that included program elements defined by the city. “We worked with the city hand-in-hand,” Hayward recalls.

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The conceptual plan was then shared widely during a design charette process that included three public meetings: one with the city, another with a five-member advisory board appointed by the city council to provide community input, and one more with airport tenants. “We got a lot of good, positive feedback about the building,” Hayward reports. “And we ultimately refined the design through that process.”

Grow found the design charettes to be valuable and enlightening, and he encourages other airports to give the process a try. The outside facilitator that led the sessions helped airport officials understand the needs and desires of all three groups, he explains.

“There was a lot of state grant money in the project, and we wanted to be as inclusive as possible,” says Grow.

Using input from the charettes, Michael Baker International completed the terminal design to about 30% before handing it over to Ausley Construction, which finished the project under a design/build contract.

Every design has glitches, and the OCF terminal was not immune. For instance, one of the conference room doors is part of a firewall, so users have to unlock the door every time they want to open it.

## Future Growth

Consolidating critical airport functions into one building not only created new space for the FBO, rental car companies and airport administration, it also created vacancies elsewhere on the airport for future growth. “For 15 years or so we had zero office space on the airport—nobody was able to build anything,” Grow relates. “We had to turn down businesses that wanted to come on the airport because we had no place to put them.”



*A parking lot expansion project preceded construction of the new terminal.*

Since airport administration relocated from a hangar to the new terminal and Sheltair vacated its previous facility, OCF now has about 7,000 square feet of office space to lease.

“The timing of our project is perfect,” observes Grow. “Ocala is going through a renaissance of sorts—there’s a lot of diversified growth happening here.”

For example, the World Equestrian Center is under construction just five miles from the airport. The large private development will include 1.5 million square feet of riding space, a three-acre outdoor stadium, multiple restaurants, a six-story hotel and a conference center with attached retail. Needless to say, it’s expected to reap tremendous benefits for the region when it opens next year.

In addition, FedEx, AutoZone, Chewy Inc. and other large corporations have moved warehouse or manufacturing operations to the area. As a result, the city is seeing associated growth of new restaurants and hotel facilities.

Of the airport’s 1,500 acres, about 450 are eligible to lease for non-aeronautical purposes. Another 400 acres adjacent to the 7,400-foot prime runway would be ideal for additional hangars, and the west side could house cargo operations, adds Grow.

“We’d like to capitalize on some of the logistics and transportation companies that are coming to town,” he remarks. “We have lots of room for growth.”

Due to current and projected growth, Sheltair is building a 19,800-square-foot hangar with 28-foot doors—almost double the size facility required in its contract with the city. Given its increased investment, the city renegotiated the FBO’s lease term for 30 years beginning in February 2020. “They’ve been a fantastic partner,” says Grow.

While most of the new terminal is complete, the restaurant, a helicopter air charter company and a fixed wing charter operator will build out their respective tenant spaces. And last November, the city approved a \$5.25 million contract to rehabilitate OCF’s main taxiway. ✈️

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## FACTS&FIGURES

**Project:** Preparing for REAL ID Deadline



**Location:** Minneapolis-St. Paul Int'l Airport

**Strategy:** Open REAL ID Application Office in Terminal 1

**Cost:** Nominal (terminal space; existing desks & kiosks; electrical service)

**Key Benefit:** Passengers can apply for REAL IDs at in-airport station staffed by state Driver & Vehicle Services Div.

**Timeline:** Development began in January; office opened in early March, but closed a few weeks later during COVID-19 pandemic



**Reno-Tahoe International Airport**

**Location:** Reno-Tahoe Int'l Airport

**Strategy:** Provide space in terminal for DMV employees to distribute info about REAL ID requirements & issue "fast track" passes for expedited service at local DMVs

**Key Benefit:** Speeds application process for travelers & airport staff



**PHOENIX SKY HARBOR INTERNATIONAL AIRPORT**

**Location:** Phoenix Sky Harbor Airport

**Strategy:** Host press conference to publicize REAL ID deadline

**Timeline:** Oct. 1, 2019





# Airports & Industry Stakeholders Spring Into Action Before Original REAL ID Deadline

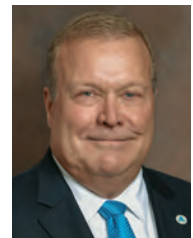
BY RONNIE WENDT



A can-do attitude gets things done, and that's definitely the mindset of Rick King, chair of Minnesota's Metropolitan Airports Commission.

In early January, after learning that less than 11% of Minnesotans had their REAL IDs, King began researching solutions. The low participation rate concerned him, because at the time of his research, adult U.S. citizens could not fly without a REAL ID, passport, or military ID as of Oct. 1, 2020.

Even though the federal government has since extended the REAL ID deadline to Oct. 1, 2021, King still sees the need for airports to do more.



RICK KING

"I just picture my mother or grandmother trying to go to a loved one's wedding or christening and being unable to do so because she didn't have the right identification," relates King. "We need to ask the question: How can we prevent this? How can we up the number of REAL IDs faster?"

Ultimately, he developed the answers at Minneapolis-St. Paul International Airport (MSP). "Why not capitalize on the time people spend at the airport? It makes perfect sense to set up a licensing area at the airport," King explains.

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A REAL ID office opened at MSP in early March, but closed a few weeks later amid the coronavirus crisis.

Just two months later, Minnesota travelers flying out of MSP were able to save time and avoid going to the state Department of Motor Vehicles (DMV) by applying for a REAL ID at the airport. MSP partnered with the Minnesota Department of Public Safety's Driver and Vehicle Services Division, and a REAL ID office opened inside Terminal 1 on March 2.

While many airports distribute information about REAL IDs, King isn't aware of any other airports that offer REAL ID licensing on site.

"It just makes sense to have a Driver and Vehicle Services station at the airport," he says. "It gives us another way to educate passengers about REAL ID and allows travelers to plan ahead and apply for a compliant ID the next time they fly."

Minnesota travelers seemed to agree. The station at MSP booked 150 appointments and processed 55 applications in its first week. "We even had one of our U.S. senators stop by and get her real ID," King reports.

The onsite option also proved popular with employees. "Over 21,000 people work at the airport every day," he notes. "We saw a lot of them lining up to get their IDs while they were at work."

The state DMV recently shuttered the airport application center amid coronavirus concerns, and as of press time in April, King is unsure if or when the office will reopen. Even so, it is an excellent example of how airports can help residents obtain REAL IDs.

### A REAL (ID) Problem

MSP's concerns rose out of the REAL ID Act, which will now take effect on Oct. 1, 2021. That's when every air traveler 18 years of age and older will need a REAL ID-compliant driver's license, state-issued ID, or another acceptable form of ID, such as a passport or military ID, to fly within the United States.

The change stems from the 2005 REAL ID Act, which established stringent standards for identity documents such as driver's licenses and state-issued IDs to make them more consistent and secure. It also prohibits federal agencies, including TSA, from accepting licenses and identification cards that do not meet the law's strict guidelines.

