Los Angeles World Airports

Surface Movement Guidance and Control System (SMGCS)

Operational Plan

Updated: December 2024

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Surface Movement Guidance and Control System (SMGCS) Operational Plan

The Federal Aviation Administration (FAA) has reviewed and accepted the SMGCS Plan for Los Angeles International Airport (LAX) Airport. Any future revisions to the LAX SMGCS Plan must be reviewed and accepted by the FAA before implementation.

Chapter 1 – General

1-1-1. Purpose

This plan contains procedures that were developed by the Airport Low Visibility Operations / Surface Movement and Guidance Control System (LVO/SMGCS) Working Group, which included representatives from Los Angeles World Airport (LAWA) Airport Operations, LAWA Maintenance Services Division (MSD) Electrical Shop, Los Angeles Fire Department (LAFD), LAWA Airport Police, Federal Aviation Administration (FAA) Western-Pacific Airports Regional Office, FAA Flight Standards, FAA Airways Facilities Office, FAA Los Angeles International Airport Air Traffic Control Tower (LAX ATCT), selected scheduled airlines, Air Line Pilots Association (ALPA), selected cargo airlines, and other appropriate tenants and aircraft operators.

This document does not supersede existing policies, procedures, rules, or guidelines for airports, aircraft, vehicle operators, or air traffic control. It explains the airfield lighting, marking improvements, and operating procedures established to improve the safety and efficiency of aircraft and vehicle movements during low visibility operations.

These improvements, procedures, and actions follow the guidance in the most current version of AC 120-57, *Low Visibility Operations / Surface Movement Guidance and Control Systems (LVO/SMGCS)*, and the most current version of FAA Order 8000.94, *Procedures for Establishing Airport Low-Visibility Operations and Approval of Low-Visibility Operations/Surface Movement Guidance and Control System Operations*.

This plan addresses current procedures to support low-visibility takeoff, landing, and taxiing operations at LAX. The Airport LVO/SMGCS Working Group will meet as needed to evaluate low visibility operations and to update the plan with future enhancements.

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.

1-1-4. Changes

- Overall review of the LAX SMGCS Program
- Updated maps

1-2-1. Abbreviations

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

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

RWY Runway

RVR RWY Visual Range

TWY Taxiway (inclusive of Taxilane for the purpose of this plan)

LVO/SMGCS Low Visibility Operations/Surface Movement Guidance and Control System

Airport LVO/SMGCSWG Airport Low Visibility Operations/Surface Movement Guidance and Control System Working Group

1-2-2. Definitions

Airfield - That portion of the Airport is 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(366m).

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 Runway 06L-24R, Runway 06R-24L and associated taxiways. The area also includes connecting Taxiways K north of Checkpoint 1, Taxiway L between Taxiway D and Taxiway C, N north of Checkpoint 2, and Y north of Checkpoint 3. Low visibility approaches can be 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(76m) and/or visibility less than ¾ statute mile (or RVR below 4000 feet(1219m))

(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. No stop bars are installed at LAX.

LVO/SMGCS - A LVO/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 south of Checkpoint 1, Taxiway L between Taxiway C and Taxiway D, N south of Checkpoint 2, and Y south of Checkpoint 3. Low visibility approaches can be 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 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 600 feet(183m).
    b. RWYs 24L, 25R, 07R, 07L, 06R, and 06L are served by a Category I ILS, MALSR approach lights, touchdown zone lighting for RWY's 24R, 25L, 06R, and 07L, centerline lighting, and high-intensity edge lighting, touchdown midpoint and rollout RVR equipment, and RWY instrument markings. RWYs 24L, 25R, 07L, 07R, 06L, and 06R are useable for landings when RVR values are 2,400 feet(732m) or greater.
2. Departures. All RWYs at LAX are equipped with high-intensity RWY centerline lighting and are useable for takeoffs when RVR values are as low as 500 feet or consistent with an Operator's approved takeoff minimums.

2-1-2. TWY Lighting

Continuous TWY centerline lights extend from all high-speed exits off RWYs 24R and 25L and entrances at TWYs E6, R, E7, and E8 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 Y and D10. TWY centerline lights are installed on TWYs H, K, L, N, and Y full length (See Appendix 1).

In-pavement and elevated yellow RWY guard lights are installed at all RWY access points and are continuously illuminated.

