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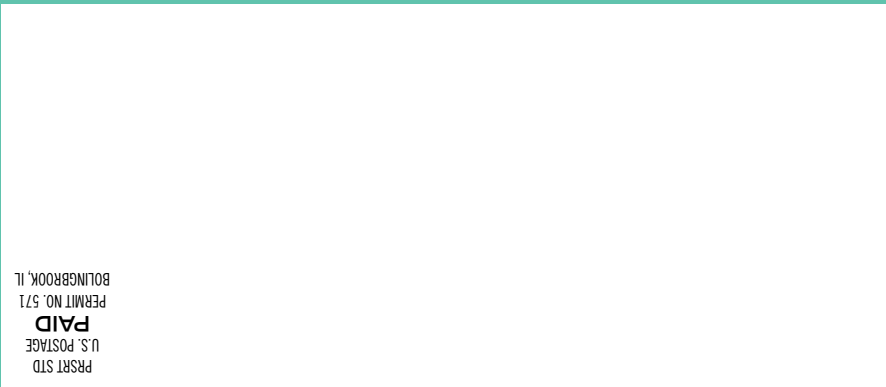
Airport Restrooms: Often Overlooked, but Seldom Forgotten

## Los Angeles Int'l Unveils Redeveloped International Terminal



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# Airports: We don't want your money!

 The other day, a friend at a consulting firm asked me about some of the articles in our October issue. She had an idea for a story, but wasn't sure whether to submit it.

Naturally, I encouraged her to let us know what was on her mind. We receive recommendations every day from readers at airports, consultants, suppliers and even government agencies. "Your idea is just as good anyone else's. *Why* wouldn't you submit it?" I asked her. Much to my surprise, she thought that if she submitted an idea, she would need to write it, ask the airport for permission and possibly even convince her company to buy an ad to accompany it.

*None* of these are true! When anyone submits a story idea, all we're looking for is the idea — and a way to contact those involved with the project. We do the writing, secure the necessary clearances and take care of all the other details. And we certainly would never require anyone to advertise in exchange for editorial coverage! No pay to play here. Consultants and suppliers advertise in *Airport Improvement* because they *want* to; because we have the circulation and

editorial content that are most relevant to their current and prospective customers.

I also believe that airports shouldn't advertise in airport publications — not for editorial coverage, to promote their facility or to publicize awards that they or their employees have "won." Where's the benefit? Airports are not in a position to sell to other airports, nor do they generate business from them; so why spend money advertising to them? Barring services like DFW's Fire Training Research Center, which is marketed to other airports, I don't see any reason to ask an airport to spend advertising money with an airport publication.

Advertising can be an incredibly successful tool. Editorial coverage is also very powerful. Each has benefits and can complement the other. But when used incorrectly, or under duress, they can do more harm than good.

Cheers,

*Paul*



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# Los Angeles Int'l Unveils Redeveloped

 In mid-September, Los Angeles International Airport (LAX) opened the South Concourse and central core of the New Tom Bradley International Terminal (TBIT). With an overall budget of \$1.9 billion, the project is part of a \$4.1 billion capital improvements program that is the largest public works project in the history of Los Angeles.

"We set out to reestablish LAX as the premier international gateway, and I think we actually achieved that," says Roger Johnson, deputy executive director for Los Angeles World Airports (LAWA).



Roger Johnson

Phase I of the new TBIT project, which broke ground in February 2010 and encompasses the north and south

concourses, will add nearly 1.2 million square feet to the existing TBIT when completed in 2015. The great hall, named the Antonio Villaraigosa Pavilion after the city's mayor, features 150,000 square feet of concessions and other passenger amenities and was designed to be a tremendous upgrade from the terminal's previous offerings.

Increasing gate capacity for larger, new-generation aircraft such as the Airbus 380 and Boeing 747-8 Intercontinental was a key component of the project. Nine new boarding gates on the west side of the terminal — each with three loading bridges — will do just that. When the new terminal is complete, LAX will have the most A380-capable gates of any airport in the United States, Johnson notes.

LAX is one of the primary target markets for the A380, he explains. "We really

needed facilities capable of accommodating the new, large aircraft," he states.

Competitively speaking, LAX could not afford to lose passenger traffic to other airports, says Michael Doucette, LAWA project manager. The value of a wide-body aircraft — whether the Boeing 747 or A380 — flying daily into LAX throughout the year is worth \$600 million to the local economy, he notes.

"We need to remain competitive," Johnson says.



Michael Doucette

## Meeting Demand

Last year, more than 30 airlines served 8.6 million international travelers at TBIT — about half of LAX's overall international passenger volume. The new TBIT will have a





# International Terminal

By Jodi Richards



**LAX**  
Los Angeles  
World Airports

## factsfigures

**Project:** Terminal Redevelopment/Expansion

**Location:** Los Angeles Int'l Airport

**Specific Area:** Tom Bradley Int'l Terminal

**Owner:** Los Angeles World Airports

**Construction:** Joint Venture of Walsh Construction Co. & Austin Commercial

**Architect:** Fentress Architects/HNTB

**Program/Construction Mgt:** Parsons, CH2MHill, AECOM, Jacobs, Arcadis, Vanir KDG

**Integrated Media System:** MRA Int'l

**Video Displays:** Daktronics

**Visual Docking Guidance Systems:** Safegate Airport Systems

**Terminal Seating:** Arconas

**Retractable Stanchions:** Visiontron



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Designers outfitted common areas to create an "upscale, airport lounge vibe for all passengers."

total of 18 new boarding gates, including the nine that can accommodate wide-bodies.

Overall, the airport has been growing "fairly steadily" at about 3.5% per year, with international volume up nearly 6%, Johnson reports. Because of the international growth, the airport could not afford to work on both of the old concourses at the same time as originally scheduled, Doucette notes. "We need to carefully balance how many gates we close at a time or how many we can bring on line at a time," he explains, acknowledging that the approach lengthens the program's overall timetable.

TBIT was originally constructed in 1984. And, while it has received some facelifts through the years, it has never provided "what any of us would consider to be an acceptable level of service for passengers," explains Johnson.

Changes in security requirements after 9/11 contributed to the terminal's shortcomings, but the facilities were "simply undersized and designed for a different type of operation," Doucette relates.

TBIT was originally designed as a bus gate facility, where the concourse would simply provide check-in and ticketing services before passengers were bussed to a remote gate. But that plan changed during construction, and the building has never been "appropriately sized for the throughput at LAX," Johnson notes.

### Improved Customer Experience

Dan Simich, a senior project manager with Parsons, says the newly opened terminal allows LAX to provide a good travel experience and accommodate passengers, aircraft and baggage efficiently and safely. (Parsons is one member of the integrated program management team for the project.)



Dan Simich

The ability to board and deplane passengers more rapidly is not only a tremendous benefit for passengers and airlines alike, it is also a competitive issue, notes Doucette. "They can turn that plane much faster here in a shorter amount of time and get it back in the air again," he explains.

Boarding at the A380-capable gates is expedited by gate ticket readers that allow passengers to board in four lanes. Outside the terminal, ramp information display systems and advanced visual guidance docking systems at the gates also improve the process, adds Doucette.

Immigration and Customs have also been upgraded significantly, including the addition of self-check-in kiosks in the primary inspection area. The former Customs and Immigration area, which had a practical capacity of roughly 2,500 passengers per hour,



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# Move Over IMAX

Huge electronic signage installations running original video content and arrival/departure information are a prominent feature in the new Tom Bradley International Terminal (TBIT) at Los Angeles International Airport (LAX). Collectively, the airport refers to the seven large media features as its Integrated Environmental Media System.

On the equipment side, the \$50 million system includes more than 12,000 square feet of light emitting diode (LED) tiles, hundreds of liquid crystal display (LCD) screens and a dedicated control and content management network system. In total, it includes nearly 9,600 square feet of active displays with an output of more than 105 million pixels — eight times an IMAX theater, note airport officials.

The displays run roughly 60 ultra-high resolution multimedia productions, totaling more than four hours of original content.

The system was designed to enhance the passenger experience as well as provide a revenue source through sponsorship opportunities, explains Michael Doucette, project manager at LAX.

"These video displays were put in to enhance the [passenger] experience and to bring back the romance of travel," Doucette says. Content ranges from colorful, modern images about the Los Angeles area to a retro black-and-white tribute to Hollywood musicals to short pieces about various destinations of LAX airlines.

"It's not advertising," notes Roger Johnson, LAWA's deputy executive director. "We're not trying to make LAX Times Square, Tokyo or the Vegas Strip."

The Bon Voyage Wall, a framed 30-foot-by-50-foot display located after the security checkpoint and before the departure gates, runs slow motion videos of people jumping — "whimsical, enjoy-your trip" content is how Johnson describes it.

Standing 72 feet tall, the Time Tower displays video content on all four sides of a two-bay elevator column. With 5,480 square feet of LED surfaces, a clock at the top and interactive features at the base, the tower is the visual centerpiece of the new digital system, and the great hall in general. The elevator doors are the only part of its surface not covered with screens.

The Story Board, also inside the great hall, stretches for 120 feet, displaying images that highlight Los Angeles' connection to the movies, music, comic books and graphic arts. LED screens arranged in a mosaic pattern showcase destination-based content. "It doesn't focus on things like significant landmarks or the traditional images," Johnson explains. "It's more the day-to-day life and shows the culture of a departure city."

Large blade panels on both sides of the great hall heading to the concourse are known as the departure portals; and new flight information displays span 75 feet long and 15 feet tall.

Despite all of the system's cutting-edge features, LAX is working to make it even more impressive, with an application that will allow passengers to interact with the entertainment content or interface with the concessions program from their handheld devices, notes Doucette.

Architect Curt Fentress allowed the airport to turn elements of its new digital media system into architectural features, as opposed to just hanging screens on walls, Doucette notes.

"Curt embraced what we were trying to do and worked with Mike Rubin and Associates to come up with ideas that actually enhanced the architecture of the building," Johnson adds.



Curt Fentress

LAX's integrated media system project was directed by Mike Rubin and Associates International and designed by Sardi Design. Daktronics supplied and installed \$20 million of displays, and supported the system with an extensive fiber optic backbone, a dedicated power supply, dedicated HVAC and fire protection systems and an equipment/control room.

The content management system was designed by Smart Monkeys Inc., and Electrosonic Inc. provided systems engineering and integration. Moment Factory and Digital Kitchen produced the content. ✈️



was undersized from the beginning, Doucette relates. The new facility is designed to process about 4,500 passengers per hour and grew from 12 contact gates to 18. The average gate size was also “significantly expanded.”

Gate areas and other sections of the terminal are outfitted with new seating from Arconas. Many of the styles selected exhibit design influences from the hospitality industry, and fully 60% of the seats include power and data ports. Some also contain footrests and cup holders, which are already proving popular with airport visitors.

### Visitor Centric

The terminal is designed to improve the passenger experience and ensure LAX's status as a gateway to America and the world, says Curtis Fentress, designer of the new terminal and chairman of Fentress Architects.

The design was largely influenced by local citizens, notes Johnson. Focus groups yielded about 5,000 words to describe the city, which planners then distilled into five dominant themes: media, the future, diversity, change and the environment. The mayor of Los Angeles ultimately selected the environment as the primary design concept.

“People come to L.A. because of the environment, the sunny days and the beach,” describes Fentress. Inspired by the local environment, the roof of the new terminal recalls waves rolling onto a beach. Functionally, the roof design shields the western and southern sun, while allowing in daylight from the east and north. “Dramatic clerestories bring lots of daylight into the space and the underside of the wave, the curl of the waves, is the ceiling which bounces the light down into the space,” he explains. “It’s a very dramatic and unique space.”

Inside the concourses, ceiling heights generally range from 40 to 60 feet. In the great hall, which was designed to resemble an old-world piazza, the ceiling soars to 100 feet and a terrace-like structure creates an open-air feel. The area plays up the design concept of the Southern California environment, notes Doucette. Bottom to the top, the great hall is almost 150 feet tall, and roughly the size of four football fields.

Overall, the new TBIT includes 1.3 million square feet of new construction, with six levels in the main core and three and one-half concourse levels.

### Construction Challenges

The open design of the steel-frame building provided some construction challenges, Johnson notes. Specifically, the welded

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The new terminal will have 18 boarding gates — nine equipped for A380s and other wide-body aircraft.



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connections between the roof trusses and the building supports are not right angles — a first for any building in Los Angeles. To reassure the city building department that the structure met its design calculations, the airport built and stressed sample connections inside a structural engineering lab at the University of California-San Diego.

The process was performed more than once, because the sample connections didn't pass the test the first time. "So we learned something out of it, in terms of how the connections went together, and made some slight modifications to the way the beams were shaped near the connections, retested them and were able to strike the building significantly and increase the failure points through that testing," Doucette recalls.

At the same time, LAX undertook nearly \$700 million in airfield improvements. During the peak of construction, the airport was putting about \$4 million of work in place on a daily basis, recalls Johnson. With more than 4,000 contractor employees working on the airfield, getting workers and materials to the secure site was a formidable logistics challenge.

"This site sat between four active runways and within 100 feet of an active taxiway for a period of time," Doucette explains. "It was completely landlocked inside the secure area of the terminal building. So 100% of materials, activity and workers needed to be transported across an active airfield to this location."

Impact to passengers, however, has been nominal, because 90% of the work was new construction immediately adjacent to the existing terminal. Parsons, which was also on board during the terminal's last update in 2006, worked to make phasing as smooth as possible, says Russell Carlisle, the firm's design manager for the project.





In addition to increasing throughput, the new checkpoint will also improve the overall passenger experience. “We’re taking them out of what are essentially some low-overhead, dark areas and we’re putting them under skylights,” Johnson explains.

The \$4.1 billion capital improvement program at LAX has had an impact of \$7 billion on the region and created some 40,000 jobs, directly and indirectly. And, with the expanded concessions program, more than 1,000 more jobs have been created at the airport. ✈️

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## Sustainability

The new TBIT is designed to achieve silver certification for Leadership in Energy and Environmental Design (LEED). In addition to using recycled materials, high-performance window glazing and natural daylighting, architects designed the roof forms to optimize the sun’s warmth during cooler months and reflect it during warmer months. While LAX is close to qualifying for gold LEED status, Doucette says the airport was “more interested in the sustainability of the building than achieving a particular label.”

