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NEWS & VIEWS

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STV GROUP
205 West Welsh Drive
Douglassville, PA 19518
t. 610-385-8200
f. 610-385-8500

STV INCORPORATED
225 Park Avenue South
New York, NY 10003
t. 212-777-4400
f. 212-529-5237

info@stvinc.com
www.stvinc.com

STV 100 Years

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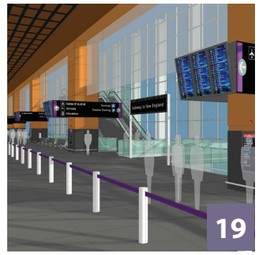

STV HELPS AVIATION CLIENTS TAKE FLIGHT

With air travel at an all-time high across the United States, many of the nation's busiest airports have embarked on or are in the planning stages for transformative rehabilitation and capital improvement plans, aimed at improving the airport experience for customers and employees. Industry analysts estimate close to $14 billion annually is currently being spent on these construction programs, which include upgrades to terminals, security systems, signage and wayfinding, airport infrastructure (roadways, runways and parking facilities), and connections to nearby bus and rail transportation networks.

With more than a century of design and construction experience, STV has been a leading partner with airport operators and other stakeholders in helping to make these vital improvement programs a reality. Historically, the firm has played a key part in such landmark aviation initiatives as the country's first energy-saving cogeneration system at Los Angeles International Airport and AirTrain JFK, an 8.3-mile light rail route connecting John F. Kennedy International Airport in Queens, NY, with the Long Island Rail Road and the New York City Subway. More recently, STV is providing a broad spectrum of planning, design and construction management services at major airports throughout the United States.

STV's unique approach is geared toward meeting the needs of our clients and the communities they serve. That means innovative design and construction techniques are deployed to help owners meet strict deadlines and tight budgets, all while keeping construction projects as undisruptive as possible for airport users. ■

PERFORMING "OPEN-HEART SURGERY" AT NEW YORK'S BUSIEST AIRPORT

Photo © Nic Lehoux

John F. Kennedy International Airport (JFK), in Queens, NY, is among the nation's most vital transportation hubs. In 2011, it was called the busiest international air passenger gateway in the United States by the U.S. Department of Transportation. More than 80 airlines operate at the airport.

JFK's Terminal 4 is one of the airport's busiest hubs for international travel. It serves more than 30 airlines carrying millions of passengers annually. Just this past year, more than 16 million travelers passed through the terminal.

Since 2011, STV and its joint venture partner, Satterfield & Pontikes (S&P), have been performing a number of construction management roles on behalf of Delta Air Lines for Delta's $1.3 billion multi-phase redevelopment at Terminal 4 at JFK.

"The improvements being made at JFK are unprecedented in terms of size, scope and complexity," said Steven Pressler, P.E., executive vice president and chief operating officer of STV's Construction Management Division. "This program is poised to change the landscape of air travel in New York."

Construction of the original Terminal 4 at JFK was once described by the New York Times as "a process not unlike performing open-heart surgery on a patient who is simultaneously running a marathon," due to its proximity to the heavily trafficked International Arrivals Building. But this analogy also applies to the current reconstruction efforts at the airport.

For the initiative's first phase, which concluded in 2013, STV/S&P served as the owner's representative overseeing multiple construction management (CM) and general contractor teams. Work at Terminal 4 included a 360,000-square-foot extension on the end of the current concourse B and expansions to the east and west sides

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Photo © Nic Lehoux

Photo © ArchPhoto / Eduard Hueber

STV's project team had to contend with stringent security measures imposed by the airport during this massive reconstruction program.

of the terminal's head house; extensive bag-handling system modifications and expansion of the 131,000-square-foot security area; construction of new escalators, stairs, elevator piles, concrete foundations and a security screening platform. In its role, STV/S&P made sure that all of the contractors were performing efficiently in the field in terms of planning, coordination, estimating, scheduling, BIM (building information modeling) and cost control.

"It was imperative for the facility to remain operational during the second phase, so as not to disrupt the enormous amount of air traffic emanating from and arriving at the terminal," said Ross Krause, P.E., an assistant project manager with STV's Construction Management Division in New York. "Our project team also had to contend with stringent security measures that were imposed by the airport. Workers were bused to the construction site from a remote parking lot and material deliveries were coordinated so as not to interrupt traffic flow or interfere with the public use of the terminal. All workers and materials – including tools – went through a security check upon arrival."

One of the most complex pieces of the project was the installation of an "in-line" baggage screening system, which necessitated replacing more than 6,000 linear feet of the existing baggage conveyor. The new screening machines, computer control system and conveyors were installed in such a way that the luggage from all the airlines would continue to be screened and transported to the correct gates in time for their flight departures.

One of the joint venture's most effective tools was using BIM software during construction. For this initiative, S&P developed proprietary software that allows construction management firms to integrate the 3-D model with the project schedule and budget during construction. The joint venture team was then able to measure progress in the field based on this model. Every time a bulletin or change was issued, the model was updated, allowing the joint venture team to compare the construction quantities and costs. This provided a major benefit when negotiating change orders with contractors because all quantities were known.

Due to STV/S&P's success, Delta selected the team for the second phase and contracted it as the CM-agent. The $180 million program added 11 new gates and 75,000 square feet to the terminal's Concourse B. To better facilitate intra-terminal connections, a new JFK jitney bus stop was constructed at the end of Concourse B. STV/S&P oversaw all construction at the Terminal 4 building. Additionally, the team managed site work such as repaving the area and changing the slope for drainage, installing a hydrant fuel system, and removing asphalt to subgrade and installing concrete. STV/S&P also managed the installation of utilities under the concrete, which encompassed drainage, sanitary, power, water and hydrant fuel lines.