2-1-3. TWY Clearance Bars

Not installed at LAX

2-1-4. TWY Guidance Signs and Markings Inspections

As part of the OPS Safety Self-Inspection program, TWY guidance signing and marking are inspected routinely. If any SMGCS related Signs and Markings are not to standard, LAX ATCT is notified, and corrective action is taken promptly to minimize 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.

2-1-7. Aircraft Docking

Aircraft Operators assume control of the aircraft in the vicinity of the gate and provide aircraft docking using wing walkers or Visual Docking Guidance Systems (VDGS).

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 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. LAWA

LAWA shall:

1) Coordinate the LVO/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 Airport LVO/SMGCSWG as necessary to assess low visibility operations, and to modify the plan with future enhancements as necessary.
3) Make changes to the LVO/SMGCS Plan when necessary.

4) Maintain documentation of Airport LVO/SMGCSWG proceedings.
5) Coordinate, amend, publish, and distribute the LVO/SMGCS Plan.
6) Notify all air carriers and LAFD/ARFF 80 when implementing the LVO/SMGCS. Plan procedures or loss of condition reporting via phone, NOTAM*, and Everbridge.

   *NOTAMS will be issued indicating the status of the discrepancy, for example “RWY 24R edge lighting not to standard. More than two consecutive lights out”.

3-1-3. LAX ATCT

ATCT shall:

1) Activate or discontinue the LVO/SMGCS Plan as specified in Chapter 4 of this plan.
2) Participate in Airport LVO/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:

A) Participate in the Airport LVO/SMGCSWG.
B) Disseminate LVO/SMGCS procedures to employees and vendors.
C) Provide training to all personnel that may operate vehicles on aircraft movement areas or service roads in low visibility conditions.
D) Provide LVO/SMGCS Taxi Route Map/Airport Diagram (Appendices 1 and 2) to all ground vehicle operators depicting low visibility taxi routes and appropriate ATCT frequencies.
E) Provide control of personnel assigned in non-movement aircraft gate/parking and exclusive leasehold areas.
F) Ensure pilots conducting low visibility operations have a copy of the low visibility taxi route chart.
G) Ensure FAR Part 91 operators are familiar with the LVO/SMGCS Plan procedures, follow the guidance in this plan to the maximum extent possible, and availability of 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’(366m) and 500’(152m) RVR

4-1-1. General

The LVO/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 LVO/SMGCS procedures and restrictions are 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 will monitor RVR values and coordinate the implementation of the LVO/SMGCS Plan when RVR values indicate visibility below 1200 feet(366m) is imminent.

4-1-3. Activation and De-Activation of the LVO/SMGCS Plan

1) SMGCS procedures shall be activated by LAX ATCT for the respective airport complex whenever the RVR value on that complex is between 1,200' (366m) and 500' (183m).
2) LAX ATCT shall notify OPS whenever LVO/SMGCS procedures are in effect and shall advise which complex the procedures are in effect for and when LVO/SMGCS procedures are no longer required.
3) OPS shall notify the air carriers, ARFF, and APD by telephone and/or the Mass Notification System when the LVO/SMGCS procedures are in effect and when they are no longer in effect.

4-1-4. LAX ATCT

When RVR values are 4,000 feet (1,219m) or less, LAX ATCT shall begin monitoring the Category II/III system remotely. When conditions warrant, LAX ATCT shall request OPS to conduct Category II/III lighting inspections on RWYs 25L and/or 24R as prescribed by FAA Order 6750.24E. When required, category II/III lighting inspections are to be performed every two hours remotely while RVR values remain below 4000 feet (1219m).

When RVR values are less than 1,200feet (366m):

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 LVO/SMGCS operations are in effect.

4-1-5. OPS

A) When the reported ceiling is less then 800 feet(244m) or visibility is less than two miles, Ops shall:
    1. Continuously monitor all aircraft movement area lighting and signage.
    2. Protect ILS RWY critical areas as required under FAR Part 139, Subsection 139.333.

B) When RVR values are at or below 4,000feet(1219m), Ops shall:
   1. Upon request by LAX ATCT, perform category II/III lighting inspections, every two hours while visibility remains below 4,000 feet (1219m) 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.

