

# Harbor Safety Committee

## of the San Francisco Bay Region

*Mandated by the California Oil Spill  
Prevention and Response Act of 1990*

### Harbor Safety Committee of the San Francisco Bay Region

Thursday, May 11th, 2006

Port of San Francisco, Pier 1 Conference Center, San Francisco, California

**Joan Lundstrom**, Chair of the Harbor Safety Committee of the San Francisco Bay Region (HSC), Bay Area Conservation and Development Commission (BCDC); called the meeting to order at 1006. **Alan Steinbrugge**, Marine Exchange of the San Francisco Bay Region (Marine Exchange); confirmed a quorum of the HSC.

The following committee members and alternates were in attendance: **Capt. Marc Bayer**, Tesoro Maritime; **Capt. Paul Bishop**, Harbor Bay Maritime; **Ted Blanckenburg**, AMNAV Maritime Services; **Capt. Pete Bonnebakker**, ConocoPhillips; **Margot Brown**, National Boating Federation; **Sue Cauthen**, San Francisco Tomorrow; **Ron Chamberlain**, Port of Benicia; **Norman Chan**, Port of Richmond; **John Davey**, Port of San Francisco; **David Dwinell**, Army Corps of Engineers (COE); **Cmdr. Gordon Loebel**, United States Coast Guard (USCG); **Daniel Massey**, Foss Maritime; **Richard Nagasaki**, Chevron Texaco; **Capt. Peter Peers**, National Cargo Bureau; **Capt. Robert Pinder**, San Francisco Bar Pilots (Bar Pilots); **Linda Scourtis**, BCDC; **Rich Smith**, Westar Marine Services; **Gerry Wheaton**, National Oceanic and Atmospheric Administration (NOAA).

Also present and reporting to the HSC were **Mike Coyne**, California Office of Spill Prevention and Response, (OSPR); **Capt. Lynn Korwatch**, Marine Exchange; **Ken Leverich**, California State Lands Commission (State Lands); **Paul Milkey**, California Air Resources Board (CARB); **LtCmdr. Ross Sargent**, USCG.

The meeting was open to the public.

### Approval of the Minutes

#### There were corrections to the minutes of April 13th, 2006:

Page four, Ferry Operations Workgroup Report, first bullet, correct the spelling of **Scott Humphrey's** name. In the third bullet the substitute the correct word: "will *affect* the maneuver zone."

Page six, Capt. Beattie's statement, fourth bullet, second sentence, substitute the correct word: "had begun to *hire* former."

It was moved, and seconded, to accept the minutes as amended. The motion passed without discussion or dissent.

### Comments by the Chair – Lundstrom

- Two groups have requested an opportunity to make brief presentations to the HSC. They are the California Senate Sub-Committee on Ports and Goods Movement and the San Francisco Bay Planning Coalition. The senate presentation would be on port growth and increased traffic. The Bay Planning Coalition would like to discuss a proposed underwater power cable that would run from Pittsburg to the old San Francisco Pacific Gas and Electric plant site. Since the comments of the HSC were favorable, invitations will be issued to both groups.
- There will be no HSC meeting in August.
- The rest of **Lundstrom's** comments were about the National Harbor Safety Conference.
- **Lundstrom** moderated the recreational boating panel, and distributed the new kayak safety decals there. There was a great deal of interest, particularly from the New York City delegation, where they have free kayaking programs. Two speakers in that panel said that up to seventeen states are discussing licensing tests for recreational boaters. Representatives from the San Diego and Los Angeles/Long Beach HSC's were very interested in that.

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- A **Mr. Zakowski**, NOAA, spoke on another panel about efforts to integrate all hydrographic information including the Physical Oceanographic Real Time System (PORTS.) **Lundstrom** raised the issue of funding for PORTS, as did many others. The Delaware River PORTS closed down for lack of funds. **Lisa Curtis**, Acting Director OSPR, said that California was getting shortchanged.

## Coast Guard Report – Cmdr. Loebel

- **Capt. William J. Uberti**, USCG, was attending the change of command ceremony at Coast Guard Island. **Vice Adm. Charles D. Wurster** relieved **Vice Adm. Harvey E. Johnson, Jr.**, as the new Commander Coast Guard Pacific Area. **Vice Adm. Johnson** will retire from the Coast Guard and take the job of Deputy Director and Chief Operating Officer of the Federal Emergency Management Agency (FEMA).
- **LtCmdr. Sargent** read from reports that were attached to the minutes.
- **LtCmdr. Sargent** said that Sector San Francisco is beginning to work on drafting an advisory on flat-towing procedures. They will want input from the HSC.

There were questions and comments at this point in the report:

- **Cmdr. Loebel** said that the recent ferry accident would be covered in more detail in next month's report. There were nine minor injuries. The investigation continues, but it could have been a problem with the maneuvering system. Anyone can get a full report when it is completed by filing a Freedom of Information Act request. **Davey** said that it was a Baylink ferry that had allided with Pier 43 ½ on the previous Saturday, May 6<sup>th</sup>.
- **LtCmdr. Sargent** said that vessel names are routinely reported in safety cases, but that the Coast Guard did not want to pinpoint vessels or facilities in describing security cases. **Cauthen** asked if the names are part of the public record and **Cmdr. Loebel** said they were. **Cauthen** said that describing where and who was having the problem could act as a deterrent to poor procedures. **Cmdr. Sargent** said that it was a matter of Coast Guard policy not to mention the names.

**Cmdr. Loebel** continued with the report:

- The crew of the *Arthur Foss* skillfully averted a nasty accident the previous Saturday when a sailing vessel crossed between them and the barge they were towing. The operator of the sailing vessel was found to be above the legal blood alcohol limit. A Rule 9 investigation was in process.
- A proposed rule making for a Transport Worker Identification Card (TWIC) was to be published on May 17<sup>th</sup>. If it was published, then a forty-five day comment period would begin. Consolidation of merchant mariner credentials is part of the proposal. There will be public meetings during the comment period.
- Facilities must submit the names of their workers to the Coast Guard for security screening by May 28<sup>th</sup>, 2006. The Transportation Security Administration (TSA) and Immigrations and Customs Enforcement (ICE) will do the screening. Those who have not been screened by June 28<sup>th</sup>, 2006 will be denied access. Names can be submitted by the Coast Guard's Homeport web portal.

There were questions and comments at this point in the report:

- **Cmdr. Loebel** said that the screening was only intended for long term employees of the facility. Short-term contractors or other incidental visitors could be checked against an authorization list.
- Companies can submit their worker's information facility by facility or directly from their headquarters, as they see fit. They can also mail the information in on compact disc.
- A person can appeal their rejection by following the process described in the *Federal Register*.
- TSA will notify facility operators which employees have been rejected by the screening process.

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- **Capt. Peers** said that names and birth dates are required, but that Social Security numbers are optional. The absence of a Social Security number could lead to delay or an incomplete screening.
- **Capt. Korwatch** said that there was a great deal of conversation about this at the recent meeting of the Navigation Safety Advisory Council (NAVSAC). Representatives from Florida said they could lose as many as forty percent of their workers, while representatives from the Gulf Coast said they would have a hard time crewing tugboats.

**Lundstrom** asked the Coast Guard to prepare a list of answers to frequently asked questions to present at the next meeting.