Phase II of Terminal 4's redevelopment exceeded the client's original scheduling expectations. The terminal opened two months early in January 2015, and was completed at $20 million under budget.

"Our customers and employees are benefitting from substantial enhancements to our JFK operations, and we thank our partners at the Port Authority of New York and New Jersey and JFK for working with Delta to create a world-class facility that meets – and, we believe, exceeds – the expectations of today's modern travelers," said Ed Bastian, Delta's president. ■

CONSTRUCTION SEQUENCING AS EASY AS 1,2,3

STV DEVELOPS MODEL TO SUPPORT CHARLOTTE DOUGLAS AIRPORT EXPANSION

When a major reconstruction program was planned at North Carolina's Charlotte Douglas International Airport to address an unprecedented increase in passengers, the client turned to STV's team of transportation engineers to develop a safe and convenient construction sequencing plan.

STV was contracted by the airport to provide a traffic analysis for motorists and pedestrians, traffic control sequencing, and a 3-D rendering in video format as part of the facility's $2.5 billion capital investment program. A new entrance roadway, elevated structure and pedestrian tunnels adjacent to the main terminal building are a part of Charlotte Douglas's development plan, known as Destination CLT.

Construction is expected to take place over the next four years. However, patrons will still be passing through the construction site via car and bus, and pedestrians will be traveling between the terminal and hourly parking deck. STV was brought in to help determine the best construction plan that would keep the airport operational and make the user experience for motorists and pedestrians as painless as possible.

"The client was clear that the fastest and/or cheapest construction sequencing plan was not top priority," said John Johnson, P.E., STV vice president and senior project manager. "Rather, the goal was to emphasize customer mobility and safety while construction activities were ongoing."

A 10 percent increase in passengers in 2010 – the largest spike in users at any airport in the United States over the past few years – necessitated the onset of Destination CLT. These user trends continued as Charlotte Douglas reported a record 44.3 million travelers at the airport in 2014.

To evaluate and identify the recommended sequence of construction at the airport, STV's engineers first created a VISSIM traffic simulation model for roadways servicing the arrival and departure levels that showed existing conditions and alternative construction stages. These analyses accounted for all of the current and proposed physical geometry of the airport roadway system, including configurations, pedestrian crossings, and upper- and lower-level curbside parking. The model estimated the vehicle assignments and routes within the terminal roadway system based on peak-hour passenger volumes for arrivals and departures, vehicle occupancy, and access restrictions for curb spaces. It also accounted for curb dwell times according to vehicle types.

Improvements at Charlotte Douglas Airport necessitated a sophisticated construction sequencing plan.

In addition to VISSIM, the team utilized the Quick Analysis Tool for Airport Roadways (QATAR), a macroscopic model developed to evaluate airport roadways for curbside lanes and adjacent through lanes. QATAR was also used as a validation tool for VISSIM traffic simulation analysis results.

"This was a challenging model to develop, especially since we had to account for the fact that airport operations needed to be maintained through every stage of construction," said Kelly Bird, P.E., STV transportation engineer. "Creating a simulation for an airport is very different from other transportation facilities because you have to account for the varying dwell times for certain vehicles. There are just a lot of variables, and we had to make a number of site visits to get all the data we needed."

STV's model was further enhanced by a sophisticated 3-D video rendering created by the project team. The rendering demonstrated STV's recommended construction sequencing plan via an animated sequence that showcased existing conditions and the proposed entrance road, bridge and pedestrian tunnels.

"The animation provided the client with something they could tangibly see," said Chris Parker, an engineering designer who is one of the firm's leading developers of 3-D animations for roadway and bridge projects. "It ended up being a critical part of the planning process."

The video was included as part of the contract documents provided to contractors during the bidding process. A second version of the animation was created for a ribbon-cutting ceremony for the hourly parking deck, which was attended by airport officials, city council members, developers and the media.

"The animation identified some nuances in design and other little details that might not have been visible in the simulation model," said Nikki Honeycutt, P.E., STV's engineering director for highways in North Carolina. "It went a long way in creating a successful project for the airport." ■

LAX LINKS SEEK TO UPGRADE AIRPORT MOBILITY

As one of the world's busiest airports, Los Angeles International Airport (LAX) is in the process of addressing two significant multimodal connectivity challenges that will allow the airport to continue to meet the air travel needs of Southern California.

STV and its joint venture partner, Parsons Brinckerhoff (PB), are supporting both efforts that will help the airport meet a number of its long-term goals. The first – and most critical – is reducing the number of vehicles coming into the airport's constrained Central Terminal Area (CTA), which is a part of LAX's Landside Access Modernization Program (LAMP).

One major component for LAMP that is being developed by the team is an Automated People Mover (APM) System that will connect the CTA with two Intermodal Transfer Facilities (ITF), the regional rail system and a Consolidated Rental Car Facility (ConRAC). This will allow passengers to reach the terminal without ever having to drive into the CTA, and will provide more convenient connections for shuttles, buses, trains and rental cars.

The second project the team is studying is LA Metro's Airport Metro Connector (AMC). This project aims to establish a connection between the people mover and the Metro Crenshaw Line at the East ITF, enabling passengers to take mass transit to the airport.

STV is leading facilities planning and engineering for the LAMP project, and performing environmental clearance services for the AMC initiative.

