

Harbor Safety Plan for the Ports of Los Angeles and Long Beach

Mandated by
California Oil Spill Prevention and
Response Act of 1990

Reviewed and approved annually by the Los Angeles / Long Beach
Harbor Safety Committee

June 30, 2024

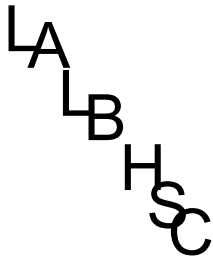
Note: For your ready reference, the current version of the LA/LB Harbor Safety Plan is posted on the Marine Exchange of Southern California web site (www.mxsocal.org), including a “printer friendly” version.

See, <http://www.mxsocal.org/safety-plan.html>

Copies of the LA/LB HSP are also available on CD and in hard copy by request to the Marine Exchange.

This combined document is created annually in June at the end of the Los Angeles Long Beach Harbor Safety Committee term. The purpose of this document is to offer a complete searchable version of the Plan. However, this combined document may not contain the latest updates to the Plan. Please see the individual chapter documents posted on this website for the most up-to-date information.

30 June 2024



LOS ANGELES/LONG BEACH HARBOR SAFETY COMMITTEE

Mandated by
California Oil Spill Prevention and
Response Act of 1990

June 30, 2024

Dr. Julie Yamamoto
Acting Administrator of OSPR
Department of Fish and Wildlife
P. O. Box 944209
Sacramento, CA 94244-2090

Dear Dr. Yamamoto:

I am pleased to report that the Los Angeles / Long Beach Harbor Safety Committee has reviewed and revised the Los Angeles / Long Beach Harbor Safety Plan as follows:

| | |
|---------------|--|
| Chapter VII | Updated vessel accident statistics |
| Chapter XVIII | New Chapter containing Navigation Standards of Care |
| Appendix C.1 | Updated to reflect current tug fleet |
| Appendix G | Rewrote to bring this Appendix in line with current practice |

We have no further recommendations for you as we conclude this 2023-2024 Harbor Safety Committee season.

Both ports are running smoothly. The Committee continues to work on old business and is available to address any new business as it arises. The most recent version of the Harbor Safety Plan is dated June 30, 2024, and is available at: <http://www.mxsocal.org/safety-plan.html>

I commend the commitment of our volunteer members who serve on our committee. It is to them that the Los Angeles Long Beach Harbor Safety Committee owes its success in continually improving maritime safety and oil spill prevention.

Sincerely,

John Betz,
Chairman

**c/o Marine Exchange of Southern California
P. O. Box 1949 • San Pedro • California 90733-1949
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Harbor Safety Plan for the Ports of Los Angeles and Long Beach

Change Pages

| Date | Page or Part | Description of Change or Revision |
|-------------|---------------------|---|
| 7/6/2021 | Appendix C.1. | Added revised section |
| 10/15/2021 | Chapter IV | Inserted previously omitted language to Chapter IV, Anchorages, Section B |
| 02/03/2022 | Chapter IV | Added paragraph D 8 |
| 02/09/2022 | Chapters V & VI | Non-substantive revisions throughout chapters |
| 06/01/2022 | Chapter XII | Revised Harbor Safety Committee Finding No. 4 on Page XII - 2 |
| 06/01/2022 | Chapter IX | Updated info by CG Bridge Office to reflect completion of the Gerald Desmond Bridge replacement span and the Heim drawbridge replacement span. |
| 02/01/2023 | Chapter X | Updated to include a recommendation for small craft to carry AIS equipment and to make other non-substantive changes to the text. |
| 06/30/2023 | Table of Appendices | Updated to show tug companies as they are listed in Appendix C1 |
| 06/30/2023 | Chapters V & VI | Non-substantive revisions throughout chapters |
| 06/30/2023 | Chapter VIII | Clarified VHF recommended operating channels and updated equipment lists. |
| 06/30/2023 | Chapter X | Added recommendation that small craft carry AIS. Eliminated the VHF monitoring requirements as redundant; the same requirements are in Chapter VIII, Communications. Other minor procedure changes. |
| 06/30/2023 | Appendix L | Clarified POLB Tariff No. 4 requirements regarding anchorages |
| 06/30/2023 | Chapter II | Changes to web addresses and other minor edits |
| 06/30/2023 | Chapter VII | Updated vessel statistics |
| 06/30/2023 | Appendix M1 | Changes to update with current practice |
| 01/01/2024 | Chapter XVIII | Added new chapter – Navigation Standards of Care |
| 06/15/2024 | Appendix C.1 | Updated to reflect current tug fleet |
| 06/30/2024 | Appendix G | Changed to reflect current practice |
| 06/30/2024 | Chapter VII | Updated vessel statistics |
| 06/30/2024 | V.O.P. / B.M.P. | Added VOP Navigation Standards of Care (Chap. XVIII) |
| | | |
| | | |

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TABLE OF ACRONYMS AND ABBREVIATIONS

This table lists common acronyms and abbreviations used in the LA/LB Harbor Safety Plan for easy reference.

| | |
|-----------|--|
| ASD | Azimuth-stern drive propulsion system |
| AOR | VTS Area of Responsibility |
| AtoN | Aids to Navigation |
| BA | Boarding Area |
| BNTM | Broadcast Notice to Mariners |
| CARB | California Air Resources Board |
| CCC | California Coastal Commission |
| CCR | California Code of Regulations |
| CDP | Capital Development Program |
| CEQA | California Environmental Quality Act |
| CFR | Code of Federal Regulations |
| CFS/CLO | Cargo Flow Sheet or Crane Letter of Operations |
| CPR | Cardio-pulmonary resuscitation |
| COLREGS | International and Inland Regulations for Preventing Collisions at Sea |
| COTP | U.S. Coast Guard Captain of the Port |
| CWA | Clean Water Act 1972 |
| DF&W | California Department of Fish & Wildlife |
| DWT | Deadweight tonnage of a vessel |
| EPA | Environmental Protection Agency |
| ETA | Estimated Time of Arrival |
| ETIP | Escort Tug Inspection Program |
| GIS | Geographic Information System |
| GT | Gross tonnage of a vessel |
| HP | Horsepower rating of an engine or a vessel |
| HSC | Los Angeles-Long Beach Harbor Safety Committee |
| HSP | Harbor Safety Plan for Los Angeles/Long Beach Harbor |
| IACS | International Association of Classification Societies |
| IMO | International Maritime Organization |
| IMO tanks | Tanks for liquid carriage built within a standard container-size frame |
| JPS | Jacobsen Pilot Service |
| Kts | Knots |
| LA/LB | Los Angeles/Long Beach |
| LNTM | Local Notice to Mariners |
| LOA | Length overall of a vessel |
| MARPOL | International Convention for the Prevention of Marine Pollution from Ships |
| MHW | Mean High Water |
| MLLW | Mean Lower Low Water |
| MOA | Memorandum of Agreement |
| MOU | Memorandum of Understanding |
| NOA | Notice of Arrival |
| NOAA | National Oceanographic and Atmospheric Administration |
| NOS | National Ocean Survey |
| NPDES | National Pollutant Discharge Elimination System |

TABLE OF ACRONYMS AND ABBREVIATIONS

| | |
|--------|--|
| PIC | Person in Charge of an oil transfer operation |
| POLA | Port of Los Angeles |
| POLB | Port of Long Beach |
| PPU | Portable Pilot Unit |
| OSPR | California Office of Spill Prevention and Response |
| PORTS | Physical Oceanographic Real-Time System |
| RACON | RAdar beaCON transmitter |
| RMG | Rail-mounted gantry cranes |
| RNA | Regulated Navigation Area |
| RORO | Roll-On Roll-off cargo ship |
| SLC | California State Lands Commission |
| SMS | Safety Management System |
| STCW | International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers |
| STD | Standard |
| TEU | Twenty-foot equivalent unit– a measure of containership size |
| TSS | Traffic Separation Scheme |
| UKC | Underkeel clearance |
| USCG | U.S. Coast Guard |
| USCP | U.S. Coast Pilot |
| VGP | EPA Vessel General Permit |
| VHF/FM | Very High Frequency/FM marine radio |
| VMRS | Vessel Movement Reporting System |
| VOP | Vessel Operating Procedures (Best Marine Practices) |
| VSP | Voith-Schneider propeller propulsion system |
| VTC | Vessel Traffic Center |
| VTS | Vessel Traffic Service |
| WAMS | Waterways Analysis and Management System |

INTRODUCTION

A. PORTS OF LOS ANGELES AND LONG BEACH: Occupying over 15,000 acres of land and water area in San Pedro Bay, the Ports of Los Angeles and Long Beach feature 57 miles of waterfront, making it one of the world's largest artificial harbor complexes.

Together, Los Angeles and Long Beach Harbors handle more containers than any port complex in the United States. Diversified facilities are available at both Ports to handle any kind of cargo. In addition to 20 state-of-the-art container terminals, there are the traditional dry bulk, petroleum, neobulk and cruise-passenger terminals that serve a multitude of maritime needs.

For more information on the Ports of Los Angeles and Long Beach you may access their websites at www.portoflosangeles.org and www.polb.com.

B. THE LOS ANGELES/LONG BEACH HARBOR SAFETY COMMITTEE AND PLAN: The California Oil Spill Prevention and Response Act of 1990 mandated the Los Angeles/Long Beach Harbor Safety Committee. The California Department of Fish and Wildlife's Office of Oil Spill Prevention and Response officially appointed the Committee on August 10, 1991.

The ACT required the Committee to review and evaluate the following:

1. Sounding checks.
2. Anchorage designations.
3. Traffic and routings from port construction and dredging projects.
4. Procedures for routing vessels during emergencies that impact navigation.
5. Communications systems.
6. Channel design plans.
7. Placement and effectiveness of navigational aids.
8. Bridge management requirements.
9. Small vessel congestion in shipping channels.
10. Recommendation as to whether establishing or expanding VTS systems within the harbors is desirable, and recommendations for funding projects.
11. Recommendation determining when tankers must be accompanied by an escort tug(s).
12. Competitive aspects of recommendations.
13. Suggested mechanisms to ensure that the provisions of the plan are fully and regularly enforced.

The Harbor Safety Plan was authorized on June 30, 2016 by the following representatives:

Mr. Glenn Farren
Representing the Port of Long Beach

Mr. Andre Nault
Representing Tug/Barge Operators

Capt. Sean Marchant
Representing Marine Oil Terminal Operators

Capt. Sam Jebanathan
Representing Dry Cargo Vessel Operations

Capt. Craig Flinn
Representing the Los Angeles Pilot Organization

Capt. Ray Lyman
Representing Passenger Ferry Operators

Mr. Jonathan Bishop
Representing the California Coastal Commission

Capt. Eric Osen
Representing Mooring Masters

Mr. Garry Brown
Representing Environmental Organizations for Los Angeles/Long Beach Harbor

Vacancy
Representing Environmental Non-Profit Organizations for Santa Monica Bay

Capt. John Betz, (*Vice-Chair*)
Representing the Port of Los Angeles

Capt. Mark H. Neilsen
Representing Tanker Vessel Operators

Capt. John Strong, (*Chair*)
Representing the Long Beach Pilot Organization

Mr. Daniel Strunk
Representing Commercial Fishing

Mr. Eric Bland
Representing Organized Labor

Capt. Charlene Downey, (*Liaison*)
Representing the U.S. Coast Guard

Mr. David Weil
Representing Pleasure Boaters

Mr. Albert Rosales, (*Liaison*)
Representing the U.S. Navy

Vacancy
Representing State Lands Commission

Mr. Jim Fields, (*Liaison*)
Representing U.S. Army

Mr. Jeffrey Ferguson, (*Liaison*)
Representing National Oceanic & Atmospheric Admin.

Capt. J. Kipling "Kip" Louttit
Executive Secretary for the Committee Marine Exchange of Southern California

Mr. Ron Kelly
Representing Ship's Agent Organizations

Mr. Michael Coyne
Representing OSPR

EXECUTIVE SUMMARY

The Los Angeles/Long Beach Harbor Safety Committee (the Committee) expanded the initial thirteen areas targeted for study or comment under the statute to seventeen. We have added in the Appendices the policy for operation of the Catalina Federal Anchorages and guidelines for container vessel bunker barge safety. Previously separate chapters XVII, Inclement Weather, and XVIII, Restricted Visibility have been combined.

I. GEOGRAPHICAL BOUNDARIES

Delineates the area of concern and separates the various areas of coverage to avoid ambiguity.

II. GENERAL WEATHER, TIDES AND CURRENTS

Describes the conditions in the port areas. Describes Physical Oceanographic Real-Time System (P.O.R.T.S.) with plans to review existing sensors and fund future requirements.

III. AIDS TO NAVIGATION

Lists all aids to navigation in the area of concern. Describes procedures and frequency for checking available water depths in both ports.

IV. ANCHORAGES

Gives guidelines for anchoring inside and outside the federal breakwaters as well as Catalina Island, with Standards of Care.

V. HARBOR DEPTHS, CHANNEL DESIGN AND PROPOSED CONSTRUCTION AND DREDGING

Describes both ports' current harbor depths and future expansion plans.

VI. CONTINGENCY ROUTING

Describes Contingency Procedures for vessel routing and traffic management.

VII. HISTORY OF VESSEL ACCIDENTS, SPILLS, AND NEAR MISSES

Provides a recap of the past year's incidents.

VIII. COMMUNICATION

Describes Principal Operating Channels, Business Operating Channels and equipment currently installed.

IX. BRIDGES

Summarizes current regulations and procedures relating to four harbor bridges. Also includes USCG Report of Delay at Drawbridge Form.

X. SMALL CRAFT

Describes Standards of Care for small recreational vessels and fishing boats affecting tankers and other commercial traffic, along with recommendations for educating, training and licensing small boat operators.

XI. VESSEL TRAFFIC SERVICE

Describes the Vessel Traffic Service (VTS), a joint venture of the Coast Guard and the Marine

EXECUTIVE SUMMARY

Exchange.

XII. TUG ESCORT/ASSIST FOR TANK VESSELS

Incorporates the state regulations for tank vessel escort in Los Angeles/Long Beach Harbors and provides an overview of operating procedures. Describes all ship escort/assist tugboats currently operating in the Los Angeles/Long Beach Harbors and lists findings of the Committee.

XIII. PILOTAGE

Outlines the pilot training programs in both harbors and the El Segundo Marine Terminal.

XIV. UNDER-KEEL CLEARANCE

Gives guidelines for varying minimum under-keel clearances for all vessels in different parts of the harbor and approaches during normal weather for POLA/POLB. Addresses regulations for tank vessels without double hulls (33 CFR 157.455).

XV. ENVIRONMENTAL IMPACTS

Outlines environmental impacts of POLA/POLB.

XVI. PLAN ENFORCEMENT

Summarizes Plan provisions requiring monitoring and/or enforcement, and lists enforcement authorities in the LA/LB Harbor area.

XVII. INCLEMENT WEATHER

This chapter addresses reduced visibility and high winds. Inclement weather requires that all mariners apply extra attention, particularly within port limits where maneuvering room is limited. This section is intended to provide clear guidance to mariners as to what is expected of them when navigating within the ports of Los Angeles and Long Beach Harbors during inclement weather. It also 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. 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 COLREGS. It is recognized however, that under certain circumstances, vessels may safely transit in reduced visibility provided that equivalent safety levels are employed.

**BY-LAWS FOR THE
LOS ANGELES/LONG BEACH HARBOR SAFETY COMMITTEE
(Revised February 1, 2006)**

PURPOSE:

The Los Angeles/Long Beach Harbor Safety Committee (Committee) is responsible for planning and providing for the safe navigation and operation of all vessels operating within San Pedro Bay, Santa Monica Bay, the Los Angeles/Long Beach port complex (and the approaches thereto); and to address the prevention of oil spills and other mishaps that could endanger (pollute) the harbors, channels and coastal waters within its defined Geographic Boundary (see page I-I of the LA/LB HSP for details). The Committee is also charged with the responsibility of creating (and updating annually, as may be required) a "Harbor Safety Plan for Los Angeles/Long Beach Harbor" (HSP). This Committee has been created under the authority of Government Code Section 8670.23(a), which requires the Administrator of the Office of Spill Prevention and Response (OSPR) to create a Harbor Safety Committee for the Los Angeles/Long Beach Harbor area.

PROCEDURES:

I. Meetings

- A. The Los Angeles/Long Beach Harbor Safety Committee shall follow Robert's Rules of Order for conducting meetings. Motions being acted upon will be approved or rejected upon a majority vote by the Committee members or their appointed alternates who constitute a quorum. A minority report may be prepared and included as a separate section of the HSP, if the dissenting members so desire.
- B. The time, location and frequency of meetings shall be determined by the Chair, and when possible, with the approval of the Committee. All meetings will require a quorum which is a simple majority of all appointed members or their alternates. The specific meeting arrangements (room reservations, equipment, supplies, etc.) will be the responsibility of the committee Secretariat, under contract with OSPR.
- C. OSPR shall provide administrative and secretariat support services. The Marine Exchange of Southern California has been contracted by OSPR for the purpose of providing secretariat and administrative support to the LA/LB HSC. These services are to include (but are not be limited to): meeting arrangements, announcements, agendas, minutes, as well as any and all other documentation deemed necessary by the Committee Chair.
- D. All Committee members, alternates, OSPR staff and interested parties shall receive at least 7 days advance notice of meetings. Agendas shall be mailed at least 72 hours prior to the date of the meeting. Items to be voted on must be on this agenda, however the Committee may take action on an item not appearing on the agenda by determining that an immediate need exists and it came to the attention of the Committee after the agenda was distributed. This determination must be approved by a two-thirds (2/3rd) vote of all appointed Committee members or, if less than two-thirds (2/3rd) of all appointed members are in attendance, by a unanimous vote of those appointed members present. Meeting announcements and agendas may also

be sent to the representatives and their alternates via e-mail and/or fax transmission. Meeting announcements and agendas shall also be sent to all interested parties who sign up for such notices, and/or who have attended the meeting(s).

- E. OSPR shall provide for minutes to be taken during each meeting. Minutes of the meetings will include a list of attendees. Minutes shall be sent to Committee members and their alternates, to OSPR's Marine Safety Branch, to all individuals attending the meeting and all interested parties, along with the meeting notices. Such information may be mailed, e-mailed, posted to the Marine Exchange and/or OSPR web sites, or faxed, depending on need. After being approved by the Committee, the minutes shall become the official record of each meeting.
- F. OSPR will regularly attend meetings to answer questions regarding the development of harbor safety plans, and to report on OSPR activities, plans, and decisions that have occurred (or will occur in the future).
- G. Meetings shall be conducted by the Committee Chair or Vice Chair – both of whom shall be selected and appointed by the OSPR Administrator from amongst the members of the Committee. All meetings shall be open to the general public, and to other interested parties, in accordance with the Brown Act (Government Code, Sections 54950 through 54962). The above procedures also apply to any and all sub-committees that may be formed and authorized by the full Committee.

II. Expenses and Committee Support

- A. Each Committee member and/or their alternate may be reimbursed by OSPR for actual and necessary expenses incurred in the participation of Committee meetings called by the chair of the Committee, or by the Administrator of OSPR. Expense claims must be in compliance with the State Board of Control Rules.
- B. Claims for expenses incurred shall be submitted to the Marine Safety Branch, Office of Spill Prevention & Response, (P.O. Box 944209, Sacramento, CA 94244-2090). Expense claims may be submitted on letterhead stationery or on State form STD. 262 for Travel Expense Claims. Claims submitted on stationery will be transferred to form STD. 262 by OSPR staff and returned to the applicant for signature. Original receipts must accompany the claim forms. If a Committee representative and/or alternate has questions regarding claims, contracts, and other administrative functions, they should contact the Marine Safety Branch secretary at telephone (916) 324-6251.
- C. The Committee Secretariat, shall arrange for the handling of general mailings, producing minutes of Committee meetings, typing and mailing of Committee correspondence, making guest speaker arrangements, coordinating special events, posting minutes and HSP to their website (www.mxsocial.org), and otherwise facilitating general week-to-week activities as reviewed, requested, and approved by the HSC Chair, and as stipulated in the OSPR secretariat services contract.
- D. OSPR shall arrange for records of Committee activities, including meeting agendas, minutes, correspondence, the HSP, etc., to be maintained and archived by the contracted Secretariat. Records that are not otherwise exempt shall be considered "public records"

which are subject to California's Public Records Act (Government Code Sections 6250, et seq.) – and all will be made available through the Secretariat for public viewing by interested parties.

GUIDELINES:

I. Committee Composition

A. The Committee shall consist of the following members:

1. A designee of the Port of Los Angeles.
2. A designee of the Port of Long Beach.
3. A representative of tanker operators.
4. Two representatives from pilot organizations within the scope of the HSP – namely, one from Jacobsen Pilot Service (Port of Long Beach) and one from the Port of Los Angeles Pilot Service.
5. A representative of an offshore marine terminal who is also a Mooring Master.
6. A representative of dry cargo vessel operators.
7. A representative of commercial fishing interests.
8. A representative of recreational boating interest
9. A representative of scheduled passenger ferry or excursion vessel operators.
10. A representative of local marine oil terminal operators.
11. Two representatives from recognized non-profit environmental organizations that have as a purpose the protection of marine resources, one of which is dedicated to preserving and protecting the waters of Santa Monica Bay.
12. A designee of the California Coastal Commission.
13. A designee of the California State Lands Commission Marine Facilities Division (by petition),
14. A representative from a recognized organized labor union involved with operations of vessels.
15. A representative of tug or barge operators, who is not also engaged in the business of operating either tankers or dry cargo vessels.
16. The Captain of the Port, U.S. Coast Guard, Sector LA/LB Command, to the extent they consent to participate on the Committee.
17. A designee of the U.S. Navy, to the extent they consent to participate on the Committee.

18. A designee of the U.S. Army Corps. of Engineers, to the extent they consent to participate on the Committee.
 19. A designee of NOAA/NOS, to the extent they consent to participate on the Committee.
- B. Members listed in 1 – 15 above will be appointed by OSPR and “sworn in” officially to begin their three year terms.
 - C. Qualifications -- Members appointed to represent categories specified in 3., 4., 5., 6., 9., 10., and 15. above shall have “navigational expertise”. An individual is considered to have navigational expertise if she/he meets any of the following conditions:
 1. Has held or is presently holding a USCG Merchant Marine Deck Officer’s License.
 2. Has held or is presently holding a position on a commercial vessel that includes navigational responsibility
 3. Has held or is presently holding a shore side position with direct operational control of vessels
 4. Has held or is currently holding a position having responsibilities_for permitting or approving the docking of vessels in and around harbor facilities.
 - D. The OSPR Administrator shall appoint a chair and a vice chair for the Committee from amongst the members.
 - E. Additional Members -- The Harbor Safety Committee may petition the Administrator to request additional membership categories which are needed to conduct the Harbor Safety Committee’s business and which reflect the make-up of the local maritime community. The approval of such petitions shall be at the sole discretion of the Administrator.

II. Committee Rules

- A. Each member shall endeavor to attend every Committee meeting. However, an alternate may attend meetings in the member’s absence. All such alternates must have the same qualifications for representing their particular constituency, and each will, when appointed by the OSPR Administrator, be “sworn in” as part of the Committee roster, and having the same duties, responsibilities and voting rights as the representative they serve as alternate for.
- B. Committee membership shall not, by itself, be construed to in any way limit the legal rights, obligations, or authorities of the individual members or the groups or agencies which they represent.
- C. Dismissal From Service -- If a member or their alternate(s) fail to attend 3 of the 5 regularly scheduled meetings for a planning cycle (October through June), or fail to carry out their duties and responsibilities to the Committee in a prudent and professional manner, the chair may ask the delinquent member and or their alternates for their resignations. Failing to obtain those resignations, the chair may then call for a recommendation of removal from the committee, which action will require a “2/3” vote by the Committee. Such recommendation will be submitted to the OSPR administrator for his/her review and immediate action.

III. Preparation of the Harbor Safety Plan

- A. The Committee shall prepare a Harbor Safety Plan (HSP) encompassing all vessel traffic within the Los Angeles/Long Beach harbor complex, as well as the waters of San Pedro and Santa Monica Bays, and the approaches thereto -- including several offshore marine terminals along the Southern California Coast -- in accordance with OSPR regulations. A copy of all “draft regulations” resulting from plan recommendations shall be provided to each Committee member and their alternate for concurrence.

IV. Implementation

- A. Upon approving the Harbor Safety Plan (HSP), the OSPR Administrator, in consultation with the Committee, will implement the HSP.
- B. OSPR staff will propose and adopt regulations necessary to implement the HSP. When federal authority or action is required to implement the HSP, or the recommendations therein, OSPR staff will petition the appropriate agency, or Congress, as necessary.
- C. On or before July 1st of each year, the Committee shall revise the HSP and report to the Administrator its findings and recommendations including:
 - (1) improving navigation safety,
 - (2) increasing vessel traffic efficiency,
 - (3) enhancing environmental protection,
 - (4) eliminating oil spills and other mishaps, and
 - (5) otherwise promoting general safety and security measures, and “Standards of Care” procedures on the waters of LA/LB Harbor, San Pedro Bay, Santa Monica Bay, and the approaches thereto, by amending the HSP (if necessary), or through other means to be determined by the Committee.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

The LA/LB Harbor Safety Plan (HSP) contains operating procedures for vessels. All of the procedures are considered Best Maritime Practices, but some are Regulations (either Local, State or Federal) while others are non-regulatory "Standards of Care" (**Regulations are shown in bold**). 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! An electronic copy of the HSP and other useful links are available on the Marine Exchange home page at: [HTTP://www.mxsocial.org](http://www.mxsocial.org). Nothing in these procedures precludes a master and/or pilot from taking necessary and prudent actions to avoid or mitigate unsafe conditions.

Topics Covered in this Quick Reference Guide:

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IMPORTANT GENERAL INFORMATION

Pilot Requirements: **Local Port Tariffs require vessels of greater than 300 gross tons to use a federally-licensed pilot whenever navigating inside the breakwater.** In most circumstances, vessels employ the services of a federally-licensed local pilot from Jacobsen Pilot Service (for Port of Long Beach) or the Los Angeles Pilot Service (for the Port of Los Angeles). In instances where the master of any vessel that is subject to pilotage wishes to decline the use of a local pilot, before entering, leaving or shifting within the Ports of Los Angeles or Long Beach, the master shall obtain prior permission from the United States Coast Guard Captain of the Port. Any vessel having received such permission from the Captain of the Port must notify the VTS and the appropriate pilot station before arrival or before commencement of any movement within the Harbor, and must abide by all local rules and regulations.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

Equipment Failures: **Vessels are required by law to report navigational equipment, propulsion, steering or other vital system failures as soon as possible to the Coast Guard via the COTP office or the Captain of the Port representative at VTS on channel 14.** The COTP will require appropriate "equivalent levels of safety" which may include:

1. Directing vessels to outside anchorage pending verification of repairs;
2. Restricted speeds with suitable tug escort/assist;
3. Second licensed navigation officer on the bridge for radar plotting, etc.
4. Sea Trials performed to the satisfaction of the Master, Pilot and the COTP.

VESSEL TRAFFIC SERVICE (Chapter XI)

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 nm from Point Fermin to the Federal Breakwater)
2. Jacobsen Pilot Service - for the Port of Long Beach
3. Los Angeles Pilot Service - for the Port of Los Angeles

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. The following are considered "Covered Mandatory Full Participant" vessels:**

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

The following are considered "Mandatory Passive Participants":

Every power driven vessel 20 meters (65 ft.) 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.

Notes of Interest:

1. The outer limit of the VTS Area Of Responsibility (AOR) is defined by a 25 nm arc from Point Fermin (LAT 33 42.3'N, LONG 118 17.6'W).
2. There is no speed restriction between the 25 mile arc and the Precautionary Area.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

However, ships are required to be at 12 knots or less upon entering the Precautionary Area. There is a voluntary Air Quality Compliance zone from a 40 nm arc from Point Fermin Light, within which vessels are requested to observe a 12-knot speed limit.

3. A minimum vessel separation of 1/4 nm is required in the Precautionary Area.
4. Code of Federal Regulations, CFR 33, Part 165, Subsection 165.1152, identifies portions of the Precautionary Area as a Regulated Navigation Area.

Arriving Vessels Upon Entering the 25 Mile Outer Limit:

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.
7. All required engine checks have been satisfactorily conducted.
8. Any navigational discrepancies onboard the vessel.

Contact Los Angeles Pilots on Channel 73 or Long Beach Pilots on Channel 12 to arrange pilot service.

Limit their 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 machinery has been successfully tested ahead and astern, as required by 33CFR 164.25
5. Maintain a minimum vessel separation of 1/4 nm.

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

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

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 and route upon departure.
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.

Sea Approaches – CAUTION

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

1. Passage of Los Angeles and Long Beach sea buoys.
2. Transit of Los Angeles and Long Beach Pilot Boarding Areas.
3. Anchorage G, outside the breakwater.

VESSEL SPEED LIMITS

These speeds restrictions reflect favorable circumstances and conditions and shall be adjusted for safety based on weather and tidal conditions, vessel maneuvering characteristics, traffic density, construction/dredging and other possible conditions and circumstances.

Tank Vessels:

Precautionary area (approach to port): 12.0 kts

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

Displacements less than 60,000 metric tons: 8.0 kts

Displacements of 60,000 metric tons and more: 6.0 kts

Other than Tank Vessels:

Precautionary area (approach to port): 12.0 kts

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

Long Beach (LB Port Tariff):

Within the Main Channel between the breakwater entrance and light 6 10.0 kts

Everywhere else in the harbor: 6.0 kts

Los Angeles (LA Port Tariff):

Outer Harbor (between the breakwater and Reservation Point) if draft greater than 1.5 meters: 10.0 kts

West Channel, Fish Harbor, marinas, yacht anchorage 4.4 kts

Everywhere else in the harbor..... 6.0 kts

See, Port Tariff for speed limits for vessels that have drafts of 5 feet (1.5 meters) or less.

TUG ESCORT/ASSIST FOR TANK VESSELS (Chapter XII)

Overview: "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 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.

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.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

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

1. contacting the escort tug operator to confirm the number and position of the escort tug(s); and
2. establishing the radio frequency to be used; and
3. establishing the destination of the tank vessel; and
4. discussing any other pertinent information that the master/pilot and escort tug operator deem necessary.

TANK BARGE AND TUG MATCHING CRITERIA

Refer to Chapter XII of the Harbor Safety Plan

TANKER FORCE SELECTION MATRIX

| TANKER FORCE SELECTION MATRIX | |
|--------------------------------------|--|
| Tanker Displacement | Forces For Tug(s) Tethered at the Stern (See Notes Below) |
| 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.

Only tractor type tugs may be employed to meet the requirements of the Tanker Force Selection Matrix.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

Any escort tug(s) employed to meet the “Forces For Tug(s)” requirements in the Tanker Force Selection Matrix shall have a pulling power as follows:

1. Laden tankers with displacements less than 180,000 metric tons must employ at least one tractor tug that has sufficient power to satisfy the “Forces-For-Tug(s)” requirements in the Tanker Force Selection Matrix.
2. Laden tankers with displacements equal to or greater than 180,000 metric tons may employ two tugs that have sufficient combined power to satisfy the “Forces-For-Tug(s)” requirements in the Tanker Force Selection Matrix, provided that:
 - both tugs have bollard pull ratings of 45 short tons or more, and
 - a team towing configuration is used. A “team towing configuration” is the practice of running two tugs in tandem on aft leads.

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, the contemplated movement of the vessel or other conditions or circumstances so require.

For Information on Tugs Employed in LA/LB - *See Appendix C.1*

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

UNDER-KEEL CLEARANCE (Chapter XIV)

Masters and pilots should use their vessel's deepest draft in still water when calculating under-keel clearance. 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; and
5. Weather impact on water depth.

Port of Los Angeles

1. Between Los Angeles Approach Channel Lighted Buoy #1 and Los Angeles Main Channel Buoy #11, minimum under-keel clearance before correction for roll and pitch is 10 percent of vessel's draft.
2. In the channel between Los Angeles Main Channel Buoy #11 and a position off the designated berth, minimum under-keel clearance is 2.0' (0.61 m).
3. In the final approach to the berth, and while at berth, the vessel must always remain afloat.
4. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel clearance is 3.0' (0.91 meters).

Port of Long Beach

1. Between the Long Beach sea buoy and the Long Beach Channel Buoy #3, minimum under-keel clearance before correction for roll and pitch is 10 percent of vessel's draft.
2. In the channel between the Long Beach Channel Buoy #3 and position off the designated berth, minimum under-keel clearance is 2.0' (0.61 m).
3. In the final approach to the berth, and while at berth, vessel must always remain afloat.
4. At anchorages inside the breakwater, minimum under-keel clearance is:
 - a. 4.0' (1.22 m) for Anchorages B-7 and B-11 when vessel's draft is 50' (15.24 m) or more, and
 - b. 2.5' (0.76 m) for all other anchorages.
5. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel clearance is 3.0' (0.91 m).

Tank vessel masters and operators should also be guided by the under-keel clearance regulations for tank vessels contained in 33 CFR 157.455. Chapter XIV of the Harbor Safety Plan includes formulas for calculating the increase in draft due to pitch or list.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

ANCHORING PROCEDURES (Chapter IV)

In addition to observing all port tariffs and U.S. Coast Guard regulations, the Master of any commercial vessel at anchor shall implement the following Standards of Care:

1. Check frequently to ensure the vessel is not dragging anchor.
2. When winds are forecasted and/or observed at 35 knots or greater in the AOR (including wind gusts), vessels shall ensure their propulsion plant is placed in immediate standby and a 2nd anchor, if installed, is made ready to let go.
3. VTS will not assign an anchorage in the first row of the Golf and Foxtrot anchorages (G-1 through G-3 and F-1 through F-4) to tankers or vessels 200 meters length overall or greater.
4. VTS will not assign anchorage G-6 to vessels 300 meters length overall or greater.
5. Golf-1 and Foxtrot-1 anchorages are established as “bail out” anchorages and only used for emergency purposes (including tankers and vessels 200 meters length overall or greater, dependent on vessels’ draft).
6. Sierra Foxtrot anchorages are designated for deep draft vessels and vessels engaged in hull cleaning operations.
7. Deep draft vessels 15.2 meters (50 feet) or greater that do not require a Sierra Foxtrot anchorage due to their draft will be assigned to anchorages F-11 through F-16. Anchorage assignments will be assigned from South to North dependent on the vessels’ draft and anchorage availability.

General Anchoring Guidelines OUTSIDE the federal breakwater:

1. VTS manages and monitors the anchorages outside the federal breakwater (6 in the “Golf” area, 16 in the “Foxtrot” area, and 3 in the "South Foxtrot" area).
2. Any vessel wanting to use one of these anchorages shall advise VTS on VHF-FM Channel 14 and be assigned an anchorage by the VTS.
3. VTS will not provide shoreside radar direction during anchoring. However, VTS will offer, on request, latitude and longitude, or ranges and bearings, from either the Los Angeles Light or Long Beach Light, to the center of a particular anchorage site.
4. Vessels do not require tug assistance to anchor outside the federal breakwater.
5. Vessels do not require a pilot to anchor outside the federal breakwater.
6. The HSC has established anchorage assignment policies and use guidelines for the federal anchorages at Avalon Harbor, Catalina Island (Appendix G).

General Anchoring Guidelines INSIDE the federal breakwater:

1. Currently, the POLB has the following anchorages available inside the breakwater: 12 in the “Bravo” area; 2 in the “Charlie” area; 9 in the “Delta” area; and 5 in the “Echo” area. Jacobsen Pilot Service (JPS) (Long Beach Pilot Station) manages and monitors these anchorages for the POLB in partnership with the USCG.

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2. The Long Beach Pilot station provides shoreside radar assistance to commercial vessels anchoring inside the breakwater. This assistance is particularly important when the anchorage areas have restricted visibility or are congested.
3. Laden tankers and all vessels with a draft of 15.2 meters (50 feet) or greater anchoring within the federal breakwater will use at least one tug to ensure proper placement of the anchor and chain, as well as to assist in turning the vessel at the anchorage site. All other commercial vessels will use tug assistance as determined by the master and pilot.
4. Vessels requiring a pilot by port tariff will utilize a POLB or POLA pilot when anchoring. Foreign and U.S. vessels sailing on articles shall seek authorization from the COTP before opting not to use a pilot.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

COMMUNICATIONS (Chapter VIII)

Operational communications in the LA/LB Harbor area are conducted by marine VHF radio and commercial telephone and originate from five principle sources: VTS, Los Angeles Pilots, Long Beach Pilots, Port of Long Beach Security and the US Coast Guard Sector LA/LB. All VHF radio users are encouraged to minimize voice traffic on all channels, maintain circuit discipline and broadcast on "low power" whenever possible.

SMALL CRAFT (Chapter X)

The Harbor Safety Plan defines “small craft” as pleasure vessels, commercial fishing vessels, and sportfishing boats.

Small craft should follow the below Standards of Care to ensure the safe operation of their vessels while in and around the port. Small craft operators should be sensitive to the fact that large commercial vessels are severely limited in their ability to stop or alter course and many times are limited in their ability to sight small vessels due to their size. COLREGS Rule 9 applies to the waters outside the federal breakwater, including the deep-water ship channel, and Inland Rule 9 applies to all navigable waters inside the federal breakwater. Small craft should not loiter in the pilot boarding areas outside of each of the breakwater entrances.

1. Ensure your vessel is safe before getting underway
2. Ensure your vessel is seaworthy
3. Keep flares and distress calling equipment readily accessible
4. Comply with the Rules of the Road – especially Rule 9
5. Avoid passing larger vessels close aboard
6. Pass tugs with caution
7. Know where the Traffic Lanes and the Regulated Navigational Area are
8. Know how and when to monitor VHF Channels 16, 14 and 13
9. Know your vessel's position
10. Be an informed mariner
11. Practice man overboard procedures

Small craft operating in restricted visibility should:

1. Take additional navigating precautions
2. Use a radar reflector
3. Maintain an accurate position
4. Reduce your speed to match existing conditions
5. Maintain a listening watch on VHF radio

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

INCLEMENT WEATHER: STANDARDS OF CARE FOR VESSEL MOVEMENTS (Chapter XVII)

A. Purpose: 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 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 COLREGS. It is recognized; however, *under certain circumstances, vessels may safely transit during inclement weather provided that equivalent safety levels are applied.*

B. Definition of Inclement Weather:

1. 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).

2. Restricted Visibility: Whenever conditions of visibility fall below the following:

- a. For tankers 150,000 DWT or greater: 1 nautical mile
- b. For tankers greater than 60,000 DWT, but less than 150,000 DWT: 0.75 nautical mile
- c. For all other vessels 45’ draft or more: 0.75 nautical mile
- d. For all other tankers and petroleum barges: 0.5 nautical mile
- e. For all other vessels: Three (3) times vessel’s LOA

C. 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 contained in Section 3 above.

1. Piloted Vessel Guidelines:

- a. General:** When inclement weather exists along a vessel’s intended route:
 - i. The respective pilot station management will be notified, and
 - ii. Prior to commencing a transit, the operating pilot will conduct a risk analysis that

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

includes consultation with a second pilot. This expanded participation is a key risk reduction measure.

b. Reduced Visibility:

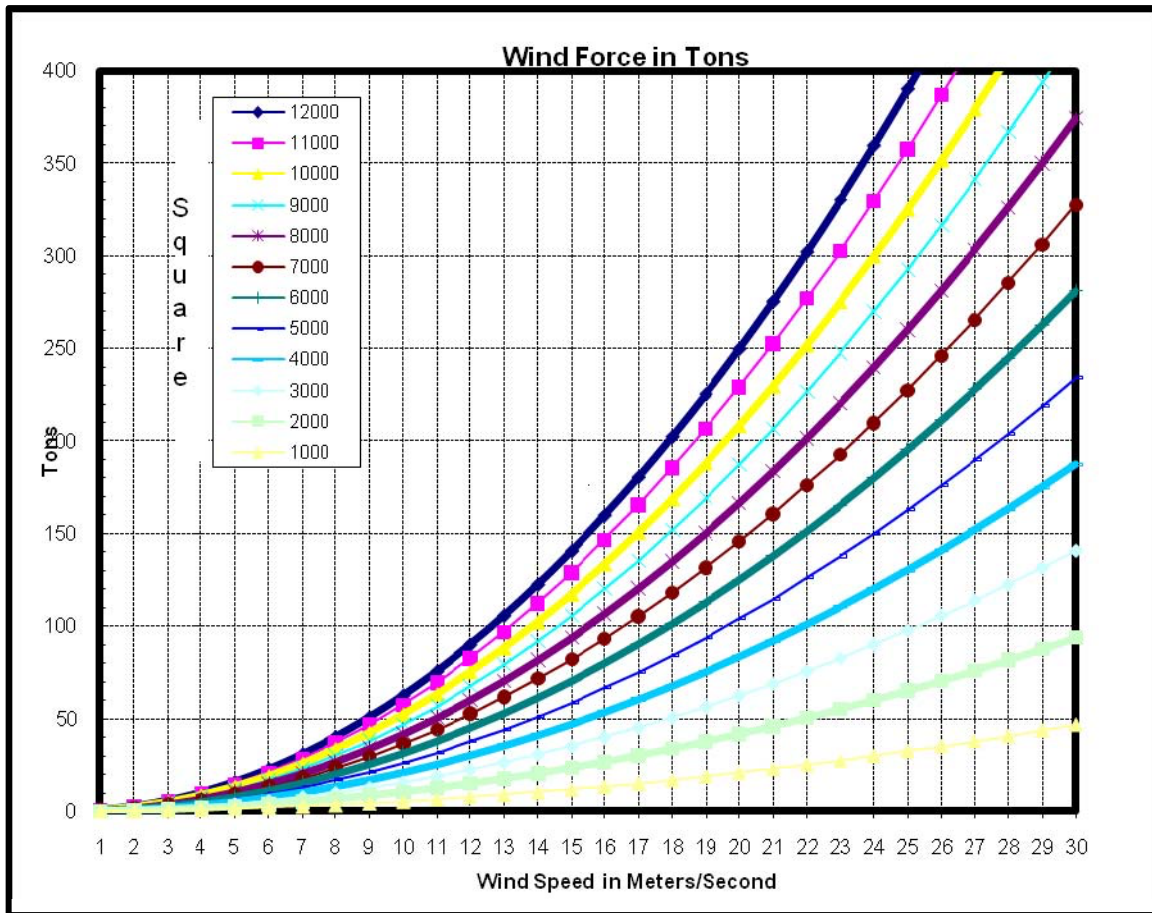
- i. When visibility inside the federal breakwater is less than 0.5 mile, the respective vessel traffic center (VTC) will impose one-way traffic restrictions when and where appropriate.
- ii. When commencing a vessel movement in reduced visibility, as defined in Section 2.b. above, shoreside radar assistance and carry-on enhanced navigational tools such as a Portable Pilot Unit (PPU) shall be readily available for use.
- iii. 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 or anchoring, reducing speed, enlisting shore-based radar support and securing additional tug assistance.

- c. 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: $(total\ area/1000) \times (V^2/18) = wind\ effect\ in\ tons$ where “V” is the wind speed in **meters/second**]:

- i. 1,000 square meters – 60 knots
- ii. 5,000 square meters – 28 knots, and
- iii. 10,000 square meters – 18 knots

iv. Wind Force Chart



2. Non-Piloted Vessel Guidelines:

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

D. Application of Equivalent Safety Levels: When a vessel master intends to commence a transit during inclement weather, at a minimum, the following equivalent safety levels should be adhered to:

- 1. Vessels 1600 GT or greater:
 - a. 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
 - b. Have shore-based radar immediately available to assist the vessel.

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

2. All vessel masters and pilots (if employed) should make a positive evaluation of the following:
 - a. The number of vessels transiting within the harbor and expected traffic concentrations,
 - b. Planned transit speeds appropriate for the prevailing conditions,
 - c. The maneuvering characteristics of the vessel,
 - d. The quality of the vessel's radar and navigation systems
 - e. The vessel's size and draft in relation to the area to be transited,
 - f. Number, type and power of assist tugs,
 - g. Number and power of bow/stern thrusters available,
 - h. Maneuvering room at various stages of the transit,
 - i. Quality of the vessel's bridge team
 - j. Special circumstances to be encountered (e.g. dredging projects, obstructions).
 - k. Wind direction in relation to planned maneuvers.

E. 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 item 4 (including shore-based radar support) shall make the following broadcast to the VTS on VHF Channel 14 at least 15 minutes prior to getting underway:

1. *“Vessel name/call sign, making our inclement weather COTP notification, as per guidance within the Harbor Safety Plan, that we intend to transit from vessel location to intended destination“*
2. In addition, a safety broadcast will be made on Channel 13 and the vessel will coordinate its movement with the appropriate pilot station and the VTS.

NAVIGATION STANDARDS OF CARE (Chapter XVIII)

The Harbor Safety Committee recommends a 0.5 nautical mile minimum separation for vessels subject to 33 CFR 165.1152(d) navigating in the San Pedro Regulated Navigation Area (RNA): To promote safety in the San Pedro Bay Regulated Navigation Area (RNA), the Vessel Traffic Service LA-LB (VTS LA-LB) has recommended the following best practice:

VESSEL OPERATING PROCEDURES (Best Maritime Practices)

In addition to observing all port tariffs and U.S. Coast Guard regulations, the following best practice should be observed for commercial vessels subject to the RNA regulations outlined in 33 CFR 165.1152 (paragraph d), which includes power driven vessels of 1600 or more gross tons, towing vessel of 8 meters (approximately 26 feet) or over in length engaged in towing, or vessels of 100 gross tons and upward carrying one or more passengers for hire:

- 1. These vessels navigating within the RNA should maintain a minimum separation from other underway vessels of at least 0.5 nm unless such vessel:
 - a. Has a pilot on board (minimum separation is pilot's discretion), or*
 - b. Is within an anchorage area.**
- 2. VTS LA-LB may recommend vessels navigating within the RNA to maintain greater than 0.5 nm separation.*

This increased voluntary minimum separation is a local best practice designed to provide safe distance between vessels due to increased size of vessels navigating in the RNA. This is a voluntary measure recommended to promote vessel safety.

I. GEOGRAPHICAL BOUNDARIES

A. ADVISORY ZONE

1. General Description: Please refer to the attached chartlets at the end of this chapter, showing the geographical boundaries of the Plan. The Plan covers:
 - a. The navigable water areas within San Pedro Bay that are under the jurisdiction of the Cities of Los Angeles and Long Beach; and
 - b. Navigable waters outside the breakwaters encompassed by the arc of a circle having its center at Point Fermin Light, drawn from a position on the shore near Newport Beach clockwise to the shore near Santa Monica. This circle's radius is twenty-five (25) nautical miles.
2. Traffic Separation Scheme: In September 2000, an amended International Maritime Organization-approved Traffic Separation Scheme (TSS) was established in San Pedro Bay. The amended TSS was established as the result of a port access route study, which evaluated vessel routing and traffic management measures. The amended TSS routes commercial vessels farther offshore, providing an extra margin of safety and environmental protection in the San Pedro Channel area and the entrances to the Ports of Los Angeles and Long Beach. The TSS comprises designated traffic lanes and associated separation zones for the approaches to the LA/LB Harbors. Refer to National Oceanographic and Atmospheric Administration (NOAA) Chart 18746. The International Maritime Organization (IMO) amended the Traffic Separation Scheme (TSS) in the Santa Barbara Channel (also known as the Northern Approach) and the approach to the ports of Los Angeles and Long Beach effective June 1, 2013. The TSS amendment reduced the width of the separation zone from 2 nautical miles (nm) which shifted the inbound lane 1 mile further from shore and away from known whale concentrations. The outbound lane was unchanged and remained in the former location. Narrowing the separation zone is expected to reduce the co-occurrence of ships and whales while maintaining navigation safety. The IMO approved coordinates and graphic depicting the changes follow.
 - a. Northern Approach
 - i. A line connecting the following geographical positions defines the separation zone:

| | |
|---------------|------------|
| a) 33°36.5N, | 118°17.7'W |
| b) 33°36.5'N, | 118°20.6W |
| c) 33°48.9N, | 118°46.6W |
| d) 33°50.0N, | 118°46.5W |
| e) 33°37.7N, | 118°20.6W |
| f) 33°37.7'N, | 118°17.7W |

- ii. A one-mile wide traffic lane is established on each side of the separation zone.
- iii. The main traffic directions are: 090°T-270°T and 120°T-300°T

b. Southern Approach

- i. A separation zone, two miles wide, is established bounded by a line connecting the following geographical positions:

- | | |
|---------------|------------|
| a) 33°35.5'N, | 118°10.3'W |
| b) 33°35.5'N, | 118°12.8'W |
| c) 33°19.7'N | 118°03.5'W |
| d) 33°19.0'N | 118°05.6'W |

- ii. A one-mile wide traffic lane is established on each side of the separation zone.
- iii. The main traffic directions are: 160°T and 340°T.

c. Voluntary Western Traffic Lanes

- i. To address the safety concerns created by increased traffic south of the Channel Islands, on October 6, 2009, the Los Angeles / Long Beach Harbor Safety Committee (LA/LB HSC) endorsed voluntary traffic lanes in the area south of the Channel Islands (referenced herein as the “voluntary western traffic lanes”). The LA/LB HSC developed these lanes as a voluntary measure to promote vessel safety.

The voluntary western traffic lanes were not developed using processes established under U.S. federal law or by the IMO. As such, these lanes have not been reviewed or approved by any U.S. Federal Authority, including the U.S. Coast Guard, or the IMO.

Since the voluntary western traffic lanes are **not** an IMO approved traffic separation scheme, International Regulations for Avoiding Collisions at Sea (COLREGS) **Rule 10 does not apply.**

Mariners should exercise due caution when choosing to operate south of the Channel Islands and within the Voluntary Western Traffic Lanes.

- ii. The following is a description of the Voluntary Western Traffic Lanes:
 - 1) A precautionary area for the Voluntary Western Lanes is bounded by a line connecting the following geographical positions:

| | |
|----------------|-------------|
| a) 33°35.50'N, | 118°20.81'W |
| b) 33°35.50'N, | 118°36.35'W |
| c) 33°42.90'N | 118°36.35'W |

- 2) A separation area bounded by a line connecting the following geographical positions.
 - a) 33°36.50'N, 118°36.35'W
 - b) 33°38.60'N, 119°05.50'W
 - c) 33°40.60'N 118°05.50'W
 - d) 33°38.50'N 118°36.35'W

- 3) Traffic westbound to transit between the separation area and a line connecting the following geographical positions:
 - a) 33°39.50'N, 118°36.35'W
 - b) 33°41.60'N, 119°05.50'W

- 4) Traffic eastbound to transit between the separation area and a line connecting the following geographical positions:
 - a) 33°36.50'N, 118°36.35'W
 - b) 33°37.60'N, 119°05.50'W

3. Precautionary Area/Regulated Navigation Area: The LA-LB Precautionary Area/Regulated Navigation Area comprises the waters enclosed by a line connecting Point Fermin Light (33-42.3N, 118-17.6W) along the shoreline to the San Pedro breakwater and the middle breakwater (following the COLREGS demarcation lines) to Long Beach Channel entrance light "2" (33-43-4N, 118-10.8W) southeast to 33-37.7N, 118-06.6W; southwesterly to 33-35.5N 118-08.8W; west to 33-35.5N, 118-17.6W; north to the point of origin.

4. The Precautionary Area/Regulated Navigation Area and portions of the TSS in the western and southern approaches to the LA/LB Harbors lie within the VTS Area of Responsibility.

Refer to the *Los Angeles-Long Beach, Vessel Traffic Service (VTS), User Manual for specific requirements while operating within these geographic boundaries.*

B. STATUTORY ZONE: California three-mile limit.

C. APPROACHES: Those waters of the San Pedro Bay outside the federal breakwater.

D. HARBOR: Waters inside federal breakwater.

1. Los Angeles Harbor: Legal limits of city.
2. Long Beach Harbor: Legal limits of city.

E. REFERENCE CHARTS AND PUBLICATIONS: Other useful charts and publications include:

1. NOAA/NOS United States Coast Pilot 7.

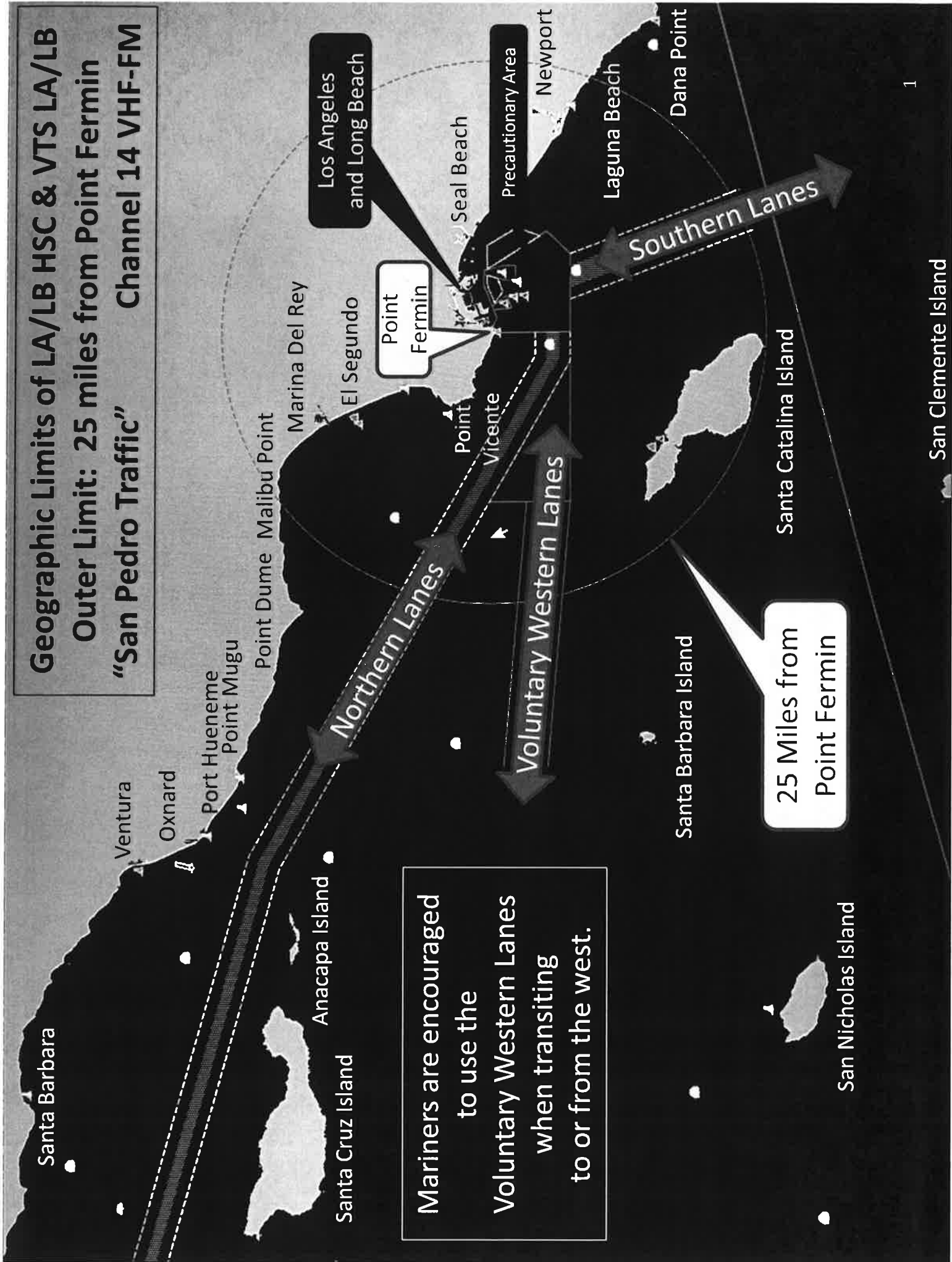
2. U.S. Coast Guard, Light List, Volume VI, Pacific Coast and Pacific Islands.
3. NOAA Chart 18740, San Diego to Santa Rosa Island.
4. NOAA Chart 18746, San Pedro Channel, Dana Point Harbor.
5. NOAA Chart 18749, San Pedro Bay, Anaheim Bay – Huntington Harbor.
6. NOAA Chart 18751, Los Angeles and Long Beach Harbors.

Los Angeles/Long Beach Harbor Safety Plan

GEOGRAPHIC LIMITS
OF THE
HARBOR SAFETY PLAN

Los Angeles/Long Beach Harbor Safety Plan

Geographic Limits of LA/LB HSC & VTS LA/LB
Outer Limit: 25 miles from Point Fermin
“San Pedro Traffic” Channel 14 VHF-FM



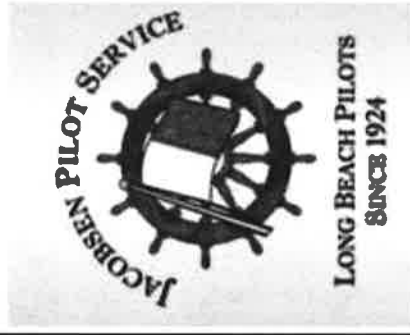
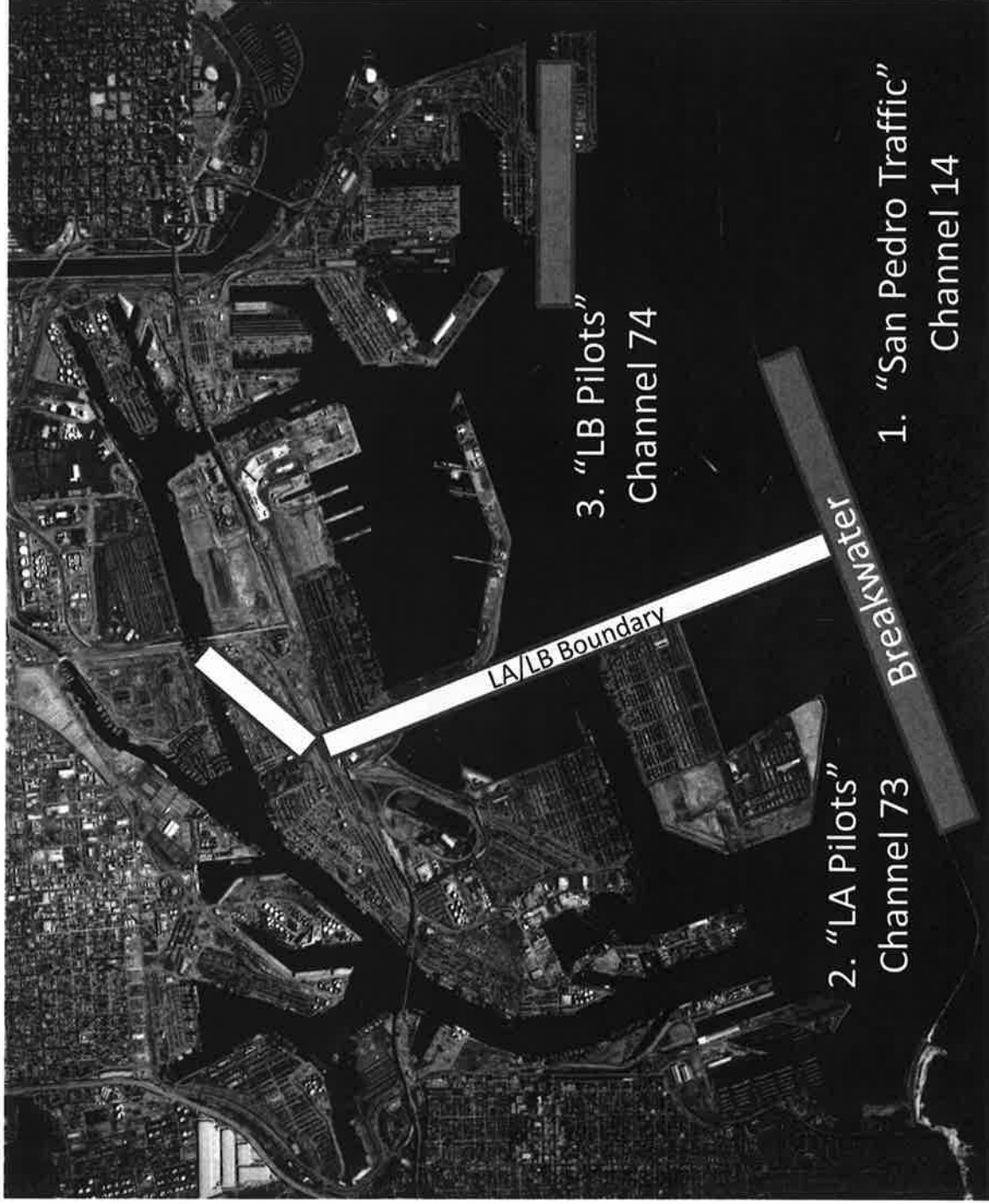
Mariners are encouraged to use the Voluntary Western Lanes when transiting to or from the west.

