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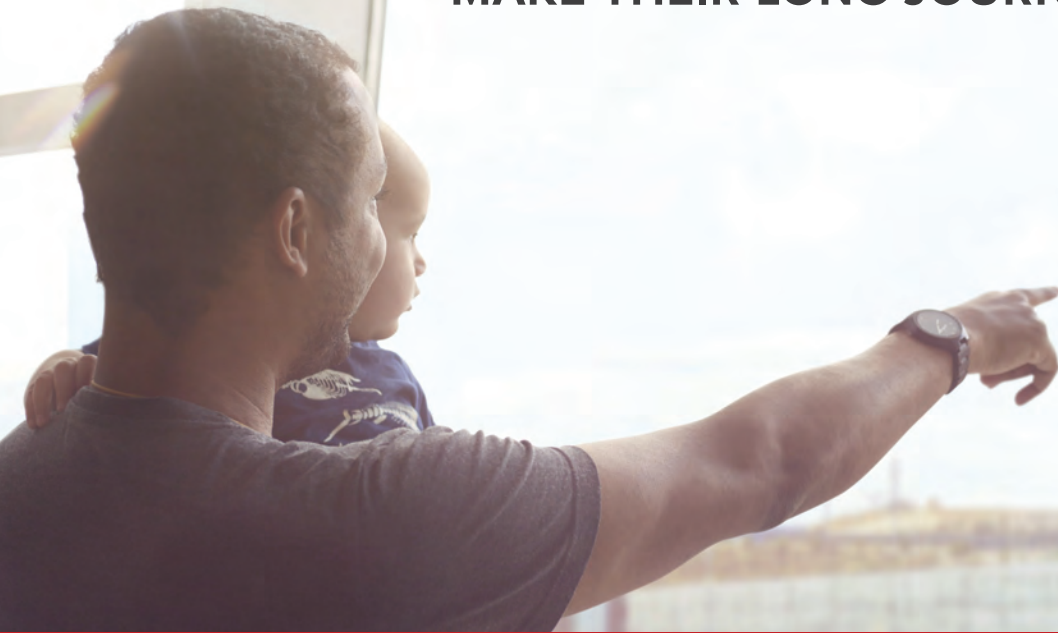


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A string of year-over-year passenger gains has created a new norm. Whether you attribute record increases to one of the longest economic expansions in memory or to ultra-low-cost carriers serving more markets and bringing in a new traveler demographic, we're benefiting as an industry.

Whoever said it was going to be easy?

Huge gains in passenger traffic are creating challenges for airports. How should facility operators respond? Will the future be just as robust? Those are billion-dollar (or so) questions. History has shown air traffic continually pushing positive. However, the growth rate is not as certain. When is the ideal time to build a new runway, terminal or parking garage? Surely our current economic expansion will not continue unabated.

Talking with many airport executives this fall, I heard a common refrain: If they could do it all over again, they would have started their expansion work sooner, rather than later. So, how can space-constrained airports get relief quickly?

We cover this question on Page 8. Seattle-Tacoma International (SEA) is the fastest growing U.S. airport over the past five years. It

has several projects in the work to prepare for future growth. However, in the meantime, it is bursting at the seams and needs gates now. One of SEA's solutions is hardstands. But rather than simply move people through an exit to waiting buses, the airport built a million-dollar standalone hardstand terminal with all the amenities of a new concourse. Bravo SEA!



PAUL BOWERS, PUBLISHER

Readying for growth is about more than hiring consultants and drawing up plans. It also takes money. The newly passed five-year FAA Reauthorization Bill missed a golden opportunity by failing to increase the cap on PFCs. Airlines have increased baggage fees with record ancillary revenues without dampening consumer demand. Yet they still argue that raising PFCs would be toxic. B.S.

With new members of Congress moving to Washington in January, now's the time to educate these folks about what is required to keep pace with passenger growth. We need to improve our outreach efforts.

Cheers to continued passenger gains in 2019!

Paul

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New Hardstand Terminal at Sea-Tac Redefines Hardstand Operations

BY ROBERT NORDSTROM



Seattle-Tacoma International Airport (SEA) is the fastest growing U.S. airport over the past five years. Passenger traffic has increased by 43%, from 32.2 million passengers in 2012 to 46.9 million in 2017.

That's the upside. On the downside, the record growth has resulted in crowded gates and aircraft idling on the tarmac waiting for an open slot. The increasing volume has also inspired the Port of Seattle to look for innovative ways to relieve gate congestion and aircraft backups.

The airport's solution: increase hardstand operations and use buses to transport passengers to/from aircraft parked at remote airfield locations. The strategy is temporary, because the ultimate goal is to have all contact gates, with aircraft connecting to the terminal via loading bridges; but it is also long-term, because achieving that goal might take 10 to 20 years. In the interim, the airport has put a program in place that redefines what hardstand operations can be.

Aviation Managing Director Lance Lyttle puts it this way: "While hardstand operations traditionally are considered a lower level of service, our program has been designed to counter that stigma."



LANCE LYTTLE



FACTS&FIGURES

Project: Hardstand Terminal Building

Location: Seattle-Tacoma Int'l Airport, Concourse D Annex

Airport Owner: Port of Seattle

Project Cost: \$38.4 million

Funding: Airport Development Fund, derived from airline fees

Strategy: Use hardstand operations, supported by standalone terminal, to relieve gate congestion & decrease fuel burn/emissions from aircraft idling while waiting for available gates; support operations with facility that includes amenities such as Wi-Fi & concessions

Construction: Sept. 2017–Oct. 2018

Project Delivery Method: Design-Build

Lead Architect: HOK

General Contractor: Walsh Construction

Structural Engineer: Lund Opsahl

Mechanical Engineer: Notkin Mechanical Engineers

Electrical Engineer: Casne Engineering

Civil Engineer: Osborn Consulting

Geotechnical Engineer: Hart Crowser

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Designers created a decidedly open feel within the new annex.

To do so, SEA built a \$38.4 million standalone hardstand terminal, and outfitted it with amenities traditionally found near contact gates.

During peak periods, all of SEA's contact gates are in use. In May and June 2018, for instance, approximately 645 flights per month waited on average 185 hours for gates—an undesirable situation that affected more than 92,000 passengers. Such congestion results in the unnecessary consumption of more than 100,000 gallons of jet fuel per month and produces 11,700 metric tons of greenhouse gases annually.

Lytle emphasizes that hardstands reduce the amount of time passengers must wait for planes to arrive at gates, thereby reducing greenhouse gas emissions and airline fuel costs.



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Travelers access the new two-story 32,400-square-foot hardstand terminal facility from a bridge connected to Concourse D and descend a gently sloped walkway into a room with six departure gates. The open holdroom area includes restroom facilities, retail and food/beverage concessions, electric charging stations and free Wi-Fi.

Departing travelers board buses and are shuttled to aircraft parked at hardstands on the airfield. Arriving passengers deplane on mobile ramps and are shuttled to a drop-off point at the south end of the hardstand terminal, where they move directly into the main terminal to claim their bags or catch connecting flights.

Todd Buchanan, an HOK principal, describes the building as a simple but elegant steel structure with a sloped metal roof and glulam trusses. "It responds to the geography of the site, presenting a Pacific Northwest feel throughout," he elaborates.



TODD BUCHANAN

Buchanan explains that designers created the regional feel by integrating wood throughout the interior and using glass curtain walls to connect the space to the outdoors.

Walsh Group Program Manager Doug Benjamin jokes that the Starbucks is what really gives the facility its Pacific Northwest feel.



DOUG BENJAMIN



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Hardstand operations help SEA accommodate growing traffic until more contact gates can be added.



“We landscaped around the building, which you don’t typically see with a building surrounded primarily by asphalt and concrete,” he adds. “We also brought greenery inside the building; and the expansive use of glass gives it an inside-out feel.”

The design team had to go all the way to the International Code Council to secure approval for the glulam beam construction. “We were nevertheless able to advance the design as HOK worked behind the scenes to establish that it was code compliant for the building type,” says Benjamin. “We eventually had resolution on the design, but the project would have been delayed significantly if we had followed a design-bid-build model [rather than a design-build model].”

HOK worked with the Port of Seattle to integrate a signature piece of artwork titled *Four Seasons* into the project. Four blown-glass installations representing spring, summer, winter and fall are suspended from the ceiling in various places throughout the building.

On the sustainability front, the Port of Seattle aimed for and anticipates LEED (Leadership in Energy and Environmental Design) silver certification for the new facility. The project team worked with the Port and U.S. Green Building Council to obtain master site credits that are difficult to obtain in an airport environment, notes Buchanan. Highly reflective roofing materials reduce the heat-island effect in the building, and a rain water management system controls water runoff from the sloped roof. The team worked to put “green” elements into the facility and “not just buy a plaque for the wall,” Benjamin emphasizes. Components and strategies that helped the cause include an indoor air quality system, environmental construction materials and diverting 95% of construction waste materials from landfills.

The Port also required 40% small business participation for the project. “It was a challenge,” Benjamin acknowledges, “but I’m proud to say we achieved nearly 50% small business participation.”

Design-Build Team Approach

From the beginning, the project was put on a fast track to help relieve gate and aircraft congestion. To that end, the architect (HOK) teamed with the general contractor (The Walsh Group) to leverage the expediency of a design-build procurement approach. Together, they had 18 months to design and build the new terminal. HOK's design work took about six months, and construction kicked off in September 2017.


"Early on, we encountered duct banks that had not shown up on drawings and concrete as thick as 3 feet in some places," recalls Benjamin. "The beauty of the design-build process is we were able to stay on schedule by beginning work before the design was 100% complete. Had we waited until the design was fully complete and then encountered these unforeseen conditions, the project would have been delayed significantly. The design-build procurement model allowed us to complete this project at least 12 months earlier than if we had followed a traditional design-bid-build or construction management at-risk model."

Benjamin and Buchanan agree that maintaining regular and open communication was key to the project's success. "The Port, Walsh and HOK team had offices right next to each other," comments Benjamin. "When a problem or issue arose, we could

walk from office to office at any given time to propose solutions to problems. Issues could be resolved in minutes or hours as opposed to the two- or three-week submittal and review process it takes with other procurement models."

The design of the building exterior was significant, because the new hardstand terminal is the first building visitors see when arriving at the airport by vehicle. It was important that it be welcoming and inviting, as well as respond to the design language of the airport, Buchanan explains.

"The building site was a major challenge," he adds. "It barely fits because of the bus operations looping around the building. It really came down to a matter of inches in places to make the program fit on this site."

Lyttle notes that the entire facility was designed and built with the passenger experience in mind. "Even though it serves hardstand operations, it looks and functions like a traditional terminal," he explains. "In fact, it rivals or exceeds the offerings in some of the other holdroom areas." 

For more information about hardstand operations, see Page 40 of our July/August 2017 issue.

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Mobile Eyes Bold Change: Moving Commercial Service Downtown

BY SCOTT BERMAN

PHOTO: MAA



FACTS&FIGURES

Project: Feasibility/Planning Study for Relocating Commercial Service

Proposed Change: Shift commercial service from Mobile (AL) Regional Airport to Mobile (AL) Downtown Airport

Status: Mobile Airport Authority approved feasibility study in Aug. 2018; master plan to follow

Study Consultant: VHB

Subconsultant: Infrastructure Consulting & Engineering

Cost of Study: \$99,000

Funding: 90% from FAA Airport Improvement Program; 10% Mobile Airport Authority funds



The Mobile Airport Authority moved one step closer to shifting commercial service from Mobile Regional Airport (MOB) to Mobile Downtown Airport (BFM) when it unanimously approved an outside feasibility study about the idea in August. Further assessments, planning and approvals are still necessary to make the idea a reality, but officials are excited about the possibilities of moving airline traffic to the city's more conveniently located general aviation facility.

"I don't know of any other example to compare with what we're doing," says Authority President Chris Curry. "We're really disrupting the status quo with our plan to relocate commercial service. Most airports go farther out from the city. We're bringing the airport closer."



CHRIS CURRY

PHOTO: MAA

Currently, passengers traveling into/out of MOB experience significant bottlenecks in street traffic. The proposed initiative would remedy this problem by consolidating commercial service at BFM, which is closer to downtown Mobile and part of the Mobile Aeroplex at Brookley, a mixed-use industrial complex. The move would transpire over several years, with commercial service temporarily occurring at both airports until the shift is complete. Some key general aviation tenants would remain at BFM after the change.

If commercial service moves from MOB, space would be made available for new options. Possibilities include moving more businesses into the facility or selling parcels, but those decisions will be made in years to come, says Curry.

Elliot Maisel, chairman of the airport authority board, summarizes the situation this way: "It's



ELLIOT MAISEL

PHOTO: GULF DISTRIBUTING CO

pretty simple. We have a regional airport that is a fantastic facility located in the wrong place. It's too tough to get there. It's a vicious cycle: Not enough people go there, thus, there are not enough flights; and so on."

There has also been a population shift in recent decades, with more people moving to the east of Mobile, closer to BFM, than to the west, where MOB is located.

Maisel believes that shifting service accordingly will provide local travelers with a broader selection of better, cheaper flights, and make Mobile the epicenter of flights into/out of the region.

In a broader sense, the move is expected to foster economic growth in and around Mobile, including downtown. Mayor William S. "Sandy" Stimpson says, "Mobile has a huge opportunity for our city's quality of life and economic development." Like airport officials, Stimpson sees the move as a very unique situation. "Even so, it certainly is doable given the circumstances of the two airports. It's something we're really excited about," he says.



WILLIAM S. "SANDY" STIMPSON

Last year, MOB logged about 305,600 enplanements, with service from American Airlines, Delta Air Lines, United Airlines and ViaAir. The Mobile Aeroplex at Brookley, which includes BFM, has no commercial traffic and averages 170 operations per day. It also has about 100 tenants that employ approximately 3,600 people.

Pending changes at the airports relate to broad changes in the region: On the east side of Mobile Bay, the population of Baldwin County is rapidly growing and straining current ground infrastructure. Traffic bottlenecks on the bridge and tunnel that cross the bay have spurred a \$2 billion bridge project that is scheduled to begin construction in 2020. The new bridge, which is expected to open in 2025, will speed traffic across the bay while commercial air service moves closer to it.

Such synergy brings significant potential benefits, explains Curry. "A productive airport touches every part of the city," he says. Curry is confident that a convenient, vibrant commercial airport on the east side of town will help attract new business, boost the potential for increased enrollment and investment in area colleges and universities, and increase fly-in leisure trips to Mobile, given its proximity to Gulf Shore beaches, area theme parks, casinos and cruise attractions.

Before joining the Mobile Airport Authority in 2017, Curry led the re-designation effort at Tallahassee International Airport (TLH).

The Study

Although officials feel the need for change is evident, the process to address it has taken a long time to crystallize. Curry notes that when he joined the airport authority last year, general conversation about an airport reassignment had been going on for about 20 years. The Mobile community began questioning whether it had commercial service at the right airport, he explains. Several new members subsequently joined the airport authority board, and soon discussions "heated up."

Conversations among the board, authority staff, mayor's office and FAA led airport officials to commission a feasibility study. The

purpose was to obtain outside expertise and professional data to answer the question that had been circulating through the region. The Mobile Airport Authority Board selected VHB in a competitive bid process and received an FAA Airport Improvement Program grant that funded 90% of the \$99,000 study.

VHB conducted the study in 120 days, and work began in February 2018. The firm delivered results to the airport authority that spring, and the findings were announced in August. It was an unusually short timetable for a study of this kind, says Fin Bonset, VHB's manager of Airport Planning. In essence, it was about striking while the iron was hot, explains Bonset.



FIN BONSET

Among other things, VHB's research revealed two notable findings: 1) an impressive level of local community support among stakeholders such as the business community, regional companies and the Mobile Area Chamber of Commerce; and 2) a surprising amount of market leakage resulting from the current commercial service location.