For LAMP, the program team analyzed all aspects of ground transportation, from curbside loading times to walking distances, lines of sight, vehicle roadway layouts, and wayfinding to develop a master plan aimed at transforming the way LAX functions and serves its customers. This ambitious study was unanimously approved by the Los Angeles Board of Airport Commissions in early 2015, and was praised by Los Angeles mayor Eric Garcetti as "a big day for LA."

"Successful airport urban planning establishes a balance between landside, terminal and airside activity. The landside is the passenger's first impression of the airport and should be treated as an equal component of the overall airport experience," said Robert Davidson, FAIA, STV senior vice president and Aviation + Multimodal Facility Design national practice lead in New York. "Whether travelers arrive by surface or rail transit, ease of accessing the airport is a fundamental goal. Equally important is the support infrastructure: efficient roadways and curbsides and safe and secure parking. An essential requirement for densely populated urban airports is rail access from the city core to the airport, which includes the rail system's ability to connect all passenger services within the airport."

LAX's Landside Access Modernization Program aims to reduce the number of vehicles coming into the constrained Central Terminal Area.

Los Angeles World Airports is expected to begin the complicated multi-year construction process this year, paving the way for this $4 billion reconfiguration of the airport landside to be completed by 2024.

As part of the AMC initiative, for the past four years STV/PB has led the preparation of environmental documentation for a new $200 million station on the Crenshaw/LAX Transit Line that would connect to the airport APM. The new station would allow for a seamless transition from the Metro system to the airport and is also expected to be used by passengers and nearly 60,000 airport-area workers.

LAMP and the AMC are complex initiatives that require the STV/PB joint venture to coordinate with numerous stakeholders, including local cities, Los Angeles County, the California Department of Transportation, the Federal Transit Administration and the Federal Aviation Administration. One of the greatest challenges for the team is blending the regional and local

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> "SUCCESSFUL AIRPORT URBAN PLANNING ESTABLISHES A BALANCE BETWEEN LANDSIDE, TERMINAL AND AIRSIDE ACTIVITY. THE LANDSIDE IS THE PASSENGER'S FIRST IMPRESSION OF THE AIRPORT AND SHOULD BE TREATED AS AN EQUAL COMPONENT OF THE OVERALL AIRPORT EXPERIENCE."

ROBERT DAVIDSON,
FAIA, STV senior vice president and Aviation + Multimodal Facility Design national practice lead in New York

travel needs into a cohesive plan that meets inter-agency objectives while maintaining the unique character of communities adjacent to the airport.

LAX's CTA is one of the most congested parts of Los Angeles – a maze of roadways, utilities, parking garages, passenger terminals and airport support facilities. The arrival and departure areas for each of the nine terminals is extremely constrained with a horizontal separation of only 100 feet between the passenger terminals and parking garages. The approved APM alignment – a grade separated three-station 'spine' – is planned to be running down the center of the CTA. There will be elevated pedestrian connectors between parking garages and the terminals, providing passengers with a high level of airport access service.

"Together, these two programs aim to develop more efficient ways for people to get from terminal to terminal and to other facilities within LAX without using the region's already congested roadway system," said Tyler Bonstead, AICP, STV vice president and deputy regional manager in the firm's Transportation & Infrastructure Division in Los Angeles. ■

STV is exploring ways to improve passenger rail options into and around LAX.

PLANNING GROUP THINKS AHEAD AT HOLLYWOOD BURBANK AIRPORT

About an hour north of Los Angeles International Airport is an airport facility with a distinctive attribute. Hollywood Burbank Airport (formerly Burbank Bob Hope Airport) in Burbank, CA, is the only airport in Southern California that can be accessed directly by rail. And now, after some recent connectivity initiatives within the airport, the Burbank-Glendale-Pasadena Airport Authority (BGPAA) has turned to STV to help develop a plan for ground transportation improvements that will allow Hollywood Burbank to become one of the premiere multimodal hubs in the state.

STV oversaw the management, planning and outreach activities for Track A of a two-pronged program, which constituted a comprehensive transportation planning study that assessed, evaluated and made recommendations to improve multimodal ground access and intermodal connectivity to the airport and its facilities.

STV also coordinated with the Track B study team – which evaluated transit-oriented developments both within and adjacent to the airport – in order to create a unified document for BGPAA and other stakeholders.

"There has been considerable change within and around Hollywood Burbank Airport in recent years, as it has transitioned from aerospace manufacturing to creative media," said Tyler Bonstead, AICP, STV vice president and deputy regional manager in the firm's Transportation & Infrastructure Division in Los Angeles. "The goal of this planning study was to get people to the airport more conveniently and to make Hollywood Burbank the go-to hub for transportation in Southern California."

One recent transportation project at the airport was the new Regional Intermodal Transportation Center (RITC), which opened in 2014. STV's Construction Management Division, in joint venture, performed program management and construction management services for this initiative, which included a three-level parking structure, a consolidated rental car facility and a bus transit facility. Other improvements slated for the region that are expected to have an impact on the

transportation system surrounding the airport are a new Metrolink commuter rail station to the north on the Antelope Valley Line, pedestrian accessibility improvements, including a new bridge at the Ventura County Line Metrolink/Amtrak Station, and various congestion mitigation efforts along Interstate 5.

As part of its scope of services for the planning study, STV developed local and regional transportation access alternatives, identified and evaluated land-use options, and packaged potential projects into a multi-year implementation program.

