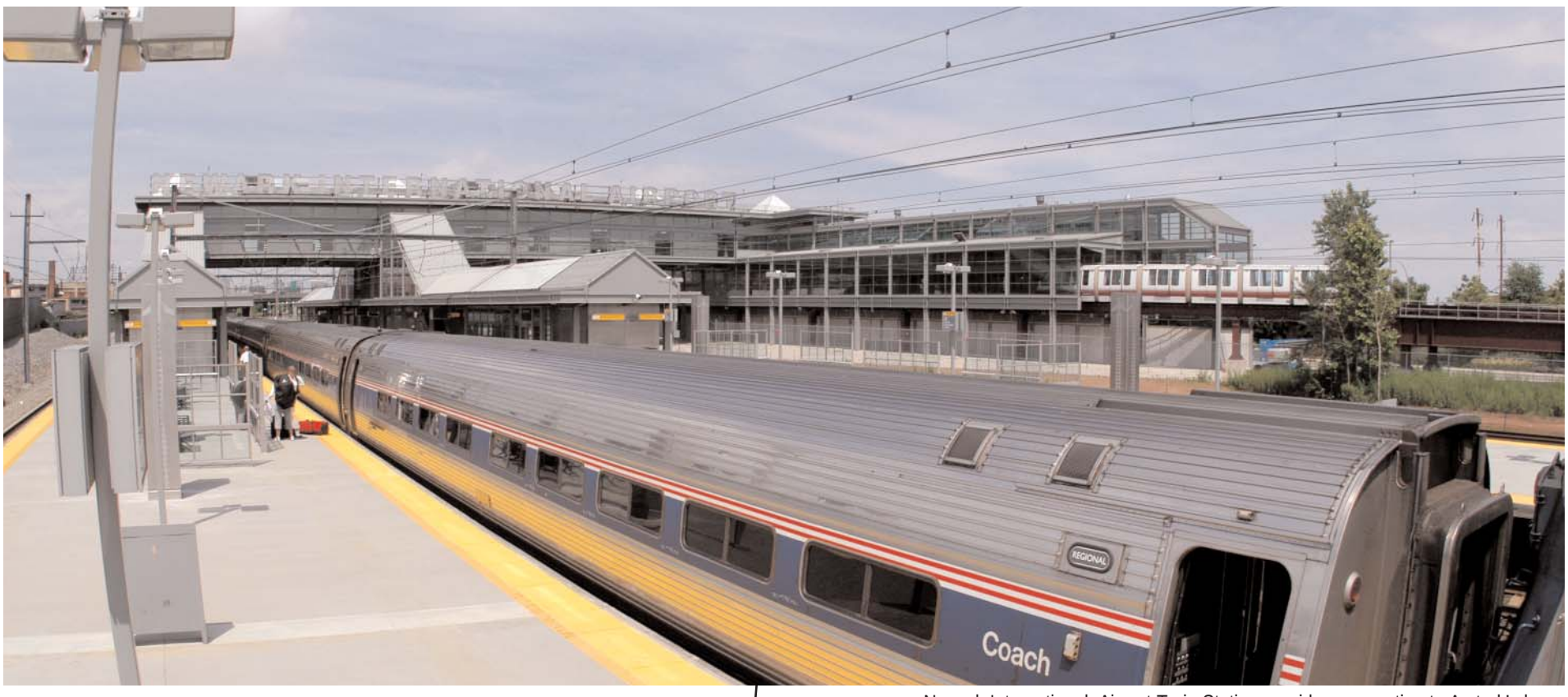
In Motion

A PUBLICATION BY LEA+ELLIOTT TRANSPORTATION CONSULTANTS

SPRING 2009

Airport Access Remains at the Forefront



Newark International Airport Train Station provides connection to Amtrak's busy Northeast Corridor and NJ TRANSIT trains.

It is encouraging to see that many of the projects planned a decade ago, or even two or three decades ago when many jurisdictions were looking at ways to connect their airport to the regional rail network, are coming to fruition. Many municipalities view a rail connection as not only a green alternative that reduces vehicle-miles traveled, but also as a key component to increasing mobility in the region. As such, the number of Airport Access rail and AGT projects have been on the rise in North America and the rest of the world for many years. In some cases, projects have been planned for more than 40 years, as is the case as at Washington Dulles International Airport. In other cases, connecting one or more regional airports to the regional transit infrastructure has been one of the highest priorities and systems with airport links have moved to "first built" or very high in the implementation plan.