The legislation arose out of the Sept. 11 tragedies, when terrorists used domestic

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planes to commit crimes against the U.S. Congress passed the REAL ID Act to help prevent airline terrorism by increasing the documentation requirements to obtain acceptable identification. Today, a citizen must prove his or her name and date of birth, legal presence in the U.S., name change (if applicable), Social Security number, and address. States also now use new technologies to make ID forgeries more difficult.

Brian Kulpin, head of the MarCom committee for Airports Council International - North America (ACI-NA), reports that airport leaders are not questioning the legislation's rationale. Further, Kulpin personally commends the government for its efforts to "put the safety and security of our country first."

That said, he also thinks that Congress dropped the ball after passing the law. "They put very little money behind the communications effort for REAL ID," Kulpin explains. "If you pass regulations that change things so drastically, you must educate the population, too. We're not seeing enough educational efforts at the federal level; they left it to the individual states, airlines and airports. That's just *not* good policy."

Recent statistics back up his concerns. Heading into the new year, the U.S. Department of Homeland Security (DHS) announced that states had issued just 34% of the 276 million possible total IDs.

"We see people who already have their REAL ID. We see those who are aware there is a change and still need to do something. And, we see people who have no idea REAL ID is coming because the message hasn't reached them yet," Kulpin says. "We need to educate people as fast as possible to avoid total chaos next year."

By early March, it was estimated that 40% of Americans still did not have REAL IDs—a number Kulpin found unacceptable. With about 2.4 million passengers flying in the U.S. every day, that would mean 960,000 people would be unable to fly in 2021 if the adoption rate doesn't improve and they don't have a passport or military ID.

"Our country needs people to travel; it is vital for our culture. To deny citizens the ability to fly isn't good for anyone," he emphasizes. "If we have thousands of people across the country unable to fly when the deadline hits, it would be a customer service nightmare for airports, the TSA and the airlines. And it would hurt the economy of our country. We *must* spread the word, so people get their REAL IDs."

### TSA & Airline Response

Affected stakeholders—from TSA and airlines to airports, DMVs and industry organizations—are taking action to move the needle in the right direction.

"The TSA has been very aggressive in reaching out to the public on REAL ID," says Lisa Farberstein, a media spokesperson for the federal agency. Efforts include informational press conferences across the country, state-specific press releases, detailed information at [www.tsa.gov](http://www.tsa.gov) and messaging on social media such as Twitter and Instagram. In-airport efforts by TSA include posting signs in checkpoint lines and at travel/document-checking podiums.

"And, TSA officers are reminding passengers by providing verbal advertisements when they come to checkpoints without a REAL ID," notes Farberstein.

Elise Durham, director of the Office of Policy and Communications at Hartsfield-Jackson Atlanta International Airport, considers the TSA very engaged in educating the traveling public. "They did a gaggle with reporters in Atlanta a couple of months ago, and at that time Georgia was above 80% compliant," says Durham.

Airlines for America (A4A) is supplementing TSA's efforts by partnering with travel industry stakeholders, government officials, airlines and airports to form a coalition that conducts robust outreach and public awareness campaigns about the topic. It is also working on a contingency plan.

"The coalition is encouraging the TSA and government to develop operational strategies that accommodate those passengers that show up without a REAL ID next year," says A4A



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Vice President of Security and Facilitation Lauren Beyer. “The answer cannot be that they cannot fly.”

For its part, A4A developed uniform messaging for travel-related stakeholders to use and asked state governors to join its awareness campaigns. The association’s REAL ID Toolkit encourages concise and consistent messaging, and includes a hashtag, tagline, editable blogs and opinion pieces, email marketing materials, factsheets, infographics, radio scripts and talking points. Beyer describes the toolkit as a “plug and play” outreach program that is not only available to member airlines, but also airports, DMVs and travel partners.

A4A also launched the [realidfacts.com](http://realidfacts.com) website, where travelers can learn more about the REAL ID and find specific requirements for their particular states.

“We’re very pleased that the issue is getting more and more attention,” Beyer says. “Our member airlines are also doing things to reach their customers. They’ve updated their websites, posted notices on social media, put REAL ID messaging on



LAUREN BEYER

inflight entertainment systems and magazines, and have added REAL ID alerts to their reservation confirmation emails.”

### Airports Doing Their Part

When MSP’s King called the Minnesota Department of Public Safety in early January, the commissioner immediately agreed to his suggestion about processing REAL ID applications at the airport. And King quickly assigned key airport staff to head the effort.

The airport not only provided the department with space in the MSP Mall near the entrance to Concourse G, it also furnished desks and kiosks from storage and hired electricians to provide power to the area. “We located the space opposite one of the highest-grossing restaurant/bars in the airport,” King notes.

Besides setting up the station, MSP paid to provide parking and badge credentials for three state employees who staff it. King considers the total expense to be minimal and the benefits to be valuable. Costs for the Department of Public Safety’s Driver and Vehicle Services Division were also low. It simply reassigned three employees to the airport and used existing equipment to process applications.

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The site was open from 8 a.m. to 5 p.m. Monday through Friday until the state shut it down during the COVID-19 crisis. When open, the center served three purposes: educating the public about REAL ID, informing Minnesota residents about getting their IDs at the airport, and processing REAL ID applications. "They gave out a little card with their phone number and website on it," King says. "People booked an appointment online and pre-registered their documents. They planned their visit for the next time they flew. The entire process took about 12 minutes when they came in with the right documentation." The state then sent applicants their REAL IDs via mail.

MSP promotes the new station with signage throughout the airport, and the airlines inform passengers via email as they book tickets, at the ticketing counter and with on-board announcements. The station's opening, which was attended by the state's governor, was covered by numerous press outlets.

King highlights the cooperation that occurred among state agencies that are otherwise somewhat monolithic. "We collaborated and worked together, and that is why the station opened so quickly," he reflects.

Though other airports are not processing ID applications on-site, they are helping spread the word. At Reno-Tahoe

International Airport (RNO), where Kulpin serves as vice president of marketing and public affairs, passengers are receiving information about REAL ID Monday through Friday from Nevada DMV employees. Travelers and badged employees who stop at the information desk receive a "fast track pass" that vaults them to the front of DMV lines to apply for REAL IDs.

RNO also partnered with a marketing agency to produce informational materials about REAL ID. "In exchange for their work, we give them free space on our TV channels," Kulpin says. "Partnering with your DMV helps get messaging in front of passengers. Partnerships like the one with the marketing agency and Clear Channel mean there is little cost for any of these efforts."

Doug Nick, assistant communications director for customer outreach at the Arizona Department of Transportation, reports similar programs at Phoenix Sky Harbor Airport (PHX). Efforts there began Oct. 1, 2019, (a full year before the original deadline) with a government-sponsored press conference at the airport.