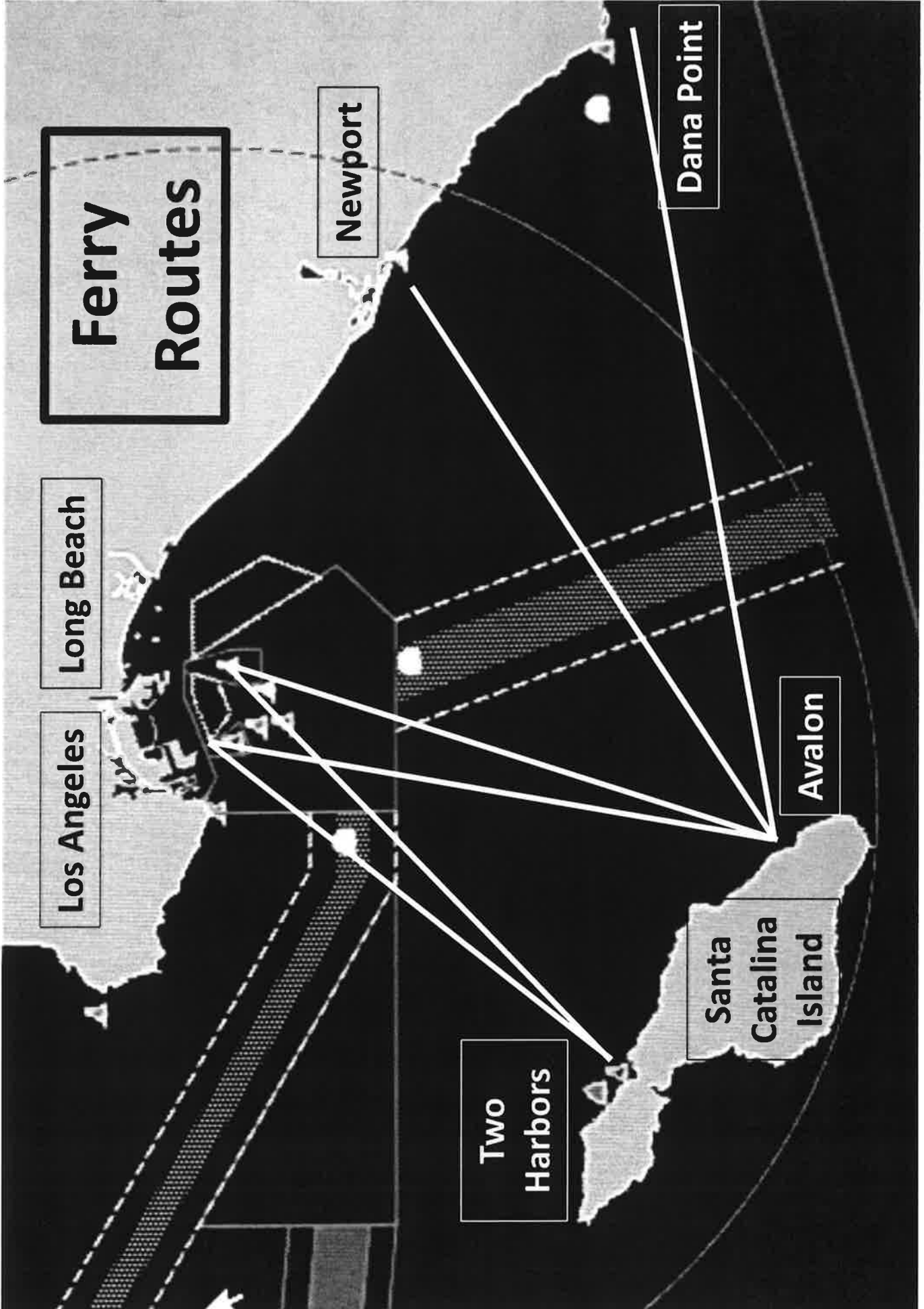
25 Miles from Point Fermin

Ports of LA & LB are divided into 3 VTS Zones

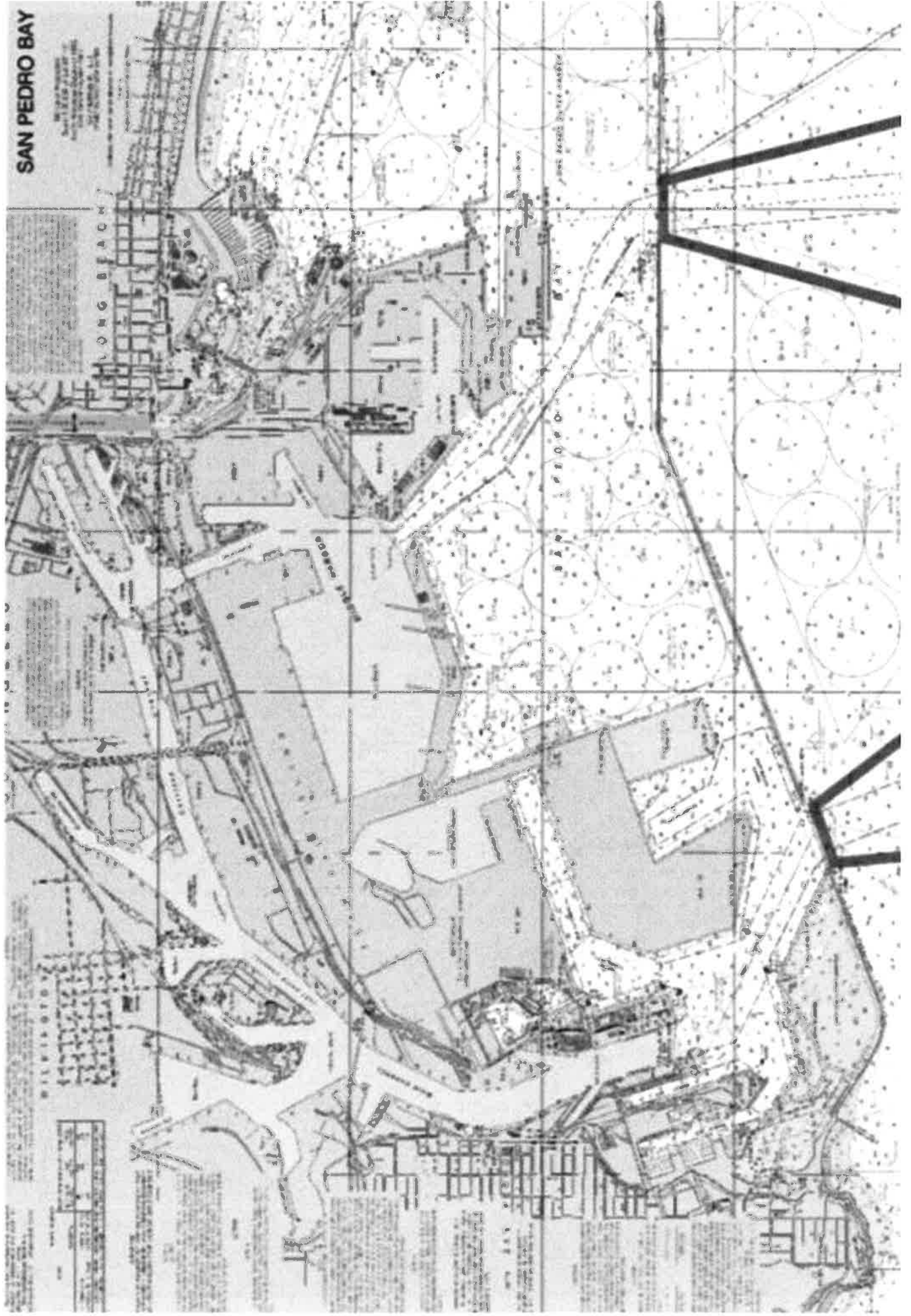
The Marine Exchange operates the VTS zone outside breakwater, out to 25 miles.

The LA and LB Pilots operate the VTS zones inside breakwater





Los Angeles and Long Beach Harbors



II. GENERAL WEATHER, TIDES AND CURRENTS

A. WEATHER: Harbor area fog is most likely in April and from October through February, when visibility over the bay is below 0.5 mile for 7-10 days per month. Fog is mostly a land (radiation) type that drifts out and worsens in the late night and early morning. Smoke from nearby industrial areas often adds to its thickness and persistence. Along the shore, fog drops visibility to less than 0.5 mile on 3 to 8 days per month from August through April, usually worst in December.

Winds vary, particularly in fall and winter. They are strongest during this period when the Santa Ana winds may blow. This offshore desert wind, though infrequent, may be violent. It occurs when a strong high-pressure system sits over the plateau region and generates a Northeasterly to Easterly flow over Southern California. Aside from weather forecasts, one gets little warning of a Santa Ana's onset: good visibility and unusually low humidity often prevail for some hours before it arrives. Shortly before arriving on the coast, the Santa Ana may appear as an approaching dark-brown dust cloud. This positive indication often gives a 10-to-30 minute warning. The Santa Ana may come at any time of day and can be reinforced by an early morning land breeze or weakened by an afternoon sea breeze.

Winter storms produce strong winds over San Pedro Bay, particularly from Southwesterly through Northwesterly. Winds of 17 knots or greater occur about 1-2% of the time from November through May. Southwesterly through Westerly winds begin to prevail in the spring and last into early fall. The following NOAA Web site gives an overall view of weather and climatic change:

<http://www.weather.gov/>

B. TIDES: The mean range of tide is 3.8' for Los Angeles Harbor and 3.7' for Long Beach Inner and Outer Harbors. The diurnal range is about 5.4' for both harbors and a range of 9' may occur at maximum tide. The time of tide is about the same for both harbors. Real and predicted tides along with wind speed, air pressure, and air/water temperature can be obtained from the following NOAA Web sites:

<https://tidesandcurrents.noaa.gov/>

Select tide station via the state maps. High water conditions by individual port community are noted under High Water Conditions under the same web site.

Yearly tide predictions are listed under:

https://tidesandcurrents.noaa.gov/tide_predictions.html

C. CURRENTS: The tidal currents follow the axis of the channels and rarely exceed one knot. The LA/LB Harbors are subject to seiche and surge, with the most persistent and conspicuous oscillation having about a one-hour period. Near Reservation Point, the prominent hourly surge causes velocity variations as great as one knot. These variations often overcome the lesser tidal current, so that the current ebbs and flows at half-hour intervals. The more-restricted channel usually causes the surge through the Back Channel to reach a greater velocity at the east end of Terminal Island, rather than west of Reservation Point. In the Back Channel, hourly variation may be 1.5 knots or more. At times the hourly surge, together with shorter, irregular oscillations, causes a very rapid change in water height and current direction/velocity, which may endanger vessels moored at the piers.

For additional navigational information, refer to the United States Coast Pilot 7, 2022 (54th Edition), Pacific Coast: California; Chapter 4, Paragraphs 309 and 310, and Charts 18751, 18746, 18749 San Pedro Bay. *Note; Chart 18751 is scheduled to be cancelled on 8/30/2023.*

D. PHYSICAL OCEANOGRAPHIC REAL TIME SYSTEM (PORTS): PORTS is a system of environmental sensors and supporting telemetry equipment that gathers and disseminates accurate “real time” information on tides, visibility, winds, currents and sea swell to maritime users, to assist in the safe and efficient transit of vessels in a port area. The PORTS system in the Ports of Los Angeles and Long Beach consists of 12 stations. For a current list of active stations, go to tidesandcurrents.noaa.gov/ports and follow the "L.A./Long Beach" link. For mobile access, "mobile.tidesandcurrents.noaa.gov" is also available."

*** RECOMMENDATION**

The Harbor Safety Committee recommends that a statewide uniform system of PORTS, certified by NOAA, be established in California waters. PORTS should be permanently financed by the State of California and/or NOAA as there is broad public benefit in terms of marine safety, protecting the environment, use by recreational boaters, academia, and preventing oil spills in California waters. Safety of navigation in our harbors is highly dependent upon real time tidal, current, and wind information. OSPR, as an agency, should continue its oversight role.

III. AIDS TO NAVIGATION

A. AIDS TO NAVIGATION (AtoN) OVERVIEW

- 1. Reporting AtoN Discrepancies:** If you see an AtoN discrepancy, (buoy off station, light extinguished, etc.) contact the Coast Guard Sector at (310)521-3800. Your timely report could prevent an accident.

The Coast Guard will list AtoN changes in the Local Notice to Mariners (LNTM) to allow for nautical chart updates.

Use the following numbers to address AtoN concerns:

Discrepancy reports:

| | |
|----------------------------|----------------|
| Captain of the Port (COTP) | (310) 521-3800 |
|----------------------------|----------------|

General Local AtoN concerns:

| | |
|--------------------------------------|----------------|
| Chief, Waterways Management Division | (310) 521-3860 |
|--------------------------------------|----------------|

CG Waterways Management Office (oan) in Alameda:

| | |
|---------------------------|---------------------|
| Branch Chief | (510) 437-2975 |
| AtoN Section Chief | (510) 437-2968 |
| AtoN Changes/WAMS | (510) 437-2982 |
| Notice to Mariners/charts | (510) 437-2970/2981 |
| Private AtoN | (510) 437-2983 |
| Bridge Section Chief | (510) 437-3516 |

- 2. AtoN Objectives:** The Coast Guard develops, establishes, operates, and maintains AtoN systems to:
 - a. Assist the mariner in determining position.
 - b. Assist the mariner in determining a safe course.
 - c. Warn the mariner of dangers and obstructions.
 - d. Promote safe and economic movement of commercial vessel traffic.
- 3. U.S. AtoN System:** This system includes buoys and beacons conforming to the International Association of Lighthouse Authorities guidelines, and other short range AtoN, intended for use with nautical charts. For additional important information, see the Light List Vol. VI and U.S. Coast Pilot 7.

The U.S. AtoN System uses several types of marks, including lateral marks, preferred channel marks, non-lateral marks, safe water marks, special marks and information and regulatory marks.

- 4. Establishing, Reviewing and Modifying AtoN Systems:** Coast Guard AtoN primarily mark channels and other areas of safe water in order to facilitate marine transportation. Specific criteria for AtoN include promoting safety, aiding national defense, aiding navigation, preventing collisions, preventing wrecks, serving commerce, assessing the amount and nature of traffic, benefiting the public and preserving natural resources. The Coast Guard considers the needs of all categories of users as well as the operating environment; e.g. weather conditions, channel lengths and widths, traffic density and traffic patterns. Benefits evaluated include, e.g., number of vessels moving through the area, vessel tonnage, cargo value and nature, level of economic activity, pleasure boating and fishing.

To meet user needs, the Coast Guard conducts a Waterways Analysis and Management System (WAMS) review of each district waterway on a five-year cycle. WAMS comprehensively analyzes the quality of each waterway's AtoN system. During this process, the Coast Guard contacts waterway users for their input and feedback.

The Office of Aids to Navigation (oan) in Alameda acts as clearinghouse for all AtoN issues in the LA/LB area. However, the COTP, the local representative, can collect, review and forward information to Alameda. The Coast Guard welcomes comments on the AtoN system at any time, independent of the WAMS cycle. The Aids to Navigation Section evaluates recommendations for changes to the AtoN system using the above criteria.

To propose AtoN changes, write to:

Commander (oan)
Eleventh Coast Guard District
Building 50-6
Coast Guard Island
Alameda, CA 94501-5100

The Coast Guard normally announces proposed AtoN changes in the LNTM, with a request for feedback from the system users. The LNTM usually publishes AtoN changes at least 30 days before they occur.

- 5. Coast Guard Light List:** The Coast Guard Light List, Vol. VI, Pacific Coast and Pacific Islands, includes information on all AtoN in the LA/LB area. The Coast Guard assigns its Light List numbers to its AtoN to make the Light List easy and clear for users. The Light List also includes such information as the approximate position (to facilitate locating an AtoN on a nautical chart), light characteristic, height above the water (for fixed AtoN), nominal range and general remarks such as fog signal characteristic,

RACON characteristic, and arc of visibility. The Light List does not include minor, private AtoN without navigational significance, such as mooring buoys and racing marks.

The Light List is published annually and sold by LA/LB-area nautical agents and by:

Superintendent of Documents
U.S. Government Printing Office
Washington, DC 20402
Stock Number 050-012-00437-4

Or available for download at:

<http://www.navcen.uscg.gov/pdf/lightlists/Lightlist%20V6.pdf>

- 6. LNTM:** The Eleventh Coast Guard District publishes a weekly LNTM that includes Light List and Chart updates. Use this LNTM to keep your Light List and nautical charts current. The LNTM covers AtoN, charts, channel depths, marine construction, military operations, bridge repair/construction, significant marine events and other information of interest to mariners.

The LNTM is now issued exclusively via the Internet. Go to:

<http://www.navcen.uscg.gov/?pageName=lnmDistrict®ion=11>

to view the LNTM or for e-mail notification regarding; LNM updates, Light List updates, and other marine related information updates.

A Navigation Information Service Watchstander can answer questions 24 hours a day at (703) 313-5900.

- 7. Broadcast Notice to Mariners (BNTM):** BNTMs disseminate information of interest to mariners that is received too late to be published in the LNTM, such as AtoN discrepancies. BNTMs are repeated until either the LNTM confirms them or they are no longer valid.

B. NAVIGATIONAL HAZARDS:

1. Navigators can easily see the LA/LB Harbors' fixed navigational hazards: breakwaters protecting the outer harbor anchorage areas from the open sea and various land masses which comprise the harbor complex. These hazards are both easily visible by radar and currently well-lighted. See, Harbor Charts 18751, 18749 and LNTMs for most current information.
2. Four bridges cross the navigation channels of both ports. All have restricted vertical clearances, and two have restricted horizontal clearances as well. Also, overhead power

lines with restricted vertical clearance cross Cerritos Channel. Chapter IX describes these hazards in detail.

IV. ANCHORAGES

A. OVERVIEW: The Anchorage Management Guidelines in this chapter are the operating procedures and Standards of Care which the LA/LB ports expect mariners to follow in anchoring vessels. In addition to these Committee guidelines, vessels at anchor shall observe all Port Tariffs and Coast Guard regulations and procedures for anchoring in U.S. waters. **Coast Guard regulations (33 CFR Part 110.214) address identification of specific anchorage regulations, watchstanding, propulsion/anchor readiness, anchorage areas, and authorized activities such as lightering, bunkering, and explosive loading not repeated here.**

B. GENERAL ANCHORING GUIDELINES OUTSIDE THE FEDERAL BREAKWATER

1. VTS manages and monitors the anchorages outside the federal breakwater (6 in the “Golf” area, 16 in the “Foxtrot” area, and 3 in the "South Foxtrot" area).
2. Any vessel wanting to use one of these anchorages shall advise VTS on VHF–FM Channel 14 and be assigned an anchorage by the VTS.
3. VTS will not provide shoreside radar direction during anchoring. However, VTS will offer, on request, latitude and longitude, or ranges and bearings, from either the Los Angeles Light or Long Beach Light, to the center of a particular anchorage site.
4. Vessels do not require tug assistance to anchor outside the federal breakwater.
5. Vessels do not require a pilot to anchor outside the federal breakwater.
6. The HSC has established anchorage assignment policies and use guidelines for the federal anchorages at Avalon Harbor, Catalina Island (Appendix G).

C. GENERAL ANCHORING GUIDELINES INSIDE THE FEDERAL BREAKWATER

1. Currently, the POLB has the following anchorages available inside the breakwater: 12 in the “Bravo” area; 2 in the “Charlie” area; 9 in the “Delta” area; and 5 in the “Echo” area. Jacobsen Pilot Service (JPS) (Long Beach Pilot Station) manages and monitors these anchorages for the POLB in partnership with the USCG.
2. The Long Beach Pilot station provides shoreside radar assistance to commercial vessels anchoring inside the breakwater. This assistance is particularly important when the anchorage areas have restricted visibility or are congested.

3. Laden tankers and all vessels with a draft of 15.2 meters (50 feet) or greater anchoring within the federal breakwater will use at least one tug to ensure proper placement of the anchor and chain, as well as to assist in turning the vessel at the anchorage site. All other commercial vessels will use tug assistance as determined by the master and pilot.
4. Vessels requiring a pilot by port tariff will utilize a POLB or POLA pilot when anchoring. Foreign and U.S. vessels sailing on articles shall seek authorization from the COTP before opting not to use a pilot.

D. **STANDARDS OF CARE:** Vessel bridge management teams should follow these Standards of Care and Good Marine Practices while at anchor in POLA/POLB (whether inside or outside the breakwater).

1. Check frequently to ensure the vessel is not dragging anchor.
2. When winds are forecasted and/or observed at 35 knots or greater in the AOR (including wind gusts), vessels shall ensure their propulsion plant is placed in immediate standby and a 2nd anchor, if installed, is made ready to let go.
3. VTS will not assign an anchorage in the first row of the Golf and Foxtrot anchorages (G-1 through G-3 and F-1 through F-4) to tankers or vessels 200 meters length overall or greater.
4. VTS will not assign anchorage G-6 to vessels 300 meters length overall or greater.
5. Golf-1 and Foxtrot-1 anchorages are established as “bail out” anchorages and only used for emergency purposes (including tankers and vessels 200 meters length overall or greater, dependent on vessels’ draft).
6. Sierra Foxtrot anchorages are designated for deep draft vessels and vessels engaged in hull cleaning operations.
7. Deep draft vessels 15.2 meters (50 feet) or greater that do not require a Sierra Foxtrot anchorage due to their draft will be assigned to anchorages F-11 through F-16. Anchorage assignments will be assigned from South to North dependent on the vessels’ draft and anchorage availability.
8. VTS may reduce anchorage capacity due to storms, during winter weather months, and/or other significant reasons to space the ships out for safety.

Los Angeles-Long Beach Anchorage Quick Reference Sheet

| Anchorage | Description / Primary Usage | Bunkering | Lightering | Comments |
|------------|------------------------------|--------------------|------------|--|
| B | Commercial Vessels | Yes | Yes | Permit required for 10+ day stay. Exception: Anchorages 7, 9, 11 have 2-day stay limit. |
| C | Commercial Vessels | w/ COTP Permission | Yes | Permit required for 10+ day stay. |
| D | Commercial and Naval Vessels | Yes | Yes | Permit required for 10+ day stay. Exception: Anchorages 5, 6, 7 have 2-day stay limit. U.S. Navy retains priority for eastern half of Anchorage D. |
| E | Commercial Vessels | w/ COTP Permission | No | Permit required for 10+ day stay. |
| F | Commercial Vessels | No | No | Outside Anchorage; no tank vessels or other vessels over 200 meters LOA in F-1 to F-4. |
| G | Commercial Vessels | No | No | Outside Anchorage; no tank vessels or other vessels over 200 meters in G-1 to G-3. No vessels over 300 meters in G-6. |
| N | Recreational Vessels | No | No | City of Long Beach Regulated |
| P | Recreational Vessels | No | No | City of Long Beach Regulated |
| Q | Recreational Vessels | No | No | City of Long Beach Regulated |
| Explosives | Explosives Anchorage | No | No | Upon Activation, no other vessels are permitted with parts of Anchorages C, D, F, and Q. Notify COTP of desire to use this anchorage. |

Catalina Anchorages

| Anchorage | Description / Primary Usage | Bunkering | Lightering | Comments |
|-----------|-----------------------------|-----------|------------|---|
| A | Commercial Vessel Anchorage | No | No | Anchorage established in 2005. VTS assigns anchorage based on established prioritization. |
| B | Commercial Vessel Anchorage | No | No | Anchorage established in 2005. VTS assigns anchorage based on established prioritization. |
| C | Commercial Vessel Anchorage | No | No | Anchorage established in 2005. VTS assigns anchorage based on established prioritization. |

V. HARBOR DEPTHS, CHANNEL DESIGN, AND PROPOSED CONSTRUCTION AND DREDGING

A. DISCUSSION: Projects that involve dredging and construction require a comprehensive design and review process that can occur years before actual site operations commence. To identify and minimize navigational safety and coordinate vessel movement issues well ahead of time, the Operations/Navigation Safety Subcommittee will keep apprised of these projects (for up to three years).

The Subcommittee will facilitate the timely assessment of navigational safety concerns during the concept stages so that appropriate modifications if any, can be made. Additionally, the Subcommittee will work with the USCG to ensure navigational risks are appropriately addressed through project modification or operational mitigation measures. The Subcommittee will review all projects for impacts to navigational safety and will:

1. Collect more information if necessary
2. Brief the full committee on “impacting” projects
3. Recommend follow-up actions such as:
 - a. Further subcommittee review
 - b. Postpone action to a later date (wait until the project concept solidifies).

B. HARBOR DEPTHS:

1. Following are the current procedures and frequency of checking harbor and berth depths at the Port of Los Angeles (POLA) and the Port of Long Beach (POLB):
 - a. Procedures: POLA/POLB checks harbor and berth depths with lead line sounding and electronic sounding equipment.
 - i. For lead line sounding, one lowers a weighted chain marked in one-foot increments into the water until it hits bottom. The number of marks counted on the chain at the water line indicates the depth, which is then tide-corrected to Mean Lower Low Water (MLLW).
 - ii. For electronic-sounding equipment, one records digitally and graphically the time it takes a sound wave to travel from an instrument near the surface to the bottom and back. This information is then tide-corrected to MLLW.
 - iii. Both ports have an automated sounding process using the latest positioning technology and a Geographic Information System (GIS). Once the harbor and berth depth soundings are complete, both ports forward data (sounding charts) to their respective Pilot Service and terminal operators. Both Ports make their separate

depth-sounding data available to NOAA. Dangers to Navigation found during the survey are reported to the USCG and then broadcasted via the Local Notice to Mariners.

- iv. When survey depths conflict with charted depths due to changes in the seafloor, the data may be provided to the Office of Coast Survey for application to NOAA Charts. Once received by Coast Survey, the data is reviewed to ensure it meets charting standards and are appropriate for chart updates. Hydrographic survey data should meet the criteria outlined in the *National Ocean Survey (NOS) Hydrographic Surveys Specifications and Deliverables*.

Information about NOS Specs and Deliverables is located at:

<https://nauticalcharts.noaa.gov/publications/standards-and-requirements.html>

Contact Mr. Jeffrey Ferguson, California Navigation Manager from NOAA's Office of Coast Survey, to discuss data submissions, charting issues or suggested changes to the Coast Pilot via email at jeffrey.ferguson@noaa.gov or cell phone: 301-351-7798.

- b. Frequency: Historically, reduced water depth due to silt settlement only minimally affects POLA and POLB. POLA and POLB check certain wharves with known shoaling problems more often. In POLB, berths are sounded at a frequency of two years to verify water depth and any maintenance dredging needs. This is done under a formal program. In POLA, cruise terminals are surveyed, dived, and sounded monthly; oil terminal berths are sounded annually. Container and dry bulk berths are sounded every three years. All other berths (including out-of-service berths) are sounded at least every five years. POLB and POLA continually inspect backlands behind the wharves for settlement that may indicate sloughing. Soundings and dive inspections are ordered to confirm the seafloor conditions and identify any maintenance needs if settlement is observed.

POLA and POLB receive sounding requests from port tenants, pilots, properties/operations staff, engineering division staff, executive management, Dredge Committee, USCG or as required by the Ports' capital programs.

The USACE performs soundings at the Naval Weapons Station Seal Beach as requested. The USACE may sound annually, but severe weather can drive sounding requirements, as changes in-depth appear to result from tidal slough action in the National Wildlife Refuge aboard the Weapons Support Facility Seal Beach. The USACE completed its last dredging in 2010. The controlling depth is -39 feet at MLLW (May 2012).

2. Findings: The Committee finds the current procedures and frequency of checking harbor and berth depths are adequate, and no changes are needed.

C. CHANNEL DESIGN PLANS: POLA and POLB, deep-water constructed ports, do not have siltation problems like estuary ports. Sediments deposited in the ports are carried by the Los Angeles River, Dominguez Channel, and several minor local storm drains. Due to the dry local climate, these channels carry significant quantities of water only on rare occasions during storm events, and silt settles out near the inlet mouth. The ports need only dredge occasionally to maintain berth side design water depths.

The Harbors usually have very localized shoaling problems. They occur mainly near the pier headlines when propeller or bow thruster action causes localized sloughing of the under-wharf embankments. Soft bottom conditions mitigate the effect of shoaling, and ongoing maintenance dredging restores design water depth.

Expanding commercial facilities and increasing ship sizes often reduce maneuvering room near marinas and other facilities. This minimizes the mariner's margin of error and can contribute to hazardous situations, damage claims, and undesirable maneuvering constraints from wake and prop wash. Although options may be limited, those designing new berths and terminals should plan for future comparable marina spaces and similar facilities. Since this can create short-term misunderstandings, developers should designate specific areas for commercial and recreational activities to minimize potential conflicts and dangers. This long-term benefit to property and safety should be considered an integral element of any significant design.

- 1. PORT OF LONG BEACH:** All 80 deep-water berths lay within three miles of the open sea and are reached via the Main Channel with depths of minus 76 feet (-23.2m) at Mean-Lower-Low-Water (MLLW). Dredging outside the Long Beach Breakwater Entrance Channel has deepened that area to minus 76 feet (-23.2m) at MLLW.

The Port is currently engaged in a capital development program (CDP) that includes but is not limited to dredging, terminal redevelopment, transportation, and public safety projects.

Southern California Edison has raised the 66kV powerlines over the Cerritos Channel to 234 feet at Mean High Water. The new wires and towers were completed in March 2021. Project is nearing completion and overall completion is estimated to be in the Fall of 2023.

In addition to the CDP, the Port has a program for maintenance dredging. Both CDP dredge projects and the maintenance dredging program are conducted under the oversight of the Port's Dredge Committee. The Dredge Committee is comprised of representatives from several Port Divisions and Jacobsen Pilots. The Dredge Committee is responsible for receiving requests, reviewing and prioritizing maintenance dredging needs, proposing prioritization to Port management, and executing the maintenance dredging program. The Dredge Committee also conducts planning efforts to identify, scope, and prioritize capital dredging needs. The Port's Program Management Division manages capital dredging projects with support from the Engineering Bureau. Construction of capital projects and maintenance dredging are managed by the Port's Construction Management Division. By centralizing all dredging requests and planning for dredging through the Dredge Committee, the Port can plan, track, and execute dredging according to permits issued by

the U.S. Army Corps of Engineers.

Major components of the Port's CDP and maintenance dredging program are described in the following paragraphs. The construction schedule for these and all other Port projects are updated monthly and can be found on the Port's website at:

<https://polb.com/business/business-opportunities#future-work>

Note that construction schedules for the projects shown in this schedule are, in some cases conceptual, because the California Environmental Quality Act (CEQA) process is currently underway. Other schedules are more certain because the CEQA process has been concluded, and a project has been approved by the Board of Harbor Commissioners.

The Port completed a multi-year Deep Draft Navigation Study with the U.S. Army Corps of Engineers, approved by the Assistant Secretary of the Army. For additional information please go to:

<https://www.spl.usace.army.mil/Missions/Civil-Works/Projects-Studies/Port-of-Long-Beach-Deep-Draft-Navigation-Study/>

The Port will continue to dredge throughout the Harbor District to maintain berth and channel depths.

The Port is currently constructing Fire Station 20 at Pier D to support Harbor District public safety. Expected completion is the summer of 2023.

2. **PORT OF LOS ANGELES:** All 27 deep-water terminals lay within five miles of the Los Angeles Pilot Operating Area boundary and reached via the Los Angeles Main Channel, with a project depth of minus 53 feet (16.15M) at Mean-Lower-Low-Water (MLLW). The Angeles Deep Water Approach Channel from Los Angeles Buoy #1 to Buoy #10 has a project depth of minus 81 feet (24.68M) at Mean-Lower-Low-Water.

The Port is currently engaged in a capital development program (CDP) that includes but is not limited to public use waterfront redevelopment, dredging, terminal redevelopment, transportation, and public safety projects. A significant component of the CDP is the demolishing of Ports O' Call Village to make way for the San Pedro Public Market.

a) Major Transportation Programs/Projects

Caltrans is repainting the under deck portion of the Vincent Thomas Bridge, over the Los Angeles Harbor Main Channel. The project entails repainting the entire under deck portion of the bridge, from the west channel margin light to the east channel margin light. The entire project will take 4.5 years to complete. A 100-foot long under temporary deck platform will initially be erected just east of the west channel margin light. Pipe scaffolding will be erected, and the platform shrink-wrapped. Once a 100-foot section is completed, the platform will be moved 100 feet to the east to continue

the project. The platform will temporarily reduce the bridge's vertical clearance by 6 feet.

b) Major Terminal Redevelopment Programs/Projects

The Port of Los Angeles Construction Division Proposed Project Outlook – 2022 to 2026

- i. Berth 148-149 Wharf Repairs
- ii. Berth 150-151 Proposed MOTEMS Project
(Marine Oil Terminal Engineering Maintenance Standards)
- iii. Berth 163-164 MOTEMS Project
- iv. Berth 167-169 MOTEMS Project
- v. Berth 177-178 Wharf Restoration
- vi. Berth 238-239 MOTEMS Project

c.) Capital and Maintenance Dredging

The Port will arrange for maintenance dredging as needed to maintain project control depths for the harbor district channels and depths alongside the wharves.

d.) Public Safety

As one of few police forces in the nation dedicated exclusively to 24-hour port activities, the Los Angeles Port Police are responsible for patrol and surveillance of the Port of Los Angeles and neighboring Harbor Area communities. As California peace officers, the Port Police enforce federal, state, and local public safety statutes and environmental and maritime safety regulations. Highly regarded among specialized law enforcement agencies, the primary goal of the Port Police is to maintain the free flow of commerce and produce a safe, secure environment that promotes uninterrupted Port operations.

F. U.S. ARMY CORPS OF ENGINEERS: The Corps of Engineers maintains the Federal Channels in Los Angeles/Long Beach Harbor. The channels and project depths are:

Los Angeles Harbor:

| <u>Federal Channels in the POLA</u> | <u>Current Depth</u> |
|-------------------------------------|----------------------|
| Main Channel | -53 feet |
| Turning Basin | -53 feet |
| West Basin | -53 feet |
| East Basin | -53 feet |
| North Channel (Pier 300/400) | -53 feet |
| Pier 300 Turning Basin | -81 feet |
| Approach and Entrance Channels | -81 feet |

Long Beach Harbor:

| <u>Federal Channels in the POLB</u> | <u>Current Depth</u> |
|-------------------------------------|----------------------|
| Main Channel | -76 feet |
| Back Channel | -52 feet |
| Inner Harbor (Turning Basin) | -52 feet |
| Cerritos Channel | -50 feet |
| Channel 2 | -37 to -55 feet |
| Channel 3 | -36 to -45 feet |

VI. CONTINGENCY ROUTING

A. CURRENT PROCEDURES DURING PORT CONSTRUCTION AND DREDGING:

Construction and channel dredging projects may affect vessel navigation. The LALB Harbor Safety Committee reviews and evaluates the adequacy of any changes needed in the traffic and routings from port construction and dredging projects and procedures for routing vessels during emergencies that impact navigation.

When planning a port construction or dredging project, the contractors are to meet with pilot organizations, the Coast Guard, and the affected port authority to establish safety and communication procedures for vessels and pilots, and define any proposed restrictions on vessel movements.

Once construction or dredging begins, these representatives meet regularly as needed to ensure navigational safety and provide up-to-date information to vessels and pilots. Weekly meetings and close coordination will proceed smoothly without compromising safe vessel movement.

See Chapter V, “Harbor Depths, Channel Design, and Proposed Construction and Dredging,” for information regarding current and future projects, some of which may impact vessel navigation and routing.

B. VESSEL ROUTING DURING EMERGENCIES: The USCG COTP has developed procedures and instructions for vessel movements during emergencies. See USCG COTP’s Merchant Vessel Dispersal Plan for Los Angeles – Long Beach Harbors in Appendix D of this Harbor Safety Plan.

C. FINDINGS: The Committee finds the current procedures for contingency routing during port construction and during emergencies are adequate, and no changes are needed.

VII. HISTORY OF ACCIDENTS

A. OVERVIEW: This chapter includes a summary of accidents, near misses, and incidents reported to the Committee during the previous calendar year.

| Incident Summary | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 |
|--|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| Propulsion (lost, lost but regained, limited, loss of pilothouse control) | 10 | 11 | 8 | 9 | 17 | 19 | 11 |
| Electrical | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| Steering | 0 | 1 | 1 | 0 | 1 | 0 | 2 |
| Subtotal Propulsion | 10 | 12 | 10 | 9 | 17 | 19 | 13 |
| Communications | | | | | | 1 | 0 |
| Search and Rescue | | | | | | 1 | 1 |
| Anchor | | | | | | 2 | 1 |
| Pollution | | | | | | 1 | 0 |
| Close Quarters | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Collision | 0 | 0 | 0 | 0 | 0 | 0 | 2 |
| Other | 7 | 6 | 1 | 3 | 8 | 8 | 5 |
| Total | 17 | 18 | 11 | 12 | 26 | 32* | 24 |

B. SUMMARY: The 24 incidents in 2023 were 6 fewer than 2022 but 2 close quarters situations (a ship with Jet Skis, and a tug and tow with a fishing vessel), and 1 collision of a ship and a fishing vessel).

1. 13 of the 24 incidents were issues with propulsion, 6 fewer than 2022 and 4 fewer than 2021, but the spikes in 2021 and 2022 were attributed to the many extra ships in our waters above normal, such as when 114 ships of all types were anchored or loitering (drifting) within 25-40 miles of the Ports of Los Angeles and Long Beach during the COVID-19 backup October 2020 - November 2022.
 - i. The 13 Propulsion incidents in 2023 were broken down as follows:
 1. 2 were loss of or limited steering.
 2. 10 resolved themselves, were repaired the ship's crew, or were limited but not loss of propulsion.
 3. Only 1 was a loss of propulsion that required outside tugs to resolve (which were already alongside).

2. The remaining 11 incidents in 2023 were 1 Search and Rescue case, 1 inoperative anchor windlass, 2 close quarters (ship with Jet Skis, and tug and tow with fishing vessel), 2 collisions (ship and fishing vessel in fog, and ship with its assist tug), and 5 “other” incidents.
 - i. The 1 Search and Rescue case was a tanker that found a sailing vessel with no people aboard.
 - ii. The 5 “Other” incidents were:
 1. 2 ships with gyrocompass issues
 2. 1 ship with inoperative AIS (Automatic Identification System (AIS),
 3. 2 ships with inoperative radar,

VIII. COMMUNICATION

A. CURRENT STATUS: Operational communications in the LA-LB Harbor area use marine VHF radio and commercial telephone communications. The five principal nodes are the Vessel Traffic Service LA-LB (VTS LA-LB) at the Marine Exchange, Los Angeles Pilots, Long Beach Pilots (Jacobsen Pilot Service), Port of Long Beach Joint Command Center (POLB JCC), and the USCG Sector LA-LB.

Marine VHF-FM radio is the primary means of communication. Please see the table below in Section B.

In 1992 FCC regulations changed VHF Channel 9 to an alternate calling frequency for non-commercial vessels.

All VHF equipped vessels and all Coast Guard Stations must monitor VHF FM Channel 16. However, when a vessel operates within the VTS LA-LB area (within 25 miles of Point Fermin) AND monitors the VTS frequency (VHF FM Channel 14), it is not required to maintain a concurrent listening watch on VHF FM Channel 16.

When operating on the Navigable Waters of the United States (12 nautical miles from the baseline), the following vessel categories must monitor VHF FM Channel 13:

- power-driven vessels 65.5' (20 m.) or longer,
- vessels 26' (7.9 m.) or longer with tows,
- vessels of 100 gross tons or more carrying one or more passengers for hire,
- vessels certified for 150 passengers or more for hire, and
- dredge and floating plants operating in or near a fairway or channel.

B. PRINCIPAL OPERATING CHANNELS (VHF-FM):

| STATION | CHANNEL | FREQUENCY |
|---|---------|-----------|
| U.S. Coast Guard (primary) and Distress, Safety & Calling | 16 | 156.800 |
| U.S. Coast Guard (secondary) | 22A | 157.100 |
| Bridge to Bridge inside the federal breakwater | 13 | 156.650 |
| Vessel Traffic Service LA-LB (San Pedro Traffic) | 14 | 156.700 |
| LA Pilots (primary) | 73 | 156.675 |
| LB Pilots (primary) | 12 | 156.600 |
| LB Pilots (pilot-to-pilot frequency) | 74 | 156.725 |
| El Segundo Mooring Masters (primary) | 10 | 156.500 |
| Harbor Tug Working Channels (LA and El Segundo) | 77 | 156.875 |
| (LA secondary) | 63A | 156.175 |
| (LB primary) | 5A | 156.250 |
| U.S. Navy Seal Beach Port Ops | 65A | 156.275 |
| Inter-Ship Safety | 6 | 156.300 |
| Non-Commercial Calling | 9 | 156.450 |

C. CURRENTLY - INSTALLED COMMUNICATIONS EQUIPMENT: VTS LA-LB, the Los Angeles Pilots, and Long Beach Pilots (Jacobsen Pilot Service) use state-of-the-art communications equipment well-suited to the requirements of the area. The Committee does not know of any area within the LA-LB Harbors with inadequate radio communications.

1. VTS LA-LB

- a. Three Furuno FM-8900S shipboard-type, VHF-FM all-channel synthesized transceivers, maximum 25 watts, with scan capabilities and local antennas.
- b. One remote Motorola VHF-FM transceiver capable of channels 13, 14, and 16, maximum 45 watts, located on San Pedro Hill at the FAA radar site.
- c. Ten Automatic Identification Systems (AIS) units located at the Marine Exchange in San Pedro and remote units at locations between San Diego and Port San Luis.
- d. Computer-based Maritime Information System (MARIS) system used by the Marine Exchange to collect, store, display, create, and send reports of ship arrival, departure, shift, and other information. Data feeds from this system are provided to the LA Pilots, LB Pilots (Jacobsen Pilot Service), and the USCG Sector LA-LB.
- e. Kongsberg/Norcontrol C-Scope VTS System with wide-screen displays on a joint Local Area Network between the VTS LA-LB, LA Pilots, LB Pilots (Jacobsen Pilot Service), USCG Sector LA-LB, and Port of Long Beach Command and Control Center (POLB JCCC)
- f. One diesel-fueled, automatic-starting emergency generator (55KW) capable of powering the entire MX building. Approximately 40-hour diesel fuel supply is on site (20-gallon tank and 20 gallons in portable containers).
- g. One battery-based uninterrupted power supply (UPS) capable of powering critical equipment (VTS System, MARIS, computers, radars, radios, telephones, and other sensitive electronic equipment for 45 minutes).
- h. Backup VTS at the Port of Long Beach Joint Commander Center on a Local Area Network with the Long Beach Pilots (Jacobsen Pilot Service).

2. Los Angeles Pilot Station

- a. Two Primary VHF Transceivers
 - a. One VHF GTR8000 Base Radio at Marine Exchange
 - b. One APX85000-based Console at Warehouse 1 (WH1)
- b. One Nokia Wavence Microwave Backhaul Hop between WH1 and Marine Exchange
- c. Two 4-hour Backup UPSs (Pilot House & WH1)

- d. Two Standard Horizon all-channel synthesized, 25-watt, with a local antenna
- e. One diesel-fueled, automatic-starting emergency generator (45KW). Essential operational communications, computers, cameras, and ECDIS displays are on UPS circuits.

3. Long Beach Pilot Station (Jacobsen Pilot Service):

- a. Two primary VHF transceivers, Motorola base station C53RTB-1196C, 50-watt (frequencies per Section B, above). The second remote unit is on San Pedro Hill and connected to the pilot station by a leased telephone line.
- b. Two secondary VHF transceivers, One Sea 156 and one Icom IC-M506, 25-watt shipboard-type, all-channel synthesized radio with scan.
- c. One PC-based private email message program to exchange vessel movement information through Harbor Net.
- d. One diesel-fueled automatic-starting emergency generator (50KW). Essential operations equipment on UPS circuits.

4. Best Practices:

- a. VTS LA-LB and pilot groups use high-quality, reliable communications equipment. Any replacement equipment should equal or exceed the current equipment.
- b. Mariners are encouraged to minimize voice traffic on VHF frequencies. The Committee supports this effort to maintain circuit discipline and reduce frequency congestion.
- c. Mariners are further encouraged to use low transmitting power when communicating with VHF radio. This practice minimizes interference and frequency congestion. High power should only be used when low power is not sufficient.

D. EMERGENCY COMMUNICATION PROTOCOL: All “requests for emergency response” from any vessel underway within the Plan’s AOR should be reported to the U.S. Coast Guard. If the vessel is not fitted with a marine radio, such reports may be made via telephone by calling “911.” Upon receiving a report, the USCG will notify the appropriate police/fire dispatch center and request the appropriate assets to respond.

| | | |
|---|----------------------------------|-------------|
| Distress, Safety and Calling USCG Sector LA-LB | VHF Channel 16 (310) 521 3801 | 156.800 MHz |
|---|----------------------------------|-------------|

The U.S. Coast Guard monitors VHF Channel 16 and the NRC Hotline 24 hours a day. Anyone witnessing an oil spill, chemical release, or maritime security incident should call the NRC hotline.

USCG National Response Center Hotline (800) 424 8802

This protocol does not supersede or replace any requirement contained in formal vessel emergency response plans, such as those required by various port states.

As used in this protocol, the term “request for emergency response” includes distress calls and reports of suspicious activities. Other activities that might warrant reporting:

- drone/plane activity
- security breaches or attempts
- USCG safety/security/protection zone violations
- crimes on land or water
- navigation rule violations

Several advantages occur from using this process. First, all police/fire boats actively monitor VHF Ch16 and will be able to mobilize immediately. This will result in a significantly faster response than using the 911 system. Second, the USCG understands maritime language and has significant domain awareness that regular land-based dispatch centers may need to possess. Lastly, the USCG can triangulate the position of the mariner/boater.

There are disadvantages associated with using a mobile phone to report an emergency.

- the signal is minimal, and there may be no coverage.
- mobile phone communication is limited to one party at a time. When using a radio, everyone hears your call for help (there could be a vessel a mile away that hears you on the radio and could reach you in minutes).
- emergency responders cannot easily locate the signal of a mobile phone. However, they can use direction finding equipment to locate a radio transmission more quickly.

Format for distress calls on VHF Channel 16:

1. Transmit: **“MAYDAY, MAYDAY, MAYDAY”**
2. **“This is** (name of the boat three times, call letters once).”
3. Repeat “MAYDAY” and your boat’s name again.
4. Report your location.
5. Report the nature of your emergency.
6. Report the kind of assistance needed.
7. Report the number of people onboard (POB) and the condition of any injured.
8. Describe the boat and its seaworthiness. Then wait for a response. If there is none, repeat the message.

When a distress signal is received, the Coast Guard will acknowledge it and ask for further information as necessary.

Notification to the National Response Center: The USCG will determine whether the emergency requires mandatory reporting to the National Response Center (NRC) and either make

that notification or ensure the responsible party is aware of the requirement. The NRC is the federal government's centralized reporting center, which U.S. Coast Guard personnel staff 24 hours per day.

Making a false distress call in the United States is a federal crime carrying sanctions of imprisonment for up to six years and a fine of up to \$250,000, and restitution to the Coast Guard.

IX. BRIDGES

A. CURRENT REGULATION: Three fixed bridges (Vincent Thomas, Gerald Desmond and Commodore Schuyler Heim) and one drawbridge (Henry Ford Ave (Badger) Railroad Bridge) span the navigable channels of the ports. The latter, crossing Cerritos Channel, is the only drawbridge within the Plan's geographical area. The narrow channel width combined with restrictions on passing under the fixed Commodore Schuyler Heim bridge limit traffic through Cerritos Channel to pleasure vessels, tugs without tows and tugs with tows alongside or pushing ahead. However, tugs with bunker barges frequently pass under the bridges. The navigable channel is 180 feet wide with a vertical clearance of 52 feet measured from Mean High Water (MHW) (Elev: 4.55', NAVD88) to low steel at the fixed Heim bridge.

CFR Title 33, Subpart A to Part 117 (33 CFR 117.1-117.49) regulate general operation of all drawbridges across navigable U.S. waters. The Code addresses general duties of the bridge tender, signals to request openings, radiotelephone installation, operations during repair or maintenance, closure for natural disasters, etc. 33 CFR 117.147 specifically regulates operation of the Henry Ford Ave (Badger) drawbridge. Page 3 of this chapter is a U.S. Coast Guard "Report of Delay at Drawbridge" form which may be forwarded to USCG D11(dpw) Bridge Administration if needed. To summarize:

The railroad draw shall be kept fully opened except for train crossings and maintenance. Use Channel 13 or other assigned frequencies to contact the bridge tender.

B. BRIDGE LIGHTING AND CHART NOTES: The Committee finds sufficient the systems to mark restricted horizontal bridge clearances and the information provided about restricted vertical overhead powerline clearance. Here is a summary of lighting and marking of the four bridges and associated information from chart notes and other nautical publications relating to both the bridges and powerline:

1. Vincent Thomas Bridge

- a. Bridge lighting (33 CFR 118): Two fixed green lights mark the center of the span. Four fixed red lights (two on each side) mark the margins of the channel.
- b. Chart Note: Horizontal clearance 1150', vertical clearance 165', with vertical clearance 185' for middle width of 500'. Two fixed green lights mark center of span. Four fixed red lights mark the margins of the channel.

2. Existing Gerald Desmond Bridge

- a. Bridge lighting (33 CFR 118): Two fixed green lights mark the center of the span. Four fixed red lights (two on each side) mark the channel limits.
- b. Chart Note: Horizontal clearance 300', vertical clearance of 155' measured from MHW (Elev: 4.33', NAVD88) to low steel at center of span.

- c. The existing replaced Gerald Desmond bridge span is anticipated to be removed from the channel in summer of 2022.
3. Replacement Gerald Desmond Bridge
- a. Bridge lighting (33 CFR 118): Two fixed green lights mark the center of the span. Four fixed red lights (two on each side) mark the channel limits.
 - b. (Future) Chart Note: Horizontal clearance 300', vertical clearance of 205' measured from MHW (Elev: 4.33', NAVD88) to low steel at center of span.
4. Schuyler Heim Highway SR-47 Bridge
- a. Bridge Lighting (33 CFR 118): One fixed red light on each end (four in all) mark the fender system. Two fixed red axis lights (one on each side) mark the available horizontal opening. Two fixed green lights (one on each side) mark the center of the navigation.
 - b. Chart Note: Horizontal clearance 180', vertical clearance of 52' measured from MHW (Elev: 4.33', NAVD88) to low steel in the navigation span.
5. Badger Railroad Lift Bridge
- a. Bridge Lighting (33 CFR 118): One fixed red light on each end (four in all) mark the fender system. Two fixed red/green lights (one on each side) mark the center of the vertical lift. The lights change from red to green when the lift is in the full open to navigation position.
 - b. Chart Note: Horizontal clearance 180 feet, vertical clearance 6 feet down and 165 feet up.

U.S. COAST GUARD
REPORT OF DELAY AT DRAWBRIDGE
PER 33 CFR 117.5

BRIDGE NAME _____ DATE _____
MILE _____ WATERWAY _____

1. Name/ Type of Vessel _____ Direction of Travel _____
2. Vessel Owner (Name) _____
(Address) _____
3. Name of Pilot (if applicable) _____
(Address) _____
4. Time vessel signaled for bridge opening _____
5. Location of vessel when signal was given _____
6. Time and location of vessel when delay began _____
7. Method of signal for bridge opening () Radio () Sound () Visual
(If sound or visual signal was used, specify _____)
8. Time bridge operator acknowledged signal _____
9. Method of bridge operator acknowledgement () Radio () Sound () Visual
(If sound or visual signal was used, specify _____)
10. Did bridge operator acknowledgement indicate the bridge
() Could be opened immediately
() Could not be opened immediately
11. If land traffic crossed the bridge:
Time land traffic started across the bridge _____
Time land traffic stopped crossing the bridge _____
Did land traffic stop on the bridge? _____
Duration land traffic stopped on the bridge _____
12. Time drawbridge opened for navigation _____
14. Additional comments _____

I certify the above information is true to the best of my knowledge and understand this statement may be used by the U.S. Coast Guard in levying fines against the bridge owner.

Signature _____
Telephone _____

Mariners may complete and send via fax or mail to:
USCG D11(dpw) Bridge Administration
Building 50-2
Coast Guard Island
Alameda, CA 94501-5100
Cellular: (510) 219-4366, Work Phone: (510) 437-3516
Work Fax: (510) 437-5836

Mariners are reminded not to require bridge openings for appurtenances nonessential to navigation, per 33 CFR 117.11

X. SMALL CRAFT

For the purpose of the Los Angeles and Long Beach Harbor Safety Plan, the term “small craft” includes, *inter alia*, pleasure vessels, commercial fishing vessels, sportfishing vessels, launches, commercial service vessels, and other small recreational vessels.

A. BACKGROUND: The combined harbor of Los Angeles and Long Beach is the largest shipping complex in the United States. Cruise ships, commercial cargo vessels, commercial fishing boats, power and sail recreational boats, small personal watercraft (e.g., Jet Skis™) and windsurfers share the harbor waterways. With all its boating activity, this harbor still ranks as one of the world’s safest.

The LA/LB Harbors handle more than 4,500 commercial vessel arrivals per year (excluding local coastwise and Catalina Island traffic).

Based upon marina slips and land storage capacities, more than 10,000 recreational vessels between 20’ and 70’ moor in the harbors. Commercial business and transient shipping within the harbor averages about 1,500 vessels monthly.

The Committee recognizes the need for commercial traffic to share the waterways with small craft, but at the same time we must provide safe transit for vessels in shipping channels and the approach areas, where a large vessel has limited options for avoiding small craft.

The areas of principal concern are LA/LB Harbors’ delineated navigation channels, breakwater entrances, pilot boarding areas and an area in the final approach to the pilot boarding areas and the Marine Terminal at El Segundo.

A Regulated Navigation Area (RNA) covers the pilot boarding areas of each port, Anchorage Area G (outside the middle breakwater) and the Precautionary Area out to the three-mile limit.

Federal Regulations regarding vessels operating within a RNA include:

- 1. No vessel may enter the pilot boarding area of either port unless entering or leaving the port through the breakwater entrance.**
- 2. Vessels entering either pilot boarding area shall pass directly through without stopping or loitering unless necessary to embark or debark a pilot.**

The U. S. Coast Guard has interpreted loitering in the pilot boarding area as follows:

Vessels fishing in these areas are ‘loitering’ within the meaning of the regulation. Fishing vessels wishing to use the areas in the vicinity of the Gates seaward of the breakwater should fish outside of the pilot boarding areas, and under no circumstances loiter in the Gates. (*See*, Coast Guard LNTM 42-86).

In a continuing effort to minimize the risk of marine casualties, the Committee has developed Standards of Care (safe operating practices) for the LA/LB port area and seaward approaches outside the breakwater, including the Traffic Separation Scheme (TSS) and Traffic Lanes. It is recommended that operators of small craft follow these Standards of Care.

Small craft, 1,100' supertankers and fast containerships, tugs with barges in tow, high speed ferries, and other commercial vessels share the Los Angeles and Long Beach (LA/LB) waterways and seaward approaches. Besides operating in a congested environment, these vessels at times encounter restricted visibility (e.g., fog) that, if not addressed adequately, can increase navigation difficulty, and elevate collision risk. Small craft operators should be aware that large vessels cannot stop or alter course quickly and, therefore, may have difficulty avoiding a collision with smaller, more maneuverable vessels. Crews of larger commercial vessels also have difficulty seeing smaller vessels because containers carried on deck often create blind spots that may extend more than 1/2 mile ahead.

The Committee encourages local efforts to educate small craft operators regarding the potential hazards to both themselves and other vessels when operating in the LA/LB harbor area, in the port approaches, and near large commercial vessels. Coast Guard, Coast Guard Auxiliary and Power Squadron units are available to communicate with and explain these Standards of Care to small craft owners/operators. These local initiatives are aimed at minimizing navigational conflicts between small craft and commercial vessels.

B. STANDARDS OF CARE FOR SMALL CRAFT OPERATING IN THE LA/LB PORT AREA

1. Ensure your vessel is safe: Before getting underway, you should ensure that all required safety equipment is on board and is operational and serviceable, i.e., personal flotation devices (life jackets), throwable flotation devices, flares, fog horns, fire extinguishers, etc. You should also verify that the vessel's batteries are fully charged, and running lights/day shapes are operational. Understanding the proper use of all this equipment, by both you and other vessels, is critical to your safety.
2. Ensure your vessel is seaworthy: Prevailing conditions in the LA/LB harbor area and approaches include heavy seas caused by offshore storms and large wakes developed by high-speed ferries, crew/supply boats, ship assist tugs, and large commercial vessels. Operators of vessels designed primarily for protected waters (e.g., canoes, paddleboards, etc.) should exercise caution in and around the port area.
3. Keep flares and distress calling equipment handy: Being disabled in an area used by large commercial vessels can be extremely hazardous. You should be able to quickly locate and use signaling flares and the VHF radio, to seek immediate help or notify other vessels.
4. Observe the Navigation Rules (the Rules of the Road) and in particular Rule 9: Rule 9 states (among other things) that vessels less than 20 meters in length, or sailing vessels, or a vessel engaged in fishing shall not impede the passage of a vessel which can safely

navigate only within a narrow channel or fairway. A good way to comply with this Rule is to avoid operating in the middle of navigable channels.

5. Avoid interfering with pilot boat operations: Large commercial vessels are limited in their ability to maneuver while boarding and disembarking pilots.
6. Avoid passing larger vessels close aboard: Avoid crossing in front of or passing larger commercial vessels close aboard, riding the bow wave (sailboards/personal watercraft), or passing between the dock and a berthing ship. Additionally, do not pass close to the stern of large vessels, as their propeller wash and suction create considerable turbulence.
7. Pass tugboats with caution: Tugboats often tow barges behind or alongside, and as a result are limited in their ability to maneuver. Often you may not be able to see a barge in tow because it can be one (1) mile or farther astern of the tug. And submerged tow wires can pose a hazard if you pass between the tug and its tow. Such encounters have caused serious damage and injury to boaters.
8. Know the locations of Traffic Separation Schemes (TSS), traffic lanes, and Regulated Navigational Areas (RNA): Small craft operators should know where large commercial vessels regularly operate and avoid those areas, especially at night or during restricted visibility. If you must operate in these areas, pay particular attention to nearby large vessels and maneuver clear of their tracks. Loitering, fishing or anchoring in the harbor entrances dangerously restricts the movement of vessels while maneuvering inbound and outbound from these large port complexes.
9. Maintain a listening watch on VHF radio: Small craft are encouraged to monitor these radio channels to remain apprised of commercial vessel movements and important mariner safety notices. Be prepared to respond if a commercial vessel calls to alert another mariner that a dangerous situation is developing.

| Location | Bridge-to-bridge frequency | Vessel Traffic Service frequency |
|-----------------------------|---------------------------------------|---|
| Outside Federal Breakwater: | | VHF 14 |
| Port of Long Beach: | VHF 13 | VHF 12 |
| Port of Los Angeles: | VHF 13 | VHF 73 |

VHF Channel 16 is the international distress, safety and calling frequency.

10. Always know your vessel's position: It is recommended that all small craft be equipped with a GPS receiver and a marine AIS (Automatic Identification System). Accurate position information with GPS and AIS will assist with navigation and collision avoidance. Importantly, accurate position information from GPS and AIS allows responders to find you more easily and quickly during an emergency.
11. Be an informed mariner: It is a good marine practice to know the Rules of the Road and to stay current with the safety tips and articles provided by local maritime magazines and

Coast Guard Notices to Mariners. Notices to Mariners provide information on port construction projects (dredging, breakwater expansion, shallow water habitat construction, etc.), aid to navigation (AtoN) changes, bridge closures, and other physical conditions affecting marine safety. You should also monitor NOAA maritime weather broadcasts (VHF WX 1) and Coast Guard Broadcast Notice To Mariners (VHF Channel 16). They provide information about heavy seas, high winds, fog, or AtoN discrepancies that might otherwise threaten a safe voyage. You are also encouraged to log onto the local Coast Guard's homepage, <https://homeport.uscg.mil/port-directory/los-angeles-long-beach> for the most current safety information.

12. Emergency procedures: In addition to crewmembers, small craft often carry visitors, paying customers and/or fishing enthusiasts. It is vitally important for the safety of everyone aboard that vessel owners/operators train their crew in emergency procedures (Man Overboard, Fire, Abandon Ship, and Distress), and in the proper use of the VHF radio and emergency signaling devices. Vessel operators should also consider appointing a competent person to assume command in the event of his/her incapacitation.

C. STANDARDS OF CARE FOR SMALL CRAFT OPERATING IN THE LA/LB PORT AREA DURING TIMES OF RESTRICTED VISIBILITY: Large commercial vessels sometimes have difficulty detecting small craft on their radar equipment. When small craft are navigated in the federal channels during times of restricted visibility, the risk of collision increases, and small craft operators should adopt additional safety precautions.

1. Be extra careful in restricted visibility (e.g., fog): Operators of small craft should carefully evaluate the elevated risks associated with navigating during times when visibility is restricted. It is recommended that small craft operators should not get underway during times of restricted visibility unless their vessel is radar-equipped and the person directing the vessel's movement is proficient at observing and interpreting radar information.

Extreme caution should be exercised when deciding whether to operate a small craft during restricted visibility conditions. Restricted visibility leaves very little time/sea room to visually detect another vessel, assess the collision risk, and take action to avoid collision. This is especially true if you are in a larger vessel's blind spot, and/or approaching a larger vessel that cannot maneuver to avoid a collision.

2. Use a radar reflector and AIS: Since fog conditions often develop quickly and unexpectedly, it is recommended that small craft operators carry and use radar reflectors and AIS (Automatic Identification System), which help large commercial vessels and Vessel Traffic Service detect small vessels on their radar and navigation equipment.
3. Maintain an accurate vessel position: Position keeping becomes particularly important when navigating in restricted visibility. Electronic positioning equipment, such as a GPS receiver, should be used to fix the vessel's position and monitor the vessel's intended track.
4. Speed is a critical factor in your ability to avoid a collision in restricted visibility. Your speed must be reduced to match the existing conditions. For your reference, a vessel

moving at 10 knots covers 600 feet in 36 seconds. With 600 feet of visibility, when another vessel is approaching you on a collision course at the same 10 knots, you both have 18 seconds to take action after sighting each other visually.