"It was a long-term look at the airport and how different modes of transportation, including bus, commuter rail, light rail, heavy rail and high-speed rail, could all effectively be utilized," Bonstead added. ■

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STV'S TALENT PIPELINE CONNECTS TO AIRPORT EXPANSION PROGRAMS

Thanks to the diverse, multidisciplinary experience of STV's Energy Services Division, the firm has supported a number of airport expansion programs by way of its petroleum and gas clients.

These clients, such as Sunoco Logistics, L.P., Colonial Pipeline Company, ExxonMobil Pipeline Company and Buckeye Partners, L.P., have called upon STV to perform a broad range of design and construction management services for projects where pipelines, and fuel delivery system upgrades, have run through airports.

STV recently provided conceptual engineering services for the relocation of a 10-inch pipeline that traversed the Fort Lauderdale/Hollywood International Airport operations area in Broward County, FL. The airport was in the midst of a major reconstruction program that included

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Photo © RVOIII Photography

the construction of a second runway to facilitate more takeoffs and landings, the addition of more gates, and the modernization of the facility's shopping/dining areas.

STV worked closely with its energy client and the Broward County Aviation Department to review existing pipeline drawings and perform detailed site investigations that confirmed the condition, site constraints and potential conflicts along the existing alignment within the proposed project area. The firm then prepared detailed pipeline alignment plans and permit documents in support of right-of-way acquisition, regulatory permitting and construction.

> "STV'S HISTORY OF SUCCESSFULLY SUPPORTING BOTH OIL AND GAS AND AVIATION CLIENTS HAS HELPED US WIN AND EXECUTE MULTIPLE CONTRACTS OVER THE YEARS FOR PROJECTS THAT DIRECTLY AFFECT BOTH MARKET AREAS."
>
> **GERALD DONNELLY, P.E.,**
> STV executive vice president of the Energy Services Division

In similar fashion, STV designed and permitted a 4,400-foot relocation for two, 24-inch crude oil pipelines in order to accommodate a new international terminal at the Philadelphia International Airport. The initiative began with a feasibility study to identify potential corridors and constraints for each corridor. STV then developed a number of alternative solutions, identified applicable permits, and determined right-of-way, security and construction issues. Once the study was complete, STV prepared engineering design documents and permits required to facilitate the project. The firm performed detailed field surveys within the selected corridor to supplement base mapping before completing plan and profile drawings for the new corridor, including cross sections, traffic planning and details for trenches, directional drilling, road crossings and pavement restoration.

A major challenge for the initiative was that field work next to the taxiways was highly restricted, and most work was relegated to late night hours. Also, all construction techniques had to be pre-approved due to the proximity to other utilities, wetlands, railroad supports for a high-speed rail, taxiways and roadways.

More recently, when the Greater Rochester International Airport in Rochester, NY, extended its runway, STV provided engineering services for the relocation of an eight-inch pipeline that would be impacted by construction. Again, the firm worked with both its energy client and the airport to prepare detailed pipeline relocation plans and regulatory permit documents.

"STV's history of successfully supporting both oil and gas and aviation clients has helped us win and execute multiple contracts over the years for projects that directly affect both market areas," said Gerald Donnelly, P.E., STV executive vice president of the Energy Services Division. "Our experience and relationships with such a broad range of clients mark one way that STV has distinguished itself from other firms in these arenas." ■

STV HELPS FUEL AIRPORT DELIVERY SYSTEMS

Beyond its support of oil and gas clients and airport operators for pipeline and utility relocations during airport expansion programs, STV's Energy Services Division also has experience providing a range of design and construction management services for pipelines that directly supply fuel to these vital transportation hubs.

Over the past decade, STV has played a key role in the development of fuel supply lines at such major airports as Dulles International Airport in Washington, D.C., and Detroit Metropolitan Airport in Michigan.

At Dulles, STV provided engineering and environmental services to complete a feasibility study and conceptual cost estimate for a proposed two-mile-long, 20-inch main connection between an existing pipeline and the Dulles Airport Delivery Facility in Virginia. The firm evaluated potential pipeline corridor routes along public and private right-of-ways, which involved coordination with multiple entities in Fairfax County, VA. STV also considered various pipeline construction techniques and technologies, as well as critical path items like regulatory approvals, permitting and right-of-way acquisition.

Similarly, in Detroit, STV provided engineering and permitting services for the construction of a two-mile-long, eight-inch-diameter jet fuel pipeline from a nearby facility in Taylor, MI, to an existing Northwest Airline's jet line at the airport. The project extended along Norfolk Southern's existing right-of-way and also included the construction of a new takeoff for the line at the existing manifold in Taylor and routing the new pipeline through a tank farm to the railroad corridor.

"Our role in the development of these jet fuel lines shows yet another way how STV's full service capabilities has allowed the Energy Services Division to support our oil and gas clients in a way that also benefits another key market area for the firm in aviation," said Gerald Donnelly, P.E., STV executive vice president of the Energy Services Division. ■

RAIL TO AIR

Fourth Track Plan Would Improve Rail Service at BWI Station

More than 35 years ago, the Baltimore/Washington International Airport (BWI) Station was the first U.S. intercity rail station built specifically to service a major airport. Today, STV and its partners are developing ways to improve service into the station, while spurring development around the airport to economically benefit the region.

STV, on behalf of the Maryland Transit Administration (MTA), provided schematic engineering services, cost estimates and an environmental assessment under the National Environmental Policy Act (NEPA), for the addition of a fourth track within Maryland and station improvements at BWI Station.

