

New APMs Soaring at Orlando International Airport



The new Orlando Airport Airside 3 (2100 & 2200) APMs

ORLANDO - Orlando International Airport (OIA) reached another major milestone in the world of Automated People Mover (APM) systems. The new Airside 1 (2400 Lane) APM began carrying passengers Jan. 23, 2018 and is the last of five new APMs actively operating and soaring over the Airport's beautiful landscape dispersed between the Main Terminal, the Airsides and the South Intermodal Terminal Facility (ITF).

This milestone completes an initiative set forth by the Greater Orlando Aviation Authority (GOAA) as part of the Airport's \$3.1 billion Capital Improvement Program, replacing the four APM shuttles that link the Main Terminal to Airsides 1 & 3 and implementing a new APM system that directly connects the Main Terminal and the South ITF. As GOAA's Design Criteria Consultant, Lea+Elliott worked with GOAA and its legal counsel, Broad & Cassel, to develop the overall procurement approach and Design Criteria Package that resulted in a highly competitive procurement. Lea+Elliott also provided project oversight and management of the APM systems' design, manufacturing, installation, testing and commissioning and is now supporting GOAA with project closeout activities, as well as overseeing the operation & maintenance of the APM systems. GOAA's Chief

Operating Officer, Stan Thornton stated that, "he is confident that Lea+Elliott will provide excellent supervision over APM operations".

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IN PROGRESS

New RTC and Passenger Processing Facility coming to Toronto Pearson International Airport



Concept rendering of proposed passenger processing facility and transit center at Toronto Pearson International Airport
Image credit: CNW Group/Greater Toronto Airports Authority)

TORONTO – The Greater Toronto Airports Authority (GTAA) announced in early February that it engaged a design team led by HOK to design a regional transit center (RTC) and passenger processing facility at Toronto Pearson International Airport. Lea+Elliott is pleased to be a member of the HOK Design Team and is supporting design of passenger/employee mobility between the new RTC/Processing Facility with the existing Terminals. The GTAA estimates the first phase of the new facility could be in place as early as the mid-2020s.

In its most recent draft Master Plan, the GTAA forecasts that Toronto Pearson will grow to handle as many as 85 million passengers annually by 2037 and the GTAA is beginning the planning of the new facility to support this growth. The planning will incorporate a regional transit center to support the region's need for better transit connectivity. The GTAA continues to work with all levels of government to advance plans on priority lines connecting into the proposed regional transit center.

The Design Team's work on the passenger processing facility and RTC design will include all facets of phased development of future airport facilities to meet projected passenger growth. Toronto Pearson saw an estimated 47 million passengers in 2017. The development will provide appropriate passenger facilities, reduce road congestion in the region and provide greater access to jobs and customers for businesses in the Greater Golden Horseshoe.

Tampa Airport SkyConnect opens for Passenger Service

TAMPA – Tampa International Airport's SkyConnect APM System opened for passenger service Feb. 14, 2018. The SkyConnect is 1.4 miles (2.5 km) long with three stations that connects passengers from the Airport's Main Terminal to the new Rental Car Center with a stop in between at the Airport's Economy Parking Garage. The SkyConnect APM System provides around the clock (24-hour) service.



The new SkyConnect at Tampa Airport

The SkyConnect APM System operates four (4) vehicles in a pinch-loop configuration that can transport 2,500 passengers per hour per direction (pphpd) at 160 second (2.7 minute) headways. A hot standby vehicle can be placed into service when needed during specific peak periods and increase the capacity to 2,850 pphpd at 125 second (2.1 minute) headways. The SkyConnect has a total fleet of six, married-paired vehicles and one maintenance and recovery vehicle (MRV).

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PHX Sky Train® Stage 2 underway

PHOENIX – The City of Phoenix is breaking ground for the Stage 2 expansion of the PHX Sky Train®.

Stage 2 will include approximately 2.5 miles of dual-lane guideway, two stations, operational and failure management cross-overs, a west side siding track, three propulsion power substations, 24 additional vehicles and a 28,600 sq. ft. expansion to the currently operating Maintenance and Storage Facility. In addition, there will be provisions for a 3rd station.

