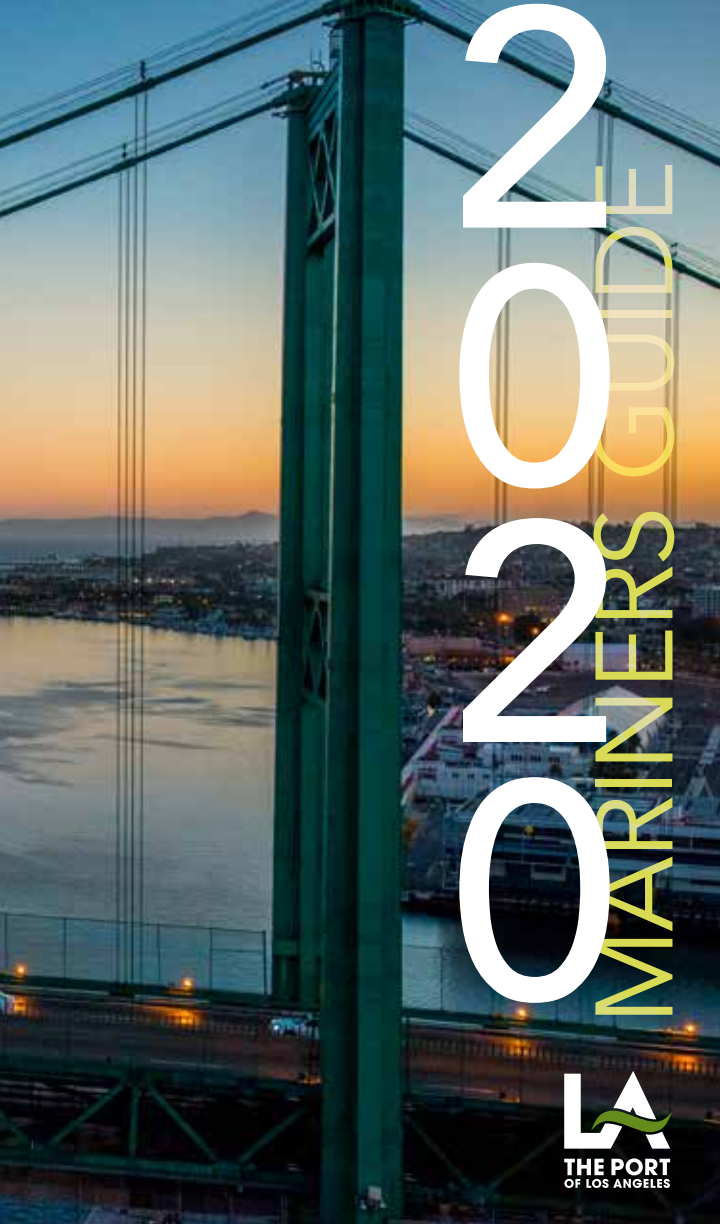


2020 MARINERS GUIDE

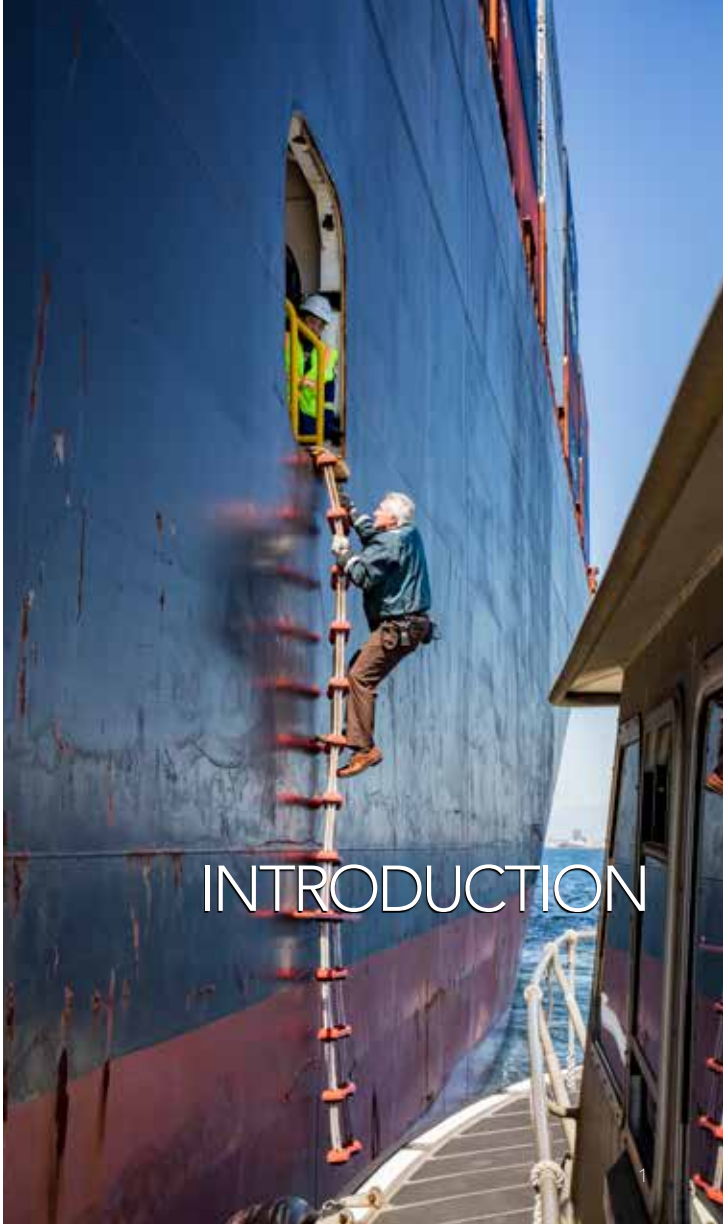
THE PORT OF LOS ANGELES

THE PORT
OF LOS ANGELES

PORT OF LOS ANGELES
425 S. Palos Verdes Street
San Pedro, CA 90731
Phone/TDD: (310) 732-3508
portoflosangeles.org

@portofla

TABLE OF CONTENTS



INTRODUCTION

WELCOME TO THE PORT OF LOS ANGELES AND THE LA WATERFRONT

The Port of Los Angeles is America's Port®, the nation's premier gateway for international commerce and the busiest seaport in the Western Hemisphere. A department of the City of Los Angeles which is governed by the Los Angeles Board of Harbor Commissioners, the Port's jurisdiction is limited to the Harbor District, which includes property in San Pedro, Wilmington, and Terminal Island. In accordance with the Public Trust Doctrine, the Port conducts operations which promote maritime, commerce, navigation, fisheries, and public access to the waterfront.

Located in San Pedro Bay, 25 miles south of downtown Los Angeles, the Port has both passenger and cargo terminals, including cruise, container, automobile, breakbulk, dry and liquid bulk, and warehouse facilities that manage billions of dollars' worth of cargo each year. The Port encompasses 7,500 acres of land and water along 43 miles of waterfront, with nearly 30 terminals.

Currently in the midst of a 10-year, $2.6 billion infrastructure investment program with a focus on improving the efficiency of goods movement across the supply chain, the Port is at the forefront of new technologies, environmental initiatives, progressive security measures and is firmly committed to community engagement.

The Port of Los Angeles is home to the LA Waterfront, 400 acres of waterfront property designated as the official waterfront of the City of Los Angeles in 2009. The LA Waterfront is a unique visitor-serving destination which includes the Los Angeles Harbor communities of San Pedro and Wilmington, and is funded and maintained by the Port of Los Angeles.

With more than three million visitors each year, the LA Waterfront is home to dozens of historical sites and museums, public art installations, a coastline promenade, and over one hundred annual events. In addition, visitors enjoy a variety of waterfront recreational activities including windsurfing, kayaking, sailing, whale watching, fishing and harbor cruises.

The Port, along with private investors, real estate developers and stakeholders, are working together to transform the LA Waterfront in to a world-class visitor destination. The Port will invest a total of $1 billion dollars in development projects through 2025, with the focus on increasing open space, encouraging public access through sustainable design, planning and urban architecture.

For more information on Port of Los Angeles:
portoflosangeles.org

For more information on LA Waterfront:
lawaterfront.org

LOS ANGELES PILOT SERVICE

Berth 68 • San Pedro
(310) 732-3805 dispatcher@portla.org
VHF Radio Channel 73 (156.675 MHz)
Call: KEB260 Los Angeles Pilots

LOS ANGELES PILOTS ARE AVAILABLE 24 HOURS A DAY.

Pilots board arriving vessels from the pilot boat in the vicinity of Los Angeles Channel RACON Buoy #3. Tank vessels will be boarded at least two nautical miles from the Los Angeles entrance. Deep-draft vessels (more than 55 feet) will be boarded in the vicinity of Los Angeles Channel Buoy #1.

Under normal weather conditions, the pilot ladder should be rigged on the starboard side one meter above water.

Los Angeles Pilot Traffic:
lapilots.org

PILOTS REQUIRE A MINIMUM OF TWO HOURS' NOTICE FOR PORT SERVICE.

Masters or agents are requested to advise the Los Angeles Pilot Station when there is a change in the arrival or sailing time.

Chief Port Pilots
John Dwyer
Craig Flinn

Port Pilots
John Betz
Jacob Crawford
Richard Crowley
Erik Cutforth
Kyle Hamill
Joseph Manlove
Joseph Mayer
Brett McDaniel
Richard Rauhut
Edward Royles
Jeffrey White

Trainee Port Pilots
Justin Jabuka
John Mayer

Dispatchers
Beth Adamik
Tamara Armstrong
Kathleen Bautista
Pauline Hospe
Cherie Ivers

Boat Captains
Danny Domingo
Raymond Maese
Ryan Ruppert
Alex Suarez

Deck Hands
Robin Craigen
Logan Gardiner
Garrick Gilham
Johnny Kostich
Lindsay Magnall

Management Analyst
Jeremy Karmelich

Founded in 1907, the Los Angeles Pilot Service is a team of 30 dedicated professionals including pilots, dispatchers, boat captains, and deck hands whose mission is to provide safe, reliable and efficient vessel movements for Port of Los Angeles customers. The Service provides around-the-clock pilotage services 365 days per year.

The Los Angeles Pilot Service is the only pilotage group in the nation operated by a City and staffed by City employees. Pilot candidates, recruited by the service, are highly experienced captains from both the offshore shipping and local tugboat sectors of the maritime industry. After a rigorous two-year training program, pilots continue to enhance their skills through both biennial ship simulator training at domestic training facilities, and manned model ship handling training, conducted every four years, in Grenoble, France. Over the past decade, these highly trained professionals have safely completed more than 45,000 vessel movements within Los Angeles Harbor.

TELEPHONE DIRECTORY

EMERGENCY 911
Los Angeles Port Police . . . . . (310) 732-3500
Los Angeles Fire Department 911
Fire Station 49 (Berths 194-195). . . . . (310) 548-7549
Fire Station 110 (Berth 44). . . . . (310) 548-7545
Fire Station 111 (Fish Harbor) . . . . . (310) 548-7541
Fire Station 112 (Berths 85-86) . . . . . (310) 548-7542

Pilots
Los Angeles Pilot Service . . . . . (310) 732-3805
Long Beach Pilots c/o Jacobsen Pilot Service . . . (562) 432-0664
Marine Exchange of Southern California . . . . . (310) 832-6411

Port of Los Angeles Administration
Executive Offices . . . . . (310) 732-3456
Environmental Management. . . . . (310) 732-3675
Public Relations . . . . . (310) 732-3508
Real Estate. . . . . (310) 732-3860
Security . . . . . (310) 732-3360
Wharfinger . . . . . (310) 732-3810

Bridges (Cerritos Channel Drawbridges)
Henry Ford (Badger Avenue) Bridge . . . . . (310) 830-0660

California Department of Fish & Wildlife
Marine Region 7 . . . . . (858) 467-4201

U.S. Coast Guard
24-Hour Emergency . . . . . (800) 221-USCG
Captain of the Port. . . . . (310) 521-3600
Environmental Response . . . . . (310) 521-3780
Facilities/Container Inspections . . . . . (310) 521-3745
Investigations . . . . . (310) 521-3770
Regional Exam Center. . . . . (562) 495-1480
Vessel Inspections (Domestic) . . . . . (310) 521-3725
Vessel Inspections (International) . . . . . (310) 521-3705
Waterways Management . . . . . (310) 521-3860

U.S. Department of Homeland Security
Customs and Border Protection-Service Port . . . . (562) 366-5555
Immigration & Customs Enforcement . . . . . (562) 624-3800
Customs-Marine Section. . . . . (562) 980-3220

U.S. Department of Agriculture
Long Beach . . . . . (562) 628-8900
El Segundo. . . . . (310) 955-3258

Vessel Services
Jankovich Company . . . . . (310) 547-3305

FACILITIES FOR VISITING SEAFARERS

Catholic Maritime Ministry
(c/o Mary Star of the Sea Catholic Church)
World Cruise Center
Berth 93A, Level 1
(310) 833-3541

Norwegian and Swedish Seamen's Church
1035 South Beacon Street
San Pedro, CA 90731
(310) 832-6800


EVERGREEN
EVERGREEN
EVERGREEN
EVERGREEN
EVERGREEN
EVERGREEN

SAFETY

BOATING SAFETY INFORMATION

The California Department of Boating and Waterways offers a home study boating course. The course, which includes a colorful handbook, can be completed at one's own pace. Upon successful completion of the optional final examination, the student will receive a certificate from the State of California.

California Division of Boating and Waterways
One Capitol Mall, Suite 500
Sacramento CA 95814
(888) 326-2822

California Division of Boating and Waterways:
email:*pubinfo@parks.ca.gov*
dbw.ca.gov

Those interested in taking boating safety classes in Southern California may contact the U.S. Coast Guard Auxiliary at (310) 521-6172, or U.S. Power Squadron at (888) 367-8777. Most courses have received approval from the National Association of State Boating Law Administrators (NASBLA). Many marine insurance providers will honor a NASBLA approved course to reduce their clients' premiums.

For general safety information, contact the Los Angeles Port Police, (310) 732-3500.

