



# LAX TERMINAL 1.5: IMPROVING THE AIRPORT PASSENGER EXPERIENCE

Exploring the newly opened Terminal 1.5 within the Los Angeles International Airport modernization program

## ***A Case Study in Airport Planning***

In 2011, WSP led the team that prepared the project definition documents for advanced planning and preliminary design of the recently opened Terminal 1.5 at Los Angeles International Airport (LAX).

Los Angeles World Airports (LAWA) is in the midst of a \$14 billion capital improvement program at LAX that began in 2009 and is expected to last through 2023.<sup>1</sup> Following the North Terminal Complex Integration Program study by WSP, the Terminal 1.5 project was identified as the top priority. The project encompasses concept development and preliminary design plans, including terminal expansion and integration, and modification of Terminal 1 passenger processing functions: security checkpoint, ticketing and baggage claim.

The team (12 subconsultants) developed programmatic criteria for the functional integration of Terminal 1 and Terminal 2, creating preliminary architectural space concepts and adjacencies, preliminary design, and detailed cost estimates; the project definition documents included multiple elements: an executive summary outlining the project scope, a preliminary schedule, project budget requirements, constructability, risk assessment, the enabling projects, phasing elements and design specifications.

In the following Q&A, leaders of the WSP team on the Terminal 1.5 (T1.5) project explore the planning process that led to the final project and its grand opening; they discuss the challenges addressed to generate operational improvements and an enhanced passenger experience at LAX.

Experts: Senior Vice President for Aviation Services and Principal Program Manager Arnold Rosenberg, P.E., led the project development effort; WSP Assistant Vice President and Senior Aviation Planner Mark Kuttrus, AICP, was the project manager. Arnold (Arnie) Rosenberg has since retired after 35 years with the company.



Figure 1 - The interior of LAX Terminal 1.5 with a view of the automated people mover system under construction.

## ***What is the significance of the LAX Terminal 1.5 project?***

**Arnie Rosenberg:** The T1.5 project is part of the larger modernization program underway to redevelop Los Angeles International Airport into a 21st-century world-class airport, serving as an international connecting hub and a major domestic destination. T1.5 is intended to improve the operational flow and curbside efficiency of the airport and improve the overall

<sup>1</sup> [Los Angeles World Airports, Project Fact sheet](#)

passenger experience by allowing people to move with ease from concourse to concourse without having to leave security.

The PDD [project definition document] team developed a rigorous program that provided both the airport and experts who prepared the subsequent environmental documents with a detailed roadmap, specifying how to get this project through the environmental, design and construction processes and integrate it into the continuously operating and expanding airport. Through its overall effort to improve operational efficiency and the passenger experience, LAX has become a model for how to plan and implement such a large expansion program.

### ***Can you address the key considerations in the Terminal 1.5 planning effort?***

**Arnie Rosenberg:** The planning effort involved the development of a series of project objectives, to improve day-to-day operations and the passenger experience.

The operational side focused on performance characteristics, particularly passenger and vehicle congestion and energy efficiencies; there were also safety and security goals relative to peak-hour utilization and the latest Transportation Security Administration [TSA] requirements for baggage and passenger screening.

State-of-the-art design concepts were involved to enhance the terminal and passenger experience, using LAX's temperate weather and natural airflow for cooling the structure and modern materials to block heat from the sun in the summer months. In addition, improvements were made for curbside vehicle flow and passenger flow within the terminal, including post-security connectivity with walking access

between terminals 1 and 2 and the other LAX terminals.

When originally constructed, the airport was a series of unconnected unit terminals. LAX evolved over a long period from an origin-and-destination airport into one of the largest international connecting hubs in the United States. During this transitional time, many international airlines continued to serve LAX, but passengers were forced to leave airport security in their arrival terminal then make an arduous transfer to the international terminal where they were rescreened by TSA. T1.5 provides both the security screening, ticketing and baggage claim functions formerly in Terminal 1 and a secure connection to Terminal 2 to avoid going through security screening again if connecting to another airline.

**Mark Kuttrus:** Terminal 1 is right at the entrance to the airport, which is quite an active area. The first door for Terminal 1 is where many people stopped for drop-off, resulting in backed-up traffic beyond the intersection of the Sky Way & World Way and congested access to the entire terminal facility. By shifting necessary functions and entrance doors about 500 feet to the west, which was an open space that became T1.5, congestion from various standpoints could be addressed, including the interior layout of ticketing, security lines that backed up onto the sidewalk, and baggage-claim congestion. As a vertical structure with four levels, Terminal 1.5 provides increased capacity for Terminal 1 passenger processing. In turn, T1.5 has allowed the former processing space within Terminal 1 to be repurposed for concessions and remodeled for better passenger flow and an improved customer experience.

Planning the new structure as a vertical connector also built flexibility into T1.5 for future projects; to enhance passenger flow, T1.5 will link to the automated people mover [APM] system scheduled to open in 2023. The APM will

connect people to a consolidated rental car facility, parking facilities, the LA Metro Rail system and the Tom Bradley International Terminal. When the APM is ready, the T1.5 structure is already prepared to link to it and support additional passenger flow, reinforcing ease of movement and intuitive wayfinding.

**Arnie Rosenberg:** It is difficult to overstate the importance of providing a calming experience for air travelers. Leaving the comforts of home, getting into transport, and potentially fighting traffic to the airport can be stressful activities. Making it easy for people to know what to do, where to go and how to get to there, within an appealing environment, can relieve pressure and put travelers at ease to complete the flight portion of their journey.



Figure 2 - Four-level Terminal 1.5 at LAX

### ***What were the major challenges of the project, and how did the planning team address them?***

**Arnie Rosenberg:** There were several major challenges—meeting the goals the airport set, getting work done without disrupting the operations of Terminal 1 and Terminal 2 or dramatically impacting the traveling public, and meeting budgetary and schedule requirements.

None of the elements specified in the PPDs could have been developed in a vacuum. Planning is a collaborative process—among team members, between teams and with the airport client; everyone has a valued position

because everyone has something to add, and by contributing, everyone improves the planning process. As we moved through this collaborative process, issues were identified and considered relative to how they would impact other aspects of the planning process; we addressed the issues as a team to bring about the best result.

**Mark Kuttrus:** Ongoing collaboration of a complete team of experts that values different perspectives for the good of the project and client is required from the start—for projects to be successful.

Our planning group assembled a highly talented group of specialists, from blast and security experts to architects, structural engineers and construction managers, to develop comprehensive project definition documents. One of the stated challenges was the need to minimize LAX's carbon footprint, which T1.5 achieved by being vertical versus linear, using highly efficient HVAC [heating, ventilation and air conditioning] and glazing systems and innovative terminal design. The thoroughness of the PDDs resulted in a smooth transition from planning to environmental approval, and reduced the timeline for EIR [Environmental Information Regulations] approvals—in turn, allowing LAWA to move efficiently to full design and construction of the \$478 million, LEED Silver certified terminal, which opened on June 4, 2021.

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