C) Follow-Me Service
   1. Upon request through ATC, OPS will provide "follow me" service to aircraft in the movement areas.
   2. Upon request through ATC, OPS will provide "follow me" service to aircraft on TWY C between TWY P and C-6 and on TWY D between TWY D-10 and D-7, as stated in para. 2.1.6.
   3. During a follow-me escort, Ops shall:
      a. Adhere to aircraft movement area reporting points along TWY routes specified in ATC clearances, i.e., apron TWY/TWY or RWY/TWY intersections as depicted in Appendix 1.
      b. Notify LAX ATCT on the appropriate VHF frequency when the escort is terminated.
      c. Use their vehicle call sign and control all escort related communication including reading back hold short instructions.

      The follow-me escort shall be considered terminated when the aircraft reaches the nonmovement area, or when an appropriate aircraft ground handler assumes responsibility for providing guidance to the pilot.

      Note: If the pilot fails to follow the escort Ops vehicle, Ops will attempt to advise the aircraft to stop and contact LAX ATCT. The escort will then be considered terminated, and Ops shall advise LAX ATCT that the follow-me escort is terminated.

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, in any weather condition, 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 repositioning aircraft by taxi or tow after receiving a clearance from either the appropriate ramp tower or LAX ATCT.

4-1-7. ARFF (LAFD)

1) ARFF shall ensure a timely response that is safe, prudent and in compliance with FAR Part 139 Index E.
2) ARFF personnel shall comply with the existing procedures identified in the current Aircraft Emergency Handling Letter of Agreement.
3) ARFF 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 between 500'(152m) and 300'(91m) RVR

5-1-1. LAX ATCT

1. LAX ATCT will notify OPS when any one RVR reading, per airport complex, reaches 500'(183m) RVR, stating which complex the 500'(183m) RVR was received.

2. Broadcast on the ATIS that less than 500'(183m) RVR procedures are in effect.

3. 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 LVO/SMGCS minima.

5-1-2. OPS

1) Ops shall:
    i. Continuously monitor all aircraft movement area lighting and signage.
    ii. Protect ILS RWY critical areas as required under FAR Part 139, Subsection 139.333.
    iii. 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
    iv. Upon request, provide "follow me" service to aircraft in the movement areas in accordance with Section 4-1-5.

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. Procedures for operations below 300'(91m) RVR

Currently, the FAA does not provide guidance for operations below 300'(91m) RVR. The use of technology such as Enhanced Vision Systems, Head-Up Displays, and advanced moving maps, could potentially increase the level of safety during airport ground operations during periods of reduced visibility. Additionally, improvements in parking assistance in ramp areas and ground crew capabilities provide better situational awareness for both flight crews and ground personnel. The Airport LVO/SMGCS will be open to considering the use of these technologies for operations below 300'(91m) RVR. Until then, when RVR is below 300':

1) Departures that have not entered the movement area shall not be permitted to taxi.
2) Aircraft Operators that have already entered the movement area and are able to takeoff with lower minima shall advise LAX ATCT of departure intent. If requested, these aircraft will be permitted to continue to taxi for takeoff.

Chapter 7. Vehicle Control

7-1-1. 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 and/or placers on vehicles. Vendor and contractor vehicles are escorted by tenants or OPS. Airport Police and OPS personnel patrol the AOA and are instructed to have unauthorized vehicles removed from the AOA.

7-1-2. Vehicle Service Roads

Except for the necessary movement in exclusive lease areas, vehicles on the airfield operate within a 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.

7-1-3. Driver Training

All LAX Restricted Area Drivers are provided training by their employer, tenant, or contracting tenant. LAX also provides a computer-based training course that all Restricted Area vehicle drivers must take. This course incorporates low-visibility operating procedures. The course also includes a test that must be passed before the driver is permitted to drive on the non-movement area.