DOUG NICK



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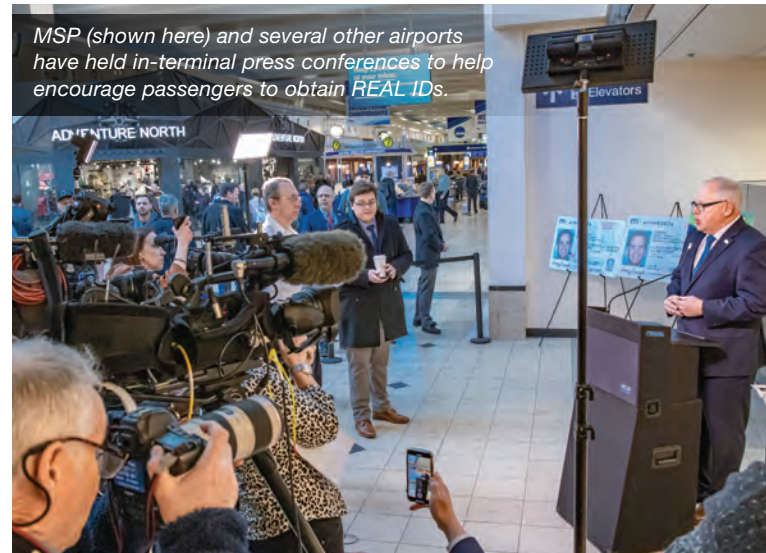
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“There was a spike in REAL IDs after that press conference,” reports Nick. “The airport and TSA also put up signage at the airport and printed flyers to distribute. And, the DOT hired two temporary workers to man an information desk at the busiest terminal from 6 a.m. to 2 p.m.”

He adds that Tucson International Airport, Flagstaff Airport, Yuma International Airport and Phoenix Mesa Gateway Airport are proactively trying to reach leisure travelers with digital ads and informational leaflets in their terminals.

“Leisure travelers are a real problem,” Nick says, noting that they are more likely than business travelers to be unaware of the change. The difference is especially pronounced at PHX because Arizona is the only state where motorists do not have to renew their driver’s licenses until age 65. “We encourage motorists to get a new photo taken every 12 years, but there is no enforcement mechanism for that. We cannot suspend their driver’s license or anything like that if they don’t do it,” he explains.

Despite multiple outreach efforts, Nick feels that Arizona has a ways to go to meet the new deadline. “The current numbers say we’ve issued 850,000 Arizona Travel IDs [Arizona’s name for REAL IDs]. This is a tiny number compared to the 5½ million driver’s licenses active in the state and the other million non-operator IDs we have. Just 67% of the new licenses we issue comply with the new requirements.”



MSP (shown here) and several other airports have held in-terminal press conferences to help encourage passengers to obtain REAL IDs.

Other airports will have hurdles to clear that are unique to their particular markets. For instance, RNO and Cincinnati/Northern Kentucky International Airport each routinely serve passengers from two states, so they must educate citizens in both. Airports that serve large bilingual populations or groups who lack proper documents will face associated challenges as their states transition residents to REAL IDs.

“We are trying to make flying more secure, but we cannot make it so difficult that the good citizens of the United States cannot travel,” Kulpin remarks.

### 12-Month Reprieve

In February, the DHS began allowing states to electronically accept documents for REAL ID applications.

The change was instituted to speed up processing at DMVs, which were experiencing lengthy lines and wait times before the COVID-19 shutdown. But Nick, from Arizona’s Department of Transportation, is not optimistic about the online option. “We still need to see physical documents when you come in,” he explains. “Electronic submissions do little to change the transaction times and little to boost the numbers of Americans getting their REAL IDs.”

ACI-NA asked the government to extend the original 2020 deadline, citing significant concerns about the low saturation of REAL ID-compliant identification among the traveling public and the negative impacts that will cause. Then the COVID-19 crisis essentially sealed the deal. When the \$2 trillion Coronavirus Aid, Relief and Security (CARES) Act was signed into law on March 27, it included a provision that delays full implementation of the REAL ID until Oct. 1, 2021.

Importantly, the CARES Act delays—not eliminates—the deadline. The country now has 12 more months to get its REAL ID act together. Though airports are breathing a collective sigh of relief over the extra time, King says the industry must continue to charge ahead to make sure it can meet the new Oct. 1, 2021, deadline. ✈️

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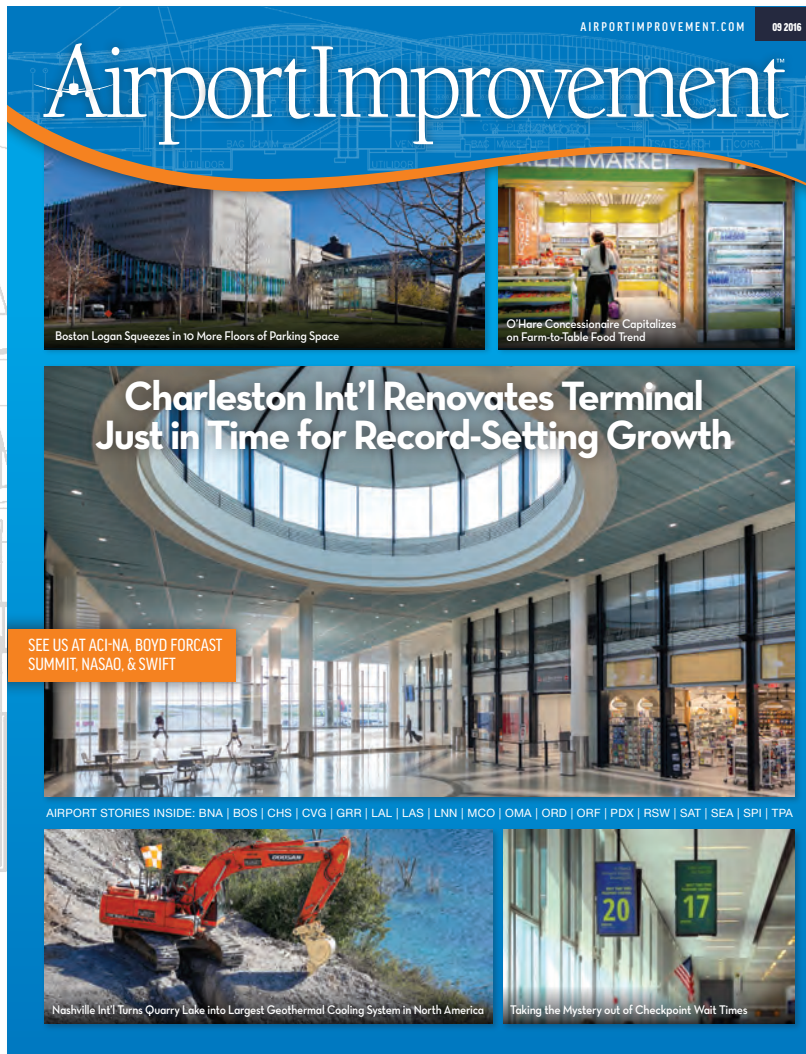
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## FACTS & FIGURES

**Project:** Lanyard Programs

**Strategy:** Offer customers with hidden disabilities lanyards that help remind airport personnel to be more patient & compassionate. Participation by customers is completely voluntary.