Lea+Elliott is currently engaged in over one dozen Airport Access projects where direct or indirect connections will link airport terminals with regional transit and remote airport facilities. Direct access connections between airports and area transit systems have existed for some time in older urban areas like Chicago, Cleveland, Philadelphia, Washington DC and Atlanta; but a variety of new cities will soon join this list. By design, these projects are being undertaken by airport operators with the common goals of enhancing passenger access to the respective airport terminal, relieving congestion on terminal roadways and curbfronts and upgrading terminal area passenger throughput capacity. While all of these projects generally have a common purpose, the characteristics of these links run the gamut in terms of system technology (rapid transit, commuter rail, light rail and AGT), guideway infrastructure (tunnel, at-grade, elevated), method of procurement (traditional Design-Bid-Build (DBB) to Design-Build-Operate-Maintain (DBOM), and project structuring (including the use of innovative financing schemes that take advantage of Public Private Partnership opportunities).

Lea+Elliott is proud of its involvement in the following Airport Access projects, working for the airport authority or the regional transit authority:

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President's Column

The American Recovery and Reinvestment Act of 2009 (ARRA), is jump-starting work through more than $48 billion for transportation initiatives. This is good for our clients as you can see from the box below. And this funding is already helping speed Lea+Elliott's work for Bay Area Rapid Transit and for our on-call projects work for the San Francisco Municipal Transportation Agency.

We may also see some benefit for the high speed rail projects under consideration in California and elsewhere around the U.S. and a boost in airports system improvement projects. While traffic is down at many airports, smart operators will see this as an ideal time to expand and prepare for the future.

ARRA Funding
Stimulus funds that impact our clients

Public transportation - $8.4 billion includes:
- $6.9 billion to purchase buses and equipment
- $750 million for fixed quideway modernization
- $750 million for light rail and commuter rail

Passenger rail - $8 billion
Aviation systems - $1.3 billion

Keep in mind, though, that the stimulus package is just a precursor to the authorization of a new transportation bill in the fall. This bill, replacing SAFETEA-LU, needs to be creative and aggressive and offer more flexibility in partnering options, financing alternatives, and delivery processes. While the stimulus package fills a gap, it's the new transportation authorization bill that will ultimately make the greatest impact on America's infrastructure.

I believe that private funding for transit projects could also pick up in the days ahead. The loss of confidence in traditional private investment vehicles, like stocks and bonds, opens an opportunity for more private funding to move into transit projects. As a result, public private partnerships may be on the rise. Our experience in working on BART's Oakland Airport Connector, America's first FTA sponsored Penta-P transit project, will be a valuable resource for these projects.

While we face challenges as a nation, trials always bring with them opportunity. We at Lea+Elliott believe the future is strong.

Jack Norton

Airport Access

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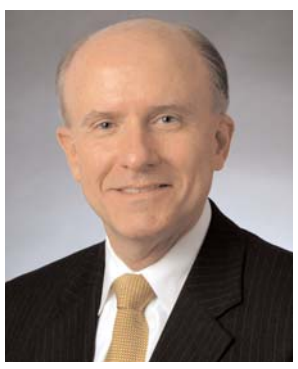
- **Miami International Airport** - Rapid transit system extension to the Miami Intermodal Center (MIC) now under construction with opening planned for 2013; MIA Mover also under construction will provide a link between MIA and the MIC with planned opening in 2011.
- **Ft. Lauderdale-Hollywood Airport** - Planning continues for 4-mile long AGT system that will link the airport with intermodal facility, rental car facilities and cruise ship terminals.
- **Washington Dulles** - Phase 1 of the 23-mile extension of the WMATA rapid transit system is under construction; Phase 2 will extend service to Dulles.
- **Dallas/Ft. Worth International** - Planning continues for DART LRT and FWTA commuter rail access.
- **Dallas Love Field** - Schematic design of landside APM connection to DART LRT station underway.
- **Denver International Airport** - A new commuter rail line will be extended to the airport.
- **Salt Lake City International** - UTA's LRT system is being extended to the airport and is currently under construction with an opening date of 2013.
- **Phoenix Sky Harbor** - APM system is currently being procured to link to the city's new LRT system.
- **Los Angeles International** - Planning continues to link airport with Green Line LRT, as well as potential proposed Crenshaw and Harbor Subdivision Lines.
- **Oakland International Airport** - Procurement of APM system planned this year for 2013 link between airport and BART Coliseum Station.
- **Honolulu International Airport** - Supporting the City & County of Honolulu in the planning, design, procurement and implementation of a new regional rail (automated) system that will include one station at the Airport.
- **Dublin International Airport** - Planning is underway for a landside APM system that will link the airport with Dublin Airport City and future metro connection.
- **Abu Dhabi International Airport** - Planning is nearing completion for regional rail (Metro) access to the airport. Lea+Elliott supported the Airport in identifying a corridor to be preserved for future track and a station to serve the airport.
- **Dubai International Airport** - The airport will be served by the Dubai Metro that is scheduled to begin operations in September 2009. Lea+Elliott supported the Airport in developing the airport interfaces including accommodation of baggage on the Metro and passenger access/egress at the airport stations.