The initiative is aimed at reducing congestion and improving travel times for Amtrak, Maryland Area Regional Commuter (MARC) trains and freight trains in the Northeast Corridor. Improvements include nine miles of fourth main line track that would extend from Winans Interlocking (in the vicinity of MARC's Halethorpe Station) to Grove Interlocking, which is near MARC's Odenton station.

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The Maryland Transit Administration is looking at adding a fourth track and other improvements at the BWI rail station.

Photo © Aerophoto America

2

The number of MARC trains the tracks were initially designed to handle in each direction

8th

busiest station on the Northeast Corridor

110

The approximate number of daily stops between MARC and Amtrak trains

40 MINUTES

The amount of travel time the Passenger Rail Investment and Improvement Act aims to shave off Amtrak's Acela Express service between Washington, D.C., and New York City by the year 2030.

Photo © Aerophoto America

The project also ties in to the potential of adding more commercial development to that area, which would necessitate improving accessibility and service at BWI Station. Not only do a number of commuters use BWI Station to access the airport, but there are also a number of businesses and corporate offices in its vicinity, which also contribute to the need to enhance rail service along the corridor.

BWI Station is located in the airport complex, about a mile away from the airport's main terminal. Despite being initially designed to only handle two MARC trains in each direction, it is currently the eighth busiest station on the Northeast Corridor and serves about 110 daily stops between MARC and Amtrak (about 60 percent MARC trains with the remaining 40 percent belonging to Amtrak). Improvements for the station were outlined in both the MARC Growth and Investment Plan and the Northeast Corridor Infrastructure Master Plan. The 2008 federal Passenger Rail Investment and Improvement Act, which aims to shave nearly 40 minutes of travel time on Amtrak's Acela Express service between Washington, D.C., and New York City by 2030, is also driving improvements at BWI Rail Station.

Meanwhile, a recent increase in airport traffic has led the Maryland Aviation Administration to consider constructing a new hotel that's a short walking distance away from the rail station.

Because of how the tracks along the Northeast Corridor are currently aligned, trains serving BWI Station can only access it on the outside tracks between Odenton and Halethorpe. As a result, the Acela high-speed trains that are scheduled to stop at BWI have to travel along this local track, often behind regional services like Amtrak and MARC. This potentially slows all inter- and intrastate service along the corridor.

A fourth track would allow Acela and other future high-speed services to operate on their own tracks, thereby reducing congestion and improving travel times throughout the corridor. A new track could also allow Amtrak to schedule more Acela service to BWI while providing MARC with the option for additional commuter rail service.

The future renovated station will be designed to meet LEED® (Leadership in Energy and Environmental Design) standards. It will also include a new platform to accommodate the fourth tracks and new elevators and stair tower improvements, which will enhance accessibility between the platforms and the parking areas.

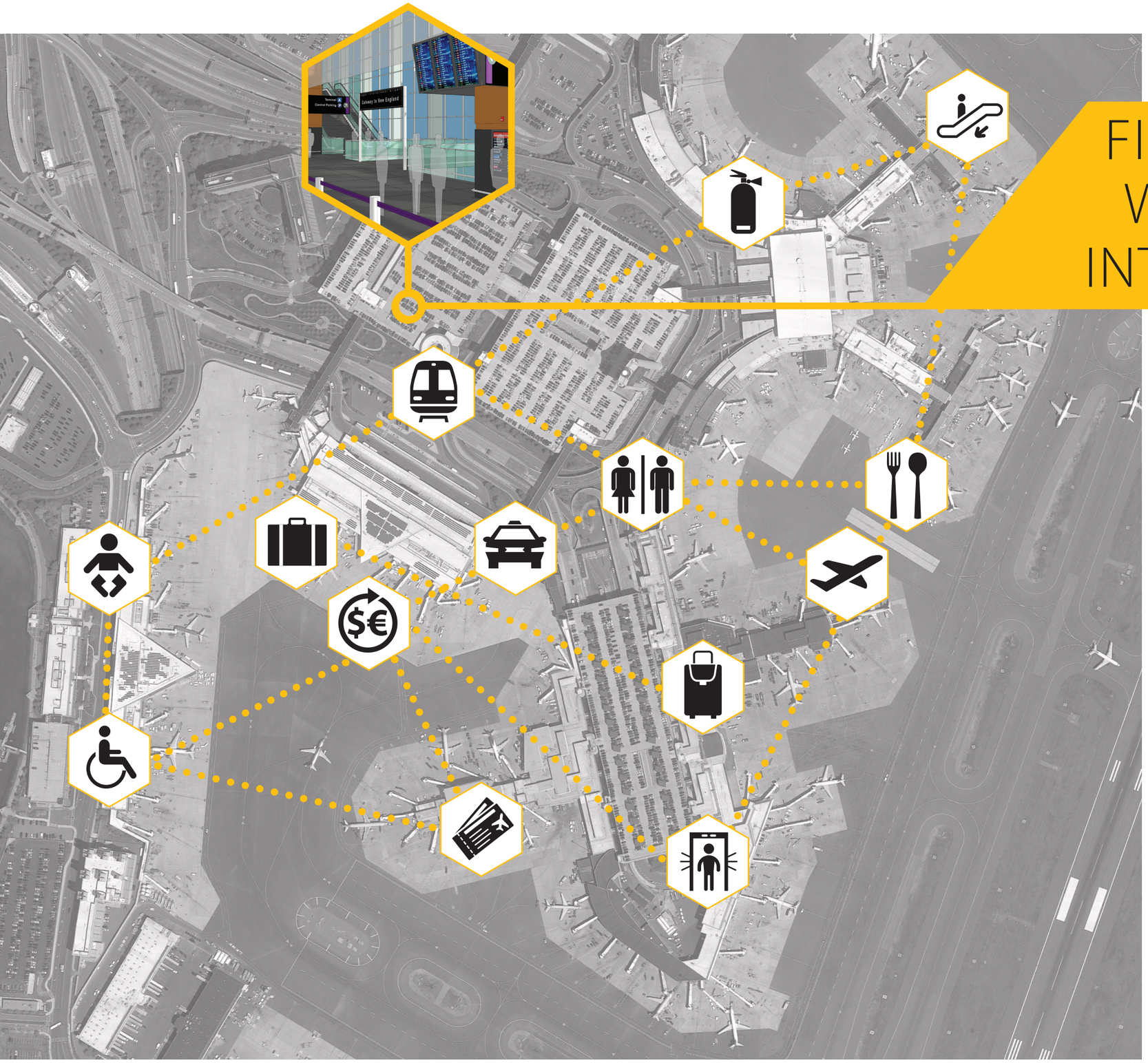
One of the primary challenges STV needed to overcome was related to the project's National Environmental Policy Act (NEPA) elements. BWI Station is located on a site that is currently designated as wetlands of special statewide concern. The project is also located near archeological features of state and national significance.

