

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, March 12, 2009
7th Floor Conference Room, Port of Oakland, Oakland, California

Joan Lundstrom, Chair of the Harbor Safety Committee of the San Francisco Bay Region (HSC), San Francisco Bay Conservation and Development Commission (BCDC); called the meeting to order at 1004. **Alan Steinbrugge**, Marine Exchange of the San Francisco Bay Region (Marine Exchange), confirmed a quorum of the HSC.

Committee members (M) and alternates (A) in attendance with a vote: **Capt. Esam Amso** (A), **John Berge** (M), Pacific Merchant Shipping Association (PMSA); **Margot Brown** (M), National Boating Federation; **Ron Chamberlain** (M), Port of Benicia; **Aaron Golbus** (M), Port of San Francisco; **Capt. Paul Gugg**, United States Coast Guard (USCG); **Maj. Adam Edwards**, United States Army Corps of Engineers (USACE); **Capt. Fred Henning** (M), Baydelta Maritime; **Capt. Bruce Horton** (M), San Francisco Bar Pilots (Bar Pilots); **Jennifer Kovecses** (A), San Francisco Baykeeper; **Capt. Patrick Murphy** (M), Blue & Gold Fleet; **Richard Nagasaki** (M), Chevron Shipping Company; **William Nickson** (A), Transmarine Navigation Corporation; **Chris Peterson** (M), Port of Oakland; **Capt. Ray Shipway** (A), International Organization of Masters, Mates, and Pilots; **Rich Smith** (M), Westar Marine Services; **Gerry Wheaton** (M), National Oceanic and Atmospheric Administration (NOAA); **Thomas Wilson** (M), Port of Richmond.

Alternates present, and those reporting to the HSC: **Jerry Bynum**, USCG; **Bob Chedsey**, California State Lands Commission (State Lands); **Lt. J.G. Meghan Clifford** USCG; **Shelah Sweatt** USACE; **Capt. Rick Holly**, OSPR; **William Needham** (A), National Boating Federation; **Linda Scourtis** (A), BCDC; **Capt. Gary Toledo**, California Office of Spill Prevention and Response (OSPR);

The meetings are always open to the public.

Approval of the Minutes

There were corrections to the minutes of February 12, 2009:

On page four, in the comments on Lawrence's report, the second sentence should read: "**Capt. Horton** also expressed curiosity . . . "

On page four, at the State Lands report, correct the comment by **Lundstrom** to read: ". . . to report on the declining number of oil barrels since the tax on oil barrels is the source of funding for OSPR."

On page seven, under New Business, correct the second sentence of **Lundstrom's** comments to read: "She asked the HSC to consider whether to address the issue since, for the first time in many years, there was a representative. . . "

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A motion to accept the corrections to the minutes of February 12, was made, and seconded. The motion passed without discussion or dissent.

Comments by the Chair – Lundstrom

- Final reports on the *COSCO Busan* allision with the Bay Bridge, and subsequent oil spill, from the National Transportation Safety Board (NTSB) and Coast Guard were due out soon, and would be forwarded to members when they were published.
- A nomination for HSC of the Year had been submitted for the next National Harbor Safety Conference. Lundstrom thanked **Brown, Sean Kelley**, Coast Guard Vessel Traffic Service, and **Scourtis** for their help preparing the nomination.

Berge said that the report due out from the NTSB was a summary, and not a final, report.

Coast Guard Report – Capt. Gugg

- Implementation of the Transportation Worker Identity Card (TWIC) program was going well thanks to cooperation from all parties.
- Thanked USACE for their help with resolving issues regarding abandoned vessels.
- Budget cuts in Alameda and Contra Costa county were affecting the amount of waterway patrols those counties could launch.

Lt. J.G. Clifford read from a report attached to these minutes.

Bynum described two new work groups for the Area Maritime Security Committee (AMSC) concerned with recovery from an incident affecting marine transportation system infrastructure. One work group would be concerned with identifying assets that could be used for recovery, while the second group was concerned with best practices. He announced meetings for the two groups in April, and asked that those interested in participating get in touch with him. The work group reports were due in July for inclusion into the local response plan.

Capt. Gugg thanked the members of the abandoned vessel coalition for their response to the sunken fishing vessel *Pavo Grande*. **Lundstrom** said that the state of the economy was liable to lead to more abandoned vessels and increase the risk of oil sheens. The issue was of particular concern due to new state regulations that could lead to the closure of fishing in incidents where more than forty-two gallons of oil product were released.

Clearing House Report – Steinbrugge

Steinbrugge read from a report that is attached to these minutes.

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OSPR Report – Capt. Toledo

- Welcomed **Golbus** to the HSC. He was to be sworn in after the meeting. His term would run through January 2011.
- **Scott Schaeffer** had been named deputy administrator for OSPR.
- Commended the HSC for the great work done on best practices. Their efforts were now on line at the Marine Exchange website www.sfmex.org. **Capt. Toledo** said that anyone concerned with the user friendly quality of links to best practices contact **Steinbrugge**.
- The new edition of the *Where the Heck is Collinsville?* brochure was at the state printing office, and was scheduled to be ready by the April meeting of the HSC.
- Attorneys at the Department of General Services were seeking clarifications from OSPR regarding the contract for enhancements to the Physical Oceanographic Real Time System (PORTS). **Wheaton** asked what the deadline would be for spending money on PORTS enhancements once the contract was approved. **Capt. Toledo** said the money would have to be spent by June 30, 2009, the end of the fiscal year. **Lundstrom** asked how much money was at stake. **Capt. Toledo** said it amounted to three hundred thousand dollars.
- The fishery closure law, previously mentioned by **Lundstrom**, was not meant to affect traffic through the site of an oil spill, and was only intended to control fishing. The option to close the site of a spill to all other traffic remained with the Coast Guard.
- California Assembly Member **Jared Huffman** (D-Marin) had introduced Assembly Bill 883 to strengthen the ability of the Department of Fish and Game, and OSPR, to fulfill their missions of protecting water resources. The bill called for increased resources as well as organizational changes or statutory authorization as required.

Kelley said that the best practices would be published in a *Marine Safety Information Bulletin* as they were approved. **Wheaton** said that best practices that had been voted on would be published in future editions of *The Coast Pilot*.

Capt. Holly said that in the course of standard inspections, OSPR personnel were reaching out to officers and crew to discuss their practices, maintenance, and training for such things as lowering anchors, switching fuel supplies, and other operations. This was part of a root cause analysis due to a spate of recent incidents. **Capt. Holly** said that similar investigations were being conducted by the state of Washington.

Lundstrom asked if the results of their efforts would come back to the HSC. **Capt. Holly** said that the first goal of the effort was to identify the scope of the situation and that feed back would come back to the HSC through The Pacific States/British Columbia Oil Spill Task Force. **Brown** asked if there was a time frame for delivering the report. **Capt. Holly** said that it was more of a project than a study, but he thought he would be able to report on the progress of the project at the April meeting of the HSC. **Capt. Gugg** asked if the process was consensual. **Capt. Holly** said that it was, and said that it happened in the course of normal inspections of contingency plans. He said that the goal was educational rather than punitive. **Wilson** asked if the effort was statewide. **Capt. Holly** said that the program had begun in Northern California, but would

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expand statewide in the near future. **Berge** asked whether the results of the project should be incorporated in future updates to HSC state-wide. **Capt. Holly** said that was being looked at.

NOAA Report – Wheaton

- A new edition of chart 18649 was out.
- Updates to two charts for the Sacramento deep-water channel were to come out in April and June thanks to input from the Bar Pilots. He invited everyone to provide input on the accuracy of the charts.
- **Heather Kerkering**, Monterey Bay Research Institute, would give a presentation on ocean sensor systems to the next meeting of the PORTS work group. She would be acting in her role as regional coordinator for the Central and Northern California Ocean Observatory System (CeNCOOS) Regional Ocean Observation System. He invited all interested parties to attend.
- Introduced **Eric Moore**, chief of the *NRT 6* boat then in the Bay Area. Among other activities, they were engage in locating the anchor lost from the *Omega Lady Miriam*.
- Weather for the upcoming ten day period was expected to be fair and dry.

US Army Corp of Engineers (COE) Report – Maj. Edwards

Shelah Sweatt read a report that is attached to these minutes.

Capt. Amso asked when dredging of Pinole Shoals was schedule to begin. **Maj. Edwards** said that it was scheduled for June 1 due to money made available from the recently passed Federal economic stimulus bill. Further details on the allocation of stimulus money were supposed to be available by March 17.

Management of Alcatraz Dredge Disposal Site Briefing – Maj. Edwards

- Maj. Edwards gave a power point presentation on the disposal site. A copy of the presentation was distributed to members of the HSC at the meeting and copies were available on the handout table. A summary of his report follows:
 - Dredge material have been disposed of at the Alcatraz site since the 1890's. It was designated as one of four official disposal sites in the Bay in the 1970's. There is one designated disposal site off shore. The Alcatraz area is managed by USACE Dredge Material and Management Office of USACE and other projects.
 - Per the designation from the 1970's, the area is classified as a dispersal site due to the action of currents and tides carrying the material out to sea. It is meant for the dumping of materials from maintenance dredging since those materials are deemed to be lighter than heavier materials that would be dredged from channel deepening projects.
 - The area is divided into cells for management purposes. Currently active disposal cells are on the northern and southern edges of the area. From October to April the cells are limited to four hundred cubic yards per month, and from May to September, three hundred cubic yards per month. In addition, the site is managed according to existing conditions as well as state Regional Water Quality Control Board regulations and Long Term Management Strategy (LTMS) environmental windows. USACE performs monthly bathymetric survey for the site that are published on the USACE website for public access.

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Capt. Horton asked why the central part of the area was not in use. **Maj. Edwards** said that it is the highest point in the area and that material there were not dispersing as expected. **Capt. Horton** asked if there was an established depth that would serve as a trigger point to stop dumping in a particular cell. **Maj. Edwards** said that was not the case. **Capt. Horton** said that the south side of the area was where a large vessel was most likely to experience problems from too much material and suggested that there ought to be a trigger point to cease dumping. **Maj. Edwards** said that all dumping had been in the northern cells since November 2008. **Capt. Horton** asked if there had ever been a published controlling depth for the disposal area. **Maj. Edwards** said that he had gone through the original documents and had not been able to find such language.

Wheaton said the issue was of concern to NOAA because their charts showed a depth of twenty-seven feet and recent surveys had shown ten feet less of depth than that. He said that the lack of depth was a danger to tugs and tows, as well as recreational boats transiting the area. He recommended that the Navigation Work Group take up the issue going forward. **Lundstrom** said that the HSC, with input from the Navigation Work Group, would compose a letter to USACE officially informing USACE of the HSC's concern on this issue.

A gentleman from the audience said that the problem with materials encroaching on the south side of area might easily be solved by shifting the entire disposal area to the north to compensate for recent accumulations. **Lundstrom** said that the Navigation Work Group would take up the issue and invited all interested parties to attend. She said that all work group meetings are open to the public and encouraged all interested parties to attend and provide input into the process.

Lundstrom thanked **Maj. Edwards** and USACE for their active participation and interest in the work of the HSC.

State Lands Commission Report – Chedsey

- Their February customer service meeting had been well attended. He encouraged interested parties to contact him with ideas for the agenda of future such meetings.
- **Chedsey** read from a statistical report that is attached to these minutes.

Lundstrom thanked **Chedsey** for including trend data on the importation of oil barrels to the region.

Tug Escort Work Group – Capt. Henning

- There was nothing to report. Their next meeting was to be held jointly with the Prevention through People Work Group to discuss life saving equipment on tug boats.

Berge asked if the issue had anything to do with containers falling into the water during cargo operations. **Brown** said that they were meeting to discuss two recent incidents where people had gone into the water

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and nearby tugs had been unable to pull those people from the water due to inadequate life saving equipment.

Navigation Work Group – Capt. Horton

- The agenda for their next meeting was to discuss the Alcatraz dump site as well as boundaries for anchorages 22 and 23.

Ferry Operations Work Group – Capt. Murphy

- They were in the process of collecting data on the new ferry routing scheme and communications protocols and would meet when there was sufficient data to discuss.

Prevention Though People Work Group – Brown

- The California Department of Boating and Waterways had not been eliminated. Their budget of eighty-five million dollars had been severely cut due to twenty-five million going to the California Department of Parks and Recreation and twenty-eight million going to the general fund. The reassignment of funds had been describes as a loan. It would have a sever impact on the development of marinas and launch sites.
- **Brown** displayed the new educational poster about the dangers of hoax distress call to the Coast Guard. The safety issue is that scarce Coast Guard resources could be diverted to a hoax call while an actual emergency could be happening in distant location within the region. She cited the most recent case of multiple hoax calls coming in during response to a ship that had lost power.

Capt. Gugg thanked the work group for their efforts. He said that one case was moving to prosecution and that they were zeroing in on some other suspects.

Plan Work Group – Scourtis

- Briefly described the plan updates that had been distributed to members and said that the final draft was due to OSPR in April.

Kovecses asked if the committee was voting on a draft. Scourtis said that was the case. **Lundstrom** said that all of the new best practices included in the plan had already been voted on by the HSC. **Steinbrugge** said that the updated appendices contained new data.

A motion to accept the plan was made and seconded. It passed without dissent.

Lundstrom said that the National Transportation Safety Bureau had relied on the Harbor Safety Plan during their investigation of the *COSCO Busan* allision with the Bay Bridge, so the annual review of the plan was an

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important effort for the HSC. She said that a printed version would be distributed to members of the HSC and that it would also be publicly available for download from the Marine Exchange web site.

PORTS Work Group – Capt. Amso

There was nothing to report.

PORTS Report – Steinbrugge

- The Coast Guard hoped to have a buoy for the Oakland bar channel in April. A possible site for a wind bird at Pier 1, Port of San Francisco had been identified but there was no time frame for installation. There was no time frame for dissemination of data from the new sensor at the Avon dock.

Public Comment

- **Capt. Korwath** announced that a workshop for the next round of grants from the Federal Emergency Management Agency would be held at the Port of Oakland following the HSC meeting of March 12.
- The Marine Exchange will celebrate its 160th birthday at its annual May Day party on May 14 in the passenger terminal at Pier 35, Port of San Francisco – festivities to commence at 1700. After some discussion, **Lundstrom** asked the Marine Exchange to explore the possibility of scheduling the May 14 meeting of the HSC for 1330 at the location of the party or close by.

Capt. Bruce Clark, California Maritime Academy, said that it was their intention to become more active participants in the HSC. He invited those interested to schedule a tour of the Academy. **Capt. Gugg** said that the activities of the Academy were another example of outstanding local cooperation.

Old Business

A person from the audience asked whether there were any plans to remove two sunken tugs near the Park Street Bridge. **Capt. Gugg** said that neither Coast Guard nor USACE had plans for such removal since they did not believe they were a pending hazard to navigation.

New Business

There was no new business

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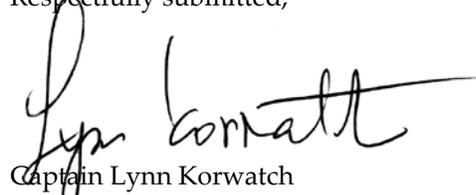
Next Meeting

Steinbrugge said that the next meeting would convene at 1000, April 9, 2009, at the Harbor Master's Office, Port of Richmond.

Adjournment

A motion to adjourn the meeting was made and seconded. It passed without discussion or dissent and Lundstrom adjourned the meeting at 1156.