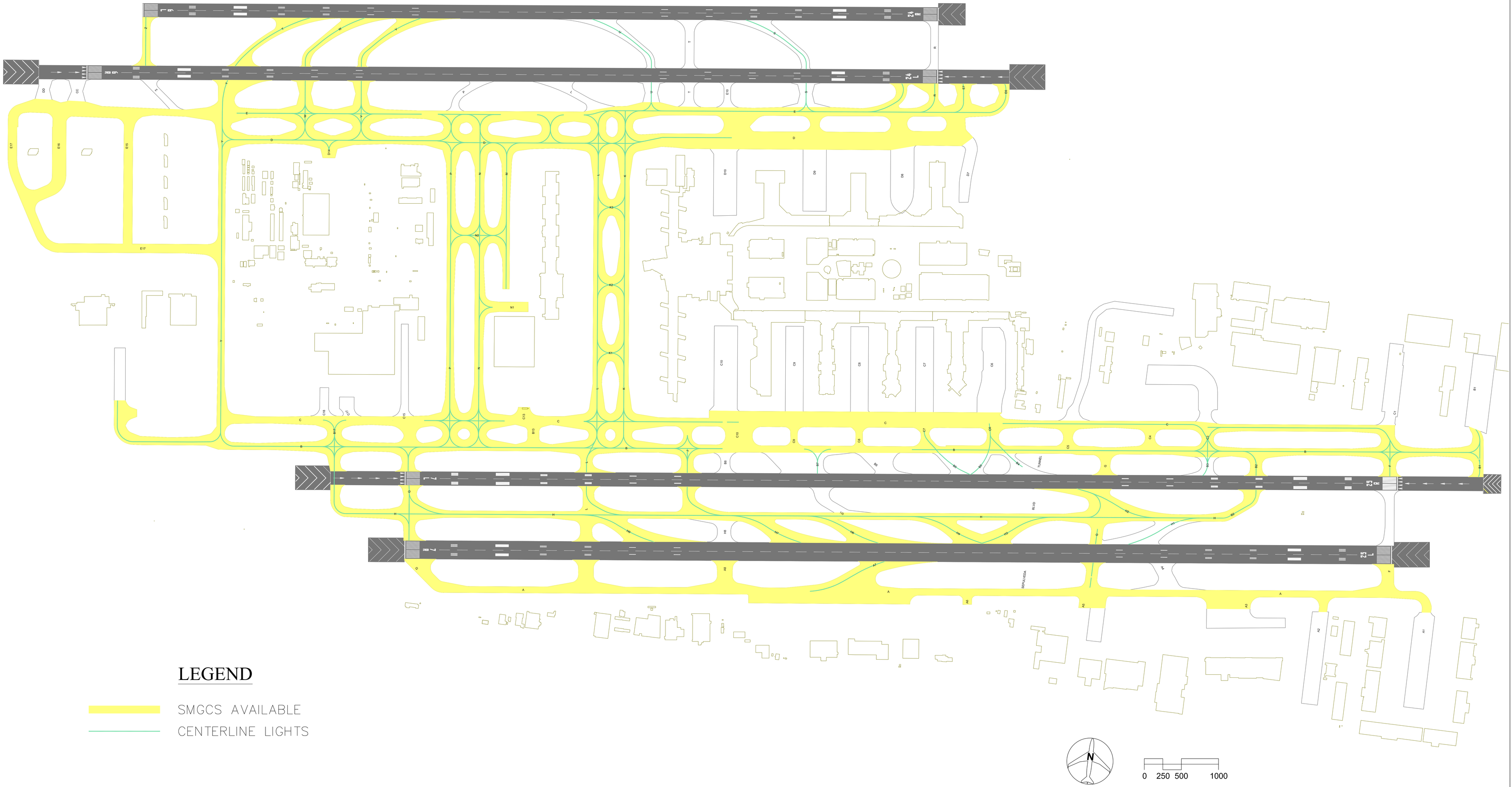
7-1-4. Access Restrictions

Only vehicles operated by OPS, Airport Maintenance, 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 and APD.

7-1-5. Construction

Before implementing the LVO/SMGCS Plan (when RVR is 1200 feet (366m) or less), OPS shall evaluate any construction activity and/or other special activity on the airport and determine what restrictions to impose. The restrictions may range from partial to complete suspension of the activity.