Leakage occurs when Mobile area passengers use Pensacola International Airport or Gulfport-Biloxi International Airport to avoid traffic congestion to and from MOB. According to the research, MOB is currently capturing just 53.8% of its market, notes Bonset.



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Mobile Downtown Airport (pictured) may soon handle commercial traffic currently at Mobile Regional Airport.

PHOTO: IMAA



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The study found that shifting commercial service to BFM would cut drive time and move service closer to more than 138,000 potential passengers. In addition, doing so would increase the likelihood of BFM capturing significant portions of the remaining 46.2% of the local market. Because the overall market is growing and drawing more passengers, adding new routes is projected to increase enplanements, revenue and competition, which in turn, is likely to reduce airfares.

Other key findings of the study include “great interest from low-cost carriers” such as ViaAir to provide service from BFM and potentially significant economic and fiscal impact from the project, pending current economic trends.

Regarding fiscal impact, the study projects that relocated and expanded commercial air service at BFM would generate net tax benefits to the county, county schools, city of Mobile and state of Alabama that would almost double over the next 20 years, from the current total of \$951.1 million to \$1.8 billion.

At this stage in the process, total costs have not been determined for moving commercial service from MOB and converting BFM accordingly. Bonset estimates expenses could run from \$100 million to \$160 million, but the payoff could be in the billions for the local/regional economy and the airport system.

A Tale of Two Airports

It all boils down to maximizing service for the community and maximizing revenue, says Bonset. The increased flight volume from area defense contractors alone could add millions of dollars each year to airport revenue, he notes. The move would also boost

non-aeronautical revenue from increased business at the nearby industrial park, he adds.

In addition to studying the option of moving commercial service to BFM, the airport authority explored the possibility of making MOB more accessible and enhancing commercial service there. Working as a subconsultant to VHB, Infrastructure Consulting and Engineering studied the MOB accessibility issue.

"We looked at the best ways to commute, and you would need a limited access roadway," says company Vice President Doug Hambrecht, noting such a project would entail years of costly work. BFM already has good interstate access, he adds.

The next step in the initiative, development of a master plan, will provide more details. Curry reports that the airport authority expects to start the master plan before the end of 2018, and the process, which could be funded with another FAA grant, may take one to two years to complete. Among the associated possibilities: re-designating BFM as an international airport.

Plans & Potential

More business means more air travel, and vice versa. As such, Maisel and Curry point out that there is a gathering development scene in the Mobile area. Highlights include a \$30 million Amazon sorting center that opened in 2017, and Walmart's new \$135 million distribution facility, which opened in August 2018.

Business is also booming at BFM and its associated industrial park. Among other companies, VT Mobile Aerospace Engineering, a tenant since 1991, recently expanded to 900,000 square feet of space; Airbus North America Manufacturing opened a 1 million-square-foot factory in 2015; and MAAS Aviation opened facilities there in 2017.

Current activity at the \$600 million facility Airbus opened at BFM in 2015 also is telling: The 1 million-square-foot assembly plant turns out an average of four A-320 passenger aircraft per month. Curry predicts that number could eventually increase to double digit growth.

Early this year, Airbus officials announced that the company is studying a boost in A-320 production at BFM to six aircraft monthly. They were joined by Bombardier officials for a joint announcement of plans to add a second assembly line, for Bombardier C series jetliners, at BFM. According to company officials, the increased production would add a combined 600 jobs.


That number of new workers would be a significant boost to BFM. Currently, 3,600 workers are employed at the industrial park by a range of significant tenants that include Continental Motors, Federal Express and

Honeywell, among others. The point, as noted by VHB: boosting economic growth more broadly fuels additional air travel.

A Harbinger of Future Expansion

In addition to beginning the master plan process, the airport authority is in the design phase for a shorter-term project to pave the way for larger changes. The project: renovating a BFM building now used by Airbus into a passenger terminal to service ViaAir. Curry says the renovated terminal may be ready by May 2019, at which time Via Air will transition its service there, initially sharing space with Airbus.

Stimpson says the project is a "tangible step to show we're committed, and moving commercial air service is doable." He believes that 10 to 20 years from now, there will be bustling commercial activity at BFM that operates in harmony with current tenants such as Airbus and VT Mobile Aerospace Engineering. "It will be good for the companies and Mobile," he asserts.

For now, much work remains for the overall initiative. Yet officials are optimistic about the potential. "This is a transformational project," emphasizes Curry. "And in order to transform communities, sometimes you have to disrupt the status quo. We're doing that in a novel way: Instead of bringing even greater numbers of people to the airport, we are bringing the airport to the people." 



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FACTS&FIGURES

Project: Video Surveillance System Replacement

Location: Jacksonville (FL) Int'l Airport

Cost: \$7.5 million

Funding: \$3.3 million – FAA Airport Improvement Program; \$4.2 million – passenger facility charges

Project Timeline: Request for quotes Jan. 2015; contract issued Oct. 2016; project completed Oct. 2018

Project Design, Engineering & Construction Management: Johnson Controls Inc. (originally Tyco Integrated Security)

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Electrical Design, Installation & Testing: Vanguard Electric

New System: Unified Management System, from Tyco Security Products

System Components: 1,200 video camera views; 28 operator workstations; 20 wall monitors; 63 network switches; 4 petabytes of video storage

Cameras: American Dynamics (fixed domes & pan/tilt/zoom); Axis (multi-lens); FLIR (thermal)

Installation Materials: Approx. 33 miles of conduit; 4,000 feet of 120-volt power/connections; 42.9 miles of category 6 cable; 5.5 miles of fiber

New Camera System Enables Jacksonville Int'l to Track Passengers From Parking Garage to Tarmac

BY RONNIE L. WENDT

It's not every day that an airport installs a new security video system that covers practically all public areas within the facility. But this is exactly what Jacksonville International Airport (JAX) in Florida has done.

The \$7.5 million system, which went online in September, tripled the number of cameras in use from 300 views to 1,200 views and made it possible to track passengers throughout the airport, from the parking garage to their planes. It also converted JAX from an analog system to digital.

Airport Chief Executive Officer Steve Grossman offers a history lesson to delineate the need for change. Prior to 9/11, airport security systems were designed to stop hijackings. In fact, "that's why security checkpoints were brought into play," he explains. "They

were designed to stop bad things from going through a checkpoint that someone could use to hijack a plane."

But after the Twin Towers fell in 2001, the focus shifted from stopping hijackers to stopping would-be terrorists at the airport door.

In 2014, the guiding strategy evolved again, after two men managed to use an employee badge, backpack and cellphones to thwart security and smuggle guns from Atlanta to New York.

"The focus went from just stopping terrorism to also preventing crime," Grossman says. "In our case, it required a change in philosophy. We knew we had a rather outdated closed-circuit TV system; but with this new directive, we wanted to be able to follow a person from the moment they came onto the airport to the time they left. If they are carrying something they shouldn't be carrying, we want to know immediately—not after the fact."



STEVE GROSSMAN

The resulting system, which was two years in the making, offers end-to-end video coverage at JAX, notes Sam Brunetti, project manager at the airport for the Government Technologies Group of Johnson Controls Inc. Security Solutions. “We have cameras to view cars as they enter the garages, where we actually log their license plate numbers in and out of the garage. We have cameras that cover every crosswalk, every door opening, every walkway,” explains Brunetti. “I don’t want to use the words ‘100%,’ but there are very few places within the airport public areas that are not covered by cameras. That was ultimately the goal: to provide camera coverage that can identify an individual and then, by a camera-by-camera basis, know where they are at, and where they are going.”

Within weeks of deployment, JAX had already reaped the new system’s benefits. When someone mailed a suspicious envelope to the airport, police were able to identify the individual from video footage. When a passenger was injured at the airport, officials were able to quickly retrieve video footage to learn when and where it took place.

“Security is an important reason for this project,” Brunetti says. “But just as important is that it offers the ability to cover an incident, such as someone falling or getting caught in an escalator, from the airport’s perspective.”

Project Partners

With its nearly 20-year-old analog video system reaching the end of its life, JAX wanted to install a new video system with updated digital technology. “The cameras needed to be newer, the format that the cameras operated in needed to be newer, and the way that data was physically gathered from the cameras and stored needed to be newer,” Brunetti elaborates.

Airport officials structured the upgrade as a design-build project, and Johnson Controls won the business after a request for quotes that was issued in 2015.

The airport teamed with Johnson Controls to develop a game plan based on the Jacksonville Aviation Authority information technology roadmap related to systems consolidation and integration. “Our purpose was to work with the airport to build a game plan that took what they needed and fit it into the budget they had,” explains Frank Pervola, the company’s transportation business development manager.

Part of the strategy was to keep the contracting team as local as possible, with Johnson Controls acting as the prime contractor overseeing the project. RS&H served as the subcontractor that designed the system, monitored quality and assisted with final system testing. Presidio Networked Solutions acted as the networking subcontractor

responsible for designing, engineering and installing the network. Johnson Controls tapped Vanguard Electric for electrical design, installation and testing.

The airport had recently upgraded its existing C-Cure access control system, so ensuring that the new cameras interfaced with that system was a key priority.

Another requirement was to use off-the-shelf options for peripheral equipment, such as field cameras. “Airport officials didn’t want to use proprietary systems,” Pervola explains. “They wanted to be sure they could get the equipment they needed from just about anyone.”

Finally, while JAX sought leading-edge technology, it also wanted equipment with a successful track record in airport environments. The team selected American Dynamics and Axis security cameras to fulfill both requirements.

Timing was also considered, notes Grossman. Although the security system had been an identified need for about a decade, he wanted to incorporate new technology at just the right time. “You don’t want to take two years to do a project, as we did here, and then on the day you are done, have the technology be three generations out of date,” he explains. “We were very careful with our timing to ensure the technology would be long-lasting.”

Unification a Must

The previous system at JAX included stand-alone video and access control systems, with a separate interface that enabled each to receive input from the other. Leveraging unification, the two new systems work together. “Although they have their own capabilities and functionality, they are integrated together on the same platform,” says Brunetti.

“We did not want two systems that were forced to talk to each other, and then have to support third-party integration and figure



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out how to keep that working,” adds Grossman. “We selected products that had the integration built in. With this project, we have laid the groundwork for complete integration over time. This is the first step, and eventually we will be able to tie in other things such as our fire alarm system or our building maintenance system. It’s a true value to personnel who monitor all of this.”

Unification also simplifies system updates. For example, when operators update the access control system, the security camera system is updated accordingly. “In the past, if you updated one system, you had no idea how it would affect the other system,” states Brunetti.

These benefits are not lost on Rick Hill, information technology project manager at JAX. “Rather than manage, administer and maintain two separate systems, we have combined the two,” says Hill. “They use the same server and the same database. We don’t have to switch between two separate boxes or two separate operating systems; it all happens internally.”

The advantages of unifications are especially evident when an alarm is triggered. For instance, if a door alarm goes off, the associated camera pops up, monitors the area and sends a notice to the Airport Operations Control Center (AOCC), where workers

monitor incoming video 24/7. Employees can also call up footage from other cameras as needed.

“The AOCC has immediate eyes on what’s happening, whether it’s someone with a security badge who propped open a door, or someone who held the door open for [nefarious] reasons,” Hill explains. With the new system, AOCC personnel can zoom in on badge numbers and faces to compare with airport records.

“Previously, we had a door alarm system that did not sync up with the camera system, so officials had to monitor multiple systems separately,” states Grossman. “As we move forward, all of our systems are going to be integrated, so the person sitting in our operations control center can monitor all of them—and do so easily.”

Selecting & Placing Tech

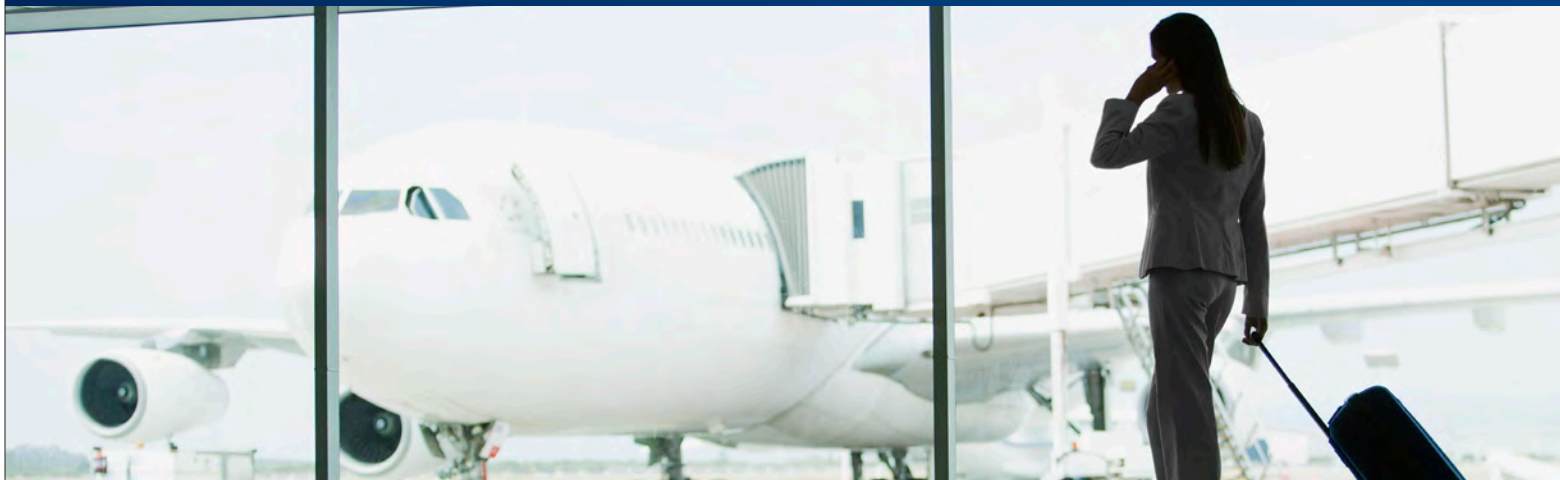
According to Grossman, the “secret” to the project’s success was involving all users from the beginning to determine what kind of visuals they needed to do their jobs effectively. Key groups included the security department, operations department and TSA.

The project team examined the cameras already in place, determined where more were needed and maximized coverage by

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increasing the number of views from individual cameras. Often, designers opted for cameras with 180-degree views, versus installing three separate cameras to achieve the same coverage.

System designers used architectural drawings of the airport to consider where video coverage was needed, and then asked key users exactly what they needed to see in these areas, to help determine camera placement. "Our engineering people set locations for the cameras, and then we would work together as a team to refine the plan," recalls Brunetti.

The resulting system utilizes five different camera types. Equipment ranges from 2-megapixel fixed units to 33-megapixel, 180-degree cameras, Axis multi-lens cameras and American Dynamics pan-tilt-zoom (PTZ) cameras. "The PTZ cameras can clearly see the numbers on planes on the runway," says Hill.

The view being sought in a specific location ultimately determined the type of cameras used. For example, a camera monitoring one specific door requires less megapixels than a camera capturing a 180-degree view of a gate. Airfield cameras needed a wide field of view, but also required additional protection from the elements, particularly jet fuel, to prevent clouding and corrosion.

"On the airfield, you want to eliminate cost and the need for extensive repair by reducing the number of cameras by increasing the field of view for each unit," explains Brunetti. "We looked at how we could get one camera with three elements built inside to span a much larger area, provide the needed views, zoom in and out, while also reducing maintenance needs."

Maintenance was top of mind, because cameras were placed high inside terminal buildings and on jet bridges. "They are not easy to reach," he says. "By reducing the numbers but increasing the capabilities, we reduce maintenance needs and costs in the long run."

Using IP (Internet protocol) cameras allows personnel to remotely tweak the equipment's field of view after installation. "Once a camera is installed, we don't have to go out and physically move it a foot to the left or the right. We can make those changes electronically in an app," comments Brunetti. "That's what the airport was looking for: flexibility within the cameras to refine the view without physically having to go out and move them."