SMALL (RECREATIONAL) VESSEL SAFETY

Recreational vessels should follow the Standards of Care (listed on page 21) to ensure the safe operation of craft while in and around the Port. Recreational vessel operators should be sensitive to the fact that large commercial vessels are severely limited in the ability to stop or alter course, and many times are limited in the ability to see small vessels due to "blind spots" that extend more than 1/2 mile ahead. These large commercial vessels cannot easily avoid a collision with a smaller, more maneuverable recreational vessel.

1. Ensure vessel is safe before getting underway.
2. Ensure vessel is seaworthy.
3. Keep flares and distress calling equipment readily accessible.
4. Be extra careful in fog.
5. Comply with "Rules of the Road, Rule 9": Small vessels remain clear of large vessels that must navigate within a narrow channel.
6. Avoid passing larger vessels close aboard.
7. Pass tugs with caution.
8. Know the locations of traffic lanes and the regulated navigational area.
9. Know how and when to monitor VHF Channels 16, 14, and 13.
10. Know vessel's position.
11. Be an informed mariner: Know the "Rules of the Road," read Coast Guard Notices to Mariners, monitor the weather and listen to Channel 16 for Coast Guard information broadcasts.

MARINERS GUIDE FOR EMERGENCY CALLS FOR SERVICE

Be prepared to provide the following information

Your Name/Name of Vessel
Phone number or VHF channel
Location of Incident i.e GPS/Berth/Terminal/Waterway
What is the emergency?

Be prepared to answer the following questions

1. Persons involved or Person on Board (clothing, physical features)
2. Vessel Description (type of vessel, length, color, unique features)
3. What happened or is occurring?

Types of activity Los Angeles Port Police respond to, but are not limited to, include suspicious activity, drone/plane activity, security breaches or attempts, USCG safety/security/protection zone violations; crimes on land and water, navigation rule violation, vessels in distress, rescues, fires and emergencies.

See Something, Say something
Los Angeles Port Police
VHF 16 or (310) 732-3500

HORIZONTAL AND VERTICAL CLEARANCES

Vertical clearances are given above Mean High Water (+4.7 feet)

Vincent Thomas Bridge

Horizontal usable width (of channel): 1150 feet
Vertical clearance: 165 feet
Middle 500 feet width: Vertical clearance 185 feet

Cerritos Channel Drawbridge Consolidated Requirements

The U.S. Coast Guard has consolidated the requirements for drawbridge operations, including Cerritos Channel, as contained in Code 33 of Federal Regulations, Part 117.

Radio telephones are installed to enable the drawtender at the Henry Ford Avenue Railroad Bridge to communicate with vessels on radio telephone frequency 156.65 MHz (Channel 13), or such other frequency as may be assigned by the Federal Communications Commission.

Henry Ford (Badger Avenue) Railroad Bridge

(310) 830-0660 VHF Channels 13 and 16 Call Sign: WXJ-947

Horizontal clearance: 180 feet
Vertical clearance: 6.7 feet (bridge down); 165 feet (bridge up)

Draw to remain in the open-to-navigation position except when a train is crossing or maintenance work is being performed.

Whistle Signals

Opening signal:	2 short, 1 long	– – ——
Acknowledging Signal:	2 long, 1 short	—— —— –
Bridge cannot open:	5 short	– – – – –

Gerald Desmond Bridge

Horizontal usable width (of channel): 260 feet
Vertical clearance: 155 feet

The Gerald Desmond Bridge Replacement Project is a joint effort of Caltrans and the Port of Long Beach, to update and modernize a critical access route for the Port of Long Beach, downtown Long Beach and surrounding communities. The new bridge will have six lanes and four emergency lanes (two in each direction on the inner and outside shoulders) to meet the long-term regional transportation needs. Construction updates are available on *newgdbridge.com*.

Southern California Edison Co. Overhead Power Cables

Vertical clearance: 155 feet

Commodore Schuyler F. Heim Highway Bridge

The Schuyler Heim Bridge Replacement and SR-47 Expressway Project is being advanced through a joint partnership between the California Department of Transportation (Caltrans) and the Alameda Corridor Transportation Authority. The project is replacing the Schuyler Heim Highway Bridge, which does not meet current earthquake standards, with a fixed-span bridge over the Cerritos Channel. The new span is a four-lane elevated expressway that allows cars and trucks to move from Terminal Island directly onto Alameda Street. During construction, navigational clearances through Cerritos Channel are as indicated in the Weekly Coast Guard Local Notice to Mariners at *navcen.uscg.gov*.

UNDERKEEL CLEARANCE

Underkeel clearance (UKC) is the minimum clearance available between the deepest point on the vessel and the bottom in still water.

UKC = (Charted Depth of Water + Height of Tide) – (Static Deep Draft)

Masters and pilots should use their vessel's deepest draft in still

water when calculating UKC. Masters and pilots should apply a plus or minus allowance for the tide when calculating depth of water, and consider the following factors:

1. Vessel's trim and list characteristics;
2. Depth of the transit area;
3. Depth at the facility or anchorage
4. Tide and current conditions
5. Weather impact on water depth

The master should discuss the vessel's anticipated UKC with the pilot. Within the ports of Los Angeles and Long Beach, actual tide heights do not normally vary significantly from predicted tide heights.

Minimum Underkeel Clearance Guidelines for All Vessels

These guidelines for minimum UKC apply during normal weather for the ports of Los Angeles and Long Beach (POLA/POLB). Severe weather or other abnormal conditions may demand case-by-case evaluation. Masters and pilots shall use prudent seamanship at all times when piloting vessels in the POLA/POLB harbors and approaches.

NOAA Tides & Currents:
Meteorological information for Los Angeles/Long Beach PORTS®
tidesandcurrents.noaa.gov/ports/

Port of Los Angeles

Between the Los Angeles Approach Channel Lighted Buoy #1 and the Los Angeles Main Channel Buoy #11, minimum underkeel clearance before correction for roll and pitch is 10% of the vessel's draft.

In the channel between the Los Angeles Main Channel Buoy #11 and a position off the designated berth, minimum underkeel clearance is:

- 2.0' (.61m)
- In the final approach to the berth, and while at berth, the vessel must always remain afloat

At anchorages inside the breakwater, minimum underkeel clearance is 3.5' (.76m)

For shifts via outer harbor between Los Angeles and Long Beach, minimum underkeel clearance is 3' (.91m).

Port of Long Beach

Between the Long Beach Seabuoy and the Long Beach Channel Buoy #3, minimum underkeel clearance before correction for roll and pitch is 10% of the vessel's draft.

In the channel between the Long Beach Channel Buoy #3 and a position off the designated berth, minimum underkeel clearance is:

- 2.0' (.61m)
- In the final approach to the berth, and while at berth, the vessel must always remain afloat.

At anchorages inside the breakwater, minimum underkeel clearance is:

- 4' (1.22m) for anchorages B-7 and B-11 when vessels draft is 50' (15.24m) or more
- 2.5' (0.76m) for all other anchorages

For shifts via outer harbor between Long Beach and Los Angeles, minimum underkeel clearance is 3' (.91m).

Tank Vessels

The above guidelines are intended to include safety margins for sinkage due to squat and for an increase in draft due to pitch and roll during the weather and sea state conditions normally encountered in the Los Angeles and Long Beach harbors and approaches. The pilot organization management, the vessel's master/operator, and the USCG Captain of the Port (COTP) should concur with any deviation below the above guidelines. Terminal or vessel operators may require minimum underkeel clearances that are more restrictive than the above guidelines. Vessel masters should be aware of this and should consider terminal policy, fleet operating requirements, and the guidelines contained in the Los Angeles/Long Beach Harbor Safety Plan when deciding upon their minimum allowable underkeel clearances. Tank vessel masters

and operators should also be guided by the underkeel clearance regulations for tank vessels contained in 33 CFR 157.455. C.

The pilot organization management, the vessel's master/operator, and the USCG Captain of the Port (COTP) should concur with any deviation below the above guidelines.

Terminal or vessel operators may require minimum underkeel clearances that are more restrictive than the above guidelines. Vessel masters should be aware of this and should consider terminal policy, fleet operating requirements, and the guidelines contained in the Los Angeles Long Beach Harbor Safety Plan when deciding upon their minimum allowable underkeel clearances.

Evaluating Underkeel Clearance

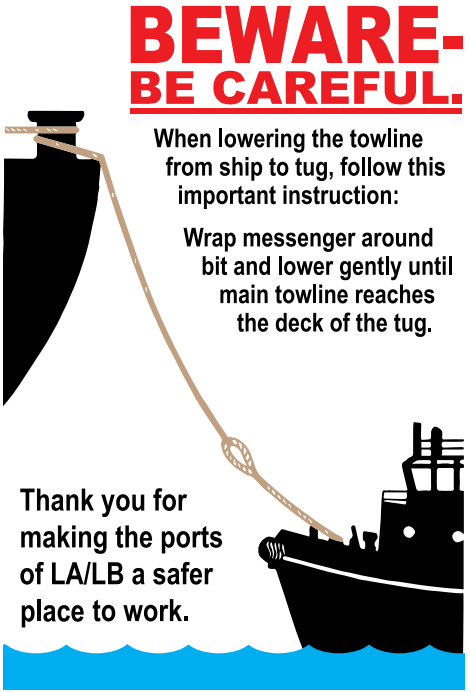
While the above guidelines should ensure adequate UKC under normally encountered circumstances of weather, sea state and vessel configuration, the LA/LB Harbor Safety Committee recommends that all vessel masters should estimate the anticipated UKC that they expect their vessel will encounter during the various phases of the transit, particularly during severe weather or other abnormal conditions. In complying with the above guidelines, the master should consider sea state conditions that might cause an increase in draft due to pitch and roll and plan/adjust transit speeds with regard to vessel squat characteristics. Studies indicate that swell crests and troughs affect vessel immersion (heave) when a vessel is rising and falling with swells off the beam. However, the studies also indicate that vessels will normally experience significant and measurable roll before increased draft due to heave becomes a problem. Therefore, the sound practice of measuring roll and calculating the corresponding increase to vessel draft before entering port helps the master evaluate safe underkeel clearance.

CONTROLLED NAVIGATION AREAS

Controlled Navigation Areas (CNAs) have been added to Tariff No. 4, restricting entry into certain areas of the Port by recreational boats without a Port Police-issued permit. Creation of the CNAs will help to ensure navigational safety for large commercial vessels by reducing non-essential boating traffic, while also increasing

waterside security by limiting access to commercial or permitted vessels. The Main Channel and other primary waterways will remain open to recreational boaters, but those areas best kept for commercial-only vessels will be restricted. (See map on pages 44-45.)

Controlled Navigation Areas, part of the Port of Los Angeles Responsible Marina Program, are identified with posted signs and enforced by the Los Angeles Port Police. Recreational vessel owners/operators may request to enter a CNA by contacting the Port Police at (310) 732-3500.



DEPTH OF WATER ALONGSIDE BERTHS

(In Feet) Mean Lower Low Water = 0.0 Feet

Berth	Depth	Berth	Depth	Berth	Depth
45/47	47.0	163	37.1	232/234	39.9
49/50	49.2	164	38.1	235/236	40.2
51/52	34.4	165	35.3/37.3	238	33.7
53	35.1	168	39.6	239	34.3
54	35.0	169	38.8	240B	36.1
55	35.0	171/172	30.0	240C	26.9
68	19.4	173	30.0	240Z	25.6
70/71	30.7	174	43.2	301	47.3
73A	19.8	175/176	41.4	302	49.8
74	24.2	177/179	33.9	303	49.7
87/89	38.4	180/181	32.8	304	48.4
90/92	36.9	187	36.6	305	49.5
93 A-E	35.0	189	44.5	306	50.0
100	48.7	191	30.5	401	52.6
102	50.5	195/197	31.7	402	51.5
118	36.0	198	32.4	403	50.2
120	31.1	199	32.4	404	50.7
121/124	44.5	200 A-B	31.0	405	48.1
126/127	39.9	200 C-D	15.7	406	52.2
127/129	40.9	207	43.5	Fish Harbor	17.2
130/131	40.0 to 150' of wall	209	40.7	L.B. 76	34.0
		210	35.8	L.B. 77	39.0
136/137	43.1	212	45.1	L.B. 78	41.5
138/139	41.5	214	52.7		
142	27.0	216/217	45.2		
143	33.5	218/219	46.8		
144	49.1	220	41.3		
146/147	52.7	221	33.3		
149	34.1/36.4	222/223	28.0		
150	32.2/33.8	224/225	30.2		
153	35.0	226/227	45.0		
154	34.6	230	43.8		
155	34.6	231	45.0		

Channel	Depth
Main Channel	53.0
East Basin Ch.	52.0

The information provided here is based upon sources deemed to be reliable and is believed to be correct as of September 2019, but the accuracy is not guaranteed.

Whenever a vessel is scheduled which would approach the depth of a particular berth, the Pilot Station management should be contacted so that an individual judgment can be made.

PILOT LADDER REQUIREMENTS

Pilot Ladder Requirements for Los Angeles Pilots in Addition to SOLAS Regulation 17, Chapter 5.

a) Please contact Los Angeles Pilots KEB260 by VHF Radio Channel 73 a minimum of two hours prior to arrival to confirm estimated time of arrival and for information regarding desired lee.

b) Rigging of the pilot ladder, as well as the embarking or disembarking of the pilot, should be under supervision of a responsible officer.

c) The ladder should be made in one length and fitted with spreaders approximately 10 feet apart to comply with SOLAS, Chapter V, Regulation 23.

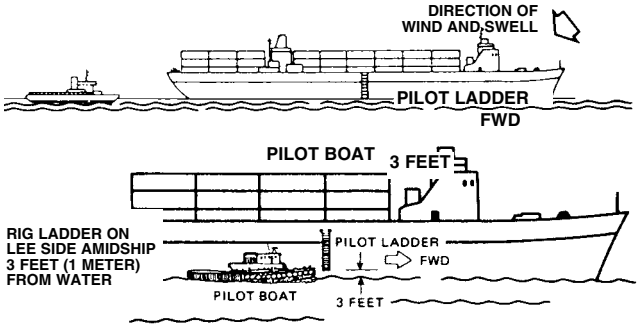
d) The area of the deck where the pilot boards should be clear of obstacles to ensure a safe passage for the pilot.