LAX requires any construction equipment that will be on-site for more than 21 days to meet or exceed emissions requirements from the California Air Resources Board for on-road vehicles, Johnson notes. While not required by law, the airport insists that equipment be fitted with pollution control equipment, which results in a “significant reduction in diesel particulates, carbon monoxide and other greenhouse and criteria pollutant emissions,” he explains.

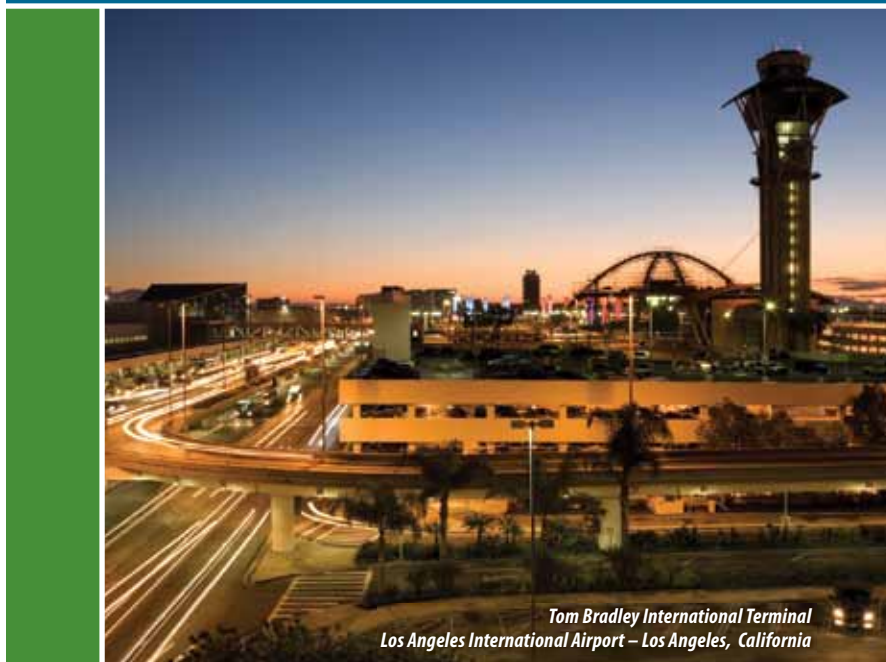
## Looking Ahead

Phase II of the TBIT project will include new boarding bridges and aircraft aprons on the east side of the new terminal; upgrades to Customs and Immigration inspection areas; relocation and upgrading of the federal passenger security screening area; public art installations; secured corridors between Terminal 3, TBIT and Terminal 4; and demolition of the existing terminal’s east side gates.

Upcoming work will also include a consolidated passenger security checkpoint. Currently, TBIT has 12 lanes, divided evenly between the south and north entrances. During Phase II, they will be consolidated into a single, 20-lane checkpoint located on what is now the mezzanine level of the existing TBIT.

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Photo: Jason A. Knowles © Fentress Architects

# Int'l Terminal at LAX Receives Retail & Dining Makeover

By Jodi Richards



## factsfigures

**Project:** Redeveloped Concessions

**Location:** Los Angeles Int'l Airport

**Specific Area:** New Tom Bradley Int'l Terminal

**Owner:** Los Angeles World Airports

**Villaraigosa Pavilion:** 150,000 sq. ft. of food, beverage and retail space

**Terminal Concessions Manager:** The Westfield Group

**Food & Beverage Partners:** Areas USA; Branded Works; CMS Hospitality; HMSHost; Taste Inc.

**Retail Partners:** Joint venture comprised of Hudson Group Retail & local partners, including equity partner Concourse Ventures & disadvantaged business enterprises Palazzo Concessions; The Zaman Group; MAJ Collection; Arandia Designs; LS Travel Retail North America; Raymond Enterprise LAX; Soto & Sanchez



Part of the \$1.9 billion renovation and expansion of the Tom Bradley International Terminal (TBIT) at Los Angeles International Airport (LAX) is the dramatic \$79.8 million redevelopment of its concessions program by The Westfield Group and its partners. When complete, the terminal will feature more than 60 dining and retail options designed to greatly enhance passengers' experience in the new terminal. More than 40 will be located in the 150,000-square-foot great hall, Antonio Villaraigosa Pavilion.

Originally constructed in 1984, TBIT was not built to meet the needs of today's traveler and did not have sufficient concessions beyond the security checkpoint, explains Roger Johnson, deputy executive director of Los Angeles World Airports (LAWA).



Roger Johnson

The new duty-free store, which recently moved from its pre-security location, experienced a "significant uptake in sales" following its debut after the TSA checkpoint, Johnson reports.

Other concessions have come online gradually since the terminal's mid-September opening. After most are operating, pre-security amenities will be closed to facilitate work on Phase 2, which is scheduled to end in June 2015 and also debut via a phased opening.

## New Approach

Overhauling the passenger experience was at the forefront when Westfield developed the new concessions program, explains Eileen Hanson, the company's vice president of marketing. A significant part included infusing the flavors of Los Angeles into the terminal.



Eileen Hanson



"It really didn't scream L.A.," Hanson says of the previous concessions mix. "As airports have evolved, that's a huge focus of Westfield — to make sure that the passenger experience really represents the best of Los Angeles, and bringing in global, recognized, iconic brands as well."

HMSHost, which won the food and beverage contract for the terminal, worked to extend the philosophy to its locations as well. "L.A. has an awesome culinary culture," remarks Joe Waller, vice president of business development for HMSHost.

New dining options feature celebrated Los Angeles chefs and local brands that have never been in an airport before. Hanson highlights ink sack from Michael Voltaggio, winner of the *Top Chef* television competition, as a "great example of bringing a fantastic chef-driven concept in L.A. into an airport."

According to Waller, the biggest current trend in the food business is consumers' strong desire for high quality food. "I don't mean necessarily high-end food," he qualifies. "I mean high *quality* food." Even fast food restaurants are touting their work with well-known chefs and use of



## Eat, Shop, Repeat

About 30,000 square feet of the new Tom Bradley International Terminal at Los Angeles International Airport (LAX) is devoted to food and beverage options. The terminal's 31 locations include nine pre-security offerings and 22 post-security. Of those, 17 are local Los Angeles brands, 18 concepts are new to LAX and 18 are airport firsts.

### **Noteworthy options include:**

**Border Grill:** upscale Mexican fare from Susan Feniger and Mary Sue Milliken of *Top Chef Masters*

**Chaya:** modern Euro-Asian eatery featuring exotic ingredients and fresh fish

**James' Beach:** award-winning, modern American comfort food from Venice Beach

**LAMILL Coffee:** freshly roasted, direct-trade coffee and tea from the Silver Lake neighborhood of Los Angeles

**Petrossian Caviar & Champagne Bar:** luxury delicacies including caviar, artisanal cheese and fine wines

**Short Cake:** artisanal Los Angeles bakery that serves small versions of classic confections

**Starbucks Evenings:** wine and light bites form a twist on the well-known coffee shop; one of the first in the country

**Umami Burger:** a Los Angeles-based concept that received *GQ* magazine's "Burger of the Year" award

About 25,000 square feet of the redeveloped terminal is devoted to retail concessions, with 10 pre-security and 20 post-security locations. Stores run the gamut from Coach and Kitson LA to 7-Eleven and CNN Newsstand Los Angeles. Other options include Hudson, Hugo Boss, Travel + Leisure, Virgin Mobile/Boost Mobile and XpresSpa.





local and/or fresh products, he explains. “That is a reflection of the fact that people are demanding to know where their food comes from; they want to know that it’s been thoughtfully prepared and will taste good.” Each of the dining concepts in the new TBIT reflects that trend, adds Waller.

Both dining and retail options were broadened to reflect what today’s travelers want and expect to find — especially in an international terminal, says Hanson. “With the lineup that we have at Tom Bradley, we have the range that really meets all of the needs of different passengers,” she says. Retail options range from newspapers to designer accessories; food/beverage offerings include both quick snacks and full, gourmet experiences, Hanson notes

While Westfield is new to LAX, it holds two separate contracts with LAWA: the first for the new TBIT, Terminal 2 and the Theme Building; and the second to manage concessions for Terminals 1, 3 and 6.

### Districts, not Divisions

The great hall is patterned after an old-world piazza, with a distinct lack of definition between concession and gate areas — a design that distinguishes it from most other terminals. “The airport was great in working with us to make some of those enhancements, so it really does blur the line,” says Hanson.

Michael Doucette, LAWA project manager, explains it this way: “We were trying to create the flavor where even if you’re waiting for your flight, you may be sitting in a concession where you have visibility of the holdroom; you don’t know whether you’re in a holdroom or concession space.”

This non-traditional use of space affects the way people circulate through the building,



Michael Doucette

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*Design influences from the hospitality industry are evident in the terminal's new seating and other finishing elements.*

which will “greatly enhance” TBIT’s concessions program, he predicts.

“There should be no reason for a passenger — with this beautiful environment and the great range of shopping and dining options at Tom Bradley — to sit at their gate for two hours before they board,” Hanson adds. “They’re going to want to be exploring the terminal and enjoying the great space and shopping and dining.”

Concessions in the new terminal are divided into five different “districts:”

- The Mezzanine Lounge, with lounge seating and luxury dining options such as Ill Forks, Lucky Fish by Sushi Roku and Drink.LA
- Luxury Island, featuring open ceilings, sculptured seating and flow-through, high-end retail including Fred Segal, Bvlgari and Michael Kors
- The Dining Terrace, which highlights local dining concepts such as 800 Degrees Pizza and Umami Burger and restaurants associated with celebrity chefs, including Border Grill and Larder at Tavern
- Edge Lounge, a workspace with copious electronic outlets and floor-to-ceiling windows
- The Boutique District, with storefronts inspired by the iconic boutiques of Rodeo Drive and Melrose. Upscale retail outlets include Kitson and Porsche Design and artisanal dining such as ink.sack, CHAYA and Vino Volo.

(See sidebar on Page 17 for more details about other specific offerings.)


Westfield also created additional common areas and selected furniture, banquettes and seating to create an “upscale, airport lounge vibe for all the passengers,” she adds. “You don’t have to have special access to the airline lounges to enjoy beautifully designed areas where you can relax in a big comfortable chair and have an outlet to plug in your phone.”

From a visual standpoint, Hanson says the new retail array “really takes your breath away.” Westfield devised the layout to complement the design of the building with pass-through boutiques that take advantage of the open, light-filled terminal and do not obstruct views of the mountains or the runway. “It’s just visually striking,” she adds.

The retail spaces were also designed with open ceilings, so passengers can look up and see the art roofline and large-scale digital

displays. (See sidebar on Page 12 for more details about LAX’s new Integrated Environmental Media System.)

Transparency and open designs are also present on the dining side, where performance kitchens allow airport visitors to see their food being prepared.

LAX gave visitors a sneak peek at the terminal’s new concessions and other features at a public preview day in late June, before the official opening in mid September. 



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# Sea-Tac & Portland Jetport



If TSA has its way, the new year will bring new security responsibilities — and their associated costs — to U.S. airports. As usual, some have already mobilized resources to meet the anticipated requirements while others are taking a “wait-and-see” approach. Many are likely banking that some type of industry or legislative intervention will delay or possibly eliminate the need for investments in new equipment or additional personnel.

In an effort to reduce its own budget woes, TSA has proposed shifting the responsibility and cost for staffing exit lanes back to local law enforcement and airport operations as of Jan. 1, 2014 — a move that will, in turn, stress individual airports’ budgets. Not surprisingly, the American Association of Airport Executives (AAAE) sent comments to House and Senate leaders asking for the Airport Security Program amendment to be delayed until airports can identify and implement technology options to manage the change. As of early October, amid the federal government shutdown, officials had not responded to AAAE’s requests.

The proposed change, however, was challenged in the House Appropriations Committee’s first session in late May. The committee admonished TSA for proposing the shift and questioned whether its “emergency rulemaking” complies with the Administrative Procedures Act (Public Law 79-404). “TSA continues to collect money for performing this function from air carriers through its Aviation Security Infrastructure Fee,” noted the committee, in its written report.

“TSA has unveiled this proposal without full consultation with the impacted airports,” continues the report. “The committee directs TSA to work in conjunction with airport operators to assess the impact of this change and to consider delaying or at least phasing in the shift of responsibility to airport operators until affordable, effective technological solutions are certified by TSA, which may then be utilized by the airport operators to successfully staff exit lanes.”

The committee put teeth in its objections by withholding \$20 million from TSA and presenting bill language that would require the administration to provide a detailed spending and deployment plan for checkpoint support (along with air cargo and explosives detection equipment) within the official justification for its budget for fiscal year 2015.

Despite the harsh tone of the original committee report, many say that exit lane security seems destined to move to local airports. In the report, the committee accuses TSA of a “continued reliance upon the unauthorized, fictitious offset of increased aviation security fees and the submittal of a flawed and reckless budget proposal that would decimate critical frontline operation across DHS and substantially diminish the long-term security capabilities of our nation ...”

## factsfigures

**Project:** Automated Exit Lane Security

**Location:** Portland Int’l Jetport

**System Installed:** Tyco Integrated Security

**Project Cost:** \$415,000

**Key Benefits:** Expected to increase security & save \$106,000/yr in personnel costs



**Project:** Exit Lane Breach Control

**Location:** Seattle-Tacoma Int’l Airport

**System Installed:** FlipFlow Triple

**Equipment Mfg:** record-USA

**Total Cost:** \$7.7 million

**Total Scope:** 19 lanes at 5 exits (plus emergency bypass lanes, additional emergency egress to provide for lost capacity & additional monitoring technology)

**Key Benefits:** Expected to increase security & save \$1.8 million/yr in personnel costs



## On the Radar

Christian Samlaska, senior manager of Aviation Security at Seattle-Tacoma International Airport (SEA), has been working on exit lane security since 2008, when he collaborated with TSA on a pilot program to address concerns about the issue. Although the TSA pilot was eventually scrapped, Samlaska and SEA stayed committed to the effort.



Christian Samlaska



# Install Automated Exit Lane Control Systems

By Kathy Scott

"We still met every week," he recalls.

