

2.1 AIRSIDE FACILITIES - ALTERNATIVE D

The airfield modifications for Alternative D would improve the level of service, reduce delays, reduce the potential for runway incursions and consequently enhance the safety and security of passengers and aircraft at LAX. Alternative D in 2015, as shown in Figure 2.0-3, would maintain the existing four-runway system with modifications to the north and south airfield runways. Center taxiways would be constructed between the runways on the north and south airfield to reduce the potential for runway incursions.

The Boeing 747-400 was used as the design aircraft (Group V), with operational and modified Group VI solutions for the anticipated operation of limited numbers of the NLA. **Figure 2.1-1** highlights each of the Alternative D airside improvements that are described in the following sections. Refer to Chapter IV, Section 3.2.6 of the Draft LAX Master Plan, for a complete description of the modified Group VI aircraft design standards.

2.1.1 NORTH AIRFIELD FACILITIES

- ◆ **Extend Runway 6L/24R:** Runway 6L/24R would maintain its current location; however, it would be extended approximately 1,495 feet to the west for a total length of approximately 10,420 feet. This would be used primarily as an arrival runway in both east and west flow, with occasional departures. This is similar to the way Runway 6L/24R is used today. This runway is shown to remain at 150 feet wide through the 2015 horizon of the Master Plan because it is not envisioned to be fully reconstructed in that time. However, a benefit-cost analysis may later determine that this runway should be widened to 200 feet during its life-cycle reconstruction. The basis of this widening would be assessed in relation to the number of Group VI operations taking place at LAX in the future. Discussions with Airbus representatives indicate that a 150-foot wide runway with 50-foot wide paved shoulders for jet blast protection is adequate for the operation of the planned Airbus A380 (a design Group VI representative aircraft also referred to herein as a NLA).
- ◆ **Relocate, Extend and Widen Runway 6R/24L:** Runway 6R/24L would be reconstructed approximately 340 feet south of the existing runway centerline to allow for the construction of a new parallel taxiway between the runways. Runway 6R/24L would be extended approximately 135 feet west and approximately 1,280 feet to the east. The total runway length would be approximately 11,700 feet long and 200 feet wide. Runway 6R/24L would be used primarily as a departure runway.

- ◆ **New Parallel Center Taxiway:** A new taxiway would be constructed between Runways 6L/24R and 6R/24L to reduce the potential for runway incursions and enhance the safety of operations at LAX; currently, there is 700 feet between runways. The new taxiway would be used to access both Runways 6L/24R and 6R/24L. The new taxiway would be a 10,420- by 100-foot full-length, modified Group VI parallel taxiway located 520 feet north of relocated Runway 6R/24L and 520 feet south of Runway 6L/24R. The new taxiway would be used to access both Runways 6L/24R and 6R/24L including two high-speed exit taxiways in west flow, and two high-speed exit taxiways in east flow, spaced to minimize the runway occupancy time reduce airfield and airspace delays for passengers at LAX. Constructing the taxiway would require the demolition of Terminals 1, 2, 3 and the north concourse of the Tom Bradley International Terminal (TBIT). A linear concourse would west of TBIT be constructed to replace some of the lost gates. Section 2.2 contains a complete description of terminal changes.
- ◆ **Relocate and Widen Taxiway E:** Taxiway E would be relocated 340 feet south of its current location and would be located 400 feet south of the realigned Runway 6R/24L. Taxiway E would be widened to 100 feet.
- ◆ **Extend, Widen and Realign Taxiway E17:** Taxiway E17 would be realigned and extended north approximately 1,085 perpendicular to the centerline extended off Runways 6L/24R and 6R/24L.
- ◆ **Relocate, Extend and Widen Taxiway D:** Taxiway D would be relocated approximately 370 feet south (at the intersection with Taxiway Y), and would be approximately 770 feet south of realigned Runway 6R/24L. The taxiway would be extended approximately 7,105 feet from the intersection of Taxiway S west to Taxiway E17, and would be 100 feet wide. The proposed new separations and pavement width would meet full Group V taxiway standards and would also provide modified Group VI separation for taxiing aircraft approaching the departure ends of Runway 6R/24L.
- ◆ **Service Roads:** Portions of the service road network at the west end of the north airfield would be removed to allow for the westward extension of Runways 6R/24L and 6L/24R.

