

WINNER OF 2017
ENGINEERING EXCELLENCE
GOLD MEDAL AWARD IN
TRANSPORTATION,
ACEC TEXAS



Love Field Modernization Program

BACKGROUND

Established in 1917, Love Field was originally developed as a pilot training base for World War I. The airfield consisted of hangars and a grass landing strip, about five miles from Downtown Dallas. Airline service began in 1929, and Love Field served as North Texas' primary airport until DFW International Airport opened in 1974. In 1958, Love Field's terminal building was relocated to its current location.

The Love Field Modernization Program (LFMP) began in 2009 to accommodate the anticipated traffic increase as a result of the Wright Amendment on October 13, 2014, which now allowed nonstop flights from Love Field Airport across the United States.

The LFMP included replacement of the existing air carrier terminal facilities, in service since 1958, with 20 new gates, replacement of the existing concourses with one central gate complex, and complete renovation of the ticketing hall and baggage claim. Removal of the existing gates required replacement of the apron and surrounding airfield.

Huitt-Zollars was initially selected to design the new airside facilities including

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the apron, taxiways, airfield utilities, lighting systems, hydrant fuel system, and supporting infrastructure. Later, the project was amended to include landside civil design. The landside work involved roadways, utilities, drainage systems, flood protection, traffic management systems, walls, and landscape improvements. Huitt-Zollars was further assigned responsibility for Construction Management Services for airside and certain landside improvements. Work was completed using a mixture of Design/Bid/Build and CMGC delivery methods.

CHALLENGES

All construction had to occur within the existing airport footprint. Usually with a large airport expansion, there is plenty of available real estate nearby for construction staging. Since Love Field is located within a highly developed area, construction logistics and staging were limited to a minimum number of available locations in the airport footprint. Conditions in the terminal area were so tight that some gates were temporarily relocated during construction.

Relocation of gates to the new terminal building required a phased process to maintain air carrier service at all times.

disciplines + services

engineering
construction management

client

city of dallas
southwest airlines

location

dallas, texas

The LFMP Shuffle refers to highly detailed and constant coordination to safely maintain normal, daily Love Field Airport operations while successfully constructing all airfield apron improvements.

“Huitt-Zollars’ understanding of our landside and airside engineering requirements confirmed we had made the right choice in selecting their team.”

-Jeff H. Miller, LFMP Program Director

disciplines + services

engineering

construction management



the existing airport, Huitt-Zollars developed a movable Airport Operations Area (AOA) fence system. The movable fencing system allows the construction work zone and haul/access routes to be effectively taken out of the Airfield Operations Area (AOA), thus not conflicting with air traffic. The fencing system was created using standard traffic barriers as a base then attaching chain-link fence and outriggers with barbed wire. This allowed frequently changing work area boundaries, simplifying access to the construction site and enabling the separation of construction traffic with airlines’ ground service equipment. Throughout construction, Love Field remained open and active.

This requirement became the basis for a four and a half-year project to replace the apron in five phases. Every time a work phase moved, the sequence to de-commission the existing building, remove it, and then remove and replace the apron started from the beginning. Each phase included improvements to the fuel supply and hydrant fueling system. Timing, sequencing, material availability, and coordination with FAA, air carriers, and airport operations played important roles in project completion.

In 2014, a significant rainfall event occurred causing some flooding challenges within the airport. The existing, undersized drainage system had already been properly addressed during design; however, the flooding event

required that the system be re-evaluated.

ADVANCEDDESIGNSM SOLUTION

The LFMP project team was diligent in execution, maintained high quality standards, and applied innovative and creative approaches wherever possible. Because airport operations had to be maintained at all times, it was crucial to effectively ‘shuffle’ all project components. The LFMP Shuffle refers to the highly detailed and constant coordination to safely maintain normal, daily Love Field Airport operations while successfully constructing all airfield improvements.

To work efficiently within the small confines of

Huitt-Zollars utilized state-of-the-art 3D hydrodynamic modeling technology to analyze Love Field’s existing drainage system. This approach helped other project leaders visualize and understand flow patterns across the airfield in order to develop and recommend cost effective solutions to mitigate flood risks to the new terminal building. This solution continues to prove its effectiveness and value, as flooding concerns in the terminal area have been eliminated.

In 2007, 8 million passengers traveled through Love Field. Ten years later, the number of passengers has increased to nearly 16 million.

HUITT-ZOLLARS DEVELOPED A MOVABLE AIRPORT OPERATIONS AREA (AOA) FENCE SYSTEM IN ANTICIPATION OF THE FREQUENTLY CHANGING WORK AREA BOUNDARIES.

