



LAWA

LAX

SURFACE MOVEMENT GUIDANCE AND CONTROL SYSTEM PLAN

Los Angeles International Airport

Surface Movement Guidance and Control System (SMGCS) Plan

The SMGCS Plan for Los Angeles International Airport (LAX) in Los Angeles, CA, has been reviewed and approved.

Prior to implementation, the Federal Aviation Administration (FAA) must approve any subsequent changes to the LAX SMGCS Plan.

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FOREWORD

This SMGCS Plan describes enhancements, procedures, and actions at LAX that are applicable to the airport operator, air traffic control, and other tenants of LAX during low visibility conditions.

Chapter 1. GENERAL

1-1-1. Purpose

The procedures contained in this plan were developed by the SMGCS Working Group, which consisted of representatives from Los Angeles World Airport (LAWA) Airport Operations, LAWA Facilities Management Electrical Shop, Los Angeles Fire Department, Los Angeles Airport Police, Federal Aviation Administration (FAA) Western-Pacific Airports Regional Office, FAA Western-Pacific Flight Standards, FAA Airways Facilities Office, Los Angeles International Airport Air Traffic Control Tower (LAX ATCT), appropriate scheduled airlines, Air Line Pilots Association, cargo/package operators, and other appropriate tenants and aircraft operators.

This document does not supersede established policies, procedures, rules, or guidelines for airports, aircraft or vehicle operators, or air traffic control. It does describe the airfield lighting, marking improvements, and operating procedures that have been designed to enhance the safety and efficiency of aircraft and vehicle movements.

These enhancements, procedures, and actions are in accordance with the guidance set forth in FAA Advisory Circular 120-57A, Surface Movement Guidance and Control System, current edition and FAA Order 8000.94. A SMGCS Plan is required for airports where scheduled air carriers conduct takeoffs or landings in visibility conditions of less than 1200 feet as measured by Runway Visual Range equipment.

This plan addresses current procedures to support low visibility takeoff, landing and taxiing operations at LAX. The work of the SMGCS Working Group will continue after the FAA approves the plan. The SMGCS Working Group will meet as necessary, but not less than once per year to assess low visibility operations, and to modify the plan with future enhancements as necessary.

1-1-2. Distribution

This Plan is distributed within the FAA and LAWA.

1-1-3. Effective Date

This plan is effective concurrent with the publication of the Low Vis Taxi Charts published for LAX.

1-2-1. Abbreviations

As used in this plan, the following abbreviations have the meanings indicated.

<i>Abbreviation</i>	<i>Meaning</i>
ALSF	Approach Light System with Sequenced Flasher
AOA.....	Air Operations Area
ARFF.....	Airport Rescue and Fire Fighting
ASDE-X.....	Airport Surveillance and Detection Equipment
APD.....	LAX Airport Police
ATIS	Automated Terminal Information Service
FAA	Federal Aviation Administration
FAR.....	Federal Air Regulation
ILS.....	Instrument Landing System
MALSR.....	Medium Intensity Approach Light System with Runway Alignment Indicator Lights.
LAFD.....	Los Angeles Fire Department
LAWA.....	Los Angeles World Airports or Airport Operator
LAX	Los Angeles International Airport
LAX ATCT.....	Airport Traffic Control Tower
OPS.....	Los Angeles International Airport, Airport Operations
POFZ.....	Precision Obstacle Free Zone
RVR.....	RWY Visual Range
RWY.....	Runway
SMGCS	Surface Movement Guidance and Control System
SMGCSWG.....	Surface Movement Guidance and Control System Work Group
TWY	Taxiway and Taxilane

1-2-2 Definitions

Airfield. That portion of the Airport intended to be used wholly or in part for the arrival, departure, and movement of aircraft.

Airport Operations or OPS. The term OPS refers to personnel assigned from the Airport Operations Section who are responsible for the overall management of the airfield.