STV supported MTA and Amtrak in leading meetings that informed the public of the project while offering them opportunities to provide comments. Additionally, STV worked closely with resource management agencies and other stakeholders to help develop a design that would minimize impacts to neighboring wetlands. One solution, for example, called for installing a retaining wall along the wetlands rather than adding fill, which could potentially extend into the protected area.

Other environmental concerns addressed by the firm included noise and vibration impacts and the presence of threatened and endangered species along the line. The project team also needed to address the replacement of a bridge which is eligible to be listed on the National Register of Historic Places.

Beyond the project's environmental challenges, the design team developed a fourth track along a right-of-way that had a number of structures that were altered years ago to accommodate three tracks.

For example, in one instance, there is a bridge that was originally designed for two tracks that was widened to three tracks some time ago. The project team developed some complex structural concepts so the corridor would have the horizontal clearance to handle a fourth track, resulting in a total, multidisciplinary effort that demonstrated the breadth of STV's services. ■



FINDING NEW WAYS FOR WAYFINDING AT LOGAN INTERNATIONAL AIRPORT

At STV, wayfinding design within large, complex airport facilities is about more than just making signage, it's about the user's experience. For nearly a decade, the firm has worked closely with the Massachusetts Port Authority (Massport) in developing innovative ways to improve customer navigation at Logan International Airport, as well as at other Massport-operated facilities. These services include creating a wayfinding master plan at Logan, while also being called upon to produce wayfinding design or review packages that are part of other programs.

"We recognize that wayfinding design is not an exact science, but rather an art form that can be developed to achieve success and managed in the future through innovative interpretation of airport guidelines," said Robert Davidson, FAIA, STV senior vice president and Aviation + Multimodal Facility Design national practice lead in New York. "It's an essential component of design for each airport facility, necessitating close collaboration between the designers, airport staff and other key stakeholders such as the traveling public."

For Logan's wayfinding master plan, STV identified the type and location for signage in every area of the airport, including terminals, parking garages, curbsides and services roadways.

One of the primary challenges for the project team was working within the airport's constantly changing environment – including airline locations and gates, advertising installations and other renovation/construction projects within the facility. In the same vein,

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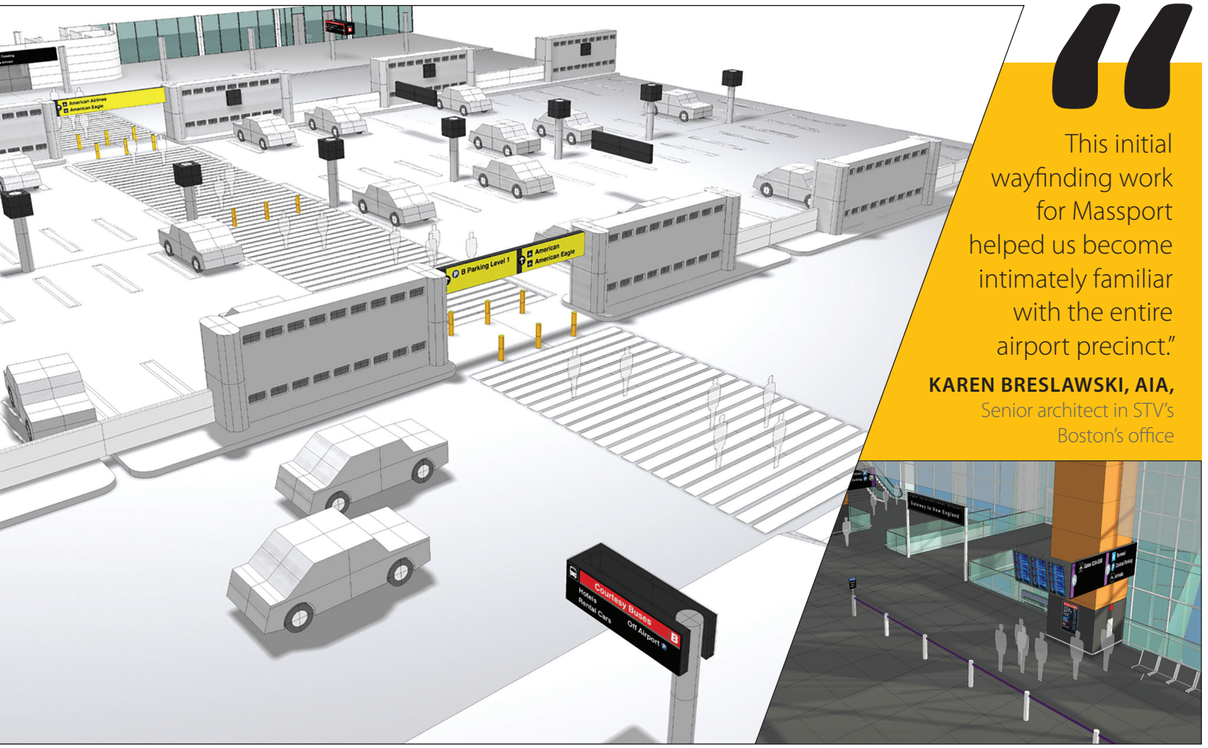