SEA chose FlipFlow™ exit lane breach control system, by record-USA, after issuing a request for information and considering a variety of equipment vendors. The system uses one-way, glass-enclosed tunnels with automatic doors to control passenger traffic. Its scalability and success in Europe were key factors in its selection, notes Samlaska.

Automated doors with intelligent sensors allow for natural walking, so there isn't backup from travelers waiting for exit doors to open, reports Samlaska. The tunnels are also scalable to include a variety of inputs and outputs and can be upgraded with closed-circuit television for facial recognition and other security options.

"It can be controlled remotely as well," adds Samlaska, noting the importance of such an option if a lockdown is necessary.

Mark Dugo, vice president of sales for record-USA, FlipFlow, notes that the system can also detect objects left in the tunnels.

The airport's first addition, a FlipFlow™ Triple with three exit lanes, was built into the existing Concourse B exit area in May 2013 and proved itself over the summer. Now, SEA plans to install 16 more lanes at four other exits by July 2014 for a total cost of \$7.7 million. The new equipment is expected to save an average of \$1.8 million per year in personnel costs.

## Numerous Options

Portland International Jetport (PWM) in Maine opted for an exit lane breach control system from Tyco Integrated Security that provides containment via doors on both ends, with a middle door to contain and secure the area. "Watcher video" and "detection videos" are integrated to alarm and capture video when a breach occurs.

Airport Director Paul Bradbury explored several different approaches with Tyco personnel at an industry conference earlier this year before PWM decided on the equipment.

Frank Pervola, Tyco's business development manager, describes the company's other main categories of systems as:

- Open Flow – Open space, with no doors. Often includes two cameras: a "watcher video" and a "detection video." The video is integrated to alarm and capture any breach, alerting security officials.
- Mantrap – Revolving doors are separated into parts and contained with only one open area. As the door rotates to the opening, the container must be fully clear before the rotation begins again.

Tyco provided three concept modifications to Bradbury and his group. Each scenario included "watcher video cameras," and "detection video cameras," developed by CheckVideo. When a threat is detected (an unidentified object moving counter to the expected traffic flow), the exit doors shut, alarms sound and lights



Frank Pervola

flash. Airport officials demonstrated the installed equipment at a press conference in September.

With a total project cost of \$415,000, Bradbury expects PWM to recoup its investment in about four years. Personnel costs for human surveillance at the exit would cost \$106,000 per year.

As an integrator, Tyco has worked with the FAA on queue and exit security since 1998 and consulted with the TSA to provide flow-through security lane data after 9/11, notes Pervola.

## Why Now?

TSA's heightened interest in exit lane security traces back to 2007, when it issued a request for information regarding "innovative ways to detect, track and contain intruders attempting to enter exit lanes." Specifically, it sought input about systems that could provide automatic notifications to airport authorities.

"There has been little attention paid to the possibility that the exit lane may provide a means for a person to bypass access-control points, circumvent the security checkpoint screening process, or introduce objects or articles through the exit lane to someone in the secured area or simply to place these objects in the secure area," noted the request.

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*PWM expects to recoup recent investments in automated exit lane security in about four years.*

Newark Liberty International Airport (EWR) is widely credited for TSA's more recent emphasis on exit lane security. In 2010, the airport had to shut down all three of its terminals for six hours after a Rutgers graduate student ducked under a rope undetected to say goodbye to his girlfriend. Nearly 200 flights were delayed or cancelled and thousands of passengers were inconvenienced while security officials searched for the man.

The breach occurred in Terminal C, when a TSA officer left his exit lane post for 85 seconds. The

airport drew an additional round of criticism when TSA officials acknowledged that investigators had to use footage from an airline's security system, because surveillance cameras at the checkpoint had failed to record the incident.


The breach at EWR prompted U.S. Senator Frank Lautenberg to add provisions to the 2011 Homeland Security Appropriations Bill to increase civil and criminal penalties for knowingly circumventing airport security.

Two years later, the New Jersey airport found itself in the hot seat again when a 64-year-old British national entered the secure side of Terminal B through a security checkpoint exit. This time, the TSA agent involved was giving directions to another passenger when the man slipped past the guard. The incident came to light when the man approached an airline agent for assistance, prompting local and national critics to ask how many other undetected breaches have occurred at EWR and other airports.

### Man vs. Machine

With the expected transfer of security responsibilities looming in January, airport operators across the country are assessing the best way to secure their checkpoint exits. Unlike PWM and SEA, many may be forced to post security personnel at exits due to budget or time constraints.

Equipment manufacturers note that automated systems eliminate human preconceptions that can lead to potentially serious consequences. In both breaches at EWR, cognitive biases played a role, as neither man seemed out of place given their environmental context. Although personnel training can reduce human biases, there is still a wide gap when it comes to detection of tiny objects, note system manufacturers.

For information about automated exit systems in use at Atlantic City International Airport and Kalamazoo/Battle Creek International Airport, visit [www.AirportImprovement.com](http://www.AirportImprovement.com) and search our archives by airport name. 

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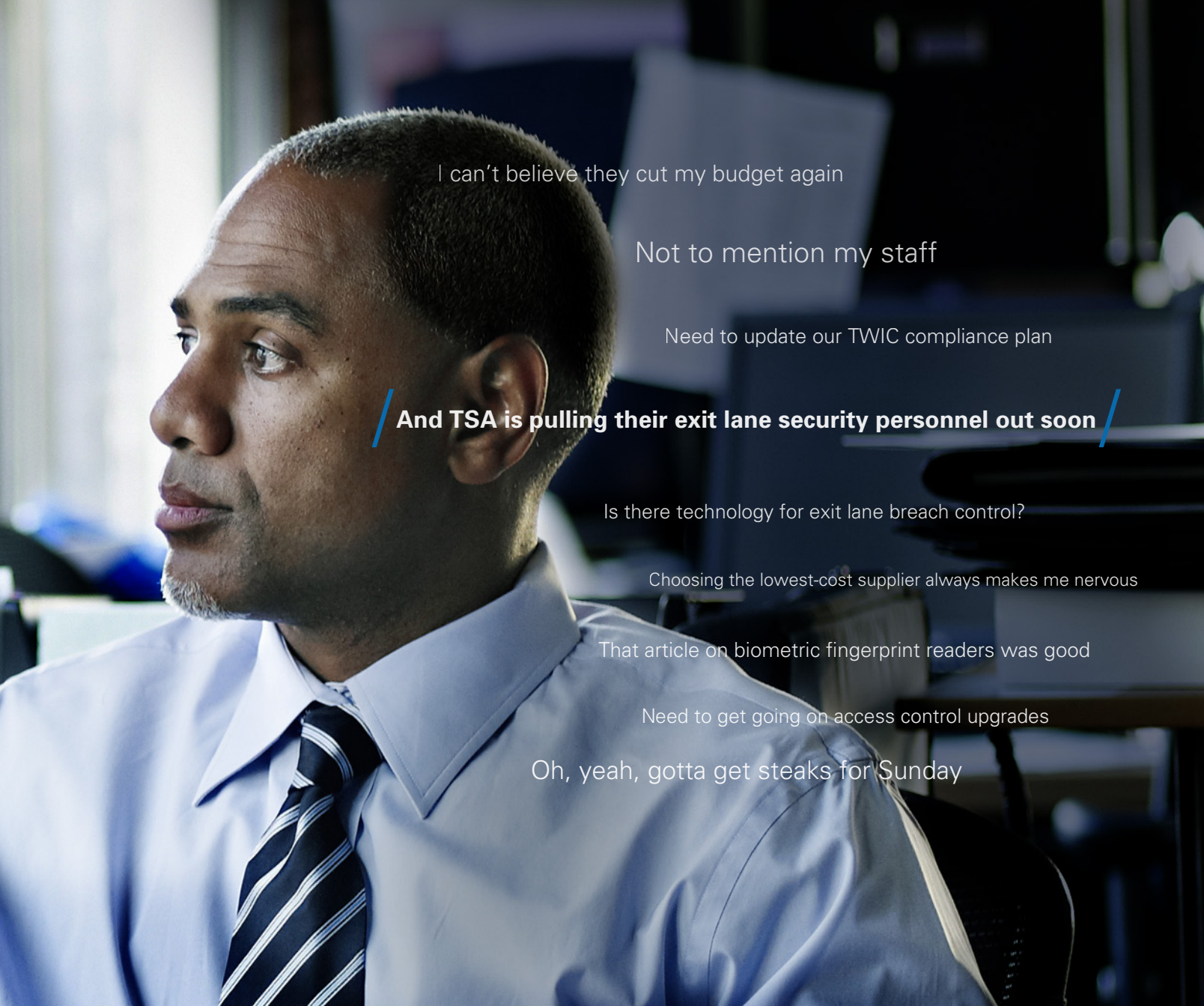



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Photo: Jose Oliva



## factsfigures

**Project:** Runway Relocation & Extension

**Airport:** Albert Lea (MN) Municipal Airport

**Total Cost:** \$9.5 million

**Funding:** FAA & American Reinvestment & Recovery Act grants (approx. 95%); city (approx. 5%); state DOT (<1%)

**Design & Engineering:** Mead & Hunt

**General Contractors:** Sorenson Brothers; Ulland Brothers

**Paving Contractors:** Ulland Brothers; Legends Concrete

**Environmental Contractor:** Mead & Hunt

**Runway Lights, Precision Approach Path Indicator Lights & Omni-Directional Approach Lighting:** Airport Lighting Co.

**LED Taxiway Lights:** Astronics DME Corp.

**Guidance Signs:** AGM

**Light Bases & Cover Plates:** Jaquith Industries

**Lighting Contractors:** Albert Lea Electric; Fox Electric

**Wind Cone:** Hali-Brite

**Electrical Vault:** Crest Precast

**Constant Current Regulators in Electrical Vault:** Liberty Airport Systems

**Relay Panel & Radio Receiver:** Rural Electric

**Engineered Paving Mat:** TruPave® by Owens Corning-Trumbull

**Mat Dealer & Installer:** Road Fabrics

**Key Benefits:** Improved safety; enhanced ability to accommodate corporate aircraft

**Related Project:** Apron Reconstruction

**Cost:** \$1.5 million

# Airfield Makeover at Albert Lea Municipal Features New 5,000-Foot Runway



Jim Hanson's Depression-era parents often reminded him to: "Use it up; wear it out; make it work." And for years, that's just what he did as manager of Albert Lea Municipal Airport (AEL), a city-owned facility in south central Minnesota.



Jim Hanson

When Hanson arrived at the airport in 1982, grass was growing through cracks in the asphalt runway and the hangars were sorely outdated. "When the facility was built, most private airplanes had tailwheels, and most 'corporate airplanes' were four- and six-place piston twins," he recalls. "The runways, buildings and lights were all designed for aircraft of that era. The city did a good job of catching up and maintaining the airport as our neighboring cities reconstructed their airports, but there is a time when there is no alternative to starting over."

After decades of "catching up" and "making do," Hanson was front and center when

the city debuted its essentially new airport in mid-July. Everything from the fuel system to the front sign had been updated throughout the years, but recent airfield improvements were particularly pivotal. A \$9.5 million project to construct a new 5,000-foot runway and reconstruct the airport's previous runway into a full-length parallel taxiway began in 2008 and ended last September. Crews also installed associated airfield lighting and navigation/aproach aids. During a separate \$1.5 million project, the apron was reconstructed.

"Our old runway lasted 55 years, and we got 15 more years from it than many of our neighboring cities got with theirs," remarks Hanson. "We also spent millions of dollars less than our neighbors to rebuild our airport."

Hanson traces the runway project back to the late 1990s, when additional overlays were no longer an option and homes impinging on the runway's south end safety zone came under official scrutiny by the Aeronautic Division of the Minnesota Department of Transportation



(MnDOT). The agency had been patient with the situation for years, because the airport's master plan called for moving the runway, and alternate property was already zoned for the new location. Eventually, however, a lack of progress toward that goal inspired MnDOT to put the airport on notice that it would withhold funding until the airport began complying with new minimum safety standards.

"In 2002, MnDOT once again insisted that action be taken on the runway zoning," Hanson recalls. "By this time, the runway and lighting were approaching 50 years of service, and it had been overlaid several times. There was no more 'limping it along' by trying to refurbish it once again. It was time to make the move."

### Winds of Change

Later that year, the city of Albert Lea contracted Mead & Hunt to draft an airport layout plan with input from the city, MnDOT and the FAA. Careful consideration was given to the types of aircraft using the airport, as well as aircraft that landed elsewhere because of the runway's length restrictions.

For decades, AEL's previous 4,500-foot runway had been a major shortcoming — and not in the figurative sense. "Even though we had operated a variety of jets and turboprops from the 4,500-foot runway for years, having that magic number of 5,000 feet was important to us, because it literally put us on the map for corporate jet operators," explains Hanson. "Many corporate operators don't even carry the instrument approach plates for airports shorter than 5,000 feet, as their insurance companies won't allow them to land there anyway. This is Minnesota, and runways are icy for up to six months of the year."

An initial study, prepared by a previous consultant in the late '90s, detailed more than a dozen possible runway configurations. But they were all less than 5,000 feet long, and therefore unacceptable to city officials and Hanson.

"If we couldn't get the 5,000-foot runway on the current site, we were determined to look for another location," he recounts. "Although we were able to service larger jets, their insurance companies wouldn't allow them to land on less than a 5,000-foot runway. We were losing business, because pilots were forced to fly into nearby Austin, Minnesota, or Mason City, Iowa."

With a creek and freeway on the north side of the airport and a popular golf course flanking it on the south, finding a suitable site for the new runway proved challenging. But Mead & Hunt looked "outside the box" for solutions to attain a 5,000-foot runway, and found the room by diverting a frontage road on the north end

and altering the runway's grade to give clearance over the road paralleling the golf course on the south end.

To make the selected site work, the airport had to relocate the adjacent city road, build a concrete bridge, relocate storm sewer infrastructure and a water main, and perform extensive grading work. It also required 2½ acres of wetland mitigation. "As with any project of this size, something always comes up that threatens to throw a wrench into the process," notes Matt Wagner, Mead & Hunt's project manager. "One of the most notable issues came about during the design of a relocated road as part of the wetland mitigation."