Apron (Ramp). A defined area on the airport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking and maintenance. The apron area includes the following components:

- Aircraft Parking Positions. Intended for parking aircraft to enplane/deplane passengers, load or unload cargo.

- Aircraft Service Areas. Areas on or adjacent to an aircraft parking position. They are intended for use by personnel/equipment for servicing aircraft and staging of equipment to facilitate loading and unloading of aircraft.
- Vehicle Roadways. Identified rights of way on the apron area designated for service and ARFF vehicles.

Controlling Region. Refers to the FAA Western-Pacific Region in which the airport is located.

Low Visibility Operations. The movement of aircraft or vehicles on the airport paved surfaces when visibility conditions are RVR values less than 1200 feet.

Movement Area. Refers to the RWYs, TWYs, and other areas of an airport that are used for taxiing or hover taxiing, air taxiing, takeoff, and landing of aircraft, exclusive of loading ramps and aircraft parking areas. This document does not change the definition or description of the area as contained in the Airport Certification Manual and Letter of Agreement between OPS and LAX ATCT.

North Complex The aircraft movement area which consists of Runways 06L-24R, Runway 06R-24L and associated taxiways. The area also includes connecting Taxiways K from Checkpoint 1, Taxiway L between Taxiway D and Taxiway C, N from Checkpoint 2, and AA from Checkpoint 3. Low visibility approaches are conducted to Runway 24R under ILS Category III with ASDE-X surveillance, ALSF-2 approach lighting system, runway centerline, edge and touchdown zone lighting, precision instrument runway markings and three RVR sensors representing touchdown, midpoint, and rollout readings.

Non-movement Area. TWYs and apron areas that are not under air traffic control.

POFZ. Volume of airspace above an area beginning at the runway threshold, at the threshold elevation, and centered on the extended runway centerline, 200 feet (60m) long by 800 feet (240m) wide. The surface is in effect only when all of the following operational conditions are met:

- (1) Vertically guided approach
- (2) Reported ceiling below 250 feet and/or visibility less than $\frac{3}{4}$ statute mile (or RVR below 4000 feet)
- (3) An aircraft on final approach within two (2) miles of the runway threshold.

When the POFZ is in effect, a wing of an aircraft holding on a taxiway waiting for runway clearance may penetrate the POFZ; however, neither the fuselage nor the tail may infringe on the POFZ. In addition, a vehicle less than 10 ft. in height is allowed in the POFZ. The POFZ is applicable at all runway ends including displaced thresholds.

Elevated RWY Guard Lights. Fixtures consisting of a pair of elevated flashing yellow lights, installed on both sides of a TWY, at the RWY hold position marking. Their function is to identify the proximity of an active RWY and assist in preventing RWY incursions.

In Pavement RWY Guard Lights. Fixtures consisting of a row of in-pavement flashing yellow lights installed across the entire TWY at a RWY hold position marking. Their function is to identify the proximity of an active RWY and assist in preventing RWY incursions.

Stop Bar. Stop bar lights consist of elevated red fixtures that are installed at the RWY holding position. Not installed at LAX.

SMGCS. A SMGCS system consists of the provision of guidance to and control or regulation of all aircraft, ground vehicles and personnel on the movement area of an aerodrome. Guidance relates to facilities, information and advice necessary to enable the pilots of aircraft, or the drivers of ground vehicles to find their way on the aerodrome, and to keep the aircraft or vehicles on the surfaces or within the areas intended for their use. Control or regulation means the measures necessary to prevent collisions and to ensure that the traffic flows smooth and freely.

South Complex The aircraft movement area which consists of Runway 07L-25R, Runway 07R-25L, and associated taxiways. The area also includes connecting Taxiways K from Checkpoint 1, Taxiway L between Taxiway C and Taxiway D, N from Checkpoint 2, and AA from Checkpoint 3. Low visibility approaches are conducted to Runway 25L under ILS Category III with ASDE-X surveillance, ALSF-2 approach lighting system, runway centerline, edge and touchdown zone lighting, precision instrument runway markings and three RVR sensors representing touchdown, midpoint, and rollout readings.