Respectfully submitted,



Captain Lynn Korwatch
Executive Secretary

USCG SECTOR SAN FRANCISCO	
PREVENTION / RESPONSE - SAN FRANCISCO HARBOR SAFETY STATISTICS	
February-09	
PORT SAFETY CATEGORIES	
	TOTAL
Total Port Safety (PS) Cases opened for the period:	8
1. Total Number of Port State Control Detentions for period:	1
SOLAS (0), MARPOL (0), ISM (0), ISPS (1)	
2. Total Number of COTP Orders for the period:	3
Navigation Safety (1), Port Safety & Security (1), ANOA (1)	
3. Marine Casualties (reportable CG 2692) within SF Bay: Allision (1), Collision (0), Fire (0),	2
Grounding (0), Sinking (1), Steering (0), Propulsion (0), Personnel (0), Other (0)	
4. Total Number of (routine) Navigation Safety related issues / Letters of Deviation:	2
Radar (1), Steering (0), Gyro (0), Echo sounder (0), AIS (1), AIS-835 (0)	
5. Reported or Verified "Rule 9" or other Navigational Rule Violations within SF Bay:	0
6. Significant Waterway events or Navigation related cases for the period:	0
7. Maritime Safety Information Bulletins (MSIBs): MSIB 09-01	0
MARINE POLLUTION RESPONSE	
	TOTAL
Total Oil/Hazmat Pollution Incidents within San Francisco Bay for Period	42
* Source Identification (Discharges and potential Discharges):	
TOTAL VESSELS	12
Commercial Vessels	3
Public Vessels (Military)	0
Commercial Fishing Vessels	2
Recreational Vessels	7
TOTAL FACILITIES	9
Regulated Waterfront Facilities	3
Other Land Sources	6
UNKNOWN/UNCONFIRMED	21
*Spill Information	
Pollution Cases Requiring Clean-up	17
Federally Funded Cases	3
Oil Discharge and Hazardous Materials Release Volumes by Spill Size Category:	
1. Spills < 10 gallons	3
2. Spills 10 - 100 gallons	4
3. Spills 100 - 1000 gallons	2
4. Spills > 1000 gallons	0
5. Spills - Unknown	33
Total Oil Discharge and/or Hazardous Material release volumes:	375.5
1. Estimated spill amount from Commercial Vessels:	0
2. Estimated spill amount from Public Vessels:	0
3. Estimated spill amount from Commercial Fishing Vessels:	250
4. Estimated spill amount from Recreational Vessels:	3.5
5. Estimated spill amount from Regulated Waterfront Facilities:	0
6. Estimated spill amount from Other Land Sources:	122
7. Estimated spill amount from Unknown sources:	10
Penalty Action:	
Civil Penalty Cases for Period	0
Notice of Violations (IKs)	0
Letters of Warning	3

**** SIGNIFICANT PORT SAFETY & SECURITY (PSS) CASES ****

*** A. MARINE CASUALTIES - PROPULSION / STEERING**

None.

*** B. MARINE CASUALTIES - VESSEL SAFETY CONDITIONS**

Marine Casualty- Allision, P/V ZELINSKI (20 Feb): While approaching the ferry dock at Angel Island, the vessel shutdown its starboard engine as it overheated and continued docking utilizing its port engine only. The vessel subsequently allided with the pier causing a 2x1/2 inch gash along the port pontoon. No pollution was involved in the allision and repairs were completed on 22 Feb. The cause of the engine overheat has been determined to be a closed seachest valve.

Marine Casualty- Sinking, F/V DELLA C (21 Feb): While pulling crab pots in the afternoon approximately 4 miles off of Ano Nuevo State Park the vessel took a random 4 ft wave off the starboard side and began to sink bow first and capsize. The 3-man crew was unable to don survival suits. 2 crew members were able to swim into the vessel's life raft. The vessel subsequently sank before CG units could arrive on scene and commence searching for the missing crew member. The search for the third crewmember was called off on 22 Feb.

*** C. COAST GUARD - GENERAL SAFETY/SECURITY CASES**

Port Safety - ANOA Violation, M/V KEN ANN MARU (1 Feb): Vessel failed to comply with the 96-hour Advance Notice of Arrival requirement for vessels entering SF Bay. A COTP order was issued holding the vessel in Anch 9 until the required 96 hours had passed. On 5 Feb the COTP order was lifted and the vessel moved to berth in Sacramento.

Port Safety - COTP Order, M/V E.R. WILHELMSHAVEN (6 Feb): Sec SF Port State Control issued a COTP Order directing the inbound vessel to maintain a qualified engineer watch for the emergency generator that was reported as unable to start automatically. The watch was required to stand while the vessel transited through SF Bay and tributaries. Repairs were conducted the same day as arrival, however the vessel requested technician survey at vessel's next port of call. The vessel departed for LA/LB with an engineer standing with the emergency generator and the COTP Order was lifted upon departure.

Port Safety - ISPS Detention, M/V MARIA BULKER (10 Feb): Sec SF Port State Control issued a COTP Order directing the vessel to Anch 9 upon arrival for an ISPS Exam based on risk of previous port calls. A satisfactory examination was conducted the next morning and the detention was lifted.

Port Safety - COTP Order, T/V CHEM FAROS (23 Feb): Sec SF Port State Control issued a COTP Order requiring several navigation safety deficiencies be addressed prior to departure from SF Bay. A sucessful trial test of the speed log and depth sounder was conducted on 25 Feb. Repairs to all but the corrupted AIS pilot plug were finalized and reported via technician on 1Mar. The COTP Order was lifted and an outbound LOD for the AIS plug was issued. The vessel departed 1Mar.

*** D. COAST GUARD - NAVIGATIONAL SAFETY**

Navigation Safety - LOD Inop 10 cm Radar, M/V AURORA ACE (13 Feb): Vessel was granted an outbound LOD for an inoperative 10 cm radar. The LOD was lifted upon departure on the same day.

Navigation Safety - LOD Inop AIS Pilot Plug, T/V CHEM FAROS (24 Feb): Vessel was granted an outbound LOD for a partially operating AIS pilot plug to be replaced at its next port.

SIGNIFICANT INCIDENT MANAGEMENT DIVISION (IMD) CASES:

Incident Management - F/V Pavo Grande, Clipper Cove (17 Feb): The F/V Pavo Grande sank at its anchoring in Clipper Cove, YBI, scattering debris and oil sheen onto the shore. Two federal projects were opened to mitigate the incident, one for collecting hazardous waste drums that floated off the vessel and another to pump remaining product was onboard the vessel.

Incident Management - F/V Della C, 4 nm west of Pt Ano Nuevo (21 Feb): The F/V Della C sank four miles west of Point Ano Nuevo after being hit by a rogue wave. The vessel had a 400-gallon capacity with no more than 200 gallons of diesel onboard. Due to the nature of the case and the depth of water it sank in, no further action was taken from a pollution response perspective. The Marine Sanctuaries and the state were notified.

SIGNIFICANT PORT SAFETY INFORMATION or EXERCISES

USCG Marine Casualty Investigation of the M/V COSCO BUSAN allision available at:http://www.uscg.mil/foia/reading_room.asp



San Francisco Bay Region
Tank Vessel Escort Clearing House

c/o Marine Exchange of the San Francisco Bay Region
Fort Mason Center, Building B, Suite 325
San Francisco, California 94123-1308

San Francisco Clearinghouse Report

March 12, 2009

-  In February the clearinghouse did not call OSPR regarding any possible escort violations.
-  In February the clearinghouse did not receive any notifications of any vessels arriving at the Pilot Station without escort paperwork.
-  The Clearinghouse has contacted OSPR 2 time 2009 about possible escort violations. The Clearinghouse called 4 times 2008; 9 times in 2007; 9 times in 2006; 16 times in 2005; 24 times in 2004; twice in 2003; twice in 2002; 6 times in 2001; 5 times in 2000.
-  In February there were 112 tank vessels arrivals; 3 Chemical Tankers, 13 Chemical/Oil Tankers, 23 Crude Oil Tankers, 22 Product Tankers, 1 LPG, and 50 tugs with barges.
-  In February there were 281 total arrivals.

San Francisco Bay Clearinghouse Report For February 2009

San Francisco Bay Region Totals

				<u>2008</u>	
Tanker arrivals to San Francisco Bay	62			66	
Barge arrivals to San Francisco Bay	50			46	
Total Tanker and Barge Arrivals	112			112	
Tank ship movements & escorted barge movements	326			391	
Tank ship movements	176	53.99%		200	51.15%
Escorted tank ship movements	82	25.15%		104	26.60%
Unescorted tank ship movements	94	28.83%		96	24.55%
Tank barge movements	150	46.01%		191	48.85%
Escorted tank barge movements	69	21.17%		86	21.99%
Unescorted tank barge movements	81	24.85%		105	26.85%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 0 0

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	223		313		0		149		685	
Unescorted movements	109	48.88%	168	53.67%	0	0.00%	72	48.32%	349	50.95%
Tank ships	64	28.70%	92	29.39%	0	0.00%	33	22.15%	189	27.59%
Tank barges	45	20.18%	76	24.28%	0	0.00%	39	26.17%	160	23.36%
Escorted movements	114	51.12%	145	46.33%	0	0.00%	77	51.68%	336	49.05%
Tank ships	60	26.91%	80	25.56%	0	0.00%	38	25.50%	178	25.99%
Tank barges	54	24.22%	65	20.77%	0	0.00%	39	26.17%	158	23.07%

Notes:

1. Information is only noted for zones where escorts are required.
2. All percentages are percent of total movements for the zone.
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.

San Francisco Bay Clearinghouse Report For 2009

San Francisco Bay Region Totals

			<u>2008</u>	
Tanker arrivals to San Francisco Bay	153		769	
Barge arrivals to San Francisco Bay			474	
Total Tanker and Barge Arrivals	153		1,243	
Tank ship movements & escorted barge movements	828		4,045	
Tank ship movements	489	59.06%	2,417	59.75%
Escorted tank ship movements	235	28.38%	1,143	28.26%
Unescorted tank ship movements	254	30.68%	1,274	31.50%
Tank barge movements	339	40.94%	1,628	40.25%
Escorted tank barge movements	152	18.36%	712	17.60%
Unescorted tank barge movements	187	22.58%	916	22.65%

Percentages above are percent of total tank ship movements & escorted barge movements for each item.

Escorts reported to OSPR 2 4

Movements by Zone	Zone 1	%	Zone 2	%	Zone 4	%	Zone 6	%	Total	%
Total movements	494		792		0		364		1,650	
Unescorted movements	238	48.18%	418	52.78%	0	0.00%	184	50.55%	840	50.91%
Tank ships	162	32.79%	250	31.57%	0	0.00%	90	24.73%	502	30.42%
Tank barges	76	15.38%	168	21.21%	0	0.00%	94	25.82%	338	20.48%
Escorted movements	256	51.82%	374	47.22%	0	0.00%	180	49.45%	810	49.09%
Tank ships	151	30.57%	228	28.79%	0	0.00%	100	27.47%	479	29.03%
Tank barges	105	21.26%	146	18.43%	0	0.00%	80	21.98%	331	20.06%

Notes:

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

**Report of the
U.S. Army Corps of Engineers, San Francisco District
March 12, 2009**

1. CORPS FY 2009 O&M DREDGING PROGRAM

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

- a. **Main Ship Channel** – A condition survey was conducted in January. The survey has not yet been posted. Dredging is scheduled for this May, with the Essayons. Disposal is proposed at the Ocean Beach disposal Site. **No change.**
- b. **Richmond Outer Harbor (and Richmond Long Wharf)** – Dredging is scheduled for mid-June, with the Essayons. Disposal at the Alcatraz Disposal Site. **No change.**
- c. **Richmond Inner Harbor** – Dredging is scheduled for this June. The Corps is has arranged with NOAA Fisheries dredging on May 1, one month before the official work window opens. Disposal is scheduled for the Hamilton Marsh Restoration Project. **No change.**
- d. **Oakland O & M Dredging** – The Corps is in discussions with NOAA Fisheries to begin dredging the Outer Harbor in July 2009; the Inner Harbor is scheduled for a September 2009 start. **No change.**
- e. **Suisun Bay Channel** – **Dredging is scheduled to begin August 1. The Corps is going to discuss, with NOAA fisheries, the possibility of beginning dredging on July 1st.**
- f. **f. Pinole Shoal** - Dredging is scheduled to begin June 1, with the Essayons. Disposal at the San Pablo Bay Disposal Site. **No change.**
- g. **Redwood City/San Bruno Shoal** – Dredging is completed.

2. DEBRIS REMOVAL - **The debris totals for February 2009: The Grizzly collected about 2 tons since it was underway for very few days due to illness of the vessel's captain; the Raccoon collected 8 tons, being underway only 10 days due to crew training; the Safe Boat collected 2 tons.**

	Grizzly	Raccoon	Other	Total						
March	16.50	0		17						
April	35.00	0		35						
May	8.00	10		18						
June	2.00	11		13						
July	0.00	10		10						
August	0.00	11		11						
September		26		26						
October	20.50	6		27						
November		5		5						
December		12		12						
Jan. 2009	25	15	5	45						
Feb. 2009	2	8	2	12						
Totals	109.00	114.00	7.00	231						

3. UNDERWAY OR UPCOMING HARBOR IMPROVEMENTS

Oakland 50-ft Deepening Project – Clean-up dredging of the Outer Harbor is still on-going. The Inner Harbor deepening is on-going. **No change.**

4. EMERGENCY (URGENT & COMPELLING) DREDGING

There has been no emergency dredging in FY 2009.

5. OTHER WORK

a. **San Francisco Bay to Stockton** The project team conducted two very successful public scoping meetings - on March 26 and April 2, co-hosted by local sponsors Port of Stockton and Contra Costa County Water Agency. This project is moving forward. **No change.**

b. **Sacramento River Deep Water Ship Channel Deepening** FY 2008 money will be carried over to FY 2009 and used for continued testing and disposal site evaluation. **No change.**

6. HYDROGRAPHIC SURVEY UPDATE

Address of Corps' web site for completed hydrographic surveys. **No new surveys have been posted due to technical difficulties with the server.** The February and March 2009 surveys of the Alcatraz Disposal Site show a continuing increase in depth at the small high spot on the south side of the site. The March survey shows the depth at that location to be at -30.0 feet mean lower low water. The material is dispersing as it is supposed to do.

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

Main Ship Channel: Survey completed in January 2009 has been posted.

Pinole Shoal: Condition surveys completed in December 2008 and January 2009 have been posted.

Suisun Bay Channel, New York Slough: Surveys completed in December 2008 and January 2009 have been posted.

Suisun Bay Channel: Surveys dated December 2008 and January 2009 have been posted.

Redwood City: Survey completed in January 2009 has been posted.

San Bruno Shoal: Surveys completed in February and March 2008 have been posted.

Oakland Entrance Channel: Surveys completed in October and November 2008 have been posted.

Oakland Outer Harbor: Surveys completed in October and November 2008 have been posted.

Southampton Shoal and Richmond Long Wharf: Surveys completed in January 2009 have been posted.

Richmond Inner Harbor: Surveys completed in January 2009 have been posted.

North Ship Channel: Surveys completed 12-13 and 20-21 March 2008 have been posted.

San Leandro Marina: Surveys completed in January 2008 have been posted.

Larkspur Ferry Terminal: Surveys completed in July 2008 have been posted.

Mare Island Strait Channel: Surveys completed in August 2008 have been posted.

Disposal Site Condition Surveys: SF-09 (Carquinez); SF-10 (San Pablo Bay); and SF-11 (Alcatraz) – January 2009.



CALIFORNIA STATE LANDS COMMISSION

HARBOR SAFETY COMMITTEE MONTHLY REPORT - FEBRUARY COMPARISON

VESSEL TRANSFERS

	Total Transfers	Total Vessel Monitors	Total Transfer Percentage
FEBRUARY 1 - 29, 2008	247	134	54.25
FEBRUARY 1 - 28, 2009	203	87	42.86

CRUDE OIL / PRODUCT TOTALS

	Crude Oil (D)	Crude Oil (L)	Overall Product (D)	Overall Product (L)	GRAND TOTAL
FEBRUARY 1 - 29, 2008	12,897,000	0	19,603,199	14,435,508	34,038,707
FEBRUARY 1 - 28, 2009	10,621,500	0	15,331,000	11,208,888	26,539,888

OIL SPILL TOTAL

	Terminal	Vessel	Facility	Total	Gallons Spilled
FEBRUARY 1 - 29, 2008	0	1	0	1	FUEL OIL / 1 gal
FEBRUARY 1 - 28, 2009	0	0	0	0	0

*** Disclaimer:

Please understand that the data is provided to the California State Lands Commission from a variety of sources; the Commission cannot guarantee the validity of the data provided to it.

To: Harbor Safety Committee of the San Francisco Bay Region
Date: 12 March 2009
Subject: **Updated Harbor Safety Plan**
From: Linda Scourtis
San Francisco Bay Conservation and Development Commission
50 California Street, Suite 2600
San Francisco, California 94111
Direct: (415) 352-3644 email: lindas@bcdc.ca.gov fax: (415) 352-3640

Enclosed please find revised sections of the *San Francisco, San Pablo and Suisun Bays Harbor Safety Plan*, dated March 12, 2009. The state's Harbor Safety Committees are required to review and update their plans as needed on an annual basis, and to submit the approved plan to the Administrator of the Office of Spill Prevention and Response. The Administrator accepts or does not accept the revised Safety Plan.

In addition to an updated Executive Summary to reflect the Committee's activities from July 2007 through mid-February 2009, a number of changes were made throughout the plan text, including minor typographic corrections and cross references, etc. The substantively amended sections for your review and proposed approval are:

1. Chapter II: General Weather, Currents and Tides to include Best Maritime Practices for large vessels and tugs with tows navigating in severe weather or in limited visibility.
2. New Chapter XI: Small Passenger Vessels-Ferries features the adopted ferry traffic routing and guidelines for transit in limited visibility and severe weather.
3. Chapter XIV: Tug Escort/ Assist for Tank Vessels to include guidelines for simulator training of tug crews in emergency operations.
4. Chapter XV: Pilotage to reflect the HSC's recommendations of the use of Portable Pilot Navigation Units, to be investigated by the Board of Pilot Commissioners.
5. New Appendix A: Best Maritime Practices summarizes guidelines developed by the Work Groups and adopted by the Harbor Safety Committee to improve navigation safety.