Client Perspective

By James E. Bennett, President and Chief Executive Officer, Metropolitan Washington Airports Authority

Editor's Note: Client Perspective is a new feature designed to allow Lea+Elliott clients to share their perspective of current events and industry news.



The Metropolitan Washington Airports Authority has long planned for the future that we are now entering at our Washington, D.C. airports.

When the Metropolitan Washington Airports Authority (Airports Authority) was created in 1987, the goal was to establish an organization that would be able to plan the needed upgrades to the 1941 National Airport and continue to expand the 1962 Washington Dulles International Airport.

Just as importantly, the Airports Authority would have the ability to issue bonds to finance these needed capital investments. By the year 2015, we estimate that the Airports Authority will have issued $7.4 billion in construction and refunding revenue bonds - and the results of this investment can be clearly seen today.

The first order of business for the Airports Authority was to modernize National Airport, and in 1997, the Airports Authority completed a several-year program to build parking garages, a new two-level roadway system and a new terminal which today provides a high level of service as Reagan National Airport.

When Washington Dulles International Airport opened in 1962, it was the first U.S. airport built for commercial jet aircraft, and it served in the role of "pioneer" for some years as commercial aviation matured in our country and the area around the Airport was developed.

Today, the Airport's landside and airside facilities reflect the evolution of commercial aviation. Parking garages, conveniently connected to the Main Terminal, a passenger walkway connecting to the modern Concourse B which was recently expanded, a new Airport Traffic Control Tower and the opening of a new fourth runway, all were carefully planned and coordinated to bring on new customer service as it was needed over the years.

In the fall, a major milestone in the capital development program will be completed when the Dulles Airport underground people mover system, called AeroTrain, opens for service. Along with the AeroTrain system, this project will provide a new security screening area below the baggage claim level.

Dulles Airport has made its presence felt in the Washington region with an entire Dulles Corridor developing along the Dulles Airport Access Highway and the Dulles Toll Road. The Dulles Corridor is populated with businesses and residences that depend on Dulles for their travel and cargo service. Today, the word "Dulles" is an identifier that reaches beyond the 12,000 acres on which the distinctive Eero Saarinen-designed terminal sits.

Literally and figuratively we have entered another millennium. Even the most far-sighted thinkers did not anticipate the tremendous changes in aircraft and airports that we see today or that aviation would become so important and so critical to a community's overall growth and well-being.

At the Airports Authority, we believe that a community is defined by its connection to the world and that no community can have this connection without a comprehensive air service program, modern and convenient facilities, and ground transportation access to those facilities.

To ensure that Dulles Airport will remain a provider of this critical connection to the world, the Airports Authority has entered into an agreement with the Commonwealth of Virginia to take on the responsibility to manage the Dulles Toll Road and to build the extension of the Washington region's Metrorail out the Dulles Corridor to the Airport and beyond into Loudoun County, Virginia.

We have recently received the approval from the Federal Transit Administration for funding in the amount of $900 million for this project and we will soon enter the bond market to sell revenue bonds, backed by the Dulles Toll Road, which will also provide funding for the project.

We believe that good ground and air transportation are essential for the nation's capital now and in the future that we see further down the road.

2008 ACC Aviation Award of Excellence

The 2008 ACC Aviation Award of Excellence was presented to Gina Marie Lindsey, Executive Director, Los Angeles World Airports. **Lea+Elliott's President Jack Norton** presented the award at the the 30th ACC Annual Conference & Exposition in Florida last November. Since her arrival at Los Angeles World Airports, Director Lindsey has underaken the task of making all LAWA airports more efficient, progressive and positioned for growth in the years to come. She has always embraced difficult tasks that ulimately better serve both the public and the aviation industry.