2.1.2 SOUTH AIRFIELD FACILITIES

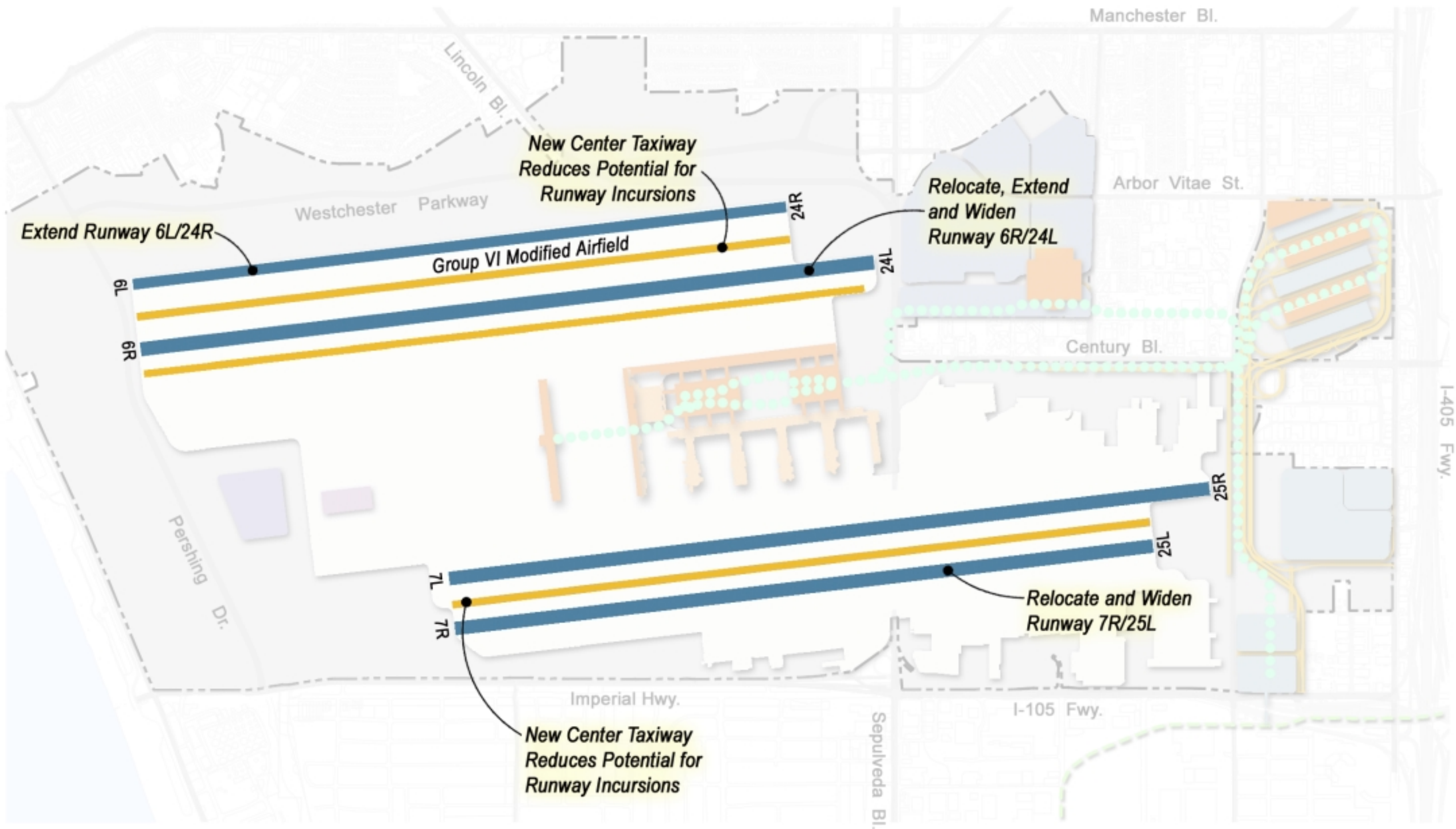
- ◆ **Existing Runway 7L/25R:** This runway would not be modified for Master Plan Alternative D.
- ◆ **Relocate Runway 7R/25L:** Runway 7R/25L would be moved approximately 50 feet south of the existing Runway 7R/25L centerline to allow for the construction of a new parallel taxiway between the south airfield runways. The runway would be 11,096