### Clearinghouse Report – Alan Steinbrugge

**Steinbrugge** read from a report that was attached to the minutes.

### OSPR Report – Coyne

- There would be a meeting of the Escort Tug Action Team on May 22<sup>nd</sup>, to discuss the implementation of new regulations with industry representatives.
- **Coyne** introduced **Jack Geck**, head of OSPR's Marine Safety Unit.

### NOAA Report – Wheaton

- **Darren Wright** is the new PORTS program manager
- Reported problems with charts 18661 and 18662 are being investigated. Coast Guard is checking to see if the aids to navigation are in the right place.
- **Rebecca Smyth**, NOAA, is working on a habitat management project that could have an effect on businesses. There is more information available on the BCDC web site.
- **Capt. Steve Thompson**, former NOAA representative to the HSC, had a stroke. **Wheaton** would try to get more details.
- The Coast Guard is involved in planning the Safe Seas 2006 exercise.

**Lundstrom** asked **Wheaton** to forward information about **Capt. Thompson** to **Steinbrugge**.

### COE Report – Dwinell

- **Dwinell** read from a report that is attached to these minutes.
- **Dwinell** announced his retirement from the COE and from the HSC. He introduced **Rob Lawrence**, COE, who would be taking his place. **Dwinell** said that the HSC's professional demeanor had made them an easy group to work with.

There were questions:

- There is no fixed time period to resolve bid protests. It takes as long as it takes.
- *Essays* will dump dredge materials off Ocean Beach this year.

**Lundstrom** thanked **Dwinell** for his service to the HSC. She said that the COE had not participated in the early years of the committee and that **Dwinell** had helped to make a real difference.

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## **State Lands Commission Report – Leverich**

- Thirty-four million barrels were moved in the previous month.
- There were no spills
- The Prevention First Biennial Symposium is scheduled for September 12<sup>th</sup> and 13<sup>th</sup>, 2006. Vendor booths are still available. Some members of the committee and the present audience might be interested in the demonstration of an underwater fan that removes sediment from under docks.

## **Water Transit Authority, Technical Advisory Committee Report – Cardoza**

There was no report

## **Summary of California Air Resources Board Auxiliary Engine Rule – Milkey**

**Milkey** gave a power point presentation which was attached to the May minutes

There were questions:

- The twenty-four mile limit is defined from the outermost boundary of the contiguous zone, with some exceptions in the vicinity of the Channel Islands.
- There is not much cooperation with other states, but CARB does follow standards set by the International Maritime Organization (IMO).
- The boundary is severable from twenty-four miles, to twelve miles, to three miles, to the dock.

**Lundstrom** thanked **Milkey** and CARB for working with the Navigation Work Group.

## **OSPR Volunteer Service Agreement – Coyne**

- The volunteer service agreement is typically given to oil spill response volunteers to provide them with worker's compensation insurance during actual work, and travel to and from the work. A review of policies and procedures revealed that members of the HSC should have received the same coverage all along. Once members of the committee turn in their completed forms they will receive worker's compensation insurance while on HSC business or travelling to or from such business.

## **Tug Escort Work Group – Lundstrom**

- The proposed changes to tank vessel escort regulations had been amended in compliance with the suggestions made at the April meeting of the HSC.
- Capt. Bayer noted some typographical errors at the top of page three.
- There were no further comments or question. A motion was made, and seconded, to endorse the proposed changes to the regulations. The motion passed without dissent.

## **Navigation Work Group – Capt. Pinder**

There was nothing to report.

## **Ferry Operations Work Group – Davey**

There was nothing to report.

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## **Prevention Though People Work Group – Brown**

- The work group met with representatives of the Pacific Maritime Association (PMA) to discuss their new safety bulletin for best practices when bunker barges are alongside container ships. Not all of the suggestions made by the group were included in PMA's safety bulletin.

**Lundstrom** recognized **Vince Lamaestra**, PMA, among those in attendance.

**Lamaestra** said that their latest bulletin was a result of numerous meetings with over three hundred-fifty stakeholders. They felt they had made a significant effort to memorialize standard operations, communications, and checklists. PMA has scheduled quarterly stakeholder meeting to assess the effectiveness of the bulletin. He asked the HSC to ask the barge operators how they felt about what PMA is doing.

**Tim Engle**, Foss Maritime, said that they had seen a marked improvement under the new bulletin and thanked PMA for their outreach to the industry. **Rick Holly**, OSPR, said that he had noticed a much keener awareness and use of safety checklists while monitoring fuel oil transfers. **George Clark**, Harley Marine, thanked PMA for their efforts.

## **Plan Work Group – Scourtis**

- The update is on schedule.

## **PORTS Work Group – Capt. Bayer**

- The group would meet at 1300 after the HSC meeting.

## **PORTS Report – Steinbrugge**

- New modems have been purchased. They require a fixed Internet Protocol (IP) address to work. The phone company process for assigning an address could take up to eight weeks.
- Work continues on the AMORCO current sensor.

## **Public Comment**

There was none.

## **Old Business**

There was none.

## **New Business**

- **Capt. Korwatch** gave a brief run down of issues discussed at the NAVSAC meeting. They included: standardized vessel bridge design, Automated Identification Systems (AIS) and rules of the road, the operational readiness of electronic charts, the impact of whales and wind farms on vessel routing, and keeping the reflective radar plotting test.
- The biggest issue discussed was the future of LORAN-C, a radio navigation service provided by the Coast Guard. The Coast Guard would like to get out from under the thirty million dollar a year price tag. Other people like the redundancy of the system, since the new technologies rely on cell-phone networks that are easily disrupted.

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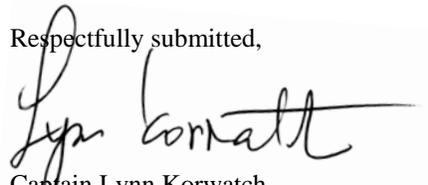
## **Next Meeting**

**Lundstrom** said that the next meeting would convene at 1000, June 8th, at the Seventh Floor Conference Room, Port of Oakland, 530 Water Street, Oakland California.

## **Adjournment**

A motion to adjourn was made and seconded. There was no discussion. The motion passed unanimously. The meeting adjourned at 1153.

Respectfully submitted,



Captain Lynn Korwatch  
Executive Secretary

# USCG SECTOR SAN FRANCISCO

## PREVENTION / RESPONSE - SAN FRANCISCO HARBOR SAFETY STATISTICS

**April-06**

### PORT SAFETY CATEGORIES

**TOTAL**

<b>1. Total Number of Port State Control Detentions for period:</b>	<b>1</b>
SOLAS (0), MARPOL (0), ISM (0), ISPS (1)	
<b>2. Total Number of COTP Orders for the period:</b>	<b>6</b>
Navigation Safety (1), Port Safety & Security (5), ANOA (0)	
<b>3. Marine Casualties (reportable CG 2692) within SF Bay:</b> Allison/Collision (0), Fire (0),	<b>3</b>
Grounding (1), Sinking (1), Steering (0), Propulsion (1), Personnel (0), Other (0)	
<b>4. Total Number of (routine) Navigation Safety related issues / Letters of Deviation</b>	<b>2</b>
Radar (0), Steering (0), Gyro (1), Echo sounder (0), AIS (1), AIS-835 (0)	
<b>5. Reported or Verified "Rule 9" or other Navigational Rule Violations within SF Bay</b>	<b>1</b>
<b>6. Significant Waterway events or Navigation related cases for the period:</b>	<b>0</b>
<b>7. Maritime Safety Information Bulletins (MSIBs):</b>	<b>0</b>
<b>Total Port Safety (PS) Cases opened for the period:</b>	<b>23</b>