Matt Wagner

The airport had to shoehorn in a relocated road onto its property, and the wetland created issues for the roadway embankment. Water would flow through the embankment to the wetland and threatened to erode the road and land supporting the guardrail.

"Our biggest challenge was designing the roadway to fit within the physical constraints of the site, yet leave enough area for wetland mitigation," recalls Wagner. While most airports avoid on-site mitigation because they don't want to

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Runway and taxiway construction at AEL ran from 2008 to September 2012.

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attract wildlife near the airfield, the particular type of wetland created at AEL would not prove to be a significant wildlife attractant due to the limited amount of standing water it entailed, and on-site mitigation emerged as the best option, he explains.

"We had to stabilize the embankment to stop water from eroding the road embankment, but the configuration of the site made it challenging to come up with a solution," says Wagner.

There was a creek running through the wetland mitigation site that drained into Fountain Lake, in the heart of Albert Lea. Environmental regulators were concerned about installing a triple box culvert under the relocated road to carry the creek water as that would have altered the route and hydrology of the creek, thus greatly increasing erosion as the water made its way to the lake, which would affect the water quality downstream. Instead, designers proposed the construction of a 118-foot bridge spanning the wetland, which ultimately proved to be an even better solution for people downstream because it left the wetland untouched.

The city and Mead & Hunt worked with seven separate stakeholders throughout the course of the environmental assessment and wetland mitigation project.

## What's in, What's out

A preliminary airfield design contained provisions for paved crossover taxiways between the new main runway and the old runway, which ultimately became the full parallel taxiway. But this element was eventually eliminated to save money. Small airplanes generally used the mid-runway intersection to turn off, and larger aircraft require use of the full runway anyway, so the additional crossover was unnecessary, Hanson explains.

An even earlier suggestion for an instrument landing system (ILS) approach oriented to the north was similarly not accepted. A variety of issues sidelined the idea: prevailing wind data, anticipated objections about associated lighting installations infringing on the nearby golf course and cost concerns regarding the larger approach zones it would require.

"If residents were given a choice between golfing and flying, we would not have liked the result," muses Hanson.

One of the many elements that did prevail



was the use of an engineered paving mat to help reduce long-term maintenance costs on AEL's crosswind runway. Wagner specified TruPave, a high-tensile polyester and fiberglass mat that helps create a moisture barrier to retard the effects of reflective cracking. The fabric mat is rolled into liquid asphalt and then covered by a leveling course and final surface course.

Although the surface did show limited reflective cracking after the first freeze/thaw cycle, Wagner notes that is unrealistic to retard 100% of such issues. "I see this product as being a tremendous success," he says, noting that it eliminated nearly 90% of the reflective cracking on AEL's crosswind runway.

### Alternate Landing System

The airport's VHF omnidirectional range (VOR) and automated weather observing system (AWOS) were relocated in 2007. Because both are state-owned, MnDOT picked up the full cost. The change proved to be very helpful, since most general aviation airports in the state use a VOR approach, explains Steve Jahnke, city engineer and director of public works.

When a shortage of VOR units threatened to delay the project, MnDOT moved AEL to the top of the list to receive units it already had on order.

"I can't over emphasize how big a role MnDOT played in moving this project forward," stresses Jahnke. "The staff there should be held up as a national example of a cooperative, activist regulatory agency."

"Their quick action in relocating the VOR and AWOS cut through a lot of red tape and allowed the project to proceed very quickly," concurs Hanson.

After the airport's VHF omnidirectional range (VOR) was relocated, the airport still needed a better precision approach system to accommodate high-performance airplanes using the airport. While the VOR gets pilots to the airport, they rely on a precision approach system to get them to a specific runway while providing vertical guidance.

Initially, planners proposed an ILS approach to the south end of the runway. But, by acquiring an additional 6½ acres of land and reversing the direction of the precision approach, the airport created its much-needed safety zone. Rather than installing a full ILS, the airport added a Wide Area Augmentation System (WAAS) to augment a global positioning system (GPS) for precision approaches to the airport.



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Designers opted to install a bridge rather than a triple box culvert to minimize downstream environmental impact.

Best of all, the WAAS GPS system cost several times less to install than a full-blown ILS approach system.

“We now have a system that allows 250-foot ceilings and three-quarter mile visibility minimums for an instrument approach (nearly the same as a full ILS system), which greatly improves our all-weather capability,” reports Hanson. “And we don’t have to pay for infrastructure, antennas or a high-intensity approach.”

“Our system works so well, I would argue for the less expensive alternative even if the FAA had not funded 90 percent of the cost,” he adds. “Mead & Hunt gets the credit for making this work, because our project would not have been done at all had we had to come from the south over the golf course.”

Initial dirt work and the relocation of the roadway to the north of the airport was completed in 2008, but the project remained idle and final grading wasn’t finished until the fall of 2009. Workers needed to fill in a ravine by bringing in nearly 25 feet of dirt to bring it up to the grade at the runway’s midpoint.

In 2010, the airport was able to construct a new electrical vault, install the runway lights, the precision approach path indicator lights and the omni-directional approach lighting system, and pave the new runway. Subdividing the projects into smaller components helped minimize the affect on airport operations, notes Wagner.

Because the FAA requires that higher-priority projects, such as runways and taxiways, be completed before lower-priority projects like apron rehabilitations, the apron project had to be put off. In 2011, funds became available to reconstruct the old runway into a taxiway, which took a year to complete.

“I give a lot of credit to the FAA, specifically the Minneapolis Airports District Office,” says Jahnke. “They were a strong advocate, and were instrumental in obtaining the necessary funding for this multi-phased project.”

In 2012, work progressed on a security and wildlife fence, and the apron reconstruction began. When the apron work was

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completed this summer, the city of Albert Lea essentially had a fully reconstructed airport. The city celebrated with a grand opening in mid-July, complete with a vintage Ford Trimotor.

### Finally Finished

"After years of planning and even more years of construction and disruptions, we finally have a rebuilt airport," says Hanson. "Our goal is to ensure the new airport serves as long and as well as the old facility."


Wagner agrees that the project worked out in the long-term best interests of both the airport and its users. "The project brought the facility up to FAA standards, and improves airport safety and better accommodates AEL's users," says Wagner. "We now have a new runway 400 feet to the west of the old runway, and the old runway has been converted into a full-length parallel taxiway. That allows pilots to avoid having to turn around and back-taxi on the main runway to reach the terminal or hangars."

The results were acknowledged by the Minnesota Council of Airports, which awarded AEL Project of the Year honors in its key system airport category. The apron project has also been nominated for a similar award.

"The Albert Lea runway relocation project has been the highlight of my career," reflects Wagner. "How many consultants can say they were involved in a decade-long project in which they were intricately involved at every stage from the early planning to final construction?"

Hanson gives Wagner particularly high praise: "Matt was constantly visiting the project, and explaining the intricacies of construction. He listened to our needs and patiently described the engineering fixes for the inevitable unexpected problems. We really appreciated his cheerful, upbeat enthusiasm for the project."

The long-term improvement process also included plenty of trying twists and turns — from disagreements about specific project elements and intermittent local criticism of the airport to personnel changes, weather delays and funding challenges.

"It was a long process, and if we could have got all the funding all at once, it would have been a lot less difficult for the airport, our pilots and the people of Albert Lea," notes Jahnke. "Plus, it would have been cheaper. I understand there is only so much funding available. But, in the end, it worked out well, and we're happy with the final results." 

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# Columbiana Airport Swaps Light Pole Real Estate for Internet Service

By Jennifer **Bradley**



Columbiana County Airport is a small two-runway facility in rural Ohio with 28 aircraft based on the field. But that doesn't stop it from providing high-speed Internet access to its customers. The airport secured the much-needed, but costly-to-add, service through a barter arrangement with a nearby Internet provider.

The airport allowed RAA Services to install equipment on its beacon tower — the highest point in the area — in exchange for free broadband Internet service. Previously, the airport had an Internet subscription to an expensive satellite service, notes Mike Diloreto, chairman of the Columbiana County Airport Authority.



Mike **Diloreto**

"At our location, there is no cable or offering," he says.

The creative arrangement also benefits the surrounding community, as local residents and businesses gained the previously unavailable opportunity to purchase Internet service for \$30 per month.

Requests for service from several community members, in fact, initiated the deal. When RAA realized it didn't have the necessary equipment in place to service the area, Scott Dunn, the company's chief

executive officer, asked the airport for access to its light tower.

Often, RAA mounts equipment on farmers' grain bins or silos to obtain a line of sight to an antenna, but the airport's light pole was tall enough to send a signal over the tree three miles away and relay an Internet signal back to customers in the area. It was also already wired for electricity.

"This was the perfect and most logical choice," explains Diloreto.

After Dunn's initial conversation with Diloreto, the project was completed in about nine months, and a whole new world opened up to Columbiana County Airport and its neighbors via the World Wide Web.

## Strong Connections

Everyone is pleased with the small-town airport's unique approach to staying relevant and progressive, says airport authority member John Sayle. The facility's original development apparently followed a similar theme, when former governor Jim Rhodes decided to establish airports in all 88 of Ohio's counties back in the 1960s. Sayle characterizes



Scott **Dunn**

Rhodes as progressive for recognizing the importance of local airports for economic growth. Columbiana County Airport was developed from a small grass-strip facility established in the 1920s just outside of East Liverpool. "We have been really fortunate to get many grants over the years to develop our airport," Sayle notes.

With today's economic challenges, Sayle recognizes the airport as an advantage for the area and acknowledges the importance of access to the World Wide Web for its users. The airport's high-speed service allows based customers and transient pilots to access up-to-the-minute weather briefings and file plans with the FAA.

"These are all ways of communicating and gathering information for a safe flight," he says. "If an airport doesn't have access to the Internet, it really handicaps its efficiency."

Initially, Dunn thought of this opportunity as a way to connect more local customers to the Internet. But after he spoke with airport representatives and learned about the facility's lack of Internet service, he quickly realized the space-for-service swap would also help the airport.

Previously, the only way the airport could accommodate incoming/outgoing pilots, he says, was paying for Wi-Fi with a cellular phone card or a satellite connection, both of which are costly, as the airport knew firsthand. Plus, those options limited the bandwidth available,



John **Sayle**



and added potential overage charges. "When a pilot flew in and looked for a Wi-Fi signal, he would realize there's nothing there," says Dunn. "The problem is (that) more and more of everything done in this world is via the Internet."

### Community Service

"Everybody came out ahead on this one," comments Diloreto. "It has to do a lot with aviation; but in this case, we were able to reach out and help the surrounding area."

This type of attitude is important for, and appreciated about, a small hometown airport, he notes. Using its light tower to provide Internet to nearby local homes is a way to provide another level of service to those that support the airport.

"We try to be a good neighbor, and this just enhances that relationship," says Sayle.

Having an airport — especially a successful and accessible one — makes

a difference when communities are looking to create jobs and attract new people, he explains. "If you don't have a place to land, they'll land somewhere else," says Sayle. But while an airport makes a county or town a competitor, it needs support to help it grow, he adds.

Dunn says that if the airport had sought him out, rather than vice versa, the high-speed Internet signal could have been working in Columbiana County Airport's favor years ago. Consequently, he suggests that small, rural airports contact their local wireless providers to see if a similar deal can be reached.

"Partner with an Internet service provider," Sayle suggests. "Airports are big open spaces." He says that the Internet swap is just one of many ways this rural airport has made forward-thinking developments, and why it is considered a key facility in Eastern Ohio. Just this August, a \$45,000+ grant was

### factsfigures

**Project:** Internet Service

**Location:** Columbiana County (OH) Airport

**Cost:** Airport receives free Wi-Fi service for allowing Internet provider to install equipment on its beacon pole; community members pay \$30/month


**Internet Provider:** RAA Services

**Benefits:** Online flight plan filing & access to real-time weather reports for pilots; opportunity to purchase previously unavailable Internet service for airport neighbors

awarded to Columbiana County Airport for taxiway and apron improvements.

With service in place for nearly a year, Dunn hasn't received a single complaint. "It's been great for the airport," reports Diloreto.

"We had the electricity; we had the altitude. It was a great idea," Sayle concludes. 

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# Airport Restrooms: Often Overlooked, but



Airport visitors use many different names for restrooms — loo, privy, lav, water closet — but few mince words about poorly designed or ill-equipped facilities. Whatever they call them, restrooms are often the first place guests visit when arriving at an airport and their last stop before departing.

Make no mistake, restrooms leave an impression. Are they clean, easy to locate and accessible for everyone, regardless of physical or circumstantial needs? Are they large enough to prevent long lines? Do the aesthetics and fixtures evoke the 21st century or the 1960s?

Alan Howell, senior architect at Minneapolis-St. Paul International Airport (MSP), considers the extensive restroom renovations currently underway at MSP a unique customer service opportunity.



Alan Howell

“It’s not just about people needing to use a restroom,” Howell reflects. “It’s their first or last look at Minneapolis-St. Paul. It’s one of the few amenities that the airport gets to provide for guests. We provide parking, space for our tenants and restrooms. All the other services are provided by our tenants.”





## factsfigures

**Project:** Restroom Reconstruction

**Location:** Dayton (OH) Int'l Airport

**Cost:** \$3.7 million

**Program Manager:** Atkins

**Architectural Design:** Architectural Alliance

**General Contractor:** Rhecors

**Mechanical, Electrical & Plumbing**

**Engineering:** Heapy Engineering

**Structural Engineering:** Shell & Meyer Assoc.



**Project:** Restroom Reconstruction

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

**Est. Cost:** \$100 million (based on current costs)

**Project Duration:** 20 yrs.

**Architectural Design:** Architectural Alliance

**General Contractors:** CM Construction (E Concourse); Terra General Contractors (F Concourse)

**Mechanical & Electrical Engineering:** Michaud Cooley Erickson

**Structural Engineering:** MBJ

**Construction Management:** Kraus Anderson

**Toilet Accessories & Sinks:** Bradley Corp.

**Quartz Panels:** Silestone; Cambria

**Mirrors & Light Boxes:** Electric Mirror

**Stainless Steel Doors:** Forms + Surfaces

**Flooring:** Terrazzo & Marble Supply

*Designers incorporated artwork inside restrooms at MSP.*

# Seldom Forgotten

By Robert Nordstrom



Terry Slaybaugh

Terry Slaybaugh, manager of Dayton International Airport (DAY), describes it this way: "Air travel has become such a challenge for the flying public. With the capacity game that airlines are forced to play, aircraft are packed. As a result, amenities at the airport itself are becoming more and more a focal point, because travelers are spending more time there. It's really

the only place where we can add value to the passenger's travel experience."