Although not included with this mailing, the following appendices were modified to reflect updated information and will appear in the final Harbor Safety Plan:

1. Appendix B: Membership of the HSC
2. Appendix E: Annual Work Reports
3. Appendix F: Tug Escort Violations Summary for 2007 and 2008
4. Appendices G, H and I: Clearing House reports for 2007 and 2008
5. Appendix L: Bridge Inventory and Bridge Allisions
6. Appendices M and N: USCG Bay Port Safety and Pollution Statistics for 2007 and 2008
7. Appendix O: Waterborne Petroleum Statistics for 2007 and 2008



Executive Summary 2007/2009

The San Francisco Bay Region Harbor Safety Committee is concerned with navigation, security and environmental issues that impact the San Francisco Bay Area. The period covered by this Harbor Safety Plan update was an exceptionally active time. On November 7, 2007, the cargo ship Cosco Busan struck the Bay Bridge in dense fog, spilling 53,000 gallons of bunker fuel into the Bay and beaches. Within days Governor Schwarzenegger directed that the state investigate the causes of the allision and make appropriate recommendations to prevent such an occurrence from happening again. The Office of Spill Prevention and Response (OSPR) called upon the Harbor Safety Committee to analyze the issues outlined in the directive and to make recommendations. After a series of many public work group meetings, the Harbor Safety Committee completed its report in July 2008, which was sent to the Governor.

Concurrently, the five California Harbor Safety Committees were directed by OSPR to adopt Best Maritime Practices that provide important guidelines for safe, reliable and environmentally sound vessel movements in each harbor. As a result of both processes, the Harbor Safety Committee adopted nine Best Maritime Practices addressing vessel movements during reduced visibility and severe weather, defined commute ferry routes, enhanced training for pilots on electronic navigation systems, and emergency training for tug escorting (see Appendix A). These guidelines are incorporated into the U.S. Coast Pilot, the Coast Guard Vessel Traffic Service (VTS) Manual and the San Francisco Bar Pilots Operations Manual.

During 2007-2009:

- The Tug Escort Work Group analyzed the Cosco Busan allision relative to tug operations, concluding there was no current evidence that tug escorting would have prevented the allision or similar incidents from occurring. The Work Group developed Best Maritime Practices for the use of simulator training for emergency tug escort response, for tugs with tows operating in reduced visibility and for operating during severe weather conditions. The Work Group also updated the Escort Plan document used by tankers for the Master/Pilot exchange prior to entering the Bay.
- The Navigation Work Group analyzed a number of components in the Governor's directive – speed limits, crew staffing requirements and Vessel Traffic Service authority over ship movements. In addition, the Work Group developed Best Maritime Practices for large vessels over 1600 gross tons operating in reduced visibility and in severe weather conditions and for enhanced training for licensed pilots in advanced electronic navigation systems. The Work Group worked with the Tug Escort and Ferry Operations Work Groups to craft similar guidelines for other vessels in the Bay.

- The Ferry Operations Work Group for commute ferries established a maneuvering zone radius for the San Francisco Ferry Building ferry terminals and a maneuvering zone protocol; agreed upon communication protocols en route; and identified and produced maneuvering routes for nautical charts. The Work Group developed Best Maritime Practices for commute ferries operating in reduced visibility and in severe weather conditions.
- The Prevention Through People Work Group continued distribution of ‘Kayakers, Be Alert!’ safety materials, updated the “Where the Heck is Collinsville?” brochure and, with the VTS, designed a poster about hoax “Mayday” calls at the request of the Coast Guard. In addition, the Harbor Safety Committee adopted the previously produced communication protocol for safe bunkering operations alongside cargo vessels as part of the Best Maritime Practices Program.
- The Physical Ocean Real Time System (PORTS) Work Group obtained funding, which continued the system’s administration by the Marine Exchange. Additional funding was obtained from Tesoro to purchase and install a current and MET sensor on the Avon Wharf. Installation of additional PORTS sensors was begun as state funds became available to support deep draft vessel navigation, the commute ferry system and the marine community. PORTS completed re-activation and equipment upgrades as new funding became available.

II. General Weather, Currents And Tides

The majority of the background information presented here is derived from the National Weather Service and can be viewed in its entirety in the *U.S. Coast Pilot, Pacific Coast*, published by NOAA and available from the following website:

<http://nauticalcharts.noaa.gov/nsd/cpdownload.htm>. The *Coast Pilot* information is augmented with observations from local sources.

Ships traveling into the Bay encounter diverse weather, currents, tides and bottom depths. Because of the often varied and changing set of harbor conditions, mariners must be observant about current conditions to navigate safely.

Weather

Bay Area weather is seasonably variable with three discernible seasons affecting the marine environment. The Bay Area has several climate regimes, or microclimates. Significant differences in temperature, winds, and fog patterns over relatively short distances are due to variations in air mass between land and sea and to the complex terrain of the coastal mountain ranges. Wind direction is generally west to east; however, there is a great deal of variation due to the complex geography.

Because of the many microclimates of the San Francisco Bay Area, mariners who navigate the waters from outside the Golden Gate, through the San Francisco Bay and Delta and into the Central Valley must be aware of how weather conditions can change significantly over short distances and over short periods of time. Mariners must also be aware of the unique weather conditions and weather hazards that are most prevalent during each season.

Winds

Winter. Winter is the season with the most significant seas, both in terms of locally driven wind waves as well as open ocean swells that are generated by long fetches of strong winds over the eastern Pacific. Winter winds from November to February shift frequently and have a wide range of speeds dependent on the procession of offshore high and low pressure systems. Calms occur 15 to 40 percent of the time inside the Bay and 10 to 12 percent outside. Extreme wind conditions of 50 knots gusting to 75 knots have occurred during the winter. The strongest winds tend to come from the Southeast to Southwest ahead of a cold front.

Seas are sometimes large enough to produce breakers across the San Francisco Bar, several miles west of the Golden Gate. These breaking waves in the open ocean present a significant danger to mariners, especially those unfamiliar with the area. Breakers across the bar are most common with a long period westerly swell around the time of maximum ebb current through the Golden Gate.

Spring. Spring is generally the windiest season, with average speeds in the Bay of 6-12 knots, with wind speeds of 17-28 knot winds up to 40 percent of the time. Wind speeds sometimes reach gale force over the coastal waters outside the Golden Gate, and approach gale force locally in northern San Francisco Bay. Wind direction stabilizes as the Pacific High Pressure System becomes the dominant weather influence. Northwesterly winds are generated and reinforced by the sea breeze. Inside the Bay, winds are channeled and vary from Northwest to Southwest.

Strong springtime winds over the coastal waters produce rough and choppy seas with a short period swell. The large long-period swells that are common during the winter months still roll through the coastal waters quite often during the early spring, but taper off considerably by late spring as the storm track across the Pacific becomes less active.

Summer. Summer winds are the most constant and predictable. The winds outside the Golden Gate are normally from Northwest to North and are generated by the strong Pacific High Pressure System. This condition lasts through October until the system weakens and the winter cycle starts again. Winds inside the Bay are local depending on the land contours acting on the onshore flow. One of the few occurrences that will alter this pattern is when a high pressure system settles over Washington and Oregon. When this happens a Northeast flow develops, bringing warm dry air and clearing away the summer fog.

Small craft advisory conditions (20 to 25 knots) occur nearly every day in summer through the central and northern San Francisco Bay and eastward through the Carquinez Strait. Wind speeds sometimes locally reach 30 knots in these areas. Gales are rare in summer, but can occur during an unusually intense onshore push.

During the summer months, seas in the coastal waters are mostly generated from local winds and therefore have a short period and tend to be choppy. Large, long-period swells from the open ocean contribute much less to the overall wave height than during the late fall to early spring time frame.

Safety Considerations in Severe Weather: Large Vessels and Tugs with Tows 1600 Gross Tons or Greater

Extreme wind conditions occasionally require the San Francisco Bar to be closed to vessel traffic. The following best practices apply to large vessels of 1600 gross tons or more and to tows with tugs of 1600 gross tons or more. They are meant to serve as guidelines, and are not meant to relieve the mariner of his or her responsibility to follow applicable rules and regulations addressing prudent seamanship.

Factors to consider when closing the Bar or limiting transits in the Bay. A number of factors must be considered when limiting transits in the Bay or closing the Bar due to severe weather, including sea state, tidal influences, visibility, traffic density, and wind advisories issued by NOAA. The size, class and condition of the vessels being addressed must also be considered. The HSC recommends a tiered approach, applying greater caution as conditions worsen.

Sustained winds exceeding 25 knots in the Bay

- Vessels should closely evaluate whether it is safe to transit in the Bay. Size, class and sail area of the vessel, tidal influences, visibility, and traffic density should all be considered.
- VTS San Francisco will establish regular communications with bridge watches of VTS users in Bay Area anchorages, and more closely monitor swing circles to ensure vessels are not drifting.

Sustained winds exceeding 40 knots in the Bay

- Transits to and from berths are not recommended.

Sustained winds exceeding 40 knots and/or seas exceed 12 ft at the Sea Buoy

- Bar traffic restrictions and closure should be considered. Size and class of the vessel, draft, swell period, tidal influences, visibility, and traffic density should all be considered. Strong ebb tides should be avoided, and a minimum of 10 feet under-keel clearance is recommended.

Procedures for Closing the Bar or Restricting Bar Traffic

- Bar closures are exercised on a situational basis without specifically defined weather or security conditions.

- The most recent San Francisco Bar Pilot over the Bar, inbound or outbound, shall make the recommendation to the dispatcher that the Bar should be considered for closure, or traffic limited to one-way traffic.
- In the event that the station boat is “boarded off,” then the station boat captain will make the recommendation to the dispatcher.
- The dispatcher will then notify the Operations Pilot, who will notify the Port Agent.
- The Operations Pilot or Port Agent will then notify the U.S. Coast Guard VTS and Command Duty Officer at the Sector San Francisco Command Center.
- The Captain of the Port will consult with the Operations Pilot or Port Agent prior to closing the bar under Captain of the Port authority. The Coast Guard will then issue a Marine Safety Broadcast communicating the closure or traffic restriction.
- The procedure for lifting traffic restrictions or re-opening the Bar will be the same as that for restricting traffic or closing the Bar.
- Vessels under Federal Pilotage or Public Vessel may petition the Captain of the Port to transit the San Francisco Bar.

Safety Considerations in Severe Weather: Tugs with Tows Less Than 1600 Gross Tons

The winter months from November to February typically bring storm systems to the Bay area that result in high winds and adverse sea conditions. Extreme wind conditions of 50 knots gusting to 75 knots have occurred during the winter, occasionally requiring the San Francisco Bar to be closed to tug and tow traffic.

These best practices are meant to serve as guidelines, and are not meant to relieve the mariner of his or her responsibility to follow applicable rules and regulations addressing prudent seamanship. Furthermore, they are designed to address vessels in the service of routine cargo transport, and are not meant to prohibit tug rescue or salvage operations.

Factors to consider when closing the Bar or limiting transits in the Bay. A number of factors must be considered when limiting transits in the Bay or closing the Bar due to severe weather, including sea state, tidal influences, visibility, traffic density, and wind advisories issued by NOAA. The size and condition of the vessels being addressed must also be considered. The Tug Escort Work Group recommends a tiered approach, applying greater caution as conditions worsen.

Sustained winds exceeding 25 knots in the Bay

- Tugs with tows should closely evaluate whether it is safe to transit in the Bay. Size and sail area of the vessel, tidal influences, visibility, operator skill and traffic density should all be considered.

- VTS San Francisco will establish regular communications with bridge watches of VTS users in Bay Area anchorages, and more closely monitor swing circles to ensure vessels are not dragging.

Sustained winds exceeding 40 knots in the Bay

- Transits to and from berths are not recommended, but may be performed following a careful risk management evaluation by the vessel operator and vessel management.

Sustained winds exceeding 40 knots and/or seas exceed 12 ft at the Sea Buoy

- Bar traffic restrictions and closure should be considered for tugs and tows. Size of the vessel, draft, swell period, tidal influences, visibility, and traffic density should all be considered. Strong ebb tides should be avoided, and a minimum of 10 feet under-keel clearance is recommended.

Fog

Fog is a common occurrence in the Bay Area, particularly around the Golden Gate. It is most frequent during the summer, occasional during fall and winter, and infrequent during spring. Although daily and seasonal fog cycles are predictable, long-term fluctuations are not. Fog patterns can differ within the Bay region on the same day because of the unique geography of the Bay, which consists of two mountain ranges and the large expanse of bays and a major river system. Depending on the location, an area may experience high, dense or relatively little fog. The following is a brief summary of fog conditions in the Bay.

Winter. Winter fogs are usually radiation fog or “tule” fog. With the clear skies and light winds of winter, land temperature drops rapidly at night. In low, damp places such as the Delta and Central Valley (where tules and marsh plants grow), an inversion develops over the inland valleys. Widespread radiation fog will then develop if the surface is sufficiently moist (e.g., after soaking rains). Tule fog is notoriously thick and dense.

In the winter months from late November to early March, fog can develop in the Valley overnight. Visibilities often fall to near zero in the Delta, southern Sacramento Valley, and northern San Joaquin Valley, making marine navigation in these areas difficult. Lowest visibilities occur late during the night through mid-morning hours. Visibilities improve by late morning and often the fog layer lifts into a low overcast during the afternoon.

Sometimes, if there is a light offshore flow during a tule fog event, dense fog can drift westward from the Delta through the Carquinez Strait and into San Francisco Bay. Visibilities can drop below 0.5 mile and stay below 0.5 mile for many hours, and in worst cases, several days. In contrast to the summer fog that moves from sea to land at about 14 knots, the winter tule fogs move slowly seaward at about one knot.

Summer. Summer fog is dependent on several routine conditions. The Pacific High becomes well established off the coast and maintains a constant Northwest wind. It also drives the cold California Current south and causes an upwelling of cold water along the coast. Air closest to the surface becomes chilled so that the temperature increases with altitude. This process forms an inversion layer at 500-1500 feet, where the air is warmer at this level than the air below it. Moist, warm ocean air moving toward the coast is cooled first by the California Current, then more by cold coastal water. Condensation occurs and fog will form to the height of the inversion layer. This happens often enough to form a semi-permanent fog bank off the Golden Gate during the summer.

Under normal summer conditions a daily cycle is evident. A sheet of fog forms off the Golden Gate headlands during the morning and becomes more extensive as the day passes. As the temperature in the inland valleys rises, a local low pressure creates a steady onshore wind. By late afternoon, the fog begins to move through the Golden Gate at a speed of about 14 knots on the afternoon sea breeze. Once inside the Bay it is carried by local winds. In general, the northern part of the Bay is the last to be enveloped and the first to clear in the morning. There are times when the flow is strong enough to carry the sea fog as far east as Sacramento and Stockton. If this continues for a number of days, cooler ocean air replaces the warm valley air and causes the sea breeze mechanism to break down. Winds then diminish and the Bay Area clears for a few days; the valley then slowly reheats and the cycle begins anew.

Safety Considerations in Reduced Visibility

Navigating the San Francisco Bay Region during periods of reduced visibility requires mariners to exercise additional caution and vigilance. The Bay region is one of the foggiest harbors in the United States. In-Bay distances are long. There is not a single regional climate, but a series of microclimates with variable fog. During summer, 30 to 40 percent of parts of the Bay may experience foggy conditions. In winter, the fog is generally denser tule fog.

Dense fog is defined by the National Weather Service as fog that reduces visibility to one-half mile or less on the San Francisco Bay or to one mile or less over the coastal waters. Spring and summer fog is not usually dense over the bays and into the Delta and Central Valley. However, fog can often be dense over the coastal waters when the marine layer is shallow (typically less than 1000 feet deep). During shallow marine layer

scenarios, the coastal mountains act as a barrier blocking fog and low clouds from moving inland. Even with a shallow marine layer, fog can still advect into the Bay through the Golden Gate. In this situation, dense fog is almost always limited to local sections of the San Francisco Bay, primarily from the Golden Gate to Berkeley.

Large Vessels and Tugs with Tows 1600 Gross Tons or greater. The following guidelines should be used by the mariner when planning, initiating or navigating a transit in the Bay during periods of reduced visibility. These guidelines acknowledge that large vessels are not as maneuverable as smaller vessels and therefore define “Large Vessels” as power driven vessels of 1600 gross tons or more, and tugs with tows of 1600 gross tons or more. Mariners are at all times to comply with the requirement of the International Regulations for Avoiding Collisions at Sea, or COLREGS.