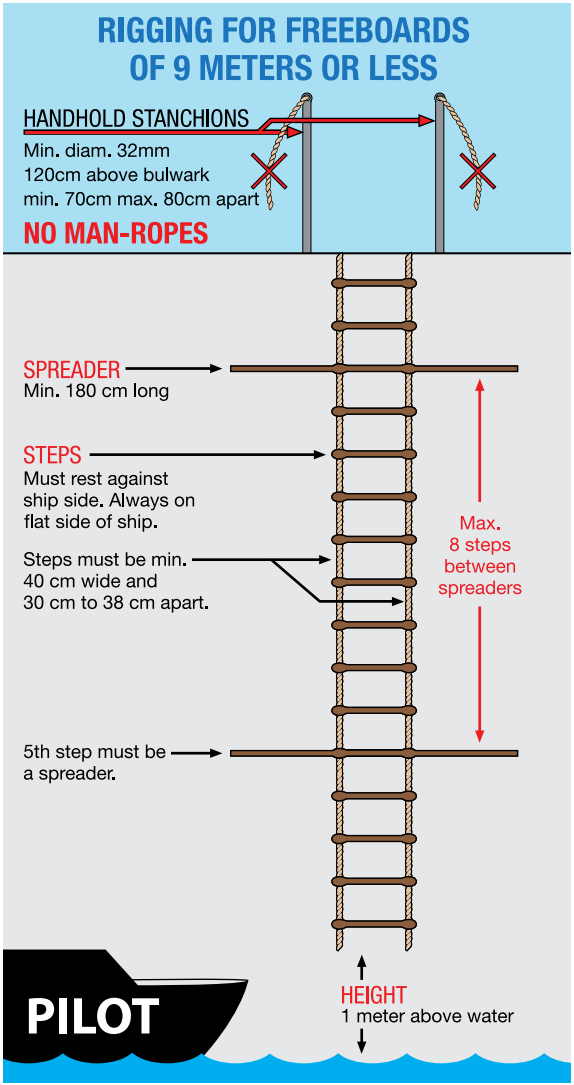
e) Trailing lines or retrieving lines should not be attached to the lower end of the ladder.

f) Ladders should be rigged well clear of discharge and water outlets and at a place near midship clear of the finer lines of the vessel. At no time should the ladder be rigged near the stern of the ship.

g) The ladder should be in good condition and rigged so that the steps remain horizontal when used.

h) Accommodation ladders must not be used for pilot boarding or disembarking.





INCLEMENT WEATHER STANDARDS OF CARE FOR VESSEL MOVEMENTS

Inclement weather requires heightened awareness and vigilance. This section is intended to provide clear guidance to mariners as to what is expected of them when navigating in inclement weather in the area covered by the LA-LB Harbor Safety Plan (HSP). Nothing in this section shall be construed to require the master of a vessel to commence a transit during inclement weather, nor does this section replace compliance with the Convention on the International Regulations for Preventing Collisions at Sea, 1972 (72 COLREGS). It is recognized; however, under certain circumstances, vessels may safely transit during inclement weather provided that equivalent safety levels are applied.

This section defines inclement weather (both reduced visibility and high winds), provides guidance for determining whether or not to commence a vessel transit, and outlines minimum equivalent safety levels to be applied when transiting during inclement weather.

Standards of Care for Vessel Movements During Reduced Visibility

Reduced visibility requires that all mariners apply extra vigilant attention. This section is intended to provide clear guidance to mariners as to what is expected of them when navigating in reduced visibility in the area covered by the HSP. Nothing in this section shall be construed to require the Master of a vessel to commence a transit in reduced visibility, nor does this section replace compliance with 72 COLREGS. It is recognized, however, that under certain circumstances, vessels may safely transit in reduced visibility provided that equivalent safety levels are employed. This section defines reduced visibility, provides guidance for use in determining whether or not to commence a vessel transit and outlines minimum equivalent levels of safety to be used when transiting in reduced visibility.

Background

It is important to understand the dynamics of the ports of Los Angeles and Long Beach, and their vessel traffic systems in order to anticipate what is expected from all levels of port users.

Under a memorandum of agreement, vessel traffic management in the LA-LB area is divided into three zones, each handled by a separate vessel traffic center (VTC). The jointly operated Marine Exchange of Southern California/U.S. Coast Guard Vessel Traffic Service functions as the VTC for traffic outside the federal breakwater, and out to 25 nautical miles from Point Fermin. Each respective pilot station (LA and LB) function as the VTC for traffic inside the breakwater.

Definition of Inclement Weather

High Winds

Whenever the National Weather Service issues a "small craft advisory" for sustained winds of 21 to 33 knots potentially in combination with wave heights exceeding 10 feet (or wave steepness values exceeding local thresholds).

Restricted Visibility

Whenever conditions of visibility fall below the following:

- Tankers 150,000 DWT or greater: 1 nautical mile
- Tankers greater than 60,000 DWT, but less than 150,000 DWT: .75 nautical mile
- All other vessels 45' draft or more: .75 nautical mile
- All other tankers and petroleum barges: 0.5 nautical mile
- All other vessels: 3 times vessel's LOA

Guidelines for Commencing a Transit During Inclement Weather

Vessel characteristics, navigational equipment and the availability of shoreside support must be considered when a movement is undertaken during inclement weather. Conditions of visibility and wind can vary considerably throughout the port complex at any given time and may impact the decision to proceed. While specific movement parameters are difficult, if not impossible, to define, it is recommended that mariners carefully consider commencing vessel movements inside the federal breakwater when conditions reach the defined thresholds listed above.

Piloted Vessel Guidelines

When inclement weather exists along a vessel's intended route:

The respective pilot station management will be notified, and prior to commencing a transit, the operating pilot will conduct a risk analysis that includes consultation with a second pilot. This expanded participation is a key risk reduction measure.

Reduced Visibility

When visibility inside the federal breakwater is less than 0.5 mile, the respective vessel traffic center (VTC) will impose one-way traffic restrictions when and where appropriate.

When commencing a vessel movement in reduced visibility, as defined above, shoreside radar assistance and carry-on enhanced navigational tools, such as a Portable Pilot Unit (PPU) shall be readily available for use.

When reduced visibility is encountered after commencing a transit, the operating pilot should take appropriate precautions to minimize the risk of collision. Precautions may include but are not limited to: continuing the transit, anchoring, reducing speed, enlisting shore-based radar support, and securing additional tug assistance.

High Winds

Vessel movements will proceed on a case by case basis. Depending on direction and force of wind, type and characteristics of the vessel, movements requiring more than 50 tons of force to hold the vessel against a wind on the beam shall be carefully considered.

Below are examples of wind velocities acting on corresponding sail areas that would require 50 tons of counter force exerted by tugs and/or thrusters [formula: (total area/1000) x (V2/18) = wind effect in tons where "V' is the wind speed in meters/second]:

1000 square meters – 60 knots
5000 square meters – 28 knots
10,000 square meters – 18 knots

Non-Piloted Vessel Guidelines

It is recommended all vessels develop and follow their own internal operating guidelines for inclement weather transits, including a provision for second opinion consultation.

Application of Equivalent Safety Levels

When a vessel master intends to commence a transit during inclement weather, at minimum, the following equivalent safety levels should be adhered to:

Vessels 1600 Gross Tons (GT) or greater:

When operating inside the federal breakwater, be under the control of a USCG-licensed pilot with the appropriate endorsement for the vessel and area of operation, and have shore-based radar immediately available to assist the vessel.

All vessel masters and pilots (if employed) should make a positive evaluation of the following:

- Number of vessels transiting within the harbor and expected traffic concentrations
- Planned transit speeds appropriate for prevailing conditions
- Maneuvering characteristics of the vessel
- Quality of the vessel's radar and navigation systems
- Vessel's size and draft in relation to the area to be transited
- Number, type, and power of assist tugs
- Number and power of bow/stern thrusters available
- Maneuvering room at various stages of the transit,
- Quality of the vessel's bridge team
- Special circumstances to be encountered (e.g. dredging projects, obstructions)
- Wind direction in relation to planned maneuvers

"Captain of the Port" (COTP) Notification of Intention to Move in Inclement Weather Without Applying Equivalent Safety Levels

Vessels 1600 GT or greater that intend to commence a vessel transit during inclement weather without complying with the "Application of Equivalent Safety Levels" section above (including shore based radar support) shall make the following broadcast to the VTC on VHF Channel 14 at least 15 minutes prior to getting underway:

"Vessel name/call sign, making our inclement weather Captain of the Port notification, as per guidance within the Harbor Safety Plan, that we intend to transit from vessel location to intended destination."

In addition, a safety broadcast will be made on Channel 13 and the vessel will coordinate its movement with the appropriate vessel traffic center.

Summary of Other Existing Measures

The following are non-encompassing examples of regulations or internal standards of care already followed by entities within the port during inclement weather:

- Federal Anchorage Regulations under 33 CFR 110.210, require all vessels greater than 1600 GT to have a licensed deck officer on watch at all times and to maintain a continuous radio listening watch. When wind conditions exceed 40 knots, these vessels shall ensure their propulsion plant is placed in immediate standby and a second anchor is made ready to let go. Vessels unable to comply are required to notify the COTP and may be required to have stand-by tugs.
- When winds exceed 40 knots, VTC will maintain a heightened awareness for dragging anchors in federal anchorages.
- VTC will notify users of low visibility conditions (<1 nautical mile) along their intended track(s) outside the breakwater and advise them of targets they may encounter.

The following organizations have their own internal guidelines for inclement weather:

Pilots: Pilot Operations Manuals prescribe a variety of criteria specific to vessel size and berth/port area.

Ferry operators: High Speed Craft Operations Manuals contain guidance on wave heights.

Small passenger vessels: Some of these vessels have internal guidelines to curtail operations in heavy winds.

Facilities regulated under 33 CFR Part 154 have wind criteria in their individual operations manuals for ceasing cargo operations and disconnecting cargo transfer equipment. In addition, the State of California has specific Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS) that include inclement weather guidelines.

NATIONAL WEATHER SERVICE

VHF Radio

Frequency 162.55 MHz; Station KW037 – Continuous, taped broadcast of public and marine forecasts and observations. Updated hourly.

Channel W1-Channel W10 – Reserved for weather transmissions. Channels W1-W4 are receive-only channels with weather broadcasts from NOAA.

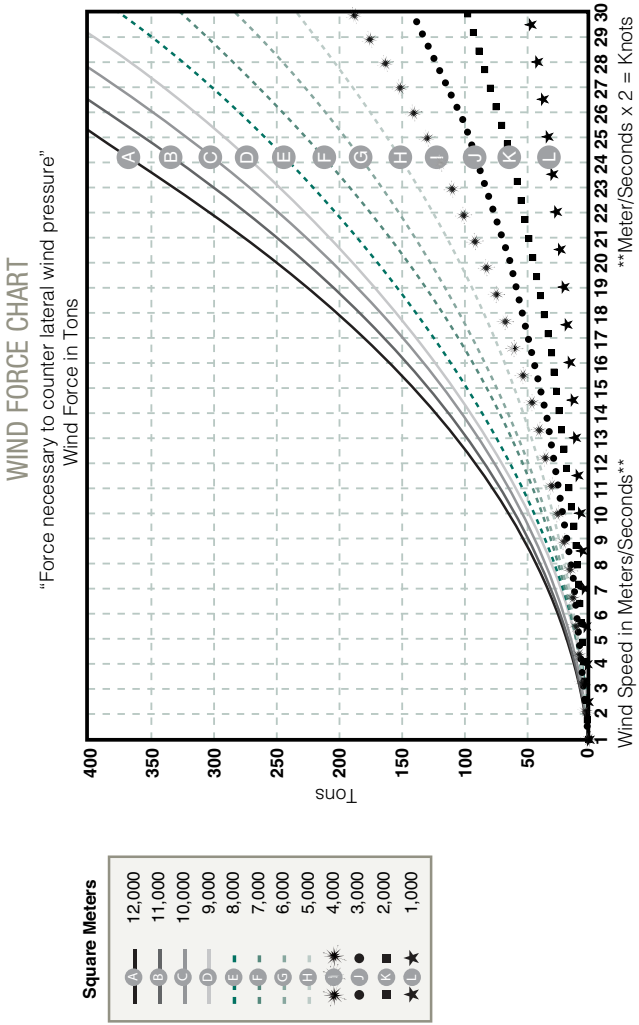
National Oceanic and Atmospheric Administration (NOAA)

National Weather Service Los Angeles/Oxnard
Local forecast (recorded): (805) 988-6610

NOAA Tides & Currents:
Meteorological information for Los Angeles/ Long Beach PORTS®
tidesandcurrents.noaa.gov/ports/

National Weather Service Los Angeles/Oxnard:
weather.gov/lox

United States Voluntary Observing Ship Program:
vos.noaa.gov



TUG ESCORT/ASSIST INFORMATION

TUG ESCORT/ASSISTANCE

"Tug Escort" refers to stationing tugs in proximity to a vessel during port transits to provide immediate assistance should a steering or propulsion failure occur. "Tug Assist" refers to positioning tugs alongside a vessel and applying force to assist making turns, reducing speed, providing propulsion and docking.

TUG ESCORT/ASSISTANCE FOR TANK VESSELS

Tug Escort Applicability

State regulations require escort tug(s) to meet inbound, laden tank vessels (carrying 5,000 or more metric tons of oil in bulk as cargo) at the seaward limit of the applicable Tank Vessel Escort Zone. Also, all tank vessels shifting within the harbor(s) – including dock to anchor, anchor to anchor and dock to dock – must comply with the escort requirements. Assist tugs, in addition to the prescribed escort tugs, may be required during port transits. Outbound laden tank vessels are not required to use escort tugs once they have safely cleared the breakwater. Arrangements should be made via the vessel agent, tug company, or appropriate pilot service to ensure compliance with these regulations.

Three Tank Vessel Escort Zones are established as follows:

Zone 1: Upon all waters within 2.0 nautical miles to seaward of the Federal Breakwater, escort tugs required for all laden tank vessels.