While restroom renovations were overdue at both Midwestern airports, each is taking a slightly different approach based on individual needs and long-term planning strategies. Architectural Alliance planned and designed the upgrades for both facilities.

## Visual & Functional Updates

At DAY, restrooms were recently renovated in both concourses and in the post-security concessions area, even though plans are in the works to replace almost everything, including the terminal and concourses, in about 15 years.



“Our facilities are dated,” explains Slaybaugh, noting that the restrooms hadn’t been updated since the late ’70s and early ’80s. Code and accessibility issues added urgency, since the airport was built in the 1950s and some elements do not meet modern building codes or Americans with Disabilities Act (ADA) standards.

Destin Nygard, Architectural Alliance’s project lead for the project, describes DAY’s restroom facilities as “pretty tired” and notes that they currently lack a consistent look and finish.



Destin Nygard

“While we were somewhat constrained in terms of real estate because the depth of the concourses was set, we walked through a range of renovation options with airport officials and settled on quality improvements that would move their restroom facilities toward the leading edge,” Nygard relates.

Fixing a significant imbalance in the size and number of fixtures between the men’s and women’s restrooms was a top priority. Previously, the men’s facilities had more fixtures than the women’s, which is the opposite of current design standards.

Unoccupied space near existing restrooms was converted into restroom space, effectively doubling capacity. Toilet stalls were enlarged and doors were changed to swing out rather than in, to provide easier access for passengers with bags. Extra hooks allow guests to hang clothing and keep bags off the floor, and new fixtures were installed throughout the facilities.

Special family/companion facilities were added to each set of restrooms for parents traveling with children and airport guests with disabilities. Both concourses now have lactation rooms for nursing mothers.

Designers kept ongoing maintenance top of mind when specifying new finish materials. Switching from stainless-steel toilet partitions to panels made of post-consumer recycled paper and petroleum-free resin will make it easier for cleaning staff to maintain a fresh, clean look, explains Nygard. Large format ceramic tile with thin grout lines was selected to minimize the collection of dirt and grime, while terrazzo flooring was chosen to create a clean, finished look that is easy to maintain.

“We spent a lot of time thinking about the sinks, how to handle hand drying and keep water off the floor,” notes Nygard. “Sinks are recessed in pairs, which allows travelers to set their bags next to them and out of the way of traffic. Users can wash their hands then turn to grab a paper towel right next to them, which minimizes water on the floor and gets people quickly through the sink locations during heavy use times.”

Entry doors were removed to eliminate bottlenecks and facilitate access. And colorful glass tiles at the entry portals mark restroom locations, to help travelers locate them quickly when scanning the concourse, explains Nygard.

“Aesthetically, we’ve created a very pleasing look,” reflects DAY Airport Engineer Liz Zelinski. “The blue glass tile ties into the theme of clouds and sky and flight.”

Designers also added water bottle filling stations next to the drinking fountains outside the restrooms. “They are proving to be very popular and are in line with our green initiatives,” notes Zelinski.

### Long-Term Revamp

Officials at MSP realized they had a problem about three years ago, when restrooms became the airport’s biggest customer service complaint. The issue came as no surprise to Jens





*At DAY, drinking fountains outside restrooms include stations to refill water bottles.*

Rothausen-Vange, senior associate architect at Architectural Alliance.

“Restrooms are one thing about which everyone has an opinion, and it’s usually an emotional opinion. But they are often overlooked,” explains Rothausen-Vange.

Given the input from MSP’s customers and design consultants, officials decided against a mere facelift and committed to overhauling all 100 sets of the airport’s restrooms. Under Architectural Alliance’s guidance, planners met weekly with airport staff for about nine months to dissect every aspect of potential improvements.

“We wanted everyone involved,” explains Director of Airport Operations Phil Burke. “Cleaning and maintenance staff provided input. The energy management folks were there to discuss



Phil Burke

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ventilation and access issues. The electricians, plumbers and carpenters were all included at the design table. It was a unique process that generated a lot of good suggestions and ideas.”

Outside the airport, the project team sought insight from representatives of the disabled community. “ADA compliance was at the top of our list,” says Burke. “For example, we learned from people with hearing aids that the noise from hand dryers can be very troublesome. As a result, we chose the quietest dryers we could find on the market.”

No detail was too small, recalls Rothausen-Vange: “Toilet paper holders, materials, layouts, you name it, we argued and discussed the topic for weeks on end as well as evaluated the condition of every restroom at the airport. Then, we created a master plan to establish where restrooms should be located, based their sizes on aircraft capacity, and determined what offices, concessions or other real estate would need to be moved. It was a huge commitment on the airport’s part.”

The result? An airport-wide project expected to cost \$100 million and span more than 20 years. With projections based on current costs of \$1 million per restroom set, the final price may vary, note officials.

By early October, crews had completed the first two sets of MSP’s new restrooms for \$1.7 million, including costs to consolidate and reconfigure space previously used by tenants. The new restrooms — one in Concourse E, another in Concourse F — will guide future renovations and construction.

“We are just at the beginning of this long-term project,” Howell reports. “We know that once we touch a restroom, we may not get back to it for another 40 years. With these prototypes in place, we understand that we need to improve with each new renovation.”

Currently, the airport is testing a new hand dryer that’s built into the faucet, he explains. Not satisfied with having the dryer’s electric motor in a public space, airport personnel are working with the manufacturer to see if the motor can be moved, perhaps behind a wall, to reduce noise levels inside restrooms. “These are the kinds of changes we can make over the long term,” Howell relates. “If we find a new technology out there, we will revisit our program to see if it makes sense to implement that change.”

### Restroom Redux

Like DAY, MSP had a capacity issue that needed to be corrected. To increase capacity and decrease wait times in women’s restrooms, planners designed them with twice as many fixtures as the men’s.

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## Help is on the Way

A guidebook for airports planning and designing restroom projects is expected to be available in late 2014 or early 2015. When released, it will be one of the latest installments of the Airport Cooperative Research Program (ACRP), an FAA-sponsored program managed by the Transportation Research Board of the National Academies that presents near-term, practical solutions for problems faced by airport operators.

Content for the restroom project guide is being developed by Architectural Alliance. Alan Howell, airport architect at Minneapolis-St. Paul International, is leading the project, per his selection by the Transportation Research Board.

For information about purchasing the guidebook, visit [www.trb.org](http://www.trb.org).

Accessibility for passengers with bags was improved by increasing size of individual toilet stalls from the standard 2½ feet by 5 feet to 3 feet by 6 feet, the recommended size for ambulatory stalls. The walls separating stalls are 6½ feet tall and 9½ inches thick, and contain recessed toilet paper dispensers and recessed niches for carry-on luggage. Quartz panels along the outside walls eliminate grout lines, and outswinging stainless steel doors have a raked, slightly textured surface to resist fingerprints and facilitate cleaning.

Designers specified two-person, 18-inch-deep trough sinks in pairs, with a hand dryer and paper towel dispenser /disposal flanking both sides of each set. Multiple hooks provide a ready place to hang coats and shoulder bags, and wash areas include shelves behind the sinks to keep personal belongings secure and dry. Pipe chases allow crews to access trash containers stored behind the walls and provide clearance for carts and equipment needed for plumbing service and repairs.

Vertical LED lighting was placed on each side of the mirrors to create a more natural glow and compliment skin tones. LED light boxes are integrated into the wall above the mirrors and at the back of the toilet stalls, creating a clerestory window effect.

Off-white epoxy terrazzo floors eliminate grout joints and make the rooms look and feel cleaner, notes Rothausen-Vange. Crushed recycled Kohler toilets and glass mirror products add depth and sparkle to the floors while also enhancing the sustainability of the space, he adds.

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*Increasing the number of fixtures in women's facilities was a priority at both DAY (left) and MSP (upper right). MSP also added flight information displays outside some restrooms (lower right).*

Accessibility was a key focus throughout the design process. All stalls are equipped with grab bars, and enhanced accessibility stalls are included in each restroom — one in the men's and two in the women's. These stalls function as separate facilities, with sinks, mirrors, hand dryers/paper towel dispensers to complement the ADA-compliant toilets. In addition, their doors open automatically.

Each set of MSP's new restrooms also includes a separate area for families traveling with children. Similar to the enhanced accessibility facilities, the family restrooms have their own sinks and related amenities. While the toilet area does not have a door, the room is divided to maintain privacy, explains Rothausen-Vange.

### Upping the Aesthetics

MSP is leveraging visual and aural elements to elevate its restroom entrances. "Travelers entering these spaces realize immediately that these restrooms are different," Burke explains enthusiastically. "They see interesting artwork and hear classical music. There's natural daylight coming in, and the finishes are like nothing they've seen before. These restrooms are very unique."

The artwork is a series of colorful, somewhat abstract, mosaics depicting Minnesota themes such as farm fields and birch trees. Two artists, selected through a competitive process, created the large pieces.


Waiting areas are next on the airport's list. "A lot of times, one traveler will be using a restroom while a companion waits out-

side," Burke observes. "We want to provide them with a more comfortable waiting area in the vicinity of the restrooms. We plan to have flight information displays in the area as well as comfortable seating. We've just finished the design, and construction should begin next year."

Digital signs identify restroom locations, and will eventually be programmed to direct visitors to the nearest alternative when individual restrooms are out of service for cleaning.

With two prototypes in place, MSP is set to move forward on its long-term, \$100 million restroom revamp. Construction of another family restroom in Concourse C is scheduled later this year, along with the addition of lactation rooms for the C, E and F concourses. Plans for 2014 include four sets of restrooms and another room for nursing mothers. And four more sets of restrooms are slated for 2015.

Even facilities for four-legged customers are being upgraded. A new relief area for service animals will be added in 2014.

"The next two years are going to be extremely busy for us," Howell reflects. "But the restrooms we have slated for reconstruction will probably have the biggest impact on the program, because they are in our highest need areas. The feedback we've received from both our board and the general public has been very positive, which is great for our team moving forward." 

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Overland Aerial Photography ©2013

# Oil Boom Creates Bonanza for North Dakota Airports

By Dan Vnuk

Until recently, North Dakota was largely considered a “flyover” state. Then its ample reserves of shale oil became a hot commodity, and now it’s more of a “fly to” destination.

As oil fields displace wheat fields and new construction flourishes throughout the northern half of the state, surges in population and industrial activity have strained North Dakota’s infrastructure — including its airports. The state government, however, is using proceeds from special taxes levied on oil-producing activities to bolster infrastructure throughout the state. The federal government and local municipalities are also helping fund improvements.

In the meantime, thousands of people continue to arrive weekly, lured by plentiful, well-paying jobs. Local roads are full of tanker trucks hauling the “black gold” to rail heads for transport to distant refineries. And oil field roughnecks, roustabouts, truck drivers and mechanics crowd into “man camps” of hastily constructed barracks.

Some industry-watchers say the boom could last another 30 years. Environmentalists who oppose the “fracking” method used to extract the oil are working to end it immediately. As the situation unfolds, airports in and around the “oil patch” are under as much pressure as the water and sand that crews pump into shale seams to force the oil and gas up to the surface.

Sloulin Field International Airport, located in what many consider the epicenter of the oil boom, has logged more than 67,500 enplanements through September this year — up

from nearly 24,000 at the same time last year. Things are also booming at Roosevelt Regional Airport in Dickinson, which had roughly 22,000 departing passengers — 3,513 more than the same point in 2012.

Revenue from aircraft registrations and excise taxes on new aircraft and fuel sales is also up. Sheila Doll, who handles registrations for the state, reports a steady increase during the last few years.



Sheila Doll

## New Realities

Larry Taborsky, director of the North Dakota Aeronautics Commission, reports that airport projects will be ongoing, and increased funding will help get facilities on track to accommodate the recent passenger influx. “Back in a different time, the places were set up for a certain volume of traffic and type of aircraft,” Taborsky explains. “We’re finding, just like roadways, that they are getting stretched beyond their capacity.”



Larry Taborsky

Earlier this year, the state legislature approved a \$240 million Oil and Gas Impact Grant Fund — \$60 million of which was earmarked for airports. In August, the state awarded more than \$27 million of the funds to support construction and maintenance projects at 11 airports that are feeling the brunt of the oil boom.



"Airports in western North Dakota are experiencing record increases in boardings and activity, requiring additional investment in new and expanded terminals, runways and other maintenance needs," Gov. Jack Dalrymple said in a press statement. "These state grants will help airports in our counties address the impact of rapid growth and enhance air travel opportunities for our citizens."

The day before North Dakota established its grant fund, state lawmakers announced that the FAA was providing \$17.5 million for improvements and construction projects at 10 North Dakota airports.

"Recommendations for (state) awards were reviewed and approved by the Aeronautics Commission," explains State Land Commissioner Lance Gaebe. "Projects that are eligible for or are set to receive federal funding are ones that were given priority. Local cost-shares for projects also were taken into consideration."

Nearly \$1.9 million was awarded for construction of a new airport in Bowman. Dickinson Theodore Roosevelt Regional is scheduled to receive approximately \$1.26 million, most of it for expanding the airport's apron and snow removal equipment building. And just over \$1 million was awarded to Crosby Municipal for apron improvements. Remaining funds were divided between airports in Williston, Kenmare, Killdeer, Mohall, New Town, Stanley and Tioga.

Grants were approved unanimously by the Land Board, which includes the governor, attorney general, state treasurer, secretary

of state and state superintendent of public instruction.

"The commission was able to give out heftier grants this year, for the 2013-2015 biennium, because it received oil impact money," explains Kyle Wanner, an aviation planner with the North Dakota Aeronautics Commission. "The legislature and government allocated \$60 million for oil impact on the airports in western North Dakota, and an additional \$6 million for airports elsewhere in the state. Because of the oil boom, most airports in the state are being hit with business traffic that wasn't there before."