Once the Stage 2 expansion is complete, all remaining bus operations on the Airport will be removed, improving air quality, easing roadway and curbside congestion, and further enhancing the passenger experience.

Stage 1 and 1A successfully opened for passenger service Apr. 8, 2013 and Dec. 8, 2014, respectively. Lea+Elliott has been the APM System Consultant leading the planning, design, engineering, procurement and implementation for all three stages of the PHX Sky Train®.



PHX Sky Train®



It's Almost Here! Tampa to host 16th International Conference on APM and ATS

TAMPA – Tampa, Florida will be the host city for the 16th International Conference on Automated People Movers and Automated Transit Systems – “Moving to the Future – Building on the Past”. The first airport APM went into service at Tampa International Airport in the early 1970s as part of an innovative terminal design. Since that time the APM/ATS technology has experienced major technological advances, and these systems have been used in numerous applications. As we move to the future, what have we learned and what changes in technology and applications

do we envision?

The conference will be held Apr. 29 – May 2, 2018. Registration is now open.

A new APM, SkyConnect, links Tampa Airport’s Main Terminal with a new Rental Car Center. The SkyConnect is now open and conference attendees will get a behind-the-scenes tour of this new system.

For more information about the conference, visit www.apmconference.org.



Tampa Airport’s airside APM - the first airport APM
Image credit: Bombardier Transportation

New APMs at Orlando Airport

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The new Airsides 1 & 3 APMs consist of dual-lane APM shuttles, each with a 3-vehicle consist, operating in a synchronized double shuttle mode on each airside during peak operating hours each day. The initial phase of the new South APM includes a total of six APM vehicles operating in a pinched-loop configuration over approximately 7,600 feet of dual-lane guideway linking the existing North Terminal to the South ITF. The South APM vehicles are designed such that each vehicle is capable of operating as a single vehicle or multiple vehicles coupled together as 2- or 3-car train consist.

Lea+Elliott's Project Director Daniel McFadden, P.E. and **Project Manager Gregory Love** are leading our work at Orlando International Airport.



The new Orlando Airport Airside 1 (2300 & 2400) APMs



The new South APM connecting the Main Terminal to the South ITF

President's Column

SkyConnect takes Tampa to New Heights



Tampa International Airport (TIA) opened its new SkyConnect APM system and new rental car center to the public February 15. These elements are the two largest projects within TIA's major expansion program, and Lea+Elliott is proud to have worked alongside the Airport team since the beginning.

For us, this has been an exciting project. We respect honest teamwork, and it takes everyone working together to make a project of this magnitude happen. For example, Florida Governor Rick Scott was behind the project and dedicated money to complete the needed funding. The Airport Management team was fantastic and truly ran the project with the skill of business leaders. They were decisive in a timely manner to keep the project moving.

Tampa Mayor Bob Buckhorn was on site last January when the SkyConnect cars arrived at TIA from Japan. He summed up the feelings of many of us when he said, "This is an exciting day that would not have come without the vision of the staff, the support of our local business partners and the financial commitment of Governor Scott and our Tampa Bay legislative delegation." I could not agree more. But let us not forget the contractors, engineers and Mitsubishi train team who worked together to make this system real. All in all, it was a very well-run project and a satisfying experience for the entire Lea+Elliott team.

When I attended the opening ceremony, it was fun celebrating with the entire extended team—it was such a unique opportunity. Lea+Elliott's people have worked on most of the world's airport APMs, yet still, the opening of a system is a rare event, because planning, designing, testing and construction of such complex systems take such a long time.

Designing systems to take people where they need to go in a safe, comfortable and convenient manner is what Lea+Elliott is all about. Our men and women work very hard on these projects, over long periods of time and it is always great to see everything finally come together.

Thank you to all who are reading this message who were involved in any way. The SkyConnect APM system is one you show your children and their children, and say, "I helped create this." All should be proud. It is one incredible system!

Jack Norton



LAX APM Becoming a Reality



Aerial of Automated People Mover Train
Image credit: LAWA

LOS ANGELES – Convenience, reliability and easy accessibility are key elements of the user experience and are integral requirements for the new Los Angeles International Airport (LAX) APM. “This is a giant leap for the evolution of LAX and public transportation in Los Angeles,” said Joe Buscaino, L.A. City Councilmember and Chairman of the Trade, Travel and Tourism Committee. “The People Mover will make arriving and departing from LAX faster and smoother than ever before, creating a much more welcoming environment.”