Each camera offers full-size internal storage. Some store 30 days of footage, while others store content for 90 days. The airport also has four petabytes of video storage to store required video.

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Behind the Scenes

Infrastructure changes were needed to ready the airport for its new system. Previously, all information technology (IT) systems were fed into a data center housed in the terminal. If that center went down, all IT systems went down. Six years ago, the airport began updating its IT infrastructure to ensure this couldn't happen.

“One of the early projects was to move admin divisions to a separate office building and add a data center there that all systems fed into,” says Steven Schultz, director of IT at the airport. “We switched everything over to that, then rebuilt the terminal data center to serve as backup. If any systems fail in the admin building server room, they will run out of the terminal data center, without users seeing a noticeable change in performance. And, through virtualization technology, software and hardware can be upgraded independently, making future upgrades easier and less costly.”



STEVEN SCHULTZ

The security system tied easily into this existing backbone, he adds. Even so, the project required JAX to install or replace approximately 63 network switches and 20 wall monitors. Crews also added approximately 42.9 miles of category 6 cable and 5.5 miles of fiber.

“We went with cat 6 cable versus cat 5 so that we could move the maximum amount of data over it, which becomes very important when you are talking about cameras that have three sensor elements in them,” Brunetti says. “That’s an extreme amount of information over a single line. This installation will help us easily move the airport toward the future.” ✈️

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Grossman Retires in October



STEVE GROSSMAN

For 43 years, Steve Grossman has worked in aviation, but now he's flying in a new direction—retirement.

On Oct. 31, Grossman is stepping down as chief executive officer of Jacksonville International Airport (JAX) and the Jacksonville Aviation Authority, a position he's held for the last nine years. Prior to that, he served as the director of aviation for the Port of Oakland.

As Grossman always hoped, he is leaving at the time of his own choosing.

"The authority is in great shape and financially secure. Our business line is very stable. We are well thought of in the community," he chronicles. "It is a good time to turn the authority over to the next person, who won't have anything that requires 'fixing,' and can focus on improving what's already in place."

However, he has not decided whether he'll stay out of the industry completely. "Aviation gets in your blood. It's been in mine since I was a teenager when I started with the Civil Air Patrol," he reflects. "If I can stay involved in a way that I find interesting, I will. But, it's not a requirement."

It also will not be full-time, because Grossman and his wife plan to travel, see their kids and grandkids more, and golf—lots of golf. "You know how they ask players after winning the Super Bowl what they're going to do, and they say: 'I'm going to Disney'?" Well, my wife and I are really going to Disney," he laughs. "We leave the day after I retire."

Grossman reflects on his time at JAX as a "career topper" and is very satisfied by what he has accomplished there with the support of the airport board. "Their trust allowed me to run the organization in a way that set the vision for the future," he says, noting that together, they turned a former naval air station into a "very successful industrial airport."

That said, infrastructure improvements are not his proudest accomplishment. He considers making a difference for employees his crowning achievement.

"I don't worry about the building improvements—those are going to happen anyway. It's hard to take personal credit for them," he says. "I am most proud of my effect on the organizations I've worked for, particularly at JAX, where we have built an organizational culture that is very positive. People like working here. We treat them with respect. My philosophy is if you like your

job, you'll do more than your job. And, every day, JAX employees go above and beyond to the benefit of the organization and the traveling public. I have been part of creating an organization that cares about people, and I'm very proud of that."

Even though he won't be involved on a daily basis anymore, Grossman looks forward to seeing how airports change and evolve in the future—particularly technology and the way passengers interface with it. Amenities like Wi-Fi, frequent parking perks, better concessions and ticketing technology have vastly improved the passenger experience, he notes.

"I predict that someday we will get to a point where passengers completely bypass the ticket counter. They will simply walk through a checkpoint with their carry-on bag and they will be scanned automatically," he says, adding that great leaders in the industry will pave the way for such advancements.

But don't expect Grossman to be among them. He and his wife will be tipping their toes in the ocean, sunning on the beach in Cancun and cruising the Mediterranean. And those are just the trips they have already planned. "There are many parts of the world we haven't seen that are on our bucket list," he notes. "We hope to hit all of them." ✈️

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Denver Int'l Stages Year-Round Special Events for Passengers & Community

BY LAURA WAVRA



FACTS&FIGURES

Project: Special Events

Location: Denver Int'l Airport

Program Name: Events at DEN

Free Public Activities: Ice skating, lawn games, mini golf, ziplining, outdoor movies, fitness classes, etc.

Paid Event: \$10 beer tasting

Outside Financial Support: United Airlines sponsored ice rink in 2016 & 2017; numerous companies & organizations donate goods & services

Staff-Only Events: Thank you picnics; division golf tournaments

Key Benefits: Enhance passengers' travel experience; connect with local community; provide stress relief/perks for employees



Most events are free and open to the public.



PHOTO: DENVER INT'L AIRPORT



PHOTO: DENVER INT'L AIRPORT



Most passengers don't expect ice skating, lawn games or beer tastings at the airport, but Denver International (DEN) provides them—and much more. For three years running, the airport has hosted an “Events at DEN” series, and the lineup is proving so popular it also attracts visitors not flying into or out of the airport.

The year-round schedule is designed to “surprise and delight” passengers, community members *and* staff, explains DEN Arts and Events Director Heather Kaufman. Most events are free and open to the public.



HEATHER KAUFMAN

The series was launched in 2016, shortly after DEN debuted the glass canopied open-air plaza that links its Jeppesen Terminal to the on-airport Westin hotel and transit center for commuter train and bus connections. Many of DEN's special events are held in the inviting, pre-security space.

Wide-Ranging Schedule

The DEN Skating Rink, a perennial favorite among non-ticketed guests, is open from November to January. Free ice skating on the plaza, complete with complimentary use of skates, is now in its third year and continues to grow in popularity. Airport spokesperson Emily Williams reports that about 16,000 people laced up their skates at the airport in 2017, nearly doubling volume of the event's inaugural year.



EMILY WILLIAMS

United Airlines sponsored the event in 2016 and 2017, garnering high-visibility logo exposure on the roughly 40-by-60-foot rink and in marketing materials. As of early October, the airport did not have a confirmed sponsorship for this winter.



Star Wars Day was a big hit with staff and customers alike.

The airport's fifth annual Beer Flights Beer Garden is scheduled to coincide with the Great American Beer Festival in Denver and Oktoberfest celebrations worldwide. Also held in the outdoor plaza, it features some of Colorado's top microbreweries and brew masters, plus live music, trivia contests and table games. DEN partners with the Colorado Brewers Guild to organize the event, which costs \$10 per person and is available to those 21 and older.

Other popular events have included a zipline, outdoor movies and a bike skills course. DEN also features smaller indoor events such as Star Wars Day and Puppy Bowl in the Great Hall.

This summer, the airport added a new event from July to September. Crews transformed the outdoor plaza into a lush pop-up park, complete with gardens featuring native Colorado trees and plants, lounge seating, lawn games and lunchtime fitness classes. Mini golf ran from May to June, and featured a custom built 18-hole course as in previous years.

Both events were free of charge and proved quite popular with passengers and airport staffers, reports Kaufman.

Staff-oriented events include thank you picnics and division golf tournaments.

Planning & Execution

Management and administration of the special events requires some outside contractors as well as participation from nearly every airport department—from security and internal guides to fleet and field maintenance. "It takes a village," Kaufman muses. Once-a-month roundtable committee meetings help keep things running smoothly, she adds.

The event series is largely funded with airport enterprise dollars, and is budgeted for accordingly. "DEN is a world-class airport, and we definitely put a lot of focus and energy into making sure the events are successful, safe and well-staffed, while remaining mindful of the budget," Williams explains.

Thus far, United is the only company to provide event sponsorship, but the airport has a long list of other partners that provide donations or services. For example, the U.S. Open has given tournament tickets for use as prizes; and the Colorado Horse Rescue brought rescued horses and ponies to an event. One year, GolfTEC enhanced the mini golf attraction by supplying a virtual driving range; the following year, it provided a golf pro, who gave putting lessons.

Denver Parks and Recreation and Alamo Drafthouse Cinema have also been valued partners.

Marketing for the series includes paid digital and print advertising, digital promotions

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and in-airport signage. Last year, the digital campaign reached more than 35,000 badged airport employees, passengers, local residents, Westin hotel guests, and family/friends greeting passengers at DEN. In-airport promotional media include floor decals, window clings in the plaza vestibule and Great Hall, digital boards, breakroom flyers, and signage wraps on the information booth, train station columns and elevators.

Raising Expectations

As one of the first U.S. airports to offer large-scale customer events and activities, DEN is helping set a new standard for the air traveler experience. "We want to provide something fun and lighthearted, to take the stress out of air travel and make it easier," Kaufman says.

According to feedback from in-person surveys and social media posts, DEN is accomplishing its goals. Kaufman reports that customer response is overwhelmingly positive and events are well attended. Last year, more than 22,000 people attended events at DEN. Many were passengers, but some came to the airport just for the fun.

The special series also has a positive effect on staff morale, adds Williams. Participants report that activities such as golf tournaments and lunchtime yoga sessions in the pop-up park leave them happier and better equipped to deal with stressful situations they sometimes encounter on the job.

Turning Vision to Reality

Inspiration for DEN's event series came from none other than Chief Executive Officer Kim Day, who saw a volleyball game being played on the public plaza at Munich Airport. Given her background in architecture, Day saw the opportunity to create a unique public venue in the open space between a soon-to-be built hotel and DEN's existing terminal.

Her goal was to provide customers with a breath of fresh air upon arrival or between flights and serve as a connection place for people and the community. Day's vision was manifested in an 82,000-square-foot open-air plaza, just steps from DEN's Jeppesen Terminal, the on-airport Westin hotel and commuter rail station. Since its debut, the airport has leveraged the space to win the hearts of customers, community members and staff. ✈️

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Medicine Hat Regional Replaces Runway in 24 Days

BY PAUL NOLAN



FACTS&FIGURES

Project: Runway Rehabilitation

Location: Medicine Hat (AB) Regional Airport

Total Cost: \$11.5 million

Work Scope: Full asphalt replacement; new perimeter sub-drains & catch basins; partial replacement of infield storm sewer system; selective concrete panel repair/replacement at runway turning buttons; new edge lighting components & cabling; new airfield lighting control system

Prime Contractor: AECON Transportation West

Project Consultant: WSP Global

Subsurface Utility Installation: MJB Enterprises Ltd.

Manholes, Catch Basins & Headwalls Mfg: Precon Mfg.

Lighting, Signage & Control Panel Mfg: ADB Safegate

Lighting Installation: Tristar Electric Inc.

Runway & Taxiway Markings: Marshall Lines

Landscaping & Hyrdoseeding: Grassroots Landscaping

Manholes, Catch Basins & Headwalls: Precon Mfg.





Be careful what you ask for. It might materialize sooner than expected.

In March 2016, Jeff Huntus, the manager of Medicine Hat Regional (YXH) in Alberta, asked for \$12.5 million to replace the airport's main runway. Transport Canada told him not to expect funds until 2018 or 2019. But in 2017, he received notice that the program had been approved—and for \$400,000 more than the airport had requested.



JEFF HUNTUS

“We were thinking we had another year or two before we had to launch the project,” recalls Huntus. “We went from sitting on our hands, not giving it a lot of thought, to full-bore final design tendering and pushing in place a program whereby we had the runway under construction in one form or another for parts of two years.”

While understandably shaken about the short notice, Huntus was eager to proceed with the project. The airport's main runway had not been resurfaced since the early 1990s. “It was very much at the end of its useful life,” explains Huntus. “This project would keep us up and running for another 20 years.”

Timely Request

The \$12.9 million grant was through the Airport Capital Assistance Program (ACAP) that is administered by Transport Canada, the federal entity that is responsible for transportation policies and programs throughout the country. To date, it is the largest single grant ever awarded under ACAP, which provides funding for improvement projects at regional airports.

Huntus says it was serendipity that YXH's proposal was submitted at a time when the program was looking for a project that could be completed over two phases and funded in two separate years—2017 and 2018. “We just happened to be on top of the pile,” he jokes.

Huntus and a team from the city's Municipal Works Department scrambled to get the project out for bid. The first phase of the project, scheduled over 10 weeks in 2017, involved replacing the subsurface drainage system and the airfield electrical system. That work was completed exclusively at night to minimize the impact on air traffic. Between 9 p.m. and 5 a.m., the width of the runway was reduced to about 100 ft., temporary lighting was installed and the runway was closed to all operations except emergency medical evacuation aircraft.

During the project, the airport averaged about two medevac flights per night. The airplanes were usually flying patients from the local regional hospital to a larger hospital in Calgary, explains Huntus. Each time a medevac airplane had to land, the work crews pulled their equipment off the runway and covered any trenches that were open along the edge of the runway. “It caused us a little bit of grief, but we factored that into the timing,” he says.



Much of the work was scheduled at night to minimize operational disruptions.

A Difficult Decision

When the runway project was announced, YXH had commercial service from Air Canada. Immediately after the project was completed, WestJet Airlines also began service. The airport tallied 36,000 passengers in 2017. Huntus estimates that 70% of the traffic is business and 30% is leisure. The area has a vibrant agriculture industry and active oil/gas sector, which brings in corporate jets as large as the long-range Gulfstream V.

To facilitate the project's second phase—the removal and replacement of the main runway—the airport closed to air traffic completely for 24 days last May. Alternative plans were considered, but in the end, shutting down completely was deemed the best way to cause the least amount of disruption for the shortest amount of time.

Before opting for the full closure, the airport considered one other strategy. Because YXH has two intersecting runways, project designers contemplated renovating the main runway in two sections to allow the shorter runway to remain open during construction. That plan was vetoed because the secondary runway is 2,800 feet, which is too short for the Air Canada flights and the air ambulance contractor. If the short runway was kept open for other aircraft, construction would have been limited to nighttime hours, which would have ballooned the project duration from 24 to 49 days.

“Going with the full closure was the most difficult decision I’ve ever had to make,” Huntus reflects. “It impacted charter operators, the medevac operators



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that had to relocate to another airport, flight training schools, the FBOs—they all suffered.” The project also affected the airport’s rental car operator, restaurants and other terminal services that remained open during the closure.

“It was definitely not a decision that we made lightly,” agrees Carlie Collier, a municipal engineer who served as the project manager. “It was over a long process where we had discussions with our consultants, looked at our options, had discussions with the air carriers and really tried to look at the best way to get the project done with minimal impact to the users.”



CARLIE COLLIER

When airport officials announced the plan to close to air traffic for more than three weeks, they received a lot of pushback from operators and negative coverage in the local press. “Reporters being reporters, they found every possible angle to support how bad that news was,” Huntus says. The president of one charter and flight training company operating told the press that his company was considering legal action against the city, but no suit was filed.

One week after news of the closure hit, the airport enjoyed somewhat of a public relations rebound, when it announced that WestJet would introduce commercial service at YXH as soon as the new runway

What the Project Entailed

The second phase of the runway replacement project at Medicine Hat Regional Airport in Alberta was completed in 24 days while the airport was closed to all air traffic. Key components included:

- Full depth removal of existing asphalt
- New granular base material
- New perimeter sub-drains and catch basins (completed in 2017)
- Partial replacement of infield storm sewer system
- Selective concrete panel repair/replacement at runway turning buttons
- Hot mix asphalt placement
- New pavement line markings
- Topsoil and hydroseeding to restore landscaping
- New edge lighting components and cabling (completed in 2017)
- New airfield lighting control system



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The renovated runway will support new traffic from WestJet.

opened. It was good fortune to have positive news to share, recalls Huntus.

While he was prepared to face the fury of local entrepreneurs, his main concern was displacing air ambulance service for 24 days. Alberta Health Services contracts with private aviation companies to fly King Air 250s throughout Alberta for critical transfers.