**Cost:** Minimal (one airport paid \$300 for 1,200 lanyards upgraded with hangtags that nonverbal customers can write on)

**Early Adopters:** Seattle-Tacoma Int'l; Phoenix Sky Harbor Int'l; John F. Kennedy Int'l, Terminal 4

**Others Developing Lanyard Programs:** San Jose Int'l; Orlando Int'l; etc.



# Lanyards Heighten Awareness of Passengers With Hidden Disabilities

BY NICOLE NELSON

When customers roll up to a ticketing counter in a wheelchair or navigate through the concourse tapping a white cane on the floor, airport employees know that they might want extra assistance. It's far more difficult, however, to identify customers with conditions that are less apparent such as learning difficulties, mental health issues or hearing impairments.

To help remedy this situation, a growing number of U.S. airports offer customers with hidden disabilities specially designed lanyards that let staff know they may need additional support and consideration. Bright green lanyards splashed with yellow sunflowers are currently being used by a handful of airports coast-to-coast to discreetly notify personnel that the person wearing the lanyard or someone in their traveling party has a condition that might not be obvious. And the movement is gaining momentum.

The Centers for Disease Control and Prevention reports that 13% of the U.S. population is purportedly affected by "invisible" developmental disabilities ranging from autism spectrum disorder to rheumatoid arthritis.

Naturally, the statistics vary by region. Heather Karch, architecture manager for the Facilities and Infrastructure Group at Seattle-Tacoma International Airport (SEA), notes that the

Pacific Northwest has a higher rate of autism and sensory processing disorders than other areas of the country.

"Based on personal accounts I have heard from people—both in the medical profession and just socially—passengers with hidden disabilities often get very dirty looks and experience subtle discrimination

because their disabilities aren't visible. And they get a lot of negativity when they do ask for more help," Karch relates. "Or, if their child with autism is having a complete meltdown, other people might think that that child is just misbehaving, when really there's a lot more happening."

With this demographic in mind, SEA became the first U.S. airport to begin using sunflower lanyards to help individuals with hidden disabilities have a better experience at the airport. The program, launched last October, has been very well received, receiving praise from staff and customers alike.

## SEA Sets the Standard

The sunflower lanyard program debuted at London's Gatwick Airport in 2016, and has since been adopted by 2 million businesses and individuals worldwide.

"We looked to the U.K. experience and saw how successful it has been throughout all of the U.K and into Europe, and we just went with the positive attitude that it would be accepted here in the U.S. as well," says Karch.

She reports that it took little seed money to get the sunflower lanyard program up and running at SEA. In 2019, the airport purchased 1,200 lanyards for about \$300. Based on the current rate of distribution, Karch expects SEA's initial supply to last about one year, or possibly longer. She notes that the airport upgraded standard lanyards with hanging tags, so nonverbal customers can write their name and/or disability on the back if they choose.

To introduce the new visual aid, Port of Seattle Aviation Director Lance Lytle sent an email with information about the lanyards to all SEA staff. Educational meetings followed for front-line personnel—including airline, TSA and airport staff—to include the Pathfinders customer service/operational needs team



HEATHER KARCH



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*PHX used a cactus design to give its lanyards local flavor.*



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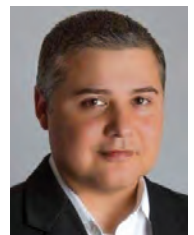
that distributes the lanyards. International and domestic station managers from the airlines also received special training.

When the program debuted in October 2019, SEA posted signs throughout the airport to raise awareness among passengers and customers. The Port of Seattle and SEA also added information to the accessibility sections of their websites.

**In a New York Minute**

Across the country, John F. Kennedy International (JFK) was the first airport in the Northeast to offer sunflower lanyards. JFKIAT, the private company that operates Terminal 4, rolled out the program there in February—and received a lot of good press.

Chad Ghastin, senior manager of customer experience for JFKIAT, says the idea emerged in early 2019 when the company consulted international advocacy experts and gleaned best practices from the industry to develop an accessibility program roadmap. Tailoring services to suit the needs of T4's international customer base was top-of-mind.



CHAD GHASTIN



“A key objective of the plan was to go beyond mandated requirements and basic wheelchair assistance to ensure all of our passengers feel empowered as they travel through T4,” says Ghastin. “Based on the enormous success of the Sunflower Lanyard Scheme in Europe and seeing inbound customers arriving with lanyards from other airports, we wanted to bring the lanyard to T4 to create a more seamless and accessible departure-to-arrivals experience. So, if a passenger uses the lanyard departing Heathrow, the passenger could also use it at T4 for arrivals and for the subsequent departure from T4 back to Heathrow.”

Because the program is so new, JFKIAT is unsure how many customers might request lanyards. Ghastin used a World Health Organization statistic to determine an approximate starting point. “They estimate that 15% of the world’s population has some form of disability. If we apply that 15% benchmark to our 21 million annual passengers, that comes to roughly 3.1 million passengers, which is significant,” he remarks.

“Not all disabilities have the same impact on a person’s ability to travel,” he adds, “but we strive to ensure that passengers who may need additional assistance, support or time within the terminal have an experience that is as accessible and dignified as possible.”

To help departing passengers, Terminal 4 personnel promote and help facilitate the TSA Cares program, which provides additional assistance during security screening to people with disabilities, medical conditions and other special circumstances. For arriving passengers, JFKIAT partners with U.S. Customs and Border Protection to provide personal meet-and-greet services.

“We appreciate that both agencies have been extremely supportive of our accessibility program, and feedback from our customers has been very positive,” reports Ghastin.

Passengers can request lanyards through the T4 website or onsite at welcome centers and travelers’ aid stations. JFKIAT is also partnering with airlines to increase awareness and adoption.

“Our vision is to be the most accessible air terminal in New York City, and the lanyard is an important part of that,” Ghastin remarks. “Our hope is that we can generate significant awareness for the lanyard in the U.S. and actively demonstrate the positive experience it provides to people with hidden disabilities.”

### Southwestern Spin

The sensitive and effective approach of sunflower lanyards immediately resonated with Misty Cisneros-Contreras, customer service manager at Phoenix Sky Harbor International (PHX). She welcomed the chance to help passengers self-identify for

additional help and understanding, but she also wanted to tailor the idea to PHX’s customer base.

So Cisneros-Contreras and her team developed a neon green lanyard decorated with a saguaro cactus print. “We know there are individuals who need extra assistance or time when they come through the airport,” she says. “We wanted our passengers to know that this lanyard was special and specific to Phoenix.”



MISTY CISNEROS-CONTRERAS

The airport introduced its “compassion cacti lanyards” with a soft launch in October 2019. Their purpose is the same as other airports’ sunflower lanyards, but the execution is more local—in design and procurement.