5. The practice of loitering in the harbor entrances or anywhere in mid-channel can be dangerous and should be avoided, particularly during times of restricted visibility.

RECOMMENDATIONS

1. The Committee recommends that owners/operators of small craft avail themselves of the numerous educational courses being offered by the Coast Guard, the Coast Guard Auxiliary, the U.S. Power Squadron and the California Department of Boating and Waterways. It is highly recommended that individuals who rent pleasure boats show proof of having taken and passed one of these courses. The rental agency in addition, should have renters demonstrate knowledge of the Rules of the Road, basic safety procedures and regulations about operating a vessel under the influence of alcohol and/or other drugs.
2. The Committee recommends that owners/operators of small craft familiarize themselves with:
 - The applicable nautical charts for the area
<https://charts.noaa.gov/InteractiveCatalog/nrnc.shtml>
 - International Regulations for Preventing Collisions at Sea (72 COLREGS) and the U.S. inland navigation Rules
<https://www.navcen.uscg.gov/sites/default/files/pdf/navRules/navrules.pdf>
 - U.S. Coast Pilot #7 https://nauticalcharts.noaa.gov/publications/coast-pilot/files/cp7/CPB7_WEB.pdf
 - Los Angeles Long Beach Harbor Safety Plan <https://mxsocial.org/hsc-safety-plan/>
 - Vessel Traffic Service LA-LB (VTS LA-LB) User Manual
<https://mxsocial.org/assets/pdf/vts-user-manual-210331.pdf>
 - Pamphlet – A Guide to Boater Safety
 - Pamphlet – Rule 9 & 5 . . . Laws to Live By
 - California Boater Card <https://californiaboatercard.com>
 - Inbound Mariner Resources on MX SoCal Web Site
<https://mxsocial.org/resources/#imr>

Additional resources may be found at: <https://mxsocial.org>

XI. VESSEL TRAFFIC SERVICE

A. Background Review: VTS is a Public/Private partnership vessel traffic service for the Ports of LA/LB. VTS is jointly operated and managed by the Marine Exchange of Southern California, (a nonprofit corporation) and the Coast Guard COTP. VTS is a cooperative effort of the State of California, U.S. Coast Guard, Marine Exchange of Southern California, Ports of Los Angeles and Long Beach, and under the authority of California Government Code, Section 8670.21, Harbors and Navigation Code, Sections 445-449.5 and the port tariffs of Los Angeles and Long Beach.

Established March 1, 1994, VTS has made our ports safer, cleaner and more efficient. Local control of VTS operations, procedures, fees and scope rests with the maritime industry and port authorities. VTS has proven to be a valuable asset to the port complex, which is today one of the safest and most successful in the world.

B. Operational Review: Since establishment, VTS has covered hundreds of thousands of commercial vessels moving through the area of responsibility. In addition to monitoring thousands of small recreational, passenger and fishing vessels not required to participate.

On January 1, 1997, Assembly Bill 748 increased the VTS area of responsibility to a 25-mile radius from PT Fermin, including Santa Monica Bay. VTS now oversees tank vessel movements at the El Segundo offshore moorings and anchorage's and significant commercial and recreational vessel traffic from Marina Del Rey and King Harbors.

Assembly Bill 748 also redefined covered vessels, mirroring state and federal VTS regulations and procedures. VTS LA-LB follows the same policies, procedures, and regulations as every other Federal Vessel Traffic Service in America. See Appendix B for the latest revision of the VTS User Manual.

A Vessel Traffic Management System is in effect within the Los Angeles /Long Beach Harbor and approaches and extending to 25 nautical miles seaward of Pt. Fermin. This system is comprised of three sectors. Within each sector is a Vessel Traffic Center (VTC) with watchstanders that monitor and report traffic information within their sector and coordinate traffic movements across sector boundaries.

POLA pilots and Jacobsen Pilot Service for POLB coordinate vessel traffic management inside the federal breakwater. Responsibility for vessel traffic monitoring and management passes to/from VTS and the appropriate pilot organization at the two breakwater openings, Angels Gate for POLA and Queens Gate for POLB. Similar electronic tracking equipment at both pilot stations creates a seamless system of vessel traffic management with VTS. Another key component of this system has vessels contact VTS 15 minutes before leaving the breakwater on outbound transits; and contact the pilot station 15 minutes before entering the traffic management system inside the breakwater.

C. Partnership with the Coast Guard COTP: VTS employs state of the art tracking and communications equipment, including a unique replay device for demonstration/archive of all

incident data. Coast Guard COTP personnel analyze this data for waterways management issues that arise. It is this vital data that supports change and enforces standards to Federal/RNA regulations, Rules of the Road, and good marine practices. COTP issues Letters of Concern or Letters of Warning as appropriate. In more severe instances, the Coast Guard may order full investigations and ascribe penalties and fines to the Master and/or Vessel Owner/Operator.

D. VTS also provides significant services to the Coast Guard in other waterways management mission areas, such as:

1. Better targeting and scheduling of vessel inspections, compliance with Notice Of Arrival (NOA) requirements;
2. Queuing inbound commercial vessels by using vessel arrival and port call information, and coordination with both pilot organizations, thereby minimizing potential close quarters or confusing situations in the vicinity of the pilot boarding and precautionary areas;
3. Identifying vessels creating incidents and referring them to the Coast Guard for boarding. Incidents include communications problems, erratic maneuvers, mechanical failures, violations of rules and regulations, improper navigation, or excessive speed, etc.;
4. Providing an incident report database. The Coast Guard analyzes trends and occurrences and shares them with mariners. This has sparked national interest and instituted navigation safety improvements. Some of these improvements include; increased Pilot coverage for inter port shifts, updated Limited Visibility Guidelines, increased RNA effectiveness through practical applications, and diverting to outside anchorage vessels with serious mechanical deficiencies (i.e., Propulsion loss, steering gear failure, etc.).
5. Developing a database of mechanical failures. Approximately 1 in 100 vessels calling at LA/LB has a mechanical failure at some point during their inbound or outbound transit. In addition to operational procedures developed to address safe movements, the Coast Guard can identify additional trends and data, and refocus design, maintenance and/or testing procedures aboard vessels.
6. Monitoring and managing all vessels at the anchorage (Golf, Foxtrot, El Segundo, and Avalon Harbor), and enforces COTP orders restricting the movement of detained vessels.

XII. TUG ESCORT/ASSIST FOR TANK VESSELS

The state of California has developed regulations which specify escort requirements for tank vessels (self-propelled tankers or tank barges) operating in the Los Angeles/Long Beach Harbor Complex and its approaches. Jurisdiction for the enforcement of these regulations falls under the California Department of Fish and Wildlife's Office of Spill Prevention and Response (OSPR). The Los Angeles/Long Beach Harbor Safety Committee is responsible to review these regulations annually and make recommendations to the Administrator of OSPR to provide for a process of continual improvement.

OVERVIEW OF LA/LB TUGBOAT EQUIPMENT: Five independent tug escort companies (AmNav, Crowley Marine Services, Foss Maritime, Millennium Maritime, and Sause Brothers) operate in LA/LB Harbors. These companies provide both dedicated ship and barge escort/assist services.

These five companies operate approximately 25 tugs in the LA/LB Harbors. The tugs' specific type of propulsion and individual horsepower varies from about 1,600 HP to 6,800 HP. These tugs have single screw, twin screw, Z-drive or Voith-Schneider propulsion. These tugs and their bollard pull ratings are listed in Appendix C, and an updated list is maintained by the Marine Exchange and available on their web site.

The Voith-Schneider and Z-drive tugs (with steerable nozzles aft) give the pilot unusual flexibility. The balance of the tugs use twin screws (some with flanking rudders and some with kort-type nozzles) and single screw propellers. Flanking rudders increase maneuverability when engines are going astern. Kort-type nozzles increase the force applied when the engines are going ahead and usually decrease the force when going astern.

Physical design can be a limiting factor. In very narrow channels, a long-hulled tug may be too long to effectively assist a wide-beam ship. Some ships have an extremely flared hull, making it difficult for some tugs to lie alongside, especially near the bow and stern. Because of the leverage, a tug is usually most effective when placed nearer the ends of the vessel. Tractor tugs can effectively overcome some of these limitations.

HARBOR SAFETY COMMITTEE FINDINGS

1. The tugs available in LA/LB Harbors provide a sufficient selection of sizes, configurations and power to safely handle any tank vessel and comply with the state escort regulations. Competitive market forces result in a continual improvement in the capabilities of tugs available in the harbors.
2. All tugs presently escorting/assisting tank vessels within the LA/LB Harbors and the approaches thereto are designed to safely and effectively operate in the weather, current and tides described in Chapter II.
3. Current regulatory language allows for exemption from mandatory escorts for fully redundant tankers with double hulls. The definition of "fully redundant" has been

amended to be consistent in both the LA/LB Harbors and San Francisco Bay Area Tug Escort regulations.

4. Tank vessels carrying liquid bulk cargoes that are not currently covered by state regulations should follow the Plan's tug escort standards, and any additional Coast Guard or appropriate port requirements for tug escort. The Harbor Safety Committee will continue to monitor changing trends in vessels arriving in LA/LB Harbors to determine whether or not further amendments to the tug escort regulations may be required.
5. As a result of the channel-deepening projects, larger tankers can now call at LA/LB Harbors. The Force Selection Matrix in 851.27 accommodates tankers up to 420,000 metric tons displacement.
6. As compliance with the bollard pull testing requirements of 851.23 paragraph (a)(7)(A) has become problematic, the Committee, in cooperation with other Harbor Safety Committees in the state, developed the optional Escort Tug Inspection Program, codified in the regulations in new paragraph (a)(7)(B), which can be used in lieu of periodic bollard pull testing.

OVERVIEW OF OPERATING PROCEDURES: The Plan covers tank vessels in the LA/LB Harbors carrying all types of petroleum cargoes. Most tank vessels carrying crude oil are loaded when inbound to either LA/LB terminals. Product- or chemical-carrying tank vessels may be either loaded or partially loaded both inbound and outbound. The Coast Guard may require additional tug escort/assist capabilities.

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 appropriate Tank Vessel Escort Zone as described in 851.22(c). The tug(s) then accompany the tank vessel to the berth and assist in berthing. Outbound, laden tank vessels must use escort tugs from departing the berth until clearing the breakwater entrance. Escort tugs must be tethered except when escorting tank barge/primary towing units that have a total displacement of 20,000 metric tons or less.

Escort tugs are usually considered servants of the vessel and carry out the orders of the master or pilot to the best of their ability. Therefore, during emergency situations and where safety of the vessel (tug and/or tank vessel) is in question, the COTP or the master/pilot may waive operating procedures.

CURRENT TUG ESCORT REGULATIONS: The state tug escort regulations were developed from the Standards of Care originally written by the Los Angeles/Long Beach Harbor Safety Committee to institutionalize good marine practices and to guide those involved in the movement of tank vessels. The minimum requirements of the regulations herein reflect favorable circumstances and conditions. The tanker master/pilot shall arrange for additional escort tug(s) should adverse weather conditions, unusual port congestion, the contemplated movement of the vessel or other conditions or circumstances so require.

**CALIFORNIA CODE OF REGULATIONS
TITLE 14, DIVISION 1**

**SUBDIVISION 4, OFFICE OF SPILL PREVENTION AND RESPONSE
CHAPTER 4. VESSEL REQUIREMENTS
SUBCHAPTER 2. TANK VESSEL ESCORT PROGRAM FOR
THE LOS ANGELES/LONG BEACH HARBOR
SECTIONS 851.20 - 851.32**

Effective August 11, 2012

851.20. Purpose and Scope.

This subchapter sets forth tank vessel escort requirements for tank vessels underway in the Los Angeles/Long Beach Harbor and their approaches. These requirements specify that tank vessels carrying 5,000 or more metric tons of oil in bulk as cargo shall be escorted by a suitable escort tug or tugs. When required, the escort tug(s) shall take action under the direction of the tank vessel master or pilot, to influence the speed and direction of travel of the tank vessels in the event of a casualty, steering or propulsion failure, thereby reducing the possibility of groundings or collisions and the risk of an oil spill from these tank vessels.

This subchapter establishes the criteria for matching tugs to tankers and barges. Tankers will be matched according to a matrix that correlates a tanker's displacement (in metric tons) with the braking force of a tug(s). Barges with a displacement tonnage less than or equal to 20,000 metric tons shall be matched based on the aggregate displacement tonnage of both the primary towing vessel and the tank barge. Barges with a displacement tonnage greater than 20,000 metric tons require a tethered escort and a one-to-one correlation between the sum of the total displacement tonnage of the primary towing vessel and its barge, and the escort tug(s).

The Administrator shall periodically review the matching criteria, other program elements and enforcement mechanisms. The program review will include a survey of the tank vessel-related incidents in U.S. waters to determine the type of failures that have occurred, an assessment of tug technology and any advances made in design and power, the tug escort-related rules and policies that are implemented by other coastal states and maritime organizations, and any changes to bathymetry in the Harbor. At the conclusion of the review, the Administrator will determine whether it is necessary to modify the tug/tank vessel matching criteria or any other provision of the program requirements.

Authority: Sections 8670.17.2, and 8670.23.1, Government Code.
Reference: Section 8670.17.2, Government Code

851.21. Definitions.

Definitions governing the construction of this subchapter can be found in Chapter 1, Section 790 of this subdivision.

Authority: Sections 8670.3, 8670.17.2 and 8670.23.1, Government Code.

Reference: Sections 8670.17.2, Government Code.

851.22. Applicability.

- (a) This subchapter shall apply to all laden tank vessels when they are:
 - (1) Inbound from the seaward limits of the applicable escort zone, as described in Subsections (c) and (d) below, to anywhere inside the Federal Breakwater;
 - (2) transiting anywhere inside the Federal Breakwater (from dock to anchor, anchor to dock and shifting between docks); and/or
 - (3) outbound from dock or anchor to the Federal Breakwater.
- (b) This subchapter shall apply to all escort tugs being used to escort tank vessels during transits described in Subsection (a), above.
- (c) Three tank vessel escort zones are established as follows:
 - (1) Zone 1: All waters within 2.0 nautical miles to seaward of the Federal Breakwater;
 - (2) Zone 2: All waters in the approaches to the Port of Long Beach within 3.5 nautical miles to seaward of the Federal Breakwater;
 - (3) Zone 3: All waters in the approaches to the Port of Los Angeles within 4.0 nautical miles to seaward of the Federal Breakwater.
- (d) Tank vessels to which this subchapter applies (as described in Subsection (a) above) required to have escorts under this subchapter shall be escorted in the applicable escort zones as specified below:
 - (1) Zone 1: Escort tugs are required for all tank vessels;
 - (2) Zone 2: Escort tugs are required for all tankers with a static deep draft that is more than 16.5 meters (54' 01.6");
 - (3) Zone 3: Escort tugs are required for all tankers with a static deep draft that is more than 14.0 meters (45' 11.2");
- (e) For the purpose of these regulations, "static deep draft" is the vessel's deepest draft in still-water conditions.
- (f) This subchapter (except for this Subsection (f)) shall not apply to tankers with double hulls, as that term is defined in 33 CFR 157.03, when the tanker also has fully redundant

steering and propulsion systems; as well as integrated navigation systems to minimally include:

- (1) Redundant propulsion and steering systems:
 - (A) two independent propellers each with a dedicated engine (or motor), propulsion system (electrical generation system) electrical system (including the switchboard), fuel system, lube oil system; and any other system required to provide the vessel with independent means of propulsion; and
 - (B) two independent rudders each with separate steering systems; and
 - (C) the propulsion and steering components, as described in subsections (A) and (B), above, shall be arranged in separate spaces, such that a fire or flood in one space will not affect the equivalent system in other space(s); and
 - (D) a bow thruster with an assigned power source.
 - (2) A navigation system in compliance with the federal navigational equipment requirements set forth in 33 CFR Sections 164.35, 164.37, 164.38(b), 164.40, 164.41, 164.42, and 164.43.
 - (3) No exemption to this subchapter shall be allowed for a tanker requesting a U.S. Coast Guard Captain of the Port letter of deviation, pursuant to 33 CFR Sections 164.51, 164.53, and 164.55.
 - (4) The Administrator may require tankers that are exempt from this subchapter under the conditions outlined in Subsection (f) above to periodically demonstrate the tank ship and crew's ability to maneuver in response to a partial or total loss of propulsion and/or steering at a level of safety at least equal to that of an escorted tanker.
- (g) This subchapter shall not apply to purely dedicated response vessels.
- (h) Nothing in these regulations shall prohibit the master or pilot from taking any action necessary to maximize the safety of the transit and/or avoid:
- (1) a collision or grounding; and/or
 - (2) damage to the tank vessel or escort tug and/or its crew and/or cargo.
- (i) The tank vessel master remains responsible for the safe navigation and maneuvering of the tank vessel in all circumstances.

- (j) The requirements outlined in this section are in addition to, and not a limitation of, any other responsibility created by custom, law, or regulation.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Section 8670.17.2, Government Code.

851.23. Requirements for Escort Tugs; Bollard Pull Testing and Certification, Equipment Requirements, Crew and Training Standards.

(a) Bollard Pull Testing Requirements.

- (1) All escort tugs in the Los Angeles/Long Beach Harbor used for escorting tank vessels, shall have their static bollard pull (ahead and astern) measured for determining their forces in kips.
- (2) Static bollard pull measurements shall be verified by a member of IACS, and in accordance with the following standards:
 - (A) The measurement shall be taken with the escort tug's trim and/or displacement corresponding to applicable loadline requirements or letter of stability.
 - (B) Auxiliary equipment (such as pumps and generators) which is driven from the main engine(s) or propeller shaft(s) in normal operation of the escort tug shall be connected during the measurement process.
 - (C) All bollard pull measurements shall be derived solely on the basis of the escort tug's capabilities. No outside assistance shall be allowed.
 - (D) The propeller(s) blades fitted during the measurement shall be the same as those used when the escort tug is in normal operation.
 - (E) Water depth shall be a minimum of 45 feet (not underwater clearance).
 - (F) Water current shall not exceed 1.0 knot.
 - (G) Wind velocity shall not exceed 10 knots.
 1. Measurements of water current and wind velocity shall be provided to the classification society surveyor by the escort tug owner's representative.
 - (H) Towline length shall be a minimum of 300 feet.

- (I) The strain cell used for the measurements shall have been calibrated within the past 12 months. The classification surveyor shall verify this fact. The accuracy of the strain cell shall be +/-2% within a temperature range of -40° and 104°F.
- (J) Instruments providing both a continuous read-out and the bollard pull graphically as a function of the time, shall be connected to the strain cell.
- (K) The surveyor for the classification society shall:
 - 1. be aboard the escort tug during the measurement process to verify that the bollard pull report is correct;
 - 2. determine the escort tug's static bollard pull capacity by averaging the forces recorded (without any significant tendency of decline) for a period of at least 15 minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's recommended continuous output;
 - 3. sign the completed BOLLARD PULL REPORT of the Los Angeles/Long Beach Harbor Safety Committee; and
 - 4. sign and issue a BOLLARD PULL CERTIFICATE.
- (3) Escort tug companies shall provide the Los Angeles/ Long Beach Harbor Safety Committee with the results of the static bollard pull tests performed measurements taken pursuant to the provisions of this subchapter.
- (4) Results of any and all static bollard pull measurements shall be inventoried and published by the Marine Exchange.
- (5) Escort tugs which do not have current bollard pull certifications on file with the Marine Exchange and the Harbor Safety Committee or which do not meet the requirements for alternative compliance for bollard pull measurements, cannot be used for the escort of tank vessels in the Los Angeles/Long Beach Harbor.
- (6) The braking force shall be re-measured after any modifications and/or repairs to the main engines, hull, shaft-drive line, or steering, that could affect bollard pull. The new measurements must be reported to the Los Angeles/Long Beach Harbor Safety Committee and on file with the Marine Exchange.
- (7) Any escort tug used to comply with the requirements of this subchapter shall also meet one of the following:
 - (A) the escort tug shall have its braking force re-measured within 3 years of its last bollard pull test, or;

- (B) the escort tug shall submit to an Escort Tug Inspection Program, as follows:
1. Escort tugs 150 gross tons or greater, and classed escort tugs shall be made available for inspection by the Administrator twice in five years during their dry dock examination. The period between inspections shall not exceed three years.
 2. Escort tug maintenance records shall be made available for inspection by the Administrator.
 3. If dry dock examination extensions are necessary, escort tugs shall comply with the direction of the cognizant Officer in Charge, Marine Inspection, or American Bureau of Shipping principal surveyors' direction.
 4. For classed escort tugs, a copy of the Class Surveyor's report confirming that the condition of the drive train (shafts, propellers, nozzles or other type drive) and main engines are in the same state as when the builder's or last bollard pull certificate was issued, shall be forwarded to the Administrator.
 5. Escort tug companies shall participate and have a certificate of compliance from one of the following Management Systems:
 - i. American Waterways Operators Responsible Carrier Program;
 - ii. International Safety Management;
 - iii. ISO 9000 (quality management).
 6. Escort tugs of less than 150 gross tons shall be made available for inspection by the Administrator once in five years during their dry dock examination. These escort tugs shall use a certified Marine Surveyor and shall comply with subsections 2, 3, and 4, above.
- (C) Escort tugs that submit to the Escort Tug Inspection Program, as described above, can perform escort duties in any port in the state, if the tugs meet the requirements of the appropriate subchapter (i.e., Subchapter 1, San Francisco Bay Region; Subchapter 2, Los Angeles/Long Beach Harbor; Subchapter 3, Port Hueneme Harbor; Subchapter 4, Humboldt Bay; Subchapter 5, San Diego Harbor), of this Chapter 4 of the California Code of Regulations.

(b) Equipment Requirements for Escort Tugs.

All escort tugs used to escort tank vessels shall be equipped with and shall maintain in good working order:

- (1) primary and secondary VHF radios; and
- (2) fendering appropriate to absorb the impact inherent in hull-to-hull operations; and
- (3) power line handling equipment fore and aft to mechanically assist in the deployment and/or retrieval of tow lines.

(A) Tow lines provided by tank vessels and/or escort tugs shall:

1. be maintained in sufficient number, length, condition and strength to assure effective control of the intended vessel maneuver, based on weather conditions, the tank vessel's size, and the escort tug's certified static bollard pull or alternative model forces;
2. have a certified strength of at least 1.5 times the escort tug's certified static bollard pull or the alternative model forces found in Section 851.29 of this subchapter.

(c) Any escort tugs used to comply with the requirements of this subchapter shall meet crew standards as follows:

- (1) Federal regulations regarding hours of work apply to licensed and unlicensed crew members. According to these regulations, working hours shall include any administrative duties associated with the tug whether underway or at the dock. Hours of rest shall be in accordance with Part A, Chapter 8, Section A-VIII/1, paragraphs 1-4, of the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers, 1978, as amended in 95 (STCW) standard, which is incorporated by reference.
- (2) An escort tug, during escort and assist operations required by this subchapter, shall have a minimum of three crewmembers on board ready to respond at the tug master's discretion during an escort transit. At least one crewmember shall be capable of resolving mechanical difficulties aboard an escort tug in the event of an emergency.
- (3) The Administrator may review the equipment and crew on an escort tug to assure compliance with this subsection.

(d) Training requirements for the crew of any escort tug used to comply with the requirements of this subchapter shall include, but are not limited to:

(1) In addition to demonstrable skills that satisfy federal requirements (46 CFR, Section 10.464) for towing vessel licensure, the following training elements are required (with refresher training every 5 years):

(A) Masters/Mates:

- *1. Bridge management training;
- *2. Radar training;
- 3. Navigation/boat handling training or proficiency evaluation, including Rules of the Road refresher training;
- 4. Company policy and procedure orientation, including review of international, federal and state requirements;
- *5. Marine firefighting/fire prevention;
- *6. Personal safety, including:
 - i. First aid and CPR certification;
 - ii. Confined space hazard awareness;
 - iii. Injury prevention;
 - iv. Cargo knowledge/hazard awareness.
- *7. Responsibility and authority of master including supervisory skills training;
- *8. Currency of knowledge, as required by federal law (46 CFR 15.812) to serve as pilot on non-self propelled tank vessels;
- *9. Knowledge of local geography:
 - i. Terminal location and approaches;
 - ii. Anchorages;
 - iii. Tanker routes.

(B) Crew members, other than masters/mates:

- 1. Deck equipment operations and safety training;

2. Company policy and procedure orientation, which shall include a review of applicable international, federal and state requirements;
- *3. Vessel firefighting/fire prevention;
- *4. Personal safety, including:
 - i. First aid and CPR certification;
 - ii. Confined space hazard awareness;
 - iii. Injury prevention;
 - iv. Lock-out/tag-out procedure.
5. Marine diesel operations training, including engine room equipment and alarms.

In addition to the subjects listed above within this Subsection (B) crew members, other than masters and mates, shall demonstrate their ability to operate the vessel in place of the master/mate in an emergency situation, when the master/mate is unable for any reason to operate in his/her capacity.

(C) All crew members:

1. Employee orientation, including:
 - i. Drug and alcohol policy;
 - ii. Safety as a condition of employment;
 - iii. Vessel layout/deck operations;
 - iv. Required safety gear;
 - v. Job responsibilities.
- *2. Emergency procedures orientation:
 - i. Fire;
 - ii. Collision/allision;
 - iii. Sinking;

- iv. Grounding;
 - v. Man overboard;
 - vi. Personal injury;
 - vii. Oil spill reporting.
3. Knowledge and use of tug escorts:
 - i. How to use an escort tug to reduce the risk of grounding or collision of an escorted vessel;
 - ii. The roles of the tug (as servant of the vessel) and the pilot during escorts;
 - iii. The primacy of safety of life and the escort tug;
 4. Capabilities and performance limitations of the escort tug, including but not limited to:
 - i. Handling and performance characteristics of escort tugs (e.g., stability, hydrodynamics, tripping, etc.);
 - ii. Propulsion type;
 - iii. Force capabilities;
 - iv. Line and connection system integrity;
 - v. Navigation systems.
- (2) Training required as a condition of U. S. Coast Guard licensure (e.g., firefighting) may be used to satisfy the training specifications listed in Subsection (d)(1) above, as appropriate.
 - (3) Compliance with the crew training and qualification requirements listed in Subsection (d)(1) above shall be verified as follows:
 - (A) Companies that comply with the International Convention on Standards of Training, Certification, and Watchkeeping for Seafarers (STCW) certification and have a Safety Management System (SMS) in place shall provide internal audit reports and STCW training certificates to the Administrator upon request; or

- (B) Companies that are not STCW certified, but which have a SMS in place shall request approval from the Administrator by providing all of the following:
1. Details of their training program; and
 2. Certified audit reports; and
 3. Demonstration of proficiency of the crew in the training elements prior to approval when deemed necessary by the Administrator.

*Federal requirements

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.
Reference: 8670.17.2 and 8670.23.1, Government Code.

851.24. Pre-Escort Conference.

- (a) Prior to commencing an escorted transit, the tank vessel master/pilot shall:
- (1) contact the escort tug master, mate or officer in charge of the watch, to confirm the number and position of the escort tug(s); and
 - (2) establish the radio frequency to be used for communications; and
 - (3) establish the anticipated direction of movement and destination of the tank vessel; and
 - (4) communicate any other pertinent information that the master/pilot and escort tug master, mate or officer in charge of the watch deem necessary to facilitate operations in the case of an unplanned event.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.
Reference: Section 8670.17.2, Government Code.

851.25. Speed Limits for Tankers.

- (a) Tankers transiting between the seaward limits of the tank vessel escort zones, as described in Section 851.22(c), and anywhere inside the Federal Breakwater shall restrict their speed as follows:
- (1) eight (8) knots for vessels with displacements less than 60,000 metric tons;
 - (2) six (6) knots for vessels with displacements of 60,000 metric tons and more.

- (b) The maximum speed limits contained in Subsections (a)(1) and (a)(2) reflect favorable circumstances and conditions and shall be adjusted for safety based on weather and tidal conditions and the proximity of other vessel traffic.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Sections 8670.17.2, Government Code.

851.26. General Escort Tug Requirements for Tankers.

- (a) The master/pilot of inbound tankers shall confirm by VHF contact with the required escort tug(s), that the tug(s) is/are stationed at the seaward limit of the applicable tank vessel escort zone (as described in Section 851.22(c)) prior to the tankers reaching the seaward limit of the applicable tank vessel escort zone.
- (b) Tanker Crew Requirements.
 - (1) a tanker shall have:
 - (A) sufficient and qualified line handling capable crew members standing by and available to immediately receive lines from each escort tug. The crew shall not be assigned duties that would interfere with their ability to immediately respond to an emergency situation;
 - (B) its anchors ready for letting go prior to entering the applicable tank vessel escort zone (inbound tankers only);
 - (C) sufficient and qualified supervisors to provide direct supervision of line handling crew operations for tankers. Supervisors shall have direct radio communication capability with the bridge of the tanker.
- (c) Tanker Equipment Requirements:
 - (1) each tanker shall have appropriate and suitably maintained bitts and chocks that are of sufficient size, strength, and number to accommodate the anticipated forces of the escort tug(s);
 - (2) the tanker tank ship owner/operator shall indicate the location of the appropriate bitts and chocks, as well as the safe working loads, on the ships general arrangement plan for each tanker. This information shall also be communicated to the pilot during the pre-escort conference required by Section 851.24 of this subchapter.

- (d) Notwithstanding any other provision of this subchapter:
- (1) any additional requirements for tug escort as deemed necessary by the U.S. Coast Guard shall supersede the requirements of this subchapter;
 - (2) during a non-emergency situation the master/pilot, may only adjust the minimum escort requirements contained in this subchapter with the concurrence of the Coast Guard Captain of the Port.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Section 8670.17.2, Government Code.

851.27. Tanker Force Selection Matrix.

- (a) The tug(s) used for the escorted vessel movements described in Section 851.22, Subsections (a) and (b), shall provide forces equivalent to those delineated in the following Tanker Force Selection Matrix. No more than two escort tugs may be used to meet the “Forces For Tug(s)” requirements in the Tanker Force Selection Matrix, except as provided in Sections 851.22(h) and 851.27(e).

| TANKER FORCE SELECTION MATRIX | |
|--------------------------------------|--|
| Tanker Displacement | Forces For Tug(s) Tethered at the Stern (See Notes Below) |
| 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.

- (b) Only tractor type tugs may be employed to meet the requirements of this subchapter.

- (c) Any escort tug(s) employed to meet the “Forces For Tug(s)” requirements in the Tanker Force Selection Matrix shall have a pulling power as follows:
 - (1) Laden tankers with displacements less than 180,000 metric tons must employ at least one tractor tug that has sufficient power to satisfy the “Forces For Tug(s)” requirements in the Tanker Force Selection Matrix.
 - (2) Laden tankers with displacements equal to or greater than 180,000 metric tons may employ two tugs that have sufficient combined power to satisfy the “Forces For Tug(s)” requirements in the Tanker Force Selection Matrix, provided that:
 - (A) both tugs have bollard pull ratings of 45 short tons or more, and
 - (B) a team towing configuration is used. A “team towing configuration” is the practice of running two tugs in tandem on aft leads.
- (d) All required escort tugs shall be tethered on the tanker’s stern.
- (e) 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, the contemplated movement of the vessel or other conditions or circumstances so require.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Section 8670.17.2, Government Code.

851.27.1. Tank Barge and Tug Matching Criteria, Tethering, Stationing and Equipment Requirements

- (a) The tug(s) used to escort a tank barge must be able to provide sufficient braking force to stop the tank barge.
 - (1) The braking force shall be measured either as:
 - (A) the escort tug's ahead static bollard pull for tractor tugs using stern lines (VSP); or
 - (B) astern static bollard pull for tractor tugs using headlines (ASD); or
 - (C) astern static bollard pull for conventional tugs.
 - (2) At the appropriate seabuoy:
 - (A) tethered escort tug(s) are required for all tank barges and their primary towing vessels whose aggregate displacement tonnage exceeds 20,000;

- (B) the escort tug(s) shall have the minimum individual or aggregate braking force, when tethered or untethered, as specified in Subsection (3) A. and B. below:

(3)

| Total Displacement Tonnage of the Barge and the Primary Towing Tug in Metric Tons | Minimum Required Escort Tug(s) Static Bollard Pull in Short Tons | |
|---|--|---------------------------------|
| | <i>Tethered Escort Tug(s)</i> | <i>Untethered Escort Tug(s)</i> |
| A. 0 to = 20,000 metric tons | 10 short tons | 15 short tons |
| B. >20,000 metric tons | <i>Tethered Escort Tug(s)</i> | |
| | A total astern static bollard pull (in pounds) equal to or greater than the sum of both the primary towing tug's and barge's total displacement tonnage in metric tons. (E.g., where the total towing tug and barge displacement is 25,000 metric tons, the escort tug(s)' astern static bollard pull shall be at least 25,000 pounds or 12.5 short tons.) | |

- (4) A tank barge must be accompanied by a sufficient number, but no more than two tugs to provide the braking force specified in this section.

- (5) The towing tug which provides the power to push or tow a tank barge shall not become an escort tug during the course of a transit unless the towing tug has been relieved of its duties as the primary towing vessel, and replaced with another tug that serves as the primary towing vessel.

- (A) Any towing tug that does become the escort tug after being relieved of all towing duties must meet all the requirements for escort tugs as specified in this subchapter.

- (6) The primary towing vessels for tank barges transiting between the seaward limits of the pilot operating areas and anywhere inside the Federal Breakwater shall restrict their speed to four (4) knots.

(b) Stationing Requirements.

- (1) The primary towing tug master or mate shall confirm by VHF contact with the required escort tugs(s), that the tug(s) is/are stationed at the seaward limit of the

applicable tank vessel escort zone (as described in Section 851.22(c) prior to the tank barge reaching the seaward limit of the applicable tank vessel escort zone.

(c) Equipment Requirements.

- (1) Each tank barge shall have deck chocks and bitts that are of sufficient size, strength and number to accommodate the anticipated forces of the escort tug(s) as stated in subsection (a)(3) above;
- (2) The tank barge owner/operator shall illustrate the location of the bitts and chocks, and any other locations on the hull, which are capable of withstanding the forces exerted by the escort tug(s), within documentation kept on file with the Marine Exchange, and onboard the towing tug.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Section 8670.17.2, Government Code.

851.28. General Requirements for Tank Vessels.

(a) All laden, inbound tank vessels engaged in movements described in Section 851.22, Subsections (a) and (b), shall:

- (1) comply with the escort requirements specified in Section 851.27, or its alternatives found in Section 851.29; and
- (2) report their displacement and their static deep draft upon arrival and departure to the Vessel Traffic Service/Marine Exchange; and
- (3) either through the tank vessel owner/operator or the agent acting on their behalf, provide the accurate displacement and static deep draft of the tank vessel when ordering tug escort services from the tug provider(s); and
- (4) be met by the required escort tug(s) at the seaward limit of the applicable tank vessel escort zone; and
- (5) not proceed closer than the seaward limit of the applicable tank vessel escort zone unless the required escort tug(s) is in position at the seaward limit of the applicable tank vessel escort zone.

Authority: Sections 8670.17.2 and 8670.23.1, Government Code.

Reference: Section 8670.17.2, Government Code.

851.29. Alternative to Section 851.27 Requirements for Matching Escort Tugs to Tank Vessels.

- (a) Measurement methodologies other than those used to establish the requirements in Section 851.27 may be used instead of, or in addition to, that section as follows:
 - (1) Escort tug operators may propose an alternate method for measuring the forces of any escort tug (in kips) than the static bollard pull measurement indicates. An alternate measurement may be submitted only once in any 12 month period and shall comply with the following:
 - (A) The owner/operator shall assure that the following are included when developing a methodology for calculating alternate forces for a given escort tug:
 1. the alternate measurement is conducted from a starting speed of six (6) knots;
 2. the escort tug is not required to exceed the limits of its ability to generate the forces, and in no instance submerges the deck edge to achieve the alternate measurement;
 3. the escort tug operates all its equipment at or below the manufacturer's recommended guidelines for its safe working load;
 4. unless demonstrated otherwise by full scale testing, all machinery shall be assumed to operate at or below performance levels published by the manufacturer;
 5. any current bollard pull values registered with the Marine Exchange shall be utilized where appropriate in any formulas or models;
 6. any known condition that would impair the escort tug's ability to perform shall be included in the calculation.
 - (B) The measurement must be conducted by a naval architect or licensed marine engineer approved by the Administrator:
 1. the escort tug operator shall submit the name of the naval architect or licensed marine engineer to the Administrator for approval prior to having that individual or his/her company conduct an alternate measurement.
 2. the Administrator shall approve a naval architect or licensed marine engineer if that person has demonstrated the education,

knowledge and experience necessary to conduct the testing and modeling of escort tug capabilities and forces.

- (C) The alternate model and the resultant measurements shall be approved by the Administrator before the alternate model may be used to match a tank vessel to an escort tug or tugs. The Administrator shall approve the alternate model if:
 - 1. it provides at least the same level of protection as the forces established in Section 851.27; and
 - 2. can be achieved using no more than two escort tugs as required by this subchapter.
 - (D) After an alternate model is approved, the Administrator shall provide the Los Angeles/Long Beach Harbor Safety Committee with a list of the escort tug combinations which correspond to the tank vessel displacements (in metric tons) and speeds under the approved alternate methodology.
- (2) Tank vessel operators may develop a model for the vessels in their fleet relative to the steering and braking demands of the vessels. The steering and braking demands established by the alternate model may be used to match escort tugs to tank vessels in lieu of those specified in Section 851.27. An alternate compliance model may be submitted only once in any 12 month period and shall comply with the following:
- (A) The measurement must be conducted by a naval architect or licensed marine engineer approved by the Administrator.
 - 1. The tank vessel operator shall submit the name of the marine architect or licensed marine engineer to the Administrator for approval prior to having that individual or his/her company conduct an alternate model.
 - 2. The Administrator shall approve a naval architect or licensed marine engineer if that person has demonstrated the education, knowledge and experience necessary to conduct the testing and modeling of escort tug capabilities and forces.
 - (B) The alternate model and the resultant measurements shall be approved by the Administrator before the alternate model may be used to match a tank vessel to an escort tug or tugs. The Administrator shall approve the alternate model if:

1. it provides at least the same level of protection as the forces established in Section 851.27; and
 2. can be achieved using no more than two escort tugs as required by this subchapter.
- (C) After an alternate model is approved, the Administrator shall provide the Marine Exchange and the Los Angeles/Long Beach Harbor Safety Committee with the tank vessel demand in kips which corresponds to the tank vessel's displacement (in metric tons) and speed under the approved alternate model.

Authority: Sections 8670.17.2, and 8670.23.1, Government Code.
 Reference: Section 8670.17.2, Government Code

851.30. Reporting.

Anyone may report violations of the provisions of this subchapter to:

- (a) the Office of Spill Prevention and Response; or
- (b) the United States Coast Guard Captain of the Port.

Authority: Sections 8670.17.2, and 8670.23.1, Government Code.
 Reference: Section 8670.17.2, Government Code

851.31. Compliance Monitoring and Notification.

Compliance monitoring of these regulations shall be accomplished by the procedures specified in either subsection (a) or (b), below:

- (a) The development of a compliance monitoring program(s) or process(es) designed by the Port of Los Angeles and the Port of Long Beach (Ports), or their designees.
 - (1) The program(s) or process(es) shall specify how the Ports will provide the Administrator, or his designee, with notification of a violation(s) to the regulations; and / or
 - (2) that the vessel, under normal, not exigent circumstances, is to be detained until the requirements of this subchapter have been fully met.
 - (A) The program and/or process shall be submitted to the Administrator for his/her review and approval no later than 120 days from the effective date of this regulation.

(B) The Administrator shall have 60 days within which to review and either approve, conditionally approve or disapprove the Ports' submittal. Upon termination of this time line the Administrator shall:

1. Fully approve the proposed program and/or process provided by the Ports and provide written confirmation of this approval.
2. Conditionally approve the proposal(s). The Administrator shall provide a written explanation for the conditional approval and state the objectionable items contained in the proposal. The Ports shall be given 30 days from the date of their receipt of the Administrator's explanation, to resubmit a proposal which will either excise or mitigate, with an explanation, the Administrator's objections. The Administrator shall have 30 days from the date of receipt of the Ports' amended proposal, and shall either fully approve or fully disapprove this document.
3. Disapprove the Ports' proposals.

(b) If either of the Ports' program(s) and/or process(es) is/are disapproved, or if either of the ports fail to submit a program, the Administrator shall implement the compliance monitoring provisions of this subchapter by the adoption of further regulations. These regulations may include the establishment of a Clearing House function within the Marine Exchange or through any other legal means deemed appropriate by the Administrator.

Authority: Sections 8670.17.2, and 8670.23.1, Government Code.
Reference: Sections 8670.17.2 and 8670.67(b), Government Code

851.32. Remedies.

- (a) Nothing herein shall limit or prevent any action by any party in a court of competent jurisdiction.
- (b) Any person who knowingly, intentionally or negligently violates any provision of this subchapter shall be subject to criminal, civil, and/or an administrative civil penalty as prescribed in Article 9 of the Government Code beginning with Section 8670.57.

Authority: Sections 8670.17.2, and 8670.23.1, Government Code.
Reference: Sections 8670.17.2 and 8670.67(b), Government Code

XIII. PILOTAGE

Regulation of pilotage in LA/LB Harbors rests on the virtually-identical Tariffs of each port and a Memorandum of Agreement between the Coast Guard, the State of California and the Ports (see Appendix I). The Tariffs require federally-licensed pilots on all vessels over 300 gross tons (with minor exceptions).

Current Coast Guard regulations require a federally licensed pilot aboard every tank vessel mooring and unmooring at offshore marine terminals. (For more detailed information see Chapter XVII). By Port Tariffs, pilots stay on outbound vessels until clear of the breakwater entrance. In bad weather, pilots who cannot disembark safely outside the breakwaters may disembark inside, once they assure the vessel's safe transit.

At the request of the Coast Guard, the Los Angeles Pilots and Jacobsen Pilots have agreed to ensure continual service of a licensed pilot for vessels moving between Los Angeles and Long Beach Harbors outside the breakwater.

The Port Tariffs require that a vessel notify the affected pilot station(s) in the rare instances when it need not engage a pilot before entering, leaving, shifting or moving between Los Angeles and Long Beach Harbors. The applicable tariff sections for the Ports of Los Angeles and Long Beach can be located at Port of Los Angeles Tariff No. 4, §3, Item 305(h)(2) and Port of Long Beach Tariff No. 004, Rule 34B, §2, Item 205(h)(2).

A. PILOT TRAINING: The Committee understands the absolute need for training pilots adequately to ensure safe vessel movement. To this end, the Committee incorporates the following description of each pilot organization's training program.

1. Jacobsen Pilot Service, Inc.

- a. General: The training program's goal is a thoroughly-trained pilot who will complete any job assignment safely. In the event of mechanical or other failure, he or she will react correctly under stress, choosing the right option(s) from those available. Experience shows that only intensive training reaches this goal. In recent times, successful completion of the program has taken at least three years, whatever the applicant's background. All trainees pass through the same phases and demonstrate the same proficiency level before progressing. The program is strictly performance-based. Jacobsen's management, in consultation with senior pilots who daily observe the trainee, decides when he or she has completed a phase and may advance to the next.

The program supplements hands-on training with simulator-based training. Essential to the hands-on portion, serving pilots actively critique trainees. Only when the trainee has repeatedly demonstrated mastery of the jobs at the current level will he or she move forward.

Jacobsen recognizes that different people learn at different speeds. Trainees occasionally reach plateaus and seem to bog down.

b. Definitions

- i. Ride: A vessel movement by a fully qualified-pilot, where the trainee watches the technique used but does not handle the vessel.
 - ii. Solo: A vessel movement by a trainee alone, without aid from a fully qualified pilot.
 - iii. With pilot: A vessel movement by a trainee with a fully qualified pilot beside her or him.
- c. Structure: Upon acceptance into the program, the trainee spends approximately one month riding with and observing a regular staff pilot, who concentrates riding pilot jobs on small and medium sized vessels. On completing this initial phase, the trainee begins handling, with pilot, smaller vessels to/from anchorage, while continuing to "ride" larger vessels to/from anchorage and docks.

The trainee, as her or his skills develop, handles incrementally larger and deeper draft vessels to/from anchorage with pilot, and begins solo handling of small vessels to/from anchorage. At about this stage, when the trainee can turn, stop, maintain directional control with engines stopped and understand inertia, he or she begins handling small, light draft vessels from the more open docks. Soon after, the trainee handles these same-sized vessels inbound to the open docks. The trainee makes all dock moves with pilot until he or she repeatedly demonstrates proficiency to the satisfaction of the screening pilots and the approval of Jacobsen's management.

The trainee then handles incrementally larger and deeper-draft vessels to/from anchor and to/from docks as solo moves while continuing to handle somewhat larger vessels with pilot. The trainee handles vessels significantly larger and deeper than her or his solo limit as rides only. This progression continues: in each phase the trainee handles up to a certain size and draft vessel solo, a somewhat larger vessel with pilot, and the largest sized vessel as ride only. As discussed more fully below, each trainee undergoes at least one computer-based simulator training with seasoned pilots in attendance.

- d. Ongoing Training: Jacobsen has developed a comprehensive pilot training program utilizing simulators. During these simulations, trainees learn all manner of advanced piloting procedures, including emergency maneuvers and bridge resources management.

All of Jacobsen's serving pilots have attended an ongoing training program. Sessions are scheduled so that every pilot attends the simulator course every 2 ½ to 5 years. All training sessions include a senior pilot as training coordinator.

- 2. Port of Los Angeles Pilot Service:** A comprehensive twenty-four month, seven step training program advances trainee pilots gradually, in ship's size and difficulty to fully competent and professional pilots. Each step has observed and supervised ride requirements for graduation to the next step. Written evaluations are completed by a senior pilot on each supervised ride. Evaluation trips and progress reviews by the Chief Pilot are an essential part of each step. This is supplemented by simulator training, observing the VTS, time riding tugs, vessel traffic management and studying Port regulations, including the Harbor Safety Plan. A trainee pilot typically completes over 1000 shipmoves prior to being promoted to Port Pilot II. The training program is monitored by a Pilot Training Committee comprised of senior pilots and administered by the Chief Pilot.

Each Port of Los Angeles pilot is required to attend manned ship model training every four years. Newly hired pilots are scheduled ahead of senior pilots that have already attended the training. The facilities that Los Angeles Pilot Service currently uses for this training are Port Revel Shiphandling Training Center in Grenoble, France and Warsash Maritime Academy in Southampton, England.

In addition to the manned model training, all pilots also attend ship simulator schools, such as the Pacific Maritime Institute in Seattle and the California Maritime Academy in Vallejo, every two years. The biennial simulator training is used for both continuing education and to address special circumstances, such as new terminal development and the handling of new ship types.

- 3. Chevron Shipping Company Mooring Master Training Program:** This program is designed to qualify an individual as a Mooring Master, for offshore conventional buoy mooring (CBM) operations at the El Segundo Marine Terminal. The Chevron Shipping Company Area Operations Manager will be responsible for administering and supervising the program.
- a. The El Segundo Mooring Master Training and Development Coordinator will continually assess and evaluate the trainee as they progress through the structured training plan and competency assessment program. He will recommend to management when a trainee is ready to be cleared for a berth clearance and subsequently arrange for an evaluation of the candidate. If the candidate performs at a high level and can fulfill the requirements for the berth clearance, he or she will be cleared by the training coordinator and management. The clearance requirements will consist of evaluations of the following topics:
- bridge team and pre-mooring discussion
 - approach/departure maneuvers
 - hose handling techniques
 - cargo transfer operations
 - tug utilization
 - weather parameters
 - terminal design

- underwater hazards

Completed training is tracked and entered into CAG (Competency Assessment Guideline) software which mirrors the OCIMF guidelines.

- b. Qualification Clearance Levels (QCL): The training program consists of (3) consecutive and distinct levels. At the completion of each phase, Western Region Manager will review the assessment, evaluations and recommendations, and may then grant clearance for a completed level to a candidate. The requirements may be modified depending upon the experience and skill level of each individual candidate.
- QCL/1. Vessels up to 80,000 DWT: To qualify for this initial level, the candidate must possess an appropriate, Unlimited Tonnage, U.S.C.G. license with an El Segundo Pilotage endorsement. The trainee must complete a minimum of sixteen (16) round trips under Mooring Master supervision. A minimum of four (4) round trips shall be conducted on a tug and barge into berth-3. The candidate will also be required to conduct one (1) full operation with the vapor processing barge “San Pedro” in Berth-3 (This may be completed in QCL/2). Additionally the trainee shall observe one (1) round trip from an attending tug and one (1) round trip on an attending line boat. The candidate will also be required to attend two shifts with the Head Terminal Operator at the El Segundo Refinery; one to be either a high-pour cargo or a vapor balancing operation.
 - QCL/2. Vessels 80,000 DWT – 125,000 DWT: To qualify for this level the trainee must complete a minimum of sixteen (16) round trips under Mooring Master supervision. A minimum of two (2) round trips shall be conducted with each qualified Mooring Master. Additionally, the trainee shall observe one (1) round trip from an attending tug and one (1) round trip on an attending line boat.
 - QCL/3. Vessels over 125,000 DWT: To qualify for this level the trainee must complete a minimum of sixteen (16) round trips under Mooring Master supervision. A minimum of two (2) round trips shall be conducted with each qualified Mooring Master. Additionally, the trainee shall observe one (1) round trip on an attending tug and one (1) round trip on an attending line boat.

Throughout the program, the candidate will keep a record of each vessel attended. A copy of the completed record sheet, endorsed by the supervising Mooring Master, is submitted to the Western Region Manager. The supervising Mooring Master will complete a *Mooring Master Training Evaluation* for each portion of the operation he attended. Comments will be practical in nature, both for the guidance of the candidate and the information of the Western Region Manager. A final Evaluation is to be completed by the Mooring Team Leader, prior to qualification for each clearance level following observation of the candidate's performance.

XIV. UNDER-KEEL CLEARANCE

A. UNDER-KEEL CLEARANCE: Under-keel clearance (UKC) means the minimum clearance available between the deepest point on the vessel and the bottom in still water.

$$\text{UKC} = (\text{Charted Depth of Water} + \text{Height of Tide}) - (\text{Static Deep Draft})$$

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; and
5. Weather impact on water depth.

In the Ports of Los Angeles and Long Beach, actual tide heights do not normally vary significantly from predicted tide heights. Nonetheless, real-time wind and tidal height information is available on the Internet at NOAA's P.O.R.T.S. website.

See: <http://tidesandcurrents.noaa.gov/ports/index.shtml?port=ll>

The master should discuss the vessel's anticipated UKC with the pilot.

B. MINIMUM UNDER-KEEL 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.

1. Port of Los Angeles:
 - a. Between the Los Angeles Approach Channel Lighted Buoy #1 and the Los Angeles Main Channel Buoy #11, minimum under-keel clearance before correction for roll and pitch is 10% of the vessel's draft.
 - b. In the channel between the Los Angeles Main Channel Buoy #11 and a position off the designated berth, minimum under-keel clearance is 2.0' (0.61m).
 - c. In the final approach to the berth, and while at berth, the vessel must always remain afloat.
 - d. At anchorages inside the breakwater, minimum under-keel clearance is 2.5' (0.76m).
 - e. Shifts via outer harbor between Los Angeles and Long Beach, minimum under-keel

clearance is 3' (.91m).

2. Port of Long Beach:

- a. Between the Long Beach seabuoy and the Long Beach Channel Buoy #3, minimum under-keel clearance before correction for roll and pitch is 10% of the vessel's draft.
- b. In the channel between the Long Beach Channel Buoy #3 and a position off the designated berth, minimum under-keel clearance is 2.0' (0.61m).
- c. In the final approach to the berth, and while at berth, the vessel must always remain afloat.
- d. At anchorages inside the breakwater, minimum under-keel clearance is:
 - i. 4' (1.22m) for anchorages B-7 and B-11 when vessels draft is 50' (15.24m) or more; and
 - ii. 2.5' (0.76m) for all other anchorages.
- e. For shifts via outer harbor between Long Beach and Los Angeles, minimum under-keel clearance is 3' (.91m).

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 under-keel 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 under-keel clearances.

Tank vessel masters and operators should also be guided by the under-keel clearance regulations for tank vessels contained in 33 CFR 157.455.

C. EVALUATING UNDER-KEEL CLEARANCE: While the above guidelines should ensure adequate UKC under normally encountered circumstances of weather, sea state and vessel configuration, the LALB 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 under-keel clearance.

FORMULA FOR INCREASE IN DRAFT DUE TO LIST

The formula for calculating the increase in draft for “X” degrees of list is:

$$\text{Draft Increase} = \text{Vessel Beam} \div 2 \times \text{Sine of List Angle}$$

| Examples: | Vessel Beam (feet) | Increase in Draft Due to List (in feet) | | |
|------------------|-------------------------------|--|----------------|----------------|
| | | 1° List | 2° List | 3° List |
| | 50 | 0.44 feet | 0.87 feet | 1.31 feet |
| | 75 | 0.65 feet | 1.31 feet | 1.96 feet |
| | 90 | 0.79 feet | 1.57 feet | 2.36 feet |
| | 105 | 0.92 feet | 1.83 feet | 2.75 feet |
| | 130 | 1.13 feet | 2.27 feet | 3.40 feet |
| | 150 | 1.31 feet | 2.62 feet | 3.93 feet |
| | 175 | 1.53 feet | 3.05 feet | 4.58 feet |
| | 200 | 1.75 feet | 3.49 feet | 5.23 feet |

FORMULA FOR INCREASE IN DRAFT DUE TO PITCH

The formula for calculating the increase in draft for “X” degrees of pitch is:

$$\text{Draft Increase} = \text{Vessel Length} \div 2 \times \text{Sine of Pitch Angle}$$

(Formula assumes tipping center is at midpoint)

| Examples: | Vessel Length (feet) | Increase in Draft Due to Pitch (in feet) | | |
|------------------|---------------------------------|---|-------------------|-------------------|
| | | 0.5° Pitch | 1.0° Pitch | 2.0° Pitch |
| | 500 | 2.18 feet | 4.36 feet | 8.72 feet |
| | 600 | 2.62 feet | 5.24 feet | 10.47 feet |
| | 700 | 3.05 feet | 6.11 feet | 12.21 feet |
| | 800 | 3.49 feet | 6.98 feet | 13.96 feet |
| | 900 | 3.93 feet | 7.85 feet | 15.70 feet |
| | 1000 | 4.36 feet | 8.73 feet | 17.45 feet |
| | 1100 | 4.80 feet | 9.60 feet | 19.19 feet |
| | 1200 | 5.24 feet | 10.47 feet | 20.94 feet |
| | 1300 | 5.67 feet | 11.34 feet | 22.68 feet |
| | 1400 | 6.11 feet | 12.22 feet | 24.43 feet |

XV. ENVIRONMENTAL IMPACTS

The Ports of Los Angeles and Long Beach are located in Santa Monica Bay and San Pedro Bay. The ports and their associated approach areas support a high diversity of biological communities in both artificial and natural habitats. A primary goal of the LA/LB Harbor Safety Plan is reduce the chance of accidents that can also result in spills or other environmental damage. Through effective implementation of the Harbor Safety Plan, we can simultaneously increase personal and equipment safety and decrease environmental impacts.

Environmental Background: The port complex habitats can be simply divided into benthic (bottom) and kelp beds, salt marsh, water column, and bird and mammal habitat. The benthic hard substrate in POLA/LB is mostly artificial breakwaters and barriers of riprap (boulders and concrete rubble), and a constructed shallow water habitat in POLA. Kelp beds, capable of housing over 800 marine species, typically dominate the hard substrate with surfgrass habitat potentially existing in waters less than 10ft deep. The soft bottom substrate comprises the majority of acreage in POLA/LB and is home to a number of burrowing organisms and bottom-dwellers. The sandy intertidal habitat at Cabrillo Beach supports burrowing invertebrates, which provide food for shore birds at low tide and fish at high tide. Eelgrass beds are found in soft bottom substrate and are habitat for many invertebrates, fish, and birds. Wetland habitat is also vital for sustaining natural resources, and the constructed salt marsh near Cabrillo Beach is home to many bird species. The water column is also valuable habitat for many fish, larvae, and planktonic food webs in addition to seals and sea lions.

The most recent baseline survey of POLA/LB was completed in 2008 by SAIC.¹ SAIC's study is an inventory of the natural resources of the Los Angeles/Long Beach port areas and approaches. The purpose of the inventory is to provide factual information for consideration by members of the HSC regarding natural habitats and biota which may be impacted by implementing the provisions of the Harbor Safety Plan.

See, Appendix H for more detail on species and habitats found in POLA/LB.

Regulatory Background: There are many international, federal, state, regional, and local environmental regulations that apply to the POLA and POLB, these include: MARPOL, EPA, CARB, CCC, CWA, Port Authority, etc. In addition, both ports are committed to environmental protections. The Port of Long Beach implemented a "Green Port Policy" in January 2005 that serves as a guide for decision making and established a framework for environmentally friendly Port operations. The policy's five guiding principles are:

- Protect the community from harmful environmental impacts of Port operations.
- Distinguish the Port as a leader in environmental stewardship and compliance.
- Promote sustainability.
- Employ best available technology to avoid or reduce environmental impacts.
- Engage and educate the community.

¹ SAIC (Science Applications International Corporation). 2010. 2008 Biological Surveys of Los Angeles and Long Beach Harbors. Submitted to Port of Los Angeles Environmental Management Division.
http://www.portofla.org/environment/wildlife_habitat.asp

The **Port of Los Angeles'** Environmental Policy states that the Port is committed to managing resources and conducting Port developments and operations in both an environmentally and fiscally responsible manner. The Port will strive to improve the quality of life and minimize the impacts of its development and operations on the environment and surrounding communities through the continuous improvement of its environmental performance and the implementation of pollution prevention measures, in a feasible and cost effective manner that is consistent with the Port's overall mission and goals, as well as with those of its customers and the community.

See Appendix L for a more detailed description of laws and regulations on marine pollution

Air Pollution

North American Emission Control Area: On August 1, 2012, the North American Emission Control Area entered into effect after being approved by the International Maritime Organization. It requires the reduction of emissions of nitrogen oxides, sulfur oxides and particulate matter for ships within 200 nautical miles of the coasts of the United States and Canada through the burning of cleaner fuel and the installation of better air pollution control equipment on ships.

For more details on the ECA, see:

<http://www.epa.gov/oms/regs/nonroad/marine/ci/420f10015.pdf>

California Air Resources Board (CARB): The California Air Resources Board has issued their own regulations to control air pollution from ocean-going vessels in California ports. The regulations are aimed at reducing the emissions of particulate matter, nitrogen oxides, and sulfur oxides through the use of cleaner burning fuel.² These regulations apply in addition to the Emission Control Area requirements.

Water Pollution: As described, POLA and POLB support unique and diverse biological communities and habitats. Implementing the provisions in the various chapters of the Harbor Safety Plan may have environmental impacts.

Given the large amount of petroleum product that is transported through the POLA and POLB, one of the most significant environmental impacts to the area would be from a major oil spill within the port, near the approaches, or at one of the offshore marine oil terminals.

Oil and Fuel Spills: A major oil spill would cause significant environmental impacts, as well as impacts to area commerce, commercial and recreational fishing and boating, personal property, and human safety. Spilled oil, including certain clean-up operations, can cause impacts to the environment and other area resources. The Coast Guard has promulgated a Los Angeles/Long Beach Oil Spill Contingency Plan which would be in effect should a major oil spill incident occur.

² See, 13 C.C.R. § 2299.2 and 17 C.C.R. § 93118.2.

For the Contingency Plan in its entirety, see:

<https://www.wildlife.ca.gov/OSPR/Preparedness/LA-LB-Spill-Contingency-Plan>

Other Ship Pollution: Harbor area waters are also subject to the Environmental Protection Agency (“EPA”) vessel discharge rules and regulations. The centerpiece of the EPA’s National Pollutant Discharge Elimination System (NPDES) vessels program is the nationwide Vessel General Permit (“VGP”) which applies to discharges incidental to the normal operation of all non-recreational, nonmilitary vessels of 79 feet or greater in length which discharge into ocean or shoreline waters.³ The VGP contains effluent limits for different types of discharges including ballast water, deck runoff, bilge water, gray water, and cooling sea water. The VGP’s requirements overlap with existing laws and regulations.⁴

A detailed discussion of vessel discharge rules and regulations can be found at:

http://www.portoflosangeles.org/DOC/WRAP_Vessel_Discharge_Rules.pdf

Bunkering/Lightering: Both the federal government and the State of California have enacted regulations governing the transfer of oil and other hazardous materials and vessel operations.

See Appendix M for more information on Bunkering Best Practices.

Ballast Water: Invasive species are potential threats to the Ports and the surrounding marine environment and local economy. Invasive species are transported primarily through the ballast water of commercial shipping. In order to combat this threat, California has created an Aquatic Invasive Species Management Plan of which mariners should be aware.⁵ In addition, the California State Lands Commission, Marine Facilities Division regulates ballast water management for the state.⁶ Ships are required to maintain a ballast water management plan and log ballast water intake and discharge.

For more info please see Page 29 of the POLB and POLA Discharge Rules and Regulations:

http://www.portoflosangeles.org/DOC/WRAP_Vessel_Discharge_Rules.pdf

Marine Mammal Strikes: Marine mammal strikes is an issue in the approaches to the Ports. During their migratory seasons, large numbers of whales pass near the approaches to the Ports.