Kyle Wanner

Wanner cites the airport in Mohall, which went from housing three planes to 25 in one year, as an example. "It's more of an indirect effect outside of the oil patch, but those airports are still growing, too," he explains. "And many small airports weren't designed to handle the increase in traffic, which is why they needed the grants for improvements. While the oil boom is bringing in more business traffic at many airports across the state, rural airports are also used by agriculture aircraft, emergency services and people who fly planes for fun."

### Modernizing MOT

Minot International Airport (MOT), long known for its massive Air Force base, is now dominated by oil field laborers who fly in for a

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few weeks of work, then fly home for a week off. With enplanements nearly tripling in the last five years, MOT received \$21.2 million in state grants this year — more than any other airport in the area. Fully \$18.5 million of the funds have been allocated for a new terminal.

“The city is funding about one-fourth of the project, and the airport also has been awarded \$18.5 million from the state in oil impact dollars for airports,” reports Airport Director Andrew Solsvig. “The city is awaiting word on an additional \$3 million in federal funds before issuing a full order to proceed with construction.”

Minot City Council has, however, accepted a \$40.7 million bid from Graham Construction Services, allowing the contractor to break ground, mobilize equipment and install underground utilities and foundations.

In July, MOT logged 19,158 boardings — up from 6,489 in July 2008.

## Sharing the Wealth

Although Jamestown Regional Airport (JMS) and Kulm Municipal are not in the oil patch, they are still benefiting from revenues it is producing. “The statewide airport growth should benefit the state’s economy,” Wanner explains. “According to a 2010 North Dakota Aeronautics Commission study, the total economic output from all airports in the state was about \$1.06 billion. The total output from general aviation airports, or small, rural airports, was about \$131 million.”

JMS, in the southeastern section of the state, completed its new terminal last year, and TSA set up shop in December. With grants from the North Dakota Aeronautics Commission, FAA and Jamestown Regional Airport Authority, it was a banner funding year for the small commercial airport. In addition to the new terminal, JMS also installed a new beacon and tower and added new hangars.

“We basically quadrupled our capacity, and the project came in just under the projected \$2.1 million estimate,” reports Airport Manager Matthew Leitner. “The existing terminal was built in 1960, while the Cold War was heating up. It was capable of serving as a nuclear fallout shelter. Although the old terminal once included offices for the Federal Aviation Administration’s flight service station — essentially a weather office — it still lacked the space now required for updated airline security requirements.”

About 40 miles south of Jamestown, Kulm Municipal Airport received five grants totaling \$47,275 from the aeronautics commission this year. “They were very kind to us,” says Lorence Holmgren, chair of the Kulm Airport Board.

Kulm Municipal, a grass strip facility with seven based airplanes, is one of the 36 North Dakota airports that rely completely on state and local funding. The state’s other 53 airports are eligible for federal funding because of their sizes and services.

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The facility in Kulm is using its grants to build a new terminal with a bathroom, running water, office and lobby. "If pilots fly in, they'll have a place to relax," notes Holmgren.

Kulm Municipal opened at its current location in July 2009, after the town's previous airport, built in the 1960s, was closed in 1995 due to flooding. In 2010, it was named General Aviation Airport of the Year by the state aeronautics commission.

### New Airport in the Works

Bowman County Airport, in the southwest corner of the state, is planning a new complex that is expected to cost around \$12 million, funded primarily by the FAA. When the new facilities are finished sometime in 2015, they will replace the aging Bowman Municipal Airport, explains Brent Kline, who manages the airport and its fixed-base operation, Bottom Line Aviation.

"I think this new facility could definitely take a load off some of the other airports in the area that are overloaded from all the oil patch activity," Kline says. "Although the new airport will not feature commercial air travel, the proper amenities will be there for possible commercial travel in the future."

The runway will be 5,700 feet — about 20% longer than the current airport's strip; and the new airport will feature more hangars and a larger, county-owned facility to house aircraft.

"I think the new airport could really be a hub for southwestern North Dakota," says Kline. "We will be able to accommodate bigger planes, and it will have a better navigation system."


With the FAA footing 90% percent of the bill and state funds covering another 5%, local government is paying 5% for the new facility. "The price was right for Bowman County," Kline notes. "People are excited, and there is a strong backing in the community."

Brosz Engineering is designing the complex. Foothills Contracting has been selected for preliminary dirt moving and grading, which is expected to be finished next July. The land housing Bowman Municipal Airport, which opened in 1944, will eventually be sold.

### Sustainable Pace?

As renovations and new construction projects help airports throughout the state manage the new levels of traffic that initially overwhelmed them, officials strategize about accommodating future needs without overbuilding.

Oil production has increased six-fold since 2006, and North Dakota currently boasts the lowest unemployment rate in the United States. Last year, its per capita gross domestic product was nearly 30% higher than the national average, after years of lingering at the bottom of national rankings.

But no one knows exactly how North Dakota's oil boom will unfold over the long-term. And that leaves aviation planners and individual airports in a tough spot. Meanwhile, the oil continues to flow and a record amount of passengers continue to fly into and out of the area. 

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# Chicago Airports Forge New Territory with Mandatory Green Standards for Concessionaires

By Victoria Soukup Jensen



When it comes to long-term sustainability, it's one thing to talk the talk and quite another to walk the walk. That said, the Chicago Department of Aviation (CDA) is boldly striding where no other airport authority has gone by extending its green policies to airport concessionaires.

All concession operators at O'Hare International Airport (ORD) and Midway International Airport (MDW) are required to adopt standards that support healthier eating choices, reduce waste and promote a cleaner environment. And they have until Dec. 31 to fully implement their new strategies.

Specifically, the sweeping new CDA policy:

- bans polystyrene (Styrofoam) products and petroleum-based bags, utensils and consumer containers
- requires concessionaires to separate all waste into recyclables, compostables and refuse
- prohibits the purchase of cleaning and hygiene products that are not green-certified
- mandates the use of more sustainable foods
- requires concessionaires to donate surplus food to the greatest extent allowable by food safety regulations

"We created the green concessions policy to provide concessionaires at O'Hare and Midway with guidance and standards for providing a more customer-friendly environment and experience that is healthier for pas-

sengers, employees and the environment," explains CDA Commissioner Rosemarie S. Andolino.



Rosemarie Andolino

Except for initial cost concerns, the changes have been well-received by concessionaires, report CDA officials. Some companies are even surpassing their expectations. Andolino says concessionaires understand that customers are demanding more in the way of sustainable foods and corporate responsibility. "We believe that they see our policy as a good opportunity to establish green reputations for their brands, which will make them more competitive in the long run," she explains.

Premier Restaurant Group, which operates 15 businesses at MDW, represents the positive way many concessionaires have reacted to the change. "While greening any operation of our size presents challenges, all of us at Premier believe it is the right thing to do for the environment, for our guests and for the company," says Stephen J. Miller, the company's vice president and chief operating officer. "We've been very, very aggressive with supporting the CDA's sustainability program."



Stephen J. Miller

## De Rigueur

Green initiatives are nothing new for Chicago airports. In 2003, the O'Hare Modernization



## factsfigures

**Project:** Green Concessions Policy

**Locations:** Midway Int'l Airport; O'Hare Int'l Airport

**Administrator:** Chicago Dept. of Aviation

**Implementation Deadline:** Dec. 31, 2013

**Contractors/Consultants:** Landrum & Brown; Unison Retail Management

**Key Goals:** Reduce waste, encourage sustainable practices & increase use of healthy, sustainable food

**Strategy:** Policy bans polystyrene foam, petroleum-based plastic bags & disposable plastic consumer containers/utensils; policy requires source-separating all solid waste refuse & increased procurement of sustainable foods

**Enforcement:** Concessionaires will incur financial or lease-related penalties for non-compliance





Amy Malick

Program implemented sustainable requirements for all airport design and construction projects. "Since then, we've expanded our focus to look at the daily operations of everything that happens at our airports, including those of our concessionaires," explains Amy Malick, CDA's deputy commissioner of sustainability.

According to Malick, 40% of the daily waste produced by concessionaires at ORD and MDW is compostable organic material; however, it can't be composted when it's intermingled with non-recyclable plastic and polystyrene foam (Styrofoam).

"The most effective way to capture those resources would be to eliminate the waste that is non-recoverable, such as Styrofoam and plastic," Malick explains. "There is an upfront cost to going green; but in the end, we also feel we will see an economic benefit of a much-improved waste recovery program."

The policy also phases in requirements for concessionaires to use more sustainable foods, such as antibiotic-free meat, free-range eggs, fair trade products and products certified by the Food Alliance. In 2014, 5% of all food purchased must be sustainably sourced or certified organic. In 2015, the requirement will rise to 10%, then to 20% in 2016.

The new requirements won't require drastic changes for Premier. It already uses nothing but green cleaning products and does not use Styrofoam products, reports Miller. It also recently switched to recyclable bags, food containers, cups and napkins. In addition, the company strives to purchase a substantial percentage of its food from within a 250-mile radius and buys only hormone-free turkey, he adds.

"It's a thing we are addressing daily, and we are constantly changing to implement more sustainable choices," Miller explains. "We are enthusiastic about not only meeting, but exceeding, the CDA's requirements for sustainable operations prior to the Dec. 31 deadline."

### My Kingdom for a Cup

Argo Tea, a Chicago-based company with three locations at ORD, focuses much of its corporate business model on sustainability, renewable resources and recycling; so implementing the new CDA policies have not been a strain for it, either. Finding recyclable cups that are not made of petroleum-based materials, however, has been a challenge, relates Arsen Avakian, Argo's founder and chief executive officer.

"The pricing is very hard to match, since the recyclable cup is two to three times more expensive than the regular cups," Avakian says. "Only when the largest companies start driving the change to recyclable cups is when the manufacturers will be forced to set up factories and capacity to produce the cups in quantities that would drop the price."

Eventually, Avakian hopes to stretch beyond recyclable cups to fully biodegradable cups. "That means we don't even need to waste money or resources on recycling," he explains. "You just use the cup, and it disappears within 120 days."

Argo has achieved that goal with other staple consumables: special salad bowls made of a biodegradable material and fully biodegradable "sporks" (a spoon and fork combination) from the Far East. "We chose sporks because they eliminate fork and spoon use, which reduces overall usage," explains Avakian.

The company also purchases all of its food and ingredients directly from farmers to ensure the products are 100% sustainable, notes Avakian. "We ensure suppliers stay in business and have a healthy business," he explains. "In return, we get the highest quality and never compete for the best leaf or the best ginger or the best honey against other bigger companies."

Currently, Argo has about 40 stores in five countries around the world. It plans to open its second airport location next year at Hartsfield-Jackson Atlanta International.

### Retail, Too

CDA's new environmental requirements aren't just for food and beverage concessions. Retail operators must comply as well.

InMotion Entertainment, an electronics retailer with two locations at ORD, switched to recycled paper bags and uses green cleaning agents, paper towels and signage made of recycled materials. In addition, its sales clerks discourage the use of bags and routinely offer to unwrap purchases for customers before they leave the store. The latter practice allows workers to recycle packaging materials properly and speeds customers' enjoyment

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of purchases, explains Eden Goldberg, vice president of marketing and business development for InMotion.

### Cooperative Effort

InMotion, Argo and all other ORD and MDW concessionaires were required to submit compliance plans detailing how they will meet the new environmental requirements. This allows CDA to help individual companies with the transition, says Malick.

"We're really trying to listen to our concessionaires in terms of the challenges they may be facing," she explains. "We will be reasonable about non-compliance if they've been communicating to us and have been clearly trying to resolve any challenges. But we are taking this very seriously. If any concessionaire fails to reach their milestones without communicating to us, there will be financial or lease-related penalties."

CDA understands that different concessionaires will face different challenges when implementing the green policies, Malick notes. Locations that are part of large chains may struggle to merge packaging restrictions with corporate branding requirements; small "mom-and-pop" shops may lack the resources to navigate available sourcing options. "We work with them to



Eden Goldberg

understand what they're facing, to see how we can help them out," she explains.

Nuts on Clark, a Chicago institution with three stores at ORD and one at MDW, has had an environmental program in place for years. The gourmet nuts, candy and popcorn business never uses polystyrene foam, uses nothing but green cleaning agents and recycles its corrugated boxes, reports company president, Estelle Kenney.



Estelle Kenney

Last year, in fact, CDA recognized Nuts on Clark for its voluntary green policies. But the new policy required the company to change its bags. Stores now use biodegradable bags to package popcorn and for general shopping bags. Even though the new bags cost twice as much as the old bags, Kenney is understanding about the change: "It makes sense, and the customers seem to appreciate it. I find the policy very exciting, because just about everything being implemented is what we practice normally. I'm very comfortable from that standpoint."

According to Malick, communication has been key to the successful implementation of green changes. "If we have a group that is easily meeting our requirements and another group that cannot find options, we try to link them to resources that will help them comply," she explains.

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## Above & Beyond

HMSHost, a national company that operates concessions in more than 100 airports, is earning gold stars for its reaction to CDA's green initiatives. Instead of complying with new requirements, it went one step further and launched the Farmer's Market and Urban Garden at ORD — the first and only aeroponic garden in an airport. The 900-square-foot plot provides ready access to fresh produce for six HMSHost airport restaurants. Initial crops include parsley, cilantro, jalapeno peppers and edible flowers.


"The market is witnessing the ushering in of a progressively more environmentally responsible era in airport dining," says Bradley Maher, director of operations for HMSHost. "Travelers are increasingly going to be able to find healthier dining options with natural, fresher ingredients from restaurants that are also on the cutting edge of observing sustainable guidelines regarding waste, energy usage, materials consumption, construction and product sourcing."

## Industry-wide Efforts

CDA's new policy puts Chicago on the map in terms of sustainability and green initiatives, says Malick. "The city as a whole has a very aggressive goal in terms of sustainability," she notes. "This is just one of the many things we're doing to make Chicago greener."

Consumers are demanding better quality when it comes to the food they eat and the products they buy. They want healthy and sustainable choices. This is a great opportunity for our airport to take a leadership position in these issues."

Andolino is proud of the leadership role Chicago airports have assumed within the industry. In addition to implementing exemplary environmental initiatives at its own facilities, CDA helps other operators by sponsoring Airports Going Green, an annual conference that highlights successful sustainability projects at airports throughout the world and presents expert speakers on a variety of environmental topics.