“That was the thing that kept me awake,” recalls Huntus. “You’ve got code red patients who are regularly transported from here to the major health services in Calgary. In the back of your mind you’re thinking, ‘What happens if they’re needed and can’t fly out of here?’” A contingency plan put in place by Alberta Health Services, the provincial health agency, called for urgent transfers to be serviced out of Bow Island Airport. Much to Huntus’ delight, none were needed during the 24 days of construction.

Race to the Finish

The planning team chose May 7 to 31 to complete the critical second phase of the project, because it is historically one of the driest months of the year. Personnel from AECON Transportation West, the project’s general contractor, felt that the 24-day window was tight but achievable—if the weather cooperated.

“The scope of work, as far as asphalt removal, laying down a granular base and then paving...we do that every day. The only unknown was the weather, and that made everybody nervous,” relates Jon Wilson, AECON’s operations manager. “The 24 days was written into the contract when we

bid on it, and we had contingency plans set up in case we fell behind so we could work around the clock.”

As it does with many of the large highway projects it tackles, AECON mobilized and set up an asphalt plant on site at the airport to minimize time for hauling and increase production on site.

Moreover, Mother Nature cooperated. There were only two rainy days during the construction period, and one was the last day, when the work was done and crews were just cleaning up.

Collier and Wilson both credit the extensive planning done by the project team as the key to finishing on time and under budget. The project was completed for \$11.5 million—more than \$1 million less than the original grant request. As required, the extra funds were returned to ACAP.

“The preliminary work was key,” Collier comments. “There was a lot of preparation leading up to the work in May, and everyone was aware of what needed to get done. It came down to good project management from our consultants and contractors. And we definitely lucked out with the weather.”

Wilson notes that extensive planning also helped keep the construction site safe throughout the 24-day closure. ✈️



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Orlando Int'l Uses Digital Messaging to



FACTS & FIGURES

Project: Largescale Digital Display

Location: Orlando (FL) Int'l Airport

Display Size: 1,231 individual screens viewed as one unified canvas that stretches 10,000+ sq. ft.

Project Management & Installation: SITA Com-Net

Software & Creative Content: Synect

Display Mfg: LG Electronics USA

Total Resolution: 1,329,480 by 1,920 pixels

Primary Goals: Entertain & inform customers; assist wayfinding



Have you met Annie the Astronaut?
Can you spot Fred the Fish?

Annie and Fred are just a couple of the creations that Orlando International Airport (MCO) presents to visitors on a digital ecosystem that so far includes 1,231 high-definition displays.

The design concept, known internally as "The Orlando Experience," is designed to engage, entertain and inform travelers. Chief Information Officer John Newsome notes that it also contributes to each of the top-level goals established by the Greater Orlando Aviation Authority: customer service, economic development, safe/secure facilities and fiscal responsibility.

Built for 24 million annual passengers, MCO is currently pushing 47 million, reports



JOHN NEWSOME

Scott Goodwin, assistant director of airport operations. The extra passenger volume and an ongoing \$4.27 billion capital improvement program keep airport officials exploring new ways to maximize existing facilities. As Goodwin explains it, the challenge is to create memorable experiences, even when the airport is crowded.



SCOTT GOODWIN

Travelers have options, adds Rod Johnson, assistant director of public affairs. Offering "The Orlando Experience" encourages them to choose MCO, he explains. Johnson also cites the program as one of the many reasons MCO earned the top customer satisfaction ranking for mega airports in the 2017 and 2018 J.D. Power North America Satisfaction Studies.



Enhance Passenger Experience

BY JODI RICHARDS

Digital Canvas

“The Orlando Experience” is presented on matrices of narrow-bezel monitors that display high-definition, full-motion video content. Viewed as one large display that stretches more than 10,000 square feet, the total resolution would be 1,329,480 pixels by 1,920 pixels.

The information and entertainment presented varies according to location. A “continuous flow” allows MCO to manage the customer experience from check-in, through the security checkpoints and, ultimately, throughout the facility, Goodwin explains.

About 700 screens located behind the check-in counters allow the airport to assign positions based on actual airline operations. This flexibility optimizes the use of resources without loss of airline branding. As MCO evolves toward a common-use platform, the technology will allow the airport to operate more dynamically to support its airlines, notes Goodwin.

Content can be changed frequently, and nearly in real-time. For example, if a diversion causes a carrier to need additional check-in counters, MCO can expand the airline’s brand and space within seconds. “With common use, we have the flexibility with the push of a button to expand and contract as needed,” Goodwin advises.

Information for travelers such as flight departure times, checkpoint wait times and promotional videos can also be displayed on the digital canvas. When airlines are not using the counters, the backwalls feature community information and entertainment or games such as Fred the Fish.

At the security checkpoints, digital content includes the gates served at that checkpoint, dynamic estimated wait times and TSA requirements. Directional signs guide travelers with information about the location of airline counters, departure gates, TSA checkpoints, bag claims, elevators, and more.

Full-motion video capabilities allow movement of icons such as arrows and the animated Annie the Astronaut to capture the attention of travelers. Many of the signs are “smart,” so content can be tailored to the audience based on the season, time of day or location. For example, a display near an arrival from Brazil could include messages in Portuguese.

“The content is developed to include not just the information needed for a specific location, but also for enjoyment of our travelers and to instill a sense of place that is consistent with ‘The Orlando Experience’ —a calm, comfortable environment that blends air and light, water and foliage, and art,” Newsome explains.

Screens behind check-in counters display general interest content when they are not needed for airline logos and flight information.



MCO wants to create memorable experiences that make visitors want to return and talk glowingly on social media, adds Goodwin.

Toward that end, the airport's Find Fred the Fish game encourages travelers to hunt for a friendly aquatic creature in various scenes depicted on digital displays throughout the facility. A digital, animated take on *Where's Waldo*, the game is designed to entertain passengers and take their minds off long lines or wait times that might exist.

Annie the Astronaut is becoming MCO's ambassador, Goodwin reports. The plan is to grow the character and create scenes where Annie demonstrates different tasks, such as divesting and moving through the TSA checkpoint.

Creative Collaboration

The airport contracted Synect, a visual communications company, to provide software, integration, support and creative services. "It's a common effort," Goodwin says. The airport provided the vision and parameters; Synect leveraged its creativity to develop content.

Yahav Ran, the company's chief executive officer and founder, notes that airport officials wanted the digital content to be informative and fun for travelers. "That was the main goal, and I believe we achieved it together — and then took it up quite a few notches from an innovation perspective and capability," he relates.



YAHAV RAN

Airport officials were clear that they did not want content to look cheap or contain advertisements, Ran adds. Keeping the look and feel of the new digital material on par with the existing spirit of MCO was key, he notes.

"It is important to make our travelers feel comfortable, safe and well informed to ease and speed their journey; to remind them what Orlando has to offer; and to entertain them," Newsome explains.

Working closely with MCO and conducting its own research, Synect developed digital content to align with the airport's diverse passenger demographics. "We had a chance to really learn about the specific Orlando experience," Ran explains. Observing passengers and noting details about their wardrobe, luggage and behaviors helped Synect develop a comprehensive picture of the people that travel through MCO.

A four-month pilot program using about eight displays proved helpful for the creative process. "It gave us the ability to test what would work and what wouldn't, and was a very successful element before going to the bigger project," reflects Ran.

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When developing content, the team considered numerous concepts. It also tested animation speed, display size and color use to ensure that content was readable, but not too bright or nauseating. “We went through a lot of different sketches and story boards with airport staff to make sure what would be the most successful, given what they know of the passengers and what they’ve seen,” explains Ryan Boyle, creative director at Synect.

Creative personnel made about 50 revisions when creating Annie the Astronaut. “It was the same with all the other characters and experiences,” says Boyle, explaining that team members constantly assessed whether an image or look would represent the airport well and make passengers feel comfortable. “It’s definitely been a partnership,” he reflects.

Before any content is presented to the public, it must first pass through two separate review groups: one for brainstorming, review and guideline-compliance and another at the executive level.

Rather than requiring 24/7 operator control, Synect’s system is largely autonomous. It also allows complex playback of imagery, video and dynamic HTML5 content or a blend of all because of its seamless integration with MCO’s airport operations database, notes Ran. “It knows which airlines are supposed to be where and how big the canvas behind it will be,” he explains. “The system is ready with specific content and scenarios, and can dynamically change by itself based on the input that is injected.”

Airline Branding

In addition to developing content for the airport, Synect worked with MCO’s airlines, each with its own brand guidelines, logo and colors. Ran says it was a challenge to create a single canvas that blended with the airport atmosphere and also allowed each airline to have its own look, feel and experience.

Synect helped each carrier’s marketing team navigate the process of executing its own brand on the digital platform. Under their lease agreements with the airport authority, airlines receive a base package of branding for their functions, but they can independently contract with Synect to “jazz it up,” says Goodwin.



RYAN BOYLE

That said, there are standards and guidelines the airlines must follow, and MCO has final say over the look and feel of all content. “We don’t want one carrier’s logo to be 4 feet wide next to another that is 1-foot wide,” explains Goodwin. The airport also wants to keep the digital canvas from becoming an overly commercial platform with flashy lights or too much movement. “We’re looking to ease the anxiety and stress that people may associate with travel and keep it pretty calming,” he remarks.

The layout of the digital canvas has a unique aspect ratio—it’s not like a typical display on a mobile phone, tablet or television. As a result, content must be carefully crafted to display correctly on



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TOP LEFT: Los Angeles International Airport – United Terminals 7 and 8
TOP RIGHT: Fort Lauderdale International Airport – Runway 10R/28L
BOTTOM: Bermuda International Airport

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Airport-Wide Digital Messaging

The massive display system at Orlando International Airport (MCO) includes more than 1,200 high-definition screens that present a blend of information and entertainment throughout the facility. Content is specifically designed to support MCO's passenger experience and business goals.

The primary physical components of the system are:

Curbside

A collection of 32 screens welcomes arriving passengers, displays airport branding and facilitates wayfinding.

Check-In Area

A long digital canvas made of 700 individual screens displays airline branding, automatically-updated flight information and travel-related data. It also aids wayfinding and runs videos to improve the passenger experience and decrease perceived wait times. Bump-outs that provide additional check-in areas are outfitted with 32 displays that are also connected to the airport's digital communications system.

Grand Hall Message Board

A 30-display video wall greets travelers arriving/departing on the airport's automated people mover with games, features about the local area and messages such as construction announcements. The display is three screens high and 10 screens long.

Wayfinding

Throughout the North Terminal and automated people mover system, 434 displays help visitors find gates, restrooms, concessions and other key areas. Wayfinding signs feature Annie the Astronaut, who moves, gestures and dances to entertain passengers as she guides them through the airport.

Pylons

Three displays present airport branding to passengers traveling through the automated people mover area.



Hundreds of the new digital displays are devoted to wayfinding.

the screens, but also be flexible to change. For example, if an airline needs to expand its footprint by adding additional check-in counters, the branding information must be adaptable to new locations.

Digital displays allow the airlines to go beyond the limits of traditional printed material. "They can engage with passengers...have some motion and make a really big impact," Boyle comments. Moreover, if airlines rebrand or the airport changes carriers, digital material can be adjusted more quickly than print.

Although the airport anticipated some resistance to changing the dated 3D branding on walls behind the check-in counters, Goodwin reports that airlines are enjoying the benefits of the new, more dynamic operating environment.

Visual Landscape

Operating capabilities and logistics were carefully considered, including display size, reflective lighting, viewing distances/angles, display lifespan and hardware requirements.

The design of content is specifically adapted for different touchpoints throughout the passenger journey. "Touch and go" is the strategy for curbside areas, because travelers need quick but thorough information. Content is brief, bold and crafted to focus passengers' attention on what they need to do next, explains Ran.

Inside the check-in area, backwall airline branding and videos of Orlando scenery are designed to provide a soothing atmosphere.

Digital wayfinding guides travelers to the next steps of their journey.

Characters and graphic icons add to the wayfinding experience in ways that printed material can't, Boyle observes. Motion can subconsciously guide people to where they need to go, while also reducing potential stress, he explains.

"Annie can nudge and point you in the right direction," adds Johnson. "It all goes back to the overarching philosophy of The Orlando Experience, which is about putting the customer first and ensuring that passengers have the best possible experience. Enhancing wayfinding was one of the key points,"

Boyle describes the content as exciting and engaging. "It feels like you're going on an adventure or journey," he remarks.

Another opportunity the system affords is the ability to create facility-wide campaigns. For example, the airport celebrated Independence Day by showing subtle fireworks and patriotic elements on its digital displays—without distracting from the core information being presented, notes Boyle.

Synect even incorporated Annie the Astronaut into patriotic scenes. "The entire airport felt like it was themed...It was 4th of July everywhere," he remarks. "The idea is to make sure it works together as a whole, throughout the entire airport ecosystem."

Going forward, the airport plans to have similar campaigns for other holidays and seasons.

Cost/Benefit Analysis

When games like Find Fred the Fish are displayed on monitors, adults and children alike point and play along. "They are smiling and happy," Boyle reports. "Sometimes, the line backs up because people aren't paying attention to the line—they're having these moments, these experiences of being entertained. Anything that can help make the experience a little bit less chaotic is good for the passengers."

Online feedback is similarly positive. "The cool thing is people are taking pictures in front of these large displays and posting them on social media," he adds.


Because the digital displays were installed in the midst of a major refurbishment, airport officials say it is difficult to quantify specific project costs. In a similar vein, it is also difficult to measure the concession revenue that might be lost from confused or frustrated passengers, notes Goodwin. "There's an investment, but if we're getting rewards, recognition and efficiencies, there's definitely a payback we're benefiting from," he comments.

Looking Ahead

In early October, infrastructure upgrades were nearly complete; and all ticket counter backwalls were slated to transition to the new digital platform. Goodwin reports that wayfinding will be upgraded to digital "where it makes sense," and the airport will continue deploying themed content to engage and entertain travelers. "For the most part, the future is about the content and getting creative," he notes.

The digital ecosystem is being extended to the South Terminal C Complex now under construction, and additional elements and refinements are in process for terminals A and B in the existing North Terminal Complex.

Other potential uses for the system include redirecting customers around construction or crowd control at security checkpoints. "We could adjust to the dynamic environment of human behavior by communicating to them through the signage," he explains.

Ran notes that the digital displays provide the airport with added flexibility to react very quickly to a variety of operational situations. 

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San Diego Int'l Fast-Tracks Federal Inspection Station Project

BY THOMAS J. SMITH



FACTS & FIGURES

Project: New Federal Inspection Station & International Arrivals Hall

Location: San Diego Int'l Airport

Owner: San Diego County Regional Airport Authority

Size: 130,000 sq. ft.

Cost: \$229.4 million

Funding: Airport funds; passenger facility charges

Design & Construction Timeline: 12 months

Project Manager: Turner/PCL

Architect/Lead Designer: Gensler

Staffing: 227 subcontractors; 3,568 construction workers; 1,000+ security access badges

Mechanical/Electric/Plumbing Engineers: Syska Hennessey Group

Structural Engineer: MKA

Civil & Special Systems Engineers: Burns & McDonnell

Fire Protection Engineer: Jensen Hughes

Landscape Architects: LdG

Temporary Construction Walls: McCain Mfg.

Wall Installation: Brady SoCal Inc.

Key Benefits: Improved throughput; enhanced customer experience

Sustainability: Targeting LEED Gold certification



Faced with a growing number of international flights, San Diego International Airport (SAN) needed a new international Arrivals Hall and Federal Inspection Station—and it needed them quickly.

An aggressive timeline scared away all but one design/build team at the beginning of the project. Ultimately, however, the new 130,000-square-foot facility was completed in just 13½ months. Moreover, it features the most advanced passenger screening technology currently in use by the U.S. Customs and Border Protection (CBP).