³ The EPA has issued a new draft version of the VGP expected to come into effect on December 18, 2013 to replace the current VGP. The EPA has also issued a separate VGP applicable to smaller vessels which do not fall within the parameters of the VGP. See, http://www.epa.gov/npdes/pubs/vgp_brieffactsheet2011.pdf for more details.

⁴ Local regulations include Port of Long Beach Tariff No. 4 and Port of Los Angeles Tariff No. 4. State laws and regulations include the California State Lands Commission regulations, the California Clean Coast Act of 2005, and California Department of Fish and Wildlife Code 5650. International Regulations include the International Convention for the Prevention of Marine Pollution from Ships (“MARPOL”), which, among other things, specifies methods of oily ballast and bilge water containment and prohibits the discharge of untreated sewage.

⁵ See, <https://www.wildlife.ca.gov/Conservation/Invasives/Plan>

⁶ See, http://www.slc.ca.gov/spec_pub/mfd/ballast_water/Documents/BWMngmnt_InfoSheet.pdf for more details.

To avoid strikes, mariners need to be aware of the migratory season and any NOAA alerts regarding marine mammals as well as all Coast Guard issued Local Notices to Mariners.

For a detailed map highlighting the whale advisory zone:

http://channelislands.noaa.gov/images/whaleadvisoryzone_lg.jpg

Dredging: Dredging can cause environmental impacts to the marine environment as it reduces water clarity which can lead to a reduction of oxygen available in the water for aquatic organisms as well as stirring up the sea bed which can contain pollutants. Dredging activities should be careful if the area being dredged is existing eelgrass habitat.

***In the United States, **eelgrass** habitat is protected by federal and state law under their respective Clean Water Acts; the Magnuson-Stevens Fishery Conservation and Management Act; the California Coastal Act; and Title 14, California Code of Regulations. According to these laws and regulations, any activities which may potentially impact eelgrass habitat must mitigate for those impacts. This requires mitigation for harmful impacts to existing eelgrass beds as well as potential eelgrass habitat.

Stormwater Runoff: Urban runoff is a major environmental issue in Los Angeles County, including at the LA/LB Ports. Runoff from upstream sources combines with runoff from Port industrial operations, resulting in water quality standards violations in adjacent waterways, including the Los Angeles River and the Pacific Ocean. Currently there are official limits for metals, bacteria, and nutrients (TMDLs, or Total Maximum Daily Limits) that are being exceeded for numerous water bodies that flow into the Ports.

Please see Appendix L for more detail.

Conclusion: The Harbor Safety Plan increases navigational safety throughout POLA and POLB, thereby reducing the likelihood of a maritime incident, such as a major oil spill. Moreover, the LA/LB Harbor Safety Committee is made up of qualified representatives from the maritime community, port authorities, pilots, tug operators, petroleum and shipping industries, recreational boaters, and a multitude of federal, state and local agencies that meet regularly to develop additional strategies to further safe navigation and oil spill prevention. As such, implementing the provisions of the HSP has a beneficial impact on the environment because it furthers navigational safety and oil spill prevention and response, thereby helping protect the LA/LB area from adverse environmental impacts.

XVI. PLAN JURISDICTION

A. MANDATE: The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990, Government Code Section 8670.23.1(c)(5) requires Harbor Safety Committees to include in their Harbor Safety Plans: "Suggested mechanisms to ensure that the provisions of the Plan are fully and regularly enforced."

B. OVERVIEW: The Committee developed guidelines for vessels operating in this region to ensure safe, reliable, and environmentally sound marine transportation. Although the Committee cannot enforce these guidelines under state, federal, or local law, they institutionalize sound marine operating practices as Standards of Care that responsible vessel operators follow voluntarily. The Committee depends on its members, local, state, and federal agencies and the maritime community to monitor compliance with the Standards of Care. Observed violations or deviations from this Plan should be referred to the Committee, Coast Guard, or State or local authorities for evaluation and possible enforcement under applicable federal and state law or regulation. If the Committee finds significant deviations, it will evaluate and may recommend more stringent enforcement, and, as appropriate, state, federal, or local rulemaking.

C. SUMMARY OF PLAN PROVISIONS REQUIRING ENFORCEMENT AND ENFORCING AND MONITORING AGENCIES: The following briefly summarizes Plan provisions requiring enforcement and the parties who directly monitor compliance. State and/or federal regulations or Port Tariffs cover some Plan sections discussed below, while others are guidelines.

- 1. Aids to Navigation (Chapter III):** Federal regulations control all Aids to Navigation. Report any problems to the Coast Guard.
- 2. Anchorages (Chapter IV):** Federal regulations control anchorages. Pilots, VTS, the Navy, and Coast Guard normally monitor compliance with anchorage requirements. Violations are to be reported to the Coast Guard.
- 3. Harbor Depths, Channel Design and Dredging (Chapter V):** Federal law and regulations govern the contents of Chapter V. Report any problems to the U.S. Army Corps of Engineers or port authorities.
- 4. Contingency Routing (Chapter VI):** Pilots, VTS and the Coast Guard monitor compliance, which the Coast Guard enforces. Violations are to be reported to the Coast Guard. This Chapter and Appendix D are placeholders for the Coast Guard directive for emergency dispersal.
- 5. History of Accidents and Near Misses in the Harbor (Chapter VII):** This chapter's provisions are maintained by the Coast Guard. Questions or concerns may be directed to them.
- 6. Communications (Chapter VIII):** This Chapter mandates that highest quality communications equipment be used in LA/LB Harbor. The Committee supports circuit-

discipline programs reducing congestion, interference, unnecessary/ excessive use of high power settings, and frequency misuse. All radio users in the harbor area, as well as Committee members, can help the Coast Guard, VTS, the Southern California Marine Radio Council, the State Lands Commission, the California Department of Fish and Wildlife, and the Federal Communications Commission (FCC) monitor these standards. Violations are to be reported to the FCC and to the Harbor Safety Committee.

- 7. Bridges (Chapter IX):** Federal regulations govern bridge operations. Improper bridge management incidents are to be reported to the Coast Guard.
- 8. Small Craft (Chapter X):** The main small vessel safety problem is violation of the U.S. Inland Navigation Rules (1980), Rule 9: impeding the progress of large vessels within channels. Pilots, the Coast Guard, and VTS monitor compliance with Rule 9. Recreational boat navigation violations are to be reported to the Coast Guard or any readily available local law enforcement authority including the Los Angeles Port Police, Long Beach Harbor Patrol or Long Beach Police Department.
- 9. Vessel Traffic Service (Chapter XI):** VTS operates under state law and regulations which requires mandatory reporting and fee payment by covered vessels. VTS also operates under federal VTS regulations. The Coast Guard uses VTS to help enforce Regulated Navigation Areas (RNA) rules (speed limits, minimum vessel separation, etc.) in the LA/LB Harbor approaches. The VTS User's Manual (Appendix B), is available from the Marine Exchange, details these requirements. VTS watchstanders monitor compliance, but anyone observing a violation of VTS or RNA requirements should report it directly to VTS/Coast Guard.
- 10. Tug Escort/Assist for Tank Vessels (Chapter XII):** LA/LB Harbor follows state regulations governing tug escort requirements for oil tankers and oil barges. Chapter XII reflects recommendations for applying state regulations. Pilots monitor compliance and report violations to OSPR. However, anyone may report infractions to OSPR for enforcement.
- 11. Pilotage (Chapter XIII):** Pilots should remain in service on outbound vessels until outside the breakwater. VTS and pilots monitor compliance. Report any deviations from the standard procedures or Standards of Care of this Plan made by pilots or other vessel operators to the Committee or Coast Guard.

Vessels moving between the two harbors without engaging a pilot shall report to the pilot stations in each harbor before and during the move. Additionally, port tariffs require that vessels without a pilot report to the appropriate pilot station(s) when entering, leaving, or shifting within a port. Violations are to be reported to the pilot stations, Los Angeles Port Police, and Long Beach Harbor Patrol. By agreement between the Coast Guard and the pilot organizations, vessels moving between the two harbors and with a licensed pilot shall have that pilot's services for the entire transit. Violations are to be reported to the Coast Guard.

12. Under-keel Clearance and Inclement Weather (Chapters XIV & XVII): Pilots to monitor for compliance. Violations are to be reported directly to the Coast Guard. Report violations regarding reduced visibility to USCG and VTS.

D. ENFORCEMENT AUTHORITIES: The Committee formally requests that its members, as well as all agencies with enforcement and monitoring authority within the scope of the Plan, monitor compliance with Plan guidelines and provisions. Furthermore, it is very important that members of the local maritime community, who regularly conduct business in the harbor area and have the strongest presence, assist in monitoring by acting as the eyes and ears of the Committee. Please report infractions of Plan guidelines, violations of state and federal regulations and any unsafe practices to the following bodies, as appropriate:

- 1. The Coast Guard - 24/7 Command Duty Officer - (310) 521-3801:** violations of federal regulations or Plan guidelines, and unsafe practices;
- 2. VTS - Marine Exchange and Coast Guard - (310) 832-6411:** violations of federal regulations or VTS User's Manual provisions;
- 3. The Los Angeles Port Police (310) 732-3500:** violations of the Los Angeles Port Tariff or Plan guidelines;
- 4. POLB Harbor Patrol (562) 590-4185:** violations of the Long Beach Port Tariff or Plan guidelines;
- 5. California Department of Fish and Wildlife (562) 342-7212: NON- EMERGENCY** notifications for violations of state regulations;
- 6. California State Lands Commission (562) 499-6348:** violations of state law governing oil transfers at marine facilities;
- 7. Long Beach Police Department (562) 435-6711:** violations of state laws, local ordinances, or Port of Long Beach Tariff No.4.

The Committee encourages the local maritime community and agencies that monitor regulatory compliance to notify the Committee of marine safety and environmental concerns by telephone, in writing, or at the regular monthly meetings.

Should the Committee find that Plan guidelines are not routinely followed, it will evaluate more-stringent approaches to enforcement, including, as appropriate, state, federal, and local rulemaking.

XVII. INCLEMENT WEATHER: STANDARDS OF CARE FOR VESSEL MOVEMENTS

A. Purpose: 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 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 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.

B. 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 3 zones handled by separate vessel traffic centers (VTC). The jointly operated Southern California Marine Exchange / 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's for traffic inside the breakwater (see Ch. XI Vessel Traffic Service).

C. Definition of Inclement Weather:

- 1. 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).
- 2. Restricted Visibility:** Whenever conditions of visibility fall below the following:
 - a. Tankers 150,000 DWT or greater: 1 nautical mile
 - b. Tankers greater than 60,000 DWT, but less than 150,000 DWT: .75 nautical mile
 - c. All other vessels 45' draft or more: .75 nautical mile
 - d. All other tankers and petroleum barges: .5 nautical mile
 - e. All other vessels: 3 times vessel's LOA

D. 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 contained in Section 3 above.

1. Piloted Vessel Guidelines:

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

- i. The respective pilot station management will be notified, and
- ii. Prior to commencing a transit, the operating pilot (the pilot directing the movement of the vessel) will conduct a risk analysis that includes consultation with a second pilot. This expanded participation is a key risk reduction measure.

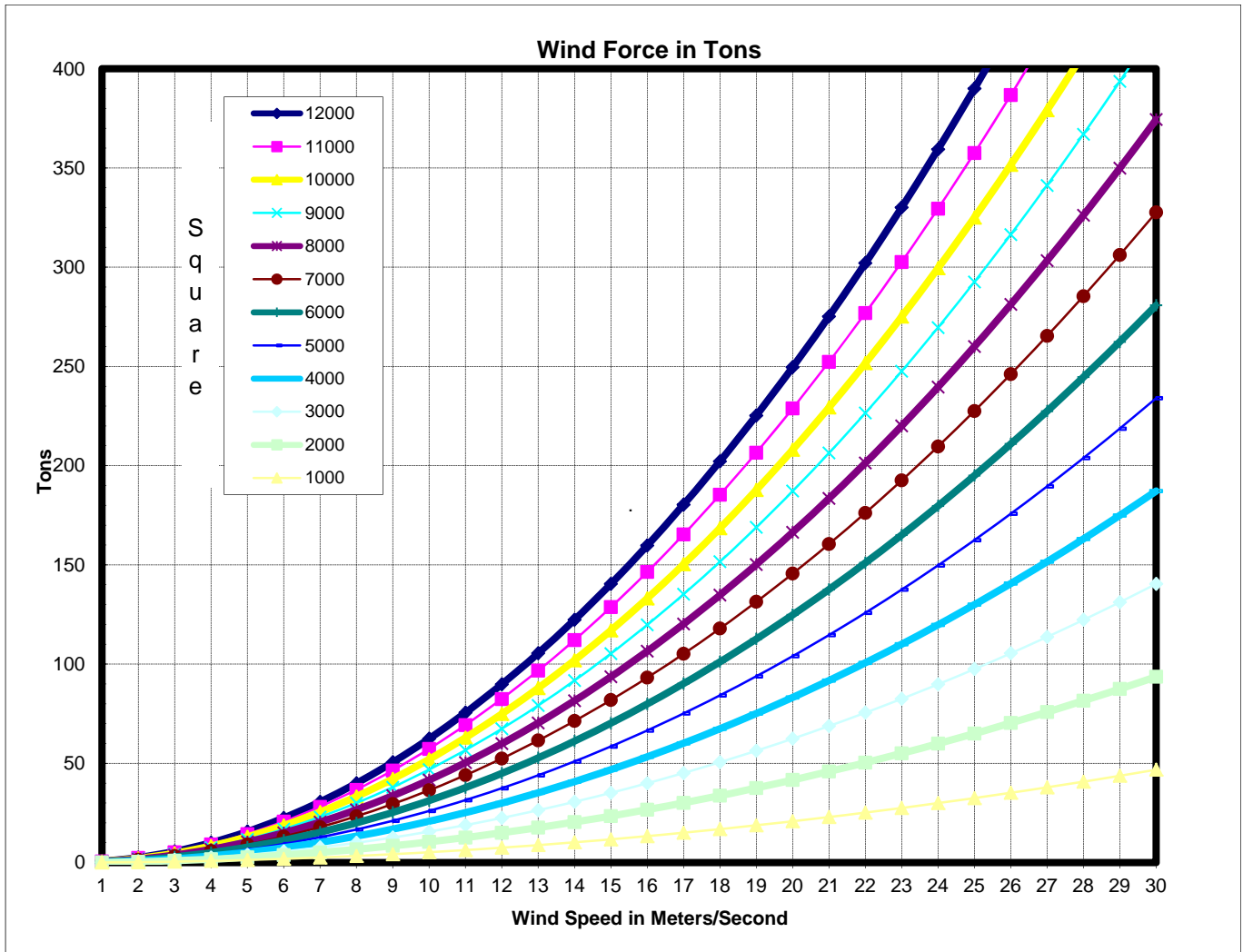
b. Reduced Visibility:

- i. 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.
- ii. When commencing a vessel movement in reduced visibility, as defined in Section 3.b. above, shoreside radar assistance and carry-on enhanced navigational tools such as a Portable Pilot Unit (PPU) shall be readily available for use.
- iii. 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 or anchoring, reducing speed, enlisting shore-based radar support and securing additional tug assistance.

c. 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: $(total\ area/1000) \times (V^2/18) = wind\ effect\ in\ tons$ where "V" is the wind speed in **meters/second**]:

- i. 1,000 square meters – 60 knots
- ii. 5,000 square meters - 28 knots and
- iii. 10,000 square meters - 18 knots

iv. Wind Force Chart



v. Example calculations for determining total sail area in square meters for various vessel types:

Example 1: 9,500 T.E.U. containership at 14.5m draft
 LOA: 330m
 Height to top of containers*: 34m

330m x 34m = 11,220 sq. meters
 9 m/s (18 knots) of beam-wind exerts 50 tons of force

* The height to the top of the container stack can be estimated from "Height of Eye" or by estimating the container stack height and adding it to the freeboard.

Example 2: Panamax bulk carrier or tanker in ballast

LOA: 250m

Freeboard: 9m

$250\text{m} \times 9\text{m} = 2,250$ sq. meters

20 m/s (40 knots) of beam-wind exerts 50 tons of force

Example 3: RORO ship

LOA: 200m

Height of Eye: 30m

$200\text{m} \times 30\text{m} = 6,000$ sq. meters

12 m/s (24 knots) of beam-wind exerts 50 tons of force

Example 4: Large passenger vessel – QEII

LOA: 344m

Height of Eye: 41m

$344\text{m} \times 41\text{m} = 14,100$ sq. meters

8 m/s (16 knots) of beam-wind exerts 50 tons of force

2. **Non-Piloted Vessel Guidelines:** It is recommended that all vessels develop, and follow, their own internal operating guidelines for inclement weather transits, including a provision for second opinion consultation.

E. Application of Equivalent Safety Levels: When a vessel master intends to commence a transit during inclement weather, at a minimum, the following equivalent safety levels should be adhered to:

1. **Vessels 1600 GT or greater while operating inside the federal breakwater:**

- a. Be under the control of a USCG licensed pilot with the appropriate endorsement for the vessel and area of operation, and
- b. Have shore-based radar immediately available to assist the vessel.

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

- a. The number of vessels transiting within the harbor and expected traffic concentrations,

- b. Planned transit speeds appropriate for the prevailing conditions,
- c. The maneuvering characteristics of the vessel,
- d. The quality of the vessel's radar and navigation systems
- e. The vessel's size and draft in relation to the area to be transited,
- f. Number, type and power of assist tugs,
- g. Number and power of bow/stern thrusters available,
- h. Maneuvering room at various stages of the transit,
- i. Quality of the vessel's bridge team
- j. Special circumstances to be encountered (e.g. dredging projects, obstructions).
- k. Wind direction in relation to planned maneuvers.

F. 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 Section E, above (including shore based radar support), shall make the following broadcast to the VTS on VHF Channel 14 at least 15 minutes prior to getting underway:

1. "*Vessel name/call sign*, making our inclement weather COTP notification, as per guidance within the Harbor Safety Plan, that we intend to transit from *vessel location* to *intended destination*."
2. In addition a safety broadcast will be made on Channel 13 and the vessel will coordinate its movement with the appropriate vessel traffic center.

G. 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:

1. Federal Anchorage Regulations under 33 CFR 110.210, require all vessels greater than 1600 gross tons 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.

2. When winds exceed 40 knots, the VTS will maintain a heightened awareness for dragging anchors in the federal anchorages.
3. The VTS 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.
4. The following organizations have their own internal guidelines for inclement weather:
 - a. Pilots: Pilot Operations Manuals prescribe a variety of criteria specific to vessel size and berth / port area.
 - b. Ferry operators: High Speed Craft Operations Manuals contain guidance on wave heights.
 - c. Small passenger vessels: some of these vessels have internal guidelines to curtail operations in heavy winds.
 - d. 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) which include inclement weather guidelines.

XVIII. RECOMMENDED BEST PRACTICES FOR VESSEL NAVIGATION

A. Recommended 0.5 nautical mile minimum separation for vessels subject to 33 CFR 165.1152(d) navigating in the San Pedro Regulated Navigation Area (RNA): To promote safety in the San Pedro Bay Regulated Navigation Area (RNA), the Vessel Traffic Service LA-LB (VTS LA-LB) has recommended the following best practice:

In addition to observing all port tariffs and U.S. Coast Guard regulations, the following best practice should be observed for commercial vessels subject to the RNA regulations outlined in 33 CFR 165.1152 (paragraph d), which includes power driven vessels of 1600 or more gross tons, towing vessel of 8 meters (approximately 26 feet) or over in length engaged in towing, or vessels of 100 gross tons and upward carrying one or more passengers for hire:

- 1. These vessels navigating within the RNA should maintain a minimum separation from other underway vessels of at least 0.5 nm unless such vessel:
 - a. Has a pilot on board (minimum separation is pilot's discretion), or*
 - b. Is within an anchorage area.**
- 2. VTS LA-LB may recommend vessels navigating within the RNA to maintain greater than 0.5 nm separation.*

This increased voluntary minimum separation is a local best practice designed to provide safe distance between vessels due to increased size of vessels navigating in the RNA. This is a voluntary measure recommended to promote vessel safety.

STATUTES

The statutes which constitute the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act can be found by going to the following Internet website: <https://www.wildlife.ca.gov/OSPR> and utilizing the website's key word(s) search function, type the word "**Compendium.**" This Compendium includes selected sections of the California Government Code (GC), Fish and Wildlife Code, Civil Code, Harbors and Navigation Code (H&NC), Health and Safety Code, Public Resources Code, Revenue and Taxation Code, and Water Code. The following citations may be of particular interest to Harbor Safety Committee members and the local maritime community.

1. Tug Escort for Tank Vessels: GC Section 8670.17.2
2. Vessel Traffic Service: GC Section 8670.21; and H&NC Sections 445–449.5
3. Harbor Safety Committees, Members and Plans: GC Sections 8670.23 8670.23.1 and 8670.23.2.

REGULATIONS

All regulations promulgated under authority of the Office of Spill Prevention and Response are contained in Title 14, California Code of Regulations (14, CCR) and can be found by going to the following Internet website: <https://www.wildlife.ca.gov/OSPR> and utilizing the website's key word(s) search function, type the words "**Index to OSPR Regulations**" in the Search box. The following citations may be of particular interest to Harbor Safety Committee members and the local maritime community.

1. General Definitions & Abbreviations: 14, CCR, Section 790
2. Harbor Safety Committees & Harbor Safety Plans: 14, CCR, Sections 800 – 802
3. Tank Vessel Escort Program for Los Angeles/Long Beach Harbor: 14 CCR, Sections 851.20 – 851.32.
4. Bunkering & Lightering: 14 CCR, Sections 840 – 845.2

Regulations promulgated under authority of the California State Lands Commission can be found by going to the following Internet website: <http://www.slc.ca.gov/> and utilizing the website's key word(s) search function, type the words "**Regulations California**" in the Search box. The following citations may be of particular interest.

1. Marine Terminal Inspection and Management, Sections 2300-2405
2. Marine Terminal Oil Pipelines, Sections 2560-2571
3. Marine Terminal Physical, Security, Sections 2430-2445
4. Marine Terminal Personnel Training and Certification, Sections 2540-2548
5. Title 24, California Building Code, Chapter 31F, Marine Oil Terminal Engineering and Maintenance Standards (MOTEMS)

OSPR'S REGULATIONS MAILING LIST

If you are interested in receiving email notifications concerning regulations being proposed by the Office of Spill Prevention and Response (OSPR) within the California Department of Fish and Wildlife, visit OSPR's website at www.wildlife.ca.gov/OSPR/Legal and click on 'Get on OSPR's Mailing List' to enter your contact information.

You will receive notification of any and all proposed regulations.

On the same website identified above is also a link to be removed from OSPR's mailing list.



**Los Angeles-Long Beach
Vessel Traffic Service
(VTS)**



USER MANUAL

Operated by:

**Marine Exchange of
Southern California**

and

**United States
Coast Guard**

In partnership with:

California Office of Spill Prevention & Response

Port of Long Beach

Port of Los Angeles

and all Waterway Users

Enhancing safe, environmentally sound
and efficient maritime transportation for:

San Pedro Channel
Santa Monica Bay
Port of Los Angeles
Port of Long Beach

Revised July 01, 2015

INTRODUCTION

The purpose of the Vessel Traffic Service is to improve vessel transit safety by providing vessel operators with advance information of other reported marine traffic and any additional information, advice and recommendations which may affect vessel traffic safety within the VTS area.

The goal of the Los Angeles/Long Beach Vessel Traffic Service is to provide seamless navigational information to improve vessel transit safety. The Coast Guard/ Marine Exchange, Los Angeles Pilots and Long Beach Pilots each specializing in their own area, have worked together to create a unique system. The Vessel Traffic Service is a cooperative effort of the State of California, U.S. Coast Guard, Marine Exchange of Southern California, Ports of Los Angeles and Long Beach, and under the authority of California Government Code Section 8670.21, Harbors and Navigation Code Section 445-449.5 and the port tariffs of Los Angeles and Long Beach. The VTS is listed in the Federal Regulations under Title 33CFR Part 161 Vessel Traffic Management.

San Pedro VTC

Vessels outside the federal breakwater to 25 nm from Point Fermin will be provided with vessel traffic information through “San Pedro Vessel Traffic Center”. San Pedro Traffic VTC is a jointly operated by the Coast Guard and the Marine Exchange. The VTC will provide vessel operators with information.

Los Angeles – Long Beach VTC

Vessels inside the federal breakwater within the boundaries of the Los Angeles and Long Beach sectors will be provided with advisory information on other reported marine traffic and any additional information available to the VTC’s that may affect vessel traffic safety within their sector.

This manual is derived from a Memorandum of Agreement (MOA) for Vessel Traffic Management in the Los Angeles-Long Beach Approaches & Harbors and the Los Angeles/Long Beach Harbor Safety Plan. It is intended to provide the user with information necessary for participation within the Los Angeles/Long Beach Vessel Traffic Service (from 25nm from PT Fermin to berth or anchorage inside the federal breakwater). This manual is not intended to conflict with or modify any existing regulations in any respect, and vessels within the VTS area shall be responsible for their safe navigation in accordance with existing international and local rules (including the Harbor Safety Plan).

THE MARINER IS CAUTIONED THAT INFORMATION PROVIDED BY VESSEL TRAFFIC CENTERS IS TO A LARGE EXTENT BASED UPON REPORTS OF PARTICIPATING VESSELS AND CAN BE NO MORE ACCURATE THAN THE INFORMATION RECEIVED. THE VTS CENTERS MAY NOT KNOW OF ALL HAZARDOUS CIRCUMSTANCES WITHIN THE VESSEL TRAFFIC AREA. UNREPORTED HAZARDS MAY CONFRONT THE MARINER AT ANY TIME. ANY CONFLICTING CIRCUMSTANCES OR HAZARDOUS CONDITIONS SHOULD BE REPORTED TO THE APPLICABLE VESSEL TRAFFIC CENTER IMMEDIATELY.

We encourage all interested parties to visit the Marine Exchange Vessel Traffic Center, the Los Angeles Pilot Station and the Long Beach Pilot Station. We encourage suggestions for improvements to this manual or to the VTS procedures. Suggestions may be mailed to:

Marine Exchange of Southern California
Vessel Traffic Center
P.O. Box 1949
San Pedro, CA 90733-1949; U.S.A.

Phone: (310) 519-3134 (Administration Office)
(310) 832-6411 (24 hour Operations Center)
(310) 519-3128 (Accounting Manager)
(310) 832-7238 (Fax)
(Web Site): www.mxsocal.org
Twitter: @mxsocal.org

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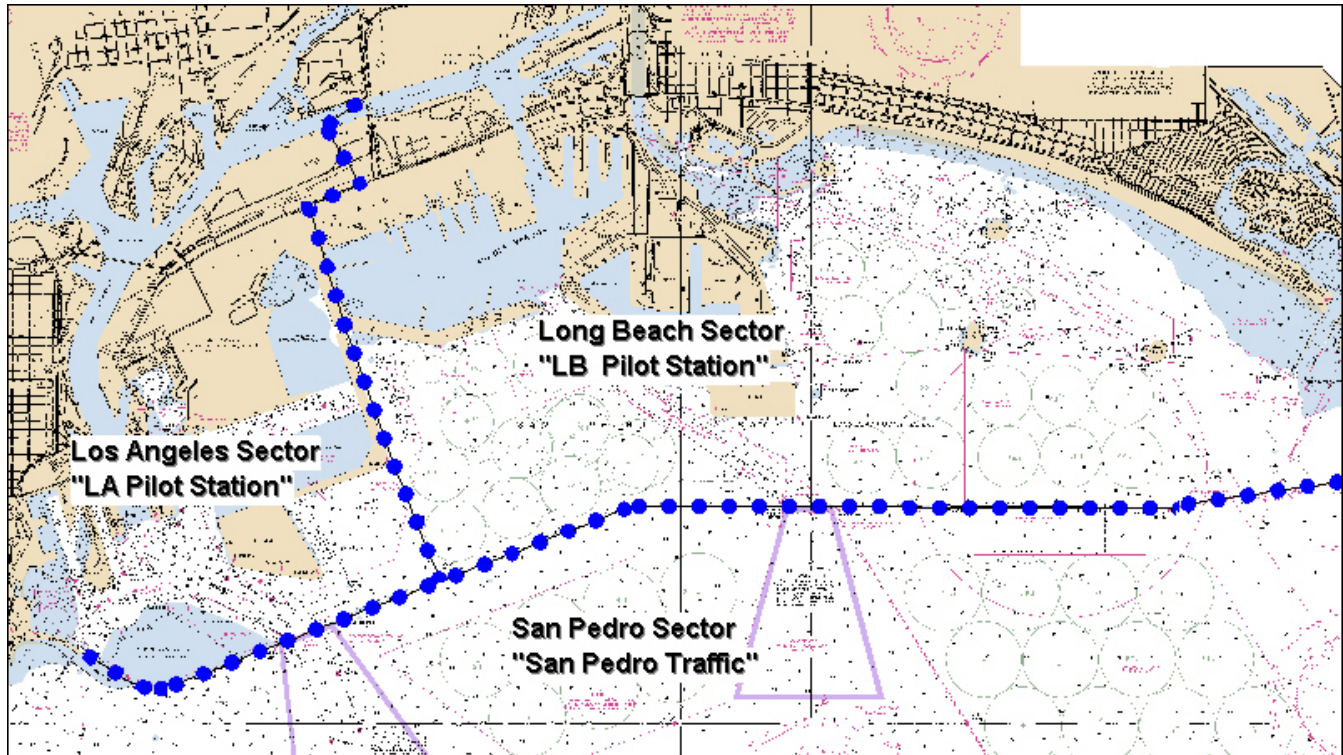


Figure 1-1 VTS SECTORS

| <u>SECTOR</u> | Sector Description | VTC Location | VHF-FM Channel | VTC Voice Call |
|-------------------------------|---|----------------------------------|-----------------------|-----------------------------------|
| The San Pedro Sector | 25 nautical miles from PT Fermin to the Federal Breakwater | USCG/MX VTS | 14 | <i>“San Pedro Traffic”</i> |
| The Los Angeles Sector | The area inside the federal breakwater encompassing the port of Los Angeles | Los Angeles Harbor Pilot Station | 73 | <i>“LA Pilot Station”</i> |
| The Long Beach Sector | The area inside the federal breakwater encompassing the port of Long Beach | Jacobsen Pilot Station | 74 | <i>“Long Beach Pilot Station”</i> |

VTS Description

VTS LA/LB is a vessel traffic monitoring and reporting system within the Los Angeles/Long Beach Harbor and approaches and extending to 25 nautical miles seaward of PT Fermin. This system is comprised of three VTS Sectors. Within each Sector is a Vessel Traffic Center (VTC) with watchstanders that monitor and report traffic information within their sector and coordinate traffic movements across sector boundaries.

1.1 Purpose | The VTS for the Los Angeles-Long Beach Harbor and approaches has been established to monitor traffic and provide mariners with timely, relevant and accurate information for the purpose of enhancing safe, environmentally sound and efficient maritime transportation.

1.2 Applicability | There are two general categories of waterway users within the VTS:

- a. Mandatory Participation:
 - 1. Active User
 - 2. Passive User
- b. Non-Participant

| VTS Participant Category | VTS Participant Vessel Criteria | VTS User Requirements |
|---------------------------|---|--|
| Active User (VMRS) | <ul style="list-style-type: none"> • Power driven vessels of 40 meters (approximately 131 feet) or more in length while navigating; • Commercial towing vessels 8 meters (approximately 26 feet) or more in length that are towing alongside, astern or by pushing ahead; • Vessels certificated to carry 50 or more passengers for hire, while engaged in trade, under sail or power. (<i>applies in San Pedro Sector only</i>) | The operators of these vessels must comply with: <ul style="list-style-type: none"> • Communication procedures (Section 2), • Vessel Movement and Reporting Procedures (Section 3) and • Traffic Separation Scheme Rules (Appendix A), • Keep a copy of this VTS User Manual on board while within the VTS area. |
| Passive User (VTS) | <ul style="list-style-type: none"> • Power driven vessels of 20 meters (approximately 65 feet) or more in length while navigating; • Vessels of 100 gross tons or more carrying one or more passengers for hire, while engaged in trade, regardless of length, or whether under sail or power; • Every dredge or floating plant. | The operators of these vessels must comply with: <ul style="list-style-type: none"> • Maintain a radio listening watch IAW communication procedures (Section 2), and; • Respond to the VTS center when hailed, • Traffic Separation Scheme Rules (Appendix A). |
| Continued on next page | | |

| VTS Participant Category | VTS Participant Vessel Criteria | VTS User Requirements |
|-------------------------------|--|---|
| <p>Non-Participant</p> | <ul style="list-style-type: none"> • Vessels that do not fall into the Active or Passive User categories. | <p>The operators of these vessels are not required to participate with the VTS, but are encouraged to:</p> <ul style="list-style-type: none"> • Monitor VTS VHF-FM channels at all times and • Contact VTS Centers to obtain information, seek assistance or report emergencies, • Observe VTS measures (advice/ information given by the VTS); <p>Non-Participants must:</p> <ul style="list-style-type: none"> • Observe and obey all International Rules of the Road, with special emphasis on Rule 9 (Narrow Channels) and Rule 10 (Traffic Separation Scheme), • Comply with all other measures of safe navigation and prudent seamanship while operating within the VTS area. |

**1.3 Definitions
(as used in
this manual)**

| Term | Definition |
|--|--|
| ETA | Estimated Time of Arrival |
| ETD | Estimated Time of Departure |
| Precautionary Area | A routing measure comprising an area within defined limits where ships must navigate with particular caution. |
| Regulated Navigation Area (RNA) | The area directly outside the entrance to the Ports of LA & LB (south of the Federal Breakwater.) See Appendix A for operating requirements within this area. |
| Separation Zone | An area of the Traffic Separation Scheme separating the opposing traffic lanes. The separation zone is 1 to 2 miles (1,853 and 3,706 meters) wide within the VTS Sector. |
| Traffic Separation Scheme (TSS) | The routing measure aimed at the separation of opposing streams of traffic by appropriate means and by the establishment of traffic lanes. (See Appendix A for additional information.) |
| Traffic Lane | An area of the TSS within defined limits, in which one way traffic is established. |
| Vessel Traffic Center (VTC) | The shore based facility that is responsible for monitoring and reporting vessel traffic information in a VTS sector. |
| VMRS User (Vessel Movement Reporting System) | Active Participant |
| VTS User | Active and Passive Participant |
| VTS Watchstander | The person(s) on watch at the VTC(s). |
| Vessel Traffic Service (VTS) | Provide coordinated vessel traffic management for the approaches to, and within the Los Angeles and Long Beach Harbors. "Coordinated vessel traffic management" includes, but is not limited to, monitoring vessel traffic, and providing mariners with timely, relevant and accurate traffic information during their transit through covered waters. |

1.4 Laws and Regulations Not Affected

Nothing in this manual is intended to relieve any person from complying with:

- a. International Regulations for Preventing Collisions at Sea, 1972, (72 COLREGS),
- b. Vessel Bridge-to-Bridge Radiotelephone Regulations (33 C.F.R. 26),
- c. The Federal Boat Safety Act of 1971 (46 U.S.C. 1451 through 1489) and
- d. Any other international, federal, state or local laws and regulations.

1.5 Emergencies

In emergencies, any vessel may deviate from any rule in this manual to the extent necessary to avoid endangering persons, property or the environment. When an emergency arises and it becomes necessary to deviate from these rules for reasons of safety, the vessel operator shall report or cause to be reported the deviation to the applicable VTC as soon as possible.

2.1 Radio Listening Watch | All active and passive VTS participants in the VTS area shall continuously monitor or cause to be monitored the VHF-FM channel for the sector in which they are transiting and respond promptly when hailed.

| Sector Transiting | VTC VHF-FM Channel | VTC Voice Call | Passing Arrangements |
|--------------------|--------------------|--------------------------|----------------------|
| San Pedro Sector | Ch-14 | San Pedro Traffic | Ch-14 |
| Los Angeles Sector | Ch-73 | LA Pilot Station | Ch-13 |
| Long Beach Sector | Ch-74 | Long Beach Pilot Station | Ch-13 |

- a. In accordance with Federal Communication Commission regulations, no person may use the VTS frequencies designated in this section to transmit any information other than information necessary for the safety of vessel traffic.
- b. All transmissions on the VTS frequencies should be initiated on low power (1 watt). High power may only be used if low power communications are unsuccessful.
- c. **In the San Pedro Sector**, all vessels should make passing arrangements with other vessels on VHF Channel 14 to allow monitoring by VTS.
- d. **In the LA and LB Sectors**, all vessels should make passing arrangements with other vessels on VHF Channel 13.

2.2 Radiotelephone Equipment and Procedures | All reports and communications required must be made to the appropriate VTC on their designated VHF-FM channel. All such reports and communications shall be made using a radio that is maintained in effective operating condition and is capable of operation on the navigational bridge of the vessel or in the main control station of a dredge.

2.3 English Language | Each required report must be made in the English language.

2.4 Time | Each report required must specify time using:

- a. The zone time in effect in the VTS area and
- b. The 24-hour clock designation (e.g. 1800 instead of 6:00 p.m.)

**2.5 Report of
Emergency or
Radio Failure**

Whenever a vessel deviates from any rule in the Bridge to Bridge Radiotelephone Act because of an emergency or radio failure, it shall report the deviation to the San Pedro Sector VTC as soon as possible.

**2.6 Report of
Impairment to
the Operation
of the Vessel**

A vessel in the VTS area shall report to the San Pedro Sector VTC as soon as possible:

- a. Any emergency or unusual event such as fire, collision, grounding, man overboard, etc,
- b. Any condition on the vessel that may impair its navigation, reduce its capabilities or affect the safety of other vessels due to defective propulsion, defective steering, inoperative navigation running lights, unusual handling, impaired maneuverability, inoperative whistle or horn, navigation equipment, etc. ,
- c. Any tow that the towing vessel is unable to control or can control only with difficulty,
- d. Any other unusual condition which restricts or prohibits total compliance with the requirements of the VTS.
- e. This report satisfies immediate reporting requirements in 46 CFR 4.05-1 (see Appendix B).

3.1 Vessel Participation Requirements

These reporting requirements are to provide necessary information to the VTC watchstander(s) so they can utilize and pass timely, relevant and accurate information to VTS users.

Active Participants are required to:

- Monitor VTS frequencies, respond promptly when hailed
- Check into the system,
- Advise when actually underway,
- Contact the applicable VTC when passing a Position Reporting Point or VTS Sector boundary. Additional reporting may be necessary as determined by the appropriate VTC,
- Check out of the system upon reaching their destination.

Passive participants are required to:

- Monitor VTS frequencies, respond promptly when hailed.

Non-Participants are **highly encouraged** to monitor VTS frequencies and communicate with participating vessels and/or VTCs as necessary.

San Pedro Sector

3.2 Checking into the VTS “San Pedro Sector”

| When to Report | Who to Contact | What to Report |
|--|---|---|
| Upon entering the VTS San Pedro Sector from Sea (at 25 nm VTS Boundary) | Call: <i>San Pedro Traffic</i> on VHF-FM channel 14 | <ul style="list-style-type: none"> a. Vessel name/call sign, b. Position (lat and long), c. Course and speed, d. Vessel destination, e. Whether the vessel is taking a pilot or being piloted by master/commanding officer, f. ETA to the sea buoy/pilot boarding area or El Segundo offshore moorings. |

3.3 Reporting Movements within the VTS “San Pedro Sector”

| | | |
|---|---|--|
| Upon entering or departing the Precautionary Area (see Appendix A-1 for Precautionary Area vessel movement requirements) | Call: <i>San Pedro Traffic</i> on VHF-FM channel 14 | <ul style="list-style-type: none"> a. Vessel name/call sign, b. If entering: report that the master/ commanding officer is on the bridge and that the vessel is being steered by hand, c. Main propulsion machinery has been successfully tested ahead and astern, as required by 33CFR 164.25 (5) referenced in U.S.C.P. 7, Chapter 2 (3240), d. If departing: report “<i>departing Precautionary Area</i>”, e. Provide ETA. |
|---|---|--|

San Pedro Sector

| | When to Report | Who to Contact | What to Report |
|--|---|--|---|
| <p>3.3 Reporting Movements within the VTS “San Pedro Sector” (Cont)</p> | <p>Fifteen (15) minutes prior to commencing a movement within the San Pedro Sector (Preparing to get underway from anchorages outside the federal breakwater, El Segundo or Avalon anchorages)</p> | <p>Call: <i>San Pedro Traffic</i> on VHF-FM channel 14</p> | <p>a. Vessel name/call sign, b. Vessel destination port or direction of departure. If the vessel will cross the Traffic Separation Scheme, such vessel shall exercise utmost caution and comply with COLREGS Rule 10.</p> |
| | <p>Upon getting underway outside the Federal Breakwater</p> | <p>Call: <i>San Pedro Traffic</i> on VHF-FM channel 14</p> | <p>a. Vessel name/call sign, b. “Underway at this time,” c. Any changes/updates to 15 minute check-in call, d. If Inbound and embarking pilot, ETA to Sea Buoy.</p> |
| <p>3.4 Checking Out of the VTS “San Pedro Sector”</p> | <p>Upon departing the San Pedro Sector bound for sea (at 25 nm VTS boundary)</p> | <p>Call: <i>San Pedro Traffic</i> on VHF-FM channel 14</p> | <p>a. Vessel name/call sign, b. Vessel location, c. “Checking out of VTS”.</p> |
| <p>3.5 Additional Reporting</p> | <p>Additional Reporting (Additional reporting may be necessary or required as determined by the appropriate VTC)</p> | <p>Call the VTC sector requesting the report</p> | <p>a. Response back to the appropriate VTC sector with requested information, e.g. (San Pedro Traffic “Vessel’s Name & abeam the Sierra Papa (SP) buoy”).</p> |

Los Angeles – Long Beach Sectors

3.6 Reporting Movements within the “Los Angeles / Long Beach Sectors” Reporting Points

| When to Report | Who to Contact | What to Report |
|---|--|--|
| <p>Preparing to get underway (from berth, anchorage or offshore mooring.)</p> <p><i>Note:</i> The report shall be made prior to casting off all lines.</p> | <p>Call the appropriate VTC on their designated VHF-FM channel.</p> | <p>a. Vessel name/call sign, b. <i>“Preparing to get underway in approximately _____ minutes”</i>, c. Any changes/updates to vessel status after initial call has been made.</p> |
| <p>(5 min) prior to crossing a Inner-Harbor Sector boundary</p> <ul style="list-style-type: none"> • <u>Los Angeles – Long Beach City Boundary line</u> (Refer Chartlet under “General Rules page 1-1) • <u>The Heim bridge</u> (Cerritos Channel) <p><i>Note:</i> For all vessels departing either the port of LA or LB entering San Pedro Sector the 15 minute prior notification remains in effect</p> | <p>Call the appropriate VTC on their designated VHF-FM channel.</p> | <p>a. Vessel name/call sign, b. The boundary which you are crossing, c. Destination/ETA.</p> |
| <p>Upon completion of transit (upon mooring or anchoring)</p> | <p>Call the appropriate VTC on their designated VHF-FM channel.</p> | <p>a. Vessel name/call sign, b. Vessel location, c. Vessel status (moored, anchored), d. <i>“Checking out of VTS”</i>.</p> |

A.1 Regulated Navigation Area (RNA) and Precautionary Area

33 CFR 165.1152 San Pedro Bay, California--Regulated navigation area and Precautionary Area.

- (a) **Location.** The following are the geographic coordinates for the San Pedro regulated navigation area and precautionary area: From Point Fermin Light (33-42.3'N, 118-17.6'W) thence along the shoreline to the San Pedro Breakwater, thence along the San Pedro Breakwater and the Middle Breakwater (following the COLREGS Demarcation Lines) to Long Beach Channel Entrance Light "2" (33-43.4'N, 118-10.8'W), thence southeast to (33-37.7'N, 118-06.6'W); thence southwesterly to (33-35.5'N, 118-08.8'W); thence west to (33-35.5'N, 118-17.6'W); thence north to point of origin----.[Datum: NAD 1983]
- (b) **Pilot areas.** There are two pilot areas within the regulated navigation area described in paragraph (a). They are defined as follows:
- (1) The Los Angeles Pilot Area is enclosed by a line beginning at Los Angeles Light (33-42.5'N, 118-15.0'W); thence easterly to Los Angeles Main Channel Entrance Light "6" (33-42.7'N, 118-14.1'W); thence southeasterly to (33-41.3'N, 118-13.5'W); thence southwesterly to (33-40.8'N, 118-14.8'W); thence north to the point of origin.[Datum: NAD 1983]
 - (2) The Long Beach Pilot Area is enclosed by a line beginning at Long Beach Light (33-43.4'N, 118-11.2'W); thence easterly to Long Beach Channel Entrance Light "2" (33-43.4'N, 118-10.8'W); thence southeasterly to (33-41.5' N, 118-10.2' W); thence south to (33-40.5' N, 118-10.2' W); thence west to (33-40.5'N, 118-11.8'W), thence north to (33-41.5' N, 118-11.8' W), north northeasterly to the point of origin.[Datum: NAD 1983]
 - (3) The Los Angeles Deep Water Traffic Lane: This area is bounded by a line beginning at (33-42' 28.0"N, 118-14' 56.9"W), thence easterly to (33-42' 33.4"N, 118-14' 45.0"W), thence southeasterly to (33-39' 29.0"N, 118-13' 19.4"W), thence westerly to (33-39' 25.1"N, 118-13' 33.0"W), thence northerly to the point of origin.
 - (4) The Long Beach Deep Water Traffic Lane: This area is bounded by a line beginning at (33-43' 25.5"N, 118-11' 09.0"W), thence east to (33-43' 23.3"N, 118-10' 54.1"W), thence south to (33-41' 30.8"N, 118-10' 42.6"W), thence west to (33-41'30.0"N, 118-10' 57.0"W), thence north to the point of origin.
 - (5) The Los Angeles Deep Water Pilot Boarding Area: This area is defined by a circular area of 1.0nm diameter centered on position at

(33-39.0' N, 118-13.19' W).

- (c) The following regulations apply to all vessels while operating within the regulated navigation area:
- (1) **Los Angeles Pilot Area:**
 - (i) No vessel may enter the Los Angeles Pilot Area unless it is entering or departing the Los Angeles Harbor Entrance (Angel's Gate).
 - (ii) Vessels entering the Los Angeles Pilot Area shall pass directly through without stopping or loitering except as necessary to embark or disembark a pilot.
 - (2) **Los Angeles Deep Water Pilot Area:**
 - (i) When a vessel of 50 foot draft or greater is embarking or disembarking a pilot in the Los Angeles Deep Water Pilot Area no other vessel shall enter the Deep Water Pilot Area.
 - (3) **Long Beach Pilot Area:**
 - (i) No vessel may enter the Long Beach Pilot Area unless it is entering or departing Long Beach Harbor Entrance (Queen's Gate).
 - (ii) Every vessel entering the Long Beach Pilot Area shall pass directly through without stopping or loitering except as necessary to embark or disembark a pilot.
 - (iii) Every vessel shall leave Long Beach Approach Lighted Whistle Buoy ``LB" to port when entering and departing Long Beach Channel and departing vessels shall pass across the southern boundary of the Long Beach Pilot Area.
 - (4) **Los Angeles and Long Beach Deep Channels:**
 - (i) When a vessel of 50 foot draft or greater is using the Los Angeles or Long Beach Deep Water Channel no other vessel shall enter the Deep Water Traffic Lane if it will result in a meeting, crossing or overtaking situation.
- (d) The following regulations contained in paragraphs (d)(1) through (d)(4) apply to vessels power driven vessels of 1600 or more gross tons, a towing vessels of 8 meters (approximately 26 feet) or over in length engaged in towing, vessels of 100 gross tons and upward carrying one or more passengers for hire:
- (1) Such vessel's speed shall not exceed 12 knots;
 - (2) A vessel navigating within the RNA, shall have its engine(s) ready for immediate maneuver and shall operate its engine(s) in a control mode on fuel that will allow for an immediate response to any engine order, ahead or astern, including stopping its engine(s) for an extended period

of time;

- (3) A vessel navigating within the RNA shall maintain a minimum separation from other vessels of at least 0.25 nm;
- (4) No such vessel may enter the waters between Commercial Anchorage G and the Middle Breakwater as defined by an area enclosed by a line beginning at Los Angeles Main Channel Entrance Light 6 (33-42' 42.0"N, 118-14' 42.0"W); thence eastward along the middle breakwater to Long Beach Light (33-43' 24.0"N, 118-11' 12.0"W); thence south to (33-43' 05.3"N, 118-11' 15.3"W); thence westerly to (33-43' 05.3"N, 118-12' 15.7"W); thence southwesterly parallel to the breakwater to (33-42' 29.9"N, 118-14' 16.0"W); thence to the point of origin, unless such vessel is:
 - (i) In an emergency,
 - (ii) Proceeding to anchor in or departing Commercial Anchorage G,
 - (iii) Standing by with confirmed pilot boarding arrangements; or,
 - (iv) Engaged in towing vessels to or from Commercial Anchorage G, or to or from the waters between Commercial Anchorage G and the Middle Breakwater.

These regulations apply to all Active Users while the Precautionary Area.

When operating within the Precautionary Area:

- a. Prior to entering the Precautionary Area, Active Users shall check in with the VTC and report that the master/commanding officer is on the bridge and the vessel is being steered by hand. Power driven vessels of 1600 or more gross tons shall report that their main propulsion machinery has been successfully tested ahead and astern (33 CFR 164.25,(a),(5) referenced in U.S.C.P. 7, Chapter 2 (3240),
- b. Power driven vessels of 1600 or more gross tons, a towing vessels of 8 meters (approximately 26 feet) or over in length engaged in towing, vessels of 100 gross tons and upward carrying one or more passengers for hire shall not exceed 12 knots,
- c. Vessels underway should maintain a minimum vessel separation of ¼ nautical mile (460 meters),
- d. Vessels crossing the Precautionary Area or maneuvering in an unusual manner, whether in the Precautionary Area or near the TSS, i.e. compass/RDF calibrations or drills/exercises, shall notify VTS of their intentions,
- e. All vessels shall be aware of the Regulated Navigation Areas in San Pedro Bay. This area encompasses both Pilot Boarding Areas as well as Anchorage "G." Refer to 33CFR 165.1152 and United States Coast Pilot #7 for additional information on the San Pedro Bay Regulated Navigation Area.

A.2 Traffic Separation Scheme (TSS)

These Regulations apply to all vessels while operating within the TSS:

- a. The master, pilot, or person directing the movement of a vessel in the TSS shall operate the vessel in accordance with the procedures of this manual.
- b. A vessel proceeding in a traffic lane must keep the separation zone to port.
- c. A vessel shall so far as practicable avoid anchoring in a Traffic Separation Scheme or in areas near its terminations.
- d. A vessel crossing a traffic lane shall, to the extent possible, maintain a course that is perpendicular to the direction of the flow of traffic in the traffic lane.
- e. A vessel joining or leaving a traffic lane shall steer a course to converge or diverge from the direction of traffic flow in the traffic lane at as small an angle as possible.
- f. A vessel engaged in fishing shall not impede the passage of any vessel following a traffic lane.
- g. A vessel of less than 20 meters in length or a sailing vessel shall not impede the safe passage of a power-driven vessel following a traffic lane.

A.3 Santa Barbara Traffic Separation Scheme Amendment

SANTA BARBARA CHANNEL TRAFFIC SEPARATION SCHEME AMENDMENT

The International Maritime Organization (IMO) is amending the Traffic Separation Scheme (TSS) in the Santa Barbara Channel and the approach to the ports of Los Angeles/Long Beach, **effective June 1, 2013**. The TSS amendment will reduce the width of the separation zone from 2 nautical miles (nm) to 1 nm by shifting the inbound lane shoreward and away from known whale concentrations. The outbound lane will remain unchanged in the current location. Narrowing the separation zone is expected to reduce co-occurrence of ships and whales while maintaining navigation safety. The IMO approved coordinates and graphic depicting the enclosed changes are provided within the following sections.

A.4 Traffic Lane Descriptions.

The following is a description of the Traffic Separation Scheme in the approaches to Los Angeles and Long Beach VTS AOR. Refer to NOAA Chart 18746.

a. **Northern Approach** (from Santa Barbara Channel)

(1) A separation zone is encompassed by a line connecting the following geographical positions:

- (i) 33-37.70' N, 118-17.60' W
- (ii) 33-36.50' N, 118-17.60' W
- (iii) 33-36.50' N, 118-20.48' W
- (iv) 33-48.87' N, 118-46.63' W
- (v) 33-49.89' N, 118-46.32' W
- (vi) 33-37.70' N, 118-20.57' W

(2) A traffic lane for northbound coastwise traffic is established between the separation zone and a line connecting the following geographical positions:

- (vii) 33-38.70' N, 118-17.60' W
- (viii) 33-38.70' N, 118-20.24' W
- (ix) 33-50.91' N, 118-45.94' W

(3) A traffic lane for southbound coastwise traffic is established between the separation zone and a line connecting the following geographical positions:

- (x) 33-35.50' N, 118-17.60' W
- (xi) 33-35.50' N, 118-20.81' W
- (xii) 33-47.88' N, 118-46.93' W

(4) The main traffic directions are:

090° - 270°
120° - 300°

b. **Southern Approach** (from the south)

(1) A separation zone is established bounded by a line connecting the following geographic positions:

(xiii) 33-35.50' N, 118-10.30' W

(xiv) 33-35.50' N, 118-12.75' W

(xv) 33-19.00' N, 118-05.60' W

(xvi) 33-19.70' N, 118-03.50' W

(2) A traffic lane for northbound traffic is established between the separation zone and a line connecting the following geographical positions:

(xvii) 33-35.50' N, 118-09.00' W

(xviii) 33-20.00' N, 118-02.30' W

(3) A traffic land for southbound traffic is established between the separation zone and a line connecting the following geographical positions:

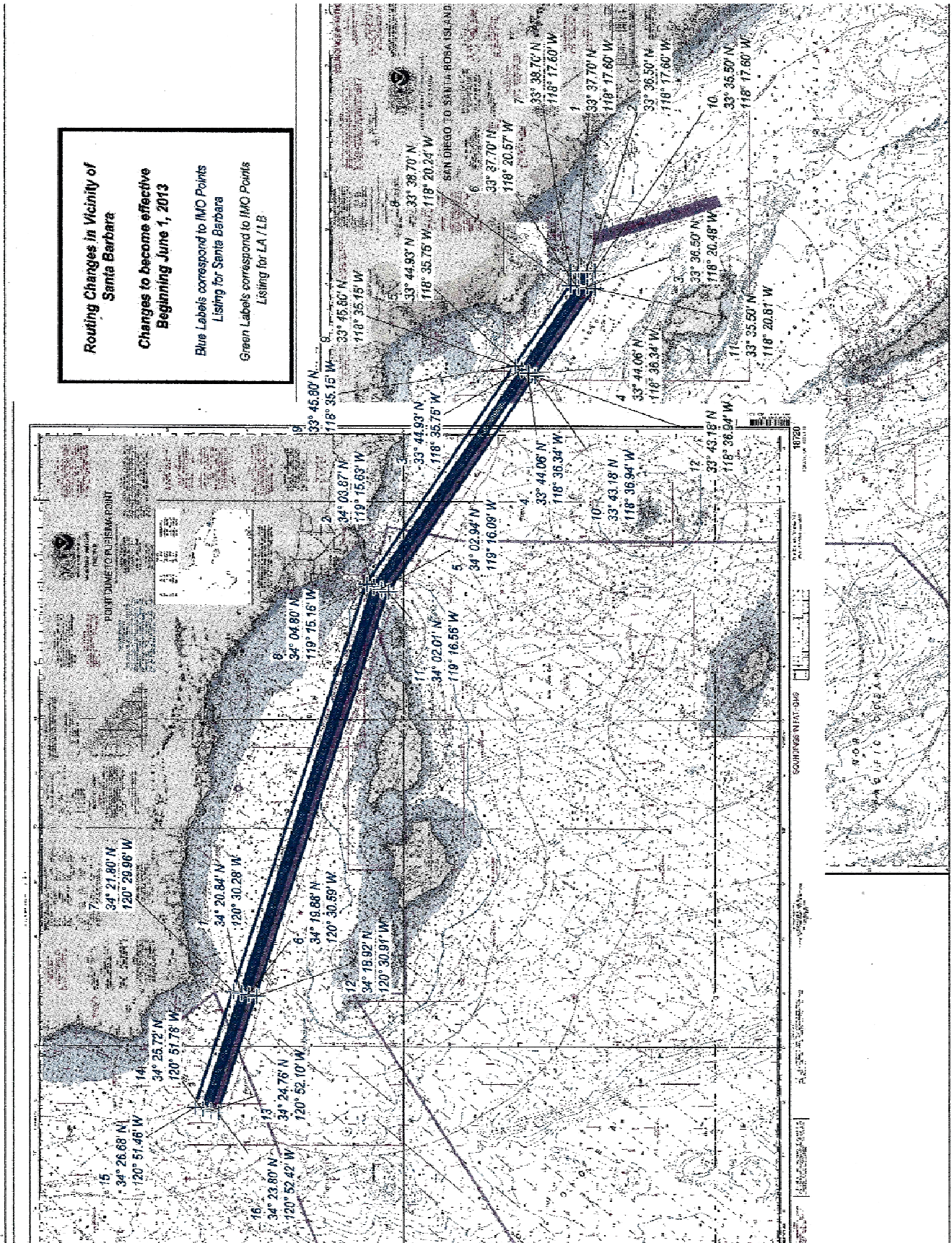
(xix) 33-35.50' N, 118-14.00' W

(xx) 33-18.70' N, 118-06.75' W

(3) The main traffic directions are:

160° and 340°

c. Portions of the Traffic Separation Scheme in the Northern and Southern approaches to Los Angeles and Long Beach are within the VTS area. Refer to NOAA charts 18751, 18749 and 18746.



A.5 Voluntary Western Traffic Lanes

Voluntary Western Traffic Lanes

To address the safety concerns created by increased traffic south of the Channel Islands, on October 6, 2009, the Los Angeles/Long Beach Harbor Safety Committee (LA/LB HSC) endorsed voluntary traffic lanes in the area south of the Channel Islands (referenced herein as “voluntary western traffic lanes”) The LA/LB HSC developed these lanes as a voluntary measure to promote vessel safety.

The voluntary western traffic lanes were not developed using processes established under U.S. federal law or by the IMO. As such, these lanes have not been reviewed nor approved by any U.S. federal authority, including the U.S. Coast Guard, or the IMO. The Coast Guard is taking separate action to study the increased traffic in this area, which will include an opportunity for the public to comment.

Since the new voluntary western traffic lanes are **not** an IMO approved traffic separation scheme, the International regulations for Avoiding Collisions at Sea (COLREGS) **Rule 10 does not apply.**

Mariners should exercise due caution when choosing to operate south of the Channel Islands and within the voluntary western traffic lanes.