Now, when employees see a bright green lanyard, they know they might need to repeat themselves, adjust the way they communicate directions and instructions or simply exhibit more patience, explains Cisneros-Contreras. “Sometimes it just takes a different approach or change in delivery for a traveler to fully comprehend something,” she elaborates. “It is our hope that with this program, we can do just that.” ✈️

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# Duluth Int'l Reconstructs Main Runway

BY JENNIFER BRADLEY



## FACTS&FIGURES

**Project:** Runway Reconstruction

**Location:** Duluth (MN) Int'l Airport

**Owner:** Duluth Airport Authority

**Carriers:** Delta Air Lines; United Airlines; Sun Country Airlines

**Home to:** 148th Fighter Wing, Minnesota National Guard F-16 fighter jets

**Cost:** \$38.3 million

**Funding:** \$31 million from FAA, \$6.5 million from MN Dept. of Transportation; \$766,000 from airport authority

**Design, Engineering, Planning, Construction Admin & Outreach:** SEH

**Construction:** PCI Constructors (Phase 1 & 2); Shafer Contracting (Phase 3)

**Electrical Contractor:** Parsons Electric

**Lighting Improvements:** 500 LED lights, 40 miles of electrical cable, in-pavement MALSR threshold bar lights; PAPI lights on west end


**Lighting Manufacturer:** ADB SAFEGATE

**Lighting Supplier:** Carlo Electrical Suppliers

**Airfield Lighting Control Management System:** ADB SAFEGATE (manufacturer & supplier)





 Tom Werner, executive director at Duluth International (DLH), is currently celebrating two big milestones: his 20th year working at the northern Minnesota airport and the recent full-length, full-depth reconstruction of its 10,150-foot main runway.

As Werner describes it, the \$38 million project spanned five calendar years and completely restored the airport's very backbone.

"I've grown up with the organization, and it's been really exciting to see how it has grown and matured over the years," he reflects. Looking back, Werner says that his time at the airport has been fun, but there has also been the pervasive challenge of prioritizing various infrastructure projects that ideally would have all been addressed at once.

For instance, rehabilitating DLH's aging, 60-year-old main runway was put on hold when 9/11 shifted the focus to a \$70 million terminal improvement project, which was finished in 2013. During that time, ancillary work was performed to preserve the airfield's existing infrastructure, "but we knew that full-depth reconstruction for some of our primary surfaces was going to need to happen," he notes.

The airport's four commercial airlines, a state National Guard installation and other tenants are thankful it did. The three-phase runway reconstruction ultimately provided new pavement and airfield upgrades that will help them serve the area for decades to come.

### Out With The Old...

"Our partners understood that with 60-year-old concrete, there wasn't any intermediate rehab that could fix all the issues," Werner explains.

So the airport asked SEH, its overall engineering consultant, to develop a comprehensive and long-term solution for Runway 9-27. Kaci Nowicki, an SEH senior airport planner who has worked with DLH since 2015, explains that the rapidly deteriorating pavement was a known issue that became a pressing problem shortly after the terminal



TOM WERNER

work was finished. "They thought they had more time left, but leadership was thrust into a situation they had to address as soon as possible," says Nowicki.

Fortunately, tenants and airport partners ultimately understood the difficult situation DLH was in as it worked against the clock. When the project scope was confirmed in 2014, planners immediately began devising a way to execute the full runway reconstruction with minimal disruption to tenants and customers. On the commercial side, DLH serves 320,000 annual passengers via two major airlines (Delta and United) and one low-cost carrier (Sun Country Airlines). Daily flights to Chicago and Minneapolis are mainstay routes.

Shawn McMahon, a lead engineer and project manager with SEH, explains that the goal was to make reconstruction work as undistruptive as possible, while also building in upgrades to reduce the airport's future maintenance expenses.



SHAWN MCMAHON

To manage such a large project, the team developed a three-phase project that would begin in 2015 and conclude in 2019. "We had to consider the times in which we could do construction, as the window for that in northern Minnesota is short," McMahon explains. "And it would be next-to-impossible to do almost two miles of concrete in a single year, both logistically and financially."

The phasing plan was also designed to be sensitive to everyone's needs and offer a solution that fixed the runway without stopping necessary business altogether, he adds. Mother Nature apparently didn't get the memo, because she sent an unseasonably early snowstorm near the end of the project.

Although the bad weather was outside anyone's control, it still delayed construction and caused difficulty for paving contractors, notes Werner. On the flipside, the project also had pleasantly cool days early in the schedule that allowed contractors to tear into the runway and reveal the level of deterioration that existed under the pavement surface. "To know we were fixing that to serve the general public made me happy," Werner reflects. "And it reinforced that this was the right project to take on."



KACI NOWICKI



### In With The New

The project team prioritized the center 6,200 feet of the runway for Phase 1. The western 2,000 feet was reconstructed in Phase 2, and the final 2,000 feet on the eastern end was reconstructed during Phase 3. In total, contractors placed 200,000 square yards of new concrete.

Working with a runway that was originally built to train pilots for World War II, the team lacked accurate as-built drawings. Contractors initially assumed it contained about 12 inches of reinforced concrete, but ultimately found no reinforcement at all—a discovery that helped explain the high degree of deterioration.

“For that reason, we added a major upgrade and reinforced the concrete,” says Werner. “We now have full-strength, 12-inch reinforced concrete.”

Previous drainage issues for airfield lighting were also resolved with new in-pavement lighting, MALS threshold bar lights (Medium Intensity Approach Lighting System With Runway Alignment Indicator Lights), and PAPI lights (Precision Approach Path Indicator) on the west end. In all, the airport added 500 LED lights and 40 miles of electrical cable.

It also reconfigured the 27 end of the runway to eliminate a “hotspot,” or area that can cause pilot confusion, with a connecting taxiway. Werner reports that the change is working well.

Phasing and work scheduling were particularly vital during the reconstruction.

Taking the main runway offline during Phase 1 essentially closed DLH for aircraft that can't land on its much shorter 5,700-foot crosswind runway. The airport knew that some large aircraft would be challenged to operate during Phase 1, when work was being completed on the center section of the runway; but this was an unfortunate reality associated with the improvement project.

“We did our best to minimize impact,” says Werner.

Interestingly, the timing for Phase 1 was scheduled around the Guard unit's extended deployment to southwest Asia in support of the Global War on Terrorism. “We recognized a window of opportunity and knew we could get that critical section reconstructed during the Fighter Wing's deployment,” McMahon recalls.

The airlines were sometimes affected—for instance, when weather required them to reduce loads and weight for safe

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operations while they used crosswind runway during Phase 1 construction.

However, such issues were especially impactful for DLH's non-airline tenants: the 148th Fighter Wing of the Minnesota Air National Guard, which flies F-16 fighter jets; AAR, the resident aircraft maintenance facility, which serves a customer that flies Airbus 319 and 320 commercial aircraft; and Cirrus Aircraft, which manufactures single-engine piston and jet aircraft and employs more workers than any other airport tenant.

A shortened runway with displaced threshold was used during phases 2 and 3, and the National Guard used temporary arresting gear to help stop aircraft in the case of an emergency and to meet requirements for the temporary 7,000-foot runway arrangement. Without such provisions, the project would have been much more impactful to users, notes McMahon.

"The 148th as well as airline and other users could continue to operate safely and keep flying while construction was happening through use of the displaced threshold," he adds.