Although CBP is the primary tenant in the new space, the airport authority funded the entire \$229.4 million project.

The new facility nearly triples SAN's processing capacity for international arrivals. The airport's previous 20-year-old federal inspection station could handle 350 passengers an hour. With 16 booths in the primary inspection area, the new facility is designed to process 1,000 passengers per hour.

After travelers clear Customs, they exit into the new International Arrivals Hall, a public



meet-and-greet space with soaring windows on the bayside of Terminal 2.

The upgraded airside facility includes three new gates attached to Terminal 2—each with two jet bridges, elevators and escalators. All of the new gates can “swing” between supporting domestic flights and providing the sterile, isolated environment that is required for international flights. The facility accommodates a variety of aircraft sizes on six gates.

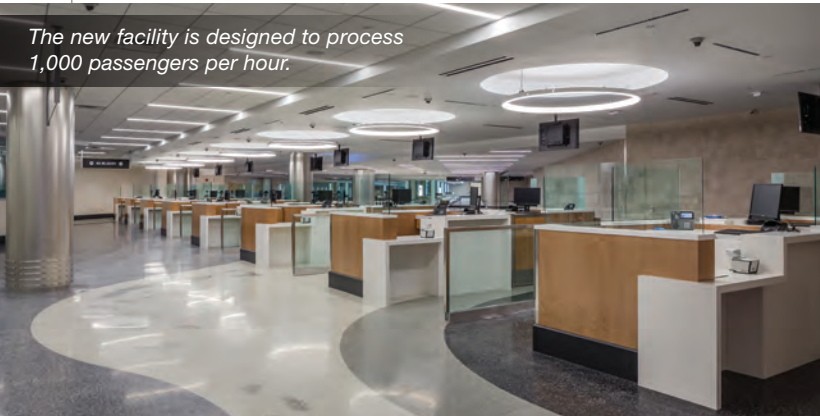
The old facility had three international gates, but could not handle three wide-bodies at the same time, explains Bob Bolton, SAN’s director of design and construction. Four of the new gates were operational by July; the remaining two were slated to be

ready by next summer—in time to serve additional international flights that have already been scheduled by carriers, notes Bolton.

Growth-Driven Urgency

SAN officials originally wanted to add a new federal inspection station when the airport constructed a new Terminal 2 during its Green Build, which concluded in 2013. The air service marketing staff projected that by summer 2018, station demand would reach 850 passengers an hour. However, the airlines would not support a larger facility since it was not needed at the time, Bolton explains. As a compromise, Terminal 2 included empty shell space to house a new inspection station at some point down the road.

The new facility is designed to process 1,000 passengers per hour.



“By 2016, it was apparent that we needed additional capacity,” Bolton recalls. Planners also realized that the shell space alone would not accommodate new CBP requirements.

In new projects, the agency was replacing its traditional two-step screening process with a bags-first approach that requires more specific square footage not originally built. Confined within a sterile environment, deplaning passengers retrieve their luggage and then proceed to a primary inspection area. “It is a real game-changer for the passengers, because they only have one interaction and off they go,” explains Bill Snyder, the CBP port director for the Port of San Diego.

In the end, an additional 54,000 square feet was added to Terminal 2 to accommodate the flow associated with the new bags-first process.

Like other recent SAN projects, the new federal inspection station and International Arrivals Hall was a design-build initiative. “As we went through the pre-qualification phase, we made the requirement that it must be completed by June 30, 2018,” says Bolton. “This all but eliminated one team. The others either had too much on their plates or felt this was too complex for one year.”

The joint venture of Turner/PCL and its lead designer, Gensler, tackled the project head on. Both were alumni of SAN’s Terminal 2 projects. The continued involvement of key players with “embedded knowledge” was crucial to giving the team confidence that it could meet the tight deadline, says Ben Regnier, Gensler’s project manager.



BEN REGNIER

“We came in with a design of what we wanted to achieve; and the project was so fast-tracked that we really did not get a chance to change anything,” notes Regnier. “We wanted to ease the traveler off the plane and onto U.S. soil in a way that did not add to stress and confusion. We tried to make it feel like it was a local San Diego arrivals facility.”



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Designers consequently specified wall colors, illustrations and textures that highlight the six distinct landscapes found within San Diego County. Notable features include a “welcome sunrise” on the third floor, a canyon-like escalator core and a shoreline-inspired space on the ground floor. Two new art installations were coordinated into the design and provide additional finishing touches.

Challenge Met

“We really pushed ourselves very hard,” says Dave Cattle, the executive that Turner/PCL put in charge of the project. “We agreed to design team commitments early, we had a highly aggressive schedule, clearly defined responsibilities and a coordinated plan that we executed extremely well.”

The project was approved in March 2017; the official ground breaking occurred weeks later in mid-May; demolition began the next day; and the occupancy permit was granted one year later to the day.

Over the year, the project involved 227 subcontractors and 3,568 construction workers. More than 1,000 personnel required security access badges.

At one point, the team had more than 60 staff members overseeing the project—about twice the normal amount for a

similar size project due to multiple shifts and 30+ separate work sites around the airport. Two full-time schedulers were also assigned to the project.

Throughout most of the year, the project required three shifts of workers. Most construction could only be completed during the limited hours each night that the airport was closed to the public.

Cattle explains that the team agreed to a design schedule that enabled the steel to be designed, bid, fabricated and onsite by Aug. 1.

Project challenges included a local building boom that sometimes made it difficult to secure subcontractors. “As an example, we could not get a roofing contractor during the spring for a week of work, because they were flat out doing 100% schools at the time,” he recalls.

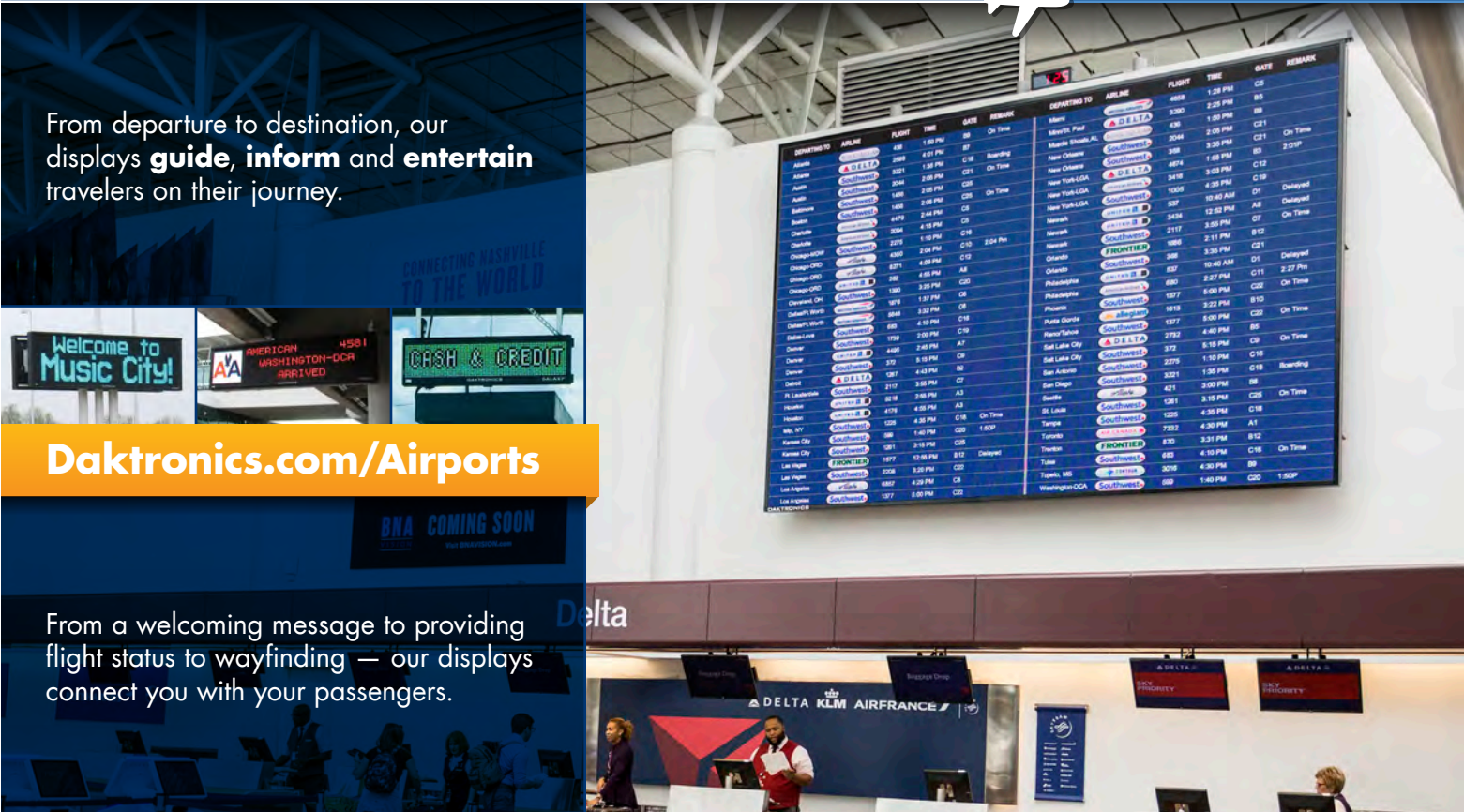
The team met weekly with stakeholders, including CBP. At times, there were separate bi-weekly meetings with CBP just to deal with technology issues. “A lot of time was spent just making sure we were doing the right things,” says Regnier.

A separate committee was established just to deal with “unexpected situations.”

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Mid-Project Biometrics

To meet CBP design standards, SAN installed biometric screening equipment at all 16 inspection booths. The challenge to the airport and its design-build team was that the standards evolved during the project.

When the project began, facial recognition technology was being tested in just two airports: Washington Dulles and Atlanta International. As the project progressed, CBP determined what equipment was working and decided what it wanted at SAN. Unfortunately, this occurred six months into the 13½-month project, notes Regnier.

As soon as CBP specified the equipment it required, the airport quickly purchased it. Each booth is equipped with a camera to photograph travelers and facial recognition technology to compare the photos it takes with those CBP has on file from passports and other travel documents.

Because the facial recognition technology was relatively new at the time, the airport purchased 10 Automated Passport Control kiosks for the new facility as backups. The airport allowed CBP to test the new equipment in the old/existing inspection station to “get the bugs worked out and to train their staff,” Bolton explains. “The day we opened, the equipment worked beautifully.”

Ultimately, the Automated Passport Control kiosks were never used; and SAN plans to sell them to other airports that are not slated to use the new facial recognition technology.

With the new equipment, CBP officers have more time to converse with passengers. “It now happens so quickly, and we are saving time in the process,” Snyder reports. “I have heard nothing but good comments from stakeholders and passengers.” ✈️

San Diego Int’l Upgrades its Construction Barriers

To meet officials’ high expectations for maintaining a great customer experience, the team designing the new Federal Inspection Station at San Diego International Airport (SAN) specified a new product to wall off construction zones from the traveling public.

Designers opted for reusable modular units rather than temporary drywall or Formica-covered particle board barriers to keep passengers and other customers out of work areas.

At one point, there were 20 separate construction sites within the terminal that needed to be screened from the public, notes Bob Bolton, director of design and construction at SAN.

Project documents for the new facility called for high-quality walls that could be installed with minimal mess and inconvenience to passengers. They didn’t, however, specify a specific brand.

“It was up to the design/build team as to how to meet these requirements,” says Bolton. Project manager Turner/PCL specified McCain Walls based on positive experiences it had with the product during previous projects. Dave Cattle, a Turner/PCL construction executive, notes that it was very important for SAN to maintain the expected customer experience throughout construction and at all times meet the schedule.

“We’re on a mission to ‘help save the planet, one wall at a time’,” says Jeffrey L. McCain, chief executive officer/founder of McCain Manufacturing. “We have invented what we believe is a 21st century, sustainable solution to drywall, and are proud to help enhance green airport construction across the U.S.”

The walls are made of steel frames covered with shaped aluminum panels that have a high-gloss white finish. McCain personnel say they are like a “giant Lego system” because the modular components are easy to assemble and offer many visual options.

Great spans of McCain Walls were installed overnight with none of the mess associated with erecting, sanding and



painting drywall, notes Lisa McGuckin, president of PanAmar Inc., a sales agent for McCain Walls. The airport also saved the time and cost of tearing down and disposing drywall structures after the project was complete. Crews at SAN were able to dis-assemble and re-install the McCain Walls elsewhere the same night in a different configuration. Eventually, all parts of the wall system can be recycled.

Airports can customize the pre-painted panels with easily removable graphics, explains McGuckin. SAN decorated some of its temporary walls with directional signs and images from the annual Comic-Con festival. Reusable elements cost \$10 to \$20 per square foot.

The first large-scale installation of McCain Walls occurred in 2016 at Aria Resort Casino in Las Vegas. Los Angeles International was the first airport application, and SAN first used the system at its facilities while renovating restrooms last year. Since then, 11 other airports have followed suit. Typically, drywall contractors or general laborers install the walls, notes McGuckin.

At SAN, a six-person crew installed a 450-foot-long McCain Wall in 2½ nights. According to Cattle, using the temporary barriers helped the construction team meet its tight one-year schedule for the 130,000-square-foot facility. ✈️

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Ohio State University Airport Unveils New Terminal/Flight Training Center

BY JENNIFER BRADLEY

FACTS&FIGURES

Project: New Terminal

Location: Ohio State University Airport/Don Scott Field

Primary Components: Administration Offices; Fixed Base Operator; Flight School

Size: 2 stories; 29,500 sq. ft.

Cost: \$15 million

Funding: \$10 million from Knowlton Foundation; \$2.5 million from hangar rental; \$2.5 million from other donors


Project Timeline: Design process began in 2015; construction started in fall 2017; facility opened Aug. 2018

Architect: Moody Nolan Inc.

General Contractor: Whiting-Turner Inc.

Notable Features: More overall space; larger, upgraded teaching areas; new observation deck; Buckeye décor; improved amenities such as Wi-Fi coverage, charging stations & 19 televisions

Proposed Future Projects: 1,000-ft. runway extension; corporate air park; self-fueling station; aerospace & aviation academic/research laboratory

 What began as a 1942 military training facility and group of outdated buildings is now a modern general aviation terminal, fixed base operator and flight school all in one building. In August, Ohio State University Airport/Don Scott Field (OSU) opened its new \$15 million Austin E. Knowlton Executive Terminal and Aviation Learning Center.

The airport, located just 11 miles northwest of downtown Columbus, owns/operates the fixed base operator and runs the university flight training program, which is also open to the public. Airport Director Doug Hammon explains that OSU Airport's main mission is to support the university's teaching, research and outreach activities, but it also functions as a traditional airport. In fact, it's the third busiest in Ohio. "We try to balance those things and think we do it pretty well," Hammon remarks.



DOUG HAMMON

The airport became public in the late 1950s and '60s, after receiving federal funds for runway improvements. From there, it has grown into a tier one university research support center *and* one of the state's leading corporate airports, says Hammon.

"Through this project, we've been able to not only have modern amenities for the airport, but also have a facility to provide aviation students a greater insight into the industry and world," he adds.

Then & Now

Consolidating OSU's three separate, aging buildings into one modern facility has been a welcome transformation for airport customers and staff. "The terminal was built in 1942 and trying to operate successfully in 2017," Hammon explains. "The flight school was an old office that was never designed for a flight school; it was too small. The administration building was old and didn't provide teaching facilities to help students or an attractive entryway to central Ohio."

Today, all these boxes have been checked. "The airport offers a grand entrance, and there's so much space now," says Mike Eppley, general manager of the airport's fixed base operator (FBO).



MIKE EPPLEY

"We were in a 1940s building, and now it's a 2018 building. There's just something about it that is a hundred times better!"