In Progress

Metrorail Construction Begins from DC to Dulles

DULLES - On March 10, 2009, US Transportation Secretary Ray LaHood committed $900 million in federal funds to the $3.1 billion first phase of the 23-mile Dulles Corridor Metrorail Extension. “This project comes at a pivotal point as the Obama Administration begins to make vast improvements to our nation’s top transit systems,” Secretary LaHood said. “It will create construction jobs, encourage economic development opportunities, and help Tysons Corner become a more livable community.”

Phase 1 of the extension consists of an 11.7-mile expansion of the Washington Metropolitan Area Transit Authority (WMATA) heavy rail service, five stations, 64 new rail cars, rail yard improvements, and all the other elements necessary to achieve project implementation. Phase 1 is expected to open for revenue service in late 2013 and is projected to serve 85,700 daily riders by 2030, including an estimated 10,000 new daily transit riders.

Airports Authority board chairman H.R. Crawford, left, and U.S. Transportation Secretary Ray LaHood shake hands after signing the $900 million Full Funding Grant Agreement for the Dulles Corridor Metrorail Project.

Aerial view of Tysons Corner and the Dulles International Airport Access Highway which the Metrorail will travel on out to the airport.

The project’s sponsor, the Metropolitan Washington Airports Authority (Airports Authority), is utilizing its extensive experience with large and complicated construction projects on both the Dulles International Airport and Reagan National Airport to meet the challenges of managing the design and construction of the rail transit project. Lea+Elliott is the Airport Authority’s technical advisor for the system elements of the project and provides planning management that covers risk assessment and mitigation, planning, permitting, FTA interface, agency coordination, right-of-way acquisition and property management, environmental reviews, and value engineering.

Phase 2 will take the line another 11.4 miles to Dulles International Airport and beyond into Loudoun County, VA.

Anaheim Fixed Guideway Corridor

ANAHEIM - Lea+Elliott, as a subconsultant to IBI Group, has recently been selected by the City of Anaheim to provide Project Management Consultant (PMC) services for the proposed Anaheim Fixed Guideway system. The system is envisioned to provide passengers with enhanced local access to the Anaheim Resort and Platinum Triangle development areas. These will be two of the highest activity areas in Southern California in the future with Disneyland, the Convention Center, Angels Stadium and Honda Center as core attractions. In addition to connecting the existing Metrolink commuter rail and Amtrak station, the Fixed Guideway system will also connect to the proposed Anaheim Regional Transportation Intermodal Center (ARTIC), a multimodal hub that will include BRT, high speed rail and high speed maglev. This system along with enhanced service on Metrolink will help promote Orange County’s visions of a regional rail system that will connect major employment and activity centers in Southern California. The City’s goal is to select a Locally Preferred Alternative (LPA) and full environmental clearance late next year. The project is currently funded by the Orange County Transportation Authority (OCTA)’s Go Local program. This program was created to allow Orange County’s cities to plan and implement transit connections to OCTA’s Metrolink commuter rail line. Lea+Elliott’s major areas of services will include system implementation, operation & maintenance, and technologies assessment.

Oversight for NYMTA’s Capital Program

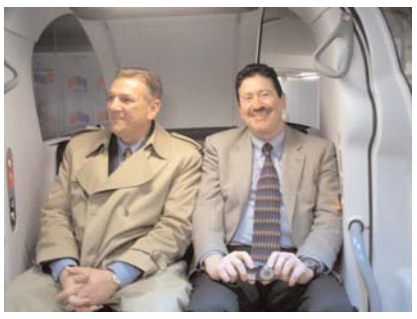
NEW YORK CITY - Lea + Elliott is working with the joint venture of McKissack + Delcan overseeing the Metropolitan Transit Authority’s (MTA) Capital Program performance and to promote improvement and cost effectiveness in areas such as cost estimating, budget and schedule control, quality, efficiency, safety and management.

As the Independent Engineering Consultant (IEC) the team works closely with MTA’s Office of Construction Oversight in the monitoring and implementation of MTA’s multi-billion dollar capital program. Projects being monitored include station rehabilitations; line structure modifications; tunnels; depot and yard improvements; signaling and communications projects; communication based train control; automatic train supervision; traction power projects and rolling stock procurements.