### MARINE POLLUTION RESPONSE

**TOTAL**

Total Oil/Hazmat Pollution Incidents within San Francisco Bay for Period	<b>11</b>
<b>* Source Identification (Discharges and potential Discharges):</b>	
<b>TOTAL VESSELS</b>	<b>5</b>
Commercial Vessels	<b>1</b>
Public Vessels (Military)	<b>1</b>
Commercial Fishing Vessels	<b>0</b>
Recreational Vessels	<b>3</b>
<b>TOTAL FACILITIES</b>	<b>4</b>
Regulated Waterfront Facilities	<b>0</b>
Other Land Sources	<b>4</b>
<b>UNKNOWN/UNCONFIRMED</b>	<b>2</b>
<b>*Spill Information</b>	
Pollution Cases Requiring Clean-up	<b>5</b>
Federally Funded Cases	<b>2</b>
<b>Oil Discharge and Hazardous Materials Release Volumes by Spill Size Category:</b>	
1. Spills < 10 gallons	<b>4</b>
2. Spills 10 - 100 gallons	<b>3</b>
3. Spills 100 - 1000 gallons	<b>1</b>
4. Spills > 1000 gallons	<b>0</b>
5. Spills - Unknown	<b>3</b>
<b>Total Oil Discharge and/or Hazardous Material release volumes:</b>	
1. Estimated spill amount from Commercial Vessels:	<b>900 gal</b>
2. Estimated spill amount from Public Vessels:	<b>1 gal</b>
3. Estimated spill amount from Commercial Fishing Vessels:	<b>0 gal</b>
4. Estimated spill amount from Recreational Vessels:	<b>17 gal</b>
5. Estimated spill amount from Regulated Waterfront Facilities:	<b>0 gal</b>
6. Estimated spill amount from Other Land Sources:	<b>59 gal</b>
7. Estimated spill amount from Unknown sources:	<b>5 gal</b>

<b>Penalty Action:</b>	
Civil Penalty Cases for Period	<b>0</b>
Notice of Violations (TKs)	<b>2</b>
Letters of Warning	<b>1</b>
<b>** SIGNIFICANT PORT SAFETY &amp; SECURITY (PSS) CASES **</b>	
<b>* A. MARINE CASUALTIES - PROPULSION / STEERING</b>	
<b>Marine Casualty - Loss of Propulsion, M/V CHIEF; Tuvalu (22 Apr):</b> Vessel lost propulsion while departing Anchorage 9 enroute to Singapore. A COTP Order was issued requiring a classification society survey to verify proper operations of steam systems & crew proficiency. Survey was received and COTP Order was rescinded 23 April. Investigation pends.	
<b>* B. MARINE CASUALTIES - VESSEL SAFETY CONDITIONS</b>	
<b>Marine Casualty - Grounding, Tug NAKOA (U.S) &amp; Barge RIGEL (29 Apr):</b> Tug and barge (carrying 80,000 bbls of Alkylate fuel additive) dragged anchor in Anchorage 22 and grounded. CG inspector and investigator, along with tug's Oil Spill Response Organization, responded to scene. Contract divers were on standby. Rising tide refloated tug and barge which transited to Benicia with 2-tug escort. No injuries or pollution. Underwater survey found no damage. Investigation pends.	
<b>* C. COAST GUARD - GENERAL SAFETY/SECURITY CASES</b>	
<b>Navigation Safety - Letter of Deviation (LOD) for Inop Gyrocompass M/V SHINYO CHALLENGE; Hong Kong (03 Apr):</b> LOD issued to inbound vessel for inop gyrocompass. Vessel planned to have technician make repairs once berthed at Crockett. Gyrocompass repaired; case closed.	
<b>Container break-in/theft at Oakland terminal (07 Apr):</b> CG received report that a 20-ft container's security seals were broken & approx \$78K in coins had been taken from within container. CG met w/ Facility Security Officer, notified assisting federal agencies & worked with Oakland police who are leading the investigation.	
<b>Security Plan - COTP Order Issued to M/V for Security Plan (08 Apr):</b> Customs & Border Protection notified CG of 21 Chinese stowaways discovered aboard container vessel during a boarding in Seattle on 4/5. Stowaways were removed from the vessel in Seattle and released into the custody of Immigration & Customs Enforcement. Vessel arrived in Oakland on 4/9 and CG, CBP & ICE coordinated efforts. A COTP Order was issued requiring the vessel to conduct an external security audit prior to departing Oakland. Written verification of the security audit was received from vessel's Recognized Security Organization on 4/10 and the COTP Order was rescinded.	
<b>Navigation Rule 9 violation (13 Apr):</b> SF Bar Pilot aboard outbound M/V CHEROKEE BRIDGE reported a 32-ft motorboat had crossed M/V's bow and remained obscured from view for 3-4 minutes, causing pilot to bring M/V to complete stop to avoid collision. Motorboat was last seen heading for SF waterfront and was not found. Investigation pends.	
<b>Navigation Safety - LOD for INOP AIS, M/V FESCO MARINA; Malta (14 Apr):</b> LOD issued to inbound vessel for inop AIS, requiring repairs to be made prior to departure. Repairs made.	
<b>Facility Security Breach - Richmond (18 Apr):</b> A man scaled facility's fence, was apprehended by facility security, and transferred to the custody of Richmond police. Richmond police believed man was suffering from mental illness and transported him to hospital.	
<b>Foreign Vessel Detention - T/V TORM CAMILLA; Denmark (28 Apr):</b> Vessel detained at Anchorage 9 for failing 2 fire drills during Cert. of Compliance renewal exam. COTP Order issued requiring vessel to conduct fire drill to satisfaction of CG prior to commencing cargo ops upriver. Satisfactory fire drill conducted, COTP Order rescinded 28 April.	
<b>Security Plan - COTP Order Issued to M/V for Security Plan (28 Apr):</b> Vessel scheduled to call at Redwood City in early May 2006. Because vessel master failed to make a timely report of a deserting crew member while in Stockton last December, a COTP Order was issued requiring an approved security plan prior to entering port. Upon port entry, vessel was to proceed to anchorage for a Customs & Border Protection boarding and adhere to approved secured plan. Vessel complying and remains at anchor awaiting pier space.	

<b>SIGNIFICANT INCIDENT MANAGEMENT DIVISION (IMD) CASES:</b>	
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<b>Sunken Barge - Derrick Barge HOLLAND (06 Apr):</b> Barge sank in Mormon Slough near Stockton and discharged approx 900 gallons of diesel and motor oil into San Joaquin River. Oil Spill Liability Trust Fund was opened and contractor was hired to conduct cleanup as well as raise barge. Approx 2000 additional gallons of diesel and motor oil were removed from barge after raising. Case had moderate local media interest. CG issued Notice of Violation to Responsible Party, who is required to pay cleanup costs. Investigation open.	
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<b>SIGNIFICANT PORT SAFETY INFORMATION or EXERCISES</b>	
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None.	
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<b>Transits include: all inbound, outbound &amp; intrabay transits</b>	<b># Transits Last month</b>	<b># Transits this month</b>	<b>Pct chg fm last month</b>	<b># Transits a year ago</b>	<b>Pct chg fm a year ago</b>
<b>Vessel Category</b>	<b>Mar-06</b>	<b>Apr-06</b>		<b>Apr-05</b>	
<b>PUBLIC</b> (incl ACOE, Research, USCG, Naval etc.)	199	191	-4%	180	6%
<b>TANKER</b> (incl: ITB's)	258	185	-28%	176	5%
<b>CARGO</b> (incl container, bulker, & freight vsls)	823	383	-53%	442	-13%
<b>TUGs with TOWS</b> (incl: ATB's and tank barges)	1889	2126	13%	2040	4%
<b>FERRIES</b> (incl both commuter and bay cruise ferries)	5871	6296	7%	6501	-3%
<b>MISC</b> (incl: school ships, recreation, fishing, & unknown vsls)	1583	1402	-11%	1080	30%
<b>PASSENGER</b> (incl cruise ships, and smaller charter vessels)	44	56	27%	86	-35%
<b>TOTAL vsl transits</b>	<b>10667</b>	<b>10639</b>	<b>0%</b>	<b>10505</b>	<b>1%</b>