Surface Painted Holding Position Sign. Pavement marking used to identify a specific RWY. These markings are configured the same as the associated sign.

Surface Painted Direction Sign. Pavement markings that are configured the same as the associated sign and provided when it is not possible to provide TWY direction signs at intersections. A Surface Painted Sign may also provide additional information to an existing directional sign.

Surface Painted Location Sign. Pavement markings that are configured the same as the associated sign, and are used to supplement the signs located alongside the TWY, and assist the pilot in confirming the designation of the TWY on which the aircraft is located. (Ref FAA AC 150/5340.1)

Taxi Route. A specific sequence of lighted or properly marked TWYs used by aircraft during low visibility operations.

Taxiway/Taxilane. A taxiway is a defined path established for taxiing of aircraft from one part of an airport to another. A taxilane is defined as a portion of the aircraft parking area used for access between Taxiways and aircraft parking positions. For the purpose of this Plan, the term “TWY” includes both taxiways and taxilanes.

Chapter 2. Facilities, Services, and Equipment

2-1-1 Runways

LAX has four east-west parallel RWYs that are used, individually or in combination, for both takeoffs and landings in a primarily west flow direction.

1. Arrivals

- a. RWYs 24R and 25L are served by Category III Instrument Landing Systems (ILS), ALSF-2 approach lights, touchdown zone, centerline lighting, and high intensity edge lighting; touchdown midpoint, and rollout RVR equipment; and RWY instrument markings. They are useable for landings with RVR values down to 500 feet.
 - b. RWYs 24L, 25R, 07R, 07L, 06R, and 06L are served by a Category I ILS, MALSR approach lights, touchdown zone, centerline lighting, and high intensity edge lighting, touchdown midpoint and rollout RVR equipment, and RWY instrument markings. RWYs 24L, 25R, 07L, 06R are useable for landings when RVR values are 1800 feet or greater. RWY's are useable for landings with the following RVR values; 07R 2400 RVR, and 06L 2400 RVR.
2. Departures. All RWYs at LAX are equipped with RWY centerline lighting and are useable for takeoffs when RVR values are down to 500 feet.

2-1-2 TWY Lighting

1. Continuous TWY centerline lights extend from all high speed exits off RWYs 25L and 24R and entrances at TWYs V, E7, and E6 for RWY 24L and TWY B1 for RWY 25R. TWY centerline lights are installed on TWY B east of TWY B6 and west of TWY J; on TWY E east of intersection TWY E12, and TWY D between TWYs N and D10. TWY centerline lights are installed on TWYs H, K, L, N, and AA full length (Attachment 1).
2. In-pavement and elevated yellow RWY guard lights are at all RWY access points and are continuously illuminated.

2-1-3 TWY Clearance Bars

Not installed at LAX.

2-1-4 TWY Guidance Signing and Marking Inspections

TWY guidance signing and marking are inspected routinely as part of the OPS airfield inspection program. This monitoring alerts LAX ATCT when part of the SMGCS related lighting system is inoperative. Corrective actions will be taken for the prompt repairs with minimal disruption of service.

2-1-5 Surface Movement Surveillance

ASDE-X radar is installed on both north and south RWY complexes and monitored by LAX ATCT personnel. ASDE-X is exclusive to ATC's use and not integrated with the LAX SMGCS plan.

2-1-6 Follow-Me Service

OPS will provide "follow-me" service for aircraft at any time on the movement area upon request through LAX ATCT. The pilot or LAX ATCT may initiate a follow-me request in accordance with section paragraph 4-1-5 c of this Plan. The OPS follow-me vehicle is identified by amber flashing emergency lights. To enhance safe operations in low visibility conditions, Part 91 operators may also request "follow-me" services to and from the RWY environment.