Crews performed a full-length, full-depth reconstruction of the 10,150-foot runway.





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In addition to replacing pavement, the airport addressed two hotspots and upgraded lighting.

## Meeting Challenges Together

After experiencing DLH's three-phase, multi-year runway project, Werner counsels directors at airports of all sizes to have a solid master plan and 20-year infrastructure vision—one that is financially feasible and provides predictability for all vital stakeholders.

"They need to know what's coming and when," he emphasizes. "It eliminates surprises and helps the organization financially plan and sequence a major infrastructure project like this."

Nowicki adds that the DLH project team enacted a fast-paced triggering event master plan during Phase 1 to help facilitate the runway geometry issue that would be fixed in Phase 3.

"We did a very focused planning study around the airport's runway and taxiway system," she says. "For Runway 9-27, we had to perform a cost analysis on the existing infrastructure to justify funding to the FAA because it is quite large. Then, we had to fix two hotspots."

The team consequently analyzed several alternatives and encouraged stakeholder engagement to work through the process. Ultimately, it developed a plan to relocate the runway end and threshold, remove an in-line taxiway and execute other safety improvements.

Nowicki, who managed the collaboration process, says that focused planning up front yielded more accurate cost estimates, resolved many details before the design process even began, and helped set the stage for construction to finish on schedule.

"I think the airport definitely saw the benefit of that, and actually just started another large master plan this past year," Nowicki adds.

The airport calls its new program Vision 2040, and Werner considers this a perfect time to engage vested parties on and off the airport in long-term planning. There is no doubt that everyone is enjoying the new pavement—and the safety and reliability it provides, he explains.

"It will be that way for the next generation," Werner adds. "We'll certainly do our due diligence in terms of maintenance. But this was a major undertaking, and we're glad to have it done!" ✈️

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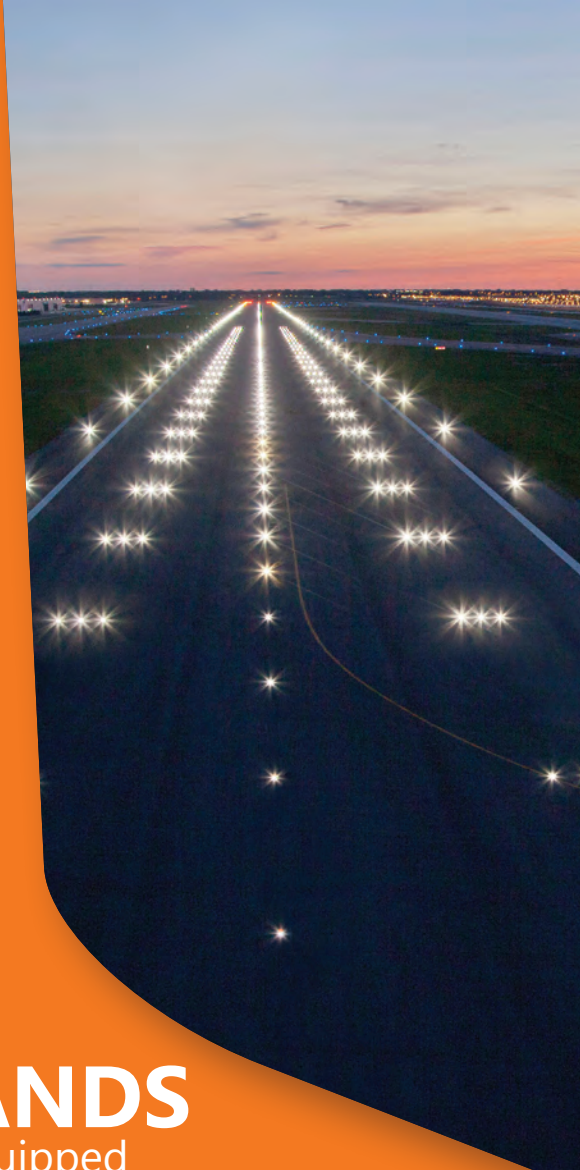
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# Cincinnati/Northern Kentucky Int'l Pilots Global Exchange Program

BY MIKE SCHWANZ





Savvy airport officials know that it makes sense to help senior-level executives improve their leadership skills and broaden their perspectives. Such training helps the executives and airports.

Cincinnati/Northern Kentucky International Airport (CVG) put a global spin on its development program by sending one executive to experience life at a European airport and another to observe operations at an Asian airport. Both worked through an exchange program developed by Airports Council International (ACI).

The organization's Executive Leadership Exchange Programme (ELEP) is designed to support succession development at member airports by facilitating domestic



CANDACE MCGRAW

and international exchanges. Candace McGraw, chief executive officer at CVG, was an early proponent of the program. As chair of ACI North America, she worked with the chair of ACI Europe—the chief executive officer of Munich Airport (MUC)—to coordinate an international ELEP pilot between the two airports in fall 2018. McGraw later worked with another colleague at Singapore Changi Airport (SIN), who serves as the chair of ACI Asia Pacific, to coordinate another exchange for summer 2019.

“By taking advantage of an opportunity to immerse themselves in a different structure or business model, the intent of ELEP was for our industry’s top future leaders to gain critical insights and bring home new and innovative ideas,” says McGraw.

She selected Scott Gibbons, the airport’s vice president of business administration, for the two-week pilot at MUC.



SCOTT GIBBONS

“Candace and I thought this would be very helpful for our airport, and would give some of our senior staff an opportunity to see how

other airports in the world operated,” Gibbons says. “From a personal standpoint, I always have been interested in an international exchange to a world-class airport. I was very excited for this opportunity.

“Munich worked out very well,” he continues. “It consistently is ranked among the best airports in the world. It gets a lot of visits from officials from other airports, and its staff has experience showing people around.”

The schedule for the visit was largely developed by MUC, with input from CVG. “My primary goal was to gain exposure in departments or functions where I had no previous experience,” Gibbons says.

Josef Manhart, from MUC’s Corporate Communications Department, arranged for Gibbons to visit a variety of departments, including Security, Fire Protection, Corporate Communications, Quality Management, Human Resources, Real Estate Management, Insurance Systems, Political Affairs, Corporate Development, Professional Training Policies and Digital Development.

Gibbons also met with Michael Kerkloh, Ph.D., the airport’s long-time chief executive who recently retired.

“It really helped that my agenda was pretty much finalized before I flew over there,” he says.

### Key Takeaways From Germany

Gibbons says that seeing how another world-class airport is managed was a very valuable experience. “MUC is an incredible airport in many ways. It operates quite differently when compared to CVG and other airports in the United States,” he states. “In this country, most airports are owned and operated by some form of government—state, county or city—or are a quasi-public independent authority such as CVG. But MUC’s ownership and structure are different, having 16 different subsidiaries that operate as separate business-related entities. Each subsidiary is very profit-oriented. It showed me the potential for U.S. airports to evolve from a traditional government model to a more business-like model, reflecting what we really are.”



CVG’s Scott Gibbons (center) with two of his hosts from MUC: recently retired CEO and President Michael Kerkloh and Theresa Fliedl, vice president of Professional Training Policy and HR-Marketing.