Zone 2: Upon all waters in the approaches to the Port of Long Beach within 3.5 nautical miles to seaward of the Federal Breakwater, escort tugs required for all laden tank vessels with static deep draft greater than 16.5 meters.

Zone 3: Upon all waters in the approaches to the Port of Los Angeles within 4.0 nautical miles to seaward of the Federal Breakwater, escort tugs required for all laden tank vessels with static deep draft greater than 14.0 meters.

Except for tank barge/primary towing units that have total displacements of 20,000 metric tons or less, escort tugs must be tethered.

Inbound, laden Oil and Chemical Tank Vessels shall not proceed closer than the seaward limit of the applicable Tank Vessel Escort Zone, as described in 851.22(c), unless the prescribed escort tug(s) are in position at the seaward limit of the applicable Tank Vessel Escort Zone. Masters shall also ensure that anchors are ready for letting go prior to entering the applicable Tank Vessel Escort Zone.

Prior to commencing an escorted transit, the tank vessel master/pilot shall hold a "pre-escort conference" that should at a minimum include:

- Contacting the escort tug operator to confirm the number and position of escort tug(s)
- Establishing the radio frequency to be used
- Establishing the destination of the tank vessel
- Discussing any other pertinent information the master/pilot and escort tug operator deem necessary

TANKER FORCE SELECTION MATRIX

Tanker Displacement	Forces for Tug(s) *Tethered at the Stern**
Metric Tons	Short Tons
0 to < 60,000	10
60,000 to < 100,000	20
100,000 to < 140,000	30
140,000 to < 180,000	40
180,000 to < 220,000	50
220,000 to < 260,000	62
260,000 to < 300,000	75
300,000 to < 340,000	87
340,000 to < 380,000	105
380,000 to < 420,000	128

*Note 1: Ahead forces for tugs using stern lines, e.g., Voith-Schneider Propeller (VSP) tugs. Astern forces for tugs using headlines, e.g., Azimuth Stern Drive (ASD) tugs.

**Note 2: The "Forces For Tugs" described in the Tanker Force Selection Matrix were evaluated in a water depth equal to 1.2 times the tanker's deep draft for tankers with a displacement of less than 260,000 metric tons, and in a water depth equal to 1.1 times the tanker's deep draft for tankers with a displacement equal to or greater than 260,000 metric tons.

All the escort tugs required to satisfy the Tanker Force Selection Matrix shall be tethered on the tanker's stern.

The force requirements contained in this subchapter reflect favorable circumstances and conditions. The tanker master/pilot shall arrange for additional escort tug(s) should adverse weather conditions, unusual port congestion, contemplated movement of the vessel, or as other conditions or circumstances occur.

TUGS EMPLOYED IN LOS ANGELES/LONG BEACH

Company Name Tug Name	Total HP *(ADV)*	Bollard Pull Ahead *(Short Tons)*	Bollard Pull Astern *(Short Tons)*
Crowley Maritime Corporation			
Admiral	4800	50.84	44.72
Leader	4730	58.94	45.44
Master	4800	51.22	43.83
Veteran	4772	90.50	89.20
Foss Maritime Company			
Alta June	5080	67.10	64.0
Arthur Foss	4000	---	54.65
Bo Brusco	4750	62.0	62.0
Lela Franco	5150	66.20	62.95
Brynn Foss	3000	52.6	44.9
Edith Foss	1800	34.9	21.5
Harley Marine Services/ Millennium Maritime			
John Quigg	4800	52.32	48.29
Millennium Maverick	4300	58.06	53.29
Robert Franco	6850	80.81	83.00
Tim Quigg	4500	52.6	50.0
AMNAV Maritime Corporation			
Independence	5080	58.39	60.64
Michelle Sloan	5150	69.00	65.40
Teresa Brusco	4732	-	61.79
Patricia Ann	5080	69.36	66.635
Baydelta Maritime			
Delta Teresa	7032	90.31	88.68

Port of Los Angeles

TUGS, WATER TAXIS, AND SALVAGE

American Marine Corp . . . . . (310) 832-3321
Berths 270-271, 1500 S. Barracuda Street, Terminal Island

AmNav Marine Services . . . . . (310) 901-3383
201 Burma Road, Oakland, CA

Baydelta Maritime . . . . . (415) 693-5800
Pier 17, #300, San Francisco, CA 94111

Crowley Maritime Corporation. . . . . (310) 732-6570
Berth 86, 300 S. Harbor Blvd., San Pedro

Curtin Maritime Corp. . . . . (562) 343-3170
Berth 57, 1500 Pier C, Long Beach

Foss Maritime Company . . . . . (562) 435-0171
Berth 35, Pier D Avenue, Long Beach

Harley Marine Services. . . . . (310) 549-1700
- Millennium Maritime Inc.
- Public Service Marine, Inc.
- Westoil Marine Services Inc.

Berth 301, 1610 Barracuda, San Pedro

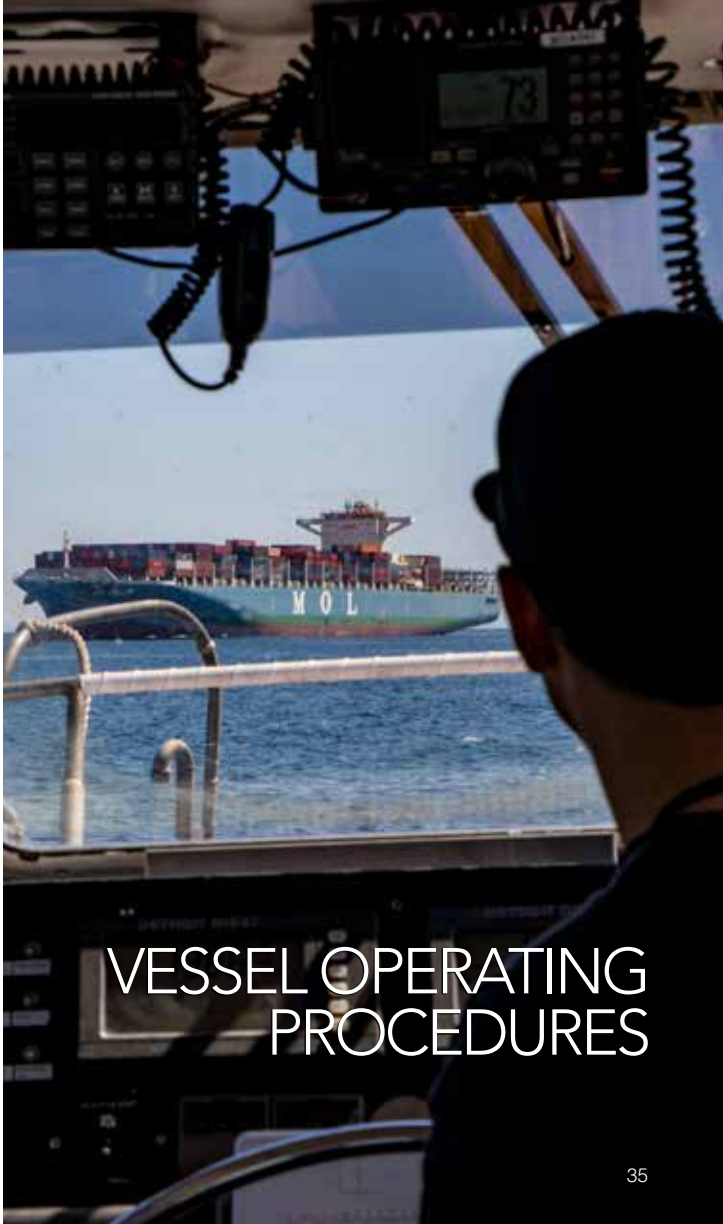
Pacific Tugboat Service, Inc. . . . . . (562) 590-8188
Berth C-58, 1512 W. Pier C Street, Long Beach

Sause Bros. Ocean Towing . . . . . (562) 901-0365
1607 W. Pier D Street, Long Beach

SoCal Ship Services . . . . . (310) 519-8411
Berth 240X, 971 S. Seaside Avenue, Terminal Island

SubSea Global Solutions. . . . . . (562) 436-2701
1725 W. Pier D. Street, Long Beach

U.S. Water Taxi . . . . . (310) 519-8230
Berth 60, San Pedro



VESSEL OPERATING PROCEDURES

RADIO COMMUNICATIONS

Operational communications in the Los Angeles-Long Beach harbor area are conducted by marine VHF radio and commercial telephone from five principal nodes: VTS, Los Angeles Port Pilot Service, Long Beach Pilots, Port of Long Beach Security, and U.S. Coast Guard Los Angeles-Long Beach. All users are encouraged to minimize voice traffic on all channels, maintain circuit discipline and broadcast on "low power" whenever possible.

FIRE ALARM SIGNAL

All Vessels Except Those Underway

Five prolonged blasts on whistle or siren. Repeat at intervals to attract attention.

In a non-emergency, call the Los Angeles Fire Department Dispatch Center at (213) 485-6185

IN AN EMERGENCY, CALL 911

PRINCIPAL OPERATING CHANNELS
Los Angeles/Long Beach Area VHF Radio

Station	Channel	Frequency
Bridge-to-Bridge	13	156.650 MHz
Distress Safety and Calling	16	156.800 MHz
Harbor Tugs	77 (Primary LA)	156.875 MHz
	5A (Primary LB)	156.250 MHz
	65A (Secondary)	156.275 MHz
Intership Safety	6	156.300 MHz
Los Angeles Port Pilots	73	156.675 MHz
	63A	156.175 MHz
Los Angeles Port Police	16	156.800 MHz
Long Beach Port Pilots	74	156.725 MHz
	12	156.600 MHz
	65A (Secondary)	156.275 MHz
Noncommercial Calling	9	156.450 MHz
Vessel Traffic Information Service	14	156.700 MHz
U.S. Coast Guard	16 (Primary)	156.800 MHz
	12 (Secondary)	156.600 MHz
U.S. Navy	12 (Primary)	156.600 MHz

VESSEL OPERATING PROCEDURES

The LA/LB Harbor Safety Plan (HSP) contains operating procedures for vessels. An electronic copy of the HSP can be seen on the Marine Exchange website at *mxsocal.org*. All of the procedures are considered Good Marine Practice, but some are regulations (local, state, and/or federal) while others are non-regulatory "Standards of Care." These Vessel Operating Procedures have been extracted from the main text of the HSP in order to create a helpful "Quick Reference Guide" containing the most important information necessary for safe, reliable and environmentally sound vessel movements in and around the port area. These Vessel Operating Procedures list only the basics. Additional and more detailed information can be found in HSP chapters addressing each topic. Port tariffs also contain requirements for vessels operating in and around the port. Familiarization and compliance with the Harbor Safety Plan and the port tariff(s) are a must! Nothing in these procedures precludes a master and/or pilot from taking necessary and prudent actions to avoid or mitigate unsafe conditions.

Pilot Requirements

Local port tariffs require vessels of greater than 300 GT to use a federally-licensed pilot whenever navigating inside the Federal Breakwater. In most circumstances, vessels employ the services of a federally-licensed local pilot from the Los Angeles Pilot Service (for the Port of Los Angeles) or Jacobsen Pilot Service (for the Port of Long Beach). In instances where a local pilot is not used, Masters must have a local federal pilot license and receive approval from the U.S. Coast Guard Captain of the Port (COTP) prior to entering or departing port. Outbound vessels are required 15 minutes prior to getting underway and inbound vessels are required 15 minutes prior to entering the Federal Breakwater to establish communications and coordinate movements with the appropriate local pilot organization and Vessel Traffic Service (VTS).

Equipment Failures

Vessels are required by law to report navigational equipment, propulsion, steering, or other vital system failures as soon as possible to the U.S. Coast Guard via the COTP office or COTP

representative at VTS on Channel 14. The COTP will require appropriate "equivalent levels of safety" provided by:

- Directing vessels to outside anchorage pending verification of repairs
- Proceeding into port at safest slow speed with suitable tug escort/assist
- Second licensed navigation officer on the bridge for radar plotting, etc.
- Sea trials performed to the satisfaction of the Master, pilot and COTP

Vessel Traffic Service (VTS):
mxsocal.org

VESSEL TRAFFIC MANAGEMENT

Vessel traffic in the ports of and approaches to Los Angeles and Long Beach is managed by three entities:

1. Vessel Traffic Service for the port approaches (25 nautical miles from Point Fermin to the Federal Breakwater).
2. Los Angeles Pilot Service for the Port of Los Angeles.
3. Jacobsen Pilot Service for the Port of Long Beach.

Vessel Traffic Service (VTS)

A VTS is in operation on the approaches to Los Angeles and Long Beach harbors. Operated jointly by the U.S. Coast Guard and the Marine Exchange, the VTS provides information about commercial, other vessel traffic and navigation safety. Covered vessels are required to participate in the VTS.

"Covered Mandatory Full Participant" Vessels:

- Every power-driven vessel of 40 meters (131 feet) or more in length, while navigating.
- Commercial vessels 8 meters (26 feet) or more in length that are towing alongside, astern or by pushing ahead.
- Every vessel certificated to carry 50 or more passengers for hire, while engaged in trade, under sail or power.

"Mandatory Passive Participants" Vessels:

Every power-driven vessel 20 meters (65 feet) or more in length, every vessel 100 gross tons or more carrying one or more passengers for hire and every dredge or floating plant are required to monitor Channel 14 VHF/FM when operating in the VTS area.

Arriving Vessels Upon Entering the 25-Mile Outer Limit

The outer limit of the VTS AOR is defined by a 25-nm arc from Point Fermin (LAT 33 42.3'N, 118 17.6'W).

Call "San Pedro Traffic" on VHF/FM Channel 14 and provide the following information:

1. Vessel name/call sign
2. Position, course and speed
3. Vessel destination
4. State whether or not taking a pilot
5. Estimated time of arrival to the breakwater/anchorage
6. Tank vessels report their displacement

Contact Los Angeles Pilots on Channel 73 or Long Beach Pilots on Channel 12 to arrange pilot service. Limit speed to 12 knots or less upon entry to the Precautionary Area.

Upon Entering the Precautionary Area

Call "San Pedro Traffic" and provide the following information:

1. Confirm vessel speed is 12 knots or less.
2. Confirm master is on the bridge.
3. Confirm vessel is in hand steering.
4. Confirm main propulsion has been successfully tested ahead and astern.
5. Maintain a minimum vessel separation of 1/4 nm.