2-1-7 Aircraft Docking

Aircraft Operators assume control of the aircraft in the vicinity of the gate and provide aircraft docking by the use of wing walkers, follow-me vehicles, tugs or other appropriate means as set in the respective airline procedures.

Chapter 3. Responsibilities

3-1-1 Movement and Non-Movement Area

LAWA delegates control of Movement Areas to the LAX ATCT by Letter of Agreement. Access to all movement areas requires an ATC approval prior to entry. LAWA delegates control of all non-movement areas between and around the concourses by Airport/Tenant/FAA Letters of Agreement. All other non-movement areas are controlled by tenants for their respective exclusive areas. Most aircraft movement and non-movement areas are not delineated at LAX.

3-1-2 LAWAWA

LAWAWA shall:

1. Coordinate the SMGCS Plan as specified in Chapter 4 and monitor adherence to those sections of the plan under their control.
2. Conduct scheduled meetings of the SMGCSWG as necessary, but not less than once per year to assess low visibility operations, and to modify the plan with future enhancements as necessary.
3. Make changes to the SMGCS Plan when necessary.
4. Maintain documentation of SMGCSWG proceedings.
5. Coordinate, amend, publish and distribute the SMGCS Plan.
6. Notify all air carriers and LAFD/ARFF #80 when implementing the SMGCS Plan procedures or loss of condition reporting via phone, NOTAM, and Everbridge..
7. Continue to upgrade all airfield lighting and signage to meet SMGCS requirements.

3-1-3 LAX ATCT

ATCT shall:

1. Activate or discontinue the SMGCS Plan as specified in Chapter 4 of this plan.
2. Participate in SMGCSWG.
3. Use "Reporting Points" in low visibility conditions to provide progressive taxi/ground instructions to aircraft, escort vehicles and/or emergency responders.

4. Issue conflict-free taxi/ground movement instructions for all aircraft movement areas.

3-1-4 Airport Tenants

Airport Tenants shall:

1. Participate in the SMGCSWG.
2. Disseminate SMGCS procedures to employees and vendors.
3. Provide training to all personnel that may operate vehicles on aircraft movement areas or service roads in low visibility conditions.
4. Provide SMGCS Taxi Route Map/Airport Diagram (Appendices 1 and 2) to all ground vehicle operators depicting low visibility taxi routes and appropriate ATCT frequencies.
5. Provide control of personnel assigned in non-movement aircraft gate/parking, and exclusive leasehold areas.
6. Ensure pilots conducting low visibility operations have a copy of the low visibility taxi route chart.
7. Ensure FAR Part 91 operators are familiar with the SMGCS Plan procedures and follow the guidance in this plan to the maximum extent possible and expect follow-me assistance to and from the RWY environment. These procedures may be located in the Aeronautical Information Manual and/or Chart Supplement.

Chapter 4. Procedures for operations between 1200' and 500' RVR

4-1-1 General

The SMGCS Plan provides guidance and control of aircraft between various apron locations and the RWYs in a safe and efficient manner during low visibility conditions. The coordinated efforts of LAX ATCT and OPS are focused on assuring the safe movement of aircraft and avoiding inadvertent or unauthorized entry onto the movement area during low visibility conditions. LAX ATCT will notify OPS when the south and/or north complex portion of LAX Airport is operating in a low visibility condition and SMGCS procedures and restrictions will be in effect, except as noted in 2-1-6 and 4-1-4 e.2.

4-1-2 Visibility Reporting

The LAX ATCT front Line Manager/Controller-In-Charge and the OPS Duty Superintendent will monitor RVR values and coordinate the implementation of the SMGCS Plan when RVR values indicate visibility below 1200 feet is imminent.

4-1-3 Activation and De-Activation of the SMGCS Plan

1. SMGCS procedures shall be activated by LAX ATCT when any one RVR value per airport south and/or north complex is between 1200 feet to 500 feet.
2. LAX ATCT will notify OPS when any one RVR reading, per airport south and/or north complex, reaches 1200' RVR, stating which complex the 1200' RVR was received and when SMGCS procedures are no longer required.
3. OPS will notify the air carriers, ARFF and APD by telephone and/or the Everbridge Mass Notification System that the SMGCS procedures are in effect and when they are no longer in effect.