SMGCS Route



KLAX/LAX

LOS ANGELES INTL

LESS THAN RVR 1200

JEPPESEN

22 NOV 24 (10-9E)

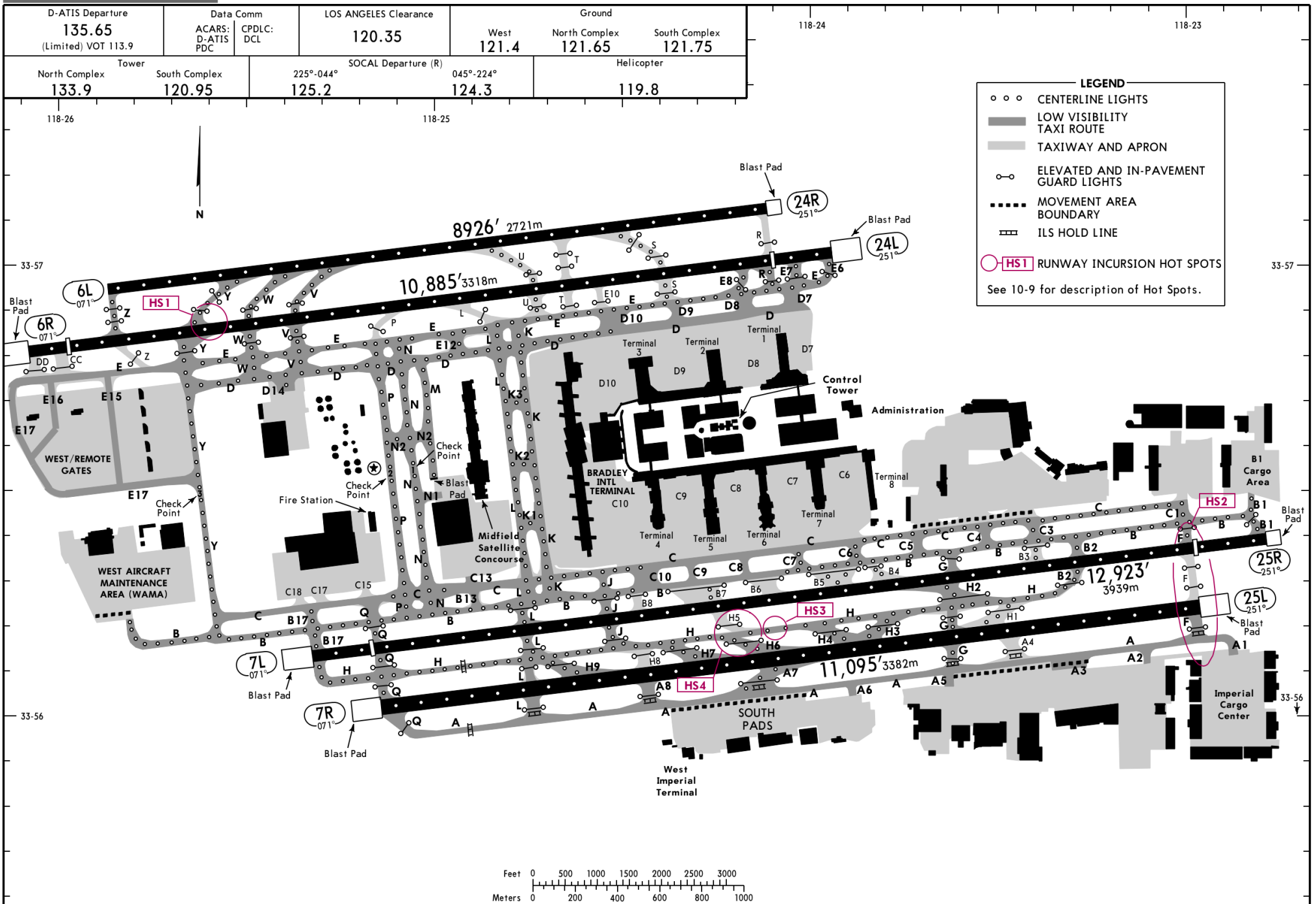
SMGCS

LOS ANGELES, CALIF

LOW VISIBILITY TAXI ROUTES

D-ATIS Departure	Data Comm		LOS ANGELES Clearance	Ground		
135.65 (Limited) VOT 113.9	ACARS: D-ATIS PDC	CPDLC: DCL	120.35	West 121.4	North Complex 121.65	South Complex 121.75

Tower		SOCAL Departure (R)		Helicopter
North Complex	South Complex	225°-044°	045°-224°	
133.9	120.95	125.2	124.3	119.8



CHANGES: Low visibility taxiways modified, centerline lights added, blast pads added.