Code of Federal Regulations, CFR 33, Part 165, Subsection 165.1109, identifies portions of the Precautionary Area as a Regulated Navigation Area. A minimum vessel separation of 1/4 nm is required in the Precautionary Area.

Departing Vessels from Inside the Breakwater

15 minutes prior to getting underway, contact Los Angeles Pilots on Channel 73 or Long Beach Pilots on Channel 12 (depending

on which harbor the vessel is in) to check into the traffic system. Provide vessel name, type, departure point, destination and intended route.

15 minutes prior to the breakwater entrance, call "San Pedro Traffic" on VHF/FM Channel 14. Breakwater entrances include Los Angeles Gate (LA), Long Beach Gate (LB) and Anaheim Bay (Naval Weapons Support Facility, Seal Beach). Provide the following:

1. Vessel name/call sign
2. Destination
3. Acknowledge VTS traffic report
4. Report departure from Precautionary Area to VTS
5. If outbound, ETA to 25 nm from Point Fermin
6. Report departure from VTS at 25 nm limit

Maintain speed at 12 knots or less through Precautionary Area.

Sea Approaches – CAUTION

The Master's attention is directed to NOAA Chart Nos. 18746 & 18749 or BA 1063 & 1082 regarding regulations for:

- Passage of Los Angeles and Long Beach sea buoys
- Transit of Los Angeles and Long Beach pilot boarding areas
- Anchorage G, outside the Breakwater

VESSEL SPEED LIMITS

These speed restrictions do not preclude the master or pilot from adjusting speeds to avoid or mitigate unsafe conditions. Weather, vessel-maneuvering characteristics, traffic density, construction/ dredging and other possible items should also be taken into account.

Tank Vessels

Precautionary area (approach to port) . . . . . 12.0 kts

Between the seaward limits of the tank vessel escort zones and anywhere inside the Federal Breakwater (except where lower speed limits apply):

Less than 60,000 metric tonne displacement . . . . . .8.0 kts
60,000 metric tonnes displacement, or more . . . . . .6.0 kts

Other Than Tank Vessels

Precautionary area (approach to port) . . . . . 12.0 kts

Port of Los Angeles

Between the breakwater and Reservation Point (if draft is greater than 1.5 meters):

Outer Harbor . . . . . 10.0 kts
Inner Harbor . . . . . .6.0 kts
Fish Harbor, West Channel, marinas, and yacht anchorages 4.4kts
No Wake Zone . . . . . .5 kts

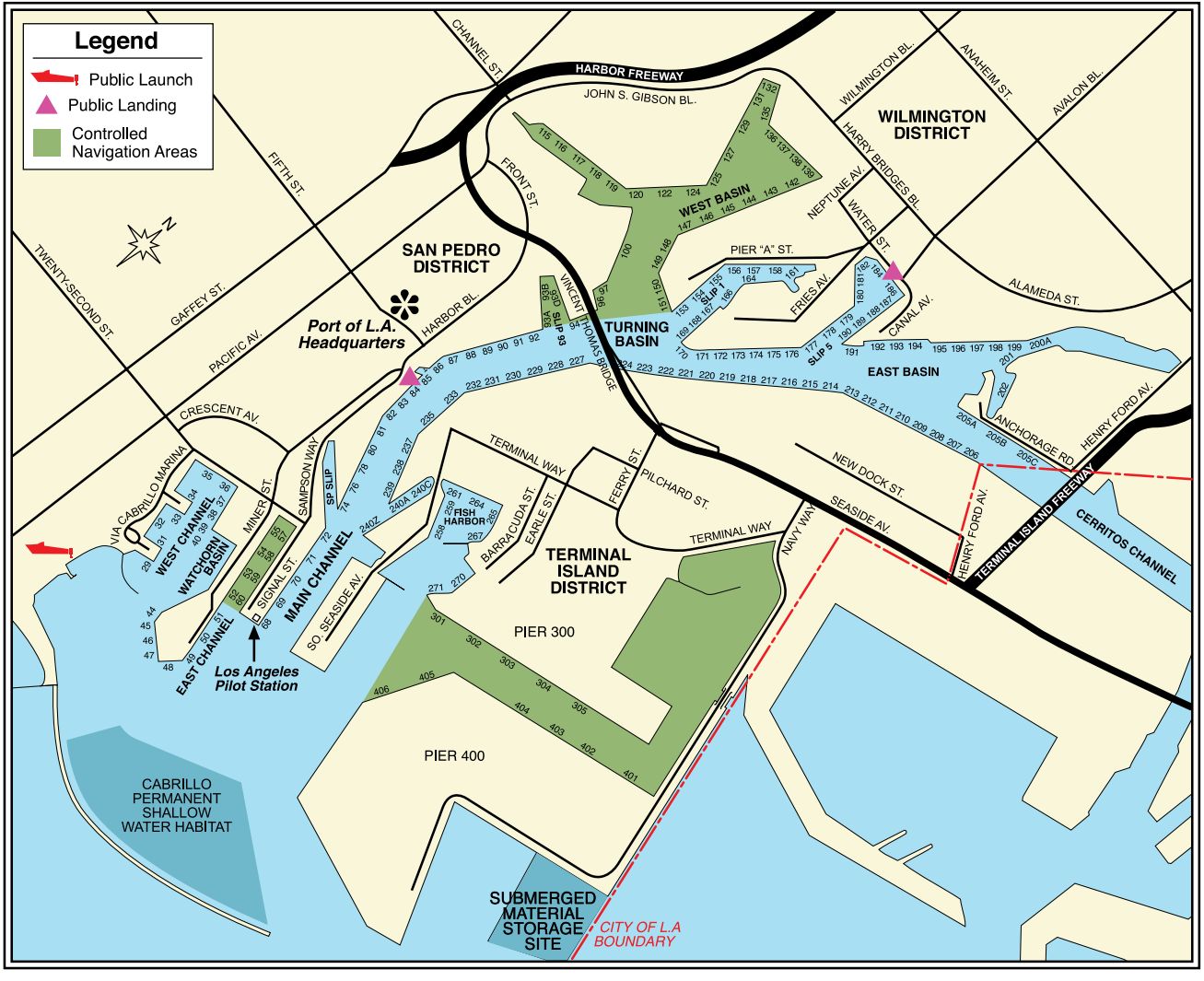
No Wake Zone includes the portion of the Cabrillo Beach recreation area extending from the launch ramp to an imaginary line extending northwesterly from the west end of the municipal fishing pier to the west end of Berth 47.

Port of Long Beach

Within the Main Channel, between the breakwater and Long Beach Channel Lights . . . . . 10.0 kts
Everywhere else in the harbor . . . . . .6.0 kts

U.S. Coast Guard Los Angeles-Long Beach
dcms.uscg.mil/Our-Organization/Director-of-Operational-Logistics-DOL/Bases/Base-Los-Angeles-Long-Beach/

ENVIRONMENTAL POLICIES


Legend
Public Launch
Public Landing
Controlled Navigation Areas
HARBOR FREEWAY
CHANNEL ST.
JOHN S. GIBSON BL.
WILMINGTON BL.
ANAHEIM ST.
AVALON BL.
WILMINGTON DISTRICT
HARRY BRIDGES BL.
NEPTUNE AV.
WATER ST.
FIFTH ST.
FRONT ST.
WEST BASIN
PIER "A" ST.
FRIES AV.
ALAMEDA ST.
CANAL AV.
TWENTY-SECOND ST.
GAFFEY ST.
PACIFIC AV.
SAN PEDRO DISTRICT
Port of L.A. Headquarters
HARBOR BL.
VINCENT THOMAS BRIDGE
SLIP 93
TURNING BASIN
SLIP 1
SLIP 5
EAST BASIN
CRESCENT AV.
ANCHORAGE RD.
HENRY FORD AV.
VIA CABRILLO MARINA
MINER ST.
SAMPSON WAY
SP SLIP
TERMINAL WAY
FERRY ST.
PILCHARD ST.
NEW DOCK ST.
SEASIDE AV.
WEST CHANNEL
WATCHORN BASIN
SIGNAL ST.
MAIN CHANNEL
SO. SEASIDE AV.
FISH HARBOR
BARRACUDA ST.
EARLE ST.
TERMINAL ISLAND DISTRICT
NAVY WAY
HENRY FORD AV.
TERMINAL ISLAND FREEWAY
CERRITOS CHANNEL
EAST CHANNEL
Los Angeles Pilot Station
PIER 300
PIER 400
CABRILLO PERMANENT SHALLOW WATER HABITAT
SUBMERGED MATERIAL STORAGE SITE
CITY OF L.A BOUNDARY

ENVIRONMENTAL NOTICES TO SHIPS

Excessive Smoke/Boiler Tube Blowing

If boiler tube blowing results in soot being deposited in such quantities as to create a nuisance, Section 41700 of the California Health and Safety Code will be enforced. Section 41700 provides that no person shall discharge from any source whatsoever such quantities of air contaminants or other material, which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.

Furthermore, as provided in Section 41701 of the California Health and Safety Code, it shall be unlawful for any person from any source whatsoever to discharge into the atmosphere any contaminant, other than uncombined water vapor, for a period or periods aggregating more than three minutes in any one hour, which is as dark, or darker in shade as that designated as No. 2 on the Ringelmann Chart, as published by the United States Bureau of Mines.

Ballast Water and Biofouling Management

The introduction of non-native organisms can create serious ecological, human health, and economic impacts in receiving environments. California state law requires ballast water and biofouling management for ships that arrive at California ports unless safety is threatened. A Ballast Water Management Report must be submitted at least 24 hours in advance of each arrival at a California port and the Marine Invasive Species Program Annual Vessel Reporting Form must be submitted at least 24 hours in advance of the first arrival of each calendar year. A Ballast Water Management Plan and Ballast Water Logbook must be maintained on board the vessel and made available for inspection. Vessel must also maintain a Biofouling Management Plan and Biofouling Record Book, and manage biofouling on wetted surfaces and niche areas (subject to a compliance phase-in schedule). The California Department of Tax and Fee Administration collects a $1,000 fee for each qualifying voyage arrival. Contact the California State Lands Commission (562-499-6312) or go to *www.slc.ca.gov* for further information on state requirements.

In addition, a Ballast Water Management Report must be filed with the U.S. Coast Guard at the first U.S. port of call. Federal ballast water discharge performance standards are coming into effect and other federal requirements may apply. Contact the U.S. Coast Guard at (310) 521-3600 or go to *www.dco.uscg.mil* for more information.

Water Pollution Regulation

Los Angeles Harbor is one of the cleanest in the world due to extensive efforts to combat water pollution. Source control and anti-pollution regulations to protect water and sediment quality at the Port of Los Angeles are strictly enforced through a variety of Federal, State and Regional permits. It is unlawful to discharge anything besides clean water into the harbor without a permit or permission from the Harbor Master. Please refer to Vessel Discharge Rules and Regulations for specifics as there are many restrictions and non-allowable discharges regarding deck washing, maintenance, contact water, and wastewater *portoflosangeles.org/pola/pdf/doc/wrap_vessel_discharge_rules_regs_2013.pdf*. For questions please contact the Watch Commander at (310) 732-3491. All discharges of pollutants (or unauthorized discharges) must be reported immediately to the Watch Commander. For large spills please call the National Response Center (NRC) at (800) 424-8802. If unable to reach NRC, you can contact the local Coast Guard unit at (310) 521-3780 or on VHF/FM Channel 16. Also notify the California Office of Emergency Services at (800) 852-7550.

Low Sulfur Fuel Regulation

Beginning January 2014, the California Air Resources Board (CARB) requires vessels to use less than or equal to 0.1% sulfur fuel within 24 nm of the California coastline in main engines, auxiliary engines and boilers.

Shore Power Regulation

The Shore Power Regulation is a California law administered by the California Air Resources Board (CARB). Vessel operators (shipping lines) are responsible for complying with the regulation, effective January 2014. Fleets calling at California ports must

Shore Power Regulations
arb.ca.gov/ports/shorepower/shorepower.htm

shut down their auxiliary engines and plug into the electrical grid while at berth. This regulation applies to container ships, cruise ships, and refrigerated cargo ships. Shore power at the Port of Los Angeles, is otherwise known as Alternative Maritime Power® (AMP®), the time-honored air quality program that focuses on reducing emissions from container and cruise vessels docked at the Port of Los Angeles. The Port of Los Angeles became the first port in the world to use AMP® technology for in-service container ships in 2004.

North American Emission Control Area
The North American Emission Control Area requires the use less than or equal to 0.1% sulfur (in main engines, auxiliary engines and boilers) fuel 200 nm from the North America coastline, excluding Mexico.

PORT OF LOS ANGELES ENVIRONMENTAL PROGRAMS

Vessel Speed Reduction Program
First established in 2001, the Vessel Speed Reduction Program is a voluntary program designed to reduce smog-forming emissions from ocean-going vessels that slow their speeds as they approach or depart the Port, generally at 20 nautical miles from Point Fermin. Some participants have extended this voluntary speed limit to 40 nautical miles. Vessel speeds are monitored by the Marine Exchange of Southern California. For more information, call (310) 832-6411.

Environmental Ship Index Program
The Port of Los Angeles' voluntary Environmental Ship Index (ESI) program has been developed to reward vessel operators for reducing Diesel Particulate Matter (DPM) and nitrogen oxide (NOx) emissions from their ocean-going vessels (OGVs). This program rewards operators for going beyond compliance by bringing their newest and cleanest vessels to the Port and demonstrating technologies onboard their vessels. It also encourages use of cleaner technology and practices in advance of regulations.

OGVs are the single largest source of Southern California goods movement air emissions and make up approximately half of all port-related air emissions. Since 2005, voluntary emission

reduction programs have yielded substantial reductions. However, based on current forecasts, the Port needs additional emission reductions to meet goals established in the Clean Air Action Plan. By 2023, this plan calls for 77 percent DPM reductions and 59 percent NOx reductions.