Critical Maneuvering Areas (CMAs). There are areas within the Bay where additional standards of care are required due to the restrictive nature of the channel, proximity of hazards, or the prevalence of adverse currents. Large vessels should not transit through CMAs when visibility is less than 0.5 nautical miles.

Locations within the Bay identified as Critical Maneuvering Areas:

Redwood Creek

San Mateo-Hayward Bridge

Oakland Bar Channel*

Islais Creek Channel

Richmond Inner Harbor

Richmond-San Rafael Bridge, East Span

Union Pacific Bridge

New York Slough, up-bound

Rio Vista Lift Bridge

*Note: the Oakland Bar Channel is identified due to cross currents and its proximity to the Bay Bridge and Yerba Buena Island.

Vessels docked: Large vessels at a dock within the Bay should not commence a movement if visibility is less than 0.5 nautical miles at the dock.

Vessels proceeding to dock: Large vessels proceeding to a dock should anchor if visibility at the dock is known to be less than 0.5 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option.

Tugs with Tows less than 1600 Gross Tons. These best practices should be used by the mariner when planning, initiating or navigating a transit in the Bay during periods of reduced visibility. They acknowledge that the size of a tug and tow have much to do with their maneuverability, and therefore, are limited to tugs with tows with a displacement of less than 1600GT. Finally, the best practices are meant to serve as guidelines, and are not meant to relieve the mariner of his or her responsibility to follow applicable rules and regulations addressing prudent seamanship including the requirement of the International Regulations for Avoiding Collisions at Sea, or COLREGS.

Critical Maneuvering Areas (CMAs): The areas within the Bay where additional standards of care are required due to the restrictive nature of the channel, proximity of hazards, or the prevalence of adverse currents, are listed above. Tugs with tows less than 1600GT should not transit through CMAs when visibility is less than 0.25 nautical miles. Tugs with tows in petroleum service should not transit through CMAs when visibility is less than 0.5 nautical miles.

Locations within the Bay identified as Critical Maneuvering Areas:

Redwood Creek

San Mateo-Hayward Bridge

Oakland Bar Channel*

Islais Creek Channel

Richmond Inner Harbor

Richmond-San Rafael Bridge, East Span

Union Pacific Bridge

New York Slough, up-bound

Rio Vista Lift Bridge

*Note: the Oakland Bar Channel is identified due to cross currents and its proximity to the Bay Bridge and Yerba Buena Island.

Vessels docked: Tugs with tows less than 1600GT at a dock within the Bay should not commence a movement if visibility is less than 0.25 nautical miles at the dock. Tugs with tows in petroleum service at a dock within the Bay should not commence a movement if visibility is less than 0.5 nautical miles at the dock.

Vessels proceeding to dock: Tugs with tows less than 1600GT proceeding to a dock should anchor if visibility at the dock is known to be less than 0.25 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option. Tugs with tows in petroleum service proceeding to a dock should anchor if visibility at the dock is known to be less than 0.5 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option.

Vessel pilots or operators should notify VTS upon determination that a scheduled movement will be delayed or cancelled. If underway, they shall make a sailing plan deviation report per VTS regulations. The operator's local knowledge should include an understanding of historic weather patterns during that time of year, current weather reports and checking with reporting stations along the route. This guidance acknowledges that the Bay region is a series of bays and rivers, in-Bay distances are long and there is not a single Bay region climate, but a series of many microclimates with variable fog. The Captain of the Port has the authority to prohibit movement of vessels within all or portions of the Bay during adverse weather conditions.

Because of the large size of the Bay (500 square miles), the longer distances traveled to the various ports, and the diverse weather conditions encountered in the Bay, mariners are dependent on accurate weather forecasting for vessel movements. The National Weather Service broadcasts marine weather information on VHF WX 1,2,3, and 4.

Currents And Tides

Currents

The currents at the entrance to San Francisco Bay are variable and can attain considerable velocity. Immediately outside the Golden Gate bar is a slight current to the North and West known as the Coast Eddy Current. The currents that have the greatest effect on navigation in the Bay and out through the Golden Gate are tidal in nature.

Golden Gate Flood Current. In the Golden Gate the flood or incoming current sets (direction of flow) straight in with a slight tendency to the northern shores and with heavy turbulence at both Lime Point and Fort Point when the flood is strong. This causes an eddy or circular current between Point Lobos and Fort Point.

Golden Gate Ebb Current. The ebb or outgoing current has been known to reach more than 6.5 knots between Lime and Fort Points. It sets from inside the northern part of the Bay toward Fort Point. As with the flood, it causes an eddy between Point Lobos and Fort Point, and a heavy rip and turbulence reach a quarter of a mile south of Point Bonita.

Golden Gate Current Maximums. In the Golden Gate the maximum flood current occurs about an hour-and-a-half before high water, with the maximum ebb occurring about an hour-and-a-half before low water. The average maximums are 3 knots for the flood and 3.5 knots for the ebb.

In-Bay Currents. Inside the Golden Gate the flood sets to the Northeast and causes swirls and eddies. This is most pronounced between the Golden Gate, Angel Island and Alcatraz Island. The current sets through Raccoon Strait (north of Angel Island), taking the most direct path to the upper Bay and the Delta area. The ebb current inside the Golden Gate is felt on the south shore first. The duration of the ebb is somewhat longer than the flood due to the addition of runoff from the Sacramento and San Joaquin Rivers.

Tides

Tides in the San Francisco Bay Area are semi-diurnal in that there are usually two cycles of high and low tides daily, but with inequality of the heights of the two. Occasionally the tidal cycle will become diurnal (only one cycle of tide in a day). As a result, depths in the Bay are based on “mean lower low water” (MLLW), or the average height of the lower of the two daily low tides. The mean range of the tide at the Golden Gate is 4.1 feet, with a diurnal range of 5.8 feet. During the periodic maximum tidal variations the range may reach as much as 9 feet and have lowest low waters 2.4 feet below mean lower low water datum.

Safety Considerations Associated with Current and Tide Conditions. In late 1991, the National Oceanic and Atmospheric Administration (NOAA) stopped publishing the local tidal current charts due to significant errors in predictions that exceeded NOAA standards. Because safe navigation is highly dependent upon accurate tidal and current information, the Physical Oceanographic Real Time System (P.O.R.T.S.) was installed to give near-real time tide and current data updated every six minutes. P.O.R.T.S. is managed by the Marine Exchange of the San Francisco Bay Region (SFMX) with technical assistance from NOAA/NOS. Consistent funding is still to be identified for long term operation of the system in the Bay.

P.O.R.T.S continues to be of great benefit to recreational boaters, commercial shippers, vessel masters and pilots in providing accurate knowledge of winds, currents and other environmental parameters used by the San Francisco maritime community.

Data from the sensors is collected and subject to automatic preliminary quality control at the Data Acquisition System (DAS) located at the SFMX. The data is quality-tested in much greater detail on a 24-hour/7-day per week basis under a program called the Continuous Operating Real Time Monitoring System or CORMS. CORMS employs knowledgeable oceanographers at NOAA’s National Ocean Service headquarters in Silver Spring, Maryland, who monitor the data quality and sensor performance using data quality control tests and remote sensor and DAS diagnostics.

Management of P.O.R.T.S., including administration, field maintenance and repair and the DAS, was handed over to the SFMX, located at Lower Fort Mason Center in San Francisco. The P.O.R.T.S. Advisory Workgroup is studying various funding options in order to continue operating the system, and has made a recommendation to request general State funding.

Access to P.O.R.T.S. information may be obtained by logging onto the SFMX website at www.sfm.org or by contacting the automated voice response number: (866) 727-6787.

Marine Weather Services

The National Weather Service (NWS), a part of the National Oceanic and Atmospheric Administration (NOAA), provides marine weather warnings and forecasts to serve all mariners who use the waters for livelihood or recreation. The warning and forecast program is the core of the NWS's responsibility to mariners. Warnings and forecasts help the mariner plan and make decisions protecting life and property. The NWS also provides information through weather statements and outlooks that supplement basic warnings and forecasts. The following are the basic marine warning products the NWS offers:

Small Craft Advisory: Forecast winds of 22 to 33 knots and/or hazardous sea conditions (usually seas greater than 10 feet).

Gale Warning: Forecast winds of 34 to 47 knots.

Storm Warning: Forecast winds of 48 knots or higher.

Dense Fog Advisory: Visibility reduced to one-half mile or less in the bay. Visibility reduced to one mile or less in the coastal waters.

Special Marine Warning: Potentially hazardous over-water events of short duration (two hours or less) such as thunderstorms with strong gusty winds.

Advisories and warnings listed above are headlined in the Coastal Waters Forecast (CWF). In addition to headlining hazardous weather conditions, the CWF includes forecast information on wind speed and direction, waves, swell, and significant weather (including fog, rain or showers, and thunderstorms). Beginning in March 2006, NWS San Francisco Bay Area began issuing a specific forecast for the San Francisco Bar as part of the Coastal Waters Forecast (CWF) product. The bar forecast includes expected sea state conditions for the next two periods (e.g., tonight and tomorrow), times of maximum ebb current through the Golden Gate and across the bar, and expected hazards such as a small craft advisory for hazardous bar conditions and/or breaking waves on the bar. The bar forecast is updated four times a day along with the rest of the CWF.

Marine Warning and Forecast Dissemination

Marine weather observations, forecasts, and warnings are disseminated through a wide variety of methods, including those listed below.

NOAA Weather Radio (NWR): The NWR network provides voice broadcasts of coastal marine forecasts on a continuous cycle. Broadcast coverage extends across the bays and typically offshore about 25 nautical miles. When severe weather threatens, an alarm tone is sent to automatically turn on compatible NWR receivers in the transmitter's coverage area. Transmitters that broadcast in the San Francisco Bay Area include:

Frequency	Call Sign	Location
162.400 MHz	KHB-49	San Francisco (Mt. Pise)
162.500	KDX-54	San Francisco North Bay Marine (Big Rock Ridge)
162.550	KEC-49	San Jose/Monterey (Mt. Umunhum)
162.450	WWF-64	San Jose/Monterey Marine (Mt. Umunhum)
162.425	KZZ-75	East Bay/Delta (Mt. Diablo)

The Internet

- National Weather Service San Francisco Bay Area: weather.gov/sanfrancisco
- NWS San Francisco Bay Area marine forecast web page:
www.wrh.noaa.gov/mtr/marine.php
- Point and Click Marine Forecast: The NWS now offers the opportunity to get a site-specific forecast instead of relying on a zone forecast:
www.wrh.noaa.gov/firewx/fwpfm/fwpfm.php?wfo=mtr&interface=marine
By selecting any spot on the interactive map, the web page user will receive a forecast table that will include specific information on winds, waves, swells and other parameters for the next seven days.
- Buoy and Coastal Observation Information: Wind and wave data from offshore buoys, as well as other coastal weather observations, can be found at:
www.wrh.noaa.gov/mtr/buoy.php

Buoys data can also be obtained over the phone using the National Data Buoy Center's "dial-a-buoy" service: 1-888-701-8992.

Use the buoy number below when prompted to access the latest buoy observations.

Buoy #	Lat/Long	Location
46013	38.2N/123.3W	Bodega Bay
46026	37.8N/122.8W	San Francisco
46012	37.4N/122.9W	Half Moon Bay
46042	36.8N/122.4W	Monterey

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XI. Small Passenger Vessels – Ferries

Small passenger vessels (ferries) operate year round on San Francisco Bay, San Pablo Bay and their tributaries, carrying nearly six million passengers on 240 transits per day. In total, passenger vessels made up nearly 60 percent of all transits tracked by the San Francisco USCG Vessel Traffic Service (VTS) in that year. Other ferries carry tourists and dinner cruises year round in the Central Bay.

In 2007, the state legislature established the San Francisco Bay Area Water Emergency Transportation Authority (WETA), as a regional agency with responsibility to develop and operate a comprehensive Bay Area public water transportation system and to increase the emergency response capability of waterborne transit. WETA is charged with: consolidating Vallejo and Alameda Ferry services under WETA, consistent with the provisions of a Transition Plan by July 1, 2009; coordinating emergency response activities for water transit services in cooperation with MTC and other agencies, consistent with the provisions of an Emergency Response Plan by July 1, 2009; and increasing regional mobility by adding seven new ferry routes to triple ferry ridership by 2025. The first new ferry route is proposed between South San Francisco's Oyster Point Marina and Oakland's Jack London Square and depending on funding availability will begin service in late 2010.

WETA is committed to using the most environmentally friendly ferries in the nation and setting a national air emissions standard with its fleet of ferries. By the end of 2009 WETA's first four 25 knot vessels will be operating in the Bay Area on existing regular commuter ferry routes and will be available as spare vessels in the event of an emergency. The first, Gemini, was delivered in December 2009 and is being used on the Tiburon and Alameda/Oakland ferry routes.

Because of concerns associated with an increasing number of commuter ferries sharing the Bay with large shipping vessels and recreational boaters, the HSC requested the Ferry Operations Work Group develop an approach and maneuvering scheme in the vicinity of the congested San Francisco Ferry Building, as well as a routing protocol in the Central Bay to decrease the risk of collision for commute ferries. The routing was adopted by the HSC in 2008, and is included at the end of this chapter.

Small Passenger Vessel Services

Small passenger vessels are defined as less than 100 gross tons that are inspected and certified by the U.S. Coast Guard to carry passengers for hire. "T" vessels carry fewer than 149 passengers, "K" vessels carry more than 149 passengers. One "H" vessel (larger than 100 gross tons) is based in San Francisco.

Note: This overview is meant to describe larger private and public vessel operators and does not include the sport fishing or smaller vessel operators that meet the definition of small passenger vessel.

Ferry: Regularly scheduled, operate year round, and provide point-to-point service.

Regularly-Scheduled and Excursion: Seasonal and year round scheduled service, including sightseeing tours, dining, and/or entertainment.

Geographical Scope. Ferry routes bring passengers from outlying cities in the region to the city of San Francisco. Excursion routes operate primarily in the central San Francisco Bay. The following are small passenger vessel terminal locations as of December 31, 2008:

- San Francisco Downtown Ferry Terminal
- Fisherman's Wharf, San Francisco
- San Francisco China Basin Ferry Terminal
- Larkspur Terminal
- Gateway Alameda
- Clay St. Oakland
- Harbor Bay Isle, Alameda
- Vallejo
- Sausalito
- Tiburon

Small passenger vessels also operate on an unscheduled basis out of marinas in Sausalito, Alameda, Oakland and Berkeley.

Small Passenger Vessel Safety Program

U.S. Coast Guard San Francisco Vessel Mutual Assistance Plan. The purpose of the San Francisco Vessel Mutual Assistance Plan (SF V-MAP) is to ensure that a sufficient level of safety exists. It is intended to enhance local capabilities to effectively manage a catastrophic, in port Search and Rescue incident. The objectives of the SF V-MAP are to:

1. Create a "sufficient level of safety" as required by 46 CFR 117.207(f).
2. Provide effective and expedient emergency support by member vessels for a marine search and rescue operation on San Francisco Bay involving a large number of victims or potential victims.
3. Ensure lifesaving equipment available on each member vessel is appropriate for the waters of San Francisco Bay.
4. Promote professionalism in emergency preparedness and response.
5. Provide, through mutual assistance, a more effective and timely means to rescue all persons in the water (PIW).

Best Practices

S.F. Bay Area ferry operators participated in the Harbor Safety Committee Ferry Operations Work Group to develop common best maritime practices for safe passenger vessel operation in the Bay.

San Francisco Bay Area Ferry Operation in Inclement Weather. As described in the Harbor Safety Plan, localized microclimates can alter visibility along an entire route or a portion of a route. During summer, channel fog is prevalent in the central San Francisco Bay with outer areas clear. In winter months Tule fog can be widespread, dense in the morning with clearing later in the day.

The Master of a ferry is the person in charge of the vessel, responsible for the safety of the passengers and crew at all times, and has the authority to decide if it is safe to get underway or to proceed.

In reduced **visibility** and **inclement weather conditions**, the following practices are followed:

- A go or no-go decision to get underway is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the Master and operations manager.
- Look-outs: the vessel Master assigns crewmembers for look-out duty based on the existing or anticipated conditions; the applicable regulations are found in the Navigation Rules and Regulations, Rule 5 Look-out (text attached).
- Safe speed: the vessel is required to proceed at a speed appropriate to the prevailing circumstances and conditions, which include state of visibility and the manageability of the vessel with special reference to stopping distance and turning ability. Other factors include participation in fixed ferry routes, wind advisories issued by NOAA, sea state, traffic density, and applicable Navigation Rules and Regulations (see attached verbiage from Rule 6 Safe Speed).
- Equipment: each ferry is required to have at minimum one radar; commuter ferry vessels generally have two operational radars onboard; the vessel Master is required to have a radar observer license endorsement. Global Positioning Satellite, Automatic Identification System and Electronic Charting navigation systems are also installed and used to assist navigation.