4-1-4 LAX ATCT

When RVR values are 4000 feet or less, shall begin monitoring the Category II/III system remotely. When conditions warrant, request OPS to conduct Category II/III lighting inspections on RWYs 25L and 24R as prescribed by FAA Order 6750.24E. Category II/III lighting inspections are to be performed every two hours remotely while RVR values remain below 4000 feet.

When RVR values are between 1800 feet to 1200 feet:

1. Category II and III arrivals shall use RWY 24R or 25L.
2. Departing aircraft may use any available RWY.

3. When requested by the pilot, advise OPS to provide follow-me service to aircraft needing access to the movement areas where TWY centerline lighting is not available.
4. Broadcast on the ATIS that SMGCS operations are in effect.

4-1-5 OPS

When weather conditions are less than reported ceiling of 800 feet and visibility is less than two miles:

1. Continuously monitor all aircraft movement area lighting and signage.
2. Protect ILS RWY critical areas. Reference FAR Part 139, Subsection 139.333.

When RVR values are at or below 4000 feet:

1. Perform an initial lighting and signage inspection prior to SMGCS Plan implementation. Perform Category II/III lighting inspections, upon request by LAX ATCT, every two hours while visibility remains below 4000 feet RVR.
2. Evaluate aircraft movement in the vicinity of construction activity. Secure construction sites that may impact low visibility operations and determine if they are safe for use.
3. Continuously monitor ground control frequencies.

Follow-Me Service

1. Airport OPS will provide "follow me" service to all aircraft to and from movement areas, upon request through ATC.
2. Aircraft escorts with a follow-me vehicle, upon request, on TWY C between TWY R and C-6 and on TWY D between TWY D-10 and D-7, as stated in para. 2.1.6.
3. Adhere to aircraft movement area reporting points along TWY routes, as specified in ATC clearances, i.e., apron TWY/TWY or RWY/TWY intersections as depicted in Appendix 1 or 2.
4. The follow-me escort will be terminated when the aircraft has reached the non-movement area, or when an appropriate aircraft ground handler assumes responsibility for providing guidance to the pilot.

5. OPS will notify LAX ATCT on the appropriate VHF frequency when the escort is terminated.
6. OPS will use their vehicle call sign and control all escort related communication including read back hold short instructions.

Note: If the pilot fails to follow the escort vehicle, OPS will attempt to advise the aircraft to stop and contact LAX ATCT. The escort will be considered terminated and notification made to LAX ATCT.

4-1-6 Aircraft Operators

1. In all weather conditions, an LAX ATCT or ramp tower clearance is required prior to push-back from an aircraft gate or parking position or to taxi out from specific gates. Pilots conducting low visibility operations at LAX are required to have a copy of the low visibility taxi route chart.
2. At any time, pilots may request "follow me" service from LAX ATCT and OPS.

Note: OPS will verbally terminate all aircraft escorts on the appropriate VHF frequency when complete.

3. Aircraft Operators are responsible for positioning aircraft by taxi or tow after receiving a clearance from either the appropriate ramp tower or LAX ATCT.

4-1-7 LAFD ARFF

1. ARFF shall ensure a timely response during existing meteorological conditions that is safe and prudent and is in compliance with FAR Part 139 Index E requirements.
2. ARFF personnel will comply with the existing procedures identified in the current Aircraft Emergency Handling Letter of Agreement.
3. Personnel shall remain familiar with low visibility taxi routes using Appendices 1 and 2, SMGCS Taxi Route Map/Airport Diagram.