> "This initial wayfinding work for Massport helped us become intimately familiar with the entire airport precinct."
>
> **KAREN BRESLAWSKI, AIA,**
> Senior architect in STV's Boston's office

STV also had to account for some of the more sweeping, universal changes that have affected the aviation industry in recent years, such as heightened airport security in the wake of the September 11 terrorist attacks.

"There have been various changes to the airline industry over the past 15 years, including how passengers are processed through security, and where services and amenities are most likely to be provided," Davidson said. "As a result, at many airports we've seen changes to the roadway network, advertising, amenity signage, closed circuit television systems, and other initiatives like Logan's Americans with Disabilities Act Transition Plan. Changes like these all necessitate an evolution in wayfinding. In fact, just one change of nomenclature within the industry could impact hundreds of signs at an airport."

Additionally with more airports seeking to transform themselves into multi-modal hubs that unite air, rail, buses and cars, wayfinding design has become even more complex and sophisticated.

Following the development of Logan's wayfinding master plan, STV provided architectural and engineering services for new wayfinding signage at Logan's four passengers terminals and completed design and construction documents as part of Massport's five-year capital plan. STV then performed similar services for various other assignments, including new Terminal C security checkpoint wayfinding signage, and upgrades and revisions to Massport's Wayfinding Guidelines and Sign Standards.

More recently, Massport tasked STV with developing ground transportation signage for Logan Terminals A, B, C and E that would effectively direct passengers to bus shuttle service being implemented to support the airport's new consolidated rental car center. The firm performed design for all wayfinding signage, including messaging, text fonts and sizes, symbols, and color modes, and recommended dramatic graphical changes for the airport directories to highlight the new program.

"This initial wayfinding work for Massport helped us become intimately familiar with the entire airport precinct," said Karen Breslawski, AIA, senior architect in STV's Boston office. "We've developed the airport's new wayfinding design guidelines, and gained a unique insight into the needs of the airport staff and other stakeholders." ■

WHAT'S NEW AT STV
AWARD-WINNING PROJECTS

STV continues to demonstrate what it means to be client-focused and quality-driven with its growing portfolio of award-winning projects across all market sectors. Here are some of the most recent initiatives to win industry honors and accolades:

1 The restoration of the 369th Regiment Armory Building in the historic Harlem neighborhood in New York has received the Lucy G. Moses Award for excellence in preservation from the New York Landmarks Conservancy. STV was contracted by the New York State Office of General Services to provide a range of design services for the renovation of the east façade of the landmark as part of a thorough effort to preserve and restore the building and its signature twin eagles to their original Art Deco grandeur. The 369th Regiment Armory Building was the home of New York state's first National Guard Unit made up entirely of African Americans, known as the Harlem Hellfighters. The armory was built in two phases with a medieval-inspired drill shed designed by the architectural firm Tachau & Vaught in 1924, and the Art Deco-inspired administrative building completed in 1933. The armory was designated a New York City landmark by the Landmarks Preservation Commission in 1985 and added to the New York State and National registers of Historic Places in 1994.

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2 The iconic New York City Police Training Academy in Queens, NY, received a Bronze Award in Building Design + Construction magazine's Building Team Awards competition. The Turner Construction/STV joint venture provided a range of construction management services on behalf of the client, the New York City Department of Design and Construction. The 720,000-square-foot facility that unites all of the New York City Police Department's training and educational resources at one complex, making it the most advanced, self-contained police training academy in the world.

3 The Kingsborough Houses in Brooklyn, NY, received a Project Achievement Award in the Building Renovation $20 to $60 million category from the Construction Management Association of America's (CMAA) New York/New Jersey Chapter. STV served as the construction manager-as-agent for the New York City Housing Authority for this initiative, which called for exterior refurbishments and renovations at 16 low-rise apartment buildings and a 24-story senior citizens building and center.

4 The I-95 West River Bridge, a major construction initiative that will replace one of Connecticut's busiest highway bridges and reconfigure an adjacent interchange, was the recipient of the Achievement in Civil Engineering (ACE) Award in the geotechnical category from the Connecticut Society of Civil Engineers. STV, in association with Amman & Whitney, is providing construction engineering and inspection services. Parsons Brinckerhoff (engineering design) and The Middlesex Corporation (contractor), were also a part of this winning project team.

5 In Washington, D.C., the 27th Street Bridge Over Broad Branch Stream Replacement project received a Project Achievement Award in the Infrastructure Constructed Values less than $25 million category from CMAA's Captiol Region. STV provided on-site construction management and inspection services on behalf of the District Department of Transportation. It was the agency's first accelerated bridge replacement project, as well as its first geosynthetic reinforced soil-integrated bridge system project.