In conditions of **high wind and waves**:

- Go/no-go decision is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the Master and operations manager. Factors to be considered include size of the vessel, direction of the winds and seas, orientation of departure and arrival piers to prevailing conditions, and limitations of ferries to travel at slower speeds.
- Passenger safety: Captain can maneuver the vessel to minimize wave effects. Crew duties include rough weather announcements and passenger safety management.

High Speed Ferry Operations (over 30 Knots). U.S. Coast Guard Navigation and Vessel Inspection Circulars (NAVIC) 5-01 and 5-01 Change 1 provide specific guidance for high speed passenger vessels and include approved vessel operation manuals, training programs and risk assessment tools (matrix).

- Vessel equipment: operators have exceeded minimum requirements for navigation electronics including dual radar, Global Position Satellite and electronic charting with Automatic Identification System overlay.
- Manning/Training: Vessels traveling at high speed are required to have a minimum of two qualified watch-standers during normal operations. Vessel operators have developed approved training programs for high speed navigation in compliance with NAVIC 5-01 and 5-01 Change 1.

Ferry Traffic Routing Protocol

The Bay Area's commute ferry companies/agencies agreed to work with the Harbor Safety Committee, Coast Guard Vessel Traffic Service (VTS), the Water Transit Authority and maritime stakeholder to develop a protocol for ferry navigation in the San Francisco and San Pablo Bays.

The Ferry Operations Work Group conducted a two-year process to develop an approach and maneuvering scheme in the vicinity of the congested San Francisco Ferry Building, as well as a routing protocol in the Central Bay to decrease the risk of collision for commute ferries. The Work Group agreed to protocols and referred them to the Harbor Safety Committee, which adopted the Work Group findings and recommendations in May 2008.

The Ferry Traffic Routing Protocol consists of planned routes and communications procedures for improving ferry navigation safety. When ferries follow routes, the Closest Point of Approach (CPAs) with other ferries is greatest at points where speeds are typically greatest. The adopted routes cross at predetermined locations at nearly right angles, enabling ferries to predict crossing situations and plan ahead.

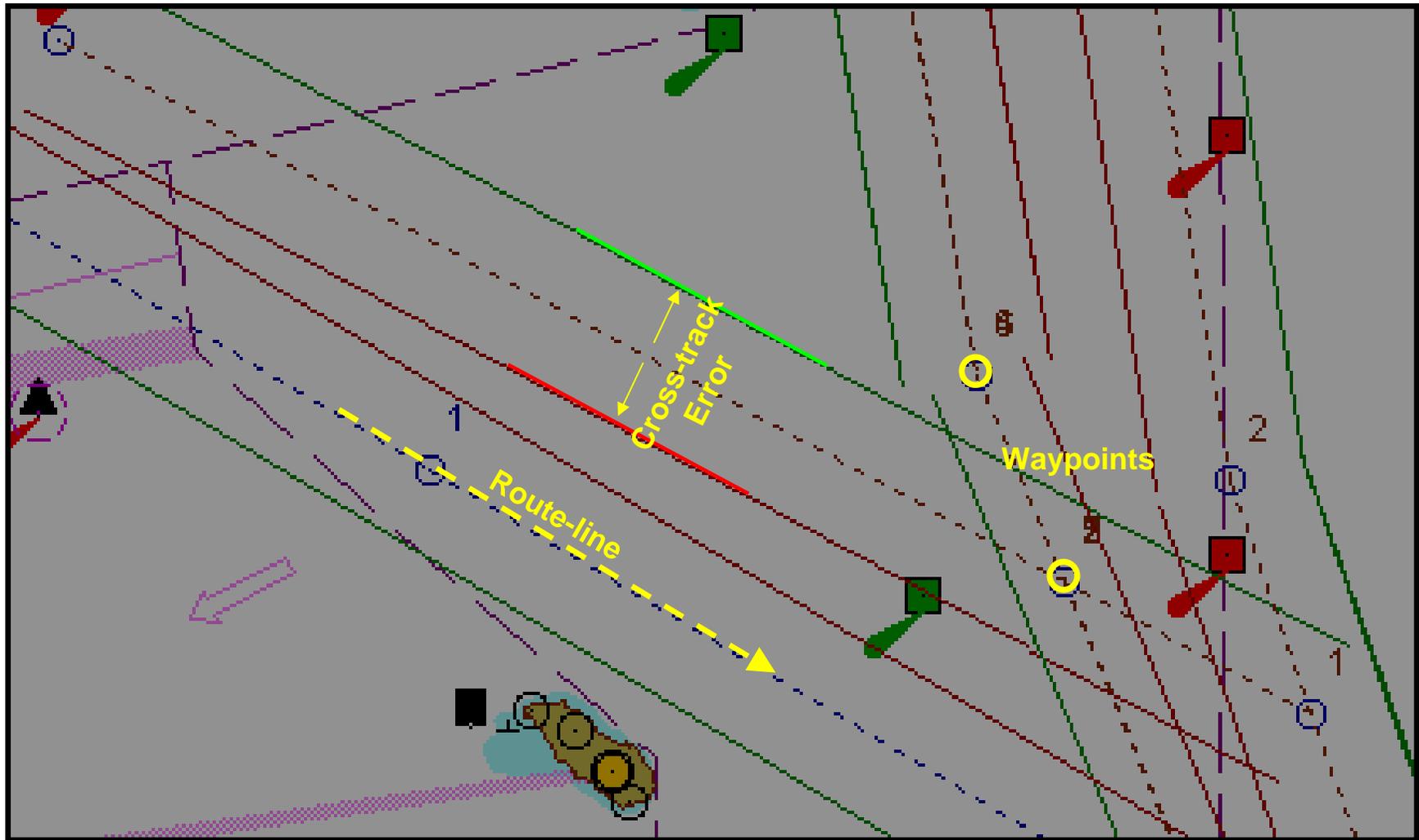
Within an approximately one-half nautical mile zone around the San Francisco Ferry Building, the protocol calls for port-to-port meeting and heightened radio communications. For inbound Ferry Building ferries, the protocol requires planning far enough in advance to avoid getting within approximately one-half nautical mile from the Ferry Building if another ferry is still at the inbounder's dock.

This reduces crowding around the Ferry Building. With ferry routes charted on nautical charts, other types of vessels can more easily predict the locations of ferries and steer clear. The Ferry Traffic Routing Protocol supports aggressive use of electronic nautical charts (ENCs) with intergraded Automatic Identification System (AIS). When all ferries consistently update their AIS data and follow routes, the protocol will ultimately lead to reduced VTS-ferry communications.

Ferry routes and the Ferry Building Approach Zone are shown in Figures 1-7, attached, and are incorporated herein. Diagrams are screen print files from vector-based electronic nautical charts (ENCs). Additional lines and labels were added to the screen print files for emphasis and clarity. For more information contact:

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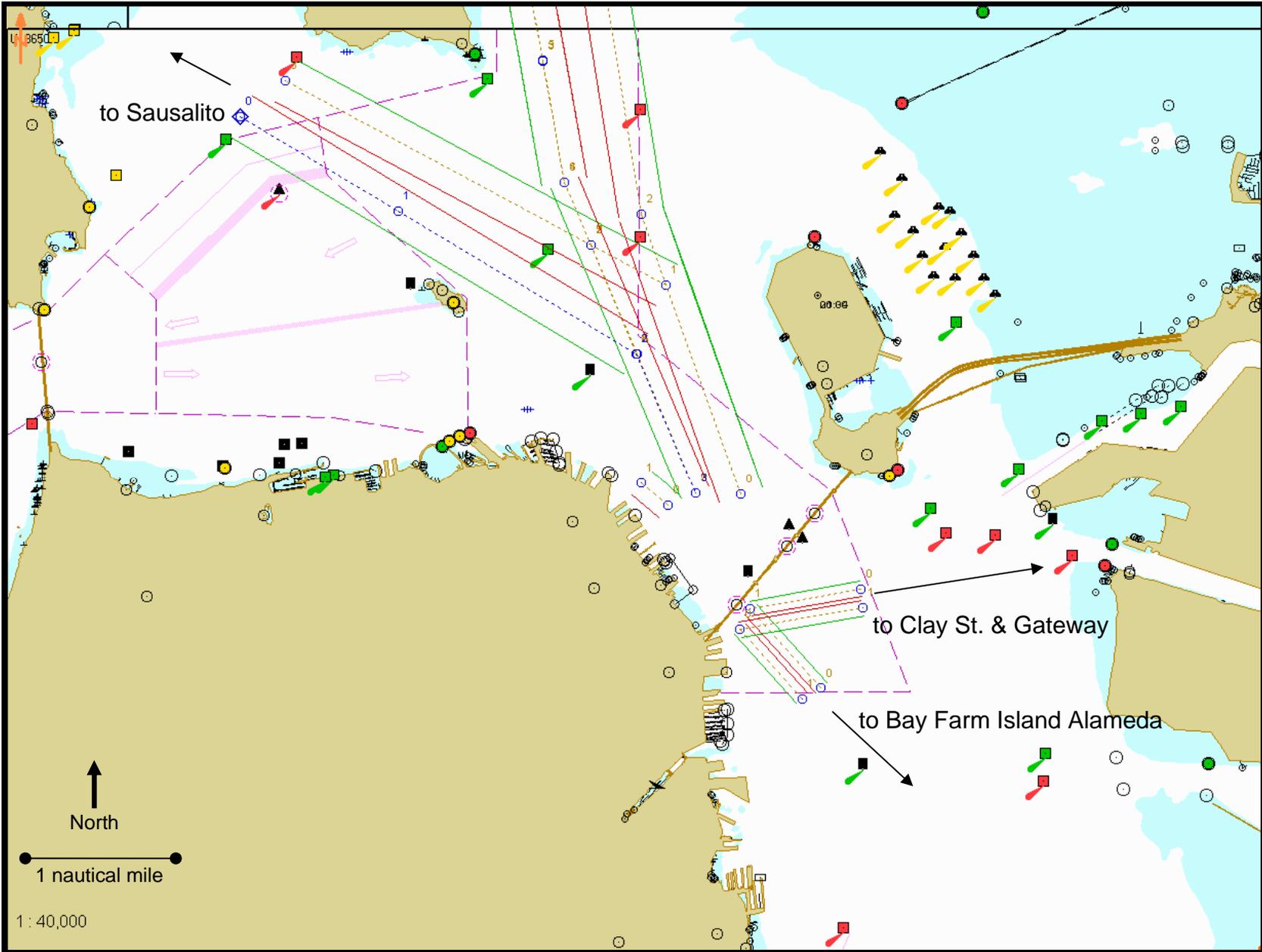
Diagram Key



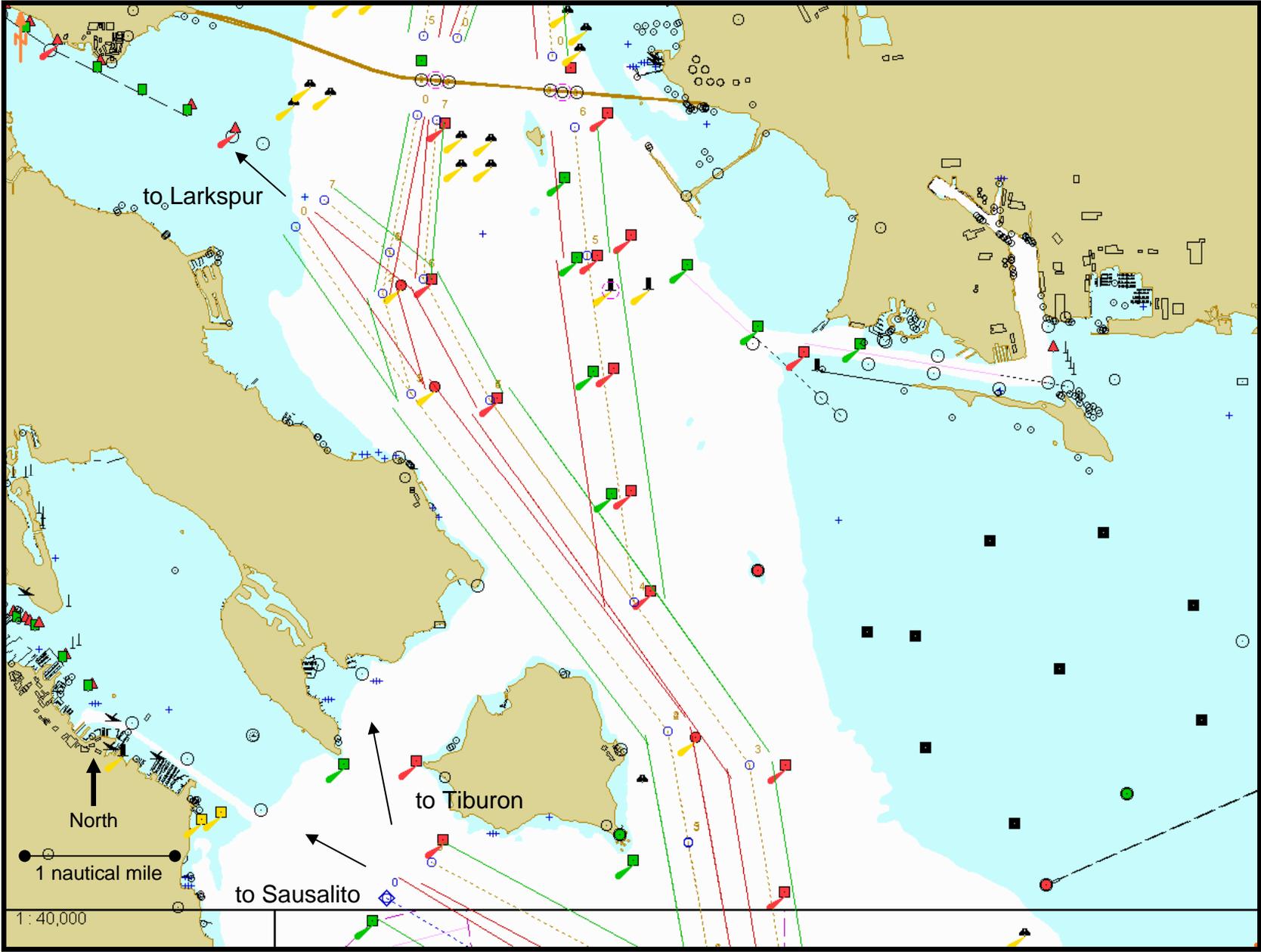
The following chart features are highlighted above.

- Route-line: Centerline of the ferry route.
- Cross-track Error: Left and right of route-line tolerance.
- Waypoints: Turns, route crossing points, and communications points.