Chapter 5. Procedures for operations below 500' RVR

5-1-1 LAX ATCT

1. LAX ATCT will notify OPS when any one RVR reading, per airport complex, reaches 500' RVR, stating which complex the 500' RVR was received.
2. Broadcast on the ATIS that less than 500' RVR procedures are in effect.
3. Departures that have not entered the movement area shall not be permitted to taxi. Some operators may be approved for lower takeoff minima via OPSSpec/MSpec/LOA C078/C079/C056.
4. Aircraft Operators that have already entered the movement area and are able to takeoff with lower minima shall advise LAX ATCT of departures. If requested, these aircraft will be permitted to continue taxi for takeoff.
5. Arrivals that have passed the final approach fix or landed shall be permitted to land and or taxi to parking if RVR values drops below the SMGCS minima.

5-1-2 OPS

1. Continuously monitor all aircraft movement area lighting and signage.
2. Protect ILS RWY critical areas. Reference FAR Part 139, Subsection 139.333.
3. Evaluate aircraft movement in the vicinity of construction activity. Secure construction sites that may impact low visibility operations and determine if they are safe for use
4. Airport OPS will provide "follow me" service to all aircraft to and from movement areas in accordance to Section 4-1-5 above.

5-1-3 Aircraft Operators

1. At any time, pilots may request "follow me" service from LAX ATCT and OPS.

Note: OPS will verbally terminate all aircraft escorts on the appropriate VHF frequency when complete.

2. Aircraft Operators are responsible for positioning aircraft by taxi or tow after receiving a clearance from either the appropriate ramp tower or LAX ATCT.

Chapter 6. Vehicle Control

6-1-1 Vehicle Access

Vehicle access to the airport is controlled by a system of perimeter fencing, gates and restricted area access control through an individual self-identification badging system. All airport and tenant vehicles entering the LAX AOA are identified by mandatory markings placed on vehicles. Vendor and contractor vehicles are escorted by tenant or the airport. Airport Police and OPS personnel patrol all airside areas and are instructed to have unauthorized vehicles removed from the secure area of the airport.

6-1-2 Vehicle Service Roads

Except for the necessary movement in exclusive lease areas, vehicles on the airfield operate within a clearly marked system of vehicle service roads. Vehicles operating on designated service roads that cross movement areas do not require two-way radios or an ATC clearance.

6-1-3 Driver Training

All LAX AOA vehicle drivers are provided training by their individual employer, tenant or contracting tenant. Employees of LAWA are provided AOA driver training by their respective supervisor. Tenants of LAX are responsible for certifying driver training as monitored by Airport Police Badging Section. The study guide for the LAX Restricted Area Driver Test includes specific low-visibility operating procedures. A standard written AOA driver's test, developed by the LAWA, is administered to all AOA vehicle drivers and the applicant must receive a passing grade before the driver is allowed to operate a vehicle on the AOA. Tenant driver training programs are reviewed periodically by the Airport to ensure the training programs are applicable to current airport rules and regulations and consider low-visibility operations.