"Under the leadership of Mayor Rahm Emanuel, we are continuously raising the bar for sustainability at Chicago's airports and leading by example in the global aviation industry and beyond," notes Andolino. "Together with our concessionaires, we're creating a more sustainable and efficient operating environment at O'Hare and Midway, and sharing our environmental commitment with over 85 million passengers who travel through our facilities each year." 

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## Risk Management Conference

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## Media Relations Seminar

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## ACI-NA / AAAE Washington Legislative Conference

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**APRIL 7 – 9**

## Airport Economics & Human Capital Conference

Dallas, TX

**APRIL 14 – 17**

## Business Information Technology Conference

Baltimore, MD

**APRIL 14 – 17**

## Public Safety & Security Spring Conference

Baltimore, MD

**JANUARY 26 – 28**

## Air Service Data Seminar

Albuquerque, NM

**FEBRUARY 5 – 7**

## CEO Forum & Winter Board of Directors Meeting

Tucson, AZ

**MARCH 29 – APRIL 1**

## Air Cargo Conference

Orlando, FL

**APRIL 7 – 9**

## Legal Affairs Spring Conference

Dallas, TX

**APRIL 14 – 17**

## Environmental Affairs Conference

Baltimore, MD

**APRIL 21 – 24**

## Operations & Technical Affairs Conference

Montréal, QC



# Parking Reservations Go Viral at Vancouver Int'l

By Nicole Nelson



## factsfigures

**Project:** Online Parking Reservations

**Location:** Vancouver Int'l Airport

**System Provider:** Chantry Corp.

**Product:** Parkspace

**System Debut:** April 2013

**Area Deployed:** jetSet long-term lot

**Lot Capacity:** 3,500 vehicles

**Key Benefits:** Users save about 40% vs. regular drive-up rates; 25% of eligible customers pre-book online

Following in the successful footsteps of U.K. airports that fundamentally changed the way patrons park, Vancouver International Airport (YVR) has introduced pre-booking options that have already doubled its online parking reservations.

After YVR re-branded its 3,500-stall long-term lot as “jetSet Parking” in January, it followed up with the soft launch of online booking capabilities in April. And the new initiative has been steadily gaining traction ever since, reports Andrew Grams, Vancouver Airport Authority’s manager of Parking Operations. With five months of incremental increases, 25% of jetSet customers were booking their parking online by September.

“The online booking has been extremely successful — more so than we really dreamed when we started planning it,” Grams relates. “The customer reaction has

been very, very positive, and I think that is evident just in its growth over the last few months.”

Given the positive launch of the jetSet portal, YVR hopes to eventually mirror the performance of airports in the United Kingdom that pre-book 70% to 90% of their parking online using the same system: Parkspace, by Chantry Corporation.

“We think it is a big opportunity for us here at Vancouver International Airport, and we would like to achieve the success that the U.K. airports are having,” Grams says.

Those airports have been using the system for decades; YVR has yet to log a full year with the new technology.

## Online Edge

Currently, online booking and payment are only available to YVR customers using the airport’s long-term jetSet lot, which is serviced by shuttle buses. Plans, however, are in the works to roll out the option at the airport’s other facilities, including its covered Parkade.



Andrew Grams



Although jetSet is the airport's lowest priced parking option, it includes amenities such as self-service kiosks that allow customers to check in for their flights right in the lot. The low-price/high-value combination makes jetSet a popular alternative to YVR's valet service, the Parkade immediately adjacent to the terminal and its economy lots, notes Grams.

YVR's jetSet lot also competes with off-airport parking options, and its new online reservation system gives it an additional advantage. "It is a competitive environment, absolutely, but we launched the jetSet product to increase the customer experience," says Grams. "Having the online bookings which is something our competitors don't have is really a convenience factor for the customer.

"Customers pre-plan most aspects of their travel including their flights, their hotels, and their rental cars. So, it is really just a natural for us to add the pre-booking parking aspect; and so far, reaction has been really positive."

YVR sweetens jetSet's price-conscious appeal by offering customers discounts for reserving and paying for parking online. "Compared to our standard roll-up rate, customers booking online with us receive about a 41% discount, so it is very competitive," notes Grams.

## Supplemental Sales

Currently, YVR customers can book and pay for jetSet parking online; but the Vancouver Airport Authority is considering adding ancillary services such as airport lounge passes and car washes to the airport's online checkout cart.



Chris McKenty

Chris McKenty, international business development director at Chantry Corporation, says that YVR has the potential to offer a wide array of bells and whistles. According to McKenty, 12% of all pre-booked parking reservations at other airports include additional items.

"So far, there has been the soft launch of the basic product (at YVR). The next step is dynamic pricing ... Vancouver can up-sell and cross-sell with lounges and possibly fast-track security options," he suggests. "It is not necessarily just airport-related (items or services); it can be car detailing, chocolates and flowers."

McKenty bases his projections on the deployment of Chantry's reservation and booking system at 80 other airports on four continents, including Edmonton International Airport, just across the country from YVR.

Regardless of the location, all airports that use the Parkspace system experience incremental revenue gains, says McKenty. Increases range anywhere from 3% to 20%, depending on how long the system has been

in place, how proactive the airport is and the extent to which it uses dynamic pricing, he explains.

"We are new to the system, so we are moving things slowly," says Grams. "But there certainly is the ability to utilize more advanced functionality such as yield management. The advantage to the online parking system is that we can adjust the rates in real time when we are at more of an advanced stage like they are in the U.K."

McKenty says that Canadian airports have the advantage of being commercially driven, which allows for dynamic pricing and an aggressive approach to market.

According to airport data, nearly half of YVR's parking reservations are for stays within two days, making the online parking option especially convenient for business travelers.

"Most business travelers are less price sensitive to airport intangibles such as parking, but they want to guarantee they have a space that is prepaid and they can get to the airport to fly out," McKenty says. "While there is a propensity nowadays for businessmen to go with a low-cost airline for a cheap flight, they still want all of the business-type privileges, such as guaranteed premium parking, lounge access and fast-track security as well. You can buy all of those things as a package at a set price."

The appeal of jetSet's online booking also extends to leisure travelers, he adds: "The Canadian market in Vancouver can be very dynamic, and they are following the demand of customers to have this solution." ✈️

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## factsfigures

**Project:** Runway Reconstruction

**Location:** Joint Base Charleston, South Carolina

**Owner:** U.S. Air Force

**Runway:** 15-33

**Size:** 9,000 ft. long; 150 ft. wide, with 25-foot paved shoulders

**Cost:** \$44 million

**Contract Management:** Air Force Civil Engineer Center

**Contractor:** DWG & Associates

**Light Installation:** Atlantic Electric

**Lighting:** ADB Airfield Solutions

**Arresting System Installation:** HMI (Home Menders Inc.)

**Portland Cement Concrete:** Anthony Allega Cement Contractors

**Asphalt Shoulder & Overrun Installation:** Banks

**Dirt Work/Civil Contractor:** Gulfstream

**Airfield Markings:** Peek Pavement Markings; Falcon UHP

**Saw Cutting & Joint Seal:** Swank

**Landscaping:** Herndon

**Cast-in-Place Pipe:** Insituform

**Survey:** Parker

**Quality Control Testing:** WPC

**Title II Quality Assurance Inspection Services:** Atkins

**Fence:** Manner Building Supply

**Key Improvements:** Portland cement concrete runway surface, taxiway airfield lighting, infrastructure for navigational aids, fighter aircraft arresting system, asphalt shoulders and overruns

**Reconstruction Timeline:** mid-June 2012 – late July 2013

**Challenges Overcome:** Construction occurred during one of the wettest years on record

# Runway Rehab Benefits Military & Civilian Traffic



By Rebecca Kanable

Airmen and civilians flying aircraft into Joint Base Charleston via Runway 15-33 have had smoother landings since the rehabilitated runway opened in August. The main 9,000-foot runway, owned by the U.S. Air Force, serves both the 437th Airlift Wing and Charleston International Airport (CHS).

The 437th Airlift Wing trains and executes the only C-17A special operations capability in the Air Force. With a maximum load of 170,900 pounds, the C-17 can carry two large buses, three helicopters, one of the Army's newest tanks or a variety of other oversized cargo. Last year, Joint Base Charleston executed more than 2,700 C-17 missions.

CHS services nearly 3,900 arriving and departing commercial flights per month and accommodates more than 2.5 million passengers each year — and volume is growing, notes John Connell, P.E., deputy director of engineering and planning for the airport. The



John Connell

runway improvements support the growing Charleston community and local private industry, including Boeing South Carolina, which manufactures the 787 Dreamliner.

"The runway is a vital link in a growing economic engine for the Charleston region and for South Carolina," says Connell.

Joint Base Charleston shares its two runways through what CHS officials say is the longest running civilian/military joint use agreement of its kind with the Department of Defense — a unique relationship the airport appreciates, notes Connell.

"We are fortunate to have use of a brand new runway," he acknowledges.

The runway's new surface consists of 150-foot wide Portland cement concrete designed for modified heavy traffic, and 25-foot asphalt shoulders and overruns. In addition to a new surface, the \$44.4 million Air Force-funded project provided high-efficiency LED lighting, an improved aircraft arresting system and taxiway reconstruction.





*Last year, Joint Base Charleston supported roughly 2,700 C-17 missions for the 437th Airlift Wing — and commercial flights with 2.9 million passengers for Charleston Int'l.*

Rob Crossland, a pavements engineer with the Air Force's 628th Civil Engineer Squadron at Joint Base Charleston, says the rehabilitation was necessary because the old runway was nearing the end of its useful life.

The aging, 9,000-foot long, 200-foot-wide concrete runway had miles of cracked slabs, hundreds of spall repairs and weight restrictions on several pavement features. Required maintenance was constant and, spot repairs no longer sufficed, Crossland reports.

In an Air Force Civil Engineer Center (AFCEC) news release, Mark Dent, AFCEC project manager, said runways are designed based on mission requirements to have a 50-year lifespan, with increased maintenance requirements after 20 years. Portions of the old Charleston runway dated back to the 1940s.

"We replaced the runway before it became a danger," says Lt. Col. Matthew Leard, commander of the 437th Operations Support Squadron. "There were cracking issues and FOD (foreign objects and debris) concerns, but we took action before it went any further."

The previous runway lacked paved shoulders and runway end lights, and had 1950s vintage lights with no available replacement parts, adds Crossland.

### Project Mission

The Air Force Civil Engineer Center at Tyndall Air Force Base in Florida managed the runway project contract. It is the ninth runway contract that AFCEC engineers executed in seven years.

The general contractor for the Charleston project was DWG & Associates, a disabled veteran-owned small business.

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# The “Talcum Powder Effect”

Lessons learned after the 2010 rehabilitation of Joint Base Charleston’s Runway 03-21 and the paving of other concrete runways were applied to the recent rehabilitation of Runway 15-33.

New concrete runways produce what Jamey Kempson calls the “talcum powder effect.” The airport maintenance and NAVAID engineer with the South Carolina Aeronautics Commission coined the term after an airport manager told him that a year or so after runway paving, a lot of dust would kick up when aircraft landed — even after a heavy rain.

Tim Neubert, president of Neubert Aero Corp., explains that the purpose of the concrete powder material is to help cure the pavement and offer protection from UV sunlight. But the powder also affects aircraft braking conditions and lowers friction pavement values.

Neubert Aero has performed friction testing surveys on the runways at Joint Base Charleston for six years. Friction values, expressed in Mu numbers, describe the paved surface and can be used to evaluate the surface friction deterioration of runway pavements and to identify corrective actions required for safe aircraft operations. Friction testing, performed at 40 mph to determine microtexture or fine scale roughness and 60 mph to determine macrotexture or visible roughness of the pavement surface as a whole also measures skid resistance or braking action.

Six months after Runway 03-21 opened, Neubert Aero confirmed a decrease of .16 Mu — a significant finding, explains Neubert.

In comparison, Runway 15-33 had Mu values within the design objective levels immediately upon opening. Based on previous experience, the engineering firm and contactor used less “curing compound” and therefore limited its effect on friction values, Neubert explains.

Instead of seeing friction results within the maintenance planning levels of .63 Mu, which was the case when Runway 03-21 opened in June 2010, Runway 15-33 classification values were within proper design/objective levels and averaged .73 Mu.

Neubert cautions that lower friction values on a paved surface as a result of existing contaminants, such as rubber deposits, oil or concrete powder combined with “wet” conditions can result in poor aircraft braking deceleration and decreased aircraft directional control. They could be contributing factors to an aircraft run-off, he adds.

Part of Kempson’s job is to evaluate pavement, primarily at the general aviation airports and at some of the air carrier facilities in South Carolina. One of ways he evaluates pavement performance is using Neubert Aero’s continuous friction measuring device, the Dynamic Friction Tester.

Up to 18 inches of concrete was ripped out and replaced on about 9,000 feet of the runway’s landing and take-off strip. The new 18-inch-thick concrete pavement was fitted with a cement-stabilized drainage layer, aggregate separation and subsurface collection system. Concrete from the old runway was crushed and used in the separation layer.

With multiple entities involved on the project — AFCEC, the joint base, airport authority, airport, FAA and various subcontractors — communication was No. 1, notes Chris Antosiak, project manager with contractor DWG & Associates. Overall weekly meetings included 20 to 50 people; additional weekly subcontractor meetings had fewer people.

The project required 355,000 labor-hours and was accomplished without accidents or incidents.

While the runway was being replaced, about 130 commercial flights and 25 Air Force flights were diverted to a shorter, secondary runway (Runway 03-21).

“Communication between the Aviation Authority and the Air Force was essential for a project this size,” relates Connell. “CHS has a great, long-standing working relationship with Joint Base Charleston. That relationship, combined with regular communication as construction progressed, was an important part of ensuring that normal airport operations were not disrupted and that our six commercial airlines and their ground crews were able to continue to operate efficiently.”