feet long and 200 feet wide. Runway 7R/25L would be used primarily as an arrival runway. Because this project is considered early in the Master Plan development sequence, an operational plan for Group VI aircraft would be developed in conjunction with the Federal Aviation Administration (FAA) Air Traffic Controllers, pilots and airline representatives to ensure safe and efficient movement of these airplanes on the ground. The goal would be to minimize airfield disruption while providing safe taxiway paths for NLA.


- ◆ **New Parallel Center Taxiway:** A new 11,096-foot long by 100-foot wide full-length Group V parallel taxiway would be constructed between Runways 7L/25R and 7R/25L to reduce the potential for runway incursions and enhance the safety of operations at LAX. The taxiway would be located 400 feet north of Runway 7R/25L and 400 feet south of Runway 7L/25R. The new taxiway would have four high-speed exit taxiways in west flow and two high-speed exit taxiways in east flow. This taxiway is proposed to be constructed 100 feet wide to provide operational areas for Group VI aircraft prior to the completion of the north airfield development. One proposed approach for Group VI movement on the redesigned south airfield would be to use this taxiway for arriving aircraft to taxi into position for crossing the inboard runway. To allow continued runway operations during a taxiway crossing, a taxiway bypass west of 7L/25R and 7R/25L outside of the Runway Safety Area (RSA)¹ from Taxiway A to Taxiway B may be required.

¹ Runway Safety Area (RSA) – A defined surface surrounding the runway prepared or suitable for reducing the risk of damage to airplanes in the event of an undershoot, or excursion from the runway.

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 Draft: July 31, 2002

 Not to Scale

2.1.3 APPROACH MINIMUMS

Table 2.1-1 outlines the minimum weather conditions for operations to each runway.

Table 2.1-1

ALTERNATIVE D - LOWEST APPROACH MINIMUMS

Runway	West Arrivals		East Arrivals	
	Decision Height	Visibility (SM)	Decision Height	Visibility (SM)
6L/24R	CAT IIIb	RVR 06	200 feet	1/2 mile
6R/24L	200 feet	1/2 mile	200 feet	RVR 18
7L/25R	200 feet	1/2 mile	200 feet	RVR 18
7R/25L	CAT IIIb	RVR 06	200 feet	1/2 mile

2.1.4 FAA RUNWAY DESIGN AND LAYOUT RECOMMENDATIONS

Improvements to the south airfield runway and taxiway layout were designed using current FAA guidelines and recommendations for airfield safety areas and zones. The proposed Runway Protection Zones (RPZ)² and RSA meet the FAA’s current recommended dimensions. In addition to expanding the airports safety areas and zones, Declared Distances would be implemented to make the best use of the airport’s constrained site.

FAA’s established mechanism for allowing existing constrained airports to continue operating unimpeded is through the declaration of safe aircraft operating parameters known as Declared Distances.

Declared Distances would be particularly beneficial for LAX Master Plan Alternative D because the airport would satisfy FAA design standards, control project costs, and minimize the physical impacts of airport reconstruction on its neighbors. Guidance on the application of this methodology is contained in FAA Advisory Circular (AC) 150/5300-13 - Airport Design. Appendix 14 of this AC states:

“The use of Declared Distances for airport design shall be limited to cases of existing constrained airports where it is impracticable to provide the RSA, the Runway Object Free

² RPZ - Runway Protection Zone – An Area off the runway end to enhance the protection of people and property on the ground.