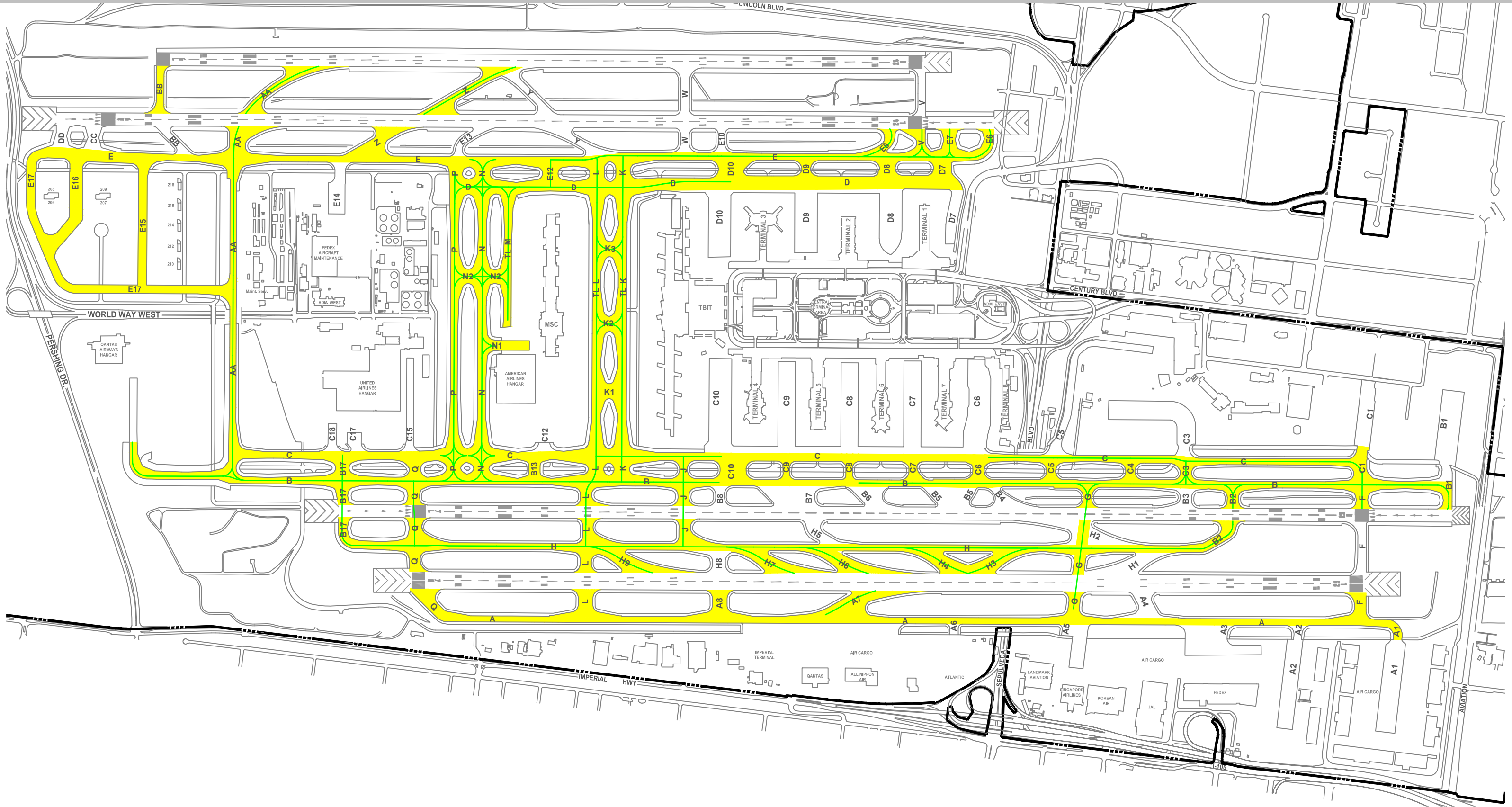
6-1-4 Access Restrictions

Only vehicles operated by OPS, Airport Maintenance, LAFD ARFF and FAA Tech Ops personnel are allowed on aircraft movement areas as directed in the LAWA/LAX Jurisdictional LOA. All other vehicles that require access to an aircraft movement area shall be escorted by OPS and are limited by function, except as noted in 6-1-2 above. The access of vehicular traffic on the service roads will be monitored by OPS.




6-1-5 Construction

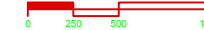
Prior to implementation of the SMGCS Plan (1200 RVR or less), OPS will analyze all construction activity and/or other specialized activity on the airport and determine the limitations to be imposed. Limitations range from restrictions to elimination of the activity.