The following is a description of the **Voluntary Western Traffic Lanes**:

a. Voluntary Western Traffic Lanes:

(1) A precautionary area for the Voluntary Western Traffic Lanes is bounded by a line connecting the following geographical positions:

- (i) 33 35.50’N 118 20.81’W
- (ii) 33 35.50’N 118 36.35’W
- (iii) 33 42.90’N 118 36.35’W
- (iv) 33 35.50’N 118 20.81’W

(2) A separation area bounded by a line connecting the following geographical positions:

- (v) 33 36.50’N 118 36.35’W
- (vi) 33 38.60’N 119 05.50’W
- (vii) 33 40.60’N 119 05.50’W
- (viii) 33 38.50’N 118 36.35’W

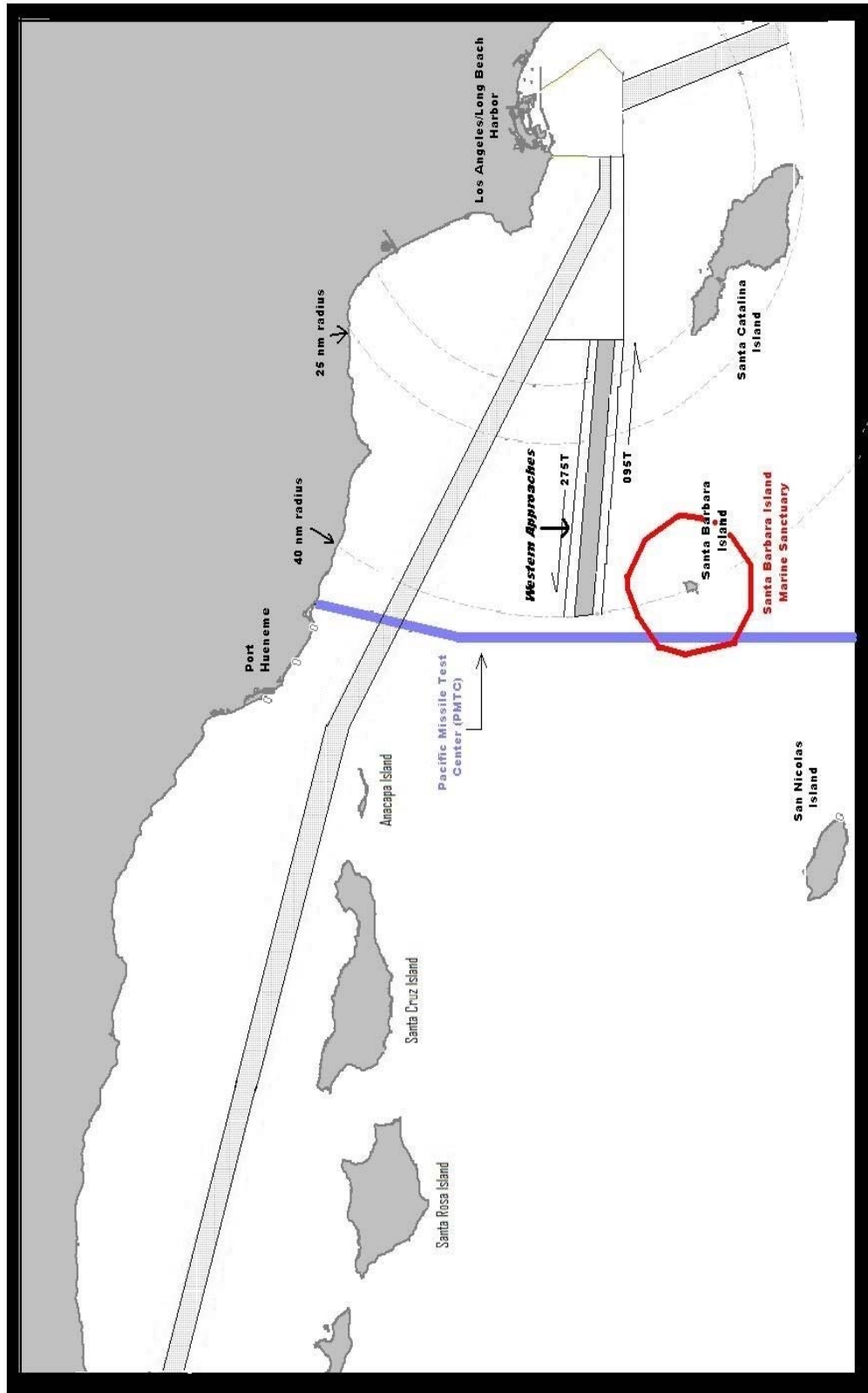
(3) Traffic westbound to transit between the separation area and a line connecting the following geographical positions:

- (ix) 33 39.50'N 118 36.35'W
- (x) 33 41.60'N 119 05.50'W

(4) Traffic eastbound to transit between the separation area and a line connecting the following geographical positions:

- (xi) 33 35.50'N 118 36.35'W
- (xii) 33 37.60'N 119 05.50'W

ROUTE FOR THE WESTERN APPROACHES TO THE PORTS OF LOS ANGELES/LONG BEACH



**B.1 Notice of Marine Casualty
46 CFR 4.05-1**

- a. Immediately after the addressing of resultant safety concerns, the owner, agent, master, operator, or person in charge, shall notify the nearest Coast Guard Sector Command whenever a vessel is involved in a marine casualty consisting in—
- 1) An unintended grounding, or an unintended strike of (allision with) a bridge;
 - 2) An intended grounding, or an intended strike of a bridge, that creates a hazard to navigation, the environment, or the safety of a vessel, or that meets any criterion of paragraphs (a) (3) through (7);
 - 3) A loss of main propulsion, primary steering, or any associated component or control system that reduces the maneuverability of the vessel;
 - 4) An occurrence materially and adversely affecting the vessel’s seaworthiness or fitness for service or route, including but not limited to fire, flooding, or failure of or damage to fixed fire-extinguishing systems, lifesaving equipment, auxiliary power-generating equipment, or bilge-pumping systems;
 - 5) A loss of life;
 - 6) An injury that requires professional medical treatment (treatment beyond first aid) and, if the person is engaged or employed on board a vessel in commercial service, that renders the individual unfit to perform his or her routine duties; or
 - 7) An occurrence causing property-damage in excess of \$25,000, this damage including the cost of labor and material to restore the property to its condition before the occurrence, but not including the cost of salvage, cleaning, gas-freeing, dry-docking, or demurrage.
- b. Notice given as required by 33 CFR 160.215 satisfies the requirement of this section if the marine casualty involves a hazardous condition as defined by 33 CFR 160.204.

**B.2 Substance of Marine Casualty Notice
46 CFR 4.05-5**

- The notice required in Section 4.05-1 must include the:
- name and official number of the vessel involved,
 - name of the vessel’s owner or agent,
 - nature and circumstances of the casualty,
 - locality in which it occurred,
 - nature and extent of injury to persons, and
 - damage to property.

San Pedro Sector Check-off List

VTS “San Pedro Sector:

Upon entering the VTS San Pedro Sector from Sea, (at 25 nm VTS Boundary) call “San Pedro Traffic” on channel 14 and provide the following information:

- a. Vessel name/call sign, _____
- b. Vessel position, course and speed _____
- c. Vessel destination (if anchoring outside the breakwater, within the VTS area, request an anchorage assignment) _____
- d. State whether or not taking on a pilot _____
- e. ETA to destination _____
- f. Advise of any known mechanical/navigation system difficulty _____
- g. Reduce speed to be at 12 knots upon entry to Precautionary Area _____

Notes of Interest:

- The 25 nm Outer Limit is defined by a 25-mile arc from Point Fermin (33° 42.3’ N, 118° 17.6’ W).
- There is no prescribed speed restriction between the 25 nm limit and the Precautionary Area. There is a voluntary Air Quality Compliance Zone within a 20-mile arc from Point Fermin. It is requested that vessels maintain a speed of 12 knots or less while operating within this area. All vessels shall proceed at a safe speed. However, ships are required to be at 12 knots or less upon entering and transiting the Precautionary Area.
- A minimum vessel separation of ¼ nm is required in the Precautionary Area.
- Code of Federal Regulations 33 CFR 165, subsection 1152 identifies the Precautionary Area as a Regulated Navigation Area (see Appendix A)

VTS San Pedro Sector

Upon entering or departing the Precautionary Area, call “San Pedro Traffic” on channel 14 and provide the following information:

- a. Vessel name/call sign, _____
- b. If **entering**: report that the master/commanding officer is on the bridge and that the vessel is being steered by hand _____
- c. Main propulsion machinery has been successfully tested ahead and astern. _____
- d. Contact pilots, channel 73 (LA) or 74 (LB) as appropriate _____
- e. Provide ETA to pilot boarding area or anchorage _____
- f. If **departing**: report “departing Precautionary Area ETA to 25 nm limit is _____”.

VTS San Pedro Sector

15 minutes prior to getting underway, call “San Pedro Traffic” on channel 14 and provide the following information

- a. Vessel name/call sign, _____
- b. Vessel position _____
- If not taking on a pilot, also report:
- c. Vessel type _____
- d. Operation (e.g. Tug and Tow, Dredging, etc) _____
- e. Destination and intended route (as necessary) _____

San Pedro Sector Check-off List (Cont).

VTS San Pedro Sector

Upon Getting Underway outside the Federal Breakwater, Call “San Pedro Traffic” on VHF-FM channel 14 and provide the following information:

- a. Vessel name/call sign, _____
- b. “Underway at this time”, _____
- c. Any changes/updates to 15 minute check-in call, _____
- d. If **Inbound and embarking a pilot**, ETA to pilot boarding area. _____

NOTES OF INTEREST:

- Maintain speed at 12 knots or less through Precautionary Area
- Maintain a minimum vessel separation of ¼ nm while in the Precautionary Area.
- Code of Federal Regulations 33 CFR 165, subsection 165.1152 identifies the Precautionary Area as a Regulated Navigation Area (see Appendix A)
- There is a voluntary Air Quality Compliance Zone within a 20-mile arc from Point Fermin. It is requested that vessels maintain a speed of 12 kts or less while operating within this area.

VTS San Pedro Sector

Upon departing the San Pedro Sector bound for sea (at 25 nm VTS boundary), Call “San Pedro Traffic” on VHF-FM channel 14 and provide the following information:

- a. Vessel name/call sign _____
- b. Vessel position _____
- c. “Checking out of VTS” _____

All VTS Sectors

Additional Reporting (Additional reporting may be necessary or required as determined by the applicable VTC. Response back to the appropriate VTC sector with requested information, e.g. (San Pedro Traffic “Vessel’s Name & abeam the Sierra Papa (SP) buoy)

Los Angeles-Long Beach Sector Check-off List

| | |
|---|--|
| <p>VTS Los Angeles & Long Beach Sectors (This report shall be made prior to casting off all lines)</p> | <p>Preparing to get underway (from berth, anchorage, or offshore mooring), Call the VTC of the Sector currently in (either “<i>LA Pilot Station</i>” on VHF-FM channel 73 or “<i>Long Beach Pilot Station</i>” on VHF-FM channel 74) and provide the following information:</p> <ul style="list-style-type: none"> a. Vessel name/call sign, _____ b. “<i>Preparing to get underway in approximately _____minutes</i>”, _____ c. Any changes/updates _____ |
|---|--|

| | |
|---|---|
| <p>VTS Los Angeles & Long Beach Sectors</p> <ul style="list-style-type: none"> • LA & LB city boundary line • Heim Bridge (Cerritos Channel) | <p>5 minutes prior to reaching the boundary, call the VTC of the destination Sector (“<i>LA Pilot Station</i>” on VHF-FM channel 73 or “<i>Long Beach Pilot Station</i>” on VHF-FM channel 74) and provide the following information:</p> <ul style="list-style-type: none"> a. Vessel name/call sign, _____ b. Vessel position, _____ <p>Note: If shifting from inside the breakwater, to an anchorage outside the breakwater, request an anchorage assignment from “<i>San Pedro Traffic</i>” at this time.</p> |
|---|---|

Note:

- For all vessels departing either the Port of LA or LB entering San Pedro Sector the **15 minute** prior notification remains in effect

| | |
|--|--|
| <p>VTS Los Angeles & Long Beach Sectors</p> | <p>Upon completion of transit (upon mooring or anchoring), call the VTC of the destination Sector (“<i>LA Pilot Station</i>” on VHF-FM channel 73 or “<i>Long Beach Pilot Station</i>” on VHF-FM channel 74) and provide the following information:</p> <ul style="list-style-type: none"> a. Vessel name/call sign _____ b. Vessel location _____ c. Vessel status (moored or anchored <i>*see note below</i>) _____ d. “<i>Checking out of VTS</i>” _____ |
|--|--|

Note:

- For all vessels anchoring inside the federal breakwater in either the Port of Los Angeles or Long Beach, an additional CHECK OUT call must be made to “San Pedro Traffic”. This call is to satisfy the Coast Guard notification requirement.

| | |
|-------------------------------|--|
| <p>All VTS Sectors</p> | <p>Additional Reporting (Additional reporting may be necessary or required as determined by the applicable VTC. Response back to the appropriate VTC sector with requested information, e.g. (LA Pilot Station “<i>Vessel’s Name & Location</i>” Checking Out!)</p> |
|-------------------------------|--|

Vessel Traffic Service Los Angeles and Long Beach – USER FEES

Effective July 01, 2015, and as mandated by State Law and specified in Port of Long Beach Tariff #4, and Port of Los Angeles Tariff #4, arriving vessels shall be assessed a “VTS User Fee” as stipulated below:

POWER-DRIVEN VESSELS 40 METERS (APPROXIMATELY 131 FEET) AND OVER:

| <u>SIZE CATEGORY</u> | <u>VESSEL LOA (*)</u> | <u>RATE (**)</u> |
|----------------------|-----------------------|------------------|
| 1 | NOT OVER 150M | \$236 |
| 2 | OVER 150M, UP TO 190M | \$260 |
| 3 | OVER 190M, UP TO 230M | \$302 |
| 4 | OVER 230M, UP TO 270M | \$352 |
| 5 | OVER 270M, UP TO 310M | \$396 |
| 6 | OVER 310M, UP TO 340M | \$445 |
| 7 | OVER 340M | \$500 |

(*) In addition to the above LOA VTS User Fees, each arriving covered vessel will be assessed \$0.0032 per gross registered ton (GRT) as recorded by Lloyd’s.

() NOTE:** *User Companies (or their Agents) may be invoiced as follows:*

(GROUP ONE BILLING): A monthly invoice covering all vessels arriving for the same liner company for that period; or

(GROUP TWO BILLING): Each ship billed individually upon arrival.

Please contact the Marine Exchange with your billing requirements and instructions for mailing or e-mailing (where, and to whose attention).

“INNOCENT PASSAGE” –

Any “Covered Vessel” that passes through the VTS “Area of Responsibility” (which extends along a 25-mile radius from Point Fermin), and that does NOT make an official arrival at either the Port of Los Angeles or the Port of Long Beach (for the purpose of occupying a berth or an anchorage), shall be considered to have made an “Innocent Passage”, and **shall NOT be subject to any VTS User Fees.**

TUGS WITH COMMERCIAL TOWS –

Every arriving power-driven vessel 8 meters (approximately 26 feet) or longer that is towing astern, alongside, or pushing ahead another vessel (or vessels) **shall be assessed a “VTS User Fee” of \$215**. There is no fee for the towed vessel(s).

PASSENGER FERRIES (*) AND TUGS WITH COMMERCIAL TOWS (ENGAGED IN TRADE BETWEEN POLA/POLB AND SANTA CATALINA ISLAND) –**

During the months of June, July, and August, such vessels shall be assessed a monthly “VTS User Fee” of \$355 (for each vessel in operation – regardless of the number of trips made). **For the rest of the year, the rate will be \$175 per month** (per vessel in operation – regardless of the number of trips made).

(***) *NOTE* “Covered Vessels” in this category include all vessels certified to carry 50 or more passengers for hire (regardless of LOA or gross tonnage); and any vessel 100 gross tons and over, carrying 1 or more passengers for hire.

TUGS WITH COMMERCIAL TOWS, DREDGES, DERRICK BARGES, AND OTHER VESSELS ENGAGED IN “PORT CONSTRUCTION PROJECTS” (AS OUTLINED IN POLA/POLA TARIFFS #4) –

Such vessels shall be assessed a monthly “VTS User Fee” of \$355 (for each vessel in operation – regardless of the number of trips made in and out of the harbor). Provided, however, that if such a vessel makes only **ONE trip** in any given month, then that vessel shall be assessed the **basic \$215 “VTS User Fee”** for a standard “Tug with a commercial tow”.

COMMERCIAL RESCUE/EMERGENCY ASSIST VESSELS –

Such vessels, when towing stranded or stricken recreational boaters (or other small craft), **shall be assessed a monthly “VTS User Fee” of \$30** for each vessel engaged in such service.

“WHALE WATCHING” AND COMMERCIAL SPORT FISHING VESSELS:

Any vessel certified to carry 50 or more passengers, and dedicated to “whale watching” and/or commercial sport fishing, **shall be assessed a monthly “VTS User Fee” of \$59** for each vessel engaged in such service.

APPENDIX C: TUG/ASSIST ESCORT INFORMATION

C.1. Certified Bollard Pull Tests

- C.1-1 Crowley Marine Services, Inc.
- C.1-1a Sept. 23, 1998 letter from Mr. Pete Bontadelli of OSPR,
to Mr. James J. Macaulay of Crowley Marine Services
- C.1-2 Foss Maritime
- C.1-2a – b Nov. 16, 2004 letter from Mr. Carlton D. Moore of OSPR,
to Mr. Wendell H. Koi of Foss Maritime
- C.1-2c Nov. 20, 2008 letter from Mr. T. L. Mar of OSPR, to Mr. Robert Gregory of
Foss Maritime
- C.1-3 Millennium Maritime
- C.1-3a - c Oct. 8, 2004 letter from Mr. Carlton D. Moore of OSPR,
to Mr. Bo H. Jun of Millennium Maritime
- C.1-4 Sause Brothers
- C.1-5 Legend - Tug Escort Terminology References

C.2. Bollard Pull Report

- C.2-2 Report Form
- C.2-3 Text Equipment/Conditions
- C.2-3 Test Results

C.3. History of HSC Tug Escort Guideline and Regulation Development

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 15 July 2024

AMNAV MARTIME CORP.***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|----------------|-----------------------|-------------------------|--------------------------|-------------|---------------|------------------|---|
| INDEPENDENCE | 5080 | 65.4 | 67.9 | Z | 78 | Longview, WA | 04/09/07 (ETIP extension) |
| LIBERTY | NR | 39.2 | | Z | 94.7 | NR | 08/15/05 (ETIP extension) |
| PATRIOT | NR | | 33 | T | 68.9 | NR | 10/06/09 (ETIP extension) |
| REVOLUTION | 5080 | | 60.9 | Z | 73.4 | Oakland, CA | 12/18/18 |
| SANDRA HUGH | NR | 66.4 | 67.5 | Z | 78 | NR | 07/31/07 (ETIP extension) |
| FREEDOM | 4400 | | 50 | Z | 86 | Oakland, CA | 11/25/15 |
| TERESA BRUSCO | 4732 | | 61.79 | Z | 81.6 | Oakland, CA | 12/18/18 |
| DR HANK KAPLAN | 5350 | 68.3 | 64 | Z | 76.3 | Oakland, CA | 09/24/2019 |
| MICHELLE SLOAN | 5150 | 69 | 65.4 | Z | 80 | Los Angeles, CA | 4/23/15 (ETIP extension) |
| PATRICIA ANN | 4732 | | 62.2 | Z | 73.4 | Oakland, CA | 04/29/2022 |
| SARAH AVERICK | 6866 | 96.73 | 93.37 | Z | 104 | Everett, WA | 10/02/2020 (ETIP extension) |

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 27 August 2021

BAYDELTA MARTIME CORP.***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|---------------|-----------------------|-------------------------|--------------------------|-------------|---------------|------------------|---|
| DELTA BILLIE | NR | 93.7 | 93.7 | Z | 100 | NR | 04/04/09 (ETIP extension) |
| DELTA CATYRUN | NR | 92.3 | 91.6 | Z | 100 | NR | 01/05/2011 (ETIP extension) |
| DELTA TERESA | 7,032 | 90.31 | 88.68 | Z | 100 | Everett, WA | 04/19/2019 |
| DELTA AUDREY | 6,670 | 83.53 | 88.40 | Z | 100 | Mare Island, CA | 08/16/2021 |

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 25 June 2024

CENTERLINE LOGISTICS***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|---------------------|-----------------------|-------------------------|--------------------------|-------------|---------------|------------------|---|
| MILLENNIUM DAWN | 4400 | 60.6 | 56.3 | Z | 105 | SFO | 1/25/11 (ETIP extension) |
| ERNEST CAMPBELL | 3000 | 39.9 | 27 | Z | 107 | SFO | 1 /25/2011 |
| MILLENNIUM FALCON | 4200 | 54.5 | 49.7 | Z | 99 | LA | 4/7/2021 (ETIP extension) |
| KESTREL | 4400 | 29.45 | 21.94 | Z | 90.2 | LA | 1/18/2022 (ETIP extension) |
| BROOKS M. HAMILTON | 2600 | 26.70 | 20.03 | T | 80.6 | LA | 4/28/2021 |
| MADLINE B. HAMILTON | 2600 | 27.39 | 20.05 | T | 80.6 | LA | 4/28/2021 |

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 22 April 2020

CROWLEY MARINE SERVICES, INC.***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|------------------------------|-----------------------|-------------------------|--------------------------|-------------|---------------|---------------------|---|
| SCOUT | 4730 | 52 | | T | 103 | Richmond, CA | 12/07/09 (ETIP extension) |
| MASTER | 4730 | 52.3 | 43.8 | TR | 103 | Treasure Island, CA | 5/10/10 (ETIP extension) |
| LEADER | 4730 | 58.9 | | TR | 103 | Richmond, CA | 9/29/09 (ETIP extension) |
| ADMIRAL | 4730 | 54.4 | | TR | 103 | Richmond, CA | 11/2/09 (ETIP extension) |
| VALOR | 6772 | 91 | 90.3 | Z | 100 | Everett, WA | 7/20/07 (ETIP extension) |
| GOLAIH | 5000 | 55 | 51.8 | Z | 98.9 | Everett, WA | 12/13/14 |
| GUARD | NR | 50.3 | 47.4 | TR | 120 | NR | 07/23/07 (ETIP extension) |
| RESOLUTE | NR | | 78.6 | Z | 110 | NR | 02/26/04 (ETIP extension) |
| TIOGA | NR | 54.1 | 52.9 | Z | 78.7 | NR | 10/31/13 |
| VETERAN | NR | 89.2 | 90.5 | Z | 100 | Everett, WA | 6/19/14 (ETIP extension) |
| HERCULES (NÉE NOYDENA) | 6008 | 88.19 | 84.77 | Z | 82 | Everett, WA | 4/9/20 |

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 1 May 2023

FOSS MARITIME***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|---------------------------------------|--------------------------|------------------|-------------------|------|--------|----------------|--|
| CAMPBELL FOSS | 5000 | 63.5 | 68.6 | Z | 78 | Portland, OR | 12/21/11 (ETIP extension) |
| BRYNN FOSS | 3000 | 52.6 | 44.9 | Z | | Pt. Tacoma, WA | 8/3/07 (ETIP extension) |
| ALTA JUNE | 5000 | 66.8 | 66.9 | Z | 78 | Pt. Tacoma, WA | 8/6/08 (ETIP extension) |
| CAROLYN DOROTHY | 5080 *Non-hybrid mode | 64 53 | 62.7 | Z | 78 | Pt. Tacoma, WA | 1/27/09 (ETIP extension) |
| ARTHUR FOSS | | | 54.7 | TR | | Richmond, CA | 12/19/08 (ETIP extension) |
| LYNN MARIE | 6250 | | 74.9 | Z | 92 | Richmond, CA | 9/30/04 (ETIP extension) |
| EDITH FOSS | NR | 24.8 | 13.8 | T | 73.3 | NR | 06/23/11 (ETIP extension) |
| MORGAN FOSS | NR | 64 | 60.9 | Z | 78 | NR | 08/31/05 (ETIP extension) |
| PACIFIC ESCORT | NR | 36.8 | 32.3 | TR | 100.2 | NR | 3/12/03 (ETIP extension) |
| PACIFIC KNIGHT | NR | 26.1 | 14 | T | 77.2 | NR | 04/06/02 (ETIP extension) |
| PACIFIC QUEEN | NR | 24.6 | 13.7 | T | 77.2 | NR | 07/24/1997 (ETIP extension) |
| DELTA LINDSEY (Charter from AMNAV) | NR | 93.5 | 87.3 | Z | 100 | NR | 09/09/10 (Alternate Compliance) |

| FOSS Continued | | | | | | | |
|-----------------------|-----------------------|-------------------------|--------------------------|-------------|---------------|-------------------|---|
| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
| BO BRUSCO | 4732 | 62.79 | 61.30 | Z | NA | San Diego, CA | 10/22/18 |
| LELA FRANCO | 5150 | 67.34 | 60.3 | Z | 80 | San Diego, CA | 8/5/2019 |
| RICH PADDEN | 5350 | 71 | 63 | Z | 76.3 | San Francisco, CA | 02/12/2020 |
| JAMIE ANN | 6866 | 92.46 | 90.68 | Z | 100 | Everett, WA | 03/25/2020 (ETIP extension) |
| SARAH | 4732 | 61.17 | 60.19 | Z | 78.1 | San Diego, CA | 08/16/2020 (ETIP extension) |
| LEISA FLORENCE | 6866 | 54.69 | 85.71 | Z | 100 | Everett, WA | 01/27/2021 (ETIP extension) |

* Foss Maritime will notify the Marine Exchange and local pilots when operating in non-hybrid mode.

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of March 2018

SAUSE BROTHERS***

| Name | Total HP (Adv) | Ahead Short tons | Astern Short tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|-------------|-----------------------|-------------------------|--------------------------|-------------|---------------|------------------|---|
| PONO | 1600 | 29.03 | 21.65 | T | 75.3. | LA | 1/30/2018 |

Los Angeles/Long Beach Harbor Safety Committee
CERTIFIED BOLLARD PULL TEST RESULTS

As of 1 July 2021

STARLIGHT MARINE SERVICES, LLC***

| Name | Total HP (Adv) | Ahead Short Tons | Astern Short Tons | Prop | Length | Test Port | Bollard Pull Issued Date (and ETIP extension status when applicable) |
|---|-----------------------|-------------------------|--------------------------|-------------|---------------|------------------|---|
| TIM QUIGG | 3600 | 50 | 52.6 | Z | 80 | Los Angeles | 5/3/11 ETIP extension |
| JOHN QUIGG | 4022 | 52.3 | 48.3 | Z | 76 | Los Angeles | 11/7/12 ETIP extension |
| BARBARA JEAN MULHOLLAND (NÉE ROBERT FRANCO) | 6850 | 89 | 91 | Z | 100 | Everett | 4/4/2013 ETIP extension |
| JAMIE RENE A (NÉE AHBRA FRANCO) | 6850 | 91.6 | 89.8 | Z | 103 | Seattle | 6/13/2013 ETIP extension |
| Z-FIVE | 4000 | | | Z | 87.7 | Richmond, CA | 12/15/2004 ETIP extension |

*** Updated bollard pull information and Escort Tug Inspection Program (ETIP) information are available from the Marine Exchange of Southern California Web page: www.mxsocal.org. ETIP compliant vessels have received an extension on their bollard pull date from the State of California.

Note: Pursuant to State Regulations, tugs must have their bollard pull re-tested every three years or be accepted into the ETIP to extend their bollard pull date.

- * Equipped with Kort-type Nozzles
- **** Equipped with Flanking Rudders
- + Equipped with Kort-type Nozzles and Flanking Rudders
- ++ Sister tug to be tested within 6 months of relocation to LA/LB
- S Single Screw
- T Twin Screw
- TR Tractor Tug
- Z Z-Drive Tug
- NR Not reported

1. Due to its specific design, a tractor-type tug can, under certain circumstances, apply significantly increased tension on the tow line.
2. Flanking rudders can, under certain conditions, increase usefulness and effectiveness when the tug operates astern.
3. Kort-type nozzles increase bollard pull when going ahead (towing) but can reduce it when going astern (backing).
4. Z-Drive-type tugs have Kort-type nozzles, which increase the bollard pull when going ahead. Rotating nozzles give the vessel approximately 90% of ahead bollard pull when going astern.

LOS ANGELES/LONG BEACH HARBOR SAFETY COMMITTEE**BOLLARD PULL REPORT**

Location _____ Date _____

Vessel Name _____
 Official Number _____
 Port Registry _____
 Year Built _____
 Classification _____

VESSEL PROFILE**Hull**

Length (overall) _____ ft.
 Breadth (overguards) _____ ft.
 Draft A _____ ft. _____ in. (fwd)
 _____ ft. _____ in. (aft)
 Trim _____ ft. _____ in.
 Gross Tonnage _____

Machinery**Main Engines**

Number B _____
 Mfg/Model _____
 Rated horsepower _____ BHP@ _____ RPM
 Cumulative HP _____ BHP

Reduction Gear

Mfg/Model _____
 Ratio _____:1

PROPULSION**Conventional**

Number propellers D _____
 Diameter _____ in.
 Pitch _____ in.
 Number blades _____
 Composition _____
 Open/Kort (circle one)

Tractor-Cycloidal/Z-Drive (circle one)

Mfg/Model _____
 Drive location _____ Fwd/Amidships/Aft (circle one)
 Number blades D _____ (each drive)
 Blade length _____ in. (Cycloidal)
 Pitch Dip _____ in. (Cycloidal)
 Blade diameter _____ in. (Z-Drive)
 Pitch _____ in. (Z-Drive)

TEST EQUIPMENT/CONDITIONS**General**

Depth at MLLW _____ ft.
 Tide (+/-) _____ ft.
 Available water _____ ft. E
 Current _____ kts. F
 Wind Direction _____
 Wind velocity _____ kts. G
 Ambient Temp. _____ °F
 Length Towline _____ ft. H

Strain Cell I

Manufacturer _____
 Model/Type _____
 Date Calibrated _____
Recording Device J
 Manufacturer _____
 Model/Type _____

TEST RESULTS**AHEAD (Towing)****ASTERN (Backing)**

| | | | |
|------------------------------------|--------------------|-------|-------|
| Time: | Start | _____ | _____ |
| | Finish | _____ | _____ |
| | Duration (minutes) | _____ | _____ |
| Vessel Heading: (Magnetic) | Start | _____ | _____ |
| | Finish | _____ | _____ |
| | Variance | _____ | _____ |
| Engine RPM: | Maximum | _____ | _____ |
| Shaft RPM: | Maximum | _____ | _____ |
| Stack Temperature: (Fahrenheit) | Start | _____ | _____ |
| | Finish | _____ | _____ |
| | Variance | _____ | _____ |

Pounds**(Short Tons)****(Pounds)****(Short Tons)**

| | | | | | |
|----------------------|------------------------|-------|-------|-------|-------|
| Strain Cell Reading: | Maximum | _____ | _____ | _____ | _____ |
| | Minimum | _____ | _____ | _____ | _____ |
| | Certified ¹ | _____ | _____ | _____ | _____ |

- I. The figure "certified" as the vessel's bollard pull capacity shall be the average of the forces recorded (without any significant tendency of decline) for a period of not less than fifteen (15) minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's maximum recommended continuous output. This testing and certification will be carried out every three (3) years.

Should it not be possible to comply with the above certification or with one or more of the following recommendations, a notation of this fact should be made in the Remarks Section.

- 1. The measurement shall be taken with the escort tug's trim and/or displacement corresponding to applicable loadline requirements or letter of stability.
- 2. Auxiliary equipment (such as pumps and generators) which is driven from the main engine(s) or propeller shaft(s) in normal operation of the escort tug shall be connected during the measurement process.
- 3. All bollard pull measurements shall be derived solely on the basis of the escort tug's capabilities. No outside assistance shall be allowed.
- 4. The propeller(s) blades fitted during the measurement shall be the same as those used when the escort tug is in normal operation.
- 5. Water Depth shall be a minimum of 45 feet.
- 6. Water current shall not exceed 1.0 knot.
- 7. Wind velocity shall not exceed 10 knots.
 - A. Measurements of water current and wind velocity shall be provided to the classification society surveyor by the escort tug owner's representative.
- 1. Towline length shall be a minimum of 300 feet.
- 2. The strain cell used for the measurements shall have been calibrated within the past 12 months. The classification surveyor shall verify this fact. The accuracy of the strain cell shall be +/-2% within a temperature range of -40° and +104° F.
- 3. Instruments providing both a continuous read-out and the bollard pull graphically as a function of the time, shall be connected to the strain cell.
- 4. The surveyor for the classification society shall:
 - A. Be aboard the escort tug during the measurement process to verify that the bollard pull report is correct.
 - B. Determine the escort tug's static bollard pull capacity by averaging the forces recorded (without any significant tendency of decline) for a period of at least 15 minutes while maintaining a fixed reading with the engine(s) operating at the manufacturer's recommended continuous output.
 - C. Sign the completed "BOLLARD PULL REPORT" of the Los Angeles/Long Beach Harbor Safety Committee.
 - D. Sign and provide a BOLLARD PULL CERTIFICATE.

Remarks:

Class Surveyor 10

Captain or Owner's Representative

Historically, pilots and masters jointly determined the proper tug assist for laden tank vessel movements. In 1992, the pilots developed a matrix depicting their usual practice for determining adequate escort tug(s) for particular tank vessel movements within the breakwater. Initial state regulations codified this matrix, and adopted other Harbor Safety Committee recommendations. Since the original tug escort regulations were adopted, numerous changes have been recommended by the LA/LB Harbor Safety Committee. This appendix summarizes the primary developments and amendments.

A. SUMMARY OF 1995 COMMITTEE CHANGES

The Committee discussed the issue of tug escorts outside the federal breakwater during the 1994-95 Plan review. Under the existing scheme, all tugs were meeting laden tankers just inside the breakwater entrances. Analysis of marine casualties for vessels operating in the LA/LB port area revealed that an average of 1 in 100 commercial vessels (1 per week) sustained some type of steering or propulsion failure during the inbound or outbound transit. The mechanical problem rate and the ever-decreasing amount of navigable water inside the breakwaters threaten safe transit of vessels through the “relatively” confined breakwater entrances. If a significant allision or collision causes a major oil or chemical release, the environmental and economic costs could be devastating.

The Tug Escort Subcommittee (TES) comprehensively assessed the risk associated with inbound laden tankers approaching and moving through LA/LB breakwater openings. The subcommittee found that the risk of steering failure or power loss justified implementing a tug escort scheme outside the breakwater. In order to develop an appropriate, practical and technically sound scheme, tug capabilities must match tank vessel size, speed and type of casualty. At the time, the San Francisco Glosten Study for Single Failures, (augmenting the less-relevant Dual Failure Study) was nearly complete, and TES felt the study would provide helpful technical insights. The Committee decided to review the Glosten Study results before finalizing a tug escort scheme outside the breakwater. In the interim, the Committees approved the following for the 1995 Harbor Safety Plan:

1. Retain the escort/assist matrix (with minor modifications) for inside the breakwater;
2. Set maximum approach speeds beginning at the outer limits of the pilot boarding: eight knots for vessels under 120,000 DWT and six knots for vessels over 120,000 DWT; and
3. Have at least one tug, or two tugs for tankers over 170,000 DWT, meet inbound tankers at approximately 1.25 miles outside the breakwater.

B. SUMMARY OF 1996 HSC CHANGES

The TES assessed the Glosten Single Failure Study and determined that it’s range of tank vessel speeds, current conditions and transit widths (openings) covered the conditions in the approaches to the LA/LB port complex. The TES agreed with Glosten that tank vessels must slow down as navigational restrictions increase, and braking force is the most important tug characteristic for

successfully dealing with a steering failure or power loss. Thus, the LA/LB scheme would require that tugs have adequate braking capability, and that they meet the inbound, speed-restricted tanker far enough out either to halt it before it grounds on the breakwater or to help steer it through an opening if it fails close to the breakwater.

After extensive technical analysis and debate, TES found that the Glosten Braking Force Table described in the “July 95 Single Failure Report,” which compares braking force with displacement tonnage at specific speeds, would serve LA/LB, especially since it was designed for more restrictive conditions, providing an additional safety margin. Displacement tons replaces DWT for escort purposes, as it better represents the tanker weight to be controlled (DWT are still the standard of care for assist purposes). An additional benefit is that the table is simple to understand, implement and enforce (see Chapter XII for the Default Table).

The Committee agreed with these findings and concluded that TES’ recommended tug escort services should be the Standard of Care for this port complex as of the signing of this 1996 Harbor Safety Plan, and should be submitted for state regulatory adoption. The Committee found that, since tugs are either escorting or assisting inside the breakwater, the Good Marine Practice captured in the already established tug assist matrix should become the Plan’s Standard of Care. (Chapter XII defines escort and assist.)

C. SUMMARY OF 1997 HSC CHANGES

1. Committee Guideline and State Regulations Development: Following are the 1997 findings and recommendations for tug escorts in LA/LB.
2. 1997 Committee Changes and Recommendations: Glosten Associates produced a “July 95 Single Failure Report” for the San Francisco Bay Area. During its 1996 review, the Subcommittee determined that information contained in the Braking Force Table of that report also pertained to the LA/LB Harbors. The Subcommittee proposed significant amendments to its regulations based on this information.

While implementing the San Francisco Bay Area regulations (effective January 1, 1997) it was discovered that “slack water” braking force requirements were interpreted strictly on a “0-knot” current. Glosten Associates is now assessing whether San Francisco’s calculations apply to the LA/LB Default Matrix/Braking Force Table (which precedes Part F of this chapter). The Committee will submit for public comment any amendments recommended by Glosten’ study. Pending Glosten’s verification, the COTP has formally requested, and received voluntary industry compliance with, the proposed regulatory requirements.

The Committee also recommended amending the proposed regulations to exclude double-hull tankers, consistent with the San Francisco Bay Area tug escort regulations. The provision will exempt from tug escort requirements tankers with both fully redundant steering and propulsion systems, in additions to double hulls (as defined in 33 CFR 157.03).

To further conform with the San Francisco Bay Area Tug Escort Regulations, the Committee recommends that LA/LB tug escort regulations apply to tank vessels carrying as cargo a total volume of oil greater than or equal to 5,000 long tons. Finally, the Committee recommends converting mandatory “Assist Tug Standards of Care” (Appendix C.3) to voluntary practices and renaming this Section to “Good Marine Practices,” once the new regulations are codified. Applying both the new regulatory requirements and the Standards of Care may confuse mariners and may prove redundant once the regulations become law. Amendments to both the Plan and the current regulations (Appendices C.3 and C.5) will issue at that time.

D. SUMMARY OF 1998 HSC CHANGES

1. Committee Guideline and State Regulation Development: Following are the 1998 findings and recommendations for tug escorts in the LA/LB Harbor. The originally adopted regulations were located in Appendix C.4 of the HSP. In June of 2006 Appendix C.4 was removed from the Harbor Safety Plan to prevent possible confusion with the current regulations. The Appendix C.4 information is kept as historical record and is available by contacting the Marine Exchange of Southern California at HSC@mxsocal.org or calling 310-519-3134 for archival Harbor Safety Plan information
2. 1998 Committee Recommendations: Within the parameters provided by the TES, the Glosten Associates’ marine engineers were initially contracted to study the relevancy between braking force criteria for the San Francisco Bay Area and the LA/LB Harbor complex. TES pilot members, however, determined that turning, as well as stopping a disabled ship outside the breakwater was now the probable and preferable maneuver, given the increase in tractor tug availability within the harbor. As a result, Glosten Associates provided a force matrix addressing requirements for turning and stopping, using tractor and/or conventional tugs. The Committee recommended that proposed state regulations be amended to incorporate the tug-to-tanker force requirements specified in the matrix.

The Committee also recommended converting the mandatory “Assist Tug Standards of Care” to voluntary practices and renamed this section “Good Marine Practices, upon codification of the new regulations (9/19/98), to reduce user confusion and redundancy.

E. SUMMARY OF 1999 HSC CHANGES

Bollard Pull Testing locations were expanded to any port where all testing requirements could be met. This allowed for more flexibility and safety for testing larger tugs.

F. SUMMARY OF 2000 HSC CHANGES

The definition of “fully redundant” (to include redundant propulsion, steering and navigation systems) was amended to recognize industry changes in new tanker design. Both the San Francisco Bay Area and LA/LB tug escort regulations are now consistent in this definition and its requirements.

G. SUMMARY OF 2001 HSC CHANGES

1. Established specific standards for tug/tank barge transits, including tug/tank barge matching criteria, tethering, stationing and equipment requirements, to address the differences between tankers and tank barges in maneuverability, draft, and tug forces.
2. Amends location designations and tug stationing area due to channel dredging and federal regulation changes to the traffic separation scheme.
3. Also, added an additional category to the tug/tanker matching criteria table to accommodate larger tankers.

H. SUMMARY OF 2002-2004 CHANGES

After much debate the LA/LB Harbor Safety Committee in February 2002 submitted to the OSPR Administrator two proposals dealing with work hour and manning requirements for tug escort crews. One proposal was developed by labor organizations and the other by the tugboat operating companies. To gain understanding of the issue and capture information on tugboat manning and fatigue, the USCG COTP implemented a tug ride-a-long program in spring 2002. The results showed fatigue was no more or less an issue in LA/LB Harbor than in the rest of the industry, and the COTP found no identifiable over-riding safety concern. The issue continued under discussion through 2002 and into 2003 with the release of a nationwide joint USCG/American Waterways Operators report on manning and fatigue. Late in 2003, OSPR drafted proposed amendments to the regulations which addressed escort tug crew manning, work hours, and training requirements. These revisions were approved by the Committee in April 2004 and after public comment became effective on October 27, 2004.

I. SUMMARY OF 2005-2006 CHANGES

Late in 2004 it came to the attention of the LA/LB Harbor Safety Committee that several factors were making it increasingly impossible for tug operators to meet the requirements for triennial re-measuring of static bollard pull. After some discussion, in February 2005 the Committee wrote to the OSPR Administrator requesting a two-year waiver of the requirement while the issue was being studied. In June the Committee formed the Tug Utilization Group subcommittee and in the summer a statewide Escort Tug Action Team representing all California Harbor Safety Committees was created by OSPR. As a result of those groups' deliberations, an Escort Tug Inspection Program was developed as an alternative to the regulatory re-measuring of bollard pull. In December 2005 the Committee wrote to Administrator supporting that program. Draft proposed regulations were developed by OSPR and approved by the Committee in April 2006. The amended regulations became effective October 15, 2006 and OSPR subsequently developed the procedures for implementing the voluntary inspection program and the statewide escort tug database.

J. SUMMARY OF 2012 CHANGES

In October 2005, and following the submission of plans to develop a new crude oil facility on Los Angeles Pier 400, the LALB Harbor Safety Committee first considered extending the Tanker Force Selection Matrix to include tankers over 340,000 displacement tons. The Glosten Associates performed a preliminary study of emergency escort tug maneuvers using team towing (with multiple tractor tugs tethered aft) for OSPR. Subcommittee #1 reviewed the study in the spring of 2006. In 2009-2010, Subcommittee #3 proposed a process for developing and validating a new Tanker Force Selection Matrix covering tankers up to 420,000 displacement tons (metric) and allowing a team towing configuration. The Committee approved the proposal and submitted it to OSPR. Subsequently, OSPR contracted with the California Maritime Academy to use their simulation facility to validate the proposed matrix. The new California regulation for Tank Vessel Escort Program for the Los Angeles/Long Beach Harbor Sections 851.20 - 851.32 went into effect on 11 August 2012.

K. SUMMARY OF 2017-2021 CHANGES

In December 2014, the LALB Harbor Safety Committee found that certain regulations might limit a tug/barge combined unit, commonly referred to as an Articulated Tug Barge (ATB), from fully utilizing its design characteristics when under tug escort in San Pedro Bay. The Committee recommended that ATB's should be treated as tankers for the purpose of applying the regulations contained in the Tank Vessel Escort Program for the Los Angeles/Long Beach Harbor, provided the ATB could meet minimum equipment standards and operating requirements. The Administrator directed the Committee to draft language for a regulatory change.

Following is a summary of the recommended new regulatory language:

1. Added new definitions to subsection 790 defining "Articulated Tug Barge" and "Integrated Tug Barge."
2. Added new subsection 851.27.2, which describes the conditions that an Articulated Tug Barge/Integrated Tug Barge must meet in order to be treated as a "Tanker" under the Tank Vessel Escort Program for the Los Angeles/Long Beach Harbor.

The LALB Harbor Safety Committee submitted their recommendation for amending the California regulation for Tank Vessel Escort Program for the Los Angeles/Long Beach Harbor (Sections 851.20 - 851.33) to OSPR on March 10, 2016. After discussion with OSPR, the Committee revisited their recommended change language in 2019-2020 and resubmitted their revised proposal to OSPR on June 2, 2021. That revised recommendation is now going through the rulemaking process and is not yet in force.

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
United States Coast Guard
Sector Los Angeles – Long Beach

1001 S. Seaside Ave., Bldg 20
San Pedro, CA 90731
Phone: 310-521-3860
Fax: 310-521-3869

16601

3 OCT 2011

Los Angeles – Long Beach Harbor Safety Committee
Marine Exchange of Southern California
P.O. Box 1949
San Pedro, CA 90733-1949

Dear Los Angeles – Long Beach Harbor Safety Committee:

This letter is to promulgate procedures to vessel masters for the safe and efficient dispersal of merchant vessels from the Ports of Los Angeles and Long Beach in emergency situations. These procedures were a joint effort between all key members of the Harbor Safety Committee.

The Coast Guard Captain of the Port Los Angeles – Long Beach (COTP LA–LB) has the authority under The Ports and Waterways Safety Act (33 USC 1221 et seq.) to supervise and control the movement of any vessel within the Ports of Los Angeles and Long Beach. When directed by the COTP, merchant vessels shall execute emergency dispersal in accordance with the enclosure.

The enclosed instructions are the COTP's procedures for coordinated merchant vessel movement actions within the Ports of Los Angeles and Long Beach in the event of a major oil spill, explosion, fire, natural disaster, impending enemy attack, or other potential port emergency which necessitates the dispersal of merchant vessels. The COTP will only direct merchant vessels to depart in cases where vessels, due to their location, are at higher risk of loss of life, property damage or could interfere with emergency response activities.

Pilots and tugboats should be used to get underway whenever possible, but there may be extreme emergency situations where vessel masters believe actions must be taken without these safeguards. In this situation, vessel masters desiring to leave port without tugs and/or a pilot on board must notify the COTP, via Vessel Traffic Services, prior to getting underway. Nothing in these procedures prohibit vessel masters from taking safe and prudent actions to safeguard personnel, the vessel, the environment, the cargo and/or the facility.

Subsequently, COTP LA–LB Public Notice 03-97 of August 20th 1997 is hereby cancelled.

If you have additional questions or comments, please contact the Sector Waterways Management Division at (310) 521-3860 or the Sector Command Center at (310) 521-3801.

Sincerely,

A handwritten signature in black ink, appearing to read "R. R. LaFerriere", written over a white background.

R. R. LAFERRIERE
Captain, U. S. Coast Guard
Captain of the Port,
Los Angeles – Long Beach

Enclosure: Merchant Vessel Dispersal Plan for Los Angeles – Long Beach Harbors

MERCHANT VESSEL DISPERSAL PLAN FOR LOS ANGELES – LONG BEACH
HARBORS

Pilots and tugboats should be used to get underway whenever possible, but there may be extreme emergency situations where vessel masters believe actions must be taken without these safeguards. In this situation, vessel masters desiring to leave port without a pilot on board must notify the Captain of the Port (COTP), via Vessel Traffic Services (VTS), prior to getting underway. Nothing in this plan prohibits vessel masters from taking safe and prudent actions to safeguard personnel, the vessel, the environment, the cargo and/or the facility.

SECTIONS IN THIS PLAN:

1. INTRODUCTION
2. THE PURPOSE OF THIS PLAN IS
3. THE DISPERSAL PLAN IS IMPLEMENTED WHEN
4. THE COTP WILL
5. THE BROADCAST OF DISPERSAL ORDER WILL
6. ALL VESSELS IN AFFECTED AREA WILL
7. VESSEL MASTERS ARE RESPONSIBLE
8. VESSEL DISPERSAL PRIORITY WILL
9. IF AN AFFECTED VESSEL IS UNABLE TO SAFELY GET UNDERWAY
10. PILOT ORGANIZATIONS AND TUGBOAT COMPANIES WILL
11. COTP LETTER TO VESSEL MASTERS TEMPLATE
12. REQUEST TO REMAIN IN PORT APPLICATION
13. UNANNOUNCED INCIDENT FLOWCHART
14. ANNOUNCED INCIDENT FLOWCHART

1. INTRODUCTION:

- a. These instructions are the COTP's procedures for vessel masters to ensure coordinated vessel movements within the Ports of Los Angeles and Long Beach in the event of a major oil spill, explosion, fire, natural disaster, impending enemy attack, or other potential port emergency which necessitates the dispersal of merchant vessels.
- b. The COTP will only direct merchant vessels to depart in cases where vessels, due to their location, are at higher risk of loss of life, property damage or could interfere with emergency response activities.

2. THE PURPOSE OF THIS PLAN IS:

- a. To minimize the possibility of personnel casualties and property damage through timely and orderly departure of affected vessels, during a port emergency.
- b. To outline expectations and provide clear, easy to understand steps to vessel masters regarding appropriate actions for ensuring a timely and orderly departure of their vessel, if necessary.

- c. To provide vessel dispersal instructions and procedures that can be followed by all personnel involved in the movement of vessels both in and around the LA-LB port complex should normal communication means become hampered.

3. THE DISPERSAL PLAN IS IMPLEMENTED WHEN:

- a. An event negatively impacts or threatens to impact vessel(s) moored or at anchorage. Examples of these events include: natural disasters, such as an earthquake, or severe storms or events such as fires, explosions, toxic gas releases, and oil or chemical spills.
- b. A serious event is forecasted that may negatively impact the ability of a vessel(s) to remain safely moored or at anchorage. Examples include an approaching severe storm, a predicted tsunami, and a possible enemy attack.
- c. The possibility of being "trapped" at berth/anchorage by an oil or chemical spill is predicted. If affected by a spill, vessels must wait at berth until the vessel and the surrounding area can be cleaned to the satisfaction of the response agencies involved and a clear departure path is available.

4. THE CAPTAIN OF THE PORT WILL:

- a. Determine the affected area depending upon the impacted area and/or the area's potential damage. The affected area may be large in the case of an earthquake or approaching storm (perhaps the entire port complex), or may be localized as in the case of an explosion, fire or oil spill.
- b. Determine which vessels will be subject to emergency vessel dispersal, under the authority of The Ports and Waterways Safety Act (33 USC 1221 et seq.).
- c. Immediately notify both pilot stations and VTS (this includes the Marine Exchange). The COTP will request the Marine Exchange and pilot dispatchers to notify local escort and assist tug companies, line handling and water taxi companies with the approximate number of affected vessels and the urgency of the dispersal order.
- d. Immediately contact U.S. Customs and Border Protection, both verbally and via Homeport AWS 2.0, to inform them of emergency vessel departures.
- e. Contact Facility Marine Operators, HSC members, and agents via the Homeport Alert Warning System (AWS) 2.0 to inform them of the affected areas, the affected vessels and the urgency of the dispersal order.
- f. Coordinate efforts, through the Maritime Transportation System Recovery Unit (MTSRU) Sub-Committee Chair, with the cooperation and teamwork of pilots, pilot dispatchers, tugboats, tugboat dispatchers, vessel masters, vessel agents, port wharfingers and others.

5. THE BROADCAST OF DISPERSAL ORDER WILL:

- a. Be passed from the COTP by the following means of communication (listed by priority):
 - i) OVER THE RADIO: Channel 16 (156.800 mhz)
 - ii) BY TELEPHONE/TEXT/E-MAIL: Homeport AWS 2.0
 - iii) COTP LETTER TO VESSEL MASTERS: Vessel dispersal order from the COTP will be sent to Commander, Eleventh Coast Guard District (dpi), vessel agents, VTS/Marine Exchange, Los Angeles and Long Beach pilots, and U.S. Customs and Border Protection. The COTP letter will be posted on the Marine Exchange website www.mxsocial.org. A COTP letter template is located in section 11.

6. ALL VESSELS IN AFFECTED AREA WILL:

- a. Be directed to disperse. If a vessel intends to stay in an affected area, it must receive permission from the COTP by filling out and sending in a Request to Remain in Port Application, located in section 12. The request will be reviewed and the COTP will make a determination on whether or not the vessel can stay.

7. VESSEL MASTERS ARE RESPONSIBLE:

- a. For taking safe and prudent actions to safeguard personnel, the vessel, the environment, the cargo and/or the facility. On a local and individual basis, the vessel master is likely the best person to determine if their vessel is affected. Nothing in this plan prohibits masters from identifying extreme emergency situations where they believe actions must be taken without the safeguards of pilots and tugboats to get underway.
- b. To determine if remaining at berth/anchorage will pose a danger to the vessel or crew. If it is not readily apparent to the master whether the vessel *is* within the affected area, the master should contact the VTS by telephone at (310) 832-6411 or radio Channel 14 VHF/FM as soon as possible in order to make that determination.
- c. To set a live radio watch to receive information and emergency instructions on the following VHF-FM frequencies (radio operator must be capable of effectively communicating in English):
 - Channel 16 (156.800 MHz) Distress, Safety & Calling
 - Channel 14 (156.700 MHz) VTS for information
 - If moored in LA, Channel 73 (156.675 MHz), LA Pilots – for dispersal
 - If moored in LB, Channel 74 (156.600 MHz), LB Pilots – for dispersal

- d. To receive permission from both the pilots and VTS, if they desire to exit to the east of the LB breakwater to facilitate a more rapid dispersal. Masters must use extreme care and caution to ensure all factors are thoroughly evaluated (i.e. shallow water, crossing vessel traffic from the east, vessels in the anchorages, etc.).
- e. If their vessel is deemed to be an affected vessel:
 - i) Prepare to get underway as soon as possible including;
 - securing all load/discharge operations
 - recalling all crew members (however not to delay sailing)
 - setting sea watches
 - other requirements in accordance with local Standards of Care
 - ii) Contact pilots to report any equipment deficiencies, vessel readiness, and request your departure status (estimated time of departure, remain at berth/anchorage), i.e. vessel's sailing priority. Tugboat assistance will be determined by pilots (as necessary).
 - **Pilots and tugboats should be used to get underway whenever possible, but there may be extreme emergency situations where vessel masters believe actions must be taken without these safeguards. In this situation, vessel masters desiring to leave port without tugs and/or a pilot on board must notify the COTP via VTS, prior to getting underway.**
 - iii) The queuing order will be set by the Captain of the Port, with the assistance of the harbor pilots and VTS. No vessel shall depart a berth or anchorage without first notifying USCG and the VTS.
 - iv) In some cases, COTP guidance may direct vessels to a dispersal location, if the vessel wishes to remain within the COTP jurisdiction.

8. VESSEL DISPERSAL PRIORITY WILL:

- a. Ensure the safe, effective, and environmentally sound dispersal of all affected vessels.
- b. Be determined by the COTP with recommendations and input from local pilot companies and VTS. Some factors used to determine vessel priority are (in no particular order): type of event, location of the event, vessel's proximity to the danger, location of the vessel in the port, vessel cargo, propulsion plant readiness, tug availability, vessel maneuverability, time required to be ready for departure, etc. This is not an inclusive list; other factors not listed may affect the dispersal priority and will be taken into account during the situation.

- c. If enemy attack is imminent, U.S. military vessels will have highest priority. Note: U.S. military vessels are not required to embark a pilot, unless the Commanding Officer deems it necessary.

9. IF AN AFFECTED VESSEL IS UNABLE TO SAFELY GET UNDERWAY:

- a. Depending on the situation, the master should consider doubling up all lines, securing all machinery and possibly directing the crew to evacuate the vessel and seek landside shelter. In all cases, vessel masters shall notify the COTP.
- b. In cases of approaching oil, the vessel master shall take all prudent steps to minimize hull contamination, and take into consideration the hazards associated with the spilled oil and provide assessments and recommendations to the spill responders as appropriate.

10. PILOT ORGANIZATIONS AND TUGBOAT COMPANIES WILL:

- a. Pilot organizations shall notify vessels in their Area of Responsibility (AOR), as well as VTS, of scheduled sailing times. Pilots will then make arrangements to board vessels (considering the above priorities) to safely, and as quickly as possible, navigate vessels out of port. Sufficient tug assistance is highly encouraged, but in some cases may not be fully or readily available. Pilot and tugboat companies should make every attempt to recall additional pilots/tug crews to meet the increased and immediate demands of vessel departures (based on the number of affected vessels).

11. COTP LETTER TO VESSEL MASTERS TEMPLATE:

- a. The letter template can be found on the following page.

U.S. Department of
Homeland Security

United States
Coast Guard



Commander
United States Coast Guard
Sector Los Angeles – Long Beach

1001 S. Seaside Ave., Bldg 20
San Pedro, CA 90731
Phone: 310-521-3801
Fax: 310-521-3813

16710

TO ALL VESSELS CURRENTLY WITHIN THE (AFFECTED AREA) WITHIN THE PORTS
OF LOS ANGELES AND LONG BEACH

Dear Master:

Due to an (emergency) and for the safety of all vessels and crews, I am ordering the immediate dispersal of all vessels from the (affected area). The goal is to safely and efficiently dispersal all merchant vessels from the Ports of Los Angeles and Long Beach during this emergency situation.

Pilots and tugboats should be used to get underway whenever possible, but there may be extreme emergency situations where you believe actions must be taken without these safeguards. In this situation, if you desire to leave port without a pilot on board you must notify the Captain of the Port, via Vessel Traffic Services through Channel 14 (156.700 MHz), prior to getting underway. Nothing in these procedures prohibits you from taking safe and prudent actions to safeguard your personnel, vessel, cargo, the environment, and/or the facility.

If you have any questions or concerns regarding this matter, please refer to the enclosed Merchant Vessel Dispersal Plan for Los Angeles – Long Beach Harbors or contact the U.S. Coast Guard, Sector Los Angeles – Long Beach Command Center at 310-521-3801.

Sincerely,

R. R. LAFERRIERE
Captain, U. S. Coast Guard
Captain of the Port,
Los Angeles – Long Beach

Enclosure: Merchant Vessel Dispersal Plan for Los Angeles – Long Beach Harbors

Copy: Commander, Eleventh Coast Guard District (dpi)
Vessel Agents
VTS/Marine Exchange
Los Angeles and Long Beach Pilots
U.S. Customs and Border Protection

12. REQUEST TO REMAIN IN PORT APPLICATION – COMMERCIAL VESSEL SURVEY

This vessel information is required by the Captain of the Port for vessels and barges, requesting to remain in port during the port dispersal. This form should be completely filled out and faxed to 310-521-3813.

Vessel Name: _____ Call Sign: _____
Official Number: _____ Flag: _____
Vessel Master: _____ Phone: _____
Location/Facility: _____
Facility POC Name: _____ Phone: _____
Agent Name: _____ Phone: _____
Address: _____
Charter/Operator Name: _____ Phone: _____
Address: _____
Owner Name: _____ Phone: _____
Address: _____

Vessel Particulars

Length: _____ Gross Tonnage: _____ Hull Type: _____

Onboard Vessel

Bunkers: _____ Lube Oil: _____ Diesel Oil: _____

Ballast Capacity: _____

Estimated draft when ballasted: _____

Availability of vessel main propulsion: _____

Current condition/why requesting to remain: _____

Number of crew to remain aboard and qualifications: _____

Operational status of machinery aboard: _____

Firefighting capability of vessel: _____

REQUEST TO REMAIN IN PORT APPLICATION – COMMERCIAL VESSEL
SURVEY CONTINUED

Any unusual conditions affecting vessel seaworthiness: _____

Facility Particulars

Berth name and location: _____

Facility POC name: _____ Phone: _____

Description of moorings: _____

NOTE: A diagram showing mooring arrangements with size and number of mooring lines or wires is required as part of the checklist.