CINCINNATI/NORTHERN KENTUCKY INTERNATIONAL AIRPORT

### FACTS&FIGURES

**Project:** Executive Leadership Exchange

**Program Developer:** Airports Council Int’l

**Pilot Participant:** Cincinnati/Northern Kentucky Int’l Airport

**Airports Visited:** Munich Airport (2 weeks); Singapore Changi Airport (1 week)

**Combined Cost for Both Trips:** \$10,000-\$12,000

**Funded by:** Cincinnati/Northern Kentucky Int’l Airport

**Key Benefits:** Participants gained wider perspective by experiencing operations at world-class airports & developing strong relationships with their executive counterparts.

**Noteworthy Lessons:** Munich Airport operates as 16 separate profit-oriented subsidiaries; Changi Airport Group has impressive concessions programming, including a large entertainment complex connected via tram & walkways to Singapore Changi Airport

The experience also opened Gibbons' mind to new possibilities regarding customer service and operational functions. "I think there are several things we can do to improve our efficiencies here, and I am excited to help develop those in the future," he states. "What MUC has been able to do to incorporate IT functions and cybersecurity, as well as to provide a cohesive travel experience by operating its airport hotel under a well-known brand, was certainly eye-opening. It has encouraged me to think about airport innovation in a new way."

Perhaps most importantly, Gibbons forged strong relationships with several people at MUC, and believes that the exchange program will help executives from other airports do the same. "It gives participants a chance to broaden their networks and relationships in a variety of international settings, and see how other first-rate airports operate," he remarks.

### Singapore-Style Concessions

Brian Cobb, chief innovation officer at CVG, visited Singapore's Changi Airport (SIN) for one week last summer, and met with leaders and staff of Changi Airport Group.



BRIAN COBB

"This is consistently ranked as one of the best airports in the world, so I was very excited to visit it and learn about their operations," Cobb says. "Like Munich, SIN is used to hosting airport officials from many countries."

Kris Mok, manager of corporate communications for Changi Airport Group, planned meetings for Cobb from 9 a.m. to 6 p.m. every day. He spent time in Customer Service, Operational Control, Air Service Development, Human Resources, Baggage Handling Systems, Information Technology, Innovation and other key areas that support the overall organizational structure of Changi Airport Group.

Cobb was particularly interested in SIN's concessions program. "This airport hosts about 70 million visitors a year, and most of them have lengthy layovers before their connecting flight departs. Therefore, with such a captive audience, the airport really emphasizes experiences, and promotes its retail shops and restaurants," he explains. "Many of these establishments sell high-end merchandise, and are very profitable, supporting much-needed revenue diversification."

One of SIN's newest retail and entertainment attractions is Jewel, a five-story entertainment complex (developed through a

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public-private partnership) that is open to the general public as well as air travelers.

“I was told that this is a favorite destination of local residents, and was very impressed when I visited it,” Cobb says. “It is very modern-looking, clean and has a ton of interesting shops, restaurants and other attractions—including a rainforest and the world’s largest indoor fountain as its centerpiece.”

Passengers can access Jewel from the main terminals via a tram or walkway. However, they have to exit the secure area, and therefore must pass through a security checkpoint to reenter the airport. This can cause problems, because connecting passengers sometimes lose track of time at the large mall and entertainment center, putting themselves at risk for missing their flights. The airport consequently advises passengers to return to the security areas at least two hours before their scheduled departures.

Beyond valuing his visits with various airport officials, Cobb also enjoyed meeting everyday people from Singapore. “I was really struck about how incredibly welcoming they are,” he says. “There are no language barriers, since English is a primary language. They are very forward-thinking about everything from quality customer experience to a culture that values work-life balance.”

Cobb also noticed that Changi Airport Group maintains a progressive and collaborative relationship with government authorities and private enterprises. “They are quick studies on new technologies, such as autonomous maintenance equipment,” he remarks. “Changi Airport Group has successfully established a ‘sense of place’ by connecting its customers to Singapore’s diverse, proud culture.”

Overall, Cobb characterizes the experience as very rewarding. “It inspired me to work more collaboratively with talented airport executives and technology firms from other parts of the world,” he reflects. “Immediately upon my return to CVG, we sourced and procured the same autonomous unit used by Changi Airport Group for our own hard-surface floor cleaning and disinfecting.”

**Highly Recommended**

Already a strong advocate for ACI programs, McGraw is even more enthusiastic about these types of opportunities after getting strong positive feedback from Cobb and Gibbons.

“This program has afforded Scott and Brian—and hopefully many others in the future—the chance to share best practices, increase business acumen and forge connections that will benefit themselves and CVG for many years to come,” she remarks. “I am very optimistic about its long-term viability.” ✈️

*Editor’s Note: To date, overseas airports have participated as hosts in the ACI exchange program but not as guests. Officials from CVG note that they would welcome the opportunity to extend the same gracious hospitality their executives received at Munich Airport and Singapore Changi Airport.*

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# Consider “Inspansion” During COVID-19 Recovery

The aviation industry has historically experienced financial shocks in roughly 10-year cycles: airline deregulation in 1978, the Gulf War in 1990, 9/11 terrorist attacks in 2001, the financial crisis in 2008, and now COVID-19. All of these events had a significant impact on airport operations and future development plans.

While I am confident that the industry will bounce back stronger than ever with time, we need to deal with the immediate impacts of this financial shock now. COVID-19 is forcing airports and their airline partners to develop creative ways to reduce operational and development costs while maintaining great passenger service with limited financial resources. We also need to consider when traffic will bounce back and what the long-term growth trend might be.

After the 9/11 terrorist attacks in 2001, I coined the term “inspansion” while serving as the aviation planning manager at Seattle-Tacoma International Airport (Sea-Tac). Inspansion describes a method of adding capacity through creative analytics in lieu of more costly physical expansion. It uses process re-engineering, operational process improvements, technology, staffing and peaking to optimize facility performance and defer expensive “brick-and-mortar” capital investments. Many airports focus on glamorous new capital development projects rather than the potential opportunity of optimizing resources—not just from a financial standpoint, but also from an environmental standpoint for sustainability. Essentially, there are two shades of green: financial and environmental.