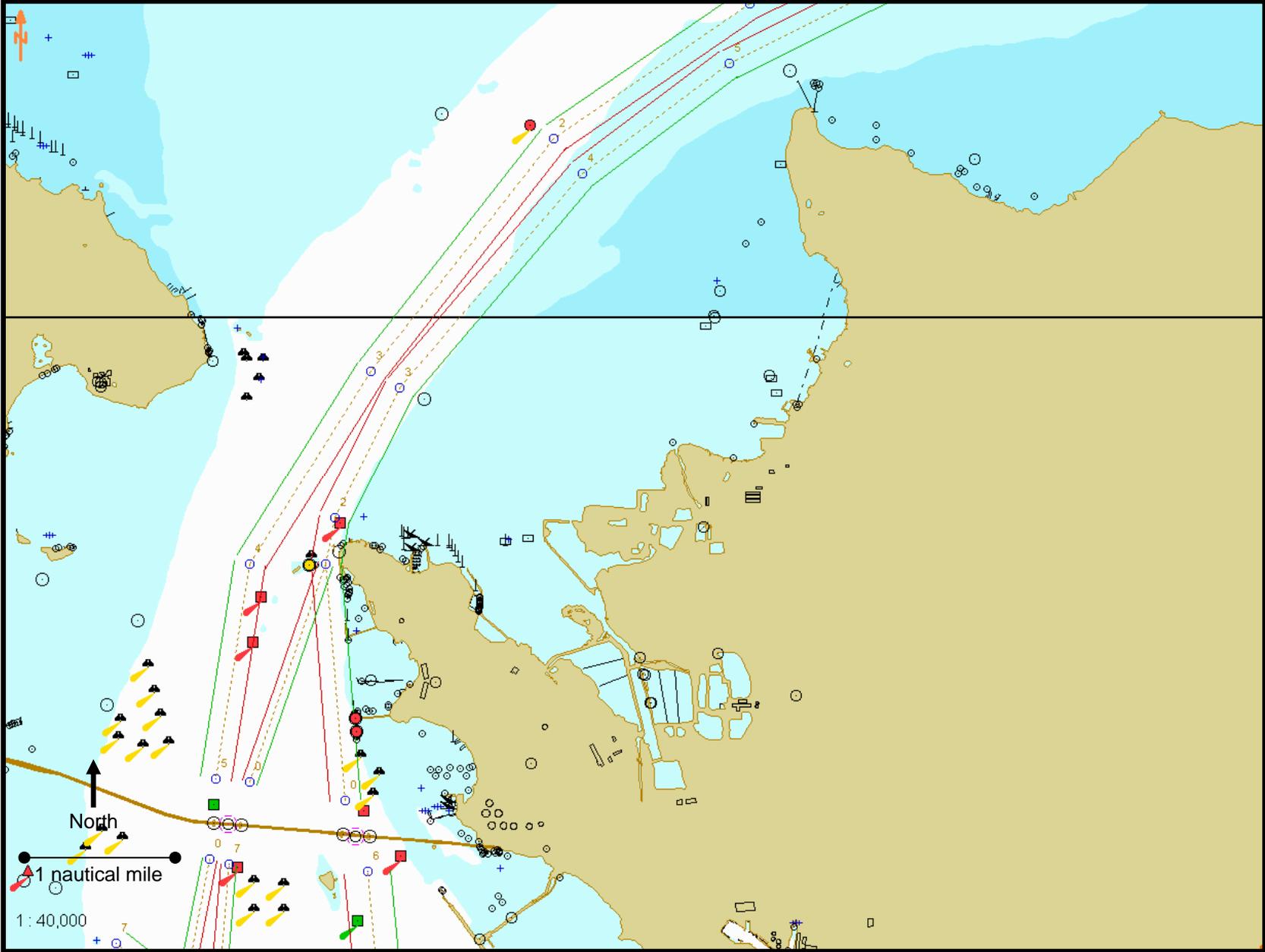
Central Bay and South San Francisco Bay



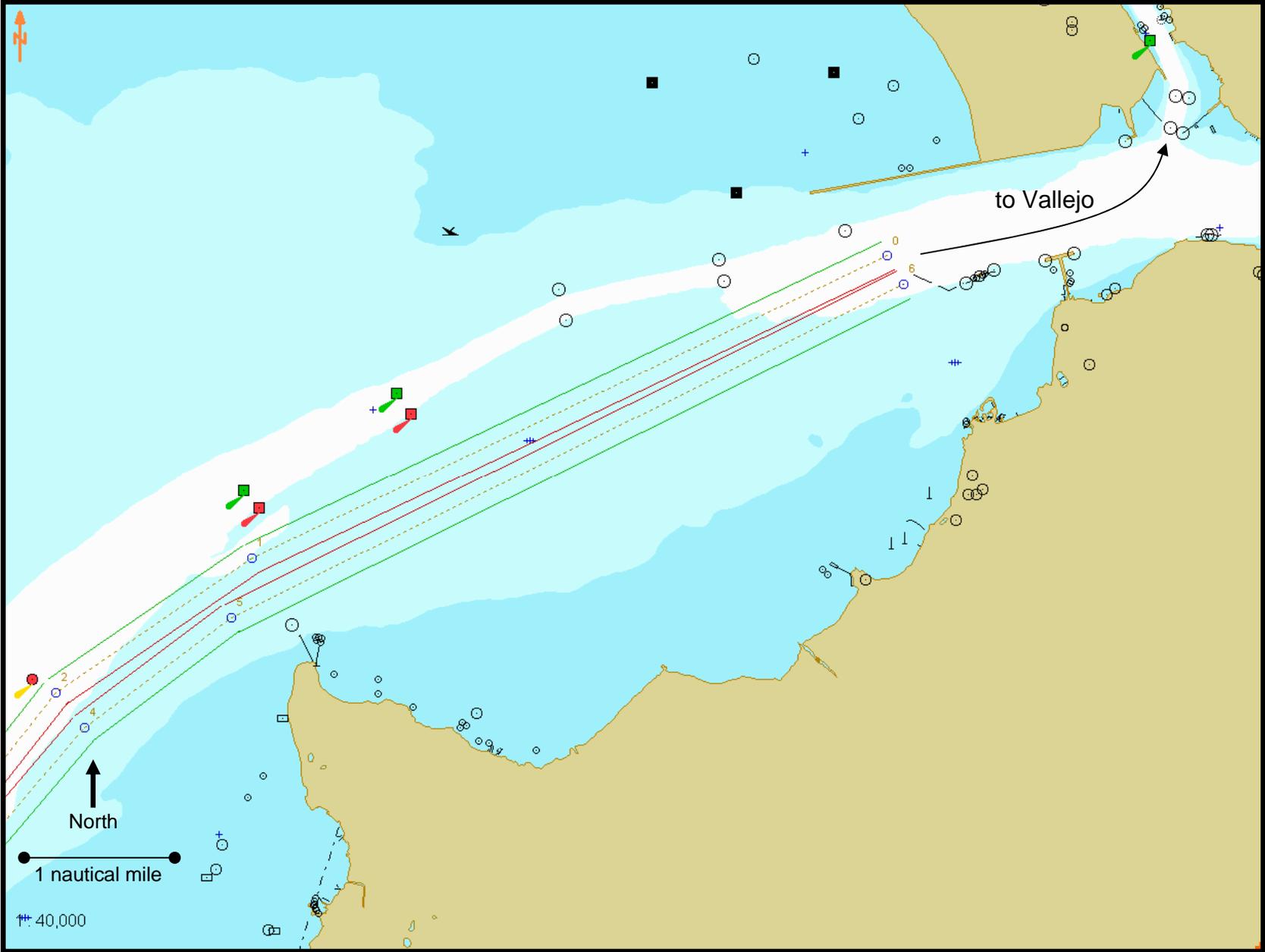
North Channel and Southampton Shoal Channel



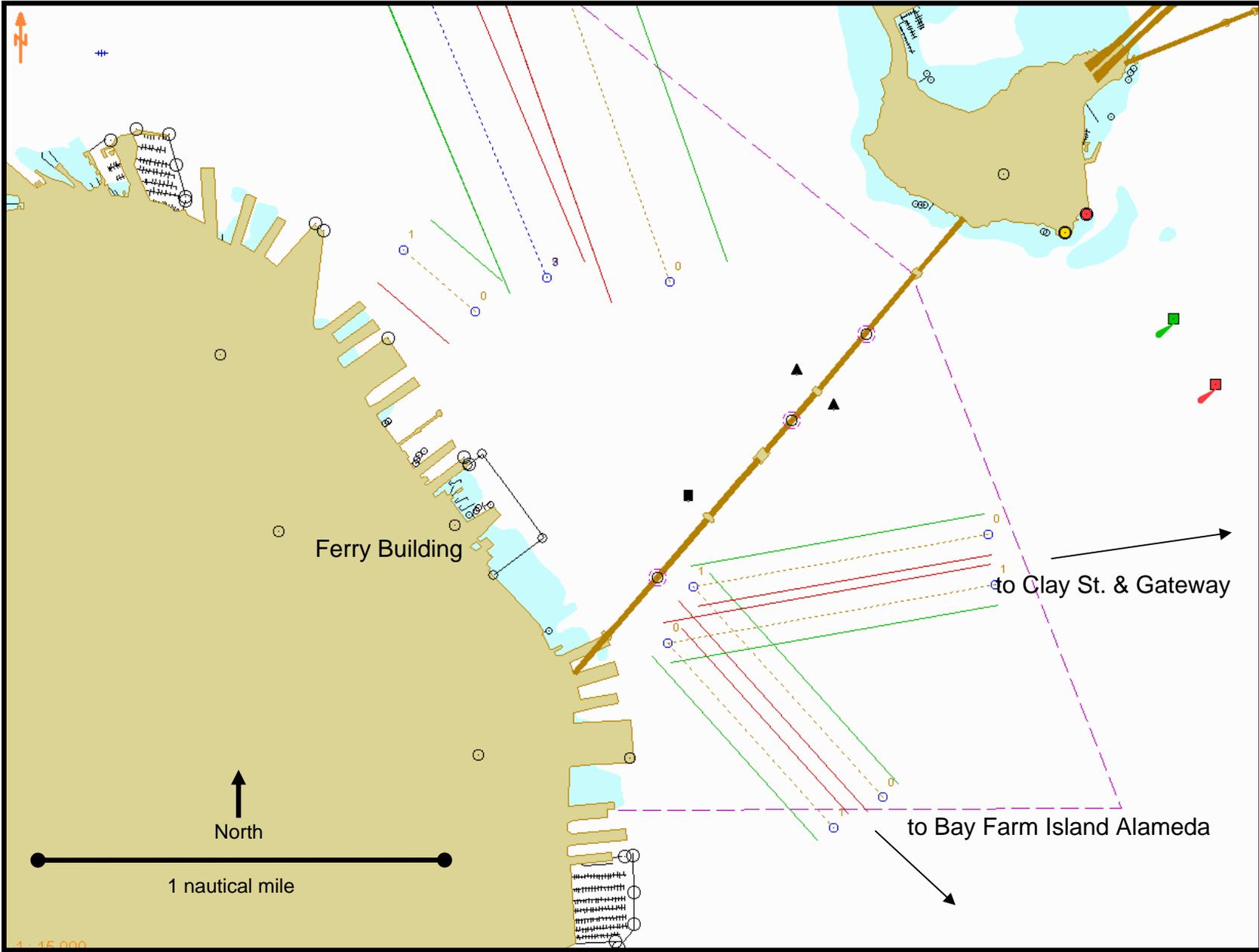
San Pablo Strait Channel



San Pablo Bay and Mare Island Strait



Ferry Building Approach/Departure Zone



Source and Contact Information

Diagrams are screen print files from vector-based electronic nautical charts (ENCs).

Additional lines and labels were added to the screen print files for emphasis and clarity.

For more information contact:

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U.S. Coast Guard Authority to Regulate Vessel Speed

The Federal Ports and Waterways Safety Act of 1972 (33USC1223) grants authority to the Coast Guard to further regulate vessel speed, and specifically states:

[The Coast Guard] may control vessel traffic in areas subject to the jurisdiction of the United States which the Secretary [of the Department of Homeland Security] determines to be hazardous, or under conditions of reduced visibility, adverse weather, vessel congestion, or other hazardous circumstances by a number of means, including establishing vessel traffic routing schemes and by establishing vessel size, speed, draft limitations and vessel operating conditions.

Under 33 Code of Federal Regulations (CFR) 161.11, the Coast Guard may, through the Vessel Traffic System (VTS), issue measures or directions to enhance navigation and vessel safety and to protect the marine environment, including establishing vessel traffic routing schemes.

International Regulations for Prevention of Collisions at Sea (COLREGS)

Maritime practices accepted worldwide are codified under the International Regulations for Prevention of Collisions at Sea (COLREGS), which address look-outs, safe transit speed, risk of collision, and conduct of vessels in restricted visibility.

Rule 5, Look-outs, states that “Every vessel shall at all times maintain a proper look-out by sight and hearing as well as by all available means appropriate in the prevailing circumstances and conditions so as to make a full appraisal of the situation and of the risk of collision.”

Rule 6 states, in part, that, “Every vessel shall at all times proceed at a safe speed so that the vessel can take proper and effective action to avoid collision and be stopped within distance appropriate to the prevailing circumstances and conditions.” Rule 6 continues, stating that factors to be taken into account in determining a safe speed include, but are not limited to, the state of visibility and the manageability of the vessel with special reference to stopping distance and turning ability in the prevailing conditions.

Rule 7 addresses risk of collision, and states, in part, that, “Every vessel shall use all available means appropriate to the prevailing circumstances and conditions to determine if risk of collision exists. If there is any doubt such risk shall be deemed to exist.”

Rule 19, Conduct of Vessels in Restricted Visibility, states, in part, that, “Every vessel shall proceed at a safe speed adapted to the prevailing circumstances and conditions of restricted visibility [and] every vessel shall have due regard to the prevailing circumstances and conditions of restricted visibility when complying with the Rules....”

XIV. Tug Escort / Assist For Tank Vessels

In 1990, Senate Bill 2040 (the Oil Spill Prevention and Response Act) established that tug escorting was beneficial for tanker operations and directed expeditious development of escorting regulations for San Francisco Bay. The requirement is based on the legislative finding that there is a navigational safety advantage of tug escorts. Tug escorts can improve tanker safety in at least two ways. Tug escorts can serve as emergency maneuvering aids in the event of loss of steering or propulsion, and a tug escort may also assist as an independent aid in the navigation of a tanker.

The Final Report of the States/British Columbia Oil Spill Task Force (1990) concluded that the risk of an oil spill could be reduced by eight to 11 percent with the mandatory use of tug escorts. That report, endorsed by the State of California, suggested that the escorts be highly maneuverable, have speed complementary to the tanker with sufficient power to control tanker direction, and that the power and number of escort tugs should be proportionate to the deadweight tonnage of the tanker.

The Harbor Safety Committee (HSC) established a Tug Escort Subcommittee, which created Interim Guidelines for tug escorting in San Francisco Bay. The Interim Guidelines recommended: minimum requirements for tug escort equipment and crews; a formula for matching tugs to tankers; establishing a central Clearing House to measure bollard pull and monitor and document compliance with the regulations; setting tug escort zones in the Bay; and various operational considerations. OSPR caused emergency regulations to be established in the winter of 1992 based on the Interim Guidelines.

In the spring of 1993, the HSC adopted a revised set of Permanent Guidelines to supersede the emergency regulations. The Permanent Tug Escort Guidelines differed from the Interim Guidelines in a number of significant respects. The Permanent Guidelines altered the formula for matching tugs to vessels by changing the bollard pull formula from ahead static bollard pull equal (or greater) than the dead weight tonnage of a regulated vessel to the astern static bollard pull in the same ratio. Additionally, performance standards for stopping a tanker; equipment standards and inspection of tugs; positioning of regulated vessels; and training requirements for tug escort crews were established. During the State's administrative process, OSPR chose to reject the permanent guidelines on the basis of their lack of rationale and scientific basis for matching tugs to tankers.

The subcommittee began what grew into a two-year process of preparing a scientific study of how to match escort tugs to tankers, with the assistance of a consultant and by holding extensive public hearings on the results of the study. Based on state funding concerns and time limitations, industry volunteered to engage a consultant in conjunction with an industry-based Technical Advisory Group and the Tug Escort Subcommittee acting as a policy board. Glosten Associates was hired to prepare a professional study focusing on the specifics of tug escorting on San Francisco Bay. Additionally, the State funded a peer reviewer, Michael M. Baristas of the University of Michigan, to review the consultant's work and to mitigate concern regarding bias. Their reports were completed in the winter of 1994.

The Glosten Study had adopted a dual-failure standard (the simultaneous loss of both propulsion and steering) as the basis for measuring the force (tanker demands) required to recover from the tanker machinery failure and remain within the tactical area of performance. Further, the tactical area was based on the ninety-fifth percentile of success in stopping the tanker within the available reach and transfer. After review of the enabling scope of work and industry concerns regarding the likelihood of a dual failure and the attendant tanker demands, the dual standard was thought to be unreasonable. The subcommittee set up various working groups to review failure probability, waterway characteristics, and commercial and navigational safety implications of demand standards and requested that Glosten calculate demands based on single failures.

These efforts resulted in a second Glosten Study and reports on failure probability and waterway specific characteristics. The subcommittee reviewed these reports and adopted a single failure standard for the development of matching criteria.

The process involved close involvement and participation by the interested public and OSPR. On August 10, 1995, the full Harbor Safety Committee reviewed and adopted the Tug Escort Subcommittee's guidelines on a vote of twelve to one. The HSC promptly transmitted the new guidelines and recommendations to OSPR for implementation.

The Committee publicly reviewed the regulatory language proposed by OSPR. During the review of the regulations, several issues were identified as not being in compliance with the Committee's recommendations. The most critical issues were related to the intended use of checklists to review and develop a transit-specific plan versus OSPR's new requirements that plans be filed with OSPR thirty days in advance. OSPR subsequently agreed to modify its proposed language to comply with the intent of the Committee's guidelines, which the Committee adopted in January 1996.

OSPR held a public hearing on the proposed permanent tug escort regulations on March 19, 1996. Approximately 15 people testified at the hearing. Most supported the new regulations but a sizable group protested the use of a single-failure standard instead of a dual-failure standard. Many of those who commented also suggested minor modifications to the regulations, such as individualized, company-specific check lists and reducing pilot liability. Written comments were also received.

In addition to the public hearing process on regulations, OSPR is required by law to have regulations reviewed by the State Inter-Agency Oil Spill Prevention Committee, which reviewed and approved the regulations for implementation, and by the OSPR Technical Advisory Committee, which is purely advisory and has no approval or disapproval authority. The issue of dual- versus single-failure standard was again debated and it was concluded to continue with the single-failure standard.

The Tug Escort regulations became effective January 1, 1997. (See Appendices for current list of certified tug escorts, the current Clearing House Report on escorted vessel movements and for Amended Tug Escort Regulations.) There have been no significant issues in implementing the regulations.