# San Francisco Bay Clearinghouse Report For April 2006

## San Francisco Bay Region Totals

			<u>2005</u>
Tanker arrivals to San Francisco Bay	71		57
Tank ship movements & escorted barge movements	352		312
Tank ship movements	205	58.24%	168
Escorted tank ship movements	99	28.13%	85
Unescorted tank ship movements	106	30.11%	83
Tank barge movements	147	41.76%	144
Escorted tank barge movements	72	20.45%	85
Unescorted tank barge movements	75	21.31%	59
Percentages above are percent of total tank ship movements & escorted barge movements for each item.			
Escorts reported to OSPR	0		1

<u>Movements by Zone</u>	<u>Zone 1</u>	<u>%</u>	<u>Zone 2</u>	<u>%</u>	<u>Zone 4</u>	<u>%</u>	<u>Zone 6</u>	<u>%</u>	<u>Total</u>	<u>%</u>
Total movements	214		331		0		177		722	
Unescorted movements	102	47.66%	169	51.06%	0	0.00%	87	49.15%	358	49.58%
Tank ships	70	32.71%	106	32.02%	0	0.00%	45	25.42%	221	30.61%
Tank barges	32	14.95%	63	19.03%	0	0.00%	42	23.73%	137	18.98%
Escorted movements	112	52.34%	162	48.94%	0	0.00%	90	50.85%	364	50.42%
Tank ships	66	30.84%	95	28.70%	0	0.00%	45	25.42%	206	28.53%
Tank barges	46	21.50%	67	20.24%	0	0.00%	45	25.42%	158	21.88%

### Notes:

- Information is only noted for zones where escorts are required.
- All percentages are percent of total movements for the zone.
- Every movement is counted in each zone transited during the movement.
- Total movements is the total of all unescorted movements and all escorted movements.

# San Francisco Bay Clearinghouse Report For 2006

## San Francisco Bay Region Totals

			<u>2005</u>
Tanker arrivals to San Francisco Bay	268		718
Tank ship movements & escorted barge movements	1,325		3,650
Tank ship movements	754	56.91%	2,149
Escorted tank ship movements	414	31.25%	997
Unescorted tank ship movements	340	25.66%	1,152
Tank barge movements	571	43.09%	1,501
Escorted tank barge movements	296	22.34%	760
Unescorted tank barge movements	275	20.75%	741
Percentages above are percent of total tank ship movements & escorted barge movements for each item.			
Escorts reported to OSPR	4		16

<b>Movements by Zone</b>	<b>Zone 1</b>	<b>%</b>	<b>Zone 2</b>	<b>%</b>	<b>Zone 4</b>	<b>%</b>	<b>Zone 6</b>	<b>%</b>	<b>Total</b>	<b>%</b>
Total movements	837		1,309		0		754		2,900	
Unescorted movements	399	47.67%	650	49.66%	0	0.00%	360	47.75%	1,409	48.59%
Tank ships	275	32.86%	431	32.93%	0	0.00%	192	25.46%	898	30.97%
Tank barges	124	14.81%	219	16.73%	0	0.00%	168	22.28%	511	17.62%
Escorted movements	438	52.33%	659	50.34%	0	0.00%	394	52.25%	1,491	51.41%
Tank ships	253	30.23%	393	30.02%	0	0.00%	208	27.59%	854	29.45%
Tank barges	185	22.10%	266	20.32%	0	0.00%	186	24.67%	637	21.97%

### Notes:

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3. Every movement is counted in each zone transited during the movement.
4. Total movements is the total of all unescorted movements and all escorted movements.

**Harbor Safety Committee  
Of the San Francisco Bay Region**

**Report of the  
U.S. Army Corps of Engineers, San Francisco District**

**May 11, 2006**

**1. CORPS 2006 O&M DREDGING PROGRAM**

The following is this years O & M dredging program for San Francisco Bay.

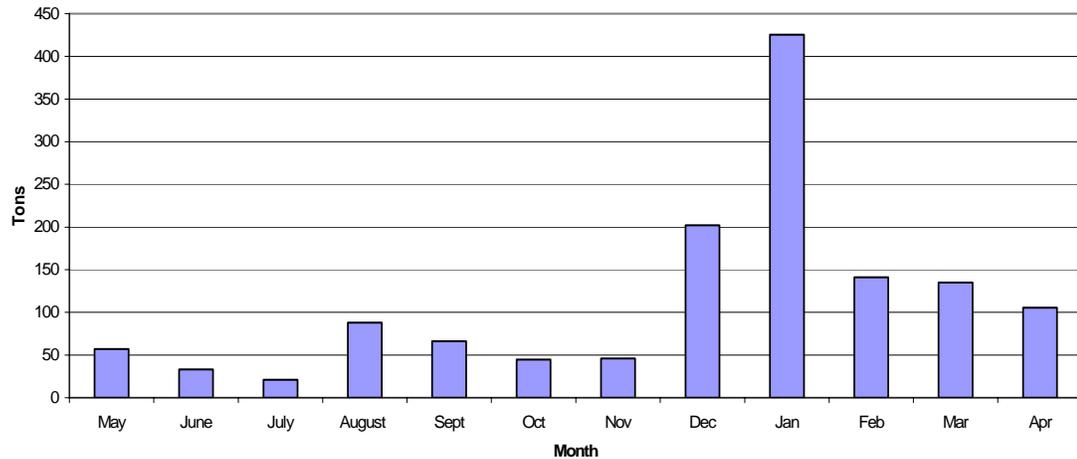
- a. **Main Ship Channel** – Scheduled to be dredged with the government dredge “Essayons” and will be disposed at SF-08 and off Ocean Beach. Dredging is scheduled to start by the end of next week.
- b. **Richmond Outer Harbor and Southampton Shoal** – Scheduled to be dredged with the government dredge “Essayons” and will be disposed at the Alcatraz dredged Material Disposal Site (SF-11). Dredging is scheduled to start first part of June.
- c. **Richmond Inner Harbor** – The material is scheduled to go to the Ocean. Hamilton was considered as an alternate disposal site, but it will not be ready with the off loader by the time this project is dredged. Corps is currently soliciting bids and the bid opening was scheduled for May 8, 2006. However, there has been a bid protest and that has delayed the bid opening 30 days or until June 8, 2006.
- d. **Oakland Outer and Inner Harbor** – The Corps has issued a modification to the Oakland 50 foot deepening contract 3 B/C to clean up the Oakland Inner and Outer Harbor to 46 feet. This will be about 200,000 cubic yards of material. Any small amount of maintenance material will be included in this contract. This material will go to the Montezuma Wetlands Restoration Project. No O & M contract will be let for this year.
- e. **Suisun Bay Channel** – The government dredge “Yaquina” started Pinole Shoal on approximately October 1, 2005 and then continued on to dredge the Suisun Bay Channel and New York Slough. Because the “Yaquina” was not able to finish Pinole Shoal, Suisun Bay Channel and New York Slough, the Corps was able to get some additional days on the government dredge “Essayons” to complete these projects. Corps plans to combine Pinole Shoal and the Suisun Bay Channel in a single contract this year. We plan to issue the bid solicitation on May 12, 2006 and award this contract in the June 2006 timeframe. Dredging should start about mid June. Material will be disposed of in bay.