There are three incentive opportunities within this ESI program. To be eligible for these incentives, operators must register with the international ESI. To receive the incentive payment, operators also must register with the Los Angeles Harbor Department (LAHD). Registration is free, and the incentive grant is paid on a quarterly basis. For registration information, visit portoflosangeles.org.

PORT OF LOS ANGELES CLEAN MARINA PROGRAM

The Port of Los Angeles worked with the Clean Marinas California Program to produce a guidebook as part of the Port's Clean Marina Program. This guidebook has been compiled to introduce marina managers, marina staff, and boat owners to the Clean Marina Program and guide marina managers through the Clean Marina certification process. The guidebook contains the Clean Marinas California Program, local resource guide, educational material, and an overview of applicable government regulations. It is intended to guide and educate the boating community about environmentally sound boating practices with the ultimate goal of improving Los Angeles Harbor water quality through the community's use of these recommendations and compliance with established regulations. The Port encourages marina managers and staff to help educate boaters about Best Management Practice (BMPs) and to implement BMPs specific to their marina's particular environmental needs.

Boater and Mariner Information at the Port of Los Angeles:
portoflosangeles.org/community/boaters

PORT OF LOS ANGELES MARINA DIRECTORY

Al Larson's Marina	Berth 258	(310) 832-0526
Cabrillo Beach Yacht Club	Berth 35	(310) 519-1694
Cabrillo Way Marina	Berths 37-43	(310) 514-4985
California Yacht Marina - Cabrillo	Berth 29-33	(310) 732-2252
California Yacht Marina - Wilmington	Berth 202	(310) 834-7113
Cerritos Yacht Anchorage	Berth 205C	(310) 834-4737
Holiday Harbor-Cabrillo Marina	Berth 34	(310) 833-4468
Holiday Harbor-Willmington	Berth 201	(310) 835-3952
Island Yacht Anchorage	Berth 205D	(310) 830-1111
Island Yacht Anchorage	Berth 200X	(310) 830-1111
Leeward Bay Marina	Berth 201	(310) 830-5621
Lighthouse Yacht Landing	Berth 205B	(310) 834-9595
Los Angeles Yacht Club	Berth 28-31	(310) 831-1203
Pacific Yacht Landing	Berth 203	(310) 830-0260
Yacht Centre - Newmarks	Berth 204	(310) 834-2830
Yacht Haven Marina	Berth 202	(310) 834-6892

FOREIGN QUARANTINE

U.S. Public Health Service Center for Disease Control (CDC),
National Center for Infectious Diseases (NCID)
Division of Quarantine Los Angeles Quarantine Station
380 World Way, Box N-19, Los Angeles, CA 90045
Phone: (310) 215-2365 (24 hours) Fax: (310) 215-2285

Standard Procedures

Radio Free Pratique may clear a vessel to enter the harbor without inspection.

Inspection officer will board a vessel based on the following criteria:

1. 15 days prior to entering a U.S. port, if any crew member or passenger exhibits these symptoms:
   - Temperature of 100 degrees or higher for 48 hours, or any temperature accompanied by rash, jaundice, or glandular swelling.
   - Diarrhea severe enough to prevent performing normal duties.
   - Death aboard ship.

2. Any ship visiting a plague-infested country within 60 days prior to entering a U.S. port.
3. Any ship that has requested a deratting inspection/exemption certificate.

If subject to inspection, regular vessel boarding hours are 0600 to 1800, Monday-Saturday. Overtime hours are 1800-0600, including Sundays and holidays.

Reporting or request for boarding must be relayed and received by the office 24 hours prior to a ship's arrival. Under conditions A and B above, the quarantine flag may be ordered flown.

CDC Los Angeles Quarantine Station:
cdc.gov/quarantine/stations/los-angeles.html

MARINE MAMMAL VIEWING GUIDELINES

The following information is provided courtesy of the Ocean Conservation Society.

Observing marine mammals in the wild can be a rewarding and educational experience, but we must respect them and their habitat. Whales, dolphins and pinnipeds are protected under the Marine Mammal Protection Act of 1972. It's a violation of Federal law to harass or harm them and penalties can include up to one year imprisonment and fines of up to $20,000. Harassment includes pursuit, torment, or annoyance of a marine mammal or attempting to do so.

Distance

You should remain at least 100 yards (300 feet) from cetaceans and at least 50 yards (150 feet) from pinnipeds.

Observation

When observing marine mammals at sea, make sure your actions do not cause any change in their behavior.

- Upon sighting marine mammals, stop your vessel, observe, and then attempt to parallel the animal's course.
- Avoid sudden changes to vessel speed and direction. Dolphins and whales may surface unpredictably at any time or location.

- Never follow behind, approach animals head-on, encircle or trap cetaceans between your vessel and shore.
- Never feed, touch or ride marine mammals; it is against the law.
- If cetaceans approach your vessel, maintain your course and speed. If the animals cut your course, put the boat in neutral and wait until they clear your vessel.

Limit viewing time to 30 minutes to avoid creating unnecessary stress for the animals. They need our help to survive and flourish.

Ocean Friends in Peril

The ocean is a remarkable ecosystem, full of life and resources, but it's also a fragile world. Pollution, climate change and overfishing are only a few of the problems affecting our waters, but the real issue is the cumulative human impact on our oceans. Today, numerous species of marine mammals are threatened, endangered, or critically endangered and a few have already disappeared within the past several decades. Another significant threat to whales is vessel strikes. In recent years, endangered Blue Whales – reaching up to 90 feet in length – have become regular visitors to the Southern California Bight using this area as foraging grounds. These whales, unfortunately, tend to move along the same routes used by ships in commercial shipping lanes.

You can help marine mammals in distress. If you see a stranded animal, keep your distance and call National Marine Fisheries Service (NMFS) California Stranding Coordinator, Justin Viezbicke office: (562) 980-3230 and cell: (562) 506-4315. Please report injured, entangled or ship-struck whales to the 24-hour WET hotline at (877) SOS-WHALE (877-767-9425).

REFERENCE

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
3.0	9.84	6.0	19.69	9.0	29.53
3.1	10.17	6.1	20.01	9.1	29.86
3.2	10.50	6.2	20.34	9.2	30.18
3.3	10.83	6.3	20.67	9.3	30.51
3.4	11.15	6.4	21.00	9.4	30.84
3.5	11.48	6.5	21.33	9.5	31.17
3.6	11.81	6.6	21.65	9.6	31.50
3.7	12.14	6.7	21.98	9.7	31.82
3.8	12.47	6.8	22.31	9.8	32.15
3.9	12.80	6.9	22.64	9.9	32.48
4.0	13.12	7.0	22.97	10.0	32.81
4.1	13.45	7.1	23.29	10.1	33.14
4.2	13.78	7.2	23.62	10.2	33.46
4.3	14.11	7.3	23.95	10.3	33.79
4.4	14.44	7.4	24.28	10.4	34.12
4.5	14.76	7.5	24.61	10.5	34.45
4.6	15.09	7.6	24.93	10.6	34.78
4.7	15.42	7.7	25.26	10.7	35.10
4.8	15.75	7.8	25.59	10.8	35.43
4.9	16.08	7.9	25.92	10.9	35.76
5.0	16.40	8.0	25.92	11.0	36.09
5.1	16.73	8.1	26.57	11.1	36.42
5.2	17.06	8.2	26.90	11.2	36.75
5.3	17.39	8.3	27.23	11.3	37.07
5.4	17.72	8.4	27.56	11.4	37.40
5.5	18.04	8.5	27.89	11.5	37.73
5.6	18.37	8.6	28.22	11.6	38.06
5.7	18.70	8.7	28.54	11.7	38.39
5.8	19.03	8.8	28.87	11.8	38.71
5.9	19.36	8.9	29.20	11.9	39.04

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
12.0	39.37	15.0	49.21	18.0	59.06
12.1	39.70	15.1	49.54	18.1	59.38
12.2	40.03	15.2	49.87	18.2	59.71
12.3	40.35	15.3	50.20	18.3	60.04
12.4	40.68	15.4	50.52	18.4	60.37
12.5	41.01	15.5	50.85	18.5	60.70
12.6	41.34	15.6	51.18	18.6	61.02
12.7	41.67	15.7	51.51	18.7	61.35
12.8	41.99	15.8	51.84	18.8	61.68
12.9	42.32	15.9	52.17	18.9	62.01
13.0	42.65	16.0	52.49	19.0	62.34
13.1	42.98	16.1	52.82	19.1	62.66
13.2	43.31	16.2	53.15	19.2	62.99
13.3	43.64	16.3	53.48	19.3	63.32
13.4	43.96	16.4	53.81	19.4	63.65
13.5	44.29	16.5	54.13	19.5	63.98
13.6	44.62	16.6	54.46	19.6	64.30
13.7	44.95	16.7	54.79	19.7	64.63
13.8	45.28	16.8	55.12	19.8	64.96
13.9	45.60	16.9	55.45	19.9	65.29
14.0	45.93	17.0	55.77	20.0	65.62
14.1	46.26	17.1	56.10	20.1	65.94
14.2	46.59	17.2	56.43	20.2	66.27
14.3	46.92	17.3	56.76	20.3	66.60
14.4	47.24	17.4	57.09	20.4	66.93
14.5	47.57	17.5	57.41	20.5	67.26
14.6	47.90	17.6	57.74	20.6	67.59
14.7	48.23	17.7	58.07	20.7	67.91
14.8	48.56	17.8	58.40	20.8	68.24
14.9	48.88	17.9	58.73	20.9	68.57

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
21.0	68.90	24.0	78.74	45.0	147.64
21.1	69.23	24.1	79.07	46.0	150.92
21.2	69.55	24.2	79.40	47.0	154.20
21.3	69.88	24.3	79.72	48.0	157.48
21.4	70.21	24.4	80.05	49.0	160.76
21.5	70.54	24.5	80.38	50.0	164.04
21.6	70.87	24.6	80.71	51.0	167.32
21.7	71.19	24.7	81.04	52.0	170.60
21.8	71.52	24.8	81.36	53.0	173.88
21.9	71.85	24.9	81.69	54.0	177.17
22.0	72.18	25.0	82.02	55.0	180.45
22.1	72.51	26.0	85.30	56.0	183.73
22.2	72.83	27.0	88.58	57.0	187.01
22.3	73.16	28.0	91.86	58.0	190.29
22.4	73.49	29.0	95.14	59.0	193.57
22.5	73.82	30.0	98.43	60.0	196.85
22.6	74.15	31.0	101.71	61.0	200.13
22.7	74.48	32.0	104.99	62.0	203.41
22.8	74.80	33.0	108.27	63.0	206.69
22.9	75.13	34.0	111.55	64.0	209.97
23.0	75.46	35.0	114.83	65.0	213.25
23.1	75.79	36.0	118.11	66.0	216.54
23.2	76.12	37.0	121.39	67.0	219.82
23.3	76.44	38.0	124.67	68.0	223.10
23.4	76.77	39.0	127.95	69.0	226.38
23.5	77.10	40.0	131.23	70.0	229.66
23.6	77.43	41.0	134.51	71.0	232.94
23.7	77.76	42.0	137.80	72.0	236.22
23.8	78.08	43.0	141.08	73.0	239.50
23.9	78.41	44.0	144.36	74.0	242.78

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
75.0	246.06	105.0	344.49	135.0	442.91
76.0	249.34	106.0	347.77	136.0	446.19
77.0	252.62	107.0	351.05	137.0	449.48
78.0	255.91	108.0	354.33	138.0	452.76
79.0	259.19	109.0	357.61	139.0	456.04
80.0	262.47	110.0	360.89	140.0	459.32
81.0	265.75	111.0	364.17	141.0	462.60
82.0	269.03	112.0	367.45	142.0	465.88
83.0	272.31	113.0	370.73	143.0	469.16
84.0	275.59	114.0	374.02	144.0	472.44
85.0	278.87	115.0	377.30	145.0	475.72
86.0	282.15	116.0	380.58	146.0	479.00
87.0	285.43	117.0	383.86	147.0	482.28
88.0	288.71	118.0	387.14	148.0	485.56
89.0	291.99	119.0	390.42	149.0	488.85
90.0	295.28	120.0	393.70	150.0	492.13
91.0	298.56	121.0	396.98	151.0	495.41
92.0	301.84	122.0	400.26	152.0	498.69
93.0	305.12	123.0	403.54	153.0	501.97
94.0	308.40	124.0	406.82	154.0	505.25
95.0	311.68	125.0	410.11	155.0	508.53
96.0	314.96	126.0	413.39	156.0	511.81
97.0	318.24	127.0	416.67	157.0	515.09
98.0	321.52	128.0	419.95	158.0	518.37
99.0	324.80	129.0	423.23	159.0	521.65
100.0	328.08	130.0	426.51	160.0	524.93
101.0	331.36	131.0	429.79	161.0	528.22
102.0	334.65	132.0	433.07	162.0	531.50
103.0	337.93	133.0	436.35	163.0	534.78
104.0	341.21	134.0	439.63	164.0	538.06

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
165.0	541.34	195.0	639.76	225.0	738.19
166.0	544.62	196.0	643.04	226.0	741.47
167.0	547.90	197.0	646.33	227.0	744.75
168.0	551.18	198.0	649.61	228.0	748.03
169.0	554.46	199.0	652.89	229.0	751.31
170.0	557.74	200.0	656.17	230.0	754.59
171.0	561.02	201.0	659.45	231.0	757.87
172.0	564.30	202.0	662.73	232.0	761.15
173.0	567.59	203.0	666.01	233.0	764.44
174.0	570.87	204.0	669.29	234.0	767.72
175.0	574.15	205.0	672.57	235.0	771.00
176.0	577.43	206.0	675.85	236.0	774.28
177.0	580.71	207.0	679.13	237.0	777.56
178.0	583.99	208.0	682.41	238.0	780.84
179.0	587.27	209.0	685.70	239.0	784.12
180.0	590.55	210.0	688.98	240.0	787.40
181.0	593.83	211.0	692.26	241.0	790.68
182.0	597.11	212.0	695.54	242.0	793.96
183.0	600.39	213.0	698.82	243.0	797.24
184.0	603.67	214.0	702.10	244.0	800.52
185.0	606.96	215.0	705.38	245.0	803.81
186.0	610.24	216.0	708.66	246.0	807.09
187.0	613.52	217.0	711.94	247.0	810.37
188.0	616.80	218.0	715.22	248.0	813.65
189.0	620.08	219.0	718.50	249.0	816.93
190.0	623.36	220.0	721.78	250.0	820.21
191.0	626.64	221.0	725.07	251.0	823.49
192.0	629.92	222.0	728.35	252.0	826.77
193.0	633.20	223.0	731.63	253.0	830.05
194.0	636.48	224.0	734.91	254.0	833.33