Five years ago, airport officials began serious conversations with the Knowlton Foundation. Its benefactor, the late Austin E. Knowlton, was an aviation enthusiast and had expressed a desire to provide funding for OSU Airport.

The foundation consequently provided the \$10 million needed to move the facility project forward, and the remaining \$5 million is being generated through contributions from other donors and revenue from 54 new T hangars. Revenue was available shortly after construction, as the hangars were promptly filled by a waiting list of more than 130 aircraft operators wanting space at the airport.

One of the foundation's specific goals for the new terminal facility was to include a space for pilots and students to interact. "You know pilots love to talk, and students do, too," Hammon muses. "If they can get together and simply share stories, then students can understand what the life of a pilot is like before they get out there. That was the foundation's vision and what brought us all together in one facility."

The design process began in 2015 and took about two years. Construction started in fall 2017, and the new terminal and training center opened this August. Minor cosmetic touches and final clean up are still underway.

Core Curriculum

A university airport is a unique business. It has an educational component but must also function efficiently for other users. During the initial design stages for the new terminal at OSU Airport, it was imperative for the airport team to educate university officials in charge of

construction projects about the inner workings of an FBO/flight school and their operational needs, such as longer runways.

"We had to help them understand our industry and what needed to be included in those structures so we could be the best business possible," Hammon explains.

The new FBO/training building is two stories tall, with large glass windows overlooking the airfield. In the first week alone, dozens from the surrounding community came to see the airfield from the new observation deck. "We really built this space to be interactive with the community," Hammon says, noting that a public open house is being planned for early 2019. To help fulfill that outreach mission, the airport opens its doors to more than 2,500 youth each year.

While some visitors miss the old terminal's 360-degree view, Eppley reports that the new views and other facility upgrades have been well received by customers, community members and staff.

Some customers fly into the facility simply to use the airport's meeting space for local appointments or conferences that involve attendees from various locations. Three classrooms on the second floor can accommodate 50 people each, or the spaces can be combined to create one more expansive room for conferences and other large events.

Hammon suspects that the airport's calendar is already filling up with reservations for the rental space because it boasts such a nice, full view of the airfield. As word spreads about the facility and passengers see it as they arrive and depart the airport, the team expects demand will continue to grow. University alumni are already enthusiastic about the Buckeye theme throughout the facility, and usage is anticipated to be especially high during this and future college football seasons.

"Normally, we book one bus per weekend to take people to the game," says Eppley. "Just knowing how this place will attract people, I've already booked two. A lot of alumni have flown in for years and will really be looking forward to coming through the new terminal."

Improved Wi-Fi coverage, USB charging stations throughout the new building and 19 televisions (vs. just one previously) promise to be particularly popular amenities. "New carpeting and flooring are pretty good, too," jokes Hammon.

Training the Next Generation

"As we all know, we have a pilot shortage," says Brandon Mann, the university's director of flight education. "We have now seen our enrollment numbers increase dramatically to 115 students—the highest we've seen in nearly 20 years."

Mann credits the recent surge of interest in the flight program to the new building, which has more space, improved teaching areas and updated technology, including a new dispatch system. Private testing rooms were added to help students concentrate, and flight instructors no longer battle to reserve space, because there are now three classrooms rather than one.



BRANDON MANN

Designers improved the entrance to the flight education terminal and added glass walls to provide a direct view into the simulator labs. Overall, the added space and modern upgrades have been a tremendous benefit for students and teaching staff, notes Mann.

By design, OSU's training program and new facility offer ample opportunities for interaction between students and professional pilots, especially corporate pilots. The goal is to increase enrollment to 200 students in the next five years and phase out older aircraft with seven Cessna Skyhawk 172 trainers donated by NetJets.

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“They are G1000 full auto-pilot aircraft, so our students are getting state-of-the-art technology to learn with,” says Mann. NetJets has been a strong partner with OSU for a long time, and the donated aircraft are the latest of many contributions to improve student learning and expose them to advanced aviation technology.

Non-aviation departments from the university also use the airport for course work such as city planning engineering and drone activity. Other nearby universities use the facility, too. All students from all departments and schools can register for flight training to earn a pilot’s license.

Of about 100 airport employees, 30 to 35 are students. “Talk about hands-on experience!” says Hammon. “On the weekends or evenings, you’ll probably see more student employees than full-time staff.”

Next Steps

Currently, the OSU Airport team is in the process of a master plan update—the first since 1990, when the university decided to keep the airport. The facility’s importance for research and outreach was more fully realized, and the time came to move forward with the next steps, Hammon explains. The team’s goal is to send the master plan up the chain to the FAA in early 2019.

The next major initiative in the current master plan is a 50-acre corporate air park. Discussions are in the works whether to develop infrastructure for leased and/or occupant-built structures, or to let an outside company develop and lease all 50 acres. Decisions will likely be made within the next half-year.

The second master plan project is a much-needed runway extension. “This has been in the books since the ’80s,” Hammon remarks. “We have 5,000 feet, but we really need 6,000 so the airport can physically fit the level of planes our corporate customers use.” Several corporate clients would like to be able to make trans-Atlantic trips without stopping at the coast to refuel.

Safety is the other main impetus for the runway extension project. “It’s kind of dicey in winter on the 5,000 feet,” Hammon explains. “That extra thousand feet for landing would be good to help stop on ice; or, on a hot summer day, to be able to get out better.”

Extra runway length would also help with noise issues, as aircraft won’t need as much

power to climb out. The airport is now surrounded by a suburban area, but that wasn’t the case 75 years ago when it was built.

“When someone hears the term ‘runway extension,’ the first thing they will think is bigger, louder planes,” he says. “That’s not the case. The longer runway will actually allow aircraft to operate more efficiently. We want to help improve the noise situation for neighborhoods around the airport.”

If approved and funded, the runway extension and corporate park will complement the new Austin E. Knowlton Executive Terminal and Aviation Learning Center, which is already making its mark serving the university and surrounding community. ✈️



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Dallas Fort Worth Int'l Improves Diversion Process with New Software

BY KRISTIN VANDERHEY SHAW



Plagued by the frequent need to divert flights due to severe weather, Dallas/Fort Worth International Airport (DFW) recently harnessed the collective brain power of the North Texas Irregular Operations Network to improve timeliness and predictability for passengers.

The network, which includes all 23 airports in the DFW diversion area, developed a plan to ensure communication, coordination and collaboration between DFW and its diversion airports, airlines and government agencies. The primary goal: to address and mitigate the effects of diversions on passengers. An important part of the strategy was to get all of the airports on the same technology platform to help them make decisions as early in the process as possible.

Leaders at DFW created an internal Irregular Operations Committee, comprised of stakeholders from various sectors. Together, they applied predictive weather software to better understand the convective weather patterns that disrupt operations, and devised plans to prepare for them. The data DFW needed existed, but it was in disparate systems. The team found that when it came to diversions, they didn't have the right tool to communicate all of the variables with the other airports in the North Texas system in real-time.

"One airport might have as many aircraft and passengers as it can handle, and the pilots wouldn't know it until they were already on the ground," says DFW Vice President of Operations Paul Sichko.

While many airports welcome diversions from a revenue standpoint due to added landing fees, concessions sales, gate fees and more, they all want to provide the best service for inbound passengers. And that means operating within their capacity.

"When passengers are diverted, they are still DFW customers," says Sichko. "We don't want to overload any of our diversion airports, and we want to make sure all passengers are cared for. Our goal is to spread out diversions for more efficient recovery."

Rose Agnew, an irregular operations specialist with Aviation Innovations, was working with DFW when Sichko arrived to lead the team; but he already knew Agnew from his 25+ years at Minneapolis-Saint Paul International Airport (MSP). DFW engaged Aviation Innovations to create an effective strategy to plan for diversions and meet Department of Transportation regulations.



PAUL SICHKO



FACTS & FIGURES

Project: Irregular Operations/Diversion Management

Location: Dallas/Fort Worth Int'l Airport

Project Consultant: Aviation Innovation

Software: PASSUR Aerospace

Cost: Based on complexity of operations & number of participating stakeholders

Funding: Airport & resident carriers

Implementation: Feb. 2018 – April 2018

Key Benefits: Refining diversion management strategy to improve passenger service; spreading diversions more strategically among other airports in the region

The project team was looking for an enhanced communication system and approached PASSUR Aerospace, which was already operating at DFW with software to help manage landing fees. PASSUR offered a collaborative information exchange platform called Airport Communicator, and DFW was intrigued by its chat room, in which airports, airlines, the National Weather Service, and air traffic can all talk to each other.

The team asked PASSUR if it could develop a visual/graphic tool based on the chat room concept in Communicator to help manage diversions and provide reliable diversion management predictive analytics. In turn, the company developed DFW's idea into a system called Regional Diversion Manager.

"The DFW team felt it was important to take a leadership role and give their passengers the best possible travel experience," says PASSUR Senior Vice President Douglas



DOUGLAS HOFSSASS

Hofsass. "They're on the leading edge of collaboration with their diversion airports...What makes this different from other approaches is that the main airport (DFW), the airlines and each of the 23 reliever airports have a window into real-time status and collaborate with each other in advance of, during and after irregular operation events."

Improving Customer Service

Before the new system was in place, four of DFW's 23 possible diversion airports were frequently receiving 50% of its diversions, explains Hofsass.

"Part of what was happening was that the airlines and crews were comfortable with specific airports. Based on their fuel capacity, the airlines sent the diversions to the carriers' preferred airports first. The problem, then, is if other airlines are diverting to that same airport, they can overtax the facility," he elaborates. "So, if you're a dispatcher, you can see that one airport has run out of gates and is operating with only four fuel trucks.



And you might look at another airport and find there is plenty of capacity and staff there instead. Now, the airports are constantly updating their respective status so the route planners can see where to optimally divert."

The Regional Diversion Manager software identifies holdings, diversions in progress and diverted flights from all operators, and also updates the remaining service capacity for each diversion airport.

"The most important aspects are active stakeholder participation and data sharing in real time—executed in a way that everyone benefits," summarizes Hofsass. "DFW is looking out for its customers. During irregular operations, passengers experience minimal disruption and get to Dallas in a thoughtful way."

The system uses PASSUR Air Traffic Management automation as a base, supplemented by user updates on mobile devices. As a result, stakeholders stay abreast of new information and have the ability to communicate in real time. Information is visually organized on a graphic web dashboard for live, collaborative coordination.

One can imagine the snare of information that must be untangled across the system when a diversion is in progress. While airports often look forward to taking a diversion, they know that if they don't have the resources or facilities to handle it, the event

The new system helps DFW coordinate diversions with 23 nearby airports.

will not reflect well on them, explains Hofsass. The new system helps airports determine their readiness and meet regulatory concerns.

"When an aircraft is diverted to an alternate airport, there are revenue and customer advocacy components to consider: fuel, concessions, landing fees, etc. Having a better distribution allows the diversion airports to equalize the revenue and provide good service," he

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A Perfect Storm for Diversion Management

April 2012 is a time that Dallas/Fort Worth International Airport (DFW) would like to forget. That month, heavy storms—some including *baseball*-sized hail—caused a record 800 flight cancellations and 550 delays.

In 2016, DFW was number nine on the Weather Channel's annual top 10 list of most weather-delayed U.S. airports (a dubious distinction it has since shaken). In short, the entire metroplex area is highly prone to slow-moving thunderstorms—especially during the summer.

Spring is no picnic either, because that is when convective activity spikes. Convection is the circular motion that occurs when warmer air rises, and cooler air drops. The sun heats up the surface of the earth, and cooler air meets it, creating an upward current. The result can be wind, clouds, storms and other inclement weather.

Not surprisingly, all that bad weather wreaks havoc on the DFW's schedule. "We're at a frontal boundary that is conducive to thunderstorms in Oklahoma and Texas," explains Vice President of Operations Paul Sichko. "There are more diversions from DFW than any other airport in the U.S."

While some of DFW's diversions are caused by medical emergencies, mechanical malfunctions or even security concerns, the vast majority are due to the region's stormy weather.

relates. "In the past, when the airports received too many diversions, they would run out of gates and equipment, and they could not serve the customers properly. Now, operational decision makers can divide total diversion demand among all available regional airports."

As the system uses advanced data processing and traffic management automation to manage diversions, airports in the North Texas Irregular Operations Network update their capabilities to service diversions accordingly.

"We partner with the air carriers so we know where its assets are—aircraft, crew and passengers—and do our best to get them back here," says Sichko. "We try to minimize the number of passengers spending the night at diversion airports and safely get people to their destination and as quickly as possible."

Hofsass considers the new system a great example of collaborative decision making: a shared common operating platform with real-time data and informational updates that are actionable in the process. It's not isolated to a specific group of stakeholders, but open to the community, he explains.

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Group Effort

When there is a high probability for an irregular operations event, the PASSUR system begins to generate a plan as soon as flights are identified as likely candidates for diversions. The operations team monitoring the dashboard will know precisely which aircraft is arriving and when, because the system has identified and managed it.

“The new process helps keep things organized,” says Fabio Spino, chief financial officer at Tulsa International Airport (TUL).

“Because we have a maintenance base here for American Airlines, we get a lot of diversions, and it allows us to track when we can expect a larger number of aircraft to arrive. It really helps us keep track of emergency situations.”


FAA regulations mandate that before an aircraft departs, a primary and secondary diversion airport must be designated by the carrier. If either changes, personnel at each end must concur. Sichko offers the following example to explain why: American might know it can put eight planes into TUL easily. But Delta might also think it can send several more, comfortably. However, too many airplanes at one diversion site are not manageable. “This system provides a visual dashboard,” he remarks. “The minute air traffic control changes the destination of the airplane, it counts the number of aircraft on their way to that destination, and indicates in green, yellow and red which sites are available to provide the best service to inbound passengers.”

“Now, we can discern the location of aircraft both airborne and on the ground,” he continues. “When an aircraft is approaching the airfield, the FAA would put it in a holding pattern so we had an estimated time of arrival; but we didn’t really know where it was. Regional Diversion Manager allows us to track an aircraft in a holding pattern. We even know its altitude.”

Sichko considers the new system a “living program” and leads an annual meeting of airport and airlines stakeholders to discover how they can improve it. They also have weekly teleconferences. Ideas generated in the meetings are often developed by PASSUR into program upgrades.

Currently, the DFW team is measuring the impact of the new system with multiple metrics: flights recovered, recovery time, number of aircraft that remain overnight, cancelled flights, etc.

But above all, passenger safety comes first. Coordinating several different airports, operating philosophies and strategies requires a bit of a culture shift; but all members of the North Texas Irregular Operations Network have put aside their competitive nature for the greater good.

“We have always tried to go above and beyond for any aircraft that lands here,” says Spino. “From a customer service standpoint, a little more notice allows an airport to better organize its staff.” 

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Tallahassee Int'l Adds Second Solar Farm & Creates Sustainability Master Plan BY MINDY HAMLIN



FACTS&FIGURES

Project: Solar Farms & Sustainability Master Plan

Location: Tallahassee (FL) Int'l Airport

Project Management/Environmental Services: Michael Baker

Project Timeline: 1st solar farm came online in 2018; 2nd is scheduled for 2019

Sustainability Management Program Completed: 2018

Phase 1 Environmental Site Assessment: Environmental & Geotechnical Specialists

Phase 1 Cultural Resource Assessment Survey: Archaeological Consultants

Geotechnical Subconsultant: Ardaman & Associates

Design Subconsultant: Genesis Group

Tree Survey: LM2 Consulting

Boundary Survey: Poole Engineering & Surveying



Tallahassee International Airport (TLH) is always looking for ways to incorporate “green” elements into its infrastructure development projects and daily operations. It was home to the first solar farm in Tallahassee, and airport officials are redoubling their efforts with another, even larger, farm. Moreover, a sustainability section being added to TLH’s master plan has the potential to make the Florida airport an environmental leader among its U.S. peers.