- f. **Pinole Shoal** – The “Yaquina” started dredging Pinole Shoals on October 1, 2005. The “Yaquina” was not able to complete this project and approximately 60,000 cubic yards remained to be dredged. Because the “Yaquina” was not able to complete this project, the Corps was able to get some additional days on the government dredge “Essayons” to complete this project. The “Essayons” started dredging on November 7, 2005. Corps plans to combine Pinole Shoal and the Suisun Bay Channel in a single contract this year. We plan to issue the bid solicitation on May 12, 2006 and award this contract in the June 2006 timeframe. Dredging should start about mid June. Material will be disposed of in bay.
- g. **Redwood City** – Corps performed full testing on this material in FY05 – The Corps was able to reprogram approximately \$1,300,000 in funds in order to start dredging Redwood City in FY05. The contract was awarded to Dutra on September 13 and the notice to proceed was issued on September 23. Dutra started dredging Redwood City on October 31, 2005. The Corps consulted with the National Marine Fishes Service (NMFS) to allow dredging to continue into December. However, NMFS placed a 390,000 cubic yard limit on this project. We completed dredging on December 30, 2005 and barring on December 31, 2005. Hydrographic survey was completed the first part of January 2006.
- h. **San Bruno Shoal** – The San Bruno Shoal is officially part of the Redwood City Project. This area does not normally require dredging. However, this year it has shoaled and is limiting access to the rest of the project. This area was not included in the Redwood City Contract. To alleviate this problem, the Corps was issuing a contract to perform a knockdown in this area. However, the area has continued to shoal and it appeared that a knockdown would not be effective. Therefore, the Corps had the government dredge “Essayon” dredge this material and take it to SF-10 and SF-11.

## 2. DEBRIS REMOVAL

The total tonnage of debris collected on the San Francisco Bay for April was 106 tons; this is down from the 135 tons collected in March. However, this is still about twice that collected last April.

Debris Removal  
2005/2006



### 3. UNDERWAY OR UPCOMING HARBOR IMPROVEMENTS

#### a. Oakland 50-ft –

The project goals are to get the Outer Harbor down to 46 feet first, then to get the Inner Harbor down to 46 feet. After the 46 foot depth is achieved, then we will take the project down to the 50-foot depth. By phasing the project in this way the project sponsor will get a greater utilization until the 50-foot depth is achieved. We continue to make progress, but there have been some delays. The Corps has four contracts underway. The first contract is for the containment structure for middle harbor. The work for this contract is complete. The second contract is the dredging contract. It combined the dredging of the Outer Harbor to an interim depth of 46 feet and the Inner Harbor to an interim depth of 46 feet. The Corps has issued a modification to this contract (3 B/C) to clean up approximately 200,000 cubic yards of material. Any small amount of maintenance material will be dredged under this contract and taken to Montezuma with the new work material. We dredged approximately 3,400,000 cubic yards or more under this contract. The third contract is a marine construction contract for the last phase on the Inner Harbor Turning Basin. This contract is scheduled to complete this summer.

The Corps awarded an additional contract. This one is to deepen the entrance channel to 50 feet. This material is scheduled to go to the Montezuma Wetlands Restoration Project. This contract was awarded on October 18, 2005. Dredging under this contract started in January.

The Corps is preparing to award another contract to dredge the remainder of the project in the Inner and Outer Harbors from 46 feet to 50 feet. This contract is expected to take approximately two years to compete. This contract will go out for solicitation pending resolution of two bid protests.

There is approximately 48 million dollars in the budget for this year.

#### **4. EMERGENCY (URGENT & COMPELLING) DREDGING**

There has been no emergency dredging in FY 2005 and the Corps is working hard in its dredging program to try to eliminate the need for emergency dredging. However, we did perform a knockdown on a shoal in the Redwood City Channel in FY2005.

The Corps is preparing an Indefinite Delivery Indefinite Quantity (IDIQ) contract to perform knockdowns for shoaling incidents that are too small for dredging, but can limit the depth of the channel. This contract is for all deep draft Federal Channels. This will allow the Corps to reduce the high of some shoaling much more quickly than in the past.

#### **5. OTHER WORK**

##### **San Francisco Bay to Stockton**

##### **Project continues to move forward**

The San Francisco District is looking at a General Re-evaluation Report (GRR) to deepen the John F. Baldwin Ship and Stockton Deep Water Ship Channels. This would be only 1 or 2 feet. Division has given ok to proceed with study. The Corps received approximately \$250,000 for this project in FY 05. For FY06 there is approximately \$200,000 in the budget and another \$67,000 is scheduled to be provided by the sponsor under the cost share. The Corps has finalized the scope for the full General Re-evaluation Report (GRR) and we have completed the Project Management Plan. The Project Management Plan and the Design Agreement were approved by the Port of Stockton's Board on April 5, 2004. Contra Costa County has existing agreement in place with the Port of Stockton that they can utilize for this project. The goal is to complete the GRR by 2007. The San Francisco District has brought in the Corps Engineer Research and Development Center (**ERDC**) to address the issue of no return water from a dredge material disposal site that is being required by the Central Valley Regional Water Quality Control Board. The hydrographic survey has been completed and a salinity model for the non project condition has been completed and we are planning to complete the salinity model for the 40 foot project condition by January 2006. We have flown the orthophotos (corrected photo map) of the project while the vegetation was at a minimum. We were able to reprogram some funds which enabled us to complete this work. We are looking at how to address the areas of low dissolved oxygen and agriculture runoff for portions of this project.

The San Francisco District is working with the Sacramento District to help develop a Long Term Management Strategy (LTMS) the dredging and disposal of dredged material for the Delta. We have met with the agencies that developed the San Francisco Bay LTMS to see the best was to go about this and to learn from their experiences. There is approximately \$225,000 in the budget for the Delta LTMS in the budget this year. The Project Manager for the Delta was in the Sacramento District, but this position has been moved to the San Francisco District. The Port of

Stockton and Contra Costa County have been incorporated into the LTMS group. The Division will have a Project Manager to coordinate all of the Corps issue in the Delta.