Inspansion for airports is based on principles of leveraging excellence in business management practices, operations and



**DAVID TOMBER**

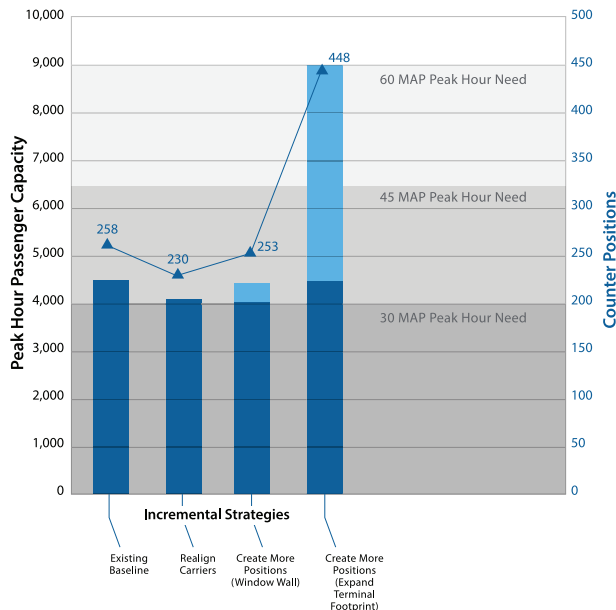
director of strategic planning for Woolpert, is an industry veteran with more than 35 years experience focused entirely on aviation. He is a subject matter expert on airport facility planning strategies for development and operations to optimize capacity and financial benefits.

technology to set strategic direction. This will result in greater efficiency, flexibility and capacity while reducing costs and providing a higher level of service. Non-visible process redesign based on analytics supports this new paradigm.

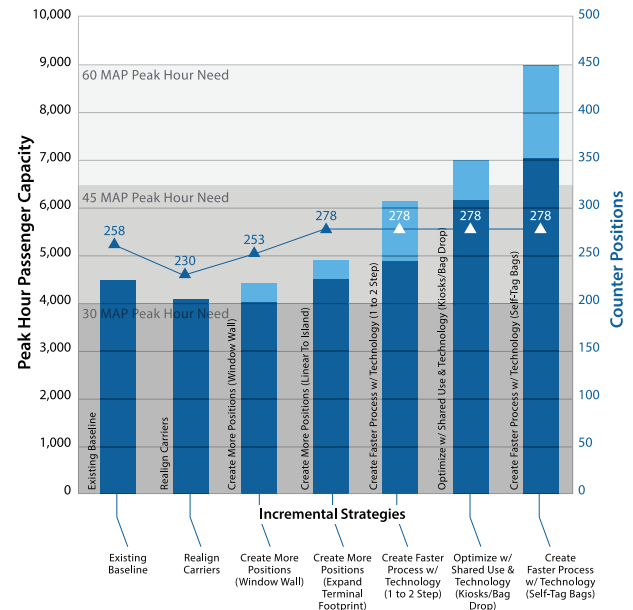
While at Sea-Tac, I analyzed the benefits of inspansion, and the results were significant. Using non-traditional inspansion planning and business intelligence principles could result in an initial capital expense that was 20% of the cost using traditional planning principles. And 30-year total cost of ownership in the same analysis was 150% of the initial capital expense for capital development. Using inspansion principles, the 30-year total ownership cost was approximately 83% less. Not only did inspansion strategies reduce cost at equal or greater level of service, they also offered a way to make incremental improvements responding to changing market conditions.

In the popular vernacular of COVID-19, inspansion principles were an effective strategy to “flatten the curve” of passenger processing, as demonstrated by the blue lines in graphs below.

Utilize Same Process and Expand Terminal Footprint in Future



Leverage Process Improvement to Live within Existing Terminal Footprint





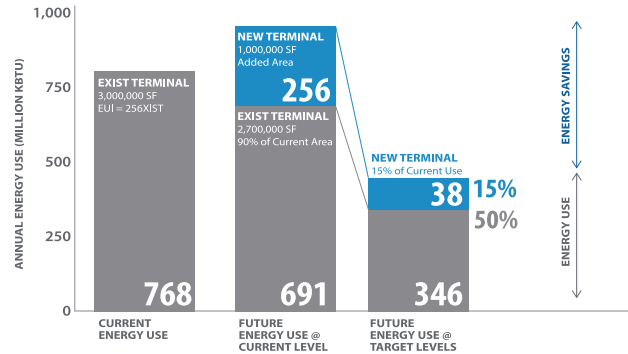
Inspansion strategies can also be used to reduce energy and greenhouse gas emissions with a smaller footprint. The 50-year energy impact of a terminal building is approximately 80% operational and 20% embodied in manufacture, transport and construction. At Sea-Tac, inspansion showed how energy use could be significantly reduced. The baseline terminal complex had an energy use intensity index (EUI) of 768 kbtu per square foot annually. Energy use at the current level would have increased annual EUI to 947. Energy reduction and inspansion strategies, however, had the potential to reduce annual EUI to 384, or 50% of current use with only a minimal footprint expansion for an increase in passenger traffic from 40 million annual passengers to more than 60 million annual passengers.

Smart management of facility assets offers tremendous economic value for maintenance, operations and replacement of aging systems. Ongoing legacy costs can be several times the initial cost of construction. The average weighted design life of terminal systems is approximately 30 years. The current replacement value of terminal assets might represent 50% of an airport's asset portfolio; however, the 20-year renewal expense for a terminal might exceed 70% of asset portfolio. Using quantitative analysis, strategies can be developed for replacing parts rather than entire systems, adjusting maintenance practices, or stretching design life by "sweating" assets to defer renewal expense.

## Strategy for Energy Reduction

### Scenario for Reducing Energy Use Through Renewal

Establish 25 year energy performance targets for new and existing terminal area



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*A new gallery at PBI sells the work of local artists.*

About 100 people attended the recent debut of a new art gallery at Palm Beach International Airport (PBI)...and many came ready to shop.

Yes, everything at PBI's art gallery is for sale. Its inaugural exhibit, *Artfully Discovering the Palm Beaches*, featured photographs, paintings and mixed media pieces about the coastal Florida community. Approximately 175 local artists submitted works for consideration, and a guest judge/exhibit curator selected pieces from 15 to display. Prices ranged from \$500 for a 30- by 40-inch photograph on canvas to \$12,000 for a large diamond-dusted oil painting.

Buyers cannot purchase art directly off the walls at PBI. Instead, they take delivery after a given exhibit closes. As of early April, a handful of pieces from the first exhibit had already been spoken for by guests who attended the opening night reception and travelers who were drawn to the displays while passing through the terminal.

Unlike a commercial gallery, PBI does not earn a commission on sales. All proceeds go to directly to the artists. The airport considers the new gallery an extension of its permanent art collection, and both were put in place to help reduce stress for travelers—much like the therapy dogs that have visited and PBI's

ever-popular putting green. The airport also likes to support local artists by showcasing their work to thousands of passengers daily, notes Lacy Larson, marketing director for the Palm Beach County Dept. of Airports. PBI serves nearly 7 million travelers annually.

The gallery's location—in a well-traveled pre-security area—is a vote of confidence in the TSA officers who staff the airport's two security checkpoints. "They pride themselves in getting passengers through in less than 15 minutes, and they often beat their goal," explains Larson. "Passengers know they have time to look at the art before they clear security."

The pre-security location also allows local residents without tickets for air travel to visit the gallery.

Palm Beach County's Art In Public Places program helped PBI develop its new gallery and counseled Larson about outfitting the atrium space with appropriate lighting and display units. The program's administrator also serves as the gallery curator, collaborating about themes for the rotating exhibits and helping issue calls to artists for submissions. A series of 30-minute segments on the county's public television station helped promote the new gallery and its inaugural exhibit. ✈️



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