Chris Antosiak



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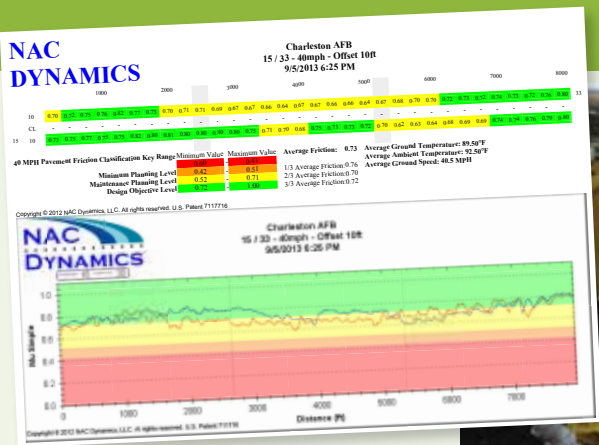
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Kempson has observed that it takes several years for sealers used during concrete runway construction to wash away and improve friction values. He intends on performing additional research using friction survey results to enhance his existing state pavement evaluation and planning program. ✈️



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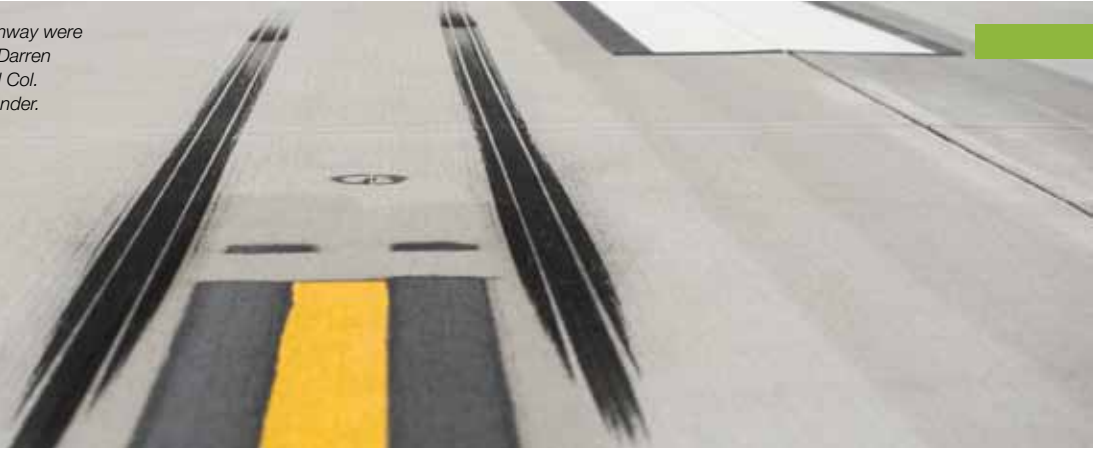


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The first skid marks on the newly opened runway were left by a C-17 Globemaster III flown by Col. Darren Hartford, 437th Airlift Wing commander, and Col. James Fontanella, 315th Airlift Wing commander.

Photo: U.S. Air Force /Tech. Sgt. Douglas



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Night work was required for 45 days. When the active runway was shut down between midnight and 5 a.m., crews worked at the intersection of the two runways.

In one night, workers would break up old concrete, remove it, put down 6 inches of separation layer, and replace as much concrete as they could. Crane mats (4 feet by 20 feet) were used to cover areas that couldn't be paved to ready them by 5 a.m.

Practice runs were performed to see how the mats would fit into a space.

Although time was of the essence, Antosiak notes, "Our biggest priority was safety."

During 13 months of construction, more than 5 feet of rain fell on the project site and caused nearly 60 days of delays.

### More Project Highlights

The improved runway features include an uncommon arresting system and LED lighting, which is becoming increasingly common.

Previously, the runway had a fighter aircraft arresting system to stop aircraft experiencing mechanical issues. The new arresting system, installed by HMI (Home Menders Inc.), has an arresting cable that is raised and lowered remotely, and remains recessed when not in use. The recessed cable extends the life of the runway, because it doesn't slap against the concrete when it's not in use, explains Lt. Col. Pat Miller, 628th Civil Engineer Squadron commander.

The Air Force owns the lighting/NAVAIDS for the runway (except the approach lighting systems and instrument landing systems, which are owned by the FAA). Atlantic






Electric installed LED in-pavement lighting from ADB Airfield Solutions for the runway centerline and touchdown zone lights.

Brian Nettles, Atlantic Electric project manager, reports that LED lighting is becoming more and more common.

At Joint Base Charleston, LEDs will significantly reduce maintenance costs and periodic replacement expenses, says Dent. While the old halogen lamps were rated for up to 6,000 hours of practical use, the LED lamps have an estimated life of 150,000 hours under practical use.

### A Joint Effort

Getting the FAA and airport authority involved early in the design and review process was key to the success of the project, reflects Crossland. "In the end, the contractor provided a quality product that will serve the Air Force and community for years to come," he adds, noting that construction occurred during one of the wettest years on record.

With other improvements in the works, it's an exciting time at CHS. "We are in the early stages of a \$189 million Terminal Redevelopment and Improvement Program that will modernize the nearly 30-year-old airport, creating a travel experience that is pleasant, efficient and sophisticated," says Connell. "Over the next two years, the airport will expand one of its concourses, build five new gates, modernize its baggage handling systems, create a consolidated security screening checkpoint, upgrade airline check-in stations and welcome a variety of retail stores, pubs and restaurants." 

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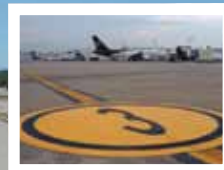
Col. Richard McComb, Joint Base Charleston commander, addresses the crowd at the early August opening of Runway 15-33.



Photo: U.S. Air Force /Tech. Sgt. Douglas

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## Gateway Airport Fixes Freeway Signage Problems

By Kristin Vanderhey **Shaw**

 Passengers have been flocking to Phoenix-Mesa Gateway Airport (AZA) in droves for the past few years. But until recently, many had trouble finding it. With just one sign on the freeway, guests would often exit prematurely or miss the airport exit altogether. GPS units weren't much help either, as mapping agencies have had difficulty keeping current with rapid development in the area.

A new series of signs, however, gives airport visitors more warnings about impending exits, and points them to the easiest and most direct path to the airport. And best of all, the wayfinding improvements cost the airport a fraction of what officials initially expected.

According to a preliminary report from Airports Council International, AZA is the fastest-growing airport in the country, with double-digit growth for the last several years. In 2012, AZA served nearly 1.4 million airline passengers — an astounding 45% increase vs. the previous year — and added two gates and a post-security courtyard. The rapid growth, however, exacerbated AZA's existing off-airport wayfinding problems. With complaints about difficulty locating the facility bubbling to the surface of annual passenger surveys, airport officials took action.

Part of the issue was the airport's name. Over the past 20 years, it has changed from

Williams Air Force Base to Williams Gateway Airport to Phoenix-Mesa Gateway Airport, as it's called today. As such, some drivers who couldn't find the proper airport signs often mistakenly took the exit for Williams Field Road, which is five miles from AZA via surface roads.

"When we changed the name to Phoenix-Mesa Gateway Airport, local people still called it Williams Gateway. And until about two years ago, signs for 'Williams Field' still existed," explains Brian Sexton, the airport's public information officer.

### Dovetailing Plans

The airport hired Otak to develop a master plan for new signage and wayfinding. Ongoing efforts led by Senior Planner Brad Bielenberg began in December 2012, with Otak personnel collecting background information and taking inventory of all existing signage. Concurrently, they conducted a precedent study, evaluating how 15 airports around the nation approach freeway and arterial road signage, and analyzed a user study of passengers traveling to and from AZA.

During the preliminary work, personnel discovered that the Arizona Department of Transportation (ADOT) was already planning to update signage on state route 202 during construction of a new freeway leading to the



PhxMesa **Gateway** Airport

### factsfigures

**Project:** Freeway Signage Update

**Location:** Phoenix-Mesa Gateway Airport

**Prime Consultant:** Otak

**Engineer:** Jacobs Engineering



airport. When ADOT and the airport met to discuss the project, they determined which signs could be modified to improve airport wayfinding.



Casey Denny

“Because of the timing of ADOT’s construction project, we were able to include better airport signage into their sign package,” explains Casey Denny, deputy director at AZA. “We did it by simplifying messages and increasing the number of signs, which ADOT funded as part of their freeway construction project.”

A series of 13 new signs now direct visitors to the airport. Nine were already in ADOT’s plan but were modified, per suggestions from AZA and its consultants. The state agency also agreed to add four more signs to facilitate overall traffic flow and improve airport wayfinding. Because the requests came before any signs were fabricated, cost increases were minor, and ADOT was open to the changes, recalls Denny.

“Because the plan was already in place, the airport was not required to fund the signs, saving us a great deal of money,” he adds.

Simplifying the signs was a key change, notes Bielenberg. The new signs include the airport symbol (an aircraft silhouette) and a single word – Gateway — rather than AZA’s full name, Phoenix-Mesa Gateway Airport. This was the best way to incorporate the signage that was already scheduled without making major design changes, he notes.

Bielenberg and the Otak team, which includes Selbert Perkins Design, Jacobs Engineering and Gunn Communications, then worked with ADOT to develop the signs to ADOT specifications.

“When the airport’s staff approached us, it made sense to include their plan for improved signs while we were still working on our freeway project,” says ADOT spokesman Doug Nintzel. “Our agency works hard on partnerships with local communities and agencies. We certainly were open to working on something that will help freeway drivers as they approach Gateway Airport.”

## Assembling the Pieces

AZA is owned and operated by the Phoenix-Mesa Gateway Airport Authority, which encompasses four different communities in

addition to the cities of Phoenix and Mesa. The airport took care to keep each one posted on the new highway signage, working particularly close with the city of Mesa as the project developed with ADOT.

“The freeway runs through the city of Mesa,” Denny explains. “When a passenger takes the freeway exit to the airport, they pass through the city. With that in mind, we wanted to ensure that they were happy with the way the signs were installed.

“They were very helpful and instrumental toward completing this project in a timely manner; the cooperation they exhibited is what allowed the timeline to progress so quickly. Everyone was aligned. Gateway is a regional destination, and everyone supported the new freeway signage. “

With fully 60% of AZA passengers arriving from out-of-state, clear and highly visible freeway signs are paramount to the trajectory of the airport’s growth.

“Many people don’t know there are two airports in the Phoenix area,” explains Sexton. “This is going to help tremendously.”

ADOT is equally excited. “Over time, we’ve heard from drivers who have wondered if we were going to do anything about the signs along Loop 202,” says Nintzel. “We assured them that their patience would be rewarded with the freeway improvements and new, improved signs.”

Denny, who has worked with AZA for 20 years, predicts that recent wayfinding improvements outside the airport will pay dividends immediately and, more importantly, in the coming decades as economic development in the area continues to take shape.

“Going forward, we would like to extend the signs into the metro area for an even further reach,” he notes.

Currently, AZA serves more than 35 cities with non-stop service via Allegiant and Spirit Airlines, and provides continuing service to many more destinations. Although the airport’s recently updated master plan is based on enplanements reaching 850,000 by 2017, AZA is on pace to exceed that forecast by the end of 2015.

With better signs now in place, the drive to the airport will surely be faster and easier for passengers. And that, in turn, should help AZA manage its rapid growth. ✈️

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## To PPP or Not to PPP, That is the Question

**Query:** *What do LaGuardia, Santiago International, Chicago Midway, Gary/Chicago International and Iqaluit Airport have in common?*

**Answer:** *They are all contemplating some form of private/public partnership (PPP).*



**Stanis Smith**

*Stanis Smith is the senior vice president for Stantec's Buildings Group, and the firm's Airport Market Sector leader. As such, he is responsible for 2,900 architects and engineers in 35 offices worldwide. Smith has spent the past 25 years overseeing Stantec's airport projects.*

PPP's are a radical departure from conventional procurement that involve contracts between a public sector authority and a private entity. The private entity designs, builds and operates the project for a given period and accepts financial, technical and operational risk in exchange for a return on its investment. For many years, countries including the United Kingdom, Australia and Canada have used various PPP models to deliver airports, hospitals and other buildings and infrastructure.

Although it is rare for two virtually identical projects — one conventional, the other a PPP — to proceed in parallel, a fascinating real-world case study of that very nature is currently under way. Two bridges are being built to connect southern Indiana and Louisville, KY.

One is being financed the traditional way, the other through a PPP. Early indications suggest that the PPP model has delivered significant capital cost savings and, more importantly, has incorporated a number of innovations intended to reduce operating costs over the 35-year term of the PPP concession.

What are the main reasons for the emergence of such PPPs?

There was a time when PPPs were used by governments to play a “build-now-pay-later” accounting game known as “off-book” financing. But that rationale has largely disappeared, because government auditors have required long-term obligations to be accounted for as debt.

The following are more current reasons for the rise of PPPs. Some are more hotly debated than others:

**Greater value for money.** Proponents of PPPs assert that they deliver better value than traditional procurement, because the government seldom seeks to maximize profit and rarely faces competition as an owner, which creates fewer incentives to encourage efficiency and cost-effectiveness. While direct comparisons are uncommon, an Australian study found that eight PPP projects achieved

average savings of 9% against traditional procurement. In a UK study of 29 projects, the average savings was close to 17%. It is reasonable to conclude that the competitive nature of PPPs drives bidders to find value for money in order to win.


### **Greater cost and schedule certainty.**

Construction projects are notorious for cost overruns, schedule delays or both. The most powerful and least contentious argument in favor of PPPs is that they can deliver greater cost and schedule certainty. Transferring the schedule and budget risk to the private sector creates powerful incentives. In the P3 model, cost overruns are absorbed by the private sector, and completion delays typically result in penalties.

**Greater innovation.** PPP proponents are driven to innovate in order to reduce capital and operating costs. In a well-designed PPP, innovation need not compromise functionality or maintenance, because annual payments to the selected proponent will typically reference functional and maintenance performance standards, with penalties for failure to comply.

### **Better control of stakeholder**

**requirements.** Changing stakeholder requirements, particularly when they occur late in the design process or during construction, can significantly affect cost and schedule. In the PPP process, once the winning bid has been accepted and the financial transaction has been completed, the consequences of stakeholders or end-users revising performance standards or design are both visible and onerous.

Our firm has been involved in many airport and other projects around the world that have been successfully delivered both traditionally and via PPPs, and it is fair to say that both procurement strategies have pros and cons. In a well-run PPP process, where the performance standards are clear and the participants have the freedom to innovate, many of the PPP advantages cited above can be realized. And for that very reason, a PPP may be coming to an airport near you. 





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