The APM is the centerpiece of the Landside Access Modernization Program (LAMP), which also includes a Consolidated Rent-a-Car (ConRAC) facility, Intermodal Transportation Facility-West, and associated roadway improvements. The APM will reduce vehicle congestion in the terminal loop, provide a connection with L.A. Metro’s regional transportation system, create new and convenient locations for passenger pick-up and drop-off outside of the terminal loop, reduce emissions, and provide reliable access to the terminals.

The APM will be built using a Public-Private Partnership (P3) contracting model. LAX Integrated Express Solutions (LINXS), recently selected by the Los Angeles World Airports (LAWA) Board of Airport Commissioners (BOAC), will be designing and constructing the system and will also be responsible for operating and maintaining the train and stations for a 30-year period. This incentivizes the construction

and operating systems to be built to last.

Trains will arrive every two minutes, have wide doors for easy access with luggage, large windows for viewing, plenty of hand holds and seats for those in need. LAWA anticipates that the APM will offer a maximum ridership capacity of 10,000 passengers per hour and up to 87.7 million passengers per year. The 2.25-mile, elevated system will be operational in 2023.

Lea+Elliott is providing procurement and implementation services for the APM as part of the LAMP Management team.



LAX APM and Theme Building
Image credit: LAWA

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About Lea+Elliott

Lea+Elliott is a transportation consulting firm offering a broad range of planning, engineering, program management, and construction management services for clients worldwide. These services are provided to public transit authorities, airports and private sector owners for new transit systems and the refurbishment of existing systems. We have expertise in all modes of transit, including high-speed and intercity rail, rapid transit, commuter rail, light rail, automated guideway transit, personal rapid transit, and conventional and advanced technology buses. The firm is especially well known for its creative structuring of procurements for a wide range of delivery options that include DBOM and P3.

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Meet Steve Beebe



Image credit: Anthony Calleja

HONOLULU – **Steve Beebe** is a senior associate in Lea+Elliott’s Honolulu office. He has not only worked with our team for nearly 20 years, but he spent many years working directly for the companies that design train control systems. His diverse experience ranges from designing relay-based signal control systems for Union Switch and Signal and AEG Westinghouse (now Bombardier), through the installation and testing of a fully automated Communications Based Train Control (CBTC) system for Alcatel Transport Automation. Steve’s expertise has been invaluable on many of our major projects, such as the Hamad International Airport APM in Qatar, Singapore’s Changi Airport APM, the Miami Metrorail extension and the San Francisco MUNI LRT Advanced Automatic Train Control Project.

Steve is also versatile. In 2013, he stepped into a completely new role for him as the Change Control Engineer for the Core Systems on the massive Honolulu Rail Transit Project (H RTP). His role is to be an advocate for the project owner, Honolulu Authority for Rapid Transit (HART). This role is very much different than his systems design background, but it is a role that has suited him well.

“For any given change order, I take the contractor’s proposed cost amounts and compare those with our own independent cost estimates so that we can determine what’s actually fair and reasonable from the client’s perspective. That’s the best part of my job. To get to a fair and reasonable final cost amount requires considerable interface with both the contractor and with our estimating team to understand each of their justifications and assumptions. I need to gather sufficient information to clearly see where each cost amount is coming from and what it represents. I can then compare and analyze the cost data and try to determine what is fair and reasonable. It’s always a win-win for both the contractor and the owner when there is a fair outcome.”

Finding that sweet spot is not easy. Steve understands the challenges in coming up with good numbers because they typically depend on many data points and on many subcontractors who have their own metrics for determining cost and value. It can take a lot of work to get to the bottom of the bottom line. While trying to understand all sides, Steve is relentless in assuring that HART receives the best value.

At the end of the day, Steve makes sure that all the reports, statistics, data and related information come together to give clear vision of the scope and impact of each contract change. “We bring our expertise to HART and present the information in a detailed and professional way so that our client is in the best possible negotiating position,” Steve says. “It’s our job and we do it very well.”