It should be noted that the 1997 Tug Escort regulations require that:

The OSPR Administrator shall review the matching criteria and other program elements within two years of the effective date of this subchapter. The program review will include a survey of the tanker-related incidents in U.S. waters to determine the types of failures that have occurred, an assessment of tug technology and any advances made in design and power, and the tug escort organizations. At the conclusion of the review, the Administrator will determine whether it is necessary to modify the tug/tanker matching criteria or any other provision of the program requirements....

The OSPR review to determine whether any changes should be made to the tug/tanker matching formula met the January 1, 1999 deadline; however, the regulations did not require a report and none was prepared. Rather than conduct a review every two years, the HSC, on behalf of the Administrator, reviews incidents on an ongoing basis at its monthly meetings. If further evaluation is warranted, issues are referred to the appropriate Work Group for additional analysis. Any findings and recommendations are brought before the full Committee for discussion and vote.

Subsequently, in 2001-2002, the HSC Tug Escort Work Group initiated a “sunshine” review of the entire tug escort regulations for the San Francisco Bay Region. The Work Group met for a one-and-a-half year period. The meetings were well attended by representatives of tanker operators, tug operators, the San Francisco Bar Pilots, marine terminal operators, the U.S. Coast Guard, OSPR, State Lands Commission, the San Francisco Marine Exchange and a host of other local maritime professionals.

The cornerstone of the regulatory review was a thorough examination of the tug/tanker matching matrix. The Work Group met with Dr. David Gray, Naval Architect of Gloston Associates from the Seattle-based company that developed the original tug/tanker matching matrix. Dr. Gray reviewed the assumptions upon which the matching formula was based and the present mix of tankers that call in the Bay. After much deliberation, the Work Group concluded that the tug/tanker matrix remains valid and should not be modified (determination made at the January 15, 2002 Work Group meeting and reported to the HSC at its February 14, 2002 meeting).

Training for Tug Escort Crews. As a result of its study of the tug/tanker matching matrix, the Work Group determined that in order for tug escorts to be effective in an emergency, training of escort tug and ship crews under pilot direction should be addressed. The Work Group concluded that training exercises could not be mandated by regulation, as the training exercises must be individual to the tugs and vessels because of the wide variety of tankers, barges and tugs and variety of conditions on the Bay. The Work Group prepared guidelines entitled “Recommendations for Conducting Escort Training on San Francisco Bay,” which outlines procedures for tug and ship crews, as well as pilots, to participate in live training exercises under agreed-upon, non-emergency conditions. A draft of the Recommendations was circulated to various tug, tanker, and barge companies and to the S.F. Bar Pilots.

The guidelines were adopted by the full Committee on May 9, 2002 (see Appendices). The HSC Secretariat, through the Marine Exchange, then sent a letter to all affected parties in the maritime community, encouraging companies to adopt the Recommendations. The Tug Escort Work Group reports that tug escort emergency maneuvers are being conducted on a voluntary basis in accordance with the HSC’s Recommended Guidelines.

In September 2008, the Tug Escort Work Group was given a presentation of a Simulator Training Program for Tugs and Pilots that is being used in Puget Sound for tug captains, Puget Sound Pilots and B.C. Pilots. Over the years it has become evident that the opportunity for on-the-water exercises involving tankers and tugs has been extremely limited at best, with few individuals trained for actual events. However, with maritime

simulators becoming more sophisticated in their ability to replicate a variety of situations and with a California Maritime Academy (CMA) simulator operational within a few months, the Work Group decided to explore the opportunity for simulating local conditions on a cost-effective basis to the maritime community within the San Francisco Bay Area.

The Work Group concluded that in addition to promoting simulator training for tugs escorting tankers, simulator training is applicable to tugs assisting and docking container ships, bulk carriers and chemical ships – thus providing industry-wide benefits for safe navigation.

The Harbor Safety Committee encourages the maritime industry to provide simulator training for tug personnel with pilot participation for emergency tug operations, based on local conditions. The training will improve communication between pilots and tug masters, offer in-house training to tug industry personnel, and provide valuable “lessons learned” for emergency situations in a controlled environment.

Escorts for Non-petroleum Tankers. In 2003, the Harbor Safety Committee rescinded its prior recommendation to propose state legislation requiring tug escorts for vessels “carrying certain dangerous chemical cargoes in enough quantities to pose a risk” in San Francisco Bay, based on the following:

- It was extremely difficult to define dangerous cargoes and quantities that could be translated into legislation.
- Thorough analysis of this category of vessels in the Bay in calendar year 2001 did not reveal a pattern of problems or inadequate ship design.
- The Coast Guard has the authority through Port State Control to require tug escorts and to detain “problem ships” if necessary.

In 2004, State legislation (SB 1480) was proposed that would allow “[t]he OSPR Administrator, in consultation with the harbor safety committees, to adopt regulations governing tugboat escorts for other vessels carrying hazardous materials that are entering, leaving, or navigating in the harbors of the state.”

The Harbor Safety Committee opposed SB 1480 and companion legislation AB 2777 because:

1. The Tug Escort Work Group carefully reviewed the nine-year record of Coast Guard Casualty reports for Chemical Tankers, the seven-year record of Coast Guard Captain of the Port (COTP) orders to require Chemical Tankers to be tug escorted, and Chemical Tanker arrivals in the Bay for the year 2003. Of 23

reported casualties, only four were for loss of steering or power; four were for the same ship, and seven were tankers carrying oil. The other casualties were minor in nature because of the broad definition of a reportable Marine Casualty.

Similarly, of the COTP orders for seven Chemical Tankers, five vessels carried oil and the other two most likely carried oil. The major increase in the number of Chemical Tankers was due to the change in definition of tankers by Lloyds of London. Also noted was the fact that most chemical tankers are double-hulled ships subject to strict standards and close vetting review.

2. The definition of “hazardous materials” is too broadly written to be meaningful in pinpointing the most dangerous chemicals and quantities hazardous to the public and the environment. As written, the legislation would affect almost every ship in the Bay, from cargo ships to tankers, and would not enhance safety.
3. The Work Group was concerned that, because the definition of hazardous materials is so broadly written, permanent broad powers would be granted to the OSPR Administrator with no criteria or analysis upon which to base his/her decision.

The Harbor Safety Committee sent its recommendation to the OSPR Administrator. The legislation was vetoed by the Governor.

XV. Pilotage

Pilotage is of primary import to Bay shipping because of complex local conditions consisting of narrow navigation channels, many bridges, swift tides and currents, variable weather patterns, and large numbers of ships and small vessels. For more than one-hundred-fifty years, the State has regulated pilotage over the Golden Gate bar through the State Board of Pilot Commissioners, which was created in 1850.

San Francisco Bar Pilots. This category of pilots is also referred to as Bar Pilots. A state license is required for a Bar Pilot to handle vessels entering the Bay and operating inside the Bay. A federal pilot's license is also required. The State Board of Pilot Commissioners regulates the number, licensing, training and disciplining of Bar Pilots for the Bays of San Francisco, San Pablo and Suisun.

Federal Pilots. Federal pilots are licensed by the U.S. Coast Guard to handle U.S. flag vessels under enrollment. State licenses for these pilots are not required.

Inland Pilots. An inland pilot is required to have both a state license and a federal license to pilot vessels solely inside of the Golden Gate. The State Board of Pilot Commissioners regulates inland pilots.

Ports of Stockton and Sacramento. The Ports of Stockton and Sacramento have separate pilotage authority from the Board of Pilot Commissioners. In practice, these ports issue commissions to certain pilots licensed by the state.

Docking Pilots. Section 1179 of the Harbors and Navigation Code allows shipping companies who expressed their intent to the Board of Pilot Commissioners before July 1, 1983, to have their own employees used as pilots in lieu of Bar Pilots. In the Bay, a grandfathering clause allows one shipping company to use its own employee(s) who are not subject to State Board of Pilot Commission regulations as pilots for docking. These employees are federally licensed.

Vessel Movements. The decision-making process by the Master and the Pilot to move a vessel should consider all relevant factors, including, but not limited to:

- The characteristics of the vessel, such as maneuverability, size and draft;
- The capabilities of the vessel's navigation equipment;
- Tide, current and wind conditions on the intended route;
- Time of the day in relation to whether the fog may be in a cycle of "burning off" or lifting;

- Possible hazards along the route, such as bridges, and amount and nature of vessel traffic; and
- Visibility conditions at the dock, en route and at the destination, and assessment of whether these conditions are changing.

Harbors and Navigation Code Preventing Unlicensed Person from Performing Pilotage. State legislation requires the use of pilots on San Francisco Bay and provides penalties to prevent unlicensed persons from performing pilotage. The penalty for acting as a pilot while not holding a pilot license was increased to a maximum of \$25,000 (Harbors and Navigation Code Section 1126).

Navigation Technology

Following the Cosco Busan allision and spill in November 2007, the Governor directed OSPR to investigate the potential role of navigational technology in reducing the risk of vessel collisions in the San Francisco Bay Region. The HSC Navigation Work Group agreed to coordinate its review with the work of the Board of Pilot Commissioners, which formed a Navigation Technology Committee to develop recommendations for the enhancement of pilots' ability to safely navigate using shipboard and portable electronic navigation systems.

Over the course of several months, in investigating different types of navigation systems found on ships calling on the San Francisco Bay Area and the sufficiency of pilot training in the use of such systems, the Pilot Commission Technology Committee considered presentations by experts in navigation technology and in the education of mariners in the use of the technology. The committee also evaluated portable electronic navigation chart systems that can be brought aboard by pilots, various comprehensive reports on their use, liability issues and interface with shipboard equipment and how portable pilot units are regulated in other jurisdictions.

The HSC Navigation Work Group reviewed the recommendations adopted by the Pilot Commission and developed recommendations to the Harbor Safety Committee. The Work Group noted that prudent mariners rely on an array of informational sources when navigating, including paper charts, electronic charts, Army Corps of Engineers charts, USCG Notices to Mariners, etc.

Portable electronic navigation chart systems that can be brought aboard by pilots, or Portable Pilot Units ("PPUs"), are an additional navigational tool proposed to be carried by Pilot Commission-licensed pilots in San Francisco Bay. These units cannot supplant onboard systems; however, their use is appropriate in the Bay due to its variety of microclimates and periods of dense fog.

To further navigational safety, the Work Group agreed to support international efforts to standardize symbols used on onboard charts. Confusion can result when piloting the more than 900 different ships that transit the Bay, many of which carry different charting systems featuring proprietary symbology. Future training of Pilot Commission-licensed pilots in advanced electronic navigation systems will include symbology used on different charts.

In July 2008, the HSC adopted the following specific recommendations:

1. Urge the Board of Pilot Commissioners, as a near-term priority, to work with the San Francisco Bar Pilots to incorporate in the Pilot training program enhanced training in advanced electronic navigation systems, providing exposure to a greater number of systems and variety of presentations.

2. Support adoption by the Board of Pilot Commissioners of a regulation to require that pilots licensed by the Pilot Commission be equipped with, and trained in the use of, portable electronic navigation equipment, commonly known as Portable Pilot Units ("PPUs"). The regulation should require that pilots be equipped with PPU's at all times while piloting except when the pilot deems that embarking on or disembarking from a vessel while carrying a PPU may present an unacceptable safety hazard to the pilot or when circumstances would prevent its use.

Such PPU's shall, at a minimum, have the following capabilities:

- (a) Displaying approved electronic navigation charts (ENCs) issued by the cognizant U.S. government authority;
- (b) Displaying the vessel's position and heading on such ENCs to the accuracy required by the International Maritime Organization (IMO) for Automatic Identification Systems (AIS); and
- (c) Displaying other navigational information as provided through the vessel's AIS pilot plug.

Appendix A - Best Maritime Practices

Background. The container ship Cosco Busan allided with the Oakland Bay Bridge November 7, 2007, releasing approximately 53,000 gallons of fuel oil. Shortly afterward Governor Schwarzenegger issued a directive to investigate and make recommendations on the navigational and operational aspects of the Cosco Busan allision. The HSC was assigned this task by OSPR. HSC Work Groups discussed the issues at length, and based on facts known of the incident at the time, developed recommendations to improve vessel transit in the Bay. The findings and recommendations developed by the Harbor Safety Committee in light of the allision covered a number of topics, some of which are now included in the Harbor Safety Plan.

Additionally, prior to the Cosco Busan incident, OSPR directed the five Harbor Safety Committees in California to adopt Best Maritime Practices for each harbor to ensure that vessels in transit will be aware of the guidelines of operation in California harbors, to be incorporated into each Harbor Safety Plan. During 2008 and early 2009, the S.F. Harbor Safety Committee developed a number of Best Maritime Practices (“BMPs”) for safe navigation in the San Francisco Bay Region. These guidelines, summarized below, provide important information necessary for safe, reliable and environmentally sound vessel movements in and around San Francisco Bay. The BMPs also are available on the Marine Exchange website: www.sfmex.org/support/hsc/introhscbestpractices.htm.

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Large Vessels and Tugs with Tows \geq 1600 GT: Speed Restrictions on San Francisco Bay

Large Vessels are power driven vessels of 1600 gross tons or more, and tugs with tows of 1600 gross tons or more. Specific areas where a **15 knot speed limit** applies within the San Francisco Bay region are prescribed in 33 CFR 165.1181:

- Golden Gate Traffic Lanes, which include the westbound and eastbound lanes west of the Golden Gate Precautionary Area
- Golden Gate Precautionary Area
- Central Bay Traffic Lanes, which include the Deep Water Traffic Lane, the eastbound lane (south of Alcatraz Island) and the westbound lane (south of Harding Rock)
- Central Bay Precautionary Area
- North Ship Channel between North Channel Lighted Buoy “A” and the Richmond-San Rafael Bridge
- Southampton Shoal Channel including the Richmond Long Wharf maneuvering area
- Richmond Harbor Entrance Channel
- Oakland Harbor Bar Channel including the Outer and Inner Harbors Entrance Channels
- San Pablo Strait Channel
- Pinole Shoal Channel
- Benicia-Martinez Railroad Drawbridge

Additionally, power driven vessels of 1,600 or more gross tons shall have their engines ready for immediate maneuver and shall not operate in control modes or with fuels that prevent an immediate response to any engine order ahead.

Note: In instances where a slower speed than the 15 knot RNA limit is required for safe navigation, the COLREGS will prevail.

See Harbor Safety Plan Chapter VII: Vessel Speed and Traffic Patterns for discussion.

Large Vessels and Tugs with Tows ≥ 1600 GT: Guidelines for Navigating in Reduced Visibility

Large Vessels are power driven vessels of 1600 gross tons or more, and tugs with tows of 1600 gross tons or more. Mariners are at all times to comply with the requirements of the COLREGS.

Critical Maneuvering Areas (CMAs): There are areas within the Bay where additional standards of care are required due to the restrictive nature of the channel, proximity of hazards, or the prevalence of adverse currents. Large vessels should not transit through CMAs when visibility is less than 0.5 nautical miles. Locations within the Bay identified as Critical Maneuvering Areas:

- Redwood Creek
- San Mateo-Hayward Bridge
- Oakland Bar Channel*
- Islais Creek Channel
- Richmond Inner Harbor
- Richmond-San Rafael Bridge, East Span
- Union Pacific Bridge
- New York Slough, up-bound
- Rio Vista Lift Bridge

*The Oakland Bar Channel is identified due to cross currents and its proximity to the Bay Bridge and Yerba Buena Island.

Vessels docked: Large vessels at a dock within the Bay should not commence a movement if visibility is less than 0.5 nautical miles at the dock.

Vessels proceeding to dock: Large vessels proceeding to a dock should anchor if visibility at the dock is known to be less than 0.5 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option.

Note: Vessel pilots or operators should notify VTS upon determination that a scheduled movement will be delayed or cancelled. If underway, they shall make a sailing plan deviation report per VTS regulations.

Adopted March 2008. See Harbor Safety Plan Chapter II: General Weather, Currents and Tides for discussion.

Large Vessels and Tugs with Tows \geq 1600 gross tons: Guidelines for Navigating in Severe Weather

A number of factors must be considered when limiting transits in the Bay or closing the Bar due to severe weather, including sea state, tidal influences, visibility, traffic density, and wind advisories issued by NOAA. The size, class and condition of the vessels being addressed must also be considered. The HSC recommends a tiered approach, applying greater caution as conditions worsen.

Sustained winds exceeding 25 knots in the Bay

- Vessels should closely evaluate whether it is safe to transit in the Bay. Size, class and sail area of the vessel, tidal influences, visibility, and traffic density should all be considered.
- VTS San Francisco will establish regular communications with bridge watches of VTS users in Bay Area anchorages, and more closely monitor swing circles to ensure vessels are not dragging.

Sustained winds exceeding 40 knots in the Bay

- Transits to and from berths are not recommended.