SMGCS Route



LEGEND

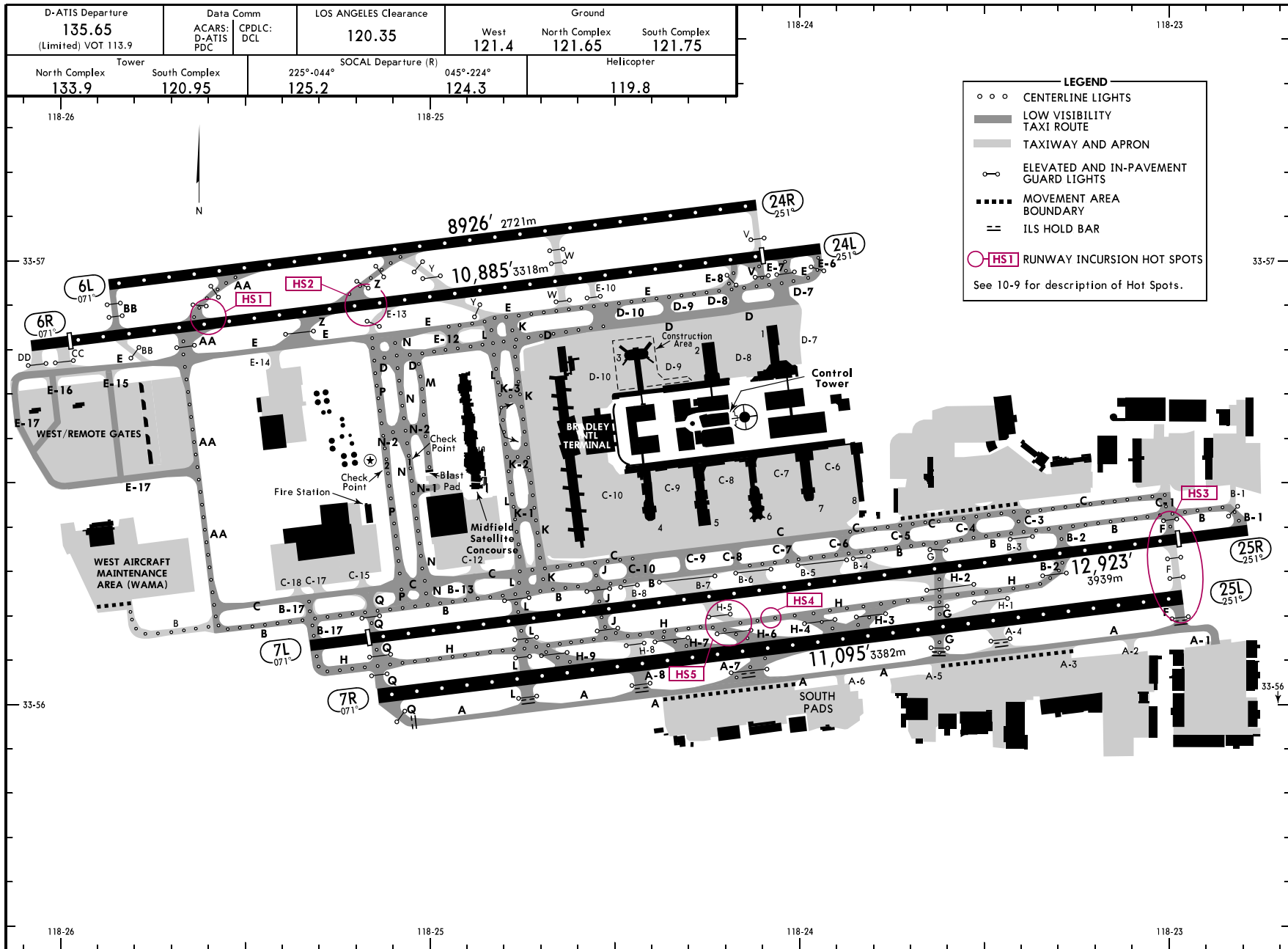
-  AIRPORT BOUNDARY
-  SMGCS Available
-  Centerline Lights



KLAX/LAX
LOS ANGELES INTL

JEPPESEN
10-9E 29 OCT 21

SMGCS
LOS ANGELES, CALIF
LOW VISIBILITY TAXI ROUTES



CHANGES: SMGCS routes, centerline lighting, directional arrows removed.

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