Fendering configuration and condition (attach plan if needed):

Shoreside firefighting capability: _____

Tugboat assistance available: _____

Condition of bollards, dolphins and deadmen: _____

Is facility capable of holding vessel: _____

Study done by: _____

Vessel person in charge

Facility person in charge

*** ONLY TO BE COMPLETED IF DISPERSAL IS FOR HEAVY WEATHER
(STORM, TSUNAMI, ETC) ***

Has the facility had an engineering study done to determine the maximum size of vessel with maximum winds which could safely moor at facility: _____

Distance to nearest obstruction (crane, drydock, building, tank, etc.) that may cause damage to vessel:

REQUEST TO REMAIN IN PORT APPLICATION – COMMERCIAL VESSEL
SURVEY CONTINUED

* ONLY TO BE COMPLETED IF DISPERSAL IS FOR HEAVY WEATHER
(STORM, TSUNAMI, ETC) *

Distance to nearest oil storage facility, oil pipelines, hazmat facility, oil or hazmat storage tanks at facility where vessel is to be moored: _____

Open areas of docks, wharves and piers cleared of missile hazards: _____

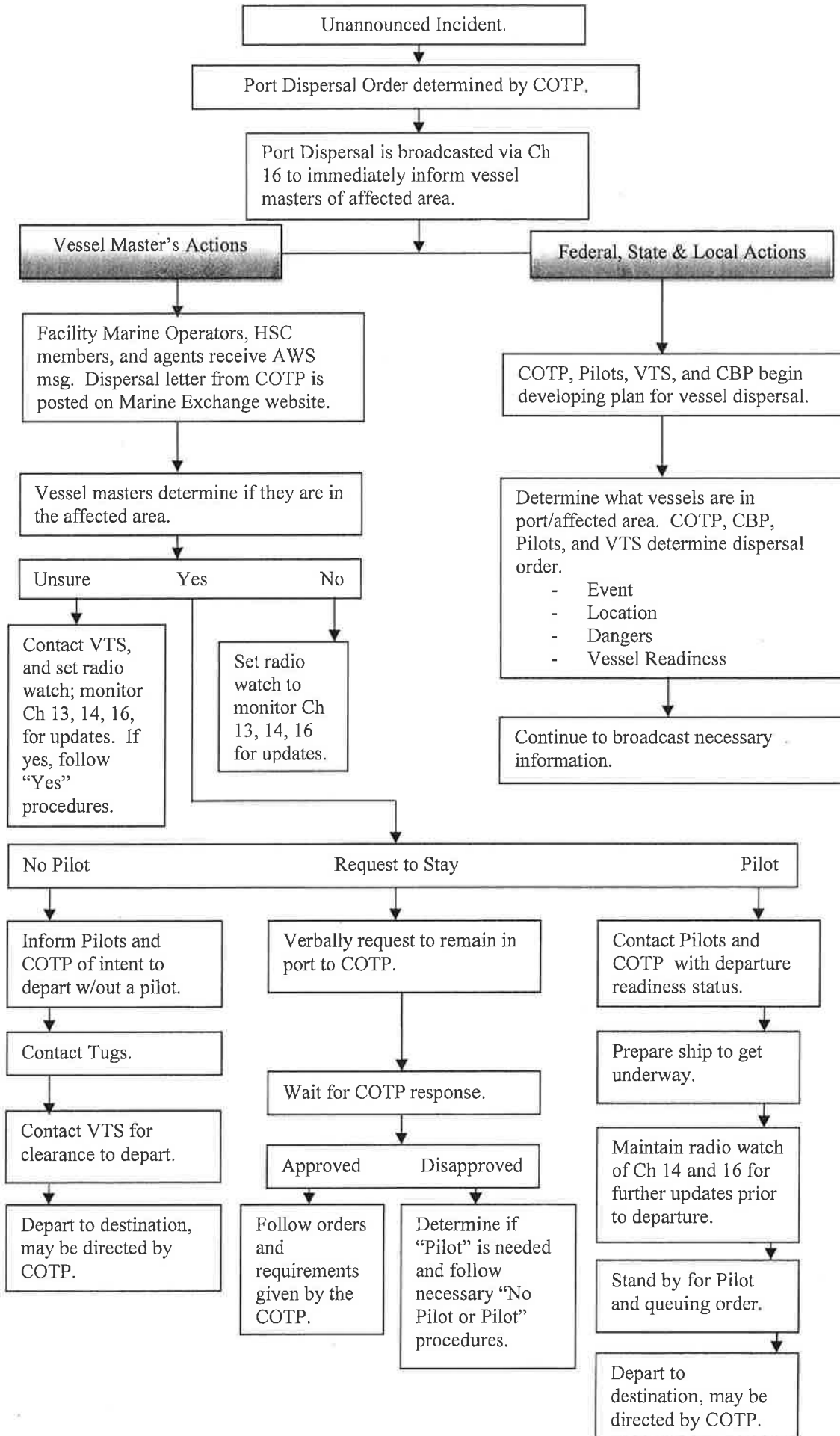
POST-DISPERSAL SURVEY

Survey team comments: _____

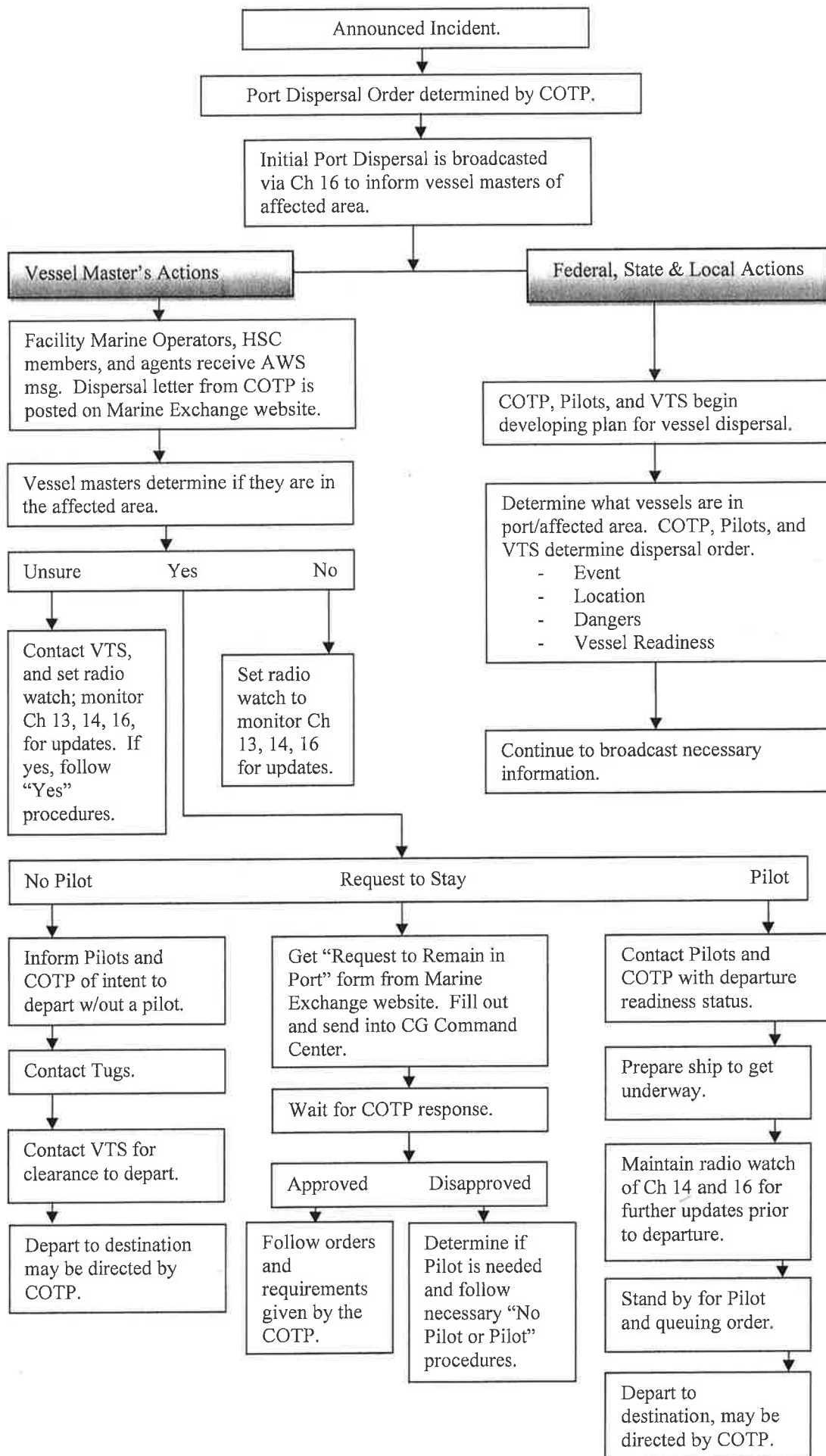
Survey team: _____ Team leader: _____

Survey date: _____ Survey time: _____

13. UNANNOUNCED INCIDENT FLOWCHART



14. ANNOUNCED INCIDENT FLOWCHART



U.S. Department
of Transportation

United States
Coast Guard



Commanding Officer
U.S. Coast Guard
Marine Safety Office/Group
Los Angeles-Long Beach

165 N. Pico Avenue
Long Beach, CA 90802
Staff Symbol:
Phone: (310) 980-4444

APPENDIX - E

16601
6 June 96

CAPTAIN OF THE PORT LOS ANGELES-LONG BEACH PUBLIC NOTICE NO. 1-96

Subj: DESIGNATION OF NARROW CHANNELS AND FAIRWAYS IN THE LA/LB
CAPTAIN OF THE PORT ZONE

1. PURPOSE: This notice updates and replaces Captain of the Port Notice 2-93 and serves to designate waterways in the ports of Los Angeles and Long Beach and approaches which the Captain of the Port determines to be "Narrow Channels or Fairways" in the context of Rule 9 of the International Rules of the Road (COLREGS) and the Inland Steering and Sailing Rules. The designation of these waters is to minimize maneuvering conflicts between large commercial vessels and smaller vessels and to help ensure the safe, efficient and environmentally sound maritime operations in this major port complex.

2. DISCUSSION: There are thousands of commercial and recreational vessels operating in the relatively confined waters of the ports of LA/LB and the seaward approaches. With over 5,500 large commercial vessels, some as large as 1,070 feet length overall, calling on the ports of LA/LB the potential exists for serious major marine casualties developing from conflicts with recreational and small vessels. To date, there have been numerous "near misses" as a result of smaller vessels not appreciating the maneuvering limitations of large vessels and not understanding which waters are "Narrow Channels or Fairways". A deep draft vessel maneuvering to avoid a recreational vessel faces the potential of grounding and causing a major oil spill, diverting into the path of other recreational vessels or standing on course with the hope the conflicting vessel takes adequate evasive action. In practice, large vessels, deep draft vessels and tugs with tows can only safely navigate in the channels, fairways and port approaches.

Rule 9 of the COLREGS and Inland Rules of the Road prohibit vessels less than 20 meters (approx. 65' in length) from impeding the passage of a vessel which can safely navigate only in a "Narrow Channel or Fairway". Violation of these regulations may result in penalties of \$10,000. In addition, small vessels operating too close to large vessels and impeding their safe transit are considered to be "negligently operated" and may be cited for \$10,000 for violation of this regulation.

To assist in the safe navigation of all marine traffic and to provide mariners an understanding of waters that fall within the definition of "Narrow Channels and Fairways" these waters are

June 26, 1996

E - 1

16601

6 June 96

CAPTAIN OF THE PORT LOS ANGELES-LONG BEACH PUBLIC NOTICE NO. 1-96

Subj: DESIGNATION OF NARROW CHANNELS AND FAIRWAYS IN THE LA/LB
CAPTAIN OF THE PORT ZONE

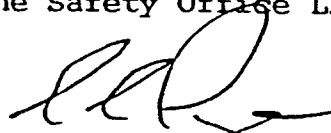
identified below. Mariners are urged to report infractions to the Captain of the Port via radio at the onset of a "close quarters" situation on VHF Channel 16 and or submission of the attached reporting form.

3. ACTION: The Coast Guard Captain of the Port designates the following waterways as "Narrow Channels and Fairways" as defined in Rule 9 of the COLREGS and the Inland Rules of the Road.

a. The Los Angeles and Long Beach Pilot operating areas as reflected on NOAA Chart 18751. These areas generally extend from the "Angel's Gate" and "Queen's Gate" breakwater openings seaward for 1 mile.

b. All navigational channels inside the LA/LB federal breakwater leading to deep draft berths in the ports of Los Angeles and Long Beach including, but not limited to the Los Angeles Main Ship Channel, Long Beach Channel, and Cerritos Channel.

c. Incidents where vessel operators fail to comply with Rule 9 and provisions of this Notice should immediately be brought to the attention of the Coast Guard Captain of the Port as appropriate and or through submission of the "Incident Report" attached to this Notice. Questions regarding the implementation of this Notice should be directed to the Chief of Port Operations, at Coast Guard Marine Safety Office LA/LB at the above listed number.



E. E. PAGE
Captain, U. S. Coast Guard
Captain of the Port
Los Angeles-Long Beach

Distribution: LA/LB Harbor Safety Plan

June 26, 1996

E - 2

THE FOLLOWING INFORMATION IS REQUIRED BY THE USCG IN ORDER FOR THEM TO INVESTIGATE INCIDENTS OF SMALL VESSELS HAMPERING THE PROGRESS OF SHIPS OR TUGS WITH TOWS IN THE HARBOR AREA.

CF # _____ OTHER IDENTIFYING # _____

NAME OF SMALL VESSEL: _____

DESCRIPTION OF SMALL VESSEL: _____

LOCATION OF INCIDENT: _____

NUMBER OF PERSONS ON BOARD: _____

TIME AND DATE OF INCIDENT: _____

DESTINATION OF SMALL VESSEL (IF KNOWN): _____

NAME OF SHIP/TUG: _____ MASTER: _____

DESTINATION OF SHIP/TUG: _____

WEATHER CONDITIONS AT THE TIME: _____

DESCRIPTION OF INCIDENT (USE REVERSE IF NECESSARY): _____

MASTER or PILOT (PRINT NAME)

MASTER or PILOT (SIGNATURE)

SUBMIT TO MANAGEMENT:

A. EL SEGUNDO MARINE TERMINAL

1. Terminal Location and Description: The Chevron U.S.A. Products Company's El Segundo Marine Terminal facility is located in an open, unsheltered roadstead in the Santa Monica Bay on the West Coast of the United States at El Segundo, California. The Terminal maintains a Sea Buoy, "2ES," a lighted bell buoy exhibiting a red flashing light every 4 seconds. The Terminal has two, 7-point conventional buoy moorings systems (CBMs). Berth No. 3 is approximately 7,200ft offshore and Berth No. 4 is approximately 8,100ft offshore.

Berth No. 3 has two separate piping systems and associated submarine hoses; 3C (clean) for light oils (primarily gasoline, diesel and jet fuels) and 3B (black) for crude oil and black fuel oils. In Berth 3C, a 16in submarine pipeline and a 12in submarine circulation pipeline are attached to 245ft of submarine hose, the last link of which is a 12in over-the-rail hose. Berth 3B has a 26in pipeline, and a 12in circulation pipeline also attached to 240ft of submarine hose with a 12in over-the-rail hose.

In Berth 4, a 36in submarine pipeline and a 14in submarine circulation pipeline attach to 310ft of submarine hose, the last link of which is a 16in over-the-rail hose.

The Onshore Facility consists of a transfer station for each submarine system, with booster pumps, lines and instrumentation. The systems operate remotely from a manned control room with control indicators, recording equipment, and remote actuators for facility controls. The El Segundo Marine Terminal is maintained and operated 24 hours a day, 7 days a week.

2. Mooring and Unmooring: Only vessels that have been successfully vetted by Chevron Shipping Company are cleared to call at this Terminal. A mooring launch with a Chevron Mooring Master and a Mooring Master Assistant (MMA) meets vessels scheduled to proceed directly into berth on arrival at the pilot station, which is located three miles SW of Buoy "2ES." The Mooring Master pilots the vessel and advises the vessel's Master on approaching and departing the berth. The Mooring Master acts as Terminal Person-in-Charge while onboard the vessel. The MMA assists the Mooring Master and acts as the pollution prevention officer on the vessel during the vessel's stay at El Segundo. The Mooring Master, MMA and marine support vessel remain with the ship throughout the entire stay at the Marine Terminal.

The following is a typical procedure for berthing vessels in Berth Nos. 3 or 4. The vessel's Master and Mooring Master discuss and agree the detailed passage plan and procedures to take into account existing conditions of the particular berth, including, but not limited to the state of the wind, current, sea, vessel size limitations before commencing the operation. Escorted by an assist tug, a vessel typically approaches the mooring heading due north, passing approximately 200 yards west of No. 7 mooring buoy. The MMA and mooring launch assist the Mooring Master in dropping and positioning the vessel's anchors. Both the port and starboard anchors are dropped and

positioned in approximately 80ft of water in Berth No. 4, and 73ft of water in Berth No. 3. The mooring launch is employed to tie up the vessel to 7 large mooring buoys, the order of which is determined by metocean conditions.

Reverse the general procedure to depart the berth. The vessel's crew slacks the lines and the mooring launch crew releases them at the buoy. The anchors are heaved based on metocean conditions at the time. An assist tug attends the unmooring operation at all times.

3. Tug Assist Requirements: All vessels will have a minimum of one tug standing by in readiness to assist the tank vessel during every mooring and unmooring.
4. Under-keel Clearance Guidelines: The maximum operating draft for vessels is 51ft in Berth No. 3 and 56ft in Berth No. 4. As measured at the pipeline end manifold (PLEM), vessels at the maximum allowable draft in each berth would have an under-keel clearance of at least 12ft.
5. Spill Prevention and Response: Chevron is aware of the consequences of oil spills, and works diligently to prevent them at the Marine Terminal. The process begins with the vetting of all tank vessels before entering into any commercial contract. The vessel owner must make the vessel available to a Chevron marine representative and the vessel must satisfy specific assurance criteria. Suitable vessels appear on Chevron Shipping Company's Conventional Buoy Mooring (CBM) Certified List. Only CBM-certified vessels trade at this terminal.

Chevron maintains the practice of placing a Mooring Master and MMA aboard all vessels calling at the Terminal. These individuals have a very high level of training and professional competency. The combination of skilled professionals monitoring the vessel's evolution from vessel mooring, throughout cargo transfer, which is concluded after the vessel is unmoored, ensures not only full compliance with regulations but also prompt corrective action to avoid dangerous developments. Chevron mooring masters rely on well-developed Contingency Plans for a wide variety of possible emergency situations and the Terminal personnel are trained in the event of an oil spill. Periodic drills involve the Terminal's own workforce and equipment, as well as a contract with MSRC (Marine Oil Spill Response Organization). All Mooring Masters complete the Chevron Mooring Master Training program and possess a USCG License and a Federal First Class Pilotage Endorsement for El Segundo Offshore Moorings.

B. ADDITIONAL EL SEGUNDO MARINE TERMINAL PREVENTION MEASURES

1. A contracted industrial diver conducts monthly surface and sub-sea inspections of all mooring equipment, the submarine PLEM and submarine hoses in each berth. Additionally, dive inspections are made in the event a submarine hose has not been lifted within fifteen days of the previous cargo transfer and after a storm or seismic event affects the area.
2. Continuous vacuum is placed on the submarine pipeline and hose during all mooring and unmooring operations and when a vessel is operating in the vicinity of the berths.
3. Bathymetric Surveys are conducted every three years. Quarterly soundings are taken at each Berth PLEM, if the quarterly sounding exceeds the Bathymetric Survey by five percent, a new Bathymetric Survey must be conducted.
4. The Terminal takes pride in a low incident rate and has a goal of zero oil spills. To contain oil spills on the water, the refinery maintains the following spill response equipment:
 - a. Initial Response: Mooring launches are equipped with 1000ft of Expandi pollution boom, and upon verification of a spill, personnel can begin deploying this boom within 15 minutes.
 - b. The refinery will dispatch the following Chevron equipment from King Harbor which can be in place in less than two hours:
 - i. Walt K: 38ft Fast response boat with– Lamor Mini max skimmer (approximately 150 bbls per hour) 3X - Kepner Oil Storage bladders (Total 100 bbls capacity)
 - ii. Utility One: 32ft Fast response vessel.
 - iii. Boomer: 52ft with 1,000ft of 43in Kepner Sea Curtain ReelPak
 - iv. Duke J: 48ft with 1,000' of 43in Kepner Sea Curtain ReelPak

Supplementary response will commence from MSRC within 2 - 2.5 hours.

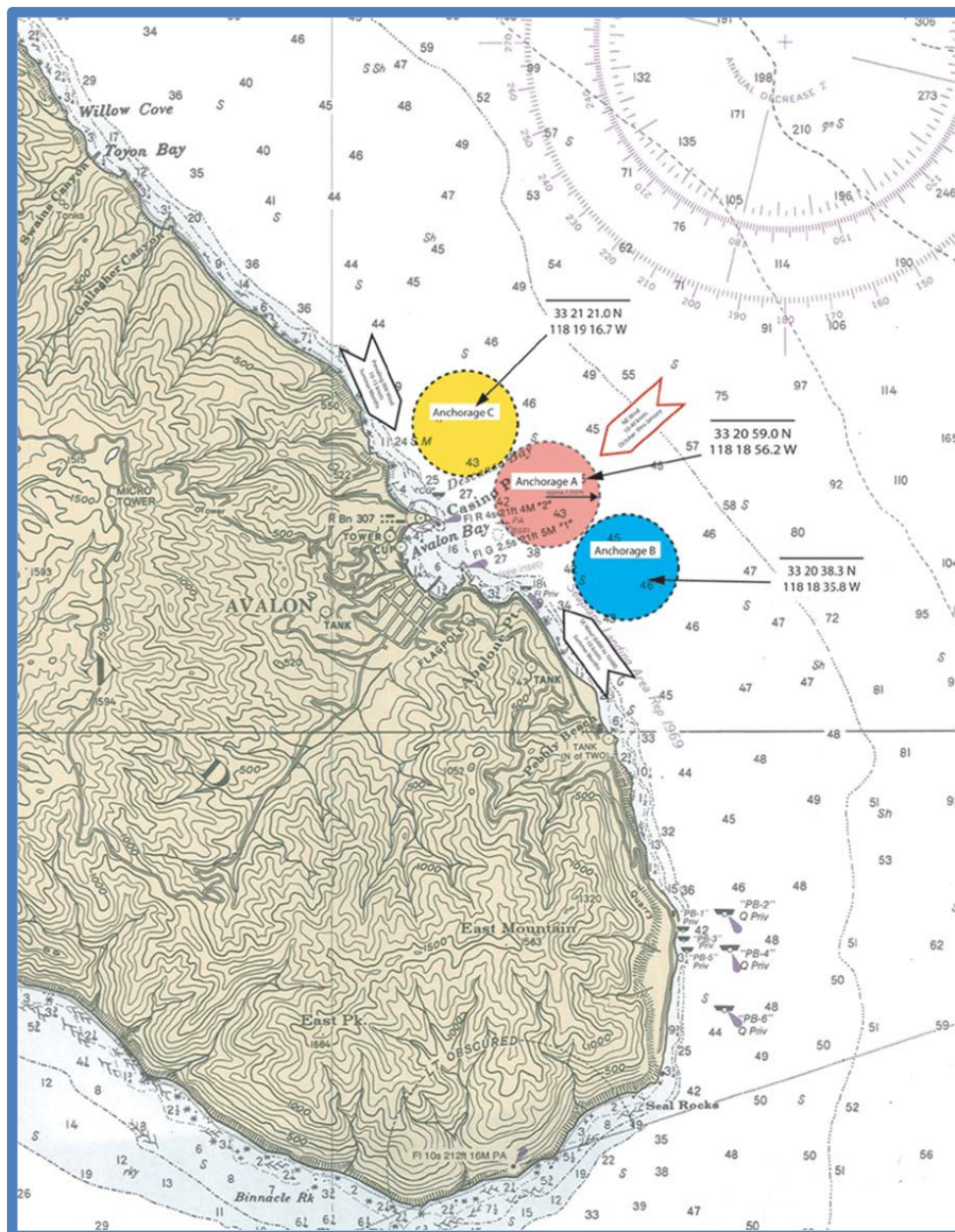
NOTE - See the “Oil Spill Contingency Response Plan” for additional inventory of the refinery’s spill containment equipment, as well as information concerning Spill Notification Procedures, Logistical Support, Offshore Containment and Recovery Procedures and Shoreline Protection and Cleanup.

**LA/LB Harbor Safety Committee
Santa Catalina Island**



Avalon Harbor and Avalon Bay Federal Anchorages

The US Coast Guard established the Avalon Bay Federal Anchorages in 2005 (33 CFR 110.216). The Avalon Bay anchorage is reserved for large passenger vessels of over 1600 gross tons unless otherwise authorized by the Captain of the Port Los Angeles-Long Beach. These three anchorages provide better control and security over the increasing number of cruise ships visiting the island. The number and size of large passenger vessels visiting Santa Catalina Island has increased and continued growth is expected. The coordination and cooperation needed to process multiple large vessels and large groups of passengers at one port has created a need for a policy ensuring safe operations.



Southeast Santa Catalina Island showing Avalon Bay Federal Anchorages

Coordination

The Harbor Safety Committee, (HSC) is the coordinating entity for this appendix. The Avalon Harbor Master is the coordinating entity for cruise lines and other vessels desiring to visit Santa Catalina Island and discharge passengers in Avalon Harbor. Local entities provide support to the visiting vessels and must plan long in advance to meet the needs of visiting vessels. The Avalon Harbor Master works with ship's agents and cruise lines in advance of their arrivals to arrange the safe transportation of passengers ashore.

Discussion

Historically, the number and size of large cruise ships visiting Santa Catalina Island has been somewhat manageable. Previously only one cruise ship visited at a time, with less than 3,000 passengers. Today, the island receives cruise ships with up to 5,000 passengers onboard. This number does not include the crew, who may also go ashore, and the increasing tourism from the mainland.

The Avalon Harbor area immediately adjacent to the anchorages can be extremely busy with private recreational vessels, cross channel fast ferries, visiting cruise ships and water taxis moving thousands of visitors and passengers to the island daily. The cruise ships unload and load thousands of people in the morning and again in the afternoon. Close coordination is necessary to ensure a safe visit for all.

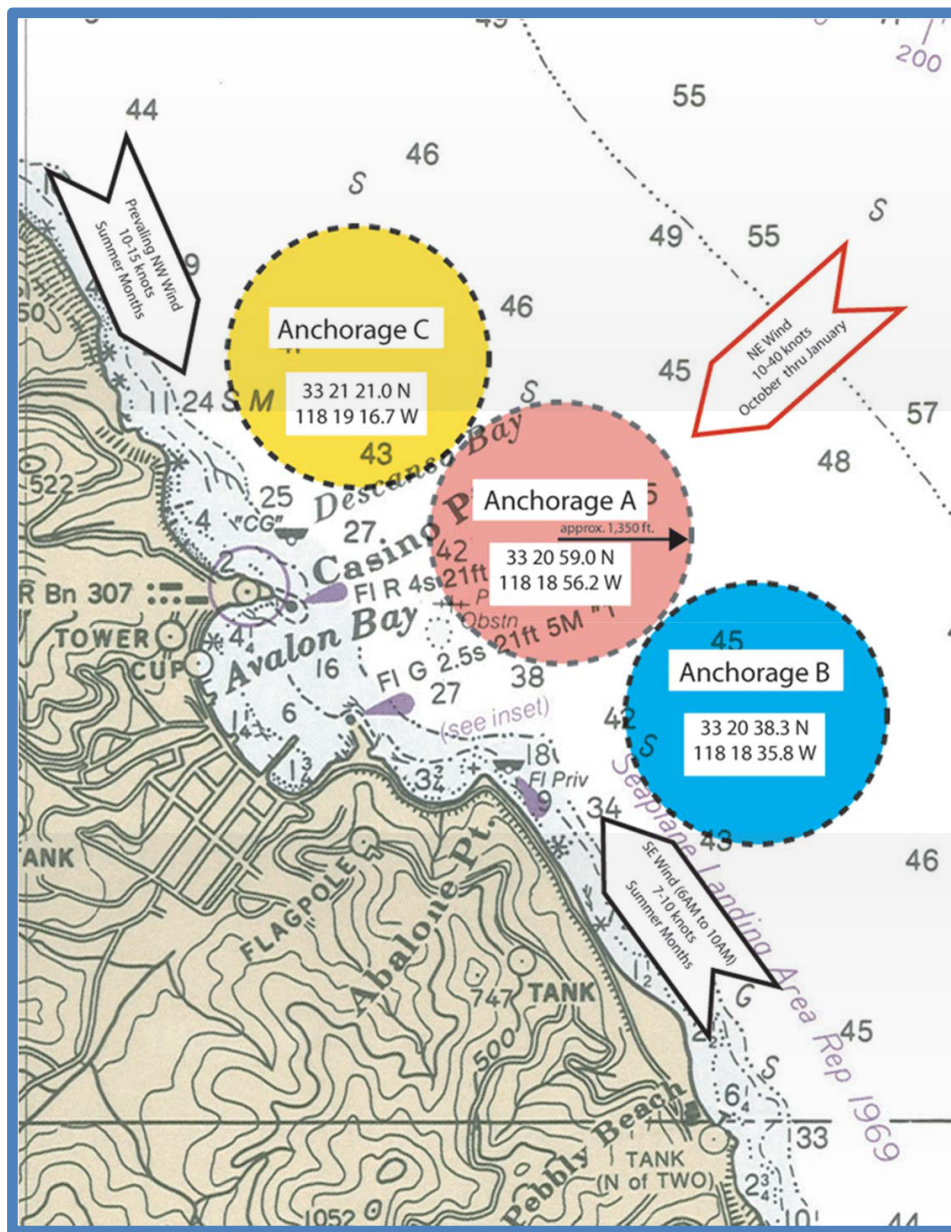
The passage of the Maritime Security Regulations has increased the visibility of cruise ship visitations to coastal areas along with other vessels. The federal anchorages have been established to assist in this regard. The presence of small craft in the vicinity of the cruise ships, the presence of aircraft flying nearby and the potential for other security issues drives the need to accurately coordinate the arrival and departure of visiting vessels.

Anchorage Assignment

The Avalon Harbor Master assigns vessels to the three Avalon Bay Anchorages "A", "B" and "C" according to locally developed protocols. The Avalon Harbor Master assigns large passenger vessels to the Avalon Federal Anchorages as well as assigning all mooring locations for recreational vessels. Large commercial vessels must always use the designated federal anchorages as opposed to random anchoring offshore. The Avalon Harbor Master maintains communication with vessels occupying the Avalon Bay Anchorages.

The COTP Los Angeles-Long Beach has the authority to order vessels to move from the Avalon Bay Anchorages.

Avalon Bay Federal Anchorages & Wind Patterns



| | Anchorage A | Anchorage B | Anchorage C |
|--------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| Avalon Bay Federal Anchorages | 33° 20' 59.0" N 118° 18' 56.2" W | 33° 20' 38.3" N 118° 18' 35.8" W | 33° 21' 21.0" N 118° 19' 16.7" W |
| Depth | 30-40 fathoms | 40-45 fathoms | 35-40 fathoms |
| NOAA Chart 18757 | | | |

Pre-Arrival Planning

Multiple Ships Visiting Santa Catalina Island Anchorages: The following procedures are designed to ensure the safe movement of personnel and passengers to and from multiple cruise ships and other vessels anchored offshore of Avalon Harbor. The port presently receives multiple cruise ships and each has different needs due to the port layout and vessel traffic patterns. Coordination must be maintained between the cruise ships, water taxis, tenders, cross-channel ferries and recreational vessels.

The Avalon Harbor Security Plan holder should meet with the vessels' safety and security officer, prior to the commencement of passenger ferrying operations to discuss all pertinent information including terminal and vessel security, tendering operations, passenger safety and communications. A Declaration of Security (DOS) should be maintained for all operations.

Safe Operating Practices For Cruise Ship Tendering Operations

The purpose of this section is to ensure cruise ships, large visiting vessels and commercial waterway users know the standard operating procedures and are able to coordinate with arriving vessels. This section is also intended to familiarize the masters and vessel operators with the local weather patterns in Avalon Harbor and the near offshore area of Santa Catalina Island.

The procedures in this document must be reviewed and a briefing should take place before arrival to Avalon Bay anchorages by visiting ships and by harbor support operations personnel. Specifically, briefings should discuss the following:

1. The restricted nature of Avalon Harbor. Tendering vessels should not congregate inside the harbor. Rather they should wait outside the breakwater until there is dock space. Having too many vessels navigating inside the harbor creates a situation where vessels cannot maneuver safely.
2. Using only a small number of tendering vessels. The Avalon Harbor Master recommends that no more than four (4) tenders be used per cruise ship to alleviate harbor congestion. If there is a need for more tenders, the cruise ship shall seek approval from the Avalon Harbor Master. Experience has shown that if more tenders are used there may be insufficient dock space.
3. Radio communications procedures should be reviewed. All tender vessels should be able to communicate in English on marine VHF. VHF Channel 13 should be used for coordinating with other tenders and Channel 16 should be used for calling and emergencies – The Harbor Master's office monitors VHF Channel 16. All radios operating in the vicinity of Avalon Harbor should be in the low power mode.
4. Safe handling of the cruise ship tenders shall be reviewed. All ship tenders shall proceed through Avalon Harbor at a speed slow enough that it does not create a wake.

Santa Catalina Island: General Description

The island is 18 miles S of Point Fermin, is 21 miles long in a SE direction and has a greatest width of 8 miles. The island is privately owned.

The island is almost divided by a deep N cut about 6 miles from the West end. The cut forms coves less than 0.5 mile apart at their heads, and because the isthmus separating these coves is low, the island appears as two from a few miles off. Rugged and mountainous, the island has steep, precipitous shores intersected occasionally by deep gulches and valleys, and is covered with a thick growth and some scrub oak. The highest peak, Mount Orizaba, rises 2,097 feet and lies near the middle of the East part of the island.

Much of the North shore is free from kelp, but the South side in general has a narrow fringe of kelp close to the beach. The island rises abruptly from deep-water, the 30-fathom curve being close inshore. Most of the dangers in the approaches to the island are inside the kelp.

Lights are shown from a pole with a red and white diamond-shaped day mark on the S end, Long Point (East side), and West End (NW point) of the island. Ribbon Rock, on the West side of Santa Catalina Island, 2.9 miles SE of West End, shows as a dark vertical rock wall with a gigantic ribbon of quartz veining that is visible for many miles.

Farnsworth Bank, 9.2 miles SSE of West End and 1.6 miles offshore, has a least known depth of 9 fathoms over it. Shelter from Santa Ana winds can be had by anchoring in the bight near the Palisades on the South side of the island, 2 to 3 miles NW of the Southern extremity.

Avalon Bay

Avalon Bay is on the North shore of Santa Catalina Island, 2.5 miles from its SE extremity, is entered between Casino Point breakwater on the North and the breakwater extending from Cabrillo Peninsula on the South. The breakwaters are marked by lights on their seaward ends.

The small bay has depths of 2 to 13 fathoms; a depth of 20 fathoms is immediately outside the points of the bay. The Avalon Harbor Master reports that shelter is good during SW, NW, and SE weather if the wind does not exceed 20 knots. The breakwater provides limited protection in the NW and SE ends of the harbor during NE Santa Ana winds that occasionally blow during the fall and winter.



Avalon Harbor

A large white circular building, brilliantly illuminated for about half the night during summer, is on Casino Point.

Avalon is an incorporated city and part of Los Angeles County. Avalon is an extensive resort and the principal settlement of the island. Daily cross channel ferries and helicopter service is maintained year-round to San Pedro, Long Beach, Newport Beach, and Dana Point. A road along the beach extends some distance on each side of the cove and at night the lights along this road are conspicuous from San Pedro Channel. The bay is extremely popular as a yacht haven and vacation resort during the summer.

Vessel Communications

The Avalon Harbor Master has designated the channel and frequency in which the Avalon Harbor Department will communicate with the water taxi operators and/or commercial traffic and the cruise ships. Water taxi or tender call signs should be agreed upon prior to commencing operations.

| Water Taxi Services | Avalon Harbor Master | Bridge to Bridge | Cruise Ship Tenders | VTS LA-LB | Emergency (Baywatch Avalon) |
|---------------------|----------------------|------------------|---------------------|-----------|-----------------------------|
| VHF 9 | VHF 12 & 16 | VHF 13 | VHF 12 & 13 | VHF 14 | VHF 16 |

All radios operating in the vicinity of Avalon Harbor should be on low power mode. This prevents the undesired distance of travel and stepping on other maritime communications.

PORT COMMUNICATIONS Reference

| Organization | Contact (s) | Radio Channel | Phone # |
|---|-------------------------------------|----------------------|--------------------------------------|
| Avalon Harbor Master | Avalon Harbor Master | VHF 12 & 16 | 1 (310) 510-0535 |
| VTS LA-LB | 24hr Watch | VHF 14 | 1 (310) 832-6411 |
| USCG Sector LA-LB | 24hr Watch | VHF 16 and 22a | 1 (310) 521-3801 |
| Avalon Sheriff Department | Dispatcher | | 1 (310) 510-0174 |
| CBP | Dispatcher | | 1 (800) 232-5378 |
| FBI | Duty Officer | | 1 (562) 432-6951 |
| Catalina Classic Cruises (Cruise Ship Tenders) | Mr. Chuck Dobbins Mr. Joe Caliva | VHF 12, 13 and 16 | 1 (415) 265-5858 1 (310) 560-8353 |
| Catalina Express | Mr. Erik Bombard | | 1 (562) 485 3200 |
| Tour Companies (glass bottom, etc..) | | | 1 (877) 778 8322 |
| Catalina Flyer | Mr. Sterling Miles | | 1 (949) 673 5245 |

Avalon Piers

Cabrillo Mole: The Avalon Cabrillo Mole pier is used primarily by the cross-channel ferries. These vessels operate on scheduled runs from the mainland to Avalon Harbor. Additionally, these piers are used when shipboard tenders are used and must be carefully coordinated.



Cabrillo Mole Ferry piers with Ship Tenders

The cross-channel ferries have water jet propulsion systems that produce significant currents during mooring and unmooring. There are three, 100-foot floating docks, with reported depths of 30 feet alongside, on the East side of the Cabrillo Mole (Cabrillo Peninsula). These docks are shared with all commercial waterway users and are controlled by the Avalon Harbor Master.

Avalon Pleasure Pier: In the center of the Harbor is the Avalon Pleasure Pier with various loading floats, concessions, and equipment rental firms. In the summer months, May 15 thru October 15, an extension is added onto the pier providing substantially more space for water taxi and harbor tour boats (see below).

Harbor Moorings: Yachts and other small craft moor to buoys in the bay; there are no alongside berths. The mooring buoys in the bay are privately owned and are assigned by the Avalon Harbor Master.



Summer - Avalon Pier with end float (May 15 thru Oct 15)

During the winter periods, October 16-May 14 the floating pier on the end of the harbor dock is removed and shorter piers are used that lay alongside the main Avalon Pleasure Pier (See below).



**Winter - Avalon Pier operations and view of Mole area (Oct 16 thru May 14)
Harbor Traffic**

During the visit by cruise ships and other large vessels, smaller traffic supporting the ships along with cross channel ferries and visiting recreational vessels create a heavy traffic area in the harbor. The water taxis and ship tenders must ensure traffic can flow. There is more room outside the harbor than inside the breakwater and tenders should not crowd the harbor while others are debarking passengers. Tenders should slow their pace or remain outside the harbor until a berthing area is clear.

Vessel and Terminal Security

A vessel security officer (or representative) and a terminal security officer representative shall always be present at pier side during the full duration of a cruise ship visit where passengers are being handled. These two officers are required to meet to ensure that their security plan objectives are met and to ensure that security measures are not being breached. For example, the tender boarding area is a designated "RESTRICTED AREA" with access limited to authorized personnel using temporary barriers.

Shipboard Crewing Requirements

All cruise ships must be manned, while underway and at anchor, according to their SOLAS Safe Manning Document. This is to ensure that sufficient crew is always available to respond to unforeseen emergencies, such as a fire, dragging anchor or a security incident, while passengers are aboard.

Avalon Harbor Master

The Avalon Harbor Master, located on the pleasure pier, offers 24-hour service year-round and can be reached on Marine VHF-FM channels 12 and 16 or via phone (310) 510-0535.

Water Taxi's

Can be reached on VHF-FM channel 9.(Call harbor master if unable to reach via VHF)

Emergency Services

Emergency medical services are available at Avalon. Baywatch Avalon paramedics should be contacted through the Avalon Sheriffs Dispatch Center by calling 310 510-0174 or 911, contacting the Coast Guard or the Avalon Harbor Master on VHF-FM channel 16, 24 hours a day.

Weather

General weather conditions:

| | |
|-----------------------|--|
| Prevailing year-round | NW winds @ 10-15 knots |
| Summer months | SE winds @ 7-10 knots, 6-10 AM Fog bank, east of island |
| October-January | NE winds @ 10-40 knots Santa Ana warming trend conditions 1-2 times/year, exceeds 50 knots |

General Sea Conditions:

| | |
|------------|------------------|
| Wind waves | 1-2 feet average |
| Swell | 1-3 feet average |

Weather information for Avalon is broadcast by NOAA weather radio channel 1.

Wind: The prevailing winds are W and NW and blow nearly every day, especially in the afternoon. Strong SE winds occur in the winter, and at times the sea is too rough for several days to permit the passage of small vessels. In the summer the winds in the channel are wholly different from those outside the islands and off the coast to the NW.

Under the North shore, which is protected by the bold range of the Santa Ynez Mountains, the West winds do not reach far East of Point Conception with much strength but are felt towards the islands, a strong NW wind and heavy swell coming in from the open ocean. The climate in the Santa Barbara Channel, because of this blocking of the winds, is much milder than to the North along the coast. However, during NW weather boats crossing the channel from the mainland

usually encounter heavier seas as the islands are approached.

The belt of rough seas, locally known as Windy Lane, lies along the North shores of the islands and is about 6 miles (11 km) wide. This sea condition is the opposite to that experienced in the crossing from Los Angeles-Long Beach to Santa Catalina Island. These W winds usually begin about 1000 and grow progressively stronger until sundown.

During heavy NW weather strong squally winds draw down the canyons between Point Conception and Capitan and pass directly offshore, causing a severe choppy sea. Heavy NW gales are often encountered off Point Conception on coming through Santa Barbara Channel, and great changes of climatic and meteorological conditions are experienced; the transition is often remarkably sudden and well defined.

In the fall and winter, stiff northeasters are occasionally experienced at and near the E end of the channel. They come up without warning, usually at night in clear dry weather, and when the barometer is either high or rising rapidly. At such times small boats should be prepared to seek shelter at a moment's notice. During the summer heavy fogs are a common occurrence in the Santa Barbara Channel and envelop the main shore, channel, and islands. Sometimes the mainland and channel are clear while the islands alone are hidden. At other times all are clear during the day but wrapped in dense wet fog nights and mornings. This condition, the fog lying offshore during the day and enveloping the land at night, is characteristic of the whole southern California coast. The fogs occur mostly during calm weather and light winds and are generally dissipated by the strong NW winds.

Current: Currents in Santa Barbara Channel are variable and dependent largely upon the wind. It appears that a weak non-tidal flow sets East in the spring and summer, and West in autumn and winter.

It has been observed that a strong inshore set prevails on a rising tide in the deep waters of Hueneme Canyon. In general, there are conflicting currents, at times quite strong, around the slopes of the submarine valleys both here and off Point Mugu.

The tidal current sets along the N shore of Santa Barbara Channel with velocities of 0.5 to 1 knot. In heavy NW weather, the current and heavy swells make into the South side of the West entrance to the channel and along the North shore of San Miguel Island.

The currents in the vicinity of the Channel Islands frequently follow the direction of the wind, with eddies under the lee of the islands and projecting points. Tidal currents of about 1 knot set through the passages between the islands.

Comments or Questions

Persons with comments or questions regarding the procedures for the Avalon Bay Federal Anchorages should contact:

US Coast Guard: 310-521-3860 Waterways Management

COLREGS Demarcation Lines: The 72 COLREGS apply to the harbors on Santa Catalina Island. NOAA Chart 18757 applies to the operations in this procedure.

Glossary

| | |
|----------|---|
| COLREGS | Collision Regulations |
| DOS | Declaration of Security |
| HSC | Harbor Safety Committee LA/LB Los Angeles/Long Beach |
| FBI | Federal Bureau of Investigations |
| NOAA | National Oceanic and Atmospheric Administration |
| SOLAS | Safety of Live at Sea (International Ship Safety Regulations) |
| VHF-FM | Very High Frequency-Frequency Modulated |
| VTSLA-LB | Vessel Traffic Service Los Angeles – Long Beach |

The purpose of this section is to create an overview of the natural resources of the Los Angeles/Long Beach port areas and approaches for consideration by members of the Harbor Safety Committee ("HSC") regarding natural habitat and biota which might be impacted by recommendations of the Harbor Safety Plan. In addition, listed below are several local experts who are willing to consult with the HSC on environmental concerns as needed.

Executive Summary: The Ports of Los Angeles and Long Beach (referred to below collectively as "the harbor") and their associated approach areas support a high diversity of biological communities in both artificial and natural habitats. These habitats may be defined as benthic (hard and soft bottom), water column, salt marsh, kelp bed, special designation habitats, and bird/marine mammal habitat.

Hard Bottom Benthic Habitats: The benthic habitats include hard substrate, soft bottom and intertidal. Hard substrate habitat is abundant, owing to the prominence of riprap (boulders and concrete rubble), walls, cobble, wood and cement pilings. In general, the hard substrate habitat of the Outer Harbor resembles that found on natural rocky shores of the adjacent coast, while the Inner Harbor resembles natural bays and estuaries of the Southern California Bight. This type of habitat provides foraging and resting areas for shorebirds along with food and shelter for numerous fishes. Primary inhabitants include acorn barnacles, mussels, limpets, shore crabs, filter-feeding gastropods, articulated coralline algae, purple sea urchin, octopus, leopard shark, rockfish, kelp bass, corbina and bat ray.

Algal beds, including giant kelp (discussed below in more detail), feather boa kelp and sargassum, are well developed in various hard substrate parts of the harbor and adjacent coastline and provide a critical nursery habitat for numerous species of fish and invertebrates, the most abundant of which are kelp bass, blacksmith, señorita, surfperch and barred sand bass. The 87 species of marine algae found in the harbor are primary producers, providing a food source for many species.

Surfgrass (*Phyllospadix* spp.) beds occur on rocky substrates in the high-energy, low intertidal and shallow subtidal reef habitats. Composition of invertebrate communities in surfgrass beds is typical of low rocky intertidal habitats except for some smaller gastropods that are specialized to live on surfgrass leaves. Transplant projects to restore damaged surfgrass beds have been largely unsuccessful. As with many species that are persistent over long periods of time, surfgrass recovers very slowly when removed and the low intertidal community is often substantially altered in its absence.

Kelp Beds: Giant Kelp (*Macrocystis pyrifera*) is an important source of primary production in coastal waters and provides food and habitat for nearshore fish and invertebrates. Kelp and macroalgal communities are narrowly distributed within the harbor areas, being principally restricted to the shallow hard bottom environments associated with riprap shorelines, breakwaters, pier structures, and most shallow horizontal hard-bottom substrates. In general giant kelp can grow up to two feet per day and creates a biogenic habitat that supports over 800 species, including birds, mammals, sharks and rays, fish, invertebrates, algae, and more. Ribbon kelp (*Egregia menziesii*) is also present. The bottom of the harbor kelp forest is dominated by gorgonians, purple urchins, lobsters, sea stars and snails. The fronds support a variety of mobile

invertebrates such as nudibranchs, amphipods, shrimp, crabs, mollusks and polychaete worms. Twenty eight species of fish also reside in the kelp community.

The harbor kelp beds are significant for two reasons. First, the kelp coverage in adjacent areas is no more than 25% of historic levels, so every acre is critical. Second, the frond density, and therefore productivity, of kelp beds in the harbor is two to three times that of most California coastal beds, due mainly to the shelter provided by the breakwater. Giant kelp communities within LA-LB Harbor cover approximately 25 acres in the spring and declining to about 14 acres in the fall. Seasonally, up to 50% of kelp is consumed by fish and invertebrates within the kelp forest, while significant portions of the remainder is shed and drifts to adjacent habitats where it is eaten by benthic invertebrates. Much uneaten kelp sheds and drifts to other benthic habitats, where it feeds a myriad of marine life. Whereas algal beds include 87 species of macro-algae, there is a general decline of algal diversity from the outermost portions of the harbors to the innermost channel.

Soft Bottom Benthic Habitats: Soft bottom habitat makes up most of San Pedro Bay, taking up over 10,000 acres of the Outer Harbor, and supports organisms that burrow within the sediments ("infauna"), for example worms, and those which live on the surface of the sediments ("epifauna"), for example sea stars, urchins and bottom-dwelling fish such as halibut. In general, the Outer Harbor areas have higher diversity and lower density of faunal populations than the Inner Harbor. Sandy intertidal habitats in the harbor are present along Cabrillo Beach, the 190 acre landfill in Los Angeles Harbor, and along the shore east of the Los Angeles River mouth in Long Beach. Burrowing invertebrates, such as polychaete worms and sand crabs live in this environment, while shore birds (during low tide) and fish (during high tide) forage on these invertebrates.

Sand and mud bottom habitat: Sand and mud soft bottom habitat comprises most of the harbor with over 10,000 acres of outer harbor. It supports a diversity of burrowing organisms and bottom-dwellers. The outer harbor supports more diverse and less dense fauna than the inner harbor.

Eelgrass beds: Eelgrass (*Zostera spp.*) grows in shallow coastal, marine bays and estuaries around the world and forms the basis of a specialized coastal and estuarine habitat of great ecological value. Eelgrass is a major source of primary production in nearshore marine systems, supplying detrital based food chains. In addition, several fish, invertebrates, and birds directly graze upon it, thus contributing to the system at multiple trophic levels.

Eelgrass meadows are also of vital importance as habitat and have an important role in the life cycle of many ecologically and economically important aquatic species by serving as nursery areas. In addition to the habitat and resource values that eelgrass provides, it also functions to trap and remove suspended particles, thus improving water clarity, reduces erosion by providing sediment stabilization, adds oxygen to the surrounding water, and cycles nutrients. Extensive eelgrass canopies absorb wave shock, thereby protecting adjacent shorelines. Not only does eelgrass provide high ecosystem value, but it also is used as an indicator of estuarine health because it responds to environmental factors by changing in distribution and abundance.

Because of the susceptibility of eelgrass to stresses such as pollution, it is used as one of the five sensitive indicators of pollution in the NOAA National Estuarine Eutrophication Assessment. Eelgrass requires some of the highest light levels of any plant group worldwide which means it is acutely responsive to water clarity changes.

Sandy intertidal habitats: Sandy intertidal habitats along Cabrillo Beach and Los Angeles Harbor's 190-acre landfill support burrowing invertebrates, which provide food for shore birds at low tide and fish at high tide.

Water Column: Phytoplankton, zooplankton and 130 species of fish, many which are commercially and recreationally important, are abundant throughout the harbor in the water column. Dominant fish species include northern anchovy, white croaker, sardine, smelt, grunion, blennies, gobies and queenfish, all important food sources for resident and migratory bird populations. Significant populations of rays, white sea bass, halibut, sand dab, shad, cusk eel, barracuda and mackerel are also present. Fish population density is higher inside the harbor than outside; although its overall productivity is 20 - 50% lower than similar, nearby, completely natural habitats. However, the shelter provided by the harbor, combined with the fact that over 90% of natural wetlands Bight-wide have been developed, make it an important nursery for virtually all of the fish species that reside there as adults. Egg and larval abundance tend to be highest in late winter and early spring. Birds and larger fish spawn, breed and forage in the shallow water habitat near the former seaplane anchorage, the Los Angeles breakwater near Cabrillo Beach, and along the east side of the Pier 400 Corridor. These habitats, although in some cases new and not yet fully productive, are proving environmentally significant.

Salt Marsh: The 3.5 acre constructed Cabrillo salt marsh lagoon provides significant spawning and nursery habitat as well as foraging habitat for birds. It is the only extant wetlands habitat in Los Angeles-Long Beach Harbor and is located next to the Port of Los Angeles' Cabrillo Beach area. The historic wetlands in the area were largely converted to port uses before World War II; only the wetlands in and around the Seal Beach Naval Weapons Station remain.

Bird Habitat: The harbor supports an abundance and diversity of birds, primarily water-associated species, up to 16,500 individuals being present during winter migrations when the harbor becomes an important foraging and roosting habitat along the Pacific Flyway. By late spring/early summer, that number drops to around 3,000. In all, 153 species have been observed in the harbor area in the past decade. The Inner harbor is a major site for roosting while the Outer Harbor is dominated by feeding activity. Flight activity is high near the breakwater and areas of human activity. Some birds require five times their normal intake of food to maintain body weight when flushed from their habitat repeatedly by human interference.

Shallow water habitat is used for foraging by loons, grebes, cormorants, pelicans, diving ducks, gulls and terns. Deeper waters are used by brown pelicans, a state and federally listed endangered bird. Pelicans nest mainly in the Channel Islands, but large numbers (several thousand between July and November) return annually to the harbor to forage, mainly feeding on northern anchovy. The breakwaters provide an important roosting area to these species as well. Local nesting species which rely on the harbor habitat include the western gull, American kestrel, killdeer, belted kingfisher, mallard, black oystercatcher, barn swallow, Anna's

hummingbird, mockingbird, Caspian tern, elegant tern and royal tern. Port of Long Beach relocated a large colony of black-crowned night herons from the former Long Beach Naval Station to Gull Park at the end of the Navy Mole in 1998.

As noted above, the harbor also provides important nesting habitat for the least tern, which feeds primarily on the abundance of northern anchovy found here. Least terns are very vulnerable to disruption of nesting activity from noise, predators, interference with foraging territory close to nesting sites, and pollution stresses.

The peregrine falcon, a state listed endangered species, also nests within the harbor area, hunting shorebirds in and adjacent to Cabrillo Salt Marsh Lagoon.

Marine Mammal Habitat: Common dolphin, Pacific white-sided dolphin, and bottlenose dolphin are present in the harbor area throughout the year, with resident populations reaching record numbers in 1995. Pacific Gray whales migrate through the area, including three to four entering into the harbor itself each year, between November and February (southward migration) and between March and May (northward). In early 1995, a Navy vessel struck and killed a large adult gray whale just outside the break wall, highlighting the need for caution during migration times. Blue whales, orca whales and five other whale species have also been observed. California sea lions and harbor seals haul out on the breakwaters and other rocky areas of the harbor. Although not a significant birthing area, the harbor is an important foraging and resting area for sea lions.

Federally endangered green sea turtles have been observed sporadically in the harbor area as well as three other species of marine turtle.

Special Designation Habitats: Within the harbor approach areas are two sensitive ecological preserves, the Point Fermin Marine Life Refuge and the Seal Beach National Wildlife Refuge. In addition, Terminal Island hosts approximately 13% of the state's total California Least Tern population in the Least Tern Management Area, an important nesting habitat for the endangered species (located on the southern portion of the Pier 400 Stage 1 landfill). Shallow water habitats in the harbor feed the terns and also provide a nursery for halibut.

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SAIC (Science Applications International Corporation). 2010. 2008 Biological Surveys of Los Angeles and Long Beach Harbors. Submitted to Port of Los Angeles Environmental Management Division. http://www.portoflosangeles.org/environment/wildlife_habitat.asp

U.S. Army Corps of Engineers (September 1992), "Deep Draft Navigational Improvements -- LA/Long Beach Harbors, San Pedro Bay, Final EIS/EIR" State Clearinghouse #202087101408

L.A. Harbor Department, et al. (June 1985), "Pacific Texas Pipeline Project Draft EIR/EIS", State Clearinghouse #85013001

Advisors/Resources

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Robert Kanter, Ph.D., POLB, Managing Director of Environmental Affairs and Planning, (562) 590-4154

Chris Cannon, POLA Environmental Affairs, (310) 732-3763

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MEMORANDUM OF AGREEMENT
BETWEEN THE
UNITED STATES COAST GUARD, THE STATE OF CALIFORNIA,
AND CERTAIN CALIFORNIA PORTS
CONCERNING REQUIREMENTS FOR PILOTS
ON VESSELS ENGAGED IN FOREIGN TRADE

WHEREAS, Congress, in Chapter 85 of Title 46, U.S. Code, has empowered the various states with comprehensive authority to regulate pilots; and,

WHEREAS, Congress in the Ports and Waterways Safety Act of 1972 [33 USC 1221-1224] finds and declares that navigation and vessel safety and protection of the marine environment are of major national importance; and,

WHEREAS, Congress, in Part E of Title 46, U.S. Code, has authorized the Coast Guard to license and regulate pilots; and,

WHEREAS, the State of California, through its tidelands grants, state-approved charters of various cities, and the California Harbors and Navigation Code, has delegated to various Cities, Harbor Commissions, Pilot Commissions, and Port Districts listed herein, authority to permit the Ports to provide for and supervise pilots and oversee the pilotage of seagoing vessels within their jurisdiction; and,

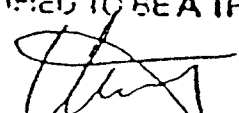
WHEREAS, the State of California, through the Harbors and Navigation Code, has created the State Board of Pilot Commissioners for San Francisco, San Pablo, and Suisun Bay and granted it exclusive authority to license, provide for, supervise, or otherwise regulate pilots and oversee the pilotage of seagoing vessels within its jurisdiction; and,

WHEREAS, the State of California has enacted the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act of 1990 to protect the waters of the state from oil pollution and to augment State authority for the prevention and response to spills in waters under the jurisdiction of the State; and,

WHEREAS, the Coast Guard exercises federal authority under the Ports and Waterways Safety Act [33 USC 1221-1224], the Oil Pollution Act of 1990, and other federal laws with respect to oil pollution prevention and marine environmental protection in waters subject to the jurisdiction of the United States;

NOW, THEREFORE, the Parties agree, to the extent permitted by law, and as consistent with their respective policies and available

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resources, to coordinate their efforts in implementing and exercising their respective statutory and regulatory authority related to pilotage.

I

PARTIES

The Parties to this Memorandum of Agreement ["Agreement"] are the United States Coast Guard ["Coast Guard"], the State of California ["State"], and the Cities of Long Beach and Los Angeles, acting through their respective Boards of Harbor Commissioners ["Port of Long Beach and Port of Los Angeles"], San Diego, Port Hueneme, and Humboldt Bay ["Ports"].

II

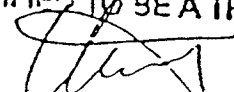
INTENT AND PURPOSE OF AGREEMENT

This Agreement utilizes existing authority to create an improved system of pilotage. It is the intent of the Coast Guard and the State to improve the safety of vessel navigation and port and environmental safety by establishing local pilotage systems which ensure the use of federally licensed pilots with local knowledge on vessels over 300 gross tons not on enrollment while navigating state pilot waters at the Ports subject to this Agreement, which systems share responsibility between the Coast Guard, the State, and the Ports designated hereinafter, acting as the State's duly authorized local authorities.

This Agreement allocates responsibilities in the following areas: initial competency and qualification of pilots, standards for maintaining proficiency and professional growth, and enforcement. This Agreement also describes a Local Pilotage Advisory Council which will provide recommendations for the implementation and improvement of the pilotage system in each Port.

For the purpose of this Agreement, the Coast Guard, the State, and the Ports define the term "supervise" as used in this Agreement to include the following:

- a. The State will not issue a pilot license but will accept and require the federal license as a condition of employment;
- b. Apprenticeship, professional growth, and oversight programs will be established by the Ports;
- c. The State will review programs for consistency;
- d. The Ports will maintain control of pilots; and
- e. Vessels being navigated in state pilotage waters shall have a pilot on board as required by local port requirements or tariffs.



III

INITIAL COMPETENCY AND QUALIFICATIONS

The standards for initial competency and qualification will include a requirement for a federal pilot license, a period of apprenticeship, and other minimum requirements as deemed necessary by the State.

a. Federal Pilot License:

The Ports, on behalf of the State, will accept and require a federal pilot license issued by the Coast Guard as a condition of employment. The Coast Guard will maintain requirements and administrative controls for comprehensive drug testing, physical and medical standards, and National Driver Register checks as part of administering its federal pilot license.

b. Apprenticeship Program:

The Ports, on behalf of the State, are responsible for establishing apprenticeship programs for respective areas of jurisdiction. Written standards will be developed by the Local Pilotage Advisory Council, with input from pilot associations or pilot companies. Final approval of the apprenticeship program will be vested with the Port. The apprenticeship program will consist of written standards describing how apprentices shall acquire additional training, the minimum period of apprenticeship or target number of round trips required for various types and tonnages of vessels, the methods for evaluating and providing feedback to apprentices, and the minimum qualifying standards for completion of apprenticeship phase of development.

c. Additional Requirements:

The Ports, on behalf of the State, may establish and enforce through local requirements or tariffs any other prerequisites for initial competency and qualifications as deemed necessary, after considering input from the Local Pilotage Advisory Council, pilot associations, and pilot companies. The requirements or tariffs may establish standards which are more stringent prerequisites than those for a federal license, including physical and medical standards, criminal and National Driver Register checks, and requirements for drug and alcohol testing.

IV

STANDARDS FOR MAINTAINING PROFICIENCY AND PROFESSIONAL GROWTH

The Ports, on behalf of the State, are responsible for establishing standards to maintain proficiency and professional growth.

These standards, at a minimum, will include periodic evaluations to verify that each pilot is maintaining the required level of proficiency. The standards may vary based upon a variety of factors including: frequency of piloting, type, tonnage, design or other vessel characteristics of vessels to be piloted, and other factors that may impact the safety of piloting vessels. Standards will be established by each Port.

V

ENFORCEMENT

The Coast Guard is responsible for investigating and enforcing federal regulations pertaining to a federal pilot license. In enforcing federal regulations, the Coast Guard may take appropriate administrative action, including the initiation of suspension and revocation proceedings. The Coast Guard will investigate marine casualties and require post casualty drug and alcohol testing in accordance with applicable federal regulations. Appropriate cases may be forwarded to the United States Attorney for possible criminal prosecution.

The Ports, on behalf of the State, will enforce the requirements or tariffs pertaining to the apprenticeship program, the standards for maintaining proficiency and professional growth and additional requirements developed pursuant to paragraph III.c above.

The parties agree to cooperate and share information related to the above enforcement efforts.

VI

LOCAL PILOTAGE ADVISORY COUNCIL

The purpose of the Local Pilotage Advisory Council is to review local pilotage and assess the risks associated with safe piloting of vessels. This includes evaluating and reviewing policies and procedures, making recommendations to establish, modify or improve pilotage requirements or tariffs in each Port. If a pilotage route serves more than one Port, a Local Pilotage Advisory Council may be established for each Port, or one Council may serve both Ports.

a. Representation:

1. The Ports, on behalf of the State, are responsible for establishing a Local Pilotage Advisory Council for each Port that meets regularly. The Executive Director shall appoint members of the Advisory Council from the following groups: local pilot groups, port authority, shipping industry. The preferred representation from each of these elements is as follows:

a. A representative of the local port authority appointed by the Executive Director for the Port,

b. A representative from the management of the local pilot group who is a qualified pilot, preferably the chief pilot,

c. A representative of the shipping industry. Industry representation should preferably be from a vessel operating company which reflects the predominant nature of the port's business. If any Port handles a significant number of both tankers, and dry cargo vessels, then a representative of each shall be appointed.

2. The Local Pilotage Advisory Council shall meet on a regular basis. The Council is encouraged to invite the Coast Guard Captain of the Port/Officer in Charge, Marine Inspection, and/or the Administrator of the Office of Oil Spill Prevention and Response to participate in meetings on an "ex officio" basis.

b. Periodic Review and Report:

The Ports, on behalf of the State, will require periodic written reports including the findings of reviews and appropriate recommendations. Periodic review of the local system of pilotage will provide the opportunity to address local procedures and in particular, human factors problems which may affect the risk of accident or the personal safety of the pilot. Consideration of pilot human factors impact due to inadequate or faulty equipment and recommendations for immediate or other action to minimize these risks is desired. Reports will be submitted to the local port authority annually for the first three years and then every third year thereafter.

VII

CONDITIONS AND TERMS OF AGREEMENT

a. This Agreement shall be effective as to each Port, as of the date it is signed by the Coast Guard, the State and such Ports, and shall remain in effect until terminated by any of said Parties, by giving the other Parties written notice to terminate as to such Port, in which event it shall terminate on the date immediately following the thirtieth day of such notice. This Agreement may be amended with the mutual consent of the Parties in writing.

b. In no event shall this Agreement be interpreted to conflict with specific operating policies and procedures published by any of the Parties without the express written consent of an appropriate senior official of the party so affected.

c. Nothing herein is intended to conflict with current Coast Guard or State directives. If the terms of this Agreement are inconsistent with existing directives of the Parties entering into this Agreement, those portions of this Agreement that are determined to be inconsistent shall be invalid, but all remaining terms and conditions shall remain in full force and effect.

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d. The State shall enact legislation to regulate and license pilots in any port to which this Agreement is applicable and which does not implement a program in accordance with this Agreement within twelve (12) months after the effective date hereof.

e. No action based upon this Agreement may be brought against the United States of the State of California by any person.