“As we work to meet the needs of the airport within our community, it is important we have an eye toward sustainability and how it affects the community,” says TLH Interim Airport Director David Pollard. “We



DAVID POLLARD

have a commitment to working with our neighborhoods and others as we move forward with future development.”

When the city’s electric utility department identified TLH as the perfect location for two solar farms, the city-owned and -operated airport moved quickly to support the projects.

“We need to meet the aviation-specific aspects set forth by the FAA and Florida Department of Transportation, but we also need to work so our plans dovetail with the city’s overall plans and directives,” advises Pollard.

The 120-acre, 20-megawatt solar farm that came online in January 2018 is located on airport property, but was financed, built and is operated by Origis Energy USA through a contract with the city of Tallahassee. The airport will collect \$60,000 per year in rent from the city.

The airport earns \$60,000 per year leasing land to the city for a 120-acre solar farm.



“The city of Tallahassee is continually implementing innovative approaches to meet the needs of the community, to protect our environment and grow in a responsible way,” says City Commissioner Scott Maddox. “The solar project at the airport represents the positive outcome that can occur through thoughtful planning and focused collaboration. It also shows that TLH is an able, dedicated partner for development opportunities that extend beyond aviation needs.”

Another 40-megawatt farm is scheduled to be completed in 2019.

Aggressive Schedule

While updating the airport layout plan followed standard procedures, the city’s aggressive timeline for the solar farm presented challenges for Michael Baker, the firm that conducted the environmental assessment for the first solar farm, developed the sustainability master plan and is the project manager. Michael Baker is also preparing the environmental assessment and city environmental reports for the second solar farm.

According to Mariben Andersen, senior associate and environmental manager with the firm, a typical environmental assessment is completed in nine to 12 months. For TLH, it needed to be completed in four and a half months to meet the construction completion date.



MARIBEN ANDERSEN

“The FAA review and agency comments can extend a project,” explains Andersen. “We received commitments from the airport and FAA to *compress* the review process. Everyone agreed comments had to be done within three days. As a result, when we did the preliminary draft, we already had the city’s review completed and had contacted the agencies to solicit comments on the environmental assessment. There was a lot of legwork and a lot of favors to ask.”

In the environmental assessment document, Michael Baker analyzed four possible locations for the solar farm, identified potential impacts and provided a summary of mitigation efforts to compensate for unavoidable environmental impacts. Based on the analysis, airport officials selected the site that does not interfere with airport operations and poses the least environmental impact.



Sustainability Master Plan Goals

In the course of developing a sustainability management plan, Tallahassee International Airport (TLH) set six overriding goals for itself:

- Enhance the airport’s overall involvement within the local community, making it a shared, vested interest and overall asset to the community
- Foster an economic climate that integrates environmental initiatives and supports local business growth, while sustaining and growing aeronautical and non-aeronautical revenues
- Incorporate more green building initiatives and transportation options into future land development design, including reusable and sustainable materials for future airport projects
- Increase energy conservation and encourage employee energy stewardship throughout the airport
- Protect the airport’s natural environment and water quality
- Improve recycling and reusable product usage while decreasing the amount of total solid waste at the airport

“We worked closely with the electric utility department to pull the project together to meet the various aviation-specific requirements and FAA reviews,” recounts Pollard. “Working as one team, we were able to move the project forward quickly to receive FAA review and concurrence.”

Ensuring that plans allowed TLH to remain self-sufficient and self-sustaining, per FAA requirements, was a constant goal throughout the project.

“In an arrangement such as this, revenue diversions could pop up,” Pollard points out. “We do not want to give the property up. We want to maintain control around the departure and arrival areas.”

The final arrangement proved to be a win-win for the electric utility department and TLH, he reports.

“In this case, it was a great fit that met some of the city’s sustainability goals and provides revenue for the airport,” explains Pollard.

Master Plan for Sustainability

As part of its ongoing work with TLH, Michael Baker created the airport’s first sustainability management plan to add to its master plan.

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The focus on sustainability is not new. In addition to the solar farms, TLH installed solar panels on its terminal building in 2011 and electric vehicle charging stations near the terminal in 2016. The sustainability management plan, which was nearing completion in early October, provides an opportunity to take a new look at the airport's efforts, notes Pollard.

"With the master plan, we are developing a much bigger picture as it relates to serving the community we are in," he explains. "At this point, sustainability is an important part of all our future planning."

Pollard points out that the process—from establishing a vision team to developing related goals and objectives—creates new opportunities for the airport. The vision team included members from other city departments and Leon County.

"The sustainability management plan has allowed us to take a fresh look at our efforts and consider how we can have a more formal approach to sustainability as we move ahead," he comments.


To create the plan, Michael Baker and the TLH sustainability vision team established six goals to preserve, protect and enhance the environment, and then developed initiatives to help

achieve those goals.

According to Andersen, the plan's success hinges on the engagement of the airport team. "The sustainability management plan is not just about the airport," she says. "It is about the people who work at the airport and make things happen. We have champions for each objective and goal. We want them to keep working on this plan. The people at the airport are responsible for making this happen."

Initiatives currently under development include:

- ride-sharing programs for employees,
- enhanced community outreach programs,
- green components for new terminal construction,
- tracking and monitoring the sustainability of materials used in construction projects, and
- sustainable landscaping.

"At TLH, we want to reflect our commitment to the environment and the community as we move forward with the airport's development plans," says Pollard. "As we work to meet the needs of the airport within this community, it is important we have an eye towards sustainability and how it affects the community." 

Michael Baker

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Orlando Melbourne Int'l Meets Ambitious Deadline for Multi-Runway Project

BY MIKE SCHWANZ

FACTS&FIGURES

Project: Runway Reconstruction

Location: Orlando Melbourne (FL) Int'l Airport

Scope: 3 runways—3,001 ft.; 6,000 ft. & 10,181 ft.

Cost: \$26.2 million (\$20.8 million for 9R-27L; \$3.8 million for 9L-27R; \$1.6 million for 5-23)

Funding: \$18.2 million FAA grant; \$3.6 million from FL Dept. of Transportation; \$4.4 million airport funds

Construction: 14 months

Lead Engineer: AVCON Airport Engineering Co.

Paving: V.A. Paving; Preferred Materials

Earthwork & Drainage: Don Luchetti

Milling: Mill-It

Electrical Contractors: H.L. Pruitt; New Energy

LED Lights for Main Runway:
ADB Airfield Solutions

Lights for Other Runways: Airport Lighting Co.

Pavement Markings: Hi Lite; Axtell

Landscaping: Nail Farms; Lake Jen Farms

Key Benefit: Ability to better accommodate expected traffic increases in coming years

2017 Traffic: 467,000 passengers; 92,000 flight operations

Commercial Airlines: American; Delta; Elite; Porter

Major Tenants: Northrop Grumman; Embraer; Harris (world headquarters); Rockwell Collins; STS Aviation Group; Thales; Southeast Aerospace; Satcom Direct

Rehabilitating a runway is always a big challenge, and often takes years of planning and fundraising to accomplish. Orlando Melbourne International Airport (MLB) in Florida recently reconstructed *all three* of its runways in just 14 months.

“We could have spaced out the runway construction over several years, but in the end, we decided it was best to do all three runways at the same time,” says Executive Director Greg Donovan. “When I took this job in 2014, I knew right away that one of my biggest challenges would be fixing all three of our runways, which were in poor condition. I was blessed with a terrific executive staff that handled the logistics.”



GREG DONOVAN

The project, which was completed this October, required incredible teamwork, organization and planning, says Dave Perley, director of capital improvement. “The three runways had not been resurfaced in more than 20 years, so we knew that had to be done,” he says.



DAVE PERLEY

“Fortunately, the Florida Department of Transportation recognized our situation, and awarded us grants needed to repair the two smaller runways—9L-27R at 6,000 feet, and 5-23 at 3,001 feet.”

Obtaining funding for the longest runway, 10,181-foot 9R-27L, was more difficult. “We knew we would need a lot more money for that one,” says Perley.

Fortunately, the airport had friends in high places, as Donovan puts it. “President Trump has flown in here twice—once as a candidate in 2016, and once as president in February 2017,” he explains. “On that occasion, I greeted him briefly and mentioned that his plane had landed on a runway officially rated as poor. A few months later, in summer 2017, Elaine Chao, the U.S. Secretary of Transportation, spoke at an international aviation convention; I had the opportunity to speak to her one-on-one about our big need for federal dollars for 9R-27L. She seemed receptive to the idea, but we still had to go through the FAA for the money.”

The airport had initiated its funding request a few months earlier, notes Perley. After meeting with the FAA in late 2016, MLB officials hired AVCON to produce the specific drawings the agency needed within six months.

Meeting such a tight deadline was a challenge, acknowledges Rob Hambrecht, senior project manager for AVCON. “The airport told us they were in line for funds, but we had to prepare very detailed construction plans and grant applications in a relatively short amount of time,” he says. “We had several design teams working around the clock on this project alone. Fortunately, we made all the deadlines.”

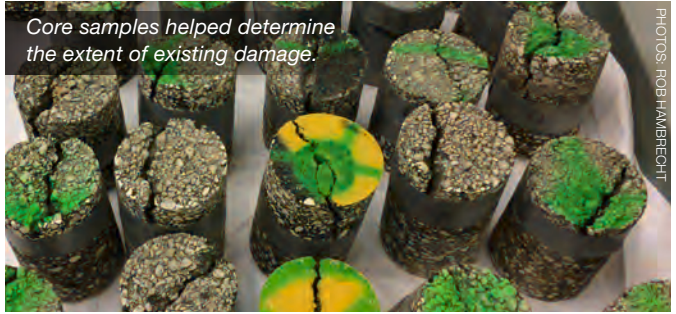


ROB HAMBRECHT

Satisfied with the bids received and the grant applications, the FAA awarded MLB an \$18.2 million grant to cover reconstruction of its primary runway, plus repainting, signage and new LED lighting. “We were delighted with this grant,” Donovan remarks. “This was the single largest FAA discretionary grant our airport has ever received.”

The Florida Department of Transportation contributed \$961,000, and the airport supplied \$3.6 million to complete the funding for that runway.

Once FAA funds were approved and the project green-lighted, AVCON worked with airport officials on the final construction details. Before construction crews broke ground, AVCON made sure all contractors were up to speed, advises Hambrecht. “We had 26 meetings before construction even started,” he comments. “Once work began, we closely monitored progress, making sure everything remained on schedule. We had three resident inspectors out there full-time to oversee every aspect of the project. Our inspectors had lots of responsibilities, primarily making sure it was being built as specified.”



PHOTOS: ROB HAMBRECHT

Early on, AVCON also coordinated testing of the asphalt pavements. Crews took exploratory core samples of the main runway, which had significant damage in many areas. “Based on the exploratory cores, we had to mill up to 11 inches deep in some spots to get rid of old pavement,” recalls Hambrecht. Most of this work was done at night; it took three nights just to do the coring, and a week to survey.

Synchronized Timetable

Scheduling the various work phases and determining the best order for each runway to be reconstructed were vital elements of the project. Crews started with 9L-27R, the 6,000-foot parallel runway, in August 2017. “That job went very smoothly, and we finished it in December 2017,” reports Perley. “We also started on Runway 5-23, our shortest runway, that same month. We originally wanted to finish

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that by March 2018, but we had a big air show here in March, so that runway's completion date was pushed back to April."

Naturally, reconstructing the airport's longest runway required the most work and took the most time.

All three runways required milling, especially 9R-27L. "The contractors had to go nearly a foot deep in some spots on that runway," Perley says. "The other 2 runways only needed perhaps two inches of milling."

After paving operations were complete, crews painted markings, updated signs and installed about 630 new LED lights. This process took about 30 minutes for each light, Perley notes.

The airport took a "very hands-on" approach to supervising each step of the project. Operations Manager Patrick MacCarthaigh or a member of his staff was on the field 24/7 throughout construction. "We had 40 dump trucks at one time on the field, and 100 workers on the field at any one time. The logistics were incredible," Perley reflects. "We are very proud there were no recordable accidents."

Communication Was Crucial

Another key to the project's success was telling airport tenants exactly what had to be done, and how long it would take. "We have a wide variety of tenants. American Airlines and Delta Air Lines have

daily passenger service here. Embraer has a major manufacturing facility airside, where it makes Phenom and Legacy business jets. We also get about 1,900 general aviation flights a week," says Cliff Graham, director of operations and maintenance.



CLIFF GRAHAM

Last year, MLB logged more than 92,000 annual operations and served 467,000 commercial passengers. The recent runway improvements were designed to help prepare the airfield for an expected increase in future volume.

"Satisfying the needs of all our stakeholders was a huge challenge. We had many, many meetings with our tenants," Graham emphasizes. "We got very good support from them, once they knew exactly what we were going to do, and when it was going to be done. They understood the end goals."

Graham has high praise for the many presentations AVCON created to detail the project for stakeholders. "One of the key components to getting their buy-in was the computer animation program that AVCON produced. It was incredibly realistic," he remarks.

Presenting a visual picture of each construction phase alleviated many concerns, especially from the commercial airlines. "Our

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animation showed the specific aircraft that Delta and American would use for each runway, what takeoffs and landings would be like, what taxi routes they would have to take depending on which end of the runways the planes landed, and how much time it would take to get to the terminal using various new taxiways,” Hambrecht explains. “That seemed to satisfy their main concern of delays.”

Before and during the project, MLB and its contractors worked to minimize impact on operations.

“When the longest runway was closed, Delta and American had to use the shorter 9L-27R, and Delta had to change some equipment to accommodate the shorter runway. I believe that was the biggest inconvenience to the airlines. The added taxi times really were minimal,” Hambrecht adds.

Flexibility Needed

Significant challenges throughout the 14-month project required the team to remain flexible. “This was a very fluid project, so we had to continually communicate with our stakeholders,” Graham recalls. “There were times we had to close two runways at the same time. This was a huge challenge for our air traffic controllers. We also had to close various taxiways at different times, and issue many NOTAMs. Fortunately, we were able to utilize new FAA technology for NOTAMs. Our staff could be out in the field, and we could issue

several NOTAMs at a time using a tablet, to go along with the hourly NOTAM notice from Air Traffic Control.”

Another compounding challenge: MLB is constructing a new air traffic control tower that is scheduled to open in March 2019. “The new tower partially blocked the sightlines to Runway 5-23, so sometimes we had to close that runway as well,” says Graham.

Mother Nature also threw the airport a few curveballs during work on Runway 9R-27L. Unusually heavy rains this summer set the schedule back a few weeks.

Despite the extra challenges, MLB worked to provide complete transparency throughout the project. “Tenants heard the truth from us, whether they liked it or not,” Graham relates. “Not everything went according to plan. You can never over-communicate on projects like this.”

Airport officials had great news to deliver when the final runway was ready to reopen in this fall. Donovan is very proud that the multi-runway project was completed in such a short amount of time, and on budget. “Everyone on our staff, as well as our consultants and contractors, did a great job,” he says. “I also appreciate the patience shown by our stakeholders. This is a classic example of a project that was inspired by necessity, and fueled by teamwork and communication.” ✈️

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HireLAX ARP Orientation
August 25, 2018

Training Program Benefits Community, Supplies Work Crews at Los Angeles Int'l

BY VICTORIA SOUKUP



Los Angeles
World Airports

FACTS & FIGURES

Project: Construction Trades Training Program

Location: Los Angeles Int'l Airport

Airport Owner/Operator: Los Angeles World Airports

Program Name: HireLAX Apprenticeship Readiness Program

Goal: Recruit, train & employ area residents for careers in construction trades; supply workers for airport & other area projects

Program Design & Implementation: The Parsons Corp.

Cost: Collaboratively paid for by LAWA, Los Angeles Trade Technical College, Los Angeles Southwest College & the city/county workforce support services system

Partners: Los Angeles/Orange Counties Building & Construction Trades Council; Los Angeles Community College District-Los Angeles Trade Technical College & Los Angeles Southwest College; city of Los Angeles; county of Los Angeles; Flintridge Center, 2nd Call

Debut: Fall 2017

Program Participants: 55 (as of mid Oct.)