Area (ROFA)³, and the RPZ in accordance with the design standards in Chapters 2 and 3 [of AC 150/5300-13].”

The general principal in the application of Declared Distances is the independent treatment of each of the four aircraft runway performance distances:

- ◆ Take-Off Run – The distance to accelerate from brake release to lift-off, plus safety factors.
- ◆ Take-Off Distance – The distance to accelerate from brake release past lift-off to start of takeoff climb, plus safety factors.
- ◆ Accelerate Stop Distance – The distance to accelerate from brake release to V₁⁴ and then decelerate to a stop, plus safety factors.
- ◆ Landing Distance – The distance from the threshold to complete the approach, touchdown, and decelerate to a stop, plus safety factors.

The Airport Layout Plan (ALP) is used to specify the available runway length for each runway in each direction of use. FAA reviews and approves the ALP and publishes Declared Distances in its Facility Directory for use by pilots and airline dispatchers. The following are the four types of Declared Distances:

- ◆ Take-Off Run Available (TORA) – The length of runway declared available and suitable for satisfying takeoff run requirements.
- ◆ Take-Off Distance Available (TODA) – The TORA plus the length of any remaining runway or clearway beyond the far end of the TORA available for satisfying takeoff distance requirements.
- ◆ Accelerate Stop Distance Available (ASDA) – The length of runway plus stopway declared available and suitable for satisfying accelerate-stop distance requirements.
- ◆ Landing Distance Available (LDA) – The length of runway declared available and suitable for satisfying landing distance requirements.

Under LAX Master Plan Alternative D, clearways⁵ would be identified off of five of the eight runway ends. The identification of clearways

³ Runway Object Free Area (ROFA) – An area on the ground centered on a runway centerline provided to enhance the safety of aircraft operations by having the area free of objects, except for objects that need to be located in the OFA for air navigation or aircraft ground maneuvering purposes.

⁴ For turbojet aircraft, “V₁” is the maximum speed during takeoff that the pilot may abort the takeoff and stop the airplane within the accelerate-stop distance.

⁵ A “clearway” is a clearly defined area connected to and extending beyond the runway end available for completion of the takeoff operation of turbo jet-engined airplanes. The Clearway is a plane, extending out and up from the runway end with a slope of no greater than 1.25%. The clearway plane is required to be 500 feet wide and has a practical length of no greater than 1,000 feet. No object or terrain may penetrate the clearway plane.

allows for the increase of an aircraft's gross takeoff weight without extending the physical runway pavement. This would result in airport cost savings through the reduction of airport reconstruction impacts while allowing aircraft operators to maximize their aircraft utilization.

On the North Airfield, Runway 6L/24R would have a physical pavement length of 10,420 feet. The west end of the runway would have a 1,000 foot displaced threshold in order to provide the recommended 1,000 foot Runway Safety Area. A 500-foot clearway would extend off of the west end of the runway increasing Runway 24R TODA while a 1,000-foot clearway would extend from the east end increasing TODA for aircraft departing Runway 6L.

Also on the North Airfield Runway 6R/24L would have a physical pavement length of 11,700 feet. Both runway ends would have displaced thresholds of 1,000 feet to accommodate the recommended 1,000-foot RSA. A 300 foot clearway would extend from the west end of the runway increasing TODA for Runway 24L to 12,000 feet.

On the South Airfield, Runway 7L/25R would have a physical pavement length of 12,091 feet. Runway 7L/25R is the only runway at LAX that would not be modified under Master Plan Alternative D. The east end of the runway would have a displaced threshold of 957 feet. The 25R arrival threshold displacement allows the runway's approach path to clear Air Freight Building #3 (Building 415 on the Sheet 3 of the ALP Package). A 1,000-foot clearway would be extended from the west end of the runway allowing for increased TODA for westbound departures from the runway.

Also in the South Airfield, Runway 7R/25L would have a physical pavement length of 11,096 feet. Runway 7R/25L does not have displaced thresholds at either end. A 1,000-foot clearway would be identified at the west end of the runway allowing increased TODA for westbound departures from the runway.

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