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet	Meters	Feet
255.0	836.61	285.0	935.04	315.0	1033.46
256.0	839.90	286.0	938.32	316.0	1036.75
257.0	843.18	287.0	941.60	317.0	1040.03
258.0	846.46	288.0	944.88	318.0	1043.31
259.0	849.74	289.0	948.16	319.0	1046.59
260.0	853.02	290.0	951.44	320.0	1049.87
261.0	856.30	291.0	954.72	321.0	1053.15
262.0	859.58	292.0	958.01	322.0	1056.43
263.0	862.86	293.0	961.29	323.0	1059.71
264.0	866.14	294.0	964.57	324.0	1062.99
265.0	869.42	295.0	967.85	325.0	1066.27
266.0	872.70	296.0	971.13	326.0	1069.55
267.0	875.98	297.0	974.41	327.0	1072.83
268.0	879.27	298.0	977.69	328.0	1076.12
269.0	882.55	299.0	980.97	329.0	1079.40
270.0	885.83	300.0	984.25	330.0	1082.68
271.0	889.11	301.0	987.53	331.0	1085.96
272.0	892.39	302.0	990.81	332.0	1089.24
273.0	895.67	303.0	994.09	333.0	1092.52
274.0	898.95	304.0	997.38	334.0	1095.80
275.0	902.23	305.0	1000.66	335.0	1099.08
276.0	905.51	306.0	1003.94	336.0	1102.36
277.0	908.79	307.0	1007.22	337.0	1105.64
278.0	912.07	308.0	1010.50	338.0	1108.92
279.0	915.35	309.0	1013.78	339.0	1112.20
280.0	918.64	310.0	1017.06	340.0	1115.49
281.0	921.92	311.0	1020.34	341.0	1118.77
282.0	925.20	312.0	1023.62	342.0	1122.05
283.0	928.48	313.0	1026.90	343.0	1125.33
284.0	931.76	314.0	1030.18	344.0	1128.61

METRIC CONVERSION TABLE

Meters	Feet	Meters	Feet
345.0	1131.89	375.0	1230.32
346.0	1135.17	376.0	1233.60
347.0	1138.45	377.0	1236.88
348.0	1141.73	378.0	1240.16
349.0	1145.01	379.0	1243.44
350.0	1148.29	380.0	1246.72
351.0	1151.57	381.0	1250.00
352.0	1154.86	382.0	1253.28
353.0	1158.14	383.0	1256.56
354.0	1161.42	384.0	1259.84
355.0	1164.70	385.0	1263.12
356.0	1167.98	386.0	1266.40
357.0	1171.26	387.0	1269.69
358.0	1174.54	388.0	1272.97
359.0	1177.82	389.0	1276.25
360.0	1181.10	390.0	1279.53
361.0	1184.38	391.0	1282.81
362.0	1187.66	392.0	1286.09
363.0	1190.94	393.0	1289.37
364.0	1194.23	394.0	1292.65
365.0	1197.51	395.0	1295.93
366.0	1200.79	396.0	1299.21
367.0	1204.07	397.0	1302.49
368.0	1207.35	398.0	1305.77
369.0	1210.63	399.0	1309.06
370.0	1213.91	400.0	1312.34
371.0	1217.19		
372.0	1220.47		
373.0	1223.75		
374.0	1227.03		

SUNRISE AND SUNSET TABLE

LOS ANGELES, CALIFORNIA
Pacific Standard Time (Time Meridian 120° West for Latitude 33° 43' N., Longitude 118° 16' W.)

This table gives the time of the rising and setting of the sun's upper limb for every fifth day of the year. An allowance of five meters has been made for the elevation of the observer. The table is approximately correct for any year, as the declination of the sun varies but little from its mean value from year to year.

Add one hour for daylight-saving time where applicable.

Date	Sunrise	Sunset
Jan. 1	0658	**1656**
6	0659	**1700**
11	0658	**1704**
16	0658	**1708**
21	0656	**1713**
26	0654	**1718**
31	0651	**1723**
Feb. 5	0647	**1728**
10	0643	**1733**
15	0638	**1737**
20	0632	**1742**
25	0627	**1746**
March 2	0621	**1750**
7	0614	**1754**
12	0608	**1758**
17	0601	**1802**
22	0555	**1806**
27	0548	**1810**
April 1	0541	**1814**
6	0534	**1817**
11	0528	**1821**
16	0522	**1825**
21	0516	**1829**
26	0510	**1832**
May 1	0505	**1836**
6	0500	**1840**
11	0456	**1844**
16	0452	**1848**
21	0449	**1851**
26	0446	**1855**
31	0444	**1858**
June 5	0443	**1901**
10	0442	**1903**
15	0442	**1905**
20	0443	**1906**
25	0444	**1907**
30	0446	**1908**

Date	Sunrise	Sunset
July 5	0448	**1907**
10	0450	**1906**
15	0453	**1904**
20	0457	**1902**
25	0500	**1859**
30	0503	**1855**
Aug. 4	0507	**1851**
9	0511	**1846**
14	0514	**1841**
19	0518	**1835**
24	0521	**1829**
29	0525	**1823**
Sept. 3	0528	**1816**
8	0531	**1810**
13	0535	**1803**
18	0538	**1756**
23	0542	**1749**
28	0545	**1742**
Oct. 3	0549	**1735**
8	0552	**1728**
13	0556	**1722**
18	0600	**1716**
23	0604	**1710**
28	0608	**1705**
Nov. 2	0613	**1700**
7	0617	**1656**
12	0622	**1652**
17	0627	**1649**
22	0631	**1647**
27	0636	**1645**
Dec. 2	0640	**1644**
7	0644	**1644**
12	0648	**1645**
17	0651	**1647**
22	0654	**1649**
27	0656	**1652**

The information provided here has been compiled from reliable government sources. The Port assumes no responsibility for its accuracy.

TIDE TABLES

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

January 2020

DECEMBER 2019

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

February 2020

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

MARCH

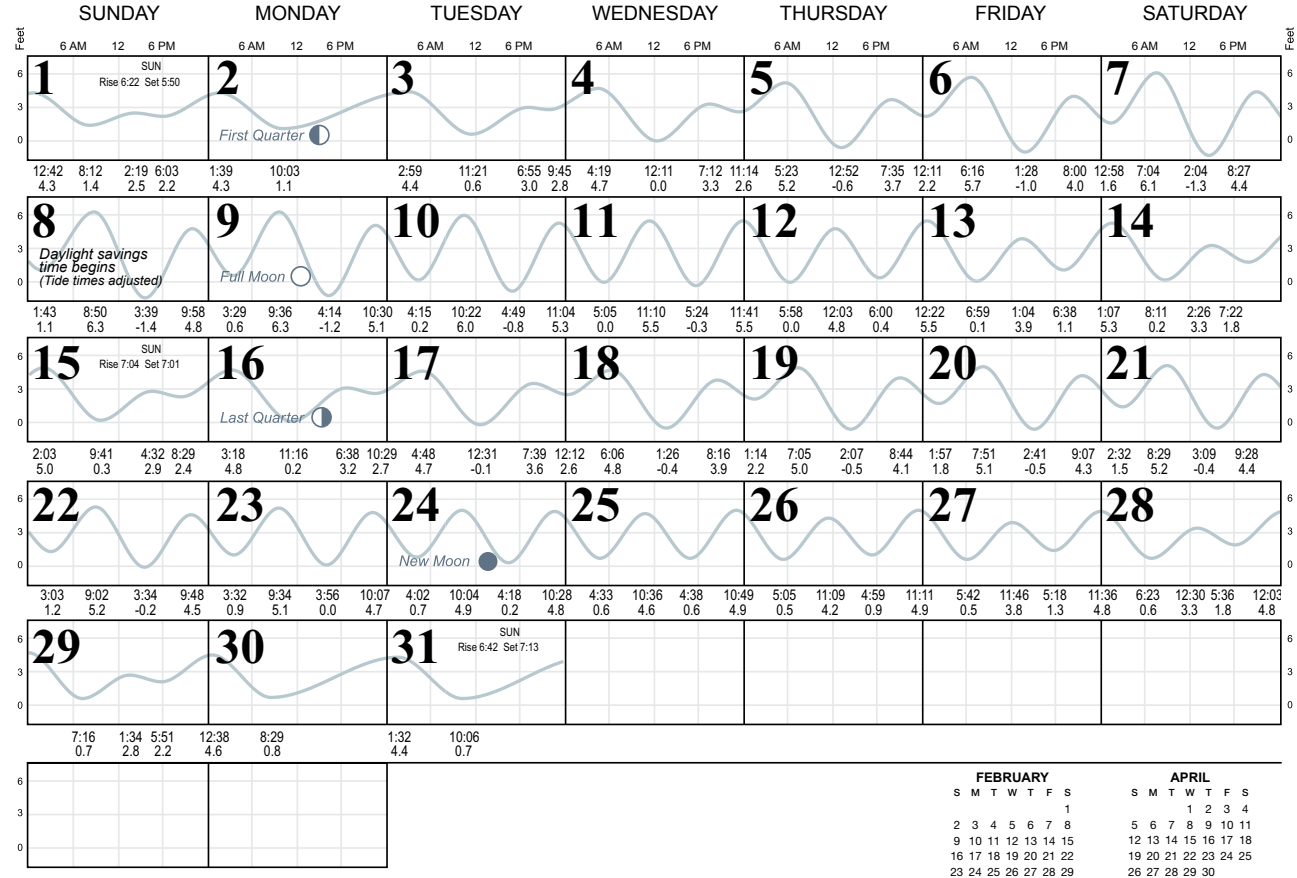
S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

March 2020



FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

April 2020

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

May 2020

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

JUNE

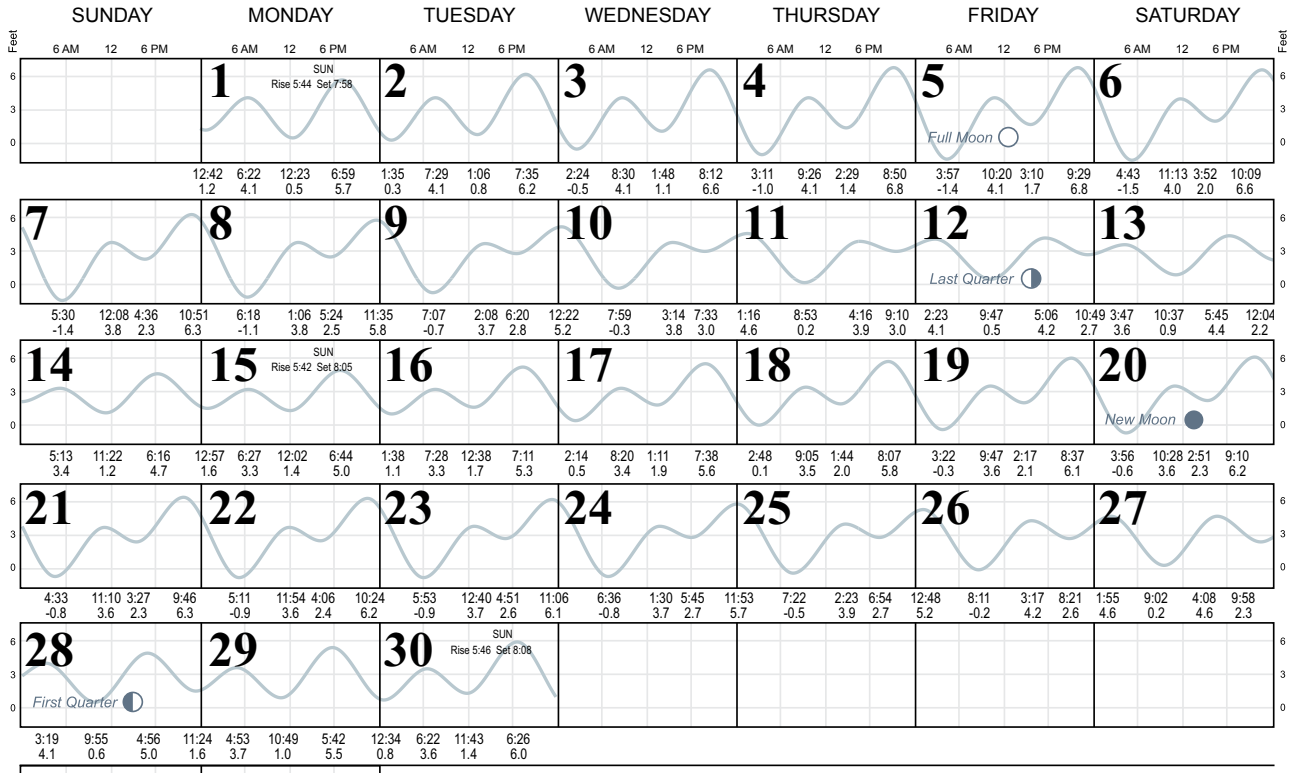
S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