Subsequent Hires: 41 (as of mid Oct.)

Of Note: Participants receive support with issues such as homelessness & lack of child care, transportation & adequate food that present barriers to employment



Los Angeles International Airport (LAX) is helping supply construction workers for its massive multibillion dollar capital improvement project with a free development program that recruits, trains and provides union apprenticeships for local residents.

As of early October, 41 of 55 students who graduated from the HireLAX Apprenticeship Readiness Program were placed into construction careers. Even though 75% is a strong placement rate, airport officials expect it to improve in the future. With two classes complete, the third is already underway.

The training provided is in construction trades such as electrical, carpentry, plumbing, sheet metal, drywall and flooring—all critical elements for upcoming construction projects at LAX. The program's goal is to maximize the economic impact of airport construction by hiring residents from areas surrounding LAX and certain zip codes throughout Los Angeles.

"Our mission is to serve the world, connecting people, places and cultures," says Samson Mengistu, chief operating officer of Los Angeles World Airports (LAWA), which operates LAX.



SAMSON MENGISTU

"One of the ways that we serve the world is by focusing on our local communities and ensuring that we are a good neighbor and include the local community in our work. Our goal for the HireLAX program is to train and prepare individuals from Los Angeles and the LAX area for careers in the construction trades, so they can have a hand in building the LAX of the future."

The program began in fall 2017 with an eight-week, 240-hour class. A second class was held in spring 2018, and a third class began this September. The Parsons Corp. designed and implemented the program as part of its contract to administer LAWA's Project Labor Agreement for the LAX capital improvement program. Employing at least 30% local craft workers is one of the program's goals. LAWA is currently exceeding that goal on current projects, reports Daniel Sloan, vice president of labor relations for Parsons.



DANIEL SLOAN

"Our mission is to maximize the economic impact of the LAX multibillion-dollar capital improvement program through the inclusion of local workers who are reflective of the diversity of Los Angeles," says



Sloan. “Not only is the program delivering a better world and airport by transforming the lives of LAX community members and their families, but it is also increasing the supply of local skilled craft labor to meet the significant market demand in the Los Angeles area.”

Grassroots Effort

The program takes a strategic approach by including trade unions, local community colleges and social support agencies. Organizers recruit potential participants through a grassroots campaign that leverages social media and flyers posted in stores, churches and high schools near LAX.

Those interested in the program are required to attend a 45-minute orientation to see if the program is a “good fit” for them. Next, potential students undergo one-on-one short interviews with 15 program leaders. Participants are selected based on interview results, diversity and place of residence. Applicants must be at least 17½ years old and live in the LAX high impact area (15 zip codes immediately surrounding the airport) or the city of Los Angeles.

A total of 429 individuals attended orientation for the first three classes, and 358 completed the interview process. Program administrators then selected 102 to participate.

Accepted students enroll in the Los Angeles Community College District, which provides direct support via two of its colleges. Los Angeles Southwest College supplies free rent for classroom instruction and outdoor space for hands-on learning. The Los Angeles Trade Technical College, which has more than 90 years of construction training experience, provides instructors with existing grant money.

The Multi-Craft Core Curriculum of the Building Trades includes classes in OSHA-10 and first aid certification, hands-on projects and field trips, employment development skills and physical fitness/conditioning training.

Removing Barriers

The outside support that participants receive is what really makes the program unique, notes Sloan. Students who enroll in the program must register with case management and support services personnel who help participants overcome personal challenges they might face during training and apprenticeships. Issues range from homelessness and inadequate food/nutrition to lack of child care and transportation.

“We not only want to teach the participants about construction, but we also need to provide them with support to overcome any employment barriers they may have. And they often do have challenges,” he says. “We need to provide them with services to help them succeed.”

After successfully completing the eight-week course, students are offered career placement assistance. “That’s the fun part, because that’s when we get to open that door for them and give them the first opportunity for a construction career,” Sloan remarks. “We bring in the contractors who work at LAWA and at other major construction projects and get to play career matchmaker for our graduates.”

LAWA’s Mengistu says the biggest challenge is that interest in the program far exceeds its capacity. “Our class size is around 30, and we have had more than 100 individuals apply for and attend orientation for each class. To ensure that these other individuals are not left without options, we work with our partners to connect

interested individuals who are not chosen for our classes to other programs that provide workforce and construction training.”

Organizers are pleased with the results thus far and are impressed with the skills, ability and commitment of participants, reports Mengistu.

The demographic breakdown of the most recent class showcases the opportunities being offered to the community:

- 100% live in Los Angeles or the LAX area
- 66% are residents of the LAX high impact area
- 31% are women
- 53% are African-American

- 44% are Hispanic/Latino
- 56% have previous involvement with the criminal justice system
- 1 student is homeless
- 1 student is a veteran

Sloan acknowledges that not every student has been placed into a job yet, and a few don't finish the program. “But for the most part, we think we give them a much better shot at having a long-term construction career than they otherwise would have had,” he comments.

Partnerships are pivotal to the program's success. Key partners include Los Angeles Trade Technical College, Los Angeles Southwest College, the Los Angeles/Orange Counties Building and Construction Trades Council, and the city/county of Los Angeles. Flintridge Center and 2nd Call are the non-profit organizations that provide case management, life skills and support services.

Mengistu highlights the program's educational impact: “On the organizational side, we have put a curriculum together that includes everything from workplace safety to physical education, as well as life management. It's a very well-rounded program that is very good at achieving its goals, which is a testament to our partners' constant engagement and the number of students who have been hired and are creating a career for themselves in the construction trades in L.A.”

Civic Benefits

Ron Miller, executive secretary of the Building and Construction Trades Council, says HireLAX helps the entire community as well as the airport. The program is timely, because the area is experiencing a building boom at the same its workforce is aging.



RON MILLER

“We need to have new people coming into our programs continuously, and this program supplies part of that effort,” Miller says. “We have a high placement rate into our apprenticeship programs, and HireLAX acts as a pipeline to create local opportunities for the airport. Agreements like this provide local hire opportunities for local community members for apprenticeships that we provide—and they don't pay anything for their education.”

To help alleviate local workforce demands, Parsons plans to conduct at least three or four classes each year, with each yielding 30 to 35 graduates. “It is our goal that the majority of graduates be placed into construction careers



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as union apprentices at LAX or other nearby major construction projects,” says Sloan.

Parsons executives credit LAX and LAWA for engaging in the “complex partnership” between public agencies, non-profits, labor organizations and businesses. “This would not have been possible without the strong leadership and direction from LAWA Chief Executive Officer Deborah Flint and Chief Operating Officer Samson Mengistu, as well as the Board of Airport Commissioners,” says Sloan. “They have set the bar high for us to ensure that inclusion and reflectivity are core values of the LAWA capital improvement program, and the HireLAX Apprenticeship Readiness Program is a direct result of their leadership.”

Rashmi Menon, vice president – aviation western regional manager with Parsons, echoes those comments. “LAWA is a critical economic engine in the Los Angeles area driving growth through job opportunities for both businesses as well as residents,” Menon says. “And key to this is the innovative HireLAX program, implemented by LAWA, which will continue to provide opportunities for Angelenos to build Los Angeles.”

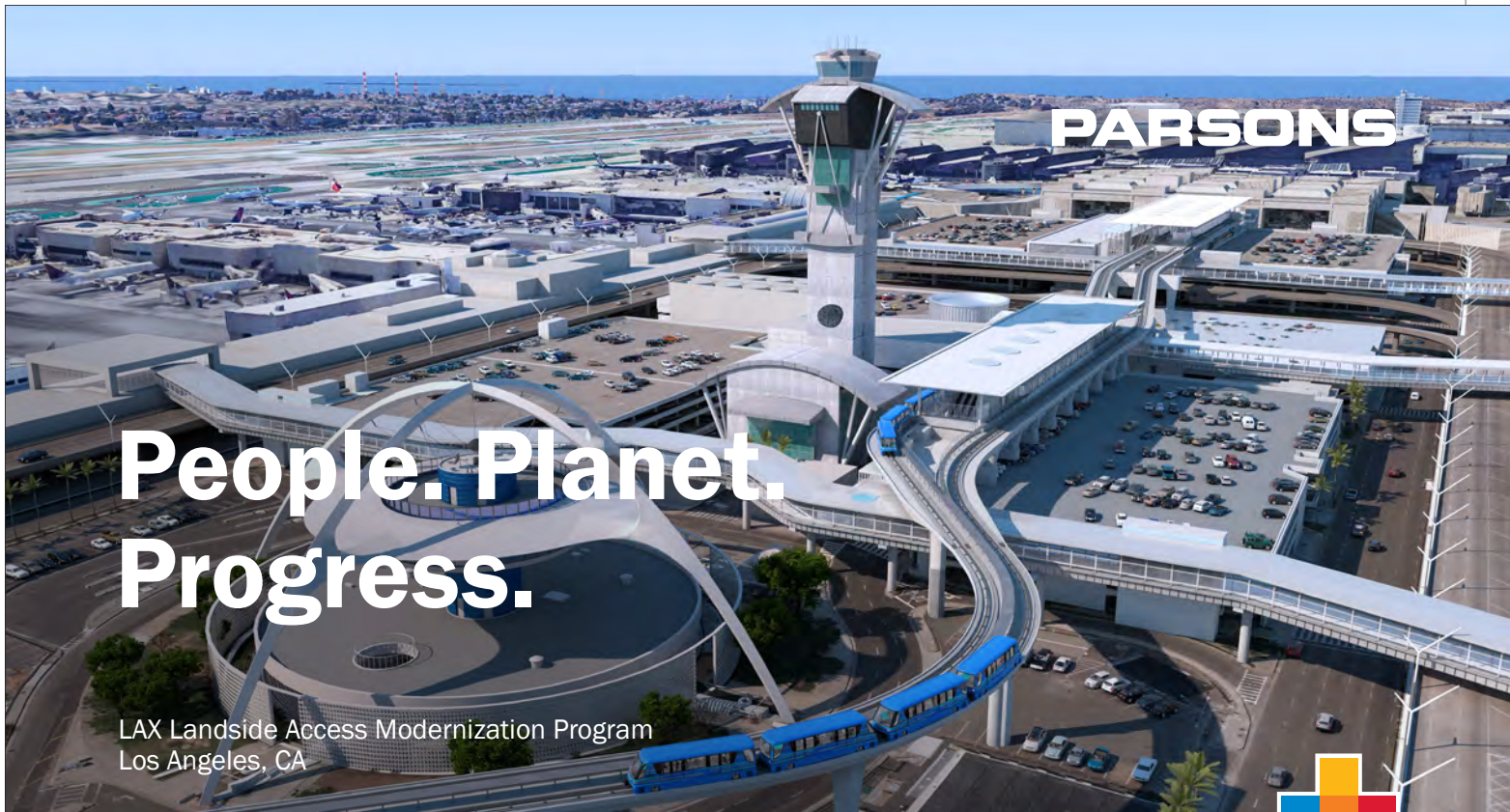


RASHMI MENON

Mengistu notes that some benefits of the program might not be immediately evident but are still important to the overall community. “With the help of our partners, we are helping empower a workforce that is competent, adaptable and ready to meet the goal of delivering a gold standard airport,” he says. “Once they go through an apprenticeship and get onto one of our projects, they will gain an invaluable experience of working in an aviation setting and learning the unique needs that airports have when it comes to building infrastructure. Having that specialized knowledge makes them even more employable by contractors wherever they go.”

There’s also a unique interpersonal benefit associated with including local residents in LAX projects. “For program graduates, there is a sense of genuine pride that comes with embarking on a career and being trained for work that will help support their families and create a tangible difference in their community,” explains Mengistu.

One graduate may have said it best: “It’s the ability to tell your child, ‘I built that’ —and that’s not something everyone gets to do.” ✈️




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Enhancing Capacity & Sustainability

 Sustainability planning and management for airports is not a new concept. That said, as airports undertake projects to enhance capacity, many are realizing quantifiable benefits—including cost savings—by incorporating sustainability into their projects.

Sustainability efforts on their own, independent of other projects, have a range of documented benefits, including:

- **Increased Revenue:** Airports can generate renewable energy on unused land or roof space.
- **Social Capital:** Leadership in sustainability improves relationships with community members and other stakeholders.
- **Regulatory Cooperation:** A proactive approach to environmental stewardship can facilitate environmental approvals and permitting.
- **Facilitating Innovation:** Sustainability projects in one area can spark innovations in other areas, such as streamlining operations or encouraging employee well-being.

By including sustainability with capacity-enhancement projects, airports can also realize dramatic cost savings. Savings can result from reduced operating costs, reduced maintenance costs, increased employee retention and productivity, increased reuse or conservation of resources, and avoided environmental mitigation costs.

First-Hand Examples

San Diego International Airport (SAN) has been a leader in sustainability efforts for several years. In 2013, SAN completed its Green Build, which expanded and updated several aspects of Terminal 2.

As part of that project, SAN incorporated photovoltaic solar panels to produce renewable energy. It also maximized energy efficiency and reduced water and energy consumption.



DAMON FORDHAM

Damon Fordham is a principal within the Sustainable Transportation Practice at Cadmus Group. The firm has extensive experience supporting sustainability projects for various organizations, including airports and other state, local and federal transportation agencies. This article was based on research conducted by Cadmus for the Airport Cooperative Research Program (ACRP) Synthesis 93, Sustainability's Role in Enhancing Airport Capacity.

In 2014, SAN became the first airport terminal in the world to achieve platinum-level Leadership in Energy and Environmental Design (LEED) certification. It also earned the Envision Platinum Award from the Institute for Sustainable Infrastructure. In total, SAN's Green Build project has won 41 awards for achievements in areas such as small disadvantaged business outreach, sustainability, public relations and construction.

Read more about the project at: san.org/Airport-Projects/The-Green-Build

Chicago became the first city in the United States to issue sustainability guidelines for an airport when the Chicago Department of Aviation released its Sustainable Design Manual in 2003. O'Hare International Airport (ORD) put the guidelines into practice during the relocation of a FedEx facility to make room for a new runway as part of its comprehensive airfield modernization program.

The new FedEx building is LEED gold certified and features a 175,000-square-foot green roof—the largest green roof at a U.S. airport as of 2017. The result? The facility has saved 30% in heating, ventilation and air conditioning costs compared with the previous facility.


That's not all ORD is doing. Currently, it is implementing green construction, a variety of vegetated roofs, sustainability efforts within the terminals, resource conservation and much more. A recent mandate requires that all new gates use preconditioned air and 400 Hz power, to shift away from auxiliary power units and ground power units that produce diesel and Jet A emissions.

Read about efforts at Chicago's airports here: flychicago.com/community/environment/Pages/default.aspx

Beyond these examples, there are many other ways to incorporate sustainability into capacity-enhancing projects, and many different strategies for leveraging the benefits of sustainability that can be tailored to individual airports.

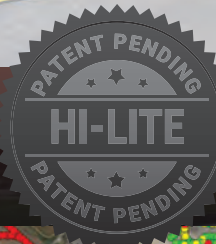
Getting Started

Combining sustainability with capacity-enhancement yields valuable benefits. Don't know where to begin? Consider the following:

- Incorporating sustainability initiatives into projects in the early planning stages can save money from a lifecycle cost perspective, sometimes with a very short payback.
- Benchmarking sustainability performance allows airport operators to quantify their performance and track improvements. Using an independent third party to establish a benchmark can help compare performance with peer airports and other industries.
- Forging collaborative and lasting relationships with airport stakeholders can inform innovative sustainability solutions and generate buy-in for capacity-enhancing projects.
- Strong executive direction and a culture of sustainability, supported by meaningful sustainability policies, can lead to the successful integration of sustainability in capacity-enhancing projects. 

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