Effective Date: 26 FEB 1997

FOR THE UNITED STATES COAST GUARD:



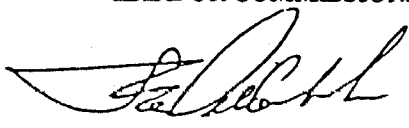
JAMES C. CARD
Rear Admiral, U. S. Coast Guard
Assistant Commandant for
Marine Safety and
Environmental Protection

FOR THE STATE OF CALIFORNIA:




PETE WILSON
Governor
State of California

CITY OF LONG BEACH, A MUNICIPAL CORPORATION, ACTING BY AND THROUGH ITS BOARD OF HARBOR COMMISSIONERS:




S. R. DILLENBECK
Executive Director

FOR THE CITY OF LOS ANGELES, BY ITS BOARD OF HARBOR COMMISSIONERS:




LARRY A. KELLER
Executive Director

FOR THE PORT OF SAN DIEGO:



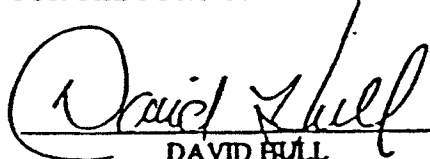
For LAWRENCE M. KILLEEN
Executive Director
San Diego Unified Port District

FOR THE PORT OF HUENEME:



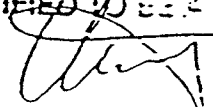
WILLIAM J. BUENGER
Executive Director
Oxnard Harbor District

FOR THE PORT OF HUMBOLDT BAY:



DAVID FULL
Chief Executive Officer
Humboldt Bay Harbor Recreation
and Conservation District

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MEMORANDUM OF AGREEMENT

FOR VESSEL TRAFFIC MANAGEMENT IN THE

LOS ANGELES-LONG BEACH APPROACHES & HARBORS

Introduction:

The Coast Guard, the State of California, the Port of Los Angeles, the Port of Long Beach, Jacobsen Pilot Service, Los Angeles Pilot Service and the Marine Exchange are central stakeholders in the process of overseeing safe and efficient maritime operations in the approaches to, and within the Los Angeles-Long Beach Harbors. With the establishment and operation of the Vessel Traffic Information Service in 1994 for waters outside the federal breakwall, each organization has demonstrated the ability to cooperatively work together to foster safe mobility.

Parties:

The following agencies and organizations are parties, each committed to – and each essential to the accomplishment of – safe and efficient vessel traffic management in the approaches to, and within the Los Angeles-Long Beach Harbors:

U. S. Coast Guard
State of California
Port of Los Angeles
Port of Long Beach
Los Angeles Pilots
Jacobsen Pilot Service
The Marine Exchange

Objectives:

The Parties hereby enter into this Agreement in pursuit of the following Objectives:

1. To provide seamless vessel traffic management for the approaches to, and within the Los Angeles and Long Beach Harbors. "Seamless vessel traffic management" includes, but is not limited to, monitoring vessel traffic, and providing mariners with timely, relevant and accurate navigational information during their transit through covered waters.
2. To provide the underlying framework to enable development of common procedures and information sharing practices between the parties in order to achieve the goal of seamless vessel traffic management.

Authority:

Each Party certifies that it holds the authority to enter into this Agreement regarding, and to participate in furtherance of the stated Objectives in, a cooperative arrangement providing for safe and efficient navigation and maritime operations within the covered waters.

Responsibilities:

The Parties each agree to utilize their best efforts to accomplish the following tasks in support of the Objectives:

1. Develop and regularly review and revise an Operations Manual containing standard operating procedures for seamless vessel traffic management. This Manual will provide specific guidance to each party regarding operating procedures, use of equipment and sharing of information.
2. Develop and regularly review and revise a Users Manual for Vessel Traffic System (VTS) participants.
3. As necessary, negotiate appropriate participation in the vessel traffic management process with external entities whose expertise, in-kind services and/or funding may be needed or useful to implement specific work plans.
4. Ensure that the Los Angeles-Long Beach Harbor Safety Committee remains fully apprised of this effort.

Conditions of Agreement:

1. Nothing in this Agreement is intended to conflict with current law or regulation of the United States, or the State of California and its subordinate Municipalities and Port Districts, nor with organizational policy or directive of, or applicable to, any of the Parties. If a term of this Agreement is inconsistent with such authority, then that term shall be invalid, but the remaining terms and conditions of this Agreement shall remain in full force and effect.
2. A modification to the terms and objectives of this Agreement may be proposed at any time by any of the signatories, and may be effectuated through a written amendment signed by all Parties, and will be effective with or without notice to external persons or entities.
3. Any Party may nominate an external entity for inclusion as a Party to this Agreement, and any such Party may be added through a written amendment to this Agreement signed by all the Parties including the added Party, and any such added Party shall be subject to the same benefits and responsibilities under this Agreement as applies to the original Parties.
4. A signatory may terminate its participation at any time upon 30 days written notice to each of the other Parties. If a Party withdraws, the remaining Parties will review this Agreement and the Operations and Users Manuals developed pursuant to this Agreement, with a view toward determining, developing and promulgating any needed changes.
5. Nothing in this agreement constitutes an obligation of any funds on the part of any of the Parties in advance of an appropriation therefor.
6. No rights, duties, obligations, or liabilities enforceable at law are created by this Agreement. No action based on this Agreement may be brought against the United States, the State of California, any subordinate Municipality or Port District of the State of California, the Marine Exchange, the Jacobsen Pilot Service, or any of the other public or private Parties to this Agreement. This Agreement does not alter, modify, abridge, or in any way affect the rights, duties, obligations, or liabilities of any person under the laws of the United States or the State of California.
7. The terms of this Agreement shall become effective immediately upon signature by all Parties.
8. The terms of this Agreement, as modified with the written consent of all Parties, will remain in effect until terminated by mutual agreement of a majority of the remaining Parties at the time of such termination.

FOR THE COAST GUARD:

George Wright Date:

Captain George Wright
U. S. Coast Guard
Captain of the Port

FOR THE STATE OF CALIFORNIA:

Gary K. Gregory Date: 6/1/00

Mr. Gary K. Gregory
Administrator
CDF&G/OSPR

FOR THE PORT OF LOS ANGELES:

Larry A. Keller Date:

Larry A. Keller
Executive Director
Port of Los Angeles

FOR THE PORT OF LONG BEACH:

Richard D. Steinke Date: 5-31-00

Richard D. Steinke
Executive Director
Port of Long Beach

ORIGINAL

**FOR THE LOS ANGELES PILOT SERVICE:
SERVICE:**

James M. Morgan Date:

Captain James M. Morgan
Manager
Los Angeles Pilot Service

FOR THE JACOBSEN PILOT

Dick J. Jacobsen Date:

Captain Dick J. Jacobsen
Chief Executive Officer
Jacobsen Pilot Service

FOR THE MARINE EXCHANGE

Mauny Aschenmeyer Date: 6/1/00

Captain Mauny Aschenmeyer
Executive Director
Marine Exchange of LA/LB Harbors



Los Angeles-Long Beach Harbor Safety Committee

California Senate Bill 414

Assessment of Emergency Towing Capabilities in the Los Angeles-Long Beach Area of Responsibility

Final Report

February 1, 2017

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Part I. Introduction/Background

California Senate Bill 414 (SB 414) was signed into law by Governor Edmund G. Brown, Jr. and became effective January 1, 2016. The bill requires, *inter alia*, the Administrator of the Office of Spill Prevention and Response (OSPR) to task the Los Angeles-Long Beach Harbor Safety Committee (LA/LB HSC):

“ . . . to assess the presence and capability of tugs within their respective geographic area of responsibility to provide emergency towing of tank and non-tank vessels to arrest their drift or otherwise guide emergency transit.”

The assessment must take into consideration data from United States Coast Guard (USCG) Vessel Traffic Service, relevant incident and accident data, simulation models, and identification of transit areas where risks are higher. In addition, the assessment must consider the condition of tank and non-tank vessels calling on Los Angeles and Long Beach ports, including the USCG’s Marine Inspection Program and Port State Control Program. See Appendix A for the complete text of SB 414.

At the November 4th, 2015 meeting of the LA/LB HSC Navigation Safety Subcommittee #1 (SC1), Michael Coyne from OSPR informed SC1 that SB 414 had passed into law and that the LA/LB HSC should begin its assessment. At its December 2, 2015 meeting, SC1 again reviewed the mandate of SB 414 and formalized a SB 414 Workgroup (“Workgroup”). See Appendix B for a roster of participants. The Workgroup identified the core issues raised by SB 414 as follows:

- Identify the geographic area of responsibility (AOR) for the assessment,
- Determine what it means to “arrest the drift or otherwise guide emergency transit,”
- Identify the present inventory of available response equipment,
- Determine tug asset response times within the AOR,
- Quantify the limitations of available equipment,
- Identify any transit areas with higher risk within the AOR,
- Gather relevant incident data, accident data, and weather data from the Marine Exchange Vessel Traffic Service Los Angeles-Long Beach (VTS),
- Analyze information from the USCG’s Port State Control Program and Marine Inspection Program to assess the condition of the tank and non-tank vessels calling on the Ports of Los Angeles and Long Beach.

Acknowledging the wide-ranging expertise of the Workgroup participants, Chair John Strong formed three subgroups to initiate the assessment and maximize process efficiencies. The subgroups include: 1) Tug and Assist Vessels; 2) Vessel Operations; and 3) Data Collection and Government Affairs. On December 4, 2015, the three subgroups initiated their data collection tasks and agreed to report back to SC1 on a monthly basis.

On January 25, 2016, OSPR Administrator Thomas M. Cullen, Jr. sent a letter to LA/LB HSC Chair Strong providing further guidance and support for the assessment. Specifically, the letter clarified the scope of the assessment to vessels over 300 GRT, and offered financial assistance if needed to complete the tasking. The assessment is to be reported in the 2017 LA/LB Harbor Safety Plan. See Appendix C for the letter from the OSPR Administrator.

Part II. Scope of Study

The LA/LB HSC has been tasked with assessing the presence and capability of tugs to respond to a disabled vessel in an offshore environment. An analysis of the likelihood of a successful outcome is implicit in this tasking. Any such hypothetical analysis involves weighing many different factors such as: the type and size of the disabled vessel in need of assistance; the expected weather and sea conditions; the size of the response tug (horsepower/bollard pull); the tug's propulsion configuration; the type of emergency towing equipment available; the condition of the disabled vessel and the capability of its crew; the urgency of the situation in terms of vessel drift rate and distance from the grounding line;¹ and the likelihood that a disabled vessel might (or might not) have any opportunity to deploy its anchors prior to drifting ashore.

When assessing hypothetical failure scenarios absolute conclusions are not likely. Nonetheless, a qualitative analysis of the likelihood and potential consequence related to a hypothetical occurrence can be achieved. Toward that end, clearly defining the scope for this study will focus our analysis and facilitate more reliable conclusions.

¹ The "grounding line" is the point separating those waters where a ship will float from the waters where it will not. It is the point where a ship's hull comes into contact with the seabed.

Geographic Area of Responsibility

Defining the geographic limits of our study area is a critical threshold issue. For guidance, the workgroup looked to the Area of Responsibility's (AOR's) for both the VTS and the LA/LB HSC. The VTS AOR (offshore sector) is defined as follows:

VTS LA/LB is a vessel traffic monitoring and reporting system within the Los Angeles/Long Beach Harbor and approaches and extending to 25 nautical miles seaward of PT Fermin.²

The LA/LB HSC AOR that lies outside the Los Angeles-Long Beach Federal Breakwater is similarly defined as follows:

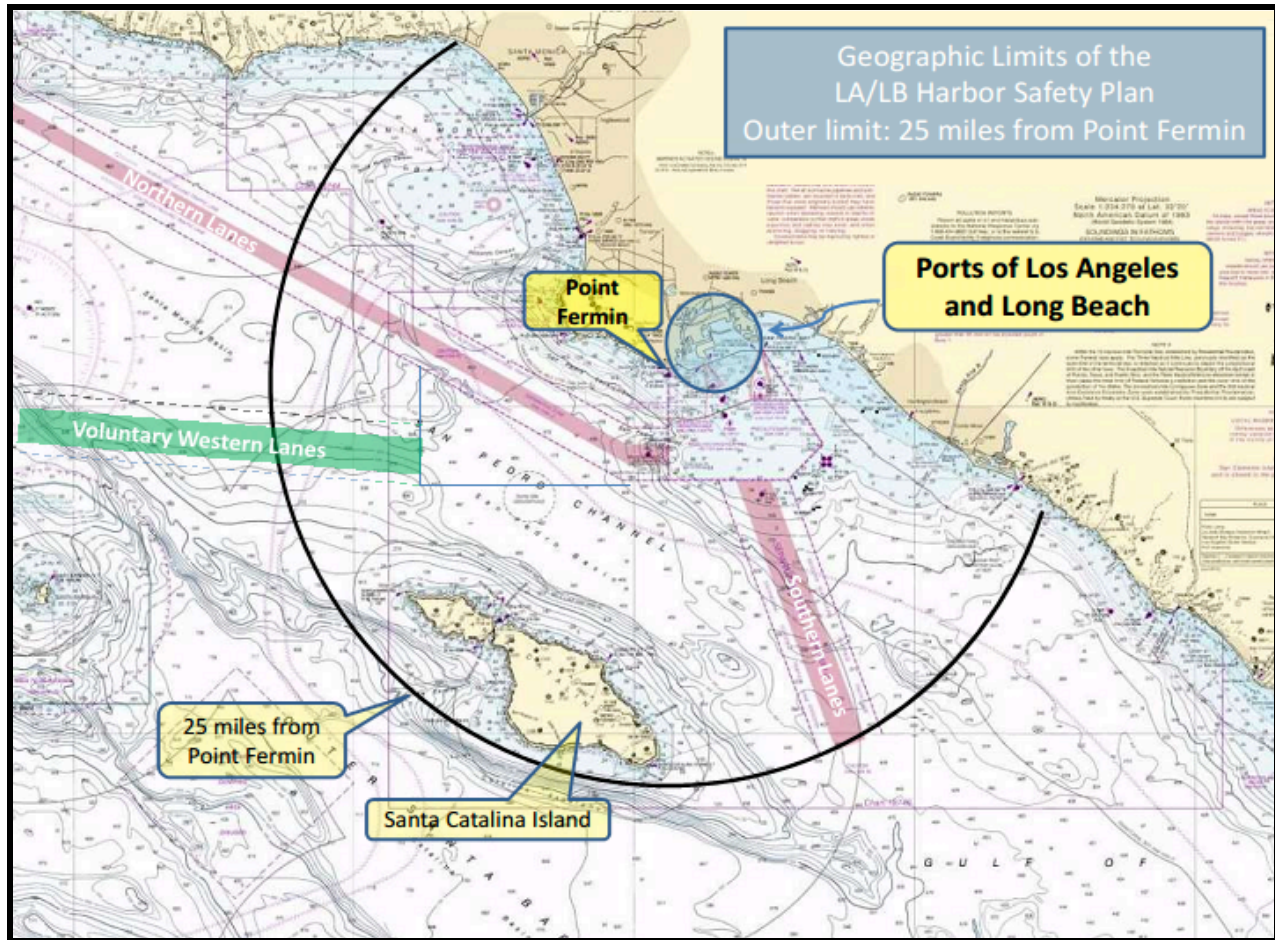
Navigable waters outside the breakwaters encompassed by the arc of a circle having its center at Point Fermin Light, drawn from a position on the shore near Newport Beach clockwise to the shore near Santa Monica. This circle's radius is twenty-five (25) nautical miles.³

The Workgroup acknowledge the importance of coordinating its assessment with the efforts of the other California Harbor Safety Committees, notably with the concurrent San Francisco Bay Region assessment and the yet-to-be-initiated assessments of San Diego, Port Hueneme, and Humboldt Bay. The LA/LB AOR should not extend so far as to interfere with the other ports' mandates. There is also a significant advantage associated with consistency of data gathering that will be realized by matching our study AOR to the above described AOR's already in place in the region.

For these reasons, the LA/LB HSC concludes that the Geographic AOR for this study should match as closely as possible the geographic limits of both the VTS offshore sector and the LA/LB Harbor Safety Plan AOR, namely a 25-mile arc extending seaward from Point Fermin. See graphic depiction on page 6, below.

² Los Angeles-Long Beach Vessel Traffic Service User Manual, 2015, p 1-1.

³ Harbor Safety Plan for the Ports of Los Angeles and Long Beach, 2016, p I-1



Types of Vessels Studied

Following the guidance received from the OSPR Administrator, the Workgroup limited the scope of vessel types studied to vessels over 300 gross tons. The types of vessels that typically fall within this scope are as follows: Oil Tankers, Chemical Tankers, Container Ships, Passenger Ships, Vehicle Carriers, General Cargo/Multi-Purpose Ships, Bulk Carriers, Barges and Articulated Tug/Barge Units, Ro-Ro Cargo Ships, Refrigerated Cargo Carriers, and Heavy Lift Ships.

An ancillary issue dependent on “vessel type” is a determination of what it means to “*arrest their drift or otherwise guide emergency transit*” of a disabled vessel. For the purposes of this study, the Workgroup interprets the term “*arrest their drift or otherwise guide emergency transit*” as the ability to use tugs and/or ship’s anchors to hold a disabled vessel in position, or slow its drift rate to afford more time for additional resources to arrive on scene, or alter its direction of drift to avoid grounding, or any combination of the above. This definition includes using response tugs to push/pull/nudge/guide a

vessel to influence its direction of drift sufficiently so that it avoids grounding, even though the disabled vessel may still be moving. This definition also includes using the disabled vessel's anchors, where possible, to arrest its drift and prevent grounding. The overarching objective of *"arresting their drift or otherwise guiding emergency transit"* is to prevent a vessel from drifting ashore. Additional resources may be needed to safely direct the vessel to a harbor of safe refuge⁴ or safe anchorage, and that issue is outside the scope of this study.

Part III. Assessment Considerations/Data Collected/Analysis

The workgroup collected and analyzed a large amount of relevant data to prepare this report, to include: a current inventory of all available response assets and equipment within LA/LB ports; historic weather conditions in the AOR; incident data over the past seven years; past simulation models that identify specific transit areas where a disabled vessel might be unreachable in sufficient time to prevent grounding; transit areas that might not offer any suitable anchoring opportunity; and information relating to the USCG's Port State Control and Marine Inspection Programs.

Tug Inventory/Capability/Availability

The "Tug and Assist Vessel" subgroup provided a complete inventory of active ship assist tugs in the Ports of Los Angeles and Long Beach. The inventory contains information on the name, bollard pull, operational range, onboard equipment, arrest or tow capability, and availability of tugs in the area. Currently, twenty-two active ship assist tugs are located in the Ports of Los Angeles and Long Beach with a wide range of bollard pull capabilities (from 25 to 90 tons) and availabilities. It should be noted that such an inventory is a "snapshot in time," since home-port assignments for tugs can change. Nonetheless, this inventory does indicate a current summary distribution of ocean-going tugs in the Ports of LA/LB and the Workgroup believes that it is representative of the minimum overall assets that will continue to be available in the future.

⁴ "Harbor of Safe Refuge" means a port, inlet, or other body of water normally sheltered from heavy seas by land and in which a vessel can navigate and safely moor. The suitability of a location as a harbor of safe refuge shall be determined by the cognizant Officer in Charge, Marine Inspection, and varies for each vessel, dependent on the vessel's size, maneuverability, and mooring gear. See, 46 CFR 175.400

Los Angeles-Long Beach Tug Boat Data

| Tug | Bollard Pull (tons) | Range (days) | Weather Limits | Bow Winch | Tow Winch | Wire on Drum | Arrest | Tow | Availability |
|---------------------|---------------------|--------------|----------------|-----------|-----------|--------------|--------|-----|-----------------------|
| INDEPENDENCE | 65 | 4 | See Note 1 | ✓ | | | ✓ | | 24/7/365 |
| FREEDOM | 50 | 4 | See Note 1 | ✓ | | | ✓ | | 24/7/365 |
| DELTA LINDSEY | 87 | 30 | See Note 1 | ✓ | ✓ | ✓ | ✓ | ✓ | |
| MASTER | 51 | 14 | See Note 1 | ✓ | | | ✓ | ✓ | 24/7/365 |
| ADMIRAL | 54 | 14 | See Note 1 | ✓ | | | ✓ | ✓ | 24/7/365 |
| LEADER | 59 | 14 | See Note 1 | ✓ | | | ✓ | ✓ | 24/7/365 |
| GOLIAH | 55 | 14 | See Note 1 | ✓ | ✓ | ✓ | ✓ | ✓ | 24/7/365 |
| ARTHUR FOSS | 55 | 12 | See Note 1 | ✓ | ✓ | | ✓ | ✓ | Generally Crewed 24/7 |
| BRYNN FOSS | 52 | 8 | See Note 1 | ✓ | ✓ | | ✓ | ✓ | Generally Crewed 24/7 |
| ALTA JUNE | 64 | 2 | See Note 1 | ✓ | | | ✓ | | Generally Crewed 24/7 |
| CAROLYN DOROTHY | 53 | 2 | See Note 1 | ✓ | | | ✓ | | See Note 2 |
| CAMPBELL FOSS | 61 | 2 | See Note 1 | ✓ | | | ✓ | | Generally Crewed 24/7 |
| DREW FOSS | 32 | 35 | See Note 1 | | ✓ | ✓ | ✓ | ✓ | See Note 3 |
| EDITH FOSS | 25 | 12 | See Note 1 | | ✓ | ✓ | ✓ | ✓ | See Note 3 |
| PACIFIC QUEEN | 25 | 12 | See Note 1 | | ✓ | ✓ | ✓ | ✓ | See Note 3 |
| PACIFIC STAR | 82 | 6 | See Note 1 | ✓ | | | ✓ | | In Harbor Temporarily |
| TIM QUIGG | 50 | 10 | See Note 1 | ✓ | | | ✓ | | 1 hr. callout |
| JOHN QUIGG | 50 | 10 | See Note 1 | ✓ | | | ✓ | | 1 hr. callout |
| ROBERT FRANCO | 90 | 30 | See Note 1 | ✓ | ✓ | ✓ | ✓ | ✓ | 1 hr. callout |
| LELA FRANCO | 68 | 14 | See Note 1 | ✓ | | | ✓ | | 1 hr. callout |
| MICHELLE SLOAN | 68 | 14 | See Note 1 | ✓ | | | ✓ | | 1 hr. callout |
| MILLENNIUM MAVERICK | 55 | 35 | See Note 1 | | | ✓ | ✓ | | 1 hr. callout |

Note 1: Generally, LA/LB tugs can operate in up to Beaufort Force Six conditions – 27 knot (31 m.p.h.) winds and 13-foot seas. Some tugs might be able to operate in sea conditions that exceed Beaufort Force Six, but with limitations.

Note 2: Crewed approximately 12 hours/day.

Note 3: Vessel callout requires from two to six hours of advance notice for routine operations, but it is anticipated that vessels could be crewed and available more quickly in an emergency.

The above Table shows the tugs that are currently available to assist drifting/disabled vessels. Six to ten tugs are crewed twenty-four hours a day, seven days a week and another ten can be crewed and dispatched on relatively short notice.

The Workgroup compared the current inventory to an older inventory contained in a 2002 Project Report⁵ that compiled similar data. The comparison shows that the current tug inventory in the Los Angeles and Long Beach Harbors is more robust today - larger and more capable tugs are currently available.

⁵ *West coast offshore vessel traffic risk management project* (Final Report, 2002), Pacific States/British Columbia Oil Spill Task Force and the U.S. Coast Guard, Pacific Area. Retrieved from, <http://oilspilltaskforce.org/wp-content/uploads/2013/12/2002-Offshore-Vessels-Risk-Management-Project-Report.pdf>.

The Workgroup found the 2002 Project Report instructive in generally evaluating the effectiveness and capability of our current tug inventory. According to that in-depth report, tugs with 40 tons of bollard pull or more meet the criteria as a rescue tug for the LA/LB area. In 2002, there were a total of 13 tugs which operated in the LA/LB Harbor, each having a bollard pull of 40 tons or greater. Today, that number has almost doubled with a total of 22 tugs, 19 of which have a bollard pull of 40 tons or greater. In 2002, only five tugs had a bollard pull of 60 tons or more (the top three having a bollard pull of 70 tons). Today, there are eight tugs with a bollard pull over 60 tons (the top three having bollard pulls of 82 tons, 87 tons, and 90 tons). In addition, all but one of the local tug companies has confirmed that they have offshore towing equipment packages available for their tugs. Thus, there is currently a robust and effective inventory of adequately equipped tugs available for the “arrest or influence” mission associated with the tasking of SB 414. Further, the present-day tug inventory is larger, more modern, more powerful, and better equipped to assist any size of vessel in distress than at any time in the past.

Based on current and expected future tug inventories in the Ports of Los Angeles-Long Beach, the LA/LB HSC believes that there is a high likelihood that tugs will be readily available and equipped to respond to a disabled vessel within the LA/LB AOR.

Historic Weather Data in the Geographic Area of Responsibility

Workgroup members representing the tug companies offered that severe weather conditions might limit a response tug’s ability to operate in the offshore environment. More specifically, rough sea conditions might increase transit times and make it more difficult to connect a towline to a drifting vessel. Quantifying the likelihood and frequency of sea conditions that could limit response operations in the LA/LB AOR is critical to assessing the capability of rescue tugs operating in the offshore environment.

Using wind data and wave buoy data provided by the Marine Exchange of Southern California, the Workgroup analyzed weather conditions for the past 15 years. The data show the weather in the LA/LB AOR is generally mild and severe weather days are infrequent. Generally, winds exceed 30 knots ~7% of the time (24 days/year).⁶ During April and from September through December, the wind exceeds 30

⁶ Percent of wind observed over 30 knots as obtained from Santa Monica Basin NOAA Buoy #46025.

knots an average of 23% of the time. Buoy data show waves exceed 13 feet ~0.05% of the time (< 1 day/year).⁷

The tug company representatives agree, emergency towing in open ocean waters can typically be conducted in weather conditions up to and including Beaufort Force 6, i.e., wind 22-27 knots (25-31 m.p.h.), wave height 9.5-13 feet.⁸

Based upon information provided, the LA/LB HSC concludes that most local tug boats should be capable of operating effectively in the offshore environment without significant limitation so long as sea conditions do not exceed Beaufort Force 6. Typically, those limiting sea conditions occur on only about 24 days per year, or less than 7% of the time, in the LA/LB AOR. When operating in Beaufort Force 7 or greater, tug companies typically conduct an additional risk assessment to mitigate the hazards associated with severe sea conditions.

Marine Exchange Vessel Traffic Service Incident Data Collected

The “Data Collection and Government Affairs” subgroup assessed relevant vessel incidents that occurred between 2010 and 2016. Based on information reported to the Marine Exchange Vessel Traffic Service Los Angeles-Long Beach, over a 7-year period there were 63,792 vessel transits and only 7 vessels required an emergency tow.⁹ It should be noted that all 7 of those incidents occurred in very mild weather and all of the ships were safely towed to a designated anchorage area or into port.

The Workgroup gathered data regarding incidents and ships needing tow from two sources: 1) Marine Exchange of Southern California, which operates the Vessel Traffic Service for the ports of Los Angeles and Long Beach, and 2) USCG District 11 in Alameda, CA. The table below summarizes the incidents during the period 2010-2016.

⁷ As obtained from the Scripps Institution of Oceanography waverider buoys located in Santa Monica Bay (Buoy No. 46221) and in San Pedro Channel (Buoy No. 46222). See, <http://www.ndbc.noaa.gov>.

⁸ Bowditch, N., & United States. (2002). *The American practical navigator: An epitome of navigation*, 2002, p 540.

⁹ Incidents over the past seven years where a vessel over 300 gross tons needed tug assistance due to a loss of propulsion, steering, or other similar casualty.

SUMMARY OF INCIDENTS, RELEVANT INCIDENTS, and SHIPS NEEDING TOWED
2010 - 2016

Based on incidents reported to MX VTS LA/LB and Coast Guard District 11, Alameda, CA
Prepared by Marine Exchange of Southern California

| Year | Total Incidents | Total Relevant Incidents (Note 1) | Propulsion | Steering | Electrical | Total Tanker Incidents | Propulsion | Steering | Electrical | Total Ships Needing Towed (Note 2) | Tankers (Note 2) | Container & Bulk Ships (Note 2) | As Of 31-Dec-16 | |
|-------|-----------------|-----------------------------------|------------|----------|------------|------------------------|------------|----------|------------|------------------------------------|--------------------------------|---------------------------------|---------------------------|---------------------------------|
| | | | | | | | | | | | | | Total Ship Count (Note 3) | Relevant Incident Rate (Note 4) |
| 2010 | 35 | 21 | 19 | 1 | 1 | 7 | 6 | 1 | 0 | 2 | 0 | 2 | 8,956 | 0.23% |
| 2011 | 30 | 21 | 18 | 2 | 1 | 6 | 5 | 1 | 0 | 0 | 0 | 0 | 9870 | 0.21% |
| 2012 | 29 | 17 | 17 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 1 | 9162 | 0.19% |
| 2013 | 25 | 21 | 19 | 2 | 0 | 3 | 2 | 1 | 0 | 0 | 0 | 0 | 8948 | 0.23% |
| 2014 | 21 | 19 | 17 | 0 | 2 | 2 | 1 | 0 | 1 | 2 | 0 | 2 | 8844 | 0.21% |
| 2015 | 31 | 19 | 15 | 2 | 2 | 4 | 4 | 0 | 0 | 1 | 0 | 1 | 8810 | 0.22% |
| 2016 | 17 | 12 | 12 | 0 | 0 | 2 | 2 | 0 | 0 | 1 | 0 | 1 | 9202 | 0.13% |
| TOTAL | 188 | 130 | 117 | 7 | 6 | 26 | 22 | 3 | 1 | 7 | 0 | 7 | 63,792 | 0.20% |
| | | | | | | | | | | 0.011% | % ships needing towed (Note 5) | | | |

Note 1: A "Relevant Incident" is defined to be something related to propulsion, steering, or other similar casualty that did or could result in a drifting ship needing tug assistance. This strips out cases of fishing and pleasure boats, search and rescue cases, medical evacuations, rules of the road and VTS procedures violations, the tsunami, the pier fire, the oil spill, towing a dead whale, etc.

Note 2: All ships were easily towed to safe anchorage or port by tugs. Six container ships and 1 bulk ship needed towed. Zero tankers.

Note 3: The ships needing towed were both inbound arrivals and outbound departures. Therefore, the total ship count column is the sum of arrivals and departures.

Note 4: 0.2% relevant incident rate means that 1 ship in 500 has an incident.

Note 5: 0.011 percent ships needing towed means that 1 ship in 9,100 needed towed.

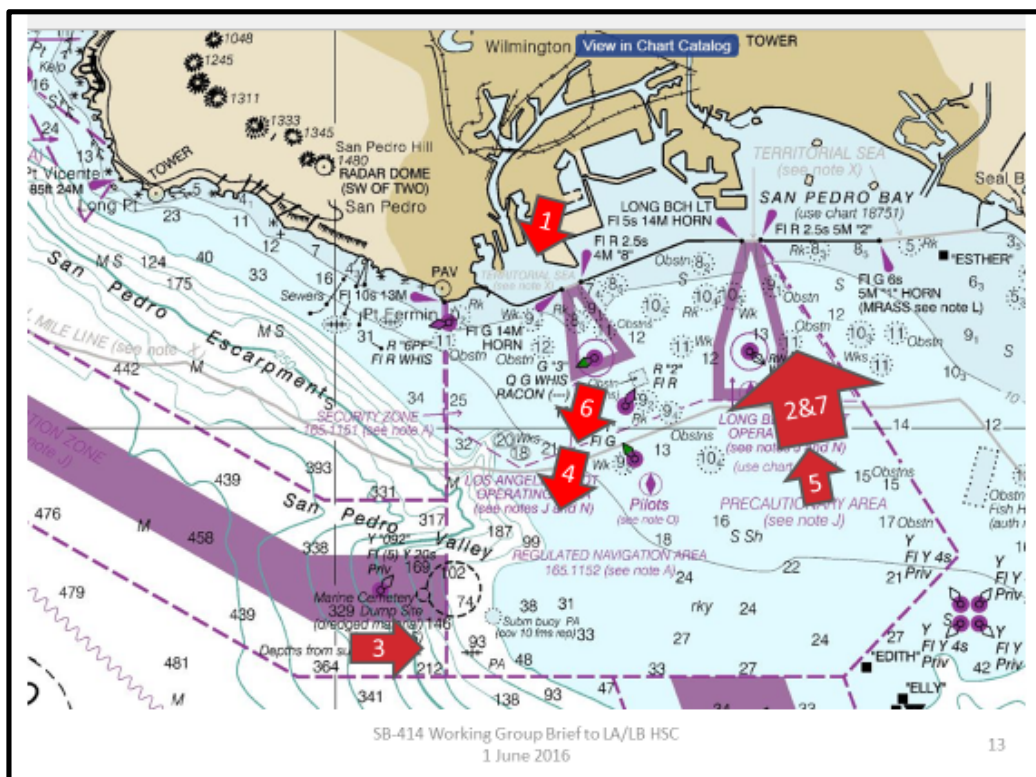
There were a total of 188 incidents during the 7-year period, but the definition of an incident is very broad. The Workgroup's review determined that many of the incidents involved matters not relevant to the SB 414 tasking related to arresting the drift of ships over 300 gross tons. The HSC determined that there were 130 incidents that were relevant to this study.

For the purposes of this study, a "relevant incident" is defined as an incident related to propulsion, steering, electrical, or other similar casualty that did or could result in a drifting ship needing tug assistance. This definition strips out cases of fishing and pleasure boats, search and rescue cases, medical evacuations, rules of the road and VTS procedures violations, and various specific incidents (for example, the tsunami, the pier fire, the oil spill, etc.). After this adjustment, the remaining "relevant Incidents" were grouped into three main failure categories: Propulsion; Steering; and Electrical. As

shown in the table above, there were 117 relevant propulsion; 7 relevant steering; and 6 relevant electrical incidents reported during the 7-year period of 2010-2016. It should be noted that the threshold for an incident is very low, and reported incidents include cases where there were *limitations* in the propulsion, steering, or electrical systems rather than a complete failure. Such limitations included things such as engines that operated but not at full power, engines that could propel the ship forward but not in reverse, or two-engine ships that lost one of the two engines, for example.

The data also show that over the 7-year reporting period, a total of 63,792 transits were made in the study area. Of these, only 7 vessels 300 GRT or larger required emergency tows. This represents 0.011% of the total ships that transited the AOR during the reporting period, which is a failure rate of 1 ship in every 9,100 ships. It should also be noted that all 7 of the vessels that required a tow were safely directed to anchor using 1 or 2 tugs.

The chartlet below details the locations of the 7 ships in the 7-year reporting period that lost propulsion and needed a tow. All the ships were very close to the LA/LB port complex and the losses of propulsion were due to issues associated with operation of the ships' engines as the ships departed or arrived at the ports. In three cases (#1, #4, and #6) the ships were departing the ports, and in four cases (#2, #3, #5 and #7) the ships were arriving in the ports. In each case, the ship was quickly taken in tow because assist tugs were nearby or already on scene due to the standard procedures and standards of care used by both ports for ships arriving and departing.



During all of the 188 incidents (130 relevant incidents), a refined process between the ship, VTS, USCG, and pilots was used, which ensured that all the proper steps were being taken to resolve the incident safely and properly, and all relevant parties were kept informed. See Appendix D for detail of the 7 ships that needed emergency tows.

The LA/LB HSC concludes that the incidence of vessel failures that necessitate a tow within the LA/LB AOR is extremely low and that historically all of those failures have occurred near the port entrances where readily available response assets are close at hand.

Transit Areas of Concern

The “Vessel Operations” subgroup identified transit areas within the AOR where the grounding risk associated with a drifting vessel could be higher. Building on the comprehensive models used in the 2002 Project Report, the subgroup made an assessment of those circumstances wherein a tug, dispatched from port in an emergency, might not be able to reach a disabled vessel before it grounded. The assessment factors included, the disabled vessel’s distance from the grounding line when failure occurred, its drift rate and direction of drift, and the response tug’s “run time” to reach the drifting vessel. Based upon this assessment, the subgroup identified “reachable” and “probably unreachable” zones. In addition, the subgroup identified areas within the AOR where a drifting vessel might have difficulty deploying its anchor(s) prior to drifting ashore.

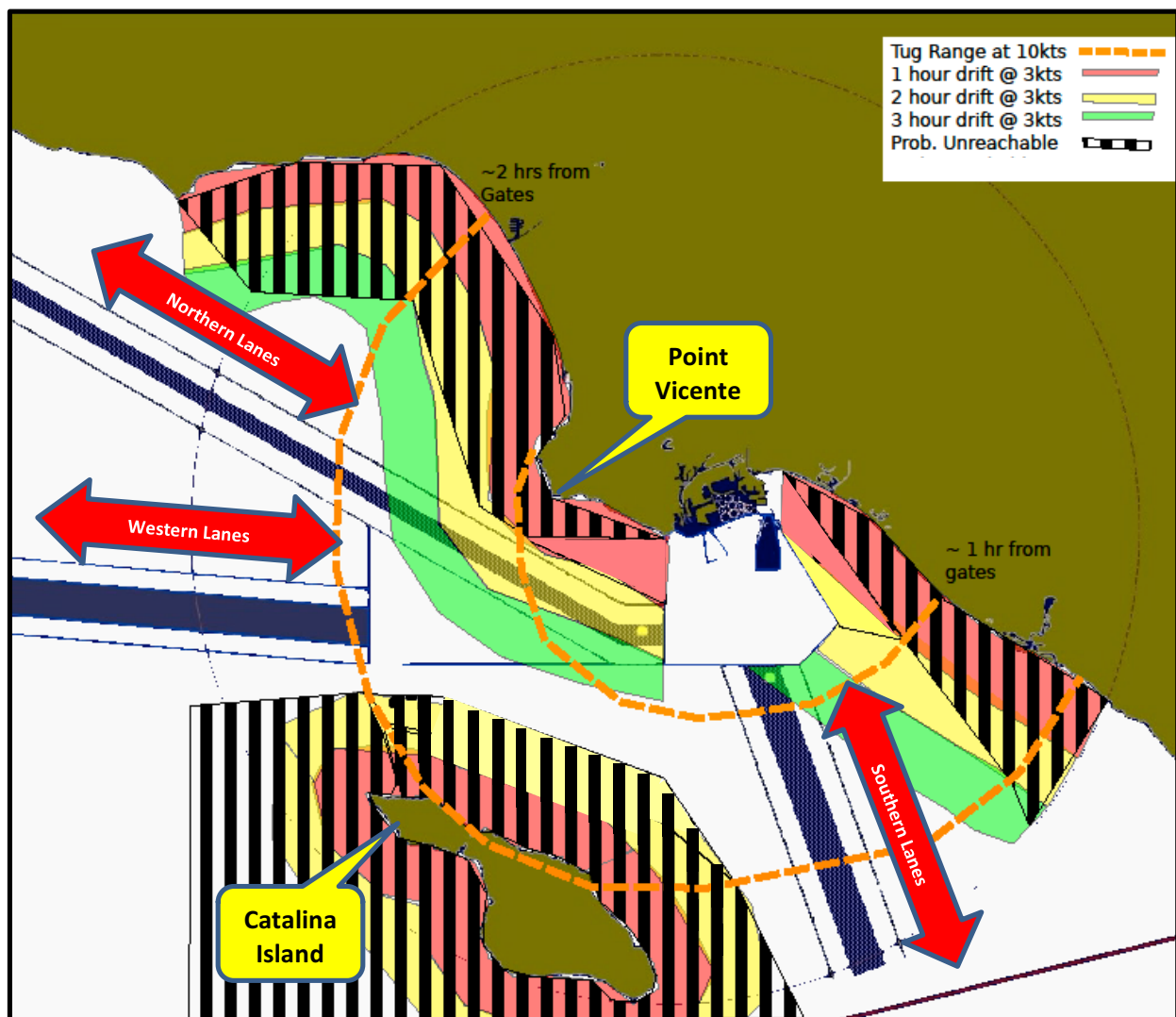
The graphic on page 13 shows the drift distances to shore cross-correlated with the range of response tug boats within a given time after departing the LA/LB port complex. According to the “Tug / Assist Vessel” subgroup, the majority of LA-LB tugs should be able to make at least 10 knots (11.5 m.p.h.) speed of advance while operating in the waters offshore of the Southern California ports. Response speeds could be slower based on weather and sea conditions at the time of response. Additionally, the Workgroup assumed that the worst case drift scenario for a disabled vessel would be 3 knots (3.4 m.p.h.), which this chart assumes.¹⁰

The normal transit areas for all vessels over 300 gross tons are the IMO Approved Traffic Lanes and the locally recommended Western Voluntary Traffic Lanes (collectively referred to as the TSS). Based on the graphic on page 13, it can be seen that vessels transiting through the TSS and within the AOR are always

¹⁰ See, *West coast offshore vessel traffic risk management project* (Final Report, 2002), Appendix F.

in the “reachable” zone and within the range of tugs dispatched from the Los Angeles-Long Beach port entrances (the “Gates”).¹¹ Accordingly, a vessel utilizing the TSS and subsequently becoming disabled poses little or no concern of grounding.

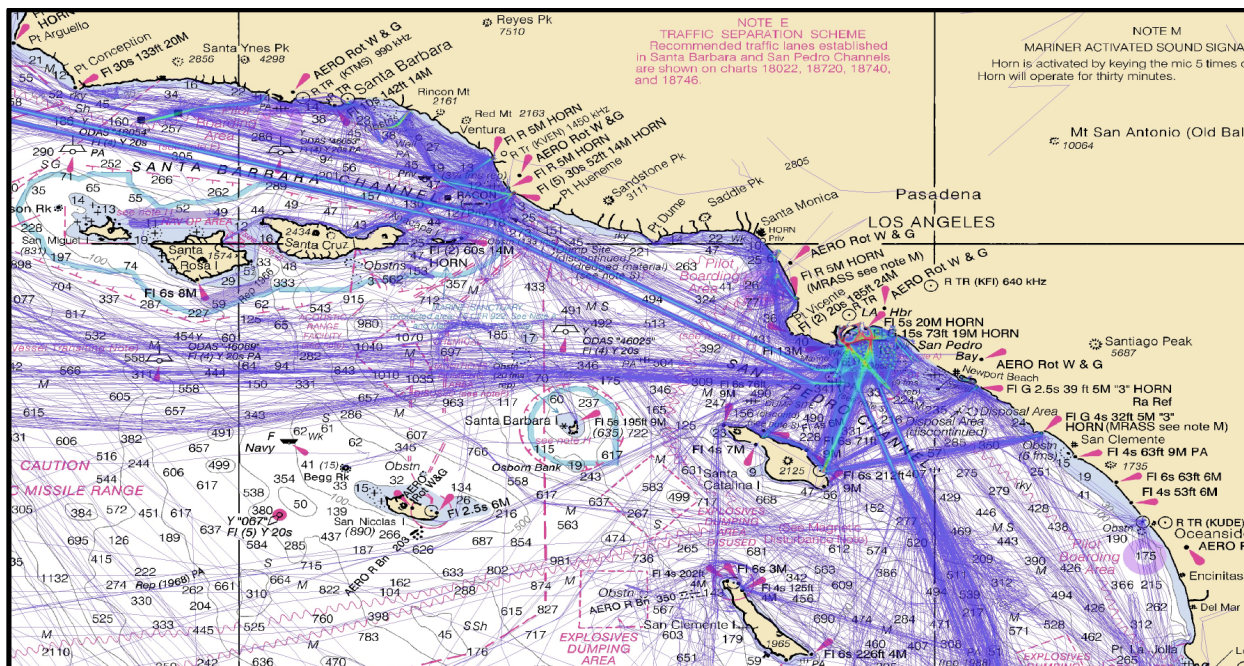
The below graphic (page 13) also depicts “probably unreachable” zones (cross-hatched) within the AOR. A “probably unreachable” zone is an area where a rescue tug’s “run time” (anticipated response time) may be inadequate to prevent a disabled vessel from grounding. This report will discuss and address in detail “probably unreachable” zones as well as mitigating circumstances, mitigation measures and the use of a vessel’s ground tackle (anchoring system) to prevent grounding.



Probably Unreachable Zones shown as cross-hatched areas

¹¹ Assumes sea conditions allow rescue tug(s) to travel at a speed of 10 knots.

As shown by the graphic of AIS data below, the majority of vessel traffic does indeed follow the TSS, and therefore poses little or no concern. Nonetheless, there are some vessel transit areas that pass through the “probably unreachable” zones. Notable are the transit areas around Point Fermin and Point Vicente lying inshore of the TSS, and the transit area on the offshore side of Santa Catalina Island. Vessels over 300 gross tons traveling between the LA/LB Port Complex and the offshore moorings in Santa Monica Bay depart the TSS and travel inshore in the area to the west of Point Vicente. Also, vessels on innocent passage through the LA-LB AOR (passing through without stopping) sometimes elect to travel on the southwest side of Catalina Island rather than through the TSS. Both of these transit areas could be unreachable by a response tug from the LA-LB port complex under certain circumstances.

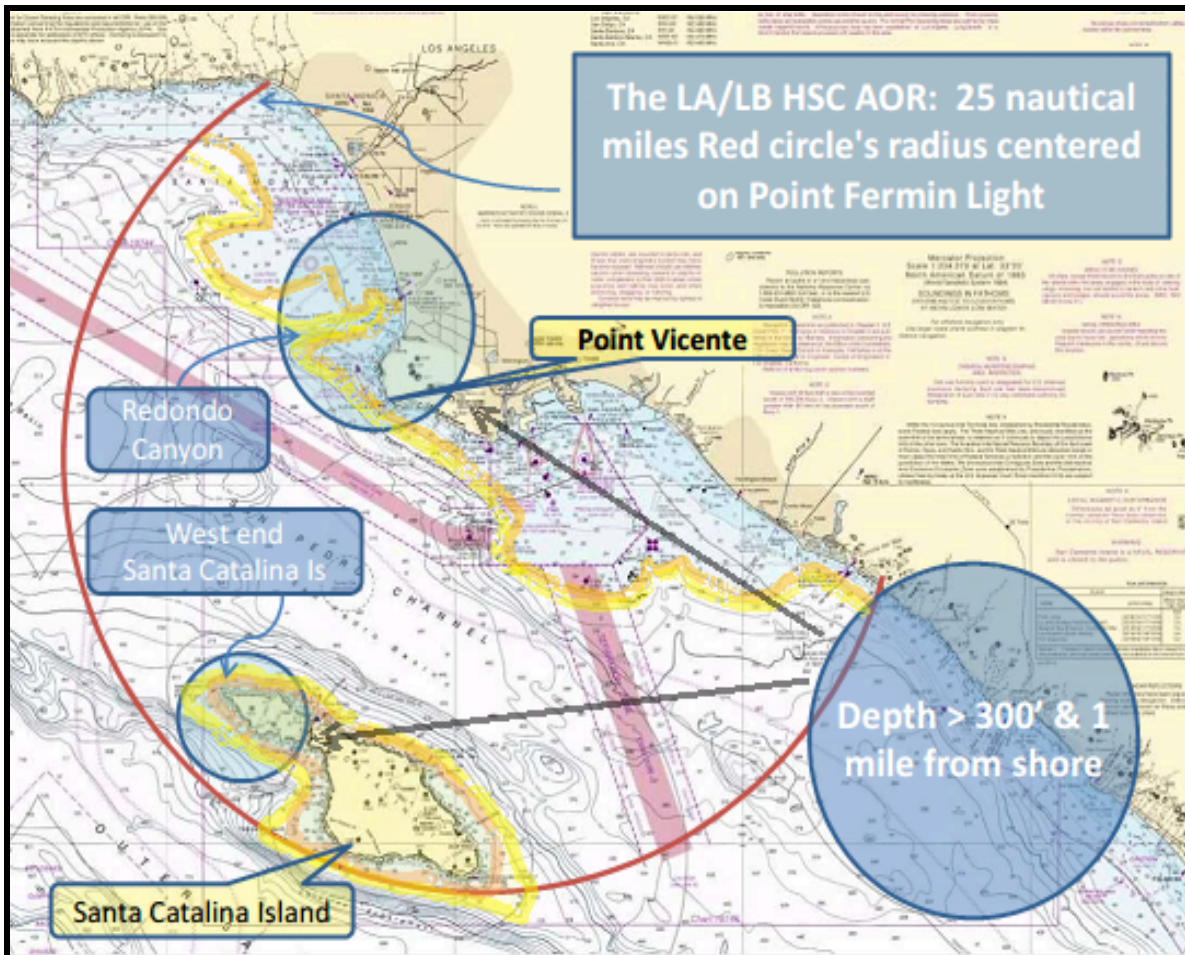


March 2015 Chartlet of vessel tracks. Source: Automatic Identification System (AIS) data provided by the U.S. Coast Guard.

Oftentimes a disabled and unreachable vessel drifting without tug assistance is able to arrest its drift simply by dropping its anchor(s). Thus, the risks associated with grounding can be eliminated when a drifting vessel has sufficient opportunity to deploy its anchors prior to grounding, with or without tug assistance. However, this methodology is only available once the vessel drifts into waters sufficiently shallow to allow anchoring, which is usually relatively near the shore. In areas where shallow water extends sufficiently far from shore, the risk of grounding is very low. Nonetheless, in areas where there is deep water in close proximity to shore, the risk of grounding is higher. Accepted industry practices

indicate that the recommended maximum depth for anchoring a drifting ship is approximately 50 fathoms (300 feet).¹²

The “Vessel Operations” subgroup identified two areas of concern within the AOR where water depths exceeding 50 fathoms are within 1 mile of the shore such that a drifting vessel might have difficulty deploying its anchors prior to grounding. As shown on the below graphic (blue circles), there is deep water in close proximity to shore just off Point Vicente and in a subsea canyon off Redondo Beach in Santa Monica Bay (northern blue circle). A similar situation is present around the West end of Catalina Island (southern blue circle). Each of these areas have water depths of 50 fathoms (300 feet) to within less than a mile of shore. This condition limits a drifting vessel’s anchoring options.



The orange line depicts the 50-fathom curve (300 feet) and the yellow line depicts the 100-fathom curve (600 feet).

¹² Oil Companies International Marine Forum, & Witherby Seamanship International, *Anchoring systems and procedures*, 2010, p 58.

The workgroup next cross-correlated the data to determine transit areas where vessels would be “probably unreachable” and may have a low likelihood of emergency anchoring. Areas where both factors existed are considered to be “transit areas of concern.”

As stated before, little or no concern exists for vessels transiting through the TSS. Those transit areas lie entirely within the “reachable” zone where response tugs are highly likely to reach a disabled vessel prior to it drifting ashore, even in severe weather conditions. The vast majority of vessels operating in the LA/LB AOR transit through these traffic lanes and pose little or no concern.

The Workgroup found that the transit areas off Point Vicente and Redondo Beach do not rise to the level of being classified as areas of concern because tug assistance from the El Segundo Refinery Offshore Marine Terminal is readily available. An assist tug is permanently stationed at the El Segundo offshore moorings, which are in close proximity to the areas off Point Vicente and Redondo Beach. Even though a disabled vessel might drift towards shore through an area of deep water, commonly available tug(s) in San Monica Bay could be dispatched to assist.

The Workgroup found that the area on the West End of Catalina Island, and particularly the waters to the southwest of the Island, is a transit area of concern. These waters lie in the previously identified “probably unreachable” zone and are sufficiently deep close inshore to make anchoring difficult. Given the right combination of circumstances, a vessel transiting close to the Island and becoming disabled during southwesterly weather could develop a high drift rate toward the Island and have no opportunity to deploy its anchors. All these factors could act in concert to cause a grounding risk before a response tug could arrive on scene. Although this scenario is relatively unlikely due to the low traffic volume on the offshore side of Catalina Island and the low likelihood of all the cited factors acting in concert, nevertheless, the right confluence of conditions could elevate the risk of grounding in this area.

The LA/LB HSC concludes that the TSS, through which the vast majority of vessel traffic into and out of the Ports of Los Angeles and Long Beach flows, is not an area of concern. It is highly likely that a response tug would be able to reach any vessel that becomes disabled while traveling through the IMO approved traffic lanes or the Western Voluntary Traffic Lanes. This is due to a sufficiency of drift distance combined with expected response tug transit times and/or ample opportunity to anchor a drifting vessel prior to reaching shore.

The LA/LB HSC concludes that the transit area southwest of Catalina Island is a transit area of concern. The Workgroup's concern would only attach to vessels transiting off the southwest side of Catalina Island and becoming disabled, then drifting to the northeast toward Catalina Island. It should be noted that vessels rarely travel this route and, even though the consequence of an event could be high, the likelihood of an occurrence is extremely low. Nevertheless, the LA/LB HSC has identified this as a transit area of concern and has recommended mitigation measures in the conclusion of this report.

Assessment of United States Coast Guard's Port State Control and Marine Inspection Programs

U.S. Coast Guard's Port State Control Program (Foreign Flag Vessels) – SB 414 requires the review of the USCG's Marine Inspection Program and Port State Control Program (PSC) regarding risks due to a vessel's hull or engineering material deficiencies, or inadequate crew training and professionalism. The Los Angeles-Long Beach Harbor Safety Committee and the Harbor Safety Committee of the San Francisco Bay Region employed an innovative and streamlined approach to assess the condition of the USCG's PSC program. The committees recognized a worldwide network of PSC regimes exist with the goal to eliminate substandard shipping. The USCG holds observer status within both the Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MoU) and Paris Memorandum of Understanding on Port State Control (Paris MoU). Similarly, the Tokyo MoU has granted observer status to the Paris MoU, and the Paris MoU has granted observer status to the Tokyo MoU. The Paris MoU, Tokyo MoU and the USCG each produced an annual PSC report, and these reports list the vessel Detention Rate due to unsatisfactory Safety Examination results. The USCG's annual reports also list the Detention Rate for California, known as District 11's Detention Rate.

The HSCs reviewed six years (2010 - 2015) of data published in annual reports from the Paris MoU's, Tokyo MoU and USCG. This assessment encompassed PSC data from forty-five countries on five continents, 651,134 PSC vessel boardings, 350,943 Safety Examinations and 12,991 Detentions.

Utilizing the Detention Rate derived from PSC data, the HSCs were able to quantify the quality of vessels calling on California ports by comparing the California Vessel Detention Rate weighted average against the combined PSC authorities' detention rate weighted average. Using the California Vessel Detention Rate in this way enables for the relative assessment as to the condition/quality of vessels calling on California ports.

The assessments results were definitive and conclusive. The California Vessel Detention Rate weighted average at 0.0064% is the lowest of all surveyed PSC organizations. It indicates vessels calling on California are 99.84% less likely to possess the characteristics that would warrant a PSC detention than other parts of the world.

The HSCs find the condition of foreign vessels calling on California ports and the condition of the USCG’s Port State Control program to be adequate.

| PSC Authority | No. of Safety Examinations | No. of Detentions | Detention Rate % | Weighting % Based on Detentions* | Detention Rate Weighted Average** (Detention Rate % x Weight) |
|--|----------------------------|-------------------|------------------|----------------------------------|---|
| (A) | (B) | (C) | (D) | (E) | (F) |
| | | | (C) / (B) | | (D) X (E) |
| Tokyo MoU | 178,148 | 8,145 | 4.5720% | 62.70% | 2.8665% |
| Paris MoU | 115,399 | 4,022 | 3.4853% | 30.96% | 1.0790% |
| USCG less D 11 | 50,619 | 749 | 1.4794% | 5.77% | 0.0854% |
| D11 (CVDR) | 6,777 | 75 | 1.1067% | 0.58% | 0.0064% |
| Totals | 350,943 | 12,991 | - | 100% | 4.0374% |
| PSC Detention Rate Weighted Average (W.A) | | | | | 4.0374% |
| CVDR W.A. | | | | | 0.0064% |
| CVDR W.A. Below PSC Detention Rate W.A. | | | | | 4.0309% |
| Percent CVDR W.A. is below PSC Detention Rate W.A. | | | | | -99.84%*** |

Notes:

- * Calculation is Number of Detentions by a PSC divided by the sum of all PSC Detentions (12,991)
- ** Calculation is Detention Rate % multiplied by the Weighting %
- *** Calculation is 4.0374% less 0.0064% divided by 4.0374%

U.S. Coast Guard’s Marine Inspection Program (U.S. Flag Vessels) – Published each year in the Paris MoU and Tokyo MoU Annual Reports, is an updated document entitled, “White, Grey and Black (WGB) List.” The WGB List represents the full spectrum, from quality flag states to flag states with a poor performance that are considered high risk. It is based on the total number of inspections and detentions and is the results from PSC inspections.¹³ The WGB List reflects the quality of a flag state’s (marine) inspection program as well as the quality of vessels and vessel operators.

¹³ "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

The White List contains a list of flag states found to be of higher quality and lower risk. Conversely, the Black List contains a list of flag states found to be substandard and of higher risk.¹⁴ The Gray List is a list of flag states that may be simply described as average, average being considered less than ideal.

Independent third party audits, more commonly referred to as PSC inspections, over the last six consecutive years have reflected favorably upon the flag state of United States as well as the condition of the USCG's Marine Inspection Program. During the sample period (2010-2015), the flag state of United States attained White List, low risk status 83% of the time. Moreover, over the past four consecutive years (2012-2015), the flag state United States attained White List, low risk status 100% of the time.

Accordingly, the LA/LB HSC finds the condition of United States vessels 300 GRT and greater and the condition of the USCG's Marine Inspection Program to be adequate.

Part IV. Conclusions

There are many factors that could cause a vessel to lose propulsion and/or maneuverability. However, based on the data assembled in response to Senate Bill 414, the Ports of Los Angeles and Long Beach are well prepared for most foreseeable emergency scenarios that might require a response tug to provide emergency towing of a tank or non-tank vessel to arrest its drift or otherwise guide its emergency transit. The large availability of response tugs in the harbor and offshore moorings allows emergency services to be dispatched any time day or night. The mild and calm weather typically encountered in the Southern California Region rarely limits the operational effectiveness of response vessels. It is highly likely that a response tug will arrive on scene well before a disabled vessel traveling in the TSS could drift into danger. Only one transit area of concern (to the southwest of Catalina Island) has been identified and very few vessels travel that route. Historically, there have been very few vessel failures that necessitated a tow, and all of them occurred relatively close to the harbor entrances where response assets are always close at hand. The quality of the vessels and crews calling at the Ports of Los Angeles, Long Beach and other California ports is generally very high as indicated by reliable data from the annual reports of the USCG's Port State Control Program, the Tokyo MoU, and the Paris MoU.

¹⁴ "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

Historically, whenever vessels have experienced failures in the LA-LB AOR, they have had sufficient sea room to drift until propulsion was restored or tug boats arrived on scene to take the vessel in tow. The worst case scenario identified by the LA/LB HSC would be for a vessel to experience a disabling failure in the transit area of concern lying southwest of the West End of Catalina Island during strong southwesterly weather. Although the risk is very low due to few vessel transits and the unlikely confluence of events necessary to drive a disabled vessel ashore, the LA/LB HSC nevertheless has considered the following measures to mitigate the low-level risk associated with such an unlikely event:

- Recommend that steps be taken to raise awareness of the grounding risks associated with vessels over 300 gross tons transiting through our AOR on the offshore side of Catalina Island during southwesterly weather.
- Recommend that vessels over 300 gross tons transiting through our AOR (on innocent passage) be encouraged to utilize the IMO approved traffic lanes located on the North side of Santa Catalina Island.

Findings: The Los Angeles-Long Beach Harbor Safety Committee finds that there is a very high degree of likelihood that the resources presently in place in the Los Angeles-Long Beach Area of Responsibility are, and will continue to be, sufficient to arrest the drift of a disabled vessel or otherwise influence its drift to prevent it from grounding.

Senate Bill No. 414

CHAPTER 609

An act to amend Sections 8670.12, 8670.13, 8670.28, and 8670.67.5 of, and to add Sections 8670.11, 8670.13.3, and 8670.55.1 to, the Government Code, relating to oil spill response.

[Approved by Governor October 08, 2015. Filed with Secretary of State October 08, 2015.]

LEGISLATIVE COUNSEL'S DIGEST

SB 414, Jackson. Oil spill response.

(1) The Lempert-Keene-Seastrand Oil Spill Prevention and Response Act generally requires the administrator for oil spill response, acting at the direction of the Governor, to implement activities relating to oil spill response, including emergency drills and preparedness, and oil spill containment and cleanup. The act authorizes the administrator to use volunteer workers in response, containment, restoration, wildlife rehabilitation, and cleanup efforts for oil spills in waters of the state. Existing law requires the administrator to evaluate the feasibility of using commercial fishermen and other mariners for oil spill containment and cleanup.

This bill would require the administrator, in cooperation with the United States Coast Guard, to establish a schedule of drills and exercises that are required under the federal Salvage and Marine Firefighting regulations. The bill would require the administrator, on or before January 1, 2017, to submit to the Legislature a report assessing the best achievable technology of equipment for oil spill prevention, preparedness, and response and to update regulations governing the adequacy of oil spill contingency plans before July 1, 2018. The bill would require the administrator to direct the Harbor Safety Committees for various regions to assess, among other things, the presence and capability of tugs within their respective regions of responsibility to provide emergency towing of tank and nontank vessels to arrest their drift or guide emergency transit.

(2) The act requires the administrator to study the use and effects of methods used to respond to oil spills and to periodically update the study to ensure the best achievable protection from the use of those methods.

This bill would require the administrator, in conducting the study and updates, to consult current peer-reviewed published scientific literature. The bill would require the administrator, by May 1, 2016, to request that the federal California Dispersant Plan be updated, as provided, and to provide support and assistance in that regard.

(3) The act requires the administrator to license oil spill cleanup agents for use in response to oil spills.