PRT System Takes Shape at London Heathrow

LONDON - As part of the Passenger Terminal Expo 2009 Conference, held in London in late March, **Lea+Elliott's Harley Moore and Hal Lindsey** led a four-hour program entitled "PRT and Automated People Movers at Airports." Other conference speakers included representatives of airport owners from London, Dublin, and Orlando and supplier representatives from MHI and Doppelmayr. David Holdcroft, PRT manager for BAA Heathrow, presented an update on London Heathrow's PRT system that recently started its testing and commissioning phase. He then hosted a tour of the system at LHR, with help from ATS, the PRT supplier. Harley Moore was impressed with the simplicity of the system and the amount of attention given to the fit and finish of the vehicle. Hal Lindsey was similarly impressed by the amount of attention that BAA paid to passenger interface and human factors. The first phase of this demonstration system will link Heathrow's T5 terminal with two stations at a remote parking lot using a lightweight aerial guideway. Expansion plans include extension of the four-kilometer guideway to additional landside facilities at LHR.

The tour included a close-up look at the battery-powered ATS vehicles.



Steve Cornell (L) and Dave Tomber of San Diego and Seattle try out the interior accommodations.

Two off-line berths are located at each of the long-term parking lot stations.

The guideway shown here at the T5 station is very simple.

Love Field APM Proceeds with Schematic Design

DALLAS - Lea+Elliott has been authorized by the City of Dallas' Public Works and Transportation and Aviation Departments to proceed with the Schematic Design of the Love Field Automated People Mover project at Dallas Love Field airport. This phase of the project will progress the APM Operating System and Fixed Facilities designs in tandem with the Design Development of the Love Field Modernization Program. The Schematic Design Phase will finalize the APM alignment between the DART Love Field LRT Station and the Love Field Terminal Building, develop the APM Stations, Maintenance Facility and Tunnels design to a Schematic Design level, refine the program cost estimate and schedule, develop a procurement strategy for the APM Operating System and Fixed Facilities and develop draft APM Operating System Procurement Documents. This phase of the project is anticipated to be complete in November 2009.

Lea+Elliott leads a team of architects, engineers, planners, and project specialty consultants that have extensive experience working with Love Field, the City of Dallas and DART. Many of the team members have worked together previously on APM and LRT projects.

Dallas Love Field APM Single Lane Bypass Concept

Join us in Atlanta for the World's Leading APM Conference

The 12th international ASCE APM conference will be held in Atlanta, from May 31 to June 3. The theme, "Connecting People, Connecting Places, Connecting Modes-APMs" reflects a focus on APMs and driverless transit systems as connectors for people, places and modes in cities, airports, and private developments. Around the world, automation in transit is accepted as safer, and less costly than manual operation. Full automation has been applied to a wide range of transit technologies, from rapid transit systems to small circulator systems. APMs have matured, and this conference will explore the experiences and lessons learned from past projects and introduce new technologies now in development.

The program is composed of concurrent technical and plenary sessions-presenting the opportunity to learn of new developments and advances in automated transit and lessons learned from others who have planned, designed and constructed existing systems. There will also be a tour of the APM systems at Hartsfield-Jackson Atlanta International Airport along with workshops to help advance professional development. Participating in the technical program allows attendees to obtain professional development hours (PDHs). In addition to the technical portions of the conference, there will be time to interact with equipment and services suppliers and network with peers.

Past conferences, held around the globe, have built international participation and flavor. This conference has become the meeting place for APM and automated transit professionals worldwide to share experiences, technologies, and innovative ideas for planning, design, implementation, and operation of fully automated systems. Conference attendees include transportation planners and engineers, APM and rapid transit system owners and operators, government officials, system suppliers, and prospective owners.

Lea+Elliott proudly serves as a primary sponsor of this conference every time it is held in the United States. Please consider joining us in Atlanta. For detailed conference information and to register online click on http://content.asce.org/conferences/apm2009/index.html.

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About Lea+Elliott

Lea+Elliott is a transportation consulting firm offering a broad range of planning and engineering services for clients worldwide. Principal activities involve transportation system planning, analysis, design, procurement, implementation, and overhaul.

The Lea+Elliott team has expertise in all modes of transit, including high-speed rail, rapid transit, commuter rail, light rail, automated guideway transit, conventional and advanced technology buses, and emerging technologies. These services are provided primarily to airports, public transit authorities, regional planning organizations, and private sector owners of transportation systems.

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