### **Sacramento River Deep Water Ship Channel Deepening**

**Status – Project has continued to move forward at a slow pace. The Sponsor was able to come up with approximately \$50,000 to continue this project.**

The San Francisco District has taken over the Sacramento River Deep Water Ship Channel Deepening Project from the Sacramento District. This project is looking to continue the authorized deepening project of the channel from 30 feet to 35 feet. The Corps has received approximately \$350,000 for this year. The Corps developed a Project Management Plan (PMP) and the Port concurred to initiate the study in July 2002. We are doing a Limited Re-evaluation Report (LRR) that focuses on economics and updating the environmental documentation. The studies should take approximately 24 months. We are continuing to work on this project. We have awarded the contract for the salinity model and have received the draft report. The initial estimate is we will need capacity to dispose of approximately 6.5 million cubic yards of material. In reviewing the project we have had to reestablish the channel location and the review shows that some portions of the channel were never built to the required specifications. The San Francisco District has brought in the Corps Engineer Research and Development Center (ERDC) to address the issue of no return water from a dredge material disposal site that is being required by the Central Valley Regional Water Quality Control Board. We have developed a sampling and analysis plan (SAP) for sediment testing and it has been submitted to the Central Valley Regional Water Quality Control Board for review and approval. We have flown the orthophotos (corrected photo map) of the project while the vegetation was at a minimum. The data is being processed. The maps are due in May. The hydrographic survey has been completed. This project is not in this year's budget. However, the Port of Sacramento and the Port of Oakland want to make progress in FY 07

### **Hydrographic Survey Update**

#### **Address of Corps' web site for completed hydrographic surveys**

<http://www.spn.usace.army.mil/hydrosurvey/>

Main Ship Channel – 18-19 April 2006

Pinole Shoals – complete 23, 28 February & 15-17, 20 March 2006

Suisun Bay Channel – 22-24 & 27-31 March 2006

Suisun Bay Channel Bullshead 8 March 2006

Redwood City – complete – January 4-5, 8 & 12, 2006

San Bruno Shoal – complete – November 21 & 29, 2005

Oakland Inner and Outer Harbor – complete November 30 and December 5-9

Mr. Paul Chen of the Hydro Survey has resigned from the Corps. Paul was instrumental in getting the Corps hydro survey web site up and running.



# Summary of ARB Regulation for Auxiliary Diesel Engines on Ocean-Going Vessels



**S.F. Harbor Safety Committee  
May 11, 2006**

**California Environmental Protection Agency**



**Air Resources Board**

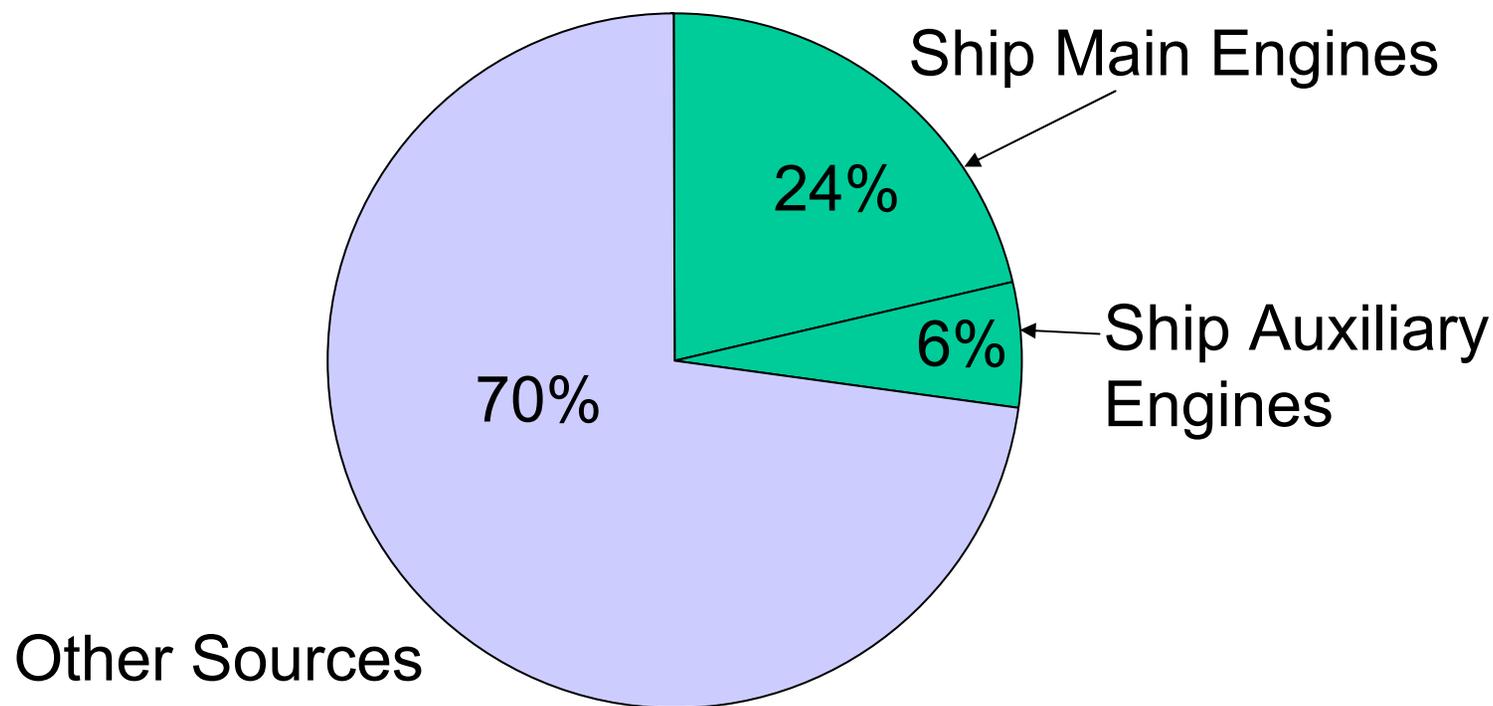
# Background



# Need for Emission Reductions from Ocean-Going Vessels

- ◆ Large and growing source of PM, NO<sub>x</sub>, and SO<sub>x</sub> emissions
- ◆ Emissions concentrated near population centers
- ◆ Significant localized and regional impacts
- ◆ Major contributor to PM mortality and cancer risk
- ◆ Major contributor to ambient levels of PM and ozone

# Ocean-Going Vessels are a Large Source of Statewide Diesel PM Emissions\*



\* Sources: 2003 ARB Emissions Inventory and 2005 Ship ISOR

# Significant Contribution to Community Health Risks

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- ◆ Ports of Los Angeles and Long Beach Exposure Assessment Study found ship auxiliary emissions were most significant contributor to high near source risk levels

<b>Cancer Risk Level (chances/million)</b>	<b>Square Miles Impacted</b>	<b>Population Affected</b>
Risk > 200	3	46,000
Risk > 100	20	220,000
Risk > 10	250	2,000,000

# Ship Auxiliary Engine Regulation



# Regulatory Development Process

- ◆ Began process in 2001 with the formation of the Maritime Working Group
- ◆ Five public workshops and work group meetings
- ◆ Input from ship operators, ports, engine manufacturers, government agencies, environmental & community groups
- ◆ Approved at Board Hearing on December 2006



# Applies to Ocean-Going Vessels Visiting California Ports

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## Port Visits by Vessel Type

- ◆ Container Ships – 49%
- ◆ Tankers – 19%
- ◆ Bulk Carriers – 14%
- ◆ Auto Carriers – 8%
- ◆ Cruise Ships – 7%
- ◆ Reefer Ships – 3%

## Vessel Statistics

- ◆ 10,000 visits annually
- ◆ 2,000 unique vessels annually
- ◆ Majority visiting the ports of LA, Long Beach, and Oakland



# Regulation Applies to Auxiliary Engines on Ocean-going Vessels

## Motor-Ship



## Diesel-Electric



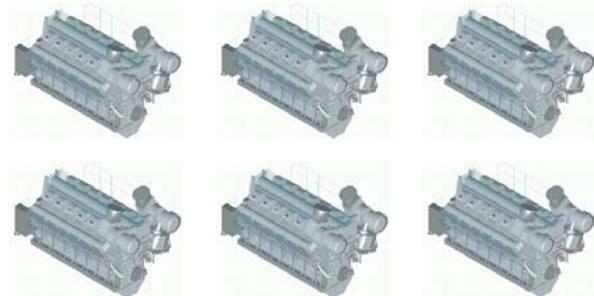
**Main Engine  
for Propulsion  
(not covered)**