This bill would require the administrator, if dispersants are used in response to an oil spill, to submit to the Legislature a written notification of, and a written justification for, the use of dispersants and a report on the effectiveness of the dispersants used, as provided.

(4) Existing law establishes the Oil Spill Technical Advisory Committee and requires the committee to provide recommendations to, among other entities, the administrator on the implementation of the act.

Appendix A – Senate Bill 414; Complete Text

This bill would require the committee to convene a taskforce to evaluate the feasibility of using vessels of opportunity for oil spill response. The bill would require the taskforce to provide recommendations to the administrator and the Legislature on whether vessels of opportunity should be included in oil spill response planning.

(5) The act makes a person who causes or permits a spill or inland spill strictly liable for specified penalties for the spill on a per-gallon-released basis. The act provides that the amount of penalty is reduced by the amount of released oil that is recovered and properly disposed of.

This bill would eliminate that reduction in the penalty by the amount of oil recovered and properly disposed of.

DIGEST KEY

Vote: majority Appropriation: no Fiscal Committee: yes Local Program: no

BILL TEXT

THE PEOPLE OF THE STATE OF CALIFORNIA DO ENACT AS FOLLOWS:

SECTION 1. Section 8670.11 is added to the Government Code, to read:

8670.11. In addition to Section 8670.10, the administrator, in cooperation with the United States Coast Guard, shall establish a schedule of drills and exercises required pursuant to Section 155.4052 of Title 33 of the Code of Federal Regulations. The administrator shall make publicly available the established schedule.

SEC. 2. Section 8670.12 of the Government Code is amended to read:

8670.12. (a) The administrator shall conduct studies and evaluations necessary for improving oil spill response, containment, and cleanup and oil spill wildlife rehabilitation in waters of the state and oil transportation systems. The administrator may expend moneys from the Oil Spill Prevention and Administration Fund created pursuant to Section 8670.38, enter into consultation agreements, and acquire necessary equipment and services for the purpose of carrying out these studies and evaluations.

(b) The administrator shall, consulting current peer-reviewed published scientific literature, study the use and effects of dispersants, incineration, bioremediation, and any other methods used to respond to a spill and, by May 1, 2016, request that the federal California Dispersant Plan be updated pursuant to subdivision (d). The study shall periodically be updated by the administrator, consulting current peer-reviewed published scientific literature, to ensure the best achievable protection from the use of those methods. Based upon substantial evidence in the record, the administrator may determine in individual cases that best achievable protection is provided by establishing requirements that provide the greatest degree of protection achievable without imposing costs that significantly outweigh the incremental protection that would otherwise be provided. The studies shall do all of the following:

(1) Evaluate the effectiveness of dispersants and other chemical, bioremediation, and biological agents in oil spill response under varying environmental conditions.

(2) Evaluate potential adverse impacts on the environment and public health including, but not limited to, adverse toxic impacts on water quality, fisheries, and wildlife with consideration to bioaccumulation and synergistic impacts, and the potential for human exposure, including skin contact and consumption of contaminated seafood.

(3) Recommend appropriate uses and limitations on the use of dispersants and other chemical, bioremediation, and biological agents to ensure they are used only in situations where the administrator determines they are effective and safe.

(c) The studies shall be performed with consideration of current peer-reviewed published scientific literature and any studies performed by federal, state, and international entities. The administrator may enter into contracts for the studies.

(d) The administrator shall support the federal Regional Response Team, as described in Section 300.115 of Title 40 of the Code of Federal Regulations, in the development, and shall request regular updates, of plans and procedures for use of dispersants and other chemical agents in California. The administrator's assistance may include, but is not limited to, providing the federal Regional Response Team with current peer-reviewed published scientific literature, and risk and consequence analysis.

SEC. 3. Section 8670.13 of the Government Code is amended to read:

8670.13. (a) The administrator shall periodically evaluate the feasibility of requiring new technologies to aid prevention, response, containment, cleanup, and wildlife rehabilitation.

(b) (1) On or before January 1, 2017, the administrator shall submit a report to the Legislature, pursuant to Section 9795, assessing the best achievable technology of equipment for oil spill prevention, preparedness, and response.

(2) The report shall evaluate studies of estimated recovery system potential as a methodology for rating equipment in comparison to effective daily recovery capacity.

(3) Pursuant to Section 10231.5, this subdivision is inoperative on July 1, 2020.

(c) (1) Including, but not limited to, the report prepared pursuant to subdivision (b), the administrator shall update regulations governing the adequacy of oil spill contingency plans for best achievable technologies for oil spill prevention and response no later than July 1, 2018.

(2) The updated regulations shall enhance the capabilities for prevention, response, containment, cleanup, and wildlife rehabilitation.

(d) (1) The administrator shall direct the Harbor Safety Committees, established pursuant to Section 8670.23, to assess the presence and capability of tugs within their respective geographic areas of responsibility to provide emergency towing of tank vessels and nontank vessels to arrest their drift or otherwise guide emergency transit.

(2) The assessments for harbors in the San Francisco Bay area and in Los Angeles-Long Beach area shall be initiated by May 1, 2016. The assessments for the other harbors shall be initiated by January 1, 2020.

(3) The assessment shall consider, but not be limited to, data from available United States Coast Guard Vessel Traffic Systems, relevant incident and accident data, any relevant simulation models, and identification of any transit areas where risks are higher.

(4) The assessment shall consider the condition of tank and nontank vessels calling on harbors, including

the United States Coast Guard's marine inspection program and port state control program regarding risks due to a vessel's hull or engineering material deficiencies, or inadequate crew training and professionalism.

SEC. 4. Section 8670.13.3 is added to the Government Code, to read:

8670.13.3. If dispersants are used in response to an oil spill in state waters, the administrator shall provide written notification of their use to the Legislature within three days of the use. The administrator shall provide the Legislature with written justification of their use, including copies of key supporting documentation used by the federal on-scene coordinator and the federal Regional Response Team as soon as those material are released. Within two months of the use of dispersants in state waters, the administrator shall also provide a report to the Legislature on the effectiveness of the dispersants used, including, but not limited to, results of any available monitoring data to determine whether the dispersant use resulted in overall environmental benefit or harm. The written notification, justification, and report shall be submitted pursuant to Section 9795.

SEC. 5. Section 8670.28 of the Government Code is amended to read:

8670.28. (a) The administrator, taking into consideration the facility or vessel contingency plan requirements of the State Lands Commission, the Office of the State Fire Marshal, the California Coastal Commission, and other state and federal agencies, shall adopt and implement regulations governing the adequacy of oil spill contingency plans to be prepared and implemented under this article. All regulations shall be developed in consultation with the Oil Spill Technical Advisory Committee, and shall be consistent with the California oil spill contingency plan and not in conflict with the National Contingency Plan. The regulations shall provide for the best achievable protection of waters and natural resources of the state. The regulations shall permit the development, application, and use of an oil spill contingency plan for similar vessels, pipelines, terminals, and facilities within a single company or organization, and across companies and organizations. The regulations shall, at a minimum, ensure all of the following:

- (1) All areas of state waters are at all times protected by prevention, response, containment, and cleanup equipment and operations.
- (2) Standards set for response, containment, and cleanup equipment and operations are maintained and regularly improved to protect the resources of the state.
- (3) All appropriate personnel employed by operators required to have a contingency plan receive training in oil spill response and cleanup equipment usage and operations.
- (4) Each oil spill contingency plan provides for appropriate financial or contractual arrangements for all necessary equipment and services for the response, containment, and cleanup of a reasonable worst case oil spill scenario for each area the plan addresses.
- (5) Each oil spill contingency plan demonstrates that all protection measures are being taken to reduce the possibility of an oil spill occurring as a result of the operation of the facility or vessel. The protection measures shall include, but not be limited to, response to disabled vessels and an identification of those measures taken to comply with requirements of Division 7.8 (commencing with Section 8750) of the

Public Resources Code.

(6) Each oil spill contingency plan identifies the types of equipment that can be used, the location of the equipment, and the time taken to deliver the equipment.

(7) Each facility, as determined by the administrator, conducts a hazard and operability study to identify the hazards associated with the operation of the facility, including the use of the facility by vessels, due to operating error, equipment failure, and external events. For the hazards identified in the hazard and operability studies, the facility shall conduct an offsite consequence analysis that, for the most likely hazards, assumes pessimistic water and air dispersion and other adverse environmental conditions.

(8) Each oil spill contingency plan contains a list of contacts to call in the event of a drill, threatened discharge of oil, or discharge of oil.

(9) Each oil spill contingency plan identifies the measures to be taken to protect the recreational and environmentally sensitive areas that would be threatened by a reasonable worst case oil spill scenario.

(10) Standards for determining a reasonable worst case oil spill. However, for a nontank vessel, the reasonable worst case is a spill of the total volume of the largest fuel tank on the nontank vessel.

(11) Each oil spill contingency plan specifies an agent for service of process. The agent shall be located in this state.

(b) The regulations and guidelines adopted pursuant to this section shall also include provisions to provide public review and comment on submitted oil spill contingency plans.

(c) The regulations adopted pursuant to this section shall specifically address the types of equipment that will be necessary, the maximum time that will be allowed for deployment, the maximum distance to cooperating response entities, the amounts of dispersant, and the maximum time required for application, should the use of dispersants be approved. Upon a determination by the administrator that booming is appropriate at the site and necessary to provide best achievable protection, the regulations shall require that vessels engaged in lightering operations be boomed prior to the commencement of operations.

(d) The administrator shall adopt regulations and guidelines for oil spill contingency plans with regard to mobile transfer units, small marine fueling facilities, and vessels carrying oil as secondary cargo that acknowledge the reduced risk of damage from oil spills from those units, facilities, and vessels while maintaining the best achievable protection for the public health and safety and the environment.

SEC. 6. Section 8670.55.1 is added to the Government Code, to read:

8670.55.1. (a) The committee shall convene a taskforce, including appropriate state and federal governmental representatives, nongovernmental organizations, oil spill response organizations, and commercial fishing and other potential vessels of opportunity, to evaluate and make recommendations regarding the feasibility of using vessels of opportunity for oil spill response in marine waters. The evaluation shall examine the following:

(1) Appropriate functions of vessels of opportunity during an oil spill.

(2) Appropriate management of a vessel's of opportunity spill response program.

(3) Vessels of opportunity equipment, training, and technology needs.

Appendix A – Senate Bill 414; Complete Text

(4) Liability and insurance.

(5) Compensation.

(b) As part of the evaluation, the taskforce shall hold two public meetings, one in southern California and one in northern California, prior to making final recommendations.

(c) (1) On or before January 1, 2017, the committee shall provide to the administrator and to the Legislature final recommendations on whether vessels of opportunity should be included in oil spill response planning.

(2) The recommendations provided to the Legislature shall be provided pursuant to Section 9795.

(d) If appropriate, the administrator, by January 1, 2018, shall update regulations to provide for inclusion of vessels of opportunity in the oil spill prevention, response, and preparedness program.

SEC. 7. Section 8670.67.5 of the Government Code is amended to read:

8670.67.5. (a) Regardless of intent or negligence, any person who causes or permits a spill shall be strictly liable civilly in accordance with subdivision (b) or (c).

(b) A penalty may be administratively imposed by the administrator in accordance with Section 8670.68 in an amount not to exceed twenty dollars (\$20) per gallon for a spill.

(c) Whenever the release of oil resulted from gross negligence or reckless conduct, the administrator shall, in accordance with Section 8670.68, impose a penalty in an amount not to exceed sixty dollars (\$60) per gallon for a spill.

Appendix B – Los Angeles-Long Beach Harbor Safety Committee SB 414 Workgroup Membership

| Name | Organization |
|-------------------|--|
| Brad Westlund | AmNav Maritime Services |
| Jonathan Bishop | California Coastal Commission |
| Mike Coyne | California Office of Spill, Prevention, Response |
| Jon Victoria | California Office of Spill, Prevention, Response |
| Kenneth Graham | Chevron Shipping Company |
| Eric Cooper | Conoco Phillips Polar Tankers |
| Mark Homeyer | Crowley Marine Services |
| Ryan Stirewalt | Crowley Marine Services |
| Norman George | Crowley Maritime (retired) |
| Guy Beckwith | Foss Maritime Company |
| Bob Gregory | Foss Maritime Company |
| Andre Nault | Harley Marine Services |
| Eric Bland | Inland Boatman's Union of the Pacific |
| John Strong | Jacobsen Pilot Service |
| John Betz | Los Angeles Pilot Service |
| Kip Louttit | Marine Exchange of Southern California |
| Steve Chesser | Marine Exchange of Southern California |
| Duncan McFarlane | Shell Trading U.S. |
| Robert McCaughey | Tesoro Refining & Marketing Company |
| Mark Nielsen | Tesoro Refining & Marketing Company |
| LCDR Brandon Link | USCG, Sector LA/LB |
| Sean Marchant | Valero Marketing and Supply Company |
| Brian Vartan | Westoil Marine Services |

Appendix C – Office of Spill Prevention and Response Administrator’s Letter to Los Angeles-Long Beach Harbor Safety Committee



State of California -The Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
Office of Spill Prevention and Response
1700 K Street, Suite 250
Sacramento, California 95811
Telephone: (916) 445-9338
www.wildlife.ca.gov/ospr

EDMUND G. BROWN, JR., Governor
CHARLTON H. BONHAM, Director



January 25, 2016

Captain John Z. Strong
Chair
Los Angeles/Long Beach Harbor Safety Committee
c/o Marine Exchange of Southern California
Post Office Box 1949
San Pedro, California 90733

Dear Captain ^{John} Strong:

Senate Bill 414 was recently signed into law by Governor Edmund G. Brown, Jr. and became effective January 1, 2016. This bill requires me to exercise my authority pursuant to Government Code 8670.13(d) and 8670.23.1(g), and to task your Harbor Safety Committee with the following:

- Assess the presence and capability of tugs within your respective geographic areas of responsibility to provide emergency towing of vessels over 300 GRT to arrest their drift or otherwise guide emergency transit.
- The assessment for the San Pedro Bay area shall be initiated by May 1, 2016.
- The assessment shall consider, but not be limited to, data from available United States Coast Guard Vessel Traffic Systems, relevant incident and accident data, any relevant simulation models, and identification of any transit areas where risks are higher.
- The assessment shall consider the condition of tank and non-tank vessels calling on the harbor, including the United States Coast Guard's marine inspection program and port state control program regarding risks due to a vessel's hull or engineering material deficiencies, or inadequate crew training and professionalism.

My project officer for this assessment is Oil Spill Prevention Specialist Michael Coyne who may be contacted by e-mail at Mike.Coyne@wildlife.ca.gov or by phone at (916) 324-5659. Questions regarding the appropriateness of any assessment model or report format may be directed to Mr. Coyne or to my Prevention Branch Chief, Ted Mar, who may be contacted by e-mail at Ted.Mar@wildlife.ca.gov or by phone at (916) 323-6281.

Conserving California's Wildlife Since 1870

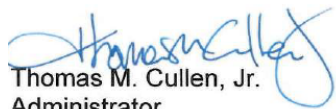
Appendix C – Office of Spill Prevention and Response Administrator’s Letter to Los Angeles-Long Beach Harbor Safety Committee

Captain John Z. Strong
January 25, 2016
Page Two

The assessment should be completed by June 2017 and reported in your 2017 Harbor Safety Plan. If additional funding is required to complete this tasking, the amount and justification should be submitted to the project officer.

As always, I appreciate the committee’s efforts. I look forward to results of your findings.

Sincerely,



Thomas M. Cullen, Jr.
Administrator
Office of Spill Prevention and Response

Appendix D – Historic Casualty Data Collected (2000-2016)

| DETAILS OF SHIPS NEEDING TOWED | | | | | | | | | | | |
|--|-----------------------|----------------|-----------------------------------|--------------------|-----------------|-------------------|--|---|-------------------------|-------------------------------------|--|
| 2010 - 2016 | | | | | | | | | | | |
| Based on incidents reported to MX VTS LA/LB and Coast Guard District 11, Alameda, CA | | | | | | | | | | | |
| Prepared by Marine Exchange of Southern California | | | | | | | | | | | |
| Year | Incident Number | VESSEL TYPE | | NATURE OF CASUALTY | | | COMMENT | Position | Pilot Aboard? Yes/No | As Of Weather | 31-Dec-16 Disposition |
| 2010 | | Tankers | Other Vessels | Propulsion | Steering | Electrical | | | | | |
| 1 | 1 | | Container Ship | 1 | | | Engine problem due to Lack of High Pressure Cooling Water. | Departing LA Berth 302 | Yes | Wind NE at 8 kts, Clear | Towed to anchorage outside Los Angeles |
| 2 | 25 | | Container Ship | 1 | | | Complete loss of power to both engines; later restored power to 1 engine prior to reaching anchorage | 1NM South of Long Beach Buoy Inbound | Yes | Wind W at 6 kts, Clear | Towed to anchorage outside Long Beach |
| 2011 | No Ships Needed Towed | | | | | | | | | | |
| 2012 | | | | | | | | | | | |
| 3 | 19 | | Container Ship | 1 | 0 | 0 | Loss of astern propulsion while conducting tests; then lost all propulsion | Approaching "Whiskey" buoy from Northern Traffic Lane inbound | No, then yes | Winds SW at 3 kts, Clear | Towed to anchorage outside Long Beach |
| 2013 | No Ships Needed Towed | | | | | | | | | | |
| 2014 | | | | | | | | | | | |
| 4 | 18 | | Container Ship | 1 | 0 | 0 | Loss of propulsion due to loss of lube oil to #4 cylinder | 4NM South of LA Light outbound | No, then yes | Winds Calm, Overcast, Seas at 1.2ft | Towed to anchorage outside Los Angeles |
| 5 | 21 | | Container Ship | 1 | 0 | 0 | Vessel was enroute Long Beach when it stopped. VTS inquired why and vessel requested to anchor immediately due to loss of propulsion. Vessel anchored outside Long Beach and then towed to inside anchorage. The vessel had run out of fuel. | 2.3 NM East of LB Sea Buoy inbound | No, then yes | Winds Calm, Clear | Towed to anchorage outside Long Beach and then inside Long Beach |
| 2015 | | | | | | | | | | | |
| 6 | 31 | | Container Ship | 1 | 0 | 0 | Loss of propulsion due to waste heat recovery system problem. Problem later determined to be computer that controls both lube oil pumps | 3NM WSW of LA Buoy #1 outbound | No, then Yes | Winds W at 4-6kts, Clear | Towed to anchorage outside Los Angeles |
| 2016 | | | | | | | | | | | |
| 7 | 6 | | Bulk Ship | 1 | 0 | 0 | Vessel lost propulsion due to possible air start problem. Language barrier prevented further information. | 1NM South of the Long Beach Buoy inbound | Yes | Winds Calm, Clear | Towed to anchorage outside Long Beach |
| | Total | Tankers | Container & Bulk Ships | Propulsion | Steering | Electrical | | | | | |
| Total | 7 | 0 | 7 | 7 | 0 | 0 | | | | | |

Further data is available on request.

Appendix E – United States Coast Guard’s Port State Control and Marine Inspection Programs’ Data and Detailed Report

Overview

California Senate Bill 414 (SB 414) requires Harbor Safety Committees to assess the condition of vessels over 300 GRT calling on California (CA) ports. Additionally, assess the condition of the United States Coast Guard’s (USCG) marine inspection program and port state control (PSC) program regarding risks due to hull or engineering material deficiencies, or inadequate crew training and professionalism.

Background

A Harbor Safety Committee is comprised of a diverse group of port stakeholders including both commercial and recreational waterway users, regulatory authorities, organized labor, and non-governmental environmental organizations. Though the Harbor Safety Committee is arguably the most comprehensive organization on a wide range of maritime related topics, many committee members believe assessing the condition of vessel’s calling on California ports, and to assess the condition of the USCG’s marine inspection and port state control programs, is beyond the level of the committee’s expertise.

Few organizations possess the resources, and maritime expertise to properly conduct an assessment of federal programs as required by SB 414. In matters relating to the effectiveness of federal programs, the United States Governmental Accountability Office is often the organization called upon to objectively assess a federal agency. However, the Los Angeles-Long Beach and the Harbor Safety Committee of the San Francisco Bay Region (HSCs) employed an innovative and streamlined approach to systematically meet the SB 414 mandates by comparing PSC regimes’ data.

Assessment – U.S.C.G.’s Port State Control Program and Foreign Flag Vessels

Currently, a worldwide network of regional co-operation PSC ministries exists with the objective to eliminate substandard shipping. There are a total of nine regional PSC agreements / Memorandum of Understandings (MoUs) to include: Abuja MoU, Black Sea MoU, Caribbean MoU, Indian Ocean MoU, Mediterranean MoU, Paris MoU, Riyadh MoU, Tokyo MoU, and Vina del Mar Agreement.¹⁵

The Memorandum of Understanding on Port State Control in the Asia-Pacific Region (Tokyo MoU) and Paris Memorandum of Understanding on Port State Control (Paris MoU) established and maintain effective and close co-operation both at the administrative and technical levels. Representatives of the two Secretariats attend the Port State Control Committee meetings of each MoU on a regular basis and the USCG holds observer status within both of these two organizations.¹⁶

For this assessment, the Tokyo MoU, Paris MoU and United States Coast Guard, will be referred to as PSC regimes and only data provided from these three organizations will be referenced. The close cooperative relationship between the USCG, the Tokyo MoU and the Paris MoU facilitates uniform and trackable data values.

¹⁵ Tokyo MoU, “Annual Report on Port State Control in the Asia–Pacific Region 2015”, 2016, p 9.

¹⁶ Ibid.

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PSC regimes including the USCG have established a vessel targeting matrix to rationally and systematically determine the probable risk posed by foreign flag ships. In developing their risk assessment methodology, the PSC regimes recognize there are key, trackable and quantifiable data points that are often a reflection of a vessel's operational condition and compliance with international safety and environmental protection standards.¹⁷

Three primary factors or data points a PSC’s targeting matrix utilize include: Ship Management Company, Recognized Organizations (Classification Societies), and the Flag State of a ship. Secondary trackable and quantifiable data points include ship type, ship age as well as a PSC’s previous experience/issues with a particular ship.^{18 19}

If a PSC’s targeting matrix identifies a ship of potential higher risk, and a subsequent Safety Examination determined the ship is substandard, a detention of the ship may be ordered by the PSC. “Ships are detained when the condition of the ship or its crew does not correspond substantially with the applicable conventions. Such strong action is to ensure that the ship cannot sail until it can proceed to sea without presenting a danger to the ship or persons on board, or without presenting an unreasonable threat of harm to the marine environment.”²⁰

Amongst the list of PSC detainable deficiencies are hull and engineering material deficiencies, inadequate crew training, and professionalism. Vessel detentions thus provide for a key and universal trackable data point to meet the requirements of SB 414.

Methodology

The HSCs sought to determine the quality of vessels calling on California ports by identifying the rate that vessels were being detained by the USCG. Additionally, determine if the detention rate in California was higher or lower than the rate of all vessels being detained in other parts of the United States/world.

The HSCs reviewed six years of data published in the PSC regimes’ annual reports from 2010 to 2015. This assessment will show the California Vessel Detention Rate (CVDR) as compared with the combined six year average Detention Rate as detailed the annual reports produced by each PSC authority to include:

- PSC data from forty-five countries on five continents
- 651,134 PSC vessel boardings
- 350,943 Safety Examinations
- 12,991 Detentions

The PSC Average Detention Rate is an average for all three surveyed PSC regimes. It is based upon total number of Safety Examinations and Detentions from each PSC authority, over a six year period.

If the CVDR is above the PSC Average Detention Rate, the CVDR is considered undesirable. A CVDR percent above (or leads) PSCs Detention Rate suggests the qualities of vessels inspected in California on

¹⁷ “PSC Safety Targeting Matrix – Safety Policy.” *United States Coast Guard (USCG)*. USCG, 12 January 2016. Web. 6 July 2016.

¹⁸ Ibid.

¹⁹ “Ship Risk Calculator – Ship Risk Profile.” *Paris MoU*. Paris MoU, 2016. Web. 6 July 2016.

²⁰ Tokyo MoU, “Annual Report on Port State Control in the Asia–Pacific Region 2015”, 2016, p 11.

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average are substandard compared to vessels inspected in other parts of the United States/world and thus require more vessels to be detained.

Conversely, if the CVDR is below the PSC Average Detention Rate, the CVDR is considered desirable. A CVDR percent below PSCs Detention Rate suggests the quality of vessels inspected in California on average are of a higher standard than vessels inspected in other parts of the United States/world and thus require fewer vessels to be detained.

Findings

A review of the USCG’s electronic notice of arrival data for the calendar year 2015 revealed that 1,888 individual foreign vessels intended to call on California ports in 2015.²¹ Referencing the USCG’s 2015 PSC Annual Report, the U.S. Coast Guard’s District 11 conducted 1,083 Safety Examination in California. Accordingly, the District 11’s vessel targeting matrix led to a PSC Safety Examination rate of 57.36% of all foreign flag vessels arriving in California.

The below table references Attachment 1 and shows six years of cumulative safety examination and detention data per PSC authority. The Detention Rate can be derived by dividing Detentions by Safety Examinations. “Detention rates are expressed as a percentage of the number of Safety Examinations, rather than the number of individual ships inspected to take account for the fact that some ships may be inspected more than once in a calendar year.”²²

²¹ All ships arriving from a foreign port are required to give ninety-six (96) hours advanced notice of their arrival to the USCG.

²² Paris MoU, “Paris MoU on Port State Control, Annual Report 2015”, 2016, p 16.

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Table 1: Six Year Cumulative Inspection and Detention Data per PSC Authority

| PSC Authority | Vessel Boardings | Safety Examinations | Detentions | PSC Average Detention Rate |
|-----------------------|------------------|---------------------|------------|----------------------------|
| Tokyo MoU | 97,637 | 178,148 | 8,145 | 4.5720% |
| Paris MoU | 89,407 | 115,399 | 4,022 | 3.4853% |
| USCG less District 11 | 417,038 | 50,619 | 749 | 1.4794% |
| USCG District 11 | 47,052 | 6,777 | 75 | 1.1067%* |

Note: * 1.1067% represents the California Vessel Detention Rate (CVDR)

Table 1 reveals that the California Vessel Detention Rate or CVDR is 1.1067%. The CVDR is equal to the USCG District 11 Detention Rate due to fact that all vessel Safety Examinations were conducted in or adjacent to California waters.

Additionally, Table 1 reveals that the CVDR is below the Detention Rate of the other PSCs. A CVDR below the PSC Average Detention Rate is a desirable situation. It indicates the quality of vessels inspected in California on average are of a higher standard than vessels inspected in other parts of the United States/world.

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Table 2 compares the California Vessel Detention Rate weighted average against both the domestic and international PSC regimes’ weighted average detention rates. Using the California Vessel Detention Rate in this way allows for comparing PSC regimes detention rate both domestically and internationally and enables for the relative assessment as to the condition/quality of vessels calling on California ports.

Table 2: Six Years Weighted Average Detention Rate Computation

| PSC Authority | No. of Safety Examinations | No. of Detentions | Detention Rate % | Weighting % Based on Detentions* | Detention Rate Weighted Average** (Detention Rate % x Weight) |
|--|----------------------------|-------------------|------------------|----------------------------------|--|
| (A) | (B) | (C) | (D) | (E) | (F) |
| | | | (C) / (B) | | (D) X (E) |
| Tokyo MoU | 178,148 | 8,145 | 4.5720% | 62.70% | 2.8665% |
| Paris MoU | 115,399 | 4,022 | 3.4853% | 30.96% | 1.0790% |
| USCG less D 11 | 50,619 | 749 | 1.4794% | 5.77% | 0.0854% |
| D11 (CVDR) | 6,777 | 75 | 1.1067% | 0.58% | 0.0064% |
| Totals | 350,943 | 12,991 | - | 100% | 4.0374% |
| PSC Detention Rate Weighted Average (W.A) | | | | | 4.0374% |
| CVDR W.A. | | | | | 0.0064% |
| CVDR W.A. Below PSC Detention Rate W.A. | | | | | 4.0309% |
| Percent CVDR W.A. is below PSC Detention Rate W.A. | | | | | -99.84%*** |

Notes:

* Calculation is Number of Detentions by a PSC divided by the sum of all PSC Detentions (12,991)

** Calculation is Detention Rate % multiplied by the Weighting %

*** Calculation is 4.0374% less 0.0064% divided by 4.0374%

Assessment - Marine Inspection Program and U.S. Flag Vessels

Much like the USCG’s PSC program has been established to inspect and enforce safety and environmental standards on foreign ships calling on ports in the United States; the USCG’s Marine Inspection Program (MIP) inspects and enforces safety and environmental standards on United States vessels. Though the standards of the PSC program and the MIP may vary in scope, each program functions to meet the same overarching need. That is, to determine that both foreign and domestic vessels comply with the all applicable laws, rules, and regulations relating to safe construction,

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equipment, manning, and operation and that they are in a seaworthy condition for the services in which they are operate (33 CFR § 1.01-20).

Methodology

Essentially, Port State Control authorities that makeup the Paris and Tokyo MoUs act as third party auditors. A PSC inspection (or audit) is an attempt to verify that a vessel, its operator and flag state (the country in which a vessel is registered) meet applicable conventions, safety and environmental standards; thus provides for an independent, unbiased and creditable means to access United States vessels and speaks to the quality and effectiveness of the USCG’s MIP.

Published each year in the Paris MoU and Tokyo MoU Annual Reports, is an updated document entitled, “White, Grey and Black (WGB) List”. The WGB List represents the full spectrum, from quality flag states to flag states with a poor performance that are considered high risk. It is based on the total number of inspections and detentions and is the results from PSC inspections.²³ The WGB List reflects the quality of a flag state’s (marine) inspection programs as well as the quality of vessels, and vessel operators.

The White List contains a list of flag states found to be of higher quality and lower risk. Conversely, the Black List contains a list of flag states found to be substandard. Black List flag states are deemed to be of high risk.²⁴ The Gray List is a list of flag states that may be simply described as average, average being considered less than ideal.

From 2010 to 2015 the flag state United States has appeared on the Tokyo MoU’s White List for the past six consecutive years and on Paris MoU for the past four consecutive years. Note, in 2010 and 2011 the flag state United States appeared on Paris MoU’s Gray List.

Expressed differently, from to 2010 to 2015, out of a possible twelve trials²⁵ (six trials in the Tokyo MoU and six trials in the Paris MoU), the flag state United States attained White List, low risk status ten out of twelve trials or 83% of the sample period. From 2012 to 2015 out of a possible eight trials (four trials in the Tokyo MoU and for trials in the Paris MoU) the flag state United States attained White List, low risk status eight out of eight trials or 100% of the sample period.

Conclusion

Many committee members expressed reservations as to the ability of a Harbor Safety Committee to properly conduct an assessment of a federal program such as required by California Senate Bill 414. Yet, The Los Angeles-Long Beach Harbor Safety Committee and the Harbor Safety Committee of the San Francisco Bay Region employed an innovative and streamlined approach to assess the condition of the United States Coast Guard’s port state control program and marine inspection program.

²³ "White, Grey and Black List." *Paris MoU*. Paris MoU, 2016. Web. 27 December 2016.

²⁴ Ibid.

²⁵ According to StatTrek.com, a binomial experiment is a statistical experiment. The experiment consists of set number of repeated trials. Each trial can result in just two possible outcomes, "success" and "failure". The trials are independent; meaning the outcome on one trial does not affect the outcome on other trials. In the case, “success” defined as a flag state listed on the White List and “failure” defined as flag state not listed on the White List.

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The HSCs utilizing the Detention Rate derived from PSC regimes data was able to quantify the quality of vessels calling on California ports by comparing the California Vessel Detention Rate weighted average against the combined PSC regimes’ detention rate weighted average. Using the California Vessel Detention Rate in this way enables for the relative assessment as to the condition/quality of vessels calling on California ports.

The assessments results were definitive and conclusive. Table 2 shows the California Vessel Detention Rate weighted average at 0.0064% is the lowest of all surveyed PSC organizations. Table 2 also indicates that vessels calling on California are 99.84% less likely to possess the characteristics that would warrant a PSC detention than other parts of the world.

Independent third party audits more commonly referred to as PSC inspections over the last six consecutive years have reflected favorably upon the flag state of United States as well as the condition of the U.S.C.G.’s Marine Inspection Program. During the sample period (2010-2015), the flag state of United States attained White List, low risk status 83% of the time. Moreover, over the past four consecutive years (2012-2015), the flag state United States attained White List, low risk status 100% of the time.

After conscientious and thorough review of the of data presented in this study, including PSC data from forty-five countries on five continents; 651,134 PSC vessel boardings; 350,943 Safety Examinations, 12,991 Detentions the HSCs find the following: The condition of United States vessels 300 GRT and greater, the condition of foreign vessels calling on California ports, the condition of the United States Coast Guard’s Marine Inspection Program and Port State Control program to be adequate.

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Six Years of PSC Data

Attachment 1

| Tokyo MoU PSC Data | | | | |
|--------------------|----------------|--------------------|--------------|----------------|
| Year | Ship Boardings | Safety Examination | Detentions | Detention % |
| 2015 | 17,269 | 31,407 | 1,153 | 3.6712% |
| 2014 | 16,761 | 30,405 | 1,203 | 3.9566% |
| 2013 | 16,861 | 31,018 | 1,395 | 4.4974% |
| 2012 | 16,439 | 30,929 | 1,421 | 4.5944% |
| 2011 | 15,771 | 28,627 | 1,562 | 5.4564% |
| 2010 | 14,536 | 25,762 | 1,411 | 5.4771% |
| Total | 97,637 | 178,148 | 8,145 | 4.5720% |

| Paris MoU PSC Data | | | | |
|--------------------|----------------|--------------------|--------------|----------------|
| Year | Ship Boardings | Safety Examination | Detentions | Detention % |
| 2015 | 15,246 | 17,858 | 595 | 3.3318% |
| 2014 | 15,377 | 18,430 | 612 | 3.3207% |
| 2013 | 14,108 | 17,687 | 668 | 3.7768% |
| 2012 | 14,646 | 18,308 | 669 | 3.6541% |
| 2011 | 15,268 | 19,058 | 688 | 3.6100% |
| 2010 | 14,762 | 24,058 | 790 | 3.2837% |
| Total | 89,407 | 115,399 | 4,022 | 3.4853% |

| USCG (All Districts) PSC Data | | | | |
|-------------------------------|----------------|--------------------|------------|----------------|
| Year | Ship Boardings | Safety Examination | Detentions | Detention % |
| 2015 | 73,752 | 9,265 | 202 | 2.1802% |
| 2014 | 79,091 | 9,232 | 143 | 1.5490% |
| 2013 | 83,535 | 9,394 | 121 | 1.2881% |
| 2012 | 72,309 | 9,469 | 105 | 1.1089% |
| 2011 | 79,031 | 10,129 | 97 | 0.9576% |
| 2010 | 76,372 | 9,907 | 156 | 1.5746% |
| Total | 464,090 | 57,396 | 824 | 1.4356% |

| USCG District 11 PSC Data | | | | |
|---------------------------|----------------|--------------------|------------|----------------|
| Year | Ship Boardings | Safety Examination | Detentions | Detention % |
| 2015 | 7,570 | 1,083 | 24 | 2.2161% |
| 2014 | 8,113 | 1,020 | 12 | 1.1765% |
| 2013 | 8,529 | 1,185 | 7 | 0.5907% |
| 2012 | 7,491 | 1,163 | 14 | 1.2038% |
| 2011 | 8,212 | 1,211 | 9 | 0.7432% |
| 2010 | 7,137 | 1,115 | 9 | .8072% |
| Total | 47,052 | 6,777 | 75 | 1.1067% |

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A rather large number of existing federal, state, and local laws, regulations and ordinances affect the LA/LB Harbor area. The Committee does not have the resources to systematically review them, but has summarized those in this appendix, and tries to review any proposed new laws or regulations that may affect the harbor area. We also, try to review all existing laws and regulations pertinent to any marine casualty or marine pollution incident brought to our attention. The Coast Guard principally regulates vessel movements via the authority vested with the COTP. In addition, California and the ports themselves have enforcement authority to assure compliance with state laws and regulations, and port tariffs or other port-related rules and regulations.

UNITED STATES COAST GUARD

Summary of Statute and Regulations: Pursuant to 33 CFR 6, Protection and Security of Vessels, Harbors, and Waterfront Facilities (Espionage Act), the COTP enforces the rules and regulations of the relevant legislation, under the supervision and general direction of the District Commander, the Area Commander, and the Commandant. The COTP may supervise and control the movement of any vessel or access to any facility or vessel. The Espionage Act addresses security, not safety, and has only criminal penalties.

The Ports and Waterways Safety Act of 1972, as amended by the Port and Tanker Safety Act of 1978, (33 USC 1221 et seq.) provides the strongest authority for the Coast Guard's program to increase vessel safety and protect the marine environment in ports, harbors, waterfront areas and navigable waters. It authorizes VTS, controls vessel movement, establishes requirements for vessel operation, and other related port safety controls. Violations carry civil and criminal penalties.

The law which governs the pollution caused by foreign ships is the International Convention for the Prevention of Marine Pollution by Ships ("MARPOL"). The annexes to MARPOL regulate pollution by ships relating to oil, noxious liquid substances carried in bulk, harmful substances carried in package form, sewage, garbage, and air pollution. Within the United States, MARPOL requirements are codified in the Act to Prevent Pollution by Ships ("APPS"), which is enforced by the Coast Guard.

The Federal Water Pollution Control Act is the main law used by the United States Coast Guard for oil pollution in navigable waters of the United States. The Act delegates enforcement authority and responsibility to the Coast Guard in cases where oil is discharged, or a hazardous substance is released into U.S. waters in harmful quantities. In addition, other laws call for Coast Guard enforcement. The Act to Prevent Pollution from Ships (33 USC 1901 et seq.) limits the operational discharges of oil from ships and requires reception facilities to receive waste that cannot be discharged at sea. The Marine Protection, Research and Sanctuaries Act of 1972 (33 USC 1401 et seq.) requires Coast Guard surveillance of ocean dumping activities. The Oil Pollution Act of 1990 (33 USC 2701 et seq.) requires increased Coast Guard involvement with vessel traffic service systems, vessel and facility monitoring, oil spill prevention and cleanup, in addition to amending the Federal Water Pollution Control Act.

COTP Orders (33 CFR 160.111) are directed at individual vessels and address short-term hazards. Any long-term directive would require following Federal rulemaking procedures. COTP orders may involve establishing a vessel traffic routing scheme or vessel size, speed and draft limitations; restricting traffic movement to one direction and certain times or requiring tug assists.

Summary of Coast Guard Field Presence: The Coast Guard Sector Los Angeles - Long Beach, handles marine safety issues including inspections of U.S. and foreign vessels, maritime security, vessel traffic management, search and rescue, response to and planning for pollution incidents, response to vessel or port emergencies and natural disasters, inspections of waterfront facilities and hazardous materials containers, monitoring of oil transfers and explosive loads, licensing of mariners, investigation of marine casualties and enforcement of fisheries, drug and other maritime laws.

The Sector Commander is the COTP, Officer in Charge of Marine Inspection, Search and Rescue Mission Coordinator, Federal Maritime Security Coordinator, and pre-designated Federal On-Scene Coordinator for oil spills and hazardous substance releases.

The area of responsibility encompasses 300 miles of California coast from the Monterey County line to Dana Point and out to 200 miles. The command uses 430 people to perform missions including operation of four HH-65 helicopters, four 87' patrol boats, three 47' boats, four 41' boats, and nine rigid hull inflatable boats.

Coast Guard field presence in the Ports of LA/LB fluctuates daily depending on port operations and incidents, but typically involves between 30 to 50 people in the field who manage vessel traffic and conduct boating safety checks, harbor patrols, commercial vessel inspections, waterfront facility inspections and container inspections, and investigate reports of hazardous material and oil spills in addition to daily search and rescue efforts.

STATE OF CALIFORNIA

Summary of Statutes and Regulations: In addition to the provisions contained in the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (see Appendix A of this Plan), the California Fish and Wildlife Code provides at Sections 5650 et seq. general law regarding water pollution prohibitions and both criminal and civil penalties on discharges of petroleum and other deleterious materials entering California waters. State Fish and Wildlife wardens enforce these sections.

Further, California Water Code Section 13272 requires any person responsible for any oil or petroleum product discharge into California waters to notify the Office of Emergency Services. Failure to comply is a misdemeanor.

All OSPR regulations are found in Title 14, California Code of Regulations. Regulations promulgated by the State Lands Commission are found in Title 2 and 24, California Code of Regulations (see Appendix A of this Plan).

Summary of OSPR and California State Lands Commission Field Presence: OSPR, within the California Department of Fish and Wildlife, carries out its mission by land, sea, and air. The Southern California Regional Office in Los Alamitos performs two complimentary enforcement functions, marine patrol, and oil spill response. Staff consists of ten oil spill response game wardens, seven oil spill prevention specialists, and eight environmental scientists. Additional support, when needed, comes from twelve Marine Region game wardens. Oil spill prevention specialists monitor vessel bunkering, lightering, inspect tugboats, conduct oil spill investigations, ensure vessel and marine facility compliance with contingency plan requirements, quantify spilled oil, participate in oil spill drills and respond to oil spills. For oil spill response in the LA/LB area, the Long Beach office has one 19' trailer-able, rigid-hull inflatable skiff (RHIB) and one 27' RHIB fast response boat.

The California State Lands Commission is responsible for providing the best achievable protection of the public health, safety and the environment, and ensuring that the best available technology is being used at marine terminals. To complete this mission, the Marine Facilities Division (MFD) Southern California Field Office (SCFO) Marine Safety personnel and MFD's staff engineers work in the field with industry and other public agencies. Staff is involved in reviewing marine terminal operations manuals and contingency plans, monitoring oil transfer operations seven days a week, reviewing terminal work hours and training programs, and observing static liquid pressure tests. Marine Safety staff and MFD engineers inspect marine oil terminals and facilities annually, and whenever events occur which might have caused facility damage, such as earthquakes, fires or oil spills. Terminals are required to conduct periodic engineering audits to determine fitness for purpose, and submit plans for the correction of deficiencies found. MFD engineers review plans for new construction or modifications to terminals to ensure compliance with Marine Oil Terminal Engineering and Maintenance Standards, as adopted by the California Building Standards Commission.

Data from all field activities are collected, analyzed, and provided back to the public in an array of outreach forums, including quarterly customer service meetings, workshops, letters and website information. Oil spills and near misses are analyzed using the Human Factors Analysis and Classification system. In addition to the Lempert-Keene-Seastrand Oil Spill Prevention Act responsibilities, SCFO staff monitors vessel compliance with the California Marine Invasive Species Act. Staff meets the arrivals of qualifying vessels to review records and to provide instructions for the compliance with ballast water management requirements.

REGIONAL WATER QUALITY BOARDS

The Los Angeles Regional Water Quality Control Board, through its "Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties" (June 13, 1994), has identified the following beneficial uses for the Los Angeles/Long Beach Harbor areas:

1. Inner & Outer Harbor; Beaches, Marinas: Existing Uses: Industrial service, navigation, contact and non-contact recreation, commercial and sport fishing, marine habitat, wildlife habitat, preservation of rare and endangered species, shellfish harvesting. Potential: spawning.

2. Los Angeles River Estuary: Existing Uses: preservation endangered species, estuarine habitat, wetland habitat, marine habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development of fish, navigation, commercial and sport fishing, industrial service supply, and contact and non-contact water recreation. Potential uses: shellfish harvesting.
3. Dominguez Channel Estuary: Existing Uses: preservation of rare and endangered species, estuarine habitat, marine habitat, wildlife habitat, migration of aquatic organisms, spawning, reproduction and/or early development of fish, commercial and sport fishing, and contact and noncontact water recreation. Potential uses: navigation.

The Los Angeles Regional Water Quality Control Board (“RWQCB”) has also recognized that most of the harbor area waters presently do not achieve the water quality objectives of the Federal Water Pollution Control Act (“Clean Water Act”) and are therefore identified as impaired water bodies in the “2008 CWA Section 303(d) List of Water Quality Limited Sections” (approved by RWQCB July 16, 2009). Pollutants causing impairment include, among others, DDT, PAHs, PCBs, Bensopyrene, Chlordane, Chromium, Lead, Zinc, Copper, Mercury, sediment toxicity, and bacteria. The 303(d) List of water quality impairments in the LA/LB Harbor area, by specific waterway, is available through the RWQCB. Overall water quality varies within the harbor areas with contaminant concentrations often localized in back channels, along wharf faces, and near storm water outfalls.

Once a water body becomes section 303(d) listed for a specific pollutant, TMDL numeric targets for effluents are set at a level that will ensure the water body will meet the water quality necessary to support its beneficial uses. To date, the Los Angeles Harbor Bacteria TMDLs (Inner Cabrillo Beach and Main Ship Channel), Los Angeles River Metals TMDLs, and Machado Lake Nutrients TMDLs have been completed and approved by the EPA. The Los Angeles River Bacteria TMDLs, Dominguez Channel and greater Los Angeles/Long Beach Harbor Toxics TMDLs are still in development. Over the next ten years, TMDLs for the other harbor 303(d) listings will be established by the RWQCB and the EPA.

PORT OF LONG BEACH

Summary of Port of Long Beach Tariff No. 4: The Port has a series of navigation regulations for the harbor which include rights-of-way, routes within the harbor, requirements for sounding horns, conditions for tows, lighting, and speed limits. The Port has contract for piloting services to vessels entering, leaving, or shifting within the Port. Such services are “voluntarily requested and voluntarily rendered.” The master, or captain, has full command of the vessel, whether a pilot is aboard or not. By agreement between the Coast Guard and the Jacobsen Pilot Service, the pilots manage the available anchorages within the Port of Long Beach (B Anchorages) and Commercial Anchorages C, D and E. Anchorages inside the breakwater have time limits of up to ten days, except Anchorages B-7, B-9, B-11, D-5, D-6 and D-7 that have a time limit of two days, subject to Coast Guard permit. No time limits exist for anchorages outside the breakwater. Speed limits are set for various conditions and areas of the Port.

Except in those cases where the duty is specifically imposed upon some other officer or employee of the City of Long Beach, the Executive Director of the Port must enforce Tariff No. 4 rules and regulations. Anyone violating any of the provisions of the rules and regulations as set forth in Item 904 of the Tariff is guilty of a misdemeanor, punishable by a fine not exceeding \$500, or by imprisonment not exceeding six months, or both. Other rules and regulations (set forth in Items 906 and 908) are punishable by fines ranging from \$50 to \$250.

The Harbor Patrol has been designated as the authority to enforce specific sections of the California Penal and Vehicle Codes, the Long Beach Municipal Code, and the Harbors and Navigational Codes.

Summary of Field Presence: The Port of Long Beach Harbor Patrol has 36 security officers and nine supervisory and management personnel. The Long Beach Harbor Patrol has one vessel, used for dive team inspection activities.

The Long Beach Police Department has 16 police officers, two sergeants, and one lieutenant assigned to the Port Security Unit. The officers have the authority to enforce all sections of the California Penal and Vehicle Codes, the Long Beach Municipal Code, the California Harbors and Navigation Code, and the Port of Long Beach Tariff No. 4. The Long Beach Police Department has two vessels which are used to provide waterborne law enforcement.

The Marine Safety Officers of the Long Beach Fire Department Marine Safety Division can cite violators in accordance with Item 902 of Tariff No. 4. These sections deal with anchorage grounds and mooring facilities, speed of vessels and prohibition of recreational water activity in parts of the Los Angeles River channel.

PORT OF LOS ANGELES

Summary of Port of Los Angeles Tariff No. 4: Tariff No. 4 states that anchorage, lighting and the handling of dangerous cargo and explosives must conform to federal regulations. Several types of cargo must be handled subject to the approval of the Chief Engineer of the Los Angeles Fire Department, including any inflammable liquid.

The Port of Los Angeles maintains a force of municipal pilots duly licensed to perform the service of piloting vessels in and out of the Port. As in the case of Long Beach, the pilotage services are “voluntarily requested and voluntarily rendered.” The master remains in full command of the vessel, and the presence of a municipal pilot on the bridge in no way relieves the master of her or his duties.

Every commercial vessel must always have someone aboard with the authority to take emergency action, including moving the vessel, as the Executive Director may direct. Speed limits are set for various areas and conditions in the Port.

In the Port of Los Angeles, every member of the Board, the Executive Director, and her or his duly authorized agent, can enter and inspect any vessel. The Executive Director must enforce all orders

and all rules and regulations adopted by the Board and may delegate to the Port Warden the duty of enforcing or seeing to the enforcement of such rules and regulations. For that purpose, the Port Warden shall have the power and authority of a regular police officer of the City of Los Angeles, including the power to arrest violators. The Port Warden, subject to the approval of the Executive Director, must report to the proper federal, state, or municipal officer the violation of any law, rule or regulation respecting the operation or control of Los Angeles Harbor in any case where he or she is not empowered to act.

Anyone failing to comply with any of the provisions of the rules and regulations of Tariff No. 4 is guilty of a misdemeanor. Conviction carries a fine of not more than \$500, or six months in jail, or both.

The Port, in addition to Tariff No. 4, enforces numerous federal, state, and local codes through the Port Police.

Summary of Field Presence: The Los Angeles Port Police have four boats, with one in the water at all times. The Port Police comprises 56 members, 50 of whom are sworn police officers. All Port Police officers are trained in police academies including those operated by the Los Angeles Police Department or the County Sheriff.

APPENDIX M Index

Appendix M.1

Container Vessel Bunkering Heightened Awareness Program

(Replaces previous program dated June 30, 2007)

Appendix M.2

Bunker Notice / Best Marine Practices Pre-Arrival Check List

Appendix M.3

Reliable 7/24 Contact Numbers & E-Mail

Under Development

Note:

The following are contained in the “Bunker Barge Best Practices” tab of the HSC tab of the MX Web Site:

- 1. “Safe Bunkering Practices” video**
- 2. “Bunker Barge Safety Program” slides**
- 3. “Bunkering – Best Maritime Practices for the State of California” document**

Appendix M.1 Container Vessel Bunkering Heightened Awareness Program

A. Mission Statement: Bunkering operations taking place alongside container ships while alongside load berths require a heightened level of awareness due to inherent risks associated with container vessel loading activities. This program is to minimize the risk to personnel on the bunker barges, to reduce the risk to the environment and to establish an ongoing program of awareness around container vessel bunkering safety. It will outline best practices, planning of bunker operations, essential communications, and due diligence to assure the safety of personnel on bunker barges.

B. Best Management Practices

1. Area of Concern: This area is identified as the Ship's offshore three stacks of containers above deck in hatch bays directly adjacent to the full length of the bunker barge the entire time the barge is alongside.
2. Any cargo operations during bunkering will give priority to the safety of the bunker barge's personnel.
3. Barge Operators will not bring barges alongside the ship if containers are being worked until communications have been verified between the designated terminal operations management, the container ship, and the barge.
4. Best efforts should be made to avoid container cargo operations in the Area of Concern while bunker barge is alongside. In the event that critical container movements must take place in the Area of Concern, the Terminal Operations Management shall make contact with the Tankerman PIC via VHF Radio or Vessel Officer on Watch and inform them of such movement. This will allow barge personnel to shut down operations and move to a safe area on the barge. Once the critical containers have been moved, Terminal Operations Management will contact the Tankermen PIC to let them know it's safe to resume bunker operations.
5. If the Tankermen notice that cargo operations are taking place in the Area of Concern, they will first contact the ship's PIC to request these conflicting activities are suspended or will utilize their STOP WORK AUTHORITY to shut down the transfer and move to an area of safety.
6. Should there be any reason for a delay in the barge's departure from the vessel, vessel will to the best of their ability avoid the Area of Concern when conducting cargo operations.
7. Lashing and unlashng activities in the Area of Concern will not be conducted during bunker operations. This is to reduce the risk of lashing hardware falling onto the bunker barge.

C. Planning bunker operations

1. The Bunker Operator and Vessel's Agent will plan for an agreeable time-period (appointment) for when the bunker barge will be alongside. Terminal Operations shall be informed of the appointment time by the ship's agent.
2. If possible, the bunker operation should be pre-scheduled to take place during the late night/early morning intermediate or "hoot" shift 0300-0800. If this is not possible the Agent will coordinate with Terminal Operations Management to determine the best time

for the bunkering operation to take place. An appointment will be made according to this targeted period.

3. To emphasize the safety of personnel and environmental protection, the bunker operator reserves the right to depart vessel and return at a later time should critical container moves cause a delay to the barges bunker schedule.

D. Essential communications

1. All stakeholders in the bunkering operation, which includes the Vessel Agent, Bunker Operator, Ship's Crew, Terminal Operations Management and Cargo Crane Operators (through the Vessel Foreman) must be aware that a bunkering operation is taking place and must be available for communications before and during the bunkering operation as needed.
2. Prior to the commencement of bunkering operations, communication shall take place between the barge's Tankerman PIC and the ship's PIC. The engineer will notify the ship's cargo officer and the Agent who in turn will make any notification to terminal operations management. The vessel and agent are responsible for notifications to the terminal.
3. Critical personnel contact information and phone numbers will be provided and listed in pre-delivery communications noted in paragraph 3.H.
4. Bunker Barge Operators, Container Terminal Operations Management and Ship's Agents will exchange and maintain a reliable and current list of their respective 24/7 telephone contact information, this will include e-mail addresses.
5. When applicable, barge operators will communicate/confirm barge arrival times with agents and receiving vessels at intervals leading up to the delivery.
 - a) 72 Hrs. Through ships agent email
 - b) 48 Hrs. Through ships agent email
 - c) 24 Hrs. Directly with Terminal Operations Management email and ships agent email

NOTE: All communications taking place less than 24 hrs. from the scheduled barge delivery time will be directly between the barge operating company and the vessel's agent via telephone call and/or email. Notifications of these changes will be made to the Terminal Operations Management by the agent.

6. Upon notification from the agent, terminal Operations Management will assure that bunker operations are communicated to all associated operations staff and that this information is passed on when there are shift or personnel changes.
7. The receiving vessel or agent will communicate any delays to the estimated finish time of bunker discharge directly to the Terminal Operations Management to ensure there are no conflicts with cargo ops scheduled in the Area of Concern.
8. The Bunker Delivery Notice/Marine Best Practice Checklist shall be initiated by the bunker delivery company then sent to the agent who will fill out applicable sections and contact information. This form will then be sent by the agent to the Vessel, Terminal Operations Management and Barge Operator so all have the same information pertaining to the transfer and its timing. Bunker delivery companies may utilize their own form or use the template included in Appendix M.2.
9. The Bunker Notice/Best Marine Practice Checklist shall be filled out and returned to the Barge Operator no later than 24 hours prior to the bunkering delivery appointment.

E. Continued Due Diligence

1. A Container Vessel Bunkering Safety Work Group has been established under the Harbor Safety Committee. This working group will hold meetings as needed to discuss issues, near misses, and incidents related to container vessel bunkering safety as well as the effectiveness of this program.
2. If container operations begin in the area of concern while the bunker barge is alongside without notification, it will be considered a “Near Miss” and recorded as such by the barge operator-
3. All parties will record and collect information regarding Near Misses via their own programs. These will be discussed by the Container Vessel Bunkering Safety Group of the Harbor Safety Committee. This may include sharing of lesson learned and corrective actions utilized. Emergency or high-profile events may necessitate sharing this info before the main meeting of the HSC.
4. The state of California has additional reference materials that pertain to bunkering operations available on the Marine Exchange website <https://mxsocial.org/bunker/>
 - a) Safe Bunkering Practices video
 - b) Bunker Barge Safety Program slides
 - c) Bunkering – Best Maritime Practices for the State of CA document.

BUNKER NOTICE/ BEST MARINE PRACTICES PRE-ARRIVAL CHECK LIST

Prior to bunkering in Los Angeles / Long Beach, the following information must be provided to the delivering barge company by the receiving vessel or vessels agent.

| | | | | | | | |
|--|--------------|------------------------------|---------------|-----------------------|-----------------|-----------------|--|
| Bunker Barge: | | Size of Bunker Barge: | | Length: | | Breadth: | |
| Bunker Barge Email: | | | | Barge Phone #: | | | |
| Bunker Barge Contact | Name: | | Email: | | Phone #: | | |
| Bunker Barge Emergency Contact #: | | | | | | | |

| | | | | | | | | |
|---|--|---------------|--|---------------|--|---------------|--|-------------|
| Notice of Pending Bunkering Operation: | | 72 hrs | | 48 hrs | | 24 hrs | | 1 hr |
|---|--|---------------|--|---------------|--|---------------|--|-------------|

| | | | | | |
|--|--|--|--|--------------|--|
| Vessel: | | Delivery Date: | | Time: | |
| Estimated Duration of Bunker Discharge: | | Estimated Barge Departure Time: | | | |
| Reference # | | Location Where Bunkering Will Take Place: | | | |
| Product / Qty: | | | | | |
| 1. | | | | | |
| 2. | | | | | |
| 3. | | | | | |

| | | | | | |
|--|--|---------------------------------|--|-----------------|--|
| Contact Information: | | | | | |
| Agent for Vessel: | | Agent 24 Hour Contact #: | | | |
| Agent Cell Phone #: | | Agent email: | | | |
| Terminal Name: | | | | | |
| Terminal Operations Manager: | | Email: | | Phone #: | |
| Name of Vessel PIC for bunkers: | | Vessel Phone #: | | | |
| Name of Vessel QI: | | 24 Hour Contact #: | | | |

| Please answer Yes or No: | YES | NO |
|--|------------|----------------------|
| Vessel's OSRO has been notified: | | |
| Hot Work/Restricted activity will not be conducted until Bunker Barge has departed: | | |
| The vessel will have a 7 barrel spill kit stationed at the bunker connection: | | |
| Container or Lashing Ops will not take place overhead of the barge during bunkering ops over area of concern: | | |
| Ship has current State and Federal Certificates of Financial Responsibility (COFR's): | | |
| Ship will present 8", 6" or 4" standard 8-bolt US connection flange for fuel hose connection (ANSI Standards): | | |
| Ships size of Fuel Hose Connection | | Pumping Rate: |

(The bunker barge is equipped with 8 inch, 6 inch and 4 inch standard 8-bolt US connection flanges. The barge will attempt to accommodate the vessel, but cannot guarantee they will be able to match other flange sizes. It is the responsibility of the receiving vessel to ensure flange compatibility.)

Location of Bunker Station:

Distance of bunker connection forward from the stern of vessel:

Distance of bunker connection from water line to rail:

Distance of bunker connection from connection to rail:

Side of Vessel (Port or Starboard):

AREA OF CONCERN: The cargo hatches adjacent to the bunker barge on the ship will be considered the "Area of Concern": This area is identified as the above deck ships offshore three stacks of containers in hatch bays directly adjacent to the full length of the bunker barge the entire time the barge is alongside. Typically, this is the area 150 feet forward and aft of the bunkering station.

Additional Notes / Comments:

Appendix M-3

Reliable 7/24 Contact Numbers & E-Mail

“Bunker Barge Operators, Container Terminal Operations Management and Ship’s Agents will exchange and maintain a reliable and current list of their respective 24/7 telephone contact information, this will include e-mail addresses.”

Under Development

DATE

TERMINAL NAME

ADDRESS

ADDRESS

Re: Vessel / Terminal Gantry Crane Safety

To minimize the risk of a vessel allision with a terminal gantry crane, the **LALB Harbor Safety Committee** recommends that all terminal operators with gantry cranes adopt the following Best Practices:

- 1) Prior to a vessel's arrival or departure from a berth, gantry cranes should be positioned close together, near the amidships section of the vessel (avoiding the vessel's bow and stern flair).
- 2) Idle gantry crane booms should be topped up over empty berths. If a boom cannot be topped up, the appropriate pilot station should be notified.
- 3) Gantry cranes should not be moved while a vessel is berthing. Moving a crane disorients and distracts the docking pilot.
- 4) No personnel should be allowed aloft on a gantry crane during berthing or unberthing operations.

Anytime a ship is maneuvered near a berth with gantry cranes, a risk of allision exists. If a ship contacts a dock at any attitude other than flat and parallel, portions of the vessel can extend over the dock. Should a gantry crane happen to be in the overshadow area, an allision resulting in significant loss is likely. The best way to manage and minimize this risk is to **leave gantry cranes in identified "safe areas" on the craneways**. These safe areas will vary from terminal to terminal, but will most often be the craneway areas adjacent to the ship's flatbody between the spring line bollards.

Gantry cranes boomed down over empty berths risk contact with berthing or passing ships. Modern container vessels are generally too tall to pass safely underneath a lowered gantry boom. Also, new generation gantry booms extend more than 200 feet beyond the dock face, which in many cases is well into the federal navigation channel. **Idle gantry crane booms should be topped up over empty berths**. If operations require a boom down over an empty berth, the appropriate pilot station should be notified of the likely duration and subsequent notification should be made when the boom is raised.

Gantry crane booms should not be moved down the craneway while a ship is berthing.

First, any crane movement causes a loss of situational awareness regarding the ship's motion relative to the berth. Second, the crane's audible motion alarms interfere with pilot/tugboat communications. Either could cause the pilot to momentarily lose control of the vessel during the critical part of the mooring. If cranes must be moved to clear bollards for the linemen or for any other reason, they should not be moved during vessel approach until after the ship is against the dock fenders.

Lastly, personnel should not go aloft on gantry cranes during mooring operations.

Additionally, whenever personnel are aloft on gantry cranes that are boomed down over an empty berth, they must appreciate and evaluate the risks posed by passing vessels.

We appreciate your attention to this matter and your help in making the harbor a safer place for us all.

Respectfully,

LA/LB Harbor Safety Committee

Capt. John Z. Strong
Chairman