STV Executive Chairman Elected to National Academy of Engineering

"I AM DEEPLY HONORED TO BE RECOGNIZED BY THE NAE."

DOMINICK M. SERVEDIO, P.E.,
Executive chairman of STV

Dominick M. Servedio, P.E., executive chairman of STV, has been elected to the prestigious National Academy of Engineering (NAE). Servedio has earned this honor "for leadership and effective advocacy on behalf of the engineering and construction professions." Election to the NAE is among the highest professional distinctions accorded to an engineer.

Servedio is one of 84 new members and 22 foreign member in this year's NAE class. Founded in 1964, total membership of the academy is only 2,281 and the number of foreign members is 249. A formal induction ceremony will be held on October 8, at the NAE's annual meeting in Washington, D.C.

Election to the NAE is a pinnacle of achievement in the engineering field. Academy membership honors those who have made "outstanding contributions to engineering research, practice, or education."

"I am deeply honored to be recognized by the NAE," Servedio said. "The Academy is one of the engineering community's most elite

assemblies of talented leaders and innovators. To stand alongside these individuals as a peer is a thrilling, yet humbling experience."

Servedio has been an outspoken leader on the need for improvements to our nation's infrastructure. He is a member of the National Academy of Construction, an organization comprised of industry leaders who have made outstanding industry contributions, and was president of that organization from 2014-2016. He remains on its board. Servedio served as chairman of the New York Building Congress during a period of nearly unprecedented construction activity in New York City. He is also an active member of the Construction Industry Roundtable and a fellow of the Society of American Military Engineers.

NEW PERSONNEL

SOME OF OUR LATEST HIRES DEMONSTRATE STV'S VISION AS LEADERS IN THE INDUSTRY.

Mija Coppola

Paul McIlree, P.E.

Mija Coppola has joined STV as vice president and chief health & safety officer. In this role, she will be responsible for building a best-in-class health and safety program and bringing that culture to all levels at STV. With more than 20 years of experience, Coppola has a diverse background in consulting including large portfolio project management, client development, business analysis and change management implementation. Prior to joining STV she was with a major consultancy firm where she served as director of health and safety. During her time there, she led the development of a comprehensive health and safety program and helped instill a deep-rooted safety culture in the organization.

Paul McIlree, P.E., a designer and project manager with nearly 20 years of experience in the management, coordination and design of transportation infrastructure projects, has joined STV as vice president in the Transportation & Infrastructure Division. Over the past 10 years, McIlree has specialized in the delivery of design-build and P3 projects while working for a leading engineering and consulting firm. His experience also includes the design and project management of a number of major highway, bridge and airfield projects located in the southeastern U.S., as well as in Missouri and Maine. In his new role at STV, McIlree will be responsible for project execution and quality control for the firm's design-build and P3 projects.

EMPLOYEE HONORS

Members from our diverse, multi-disciplinary employee team continue to make an impact throughout the design and construction industry, garnering key committee appointments and presenting at major conferences around the United States.

Milo Riverso, Ph.D., P.E., CCM

Milo Riverso, Ph.D., P.E., CCM, STV president and chief executive officer, has been honored by the Construction Management Association of America (CMAA) by being inducted into the association's prestigious College of Fellows. The Fellow designation is the highest honor that CMAA bestows on an individual and recognizes those who are industry leaders and have made significant contributions to their profession, the industry, and the CMAA. Riverso joined CMAA a decade ago, just a year after he started at STV heading up the firm's CM group. An active member of the organization, he served as the CMAA's chairman from 2013-14. Over the years, he has held a number of roles, including member of the executive committee, chair of both the professional development and the ABET (Accreditation Board for Engineering and Technology) committees, as well as CMAA treasurer.

Stu Matthis, P.E.

Stu Matthis, P.E., vice president and business development director in the Transportation & Infrastructure Division, was appointed by North Carolina Governor Pat McCrory to serve on the NCWorks Commission, representing the engineering business community. The NCWorks Commission recommends policies and strategies that enable North Carolina's workforce and businesses to compete in the global economy.

Seth Young, P.E., PTOE

Seth Young, P.E., PTOE, an associate and traffic engineer in the firm's Baltimore office, was recently profiled in the March 2016 edition of the Institute of Transportation Engineers' (ITE) Journal. Young, who also received the ITE Washington, D.C. Section Young Member of the Year Award in 2015, spoke to the magazine about how he became interested in transportation and his involvement in the organization.

Matthew Storck, P.E., PTOE

Matthew Storck, P.E., PTOE, a senior associate in the firm's Transportation & Infrastructure Division in Baltimore, recently made a presentation at an ITE meeting at the University of Maryland's A. James Clark School of Engineering. Storck spoke about the Maryland Transit Administration's Purple Line light rail project – a new 16-mile east-west connection linking Montgomery County to New Carrollton in Prince George's County. STV is providing planning and preliminary engineering services under a general engineering consultant contract. Storck is the traffic engineering and highway design discipline lead for the initiative.

Joel Oppenheimer, P.E.

Joel Oppenheimer, P.E., senior vice president and Maryland office manager for the Transportation & Infrastructure Division, has been selected to serve on the Eno Center for Transportation's Board of Directors. Eno is a neutral, non-partisan think tank that promotes policy innovation and provides development opportunities for transportation professionals. Eno is also saying goodbye to longtime board member and chair, **Lillian Borrone**, who serves on STV's Board of Directors. Borrone joined the Eno board in 1993 and has served as board chair for the past 12 years.

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