**Auxiliary  
Engines for  
Electricity  
(covered)**

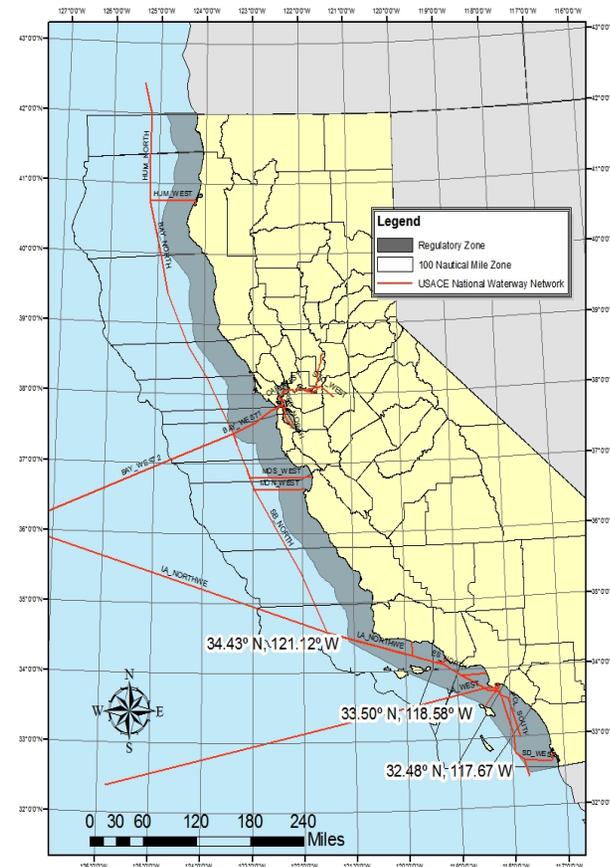


**Engines Provide Electricity for both  
Propulsion & Shipboard Uses (covered)**



# Regulation Applies within 24 Nautical Miles of the California Coastline

- Retains the majority of health benefits
- Reduces the cost
- Utilizes international boundary



# Emission Limit Based on Use of Cleaner Distillate Marine Fuels

- ◆ January 1, 2007 Emission Limit
  - Use marine gas oil
  - Use marine diesel oil with a 0.5% sulfur limit
  - Use equally effective emission control strategies
  
- ◆ January 1, 2010 Emission Limit
  - Use marine gas oil with a 0.1% sulfur limit
  - Use equally effective emission control strategies
  - Fuel supply review in 2008

# Alternative Control of Emissions (ACE Provision)

- ◆ Operators may comply using alternative emission control strategies
- ◆ Must achieve equivalent or greater reductions
- ◆ Applicants may use fleet average emission reductions
- ◆ Special provision encourages the use of shore-side power

# Noncompliance Fee Provision

- ◆ Option to pay a noncompliance fee
  - Unexpected redirection to a California port
  - Inability to purchase complying distillate fuel
  - Fuel found to be noncompliant enroute to CA
  - Extension needed for vessel modifications
  - Vessel modifications needed on infrequent visitor
- ◆ Funds to be used for port air quality projects

# Safety Considerations

- ◆ ARB staff investigated safety concerns
  - Discussions with engine manufacturers, ship operators, USCG, S.F. Harbor Safety Committee, and DFG/OSPR
  - Vessels currently perform fuel switching
  - Fuel switching was routinely practiced in past for port visits
- ◆ Regulation designed to address concerns
  - Fuel switching not required
  - Fuel switching to be conducted outside of 24 nm boundary
  - Safety exemption included in the regulation

# Enforcement of the Proposed Regulation

- ◆ ARB staff will enforce by inspecting records and sampling fuels
- ◆ Fines will be issued for violations

# Impacts



# Air Quality Benefits

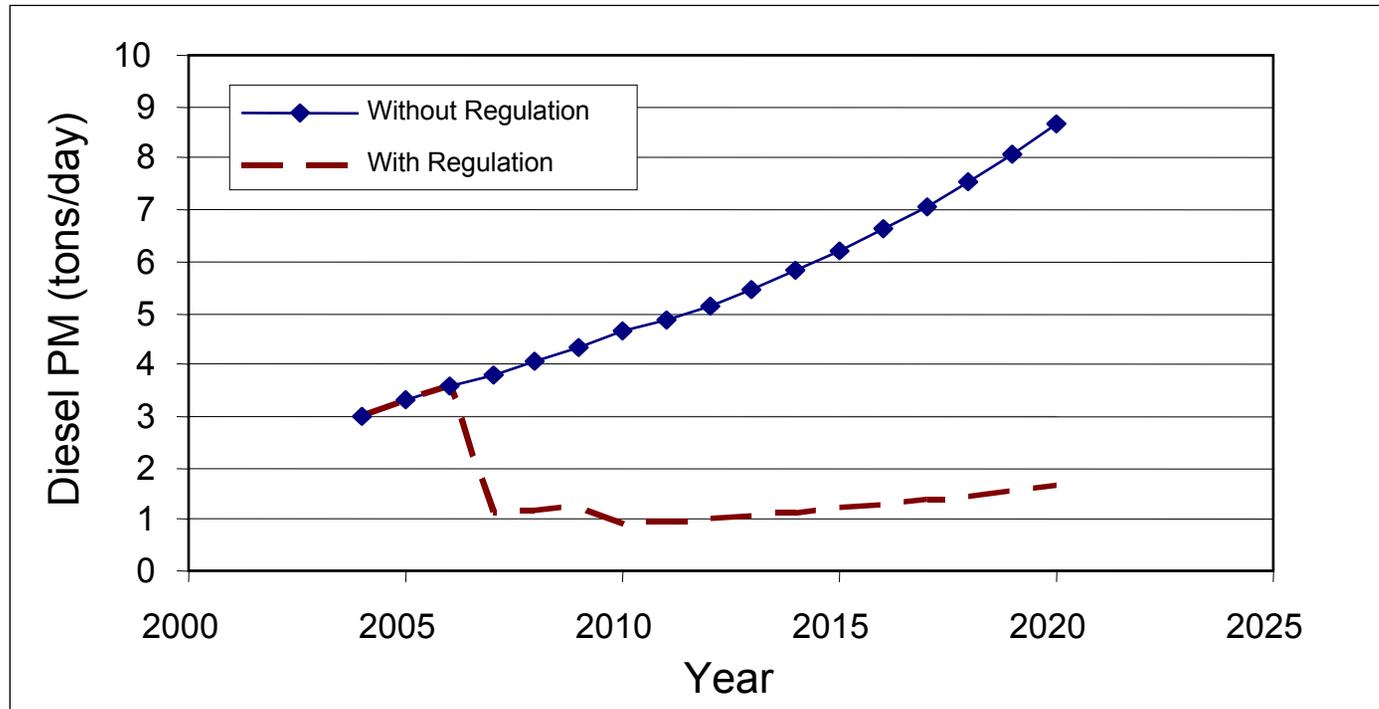
- ◆ Large reductions in diesel PM, NO<sub>x</sub>, & SO<sub>x</sub>
- ◆ Reductions in ozone and “secondarily formed” PM (PM formed in the atmosphere)
- ◆ Reduced cancer risk to populations near California ports
- ◆ Avoid 520 premature deaths by 2020 due to diesel PM reductions
- ◆ Significant additional health benefits from NO<sub>x</sub> and SO<sub>x</sub> reductions