June 2020



MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

July 2020

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

August 2020

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

SEPTEMBER

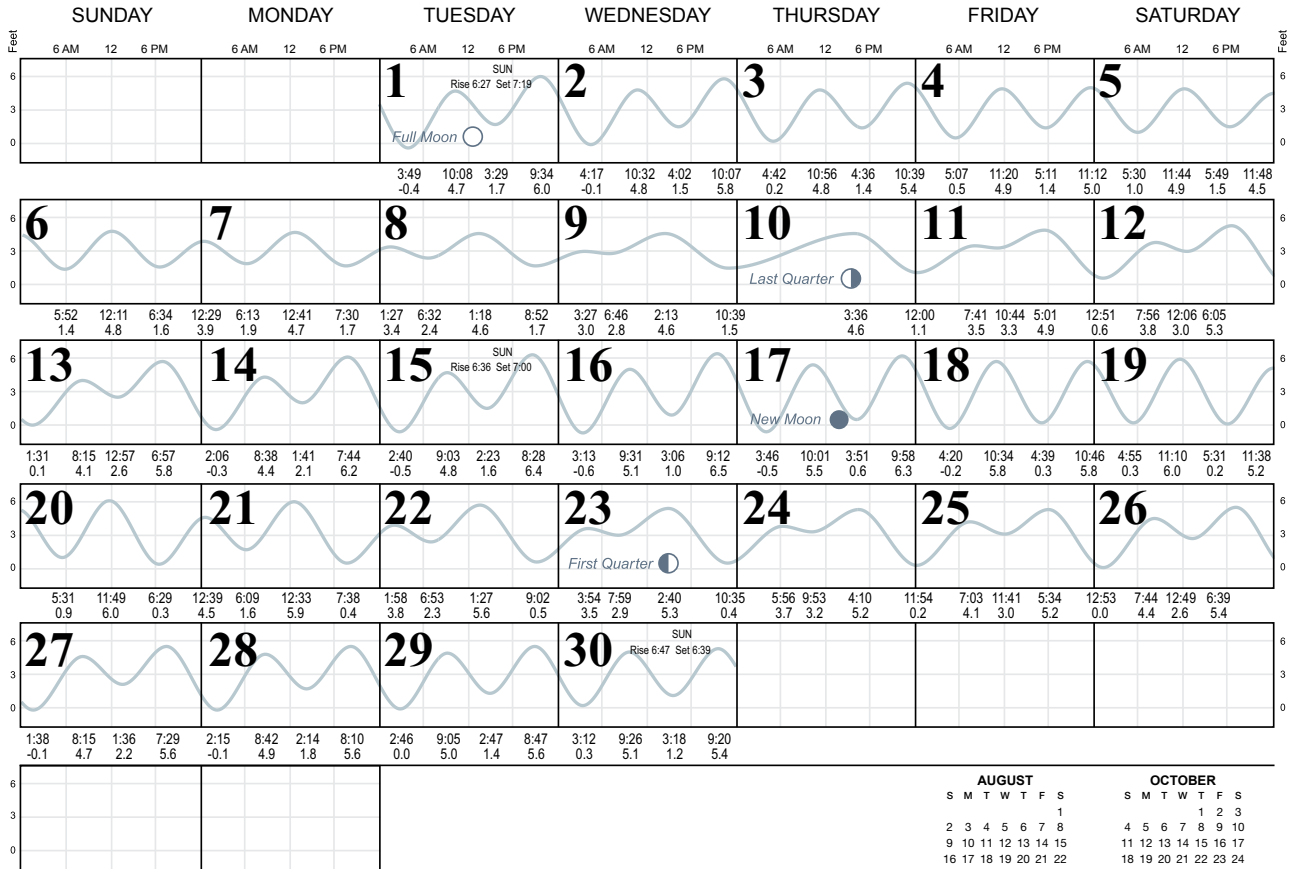
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

September 2020



AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

OCTOBER

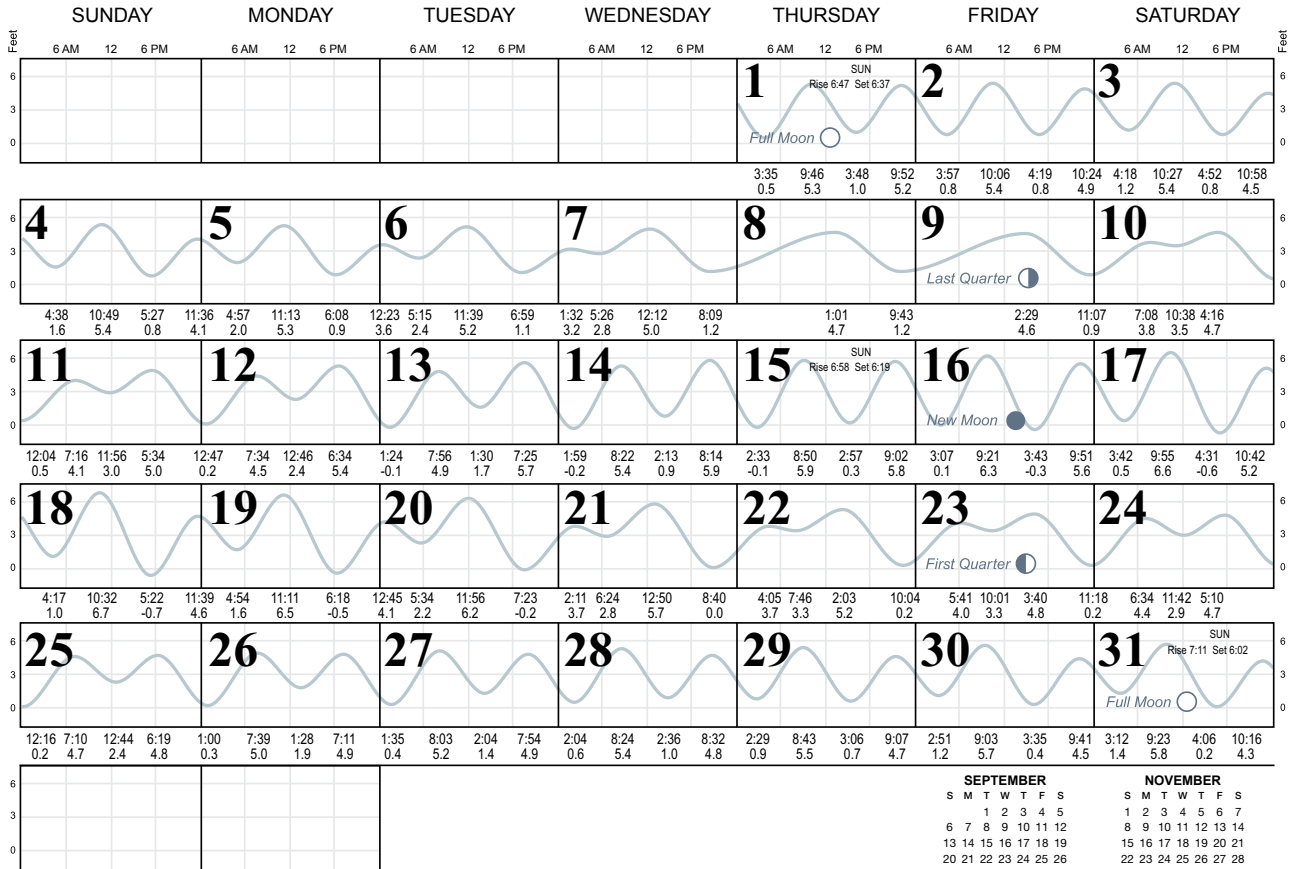
S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

October 2020



SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

November 2020

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
1 SUN Rise 6:12 Set 5:01 *Daylight savings time ends (Tide times adjusted)* 2:33 1.7 · 8:45 5.8 · 3:38 0.2 · 9:54 4.0	**2** 2:55 2.1 · 9:08 5.8 · 4:13 0.2 · 10:38 3.7	**3** 3:15 2.4 · 9:34 5.7 · 4:54 0.3 · 11:31 3.5	**4** 3:35 2.7 · 10:03 5.5 · 5:42 0.4	**5** 12:50 3.3 · 3:53 3.0 · 10:38 5.3 · 6:43 0.6	**6** 11:27 5.0 · 7:57 0.6	**7** 12:46 4.7 · 9:10 0.6
8 *Last Quarter* 5:04 4.0 · 9:15 3.4 · 2:30 4.5 · 10:09 0.4	**9** 5:24 4.4 · 10:37 2.8 · 4:00 4.6 · 10:57 0.3	**10** 5:47 4.9 · 11:32 2.0 · 5:10 4.8 · 11:38 0.3	**11** 6:13 5.4 · 12:20 1.1 · 6:09 4.9 · 12:16 0.4	**12** 6:42 6.0 · 1:05 0.3 · 7:04 5.0 · 12:53 0.6	**13** 7:14 6.5 · 1:51 -0.4 · 7:57 4.9	**14** *New Moon* 1:30 0.8 · 7:48 6.9 · 2:37 -1.0 · 8:50 4.8
15 SUN Rise 6:25 Set 4:50 2:08 1.2 · 8:25 7.1 · 3:24 -1.3 · 9:44 4.5	**16** 2:46 1.6 · 9:04 7.0 · 4:14 -1.3 · 10:42 4.2	**17** 3:27 2.1 · 9:45 6.8 · 5:07 -1.1 · 11:48 3.9	**18** 4:12 2.5 · 10:31 6.3 · 6:06 -0.7	**19** 1:06 3.8 · 5:09 3.0 · 11:23 5.7 · 7:11 -0.3	**20** 2:36 3.9 · 6:34 3.3 · 12:29 5.0 · 8:20 0.1	**21** *First Quarter* 3:53 4.1 · 8:35 3.2 · 1:55 4.5 · 9:27 0.3
22 4:47 4.4 · 10:17 2.8 · 3:28 4.2 · 10:24 0.6	**23** 5:25 4.7 · 11:24 2.3 · 4:46 4.1 · 11:09 0.8	**24** 5:55 5.0 · 12:11 1.7 · 5:47 4.1 · 11:46 1.0	**25** 6:19 5.3 · 12:49 1.2 · 6:37 4.0 · 12:17 1.3	**26** 6:42 5.5 · 1:23 0.7 · 7:21 4.0 · 12:44 1.5	**27** 7:04 5.7 · 1:54 0.3 · 8:01 4.0 · 1:09 1.7	**28** 7:26 5.9 · 2:24 0.0 · 8:39 3.9
29 1:34 1.9 · 7:50 6.0 · 2:56 -0.2 · 9:18 3.8	**30** SUN Rise 6:39 Set 4:45 *Full Moon* 2:00 2.1 · 8:16 6.1 · 3:29 -0.4 · 9:58 3.7					

OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

DECEMBER

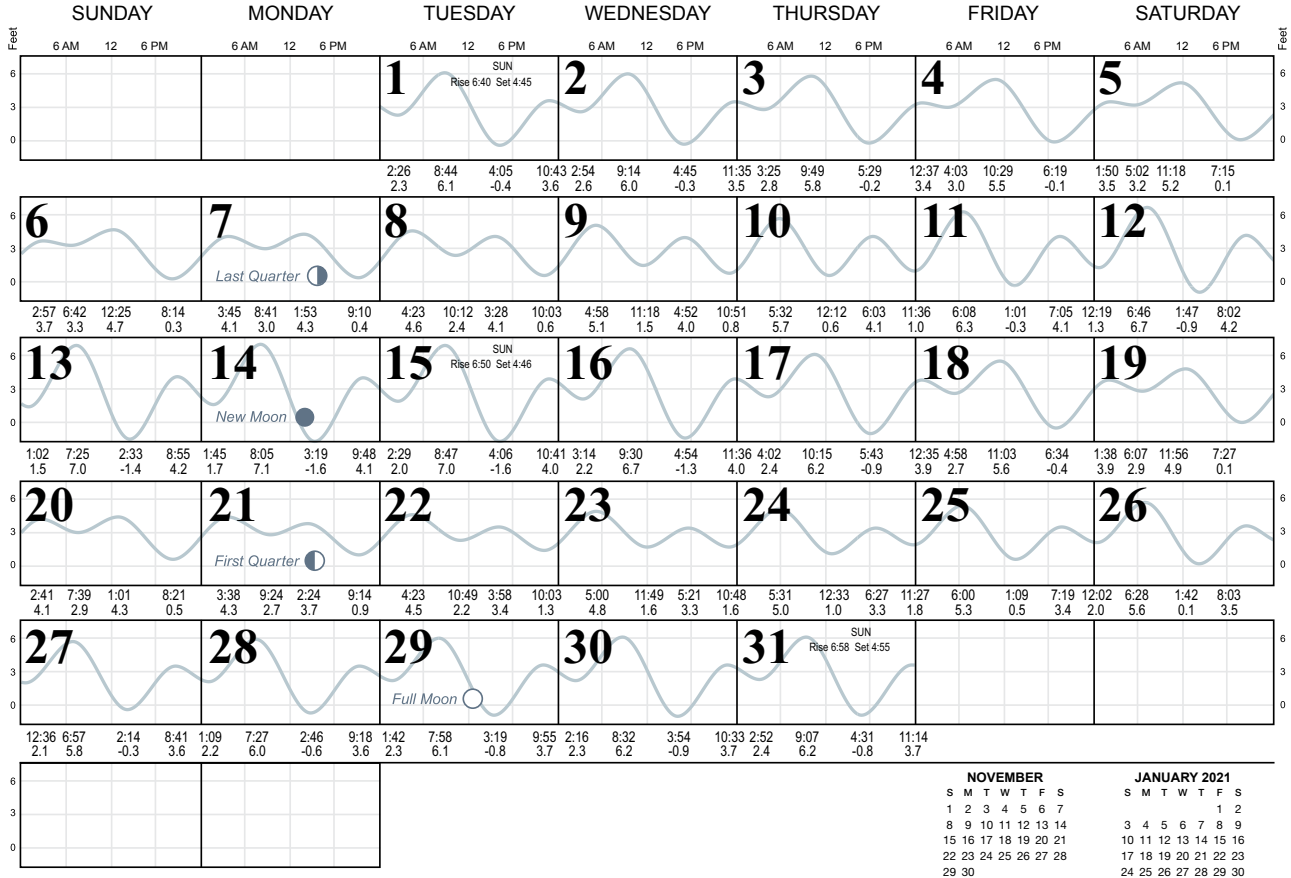
S	M	T	W	T	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

Tide Tables

LOS ANGELES
(Outer Harbor)
CALIFORNIA

Times and Heights of
High and Low Water
(heights in feet)

December 2020



NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

JANUARY 2021

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						

NOTES

NOTES

NOTES

THE PORT
OF LOS ANGELES

Port of Los Angeles
425 S. Palos Verdes Street, P.O. Box 151
San Pedro, California 90733-0151
Tel/TDD: (310) SEA-PORT
portoflosangeles.org

THE PORT
OF LOS ANGELES

@PortofLA

2019-0757