# Estimated Percent Emission Reductions\*

Pollutant	2007	2010
Diesel PM	75%	83%
NOx	6%	6%
SOx	80%	96%

\* Emission reductions estimated from the use of 0.5% sulfur MGO in 2007, and 0.1% sulfur MGO in 2010, relative to the use of heavy fuel oil at 2.5% sulfur

# Estimated Emissions of Diesel PM with and without the Regulation in the 24 nm Zone



Estimated Emission Reductions (TPD)

# Next Steps for Regulation

- ◆ Modified regulation released for a 15-day public comment period
  - Safety exemption added
- ◆ “FSOR” responding to formal public comments will be submitted to OAL
- ◆ OAL has 30 days to approved or reject regulatory package
- ◆ If approved by OAL, regulation generally becomes law in 30 days

# Future Plans to Reduce Ship Emissions

- ◆ ARB Emission Reduction Plan for Ports & Goods Movement Approved in April
  - Plan is part of BT&H/Cal-EPA GMAP
  - “<http://www.arb.ca.gov/planning/gmerp/gmerp.htm>”
- ◆ Strategies to be pursued
  - Cleaner fuels in main engines
  - Dedicate cleaner new build vessels to CA service
  - Retrofit of existing engines
  - Shore-side power
  - Operational Controls (i.e. speed reduction zones)

# Ships In/Near Port

- ✓ ARB rule for cleaner auxiliary engine fuel (adopted December 2005)
- ◆ Strategy to cut dockside emissions
  - Use of plug-in shore power
  - Alternative at-dock technologies (like channeling exhaust through barge-mounted control devices)

# Targets for At Dock Controls



- Plan seeks to increase percentage of ship visits that use shore-side power or alternatives

	Ship Visits by Year		
	2010	2015	2020
Shore Power	20%	60%	80%
Alternate Measures	20%	40%	20%

# Ships at Sea

- ◆ Cleaner Propulsion engine fuel
- ◆ Retrofit controls for existing engines
- ◆ Bring cleaner ships to California service
  - Step 1: 30% lower NO<sub>x</sub> and PM emissions than existing standards, beginning 2010
  - Step 2: Best technology at 90% NO<sub>x</sub> and at least 60% PM control, beginning 2015

# Ships at Sea



- Plan seeks to increase the percentage of ship visits by vessels using cleaner technology

## Ship Visits by Year

	2010	2015	2020
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30% Lower than Current Standards	20%	50%	40%
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Best Available Controls	--	25%	50%
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# ARB Contacts for Auxiliary Engine Regulation

Staff	Title	Email & phone
Daniel Donohoue	Chief, Emissions Assessment Branch	ddonohou@arb.ca.gov (916) 322-6023
Erik White	Manager, Technical Analysis Section	ewhite@arb.ca.gov (916) 327-7213
Paul Milkey	Staff Air Pollution Specialist	pmilkey@arb.ca.gov (916) 327-2957
Floyd Vergara	Legal Counsel	fvergara@arb.ca.gov (916) 445-9566

Note: Staff report and regulation available at ARB's website at:  
<http://www.arb.ca.gov/marine>

TITLE 14, CALIFORNIA CODE OF REGULATIONS  
SUBDIVISION 4. OFFICE OF SPILL PREVENTION AND RESPONSE  
CHAPTER 4. VESSEL REQUIREMENTS  
SUBCHAPTER 1. TANK VESSEL ESCORT REGULATIONS  
FOR THE SAN FRANCISCO BAY REGION  
SECTIONS 851.1 through 851.10.1

Amended April 20, 2006

851.1           Effective Date of this Subchapter

No Change.

Authority:       Sections 8670.17.2(a), and 8670.23.1(d), Government Code.

Reference:       Sections 8670.17.2(b), 8670.23.1 (d), (e)(1) and (h) Government Code.

851.2           Purpose and Scope

No Change.

Authority:       Sections 8670.17.2(a) and 8670.23.1(d), Government Code.

Reference:       Sections 8670.17.2(b) and 8670.23.1(e)(1), Government Code.

851.3           Definitions

No Change.

Authority:       Sections 8670.3, 8670.17.2(a) and 8670.23.1(d), Government Code.

Reference:       Sections 8670.3 and 8670.17.2(a), Government Code.

851.4           Applicability

No Change.

Authority:       Sections 8670.17.2(a) and 8670.23.1(d), Government Code.

Reference:       Section 8670.23.1(e)(1), Government Code, ~~and~~  
~~33 USC 2002(b) and 2007, and 33 CFR 157.03(kk).~~

851.5           Escort Zone Requirements

No Change.

Authority:       Sections 8670.17.2(a) and 8670.23.1(d), Government Code.

Reference:       Section 8670.17.2(a), Government Code

851.5.1 Escort Plans  
No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Sections 8670.17.2(b) and 8670.23.1(e)(1), Government Code

851.6 Clearing House Responsibilities.  
No Change.

Authority: Sections 8670.17.1, 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Sections 8670.17.1 and 8670.23.1(e)(1), Government Code

851.7 Communication and Reporting Requirements Before, During and After an  
Escorted Transit

No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1), Government Code.

851.8 Requirements for Escort Tugs; Braking Force Measurement, Crew and  
Training Standards, Equipment and Stationing Criteria.

Subsection (a): No Change.

(b) Braking force measurement:

(1) any escort tug used to comply with the requirements of this subchapter  
must have its braking force verified and registered with the Clearing  
House, as follows;

(A) for tractor tugs escorting in an ahead position the braking force is  
measured as the ahead bollard pull;

(B) for tractor tugs escorting in an astern position the braking force is  
measured as the astern bollard pull;

(C) for conventional tugs the braking force is measured as the astern  
bollard pull.

(2) 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 the bollard pull. ~~the braking force of each escort tug must be re-  
measured at least once every 3 years from the date of the initial~~

~~measurement, or sooner if the operating capability or braking force of the tug has been degraded by 10% or more.~~ The new measurements must be verified and registered with the Clearing House.

(3) The Clearing House shall publish procedures and standards to be followed when conducting braking force measurement. These procedures, entitled ASan Francisco Bay Region Clearing House, Rules for Bollard Pull Tests@, dated May 19, 2000, are incorporated by reference. These procedures and standards shall be made available upon request to the Clearing House.

(4) 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 over 150 gross tons 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 of Marine Inspection, or American Bureau of Shipping principal surveyors' direction.

4. 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.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1), Government Code, ~~and 46 CFR Sections 173.090, 173.095 and 174.145.~~

851.9 Tanker and Tug Matching Criteria, and Tanker Crew and Equipment Requirements

No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1), Government Code

851.9.1 Barge and Tug Matching Criteria, and Barge Crew and Equipment Requirements

No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1), Government Code

851.10 Penalties

No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1) and ~~Article 9,~~ Sections 8670.57 through 8670.69.6, Government Code.

851.10.1 Requests for Redetermination

No Change.

Authority: Sections 8670.17.2(a) and 8670.23.1(d), Government Code.  
Reference: Section 8670.23.1(e)(1) and ~~Article 9,~~ Sections 8670.57 through 8670.69.6, Government Code.