Sustained winds exceeding 40 knots and/or seas exceed 12 ft at the Sea Buoy

- Bar traffic restrictions and closure should be considered. Size and class of the vessel, draft, swell period, tidal influences, visibility, and traffic density should all be considered. Strong ebb tides should be avoided, and a minimum of 10 feet under-keel clearance is recommended.

Procedures for Closing the Bar or Restricting Bar Traffic

- Bar closures are exercised on a situational basis without specifically defined weather or security conditions.
- The most recent San Francisco Bar Pilot over the Bar, inbound or outbound, shall make the recommendation to the dispatcher that the Bar should be considered for closure, or traffic limited to one-way traffic.
- In the event that the station boat is “boarded off”, then the station boat captain will make the recommendation to the dispatcher.
- The dispatcher will then notify the Operations Pilot, who will notify the Port Agent.

- The Operations Pilot or Port Agent will then notify the U.S. Coast Guard VTS and Command Duty Officer at the Sector San Francisco Command Center.
- The Captain of the Port will consult with the Operations Pilot or Port Agent prior to closing the bar under Captain of the Port authority. The Coast Guard will then issue a Marine Safety Broadcast communicating the closure or traffic restriction.
- The procedure for lifting traffic restrictions or re-opening the Bar will be the same as that for restricting traffic or closing the Bar.
- Vessels under Federal Pilotage or Public Vessel may petition the Captain of the Port to transit the San Francisco Bar.

Adopted January 2009. See Harbor Safety Plan Chapter II: General Weather, Currents and Tides for discussion.

Tugs with Tows <1600 Gross Tons: Guidelines for Navigating in Reduced Visibility

Critical Maneuvering Areas (CMAs): There are areas within the Bay where additional standards of care are required due to the restrictive nature of the channel, proximity of hazards, or the prevalence of adverse currents. Tugs with tows should not transit through CMAs when visibility is less than 0.25 nautical miles. Tugs with tows in petroleum service should not transit through CMAs when visibility is less than 0.5 nautical miles.

Locations within the Bay identified as Critical Maneuvering Areas:

- Redwood Creek
- San Mateo-Hayward Bridge
- Oakland Bar Channel*
- Islais Creek Channel
- Richmond Inner Harbor
- Richmond-San Rafael Bridge, East Span
- Union Pacific Bridge
- New York Slough, up-bound
- Rio Vista Lift Bridge

*Note: the Oakland Bar Channel is identified due to cross currents and its proximity to the Bay Bridge and Yerba Buena Island.

Vessels docked: Tugs with tows at a dock within the Bay should not commence a movement if visibility is less than 0.25 nautical miles at the dock. Tugs with tows in

petroleum service at a dock within the Bay should not commence a movement if visibility is less than 0.5 nautical miles at the dock.

Vessels proceeding to dock: Tugs with tows proceeding to a dock should anchor if visibility at the dock is known to be less than 0.25 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option. Tugs with tows in petroleum service proceeding to a dock should anchor if visibility at the dock is known to be less than 0.5 nautical miles, unless, under all circumstances, proceeding to the dock is the safest option.

Note: Vessel captains or operators should notify VTS upon determination that a scheduled movement will be delayed or canceled. If underway, they shall make a sailing plan deviation report per VTS regulations.

Adopted February 2009. See Harbor Safety Plan Chapter II: General Weather, Currents and Tides for discussion.

Tugs with Tows <1600 Gross Tons: Guidelines for Navigating in Severe Weather

A number of factors must be considered when limiting transits in the Bay or closing the Bar due to severe weather, including sea state, tidal influences, visibility, traffic density, and wind advisories issued by NOAA. The size and condition of the vessels being addressed must also be considered. The Tug Escort Work Group recommends a tiered approach, applying greater caution as conditions worsen.

Sustained winds exceeding 25 knots in the Bay

- Tugs with tows should closely evaluate whether it is safe to transit in the Bay. Size and sail area of the vessel, tidal influences, visibility, operator skill and traffic density should all be considered.
- VTS San Francisco will establish regular communications with bridge watches of VTS users in Bay Area anchorages, and more closely monitor swing circles to ensure vessels are not dragging.

Sustained winds exceeding 40 knots in the Bay

- Transits to and from berths are not recommended, but may be performed following a careful risk management evaluation by the vessel operator and vessel management.

Sustained winds exceeding 40 knots and/or seas exceed 12 ft at the Sea Buoy

- Bar traffic restrictions and closure should be considered for tugs with tows. Size of the vessel, draft, swell period, tidal influences, visibility, and traffic density should all be considered. Strong ebb tides should be avoided, and a minimum of 10 feet under-keel clearance is recommended.

Adopted February 2009. See Harbor Safety Plan Chapter II: General Weather, Currents and Tides for discussion.

Emergency Training for Tug Escorting

A set of recommendations for conducting Escort Training on San Francisco Bay is included in the Harbor Safety Plan (Appendix J). The guidelines anticipated live escort training exercises; however, few opportunities arise for on-water exercises involving tankers and tugs, with few individuals trained for emergency events. With maritime simulators becoming more sophisticated in their ability to replicate a variety of situations and with a California Maritime Academy simulator soon operational, the HSC found simulating local conditions to be a cost-effective alternative to on-water exercises.

The Work Group concluded that in addition to promoting simulator training for tugs escorting tankers, simulator training is applicable to tugs assisting and docking container ships, bulk carriers and chemical ships – thus providing industry-wide benefits for safe navigation.

The HSC recommends the use of simulators to improve communication between pilots and tug masters, offer in-house training to tug industry personnel, and provide valuable “lessons learned” for emergency situations in a controlled environment.

Adopted November 2008. See Harbor Safety Plan Chapter XIV: Tug Escort/Assist for Tank Vessels for discussion.

S.F. Bar Pilots: Use of Portable Navigation Units

The SF HSC recommends that San Francisco Bar Pilots be trained in the use of and equipped with Portable Pilot Units (PPUs) at all times while piloting, except when the pilot deems that embarking on or disembarking from a vessel while carrying a PPU may present an unacceptable safety hazard to the pilot or when circumstances would prevent its use.

Such PPU shall, at a minimum, have the following capabilities:

- (a) Displaying approved electronic navigation charts (ENCs) issued by the cognizant U.S. government authority;

- (b) Displaying the vessel's position and heading on such ENC's to the accuracy required by the International Maritime Organization (IMO) for Automatic Identification Systems (AIS); and
- (c) Displaying other navigational information as provided through the vessel's AIS pilot plug.

Adopted July 2008. See Harbor Safety Plan Chapter XV: Pilotage for discussion.

Small Passenger Vessels - Ferries: Recommended Guidelines for Navigating in Reduced Visibility and Severe Weather

Safety Practices

The Master of a ferry is the person in charge of the vessel, responsible for the safety of the passengers and crew at all times, and has the authority to decide if it is safe to get underway or to proceed.

In reduced visibility and inclement weather conditions, the following practices are followed:

- A go or no-go decision to get underway is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the master and operations manager.
- Look-outs: the vessel Master assigns crewmembers for look-out duty based on the existing or anticipated conditions; the applicable regulations are found in the Navigation Rules and Regulations, Rule 5 Look-out (text attached).
- Safe speed: the vessel is required to proceed at a speed appropriate to the prevailing circumstances and conditions, which include state of visibility and the manageability of the vessel with special reference to stopping distance and turning ability. Other factors include participation in fixed ferry routes, wind advisories issued by NOAA, sea state, traffic density, and applicable Navigation Rules and Regulations (see attached verbiage from Rule 6 Safe Speed).
- Equipment: each Ferry is required to have at minimum one radar; commuter ferry vessels generally have two operational radars onboard; the vessel Master is required to have a radar observer license endorsement. Global Positioning Satellite, Automatic Identification System and Electronic Charting navigation systems are also installed and used to assist navigation.

In conditions of high wind and waves:

- Go/no-go decision is made by the vessel Master or the company Operation Manager, based on conditions along the entire route, using all available information including the experience of the master and operations manager. Factors to be considered include size of the vessel, direction of the winds and seas, orientation of departure and arrival piers to prevailing conditions, and limitations of ferries to travel at slower speeds.
- Passenger safety: Captain can maneuver the vessel to minimize wave effects. Crew duties include rough weather announcements and passenger safety management.

High Speed Ferry Operations (over 30 Knots)

U.S. Coast Guard Navigation and Vessel Inspection Circulars (NAVIC) 5-01 and 5-01 Change 1 provide specific guidance for high speed passenger vessels and include approved vessel operation manuals, training programs and risk assessment tools (matrix).

- Vessel equipment: operators have exceeded minimum requirements for navigation electronics including dual radar, Global Position Satellite and electronic charting with Automatic Identification System overlay.
- Manning/Training: Vessels traveling at high speed are required to have a minimum of two qualified watch-standers during normal operations. Vessel operators have developed approved training programs for high speed navigation in compliance with NAVIC 5-01 and 5-01 Change 1.

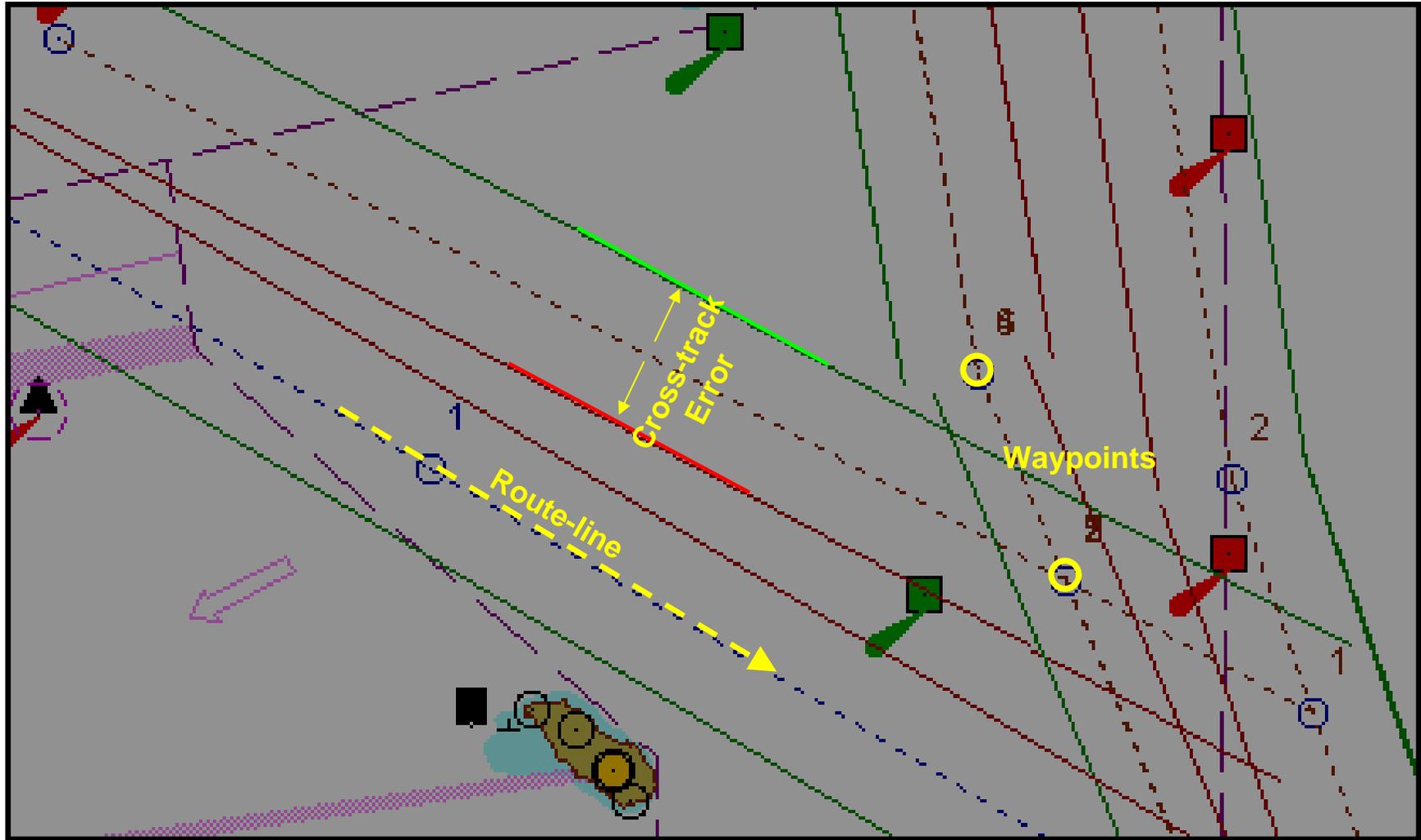
Adopted February 2009. See Harbor Safety Plan Chapter XI: Small Passenger Vessels - Ferries for discussion.

Passenger Ferry Traffic Routing Protocol

To avoid future possible ferry collisions, particularly in light of expanded fast ferry service, a protocol for ferry navigation in the San Francisco and San Pablo Bays includes routes and a Ferry Building Approach Zone, as shown in Figures 1-7 below.

Adopted May 2008. See Harbor Safety Plan Chapter XI: Small Passenger Vessels - Ferries for discussion.

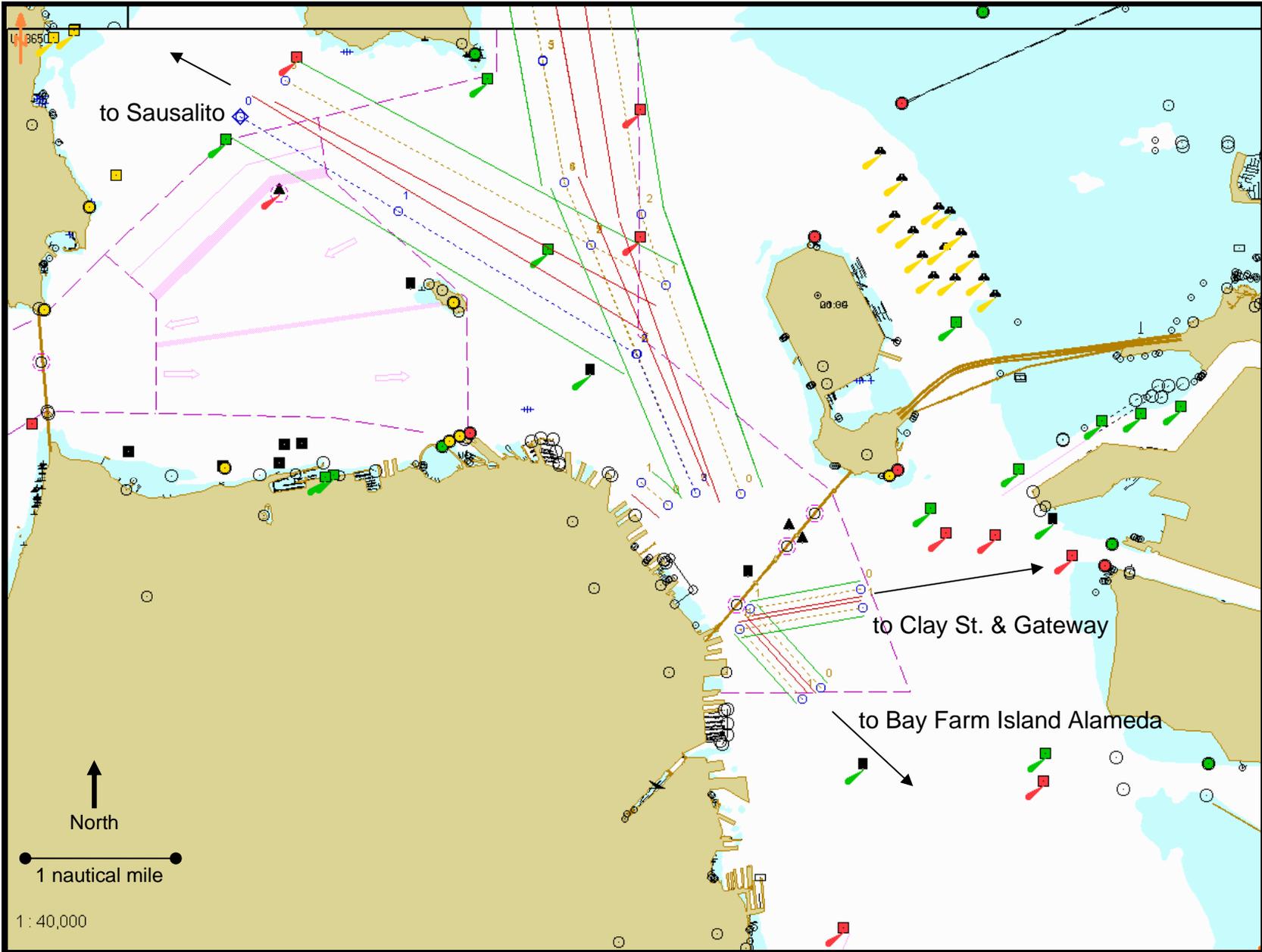
Diagram Key



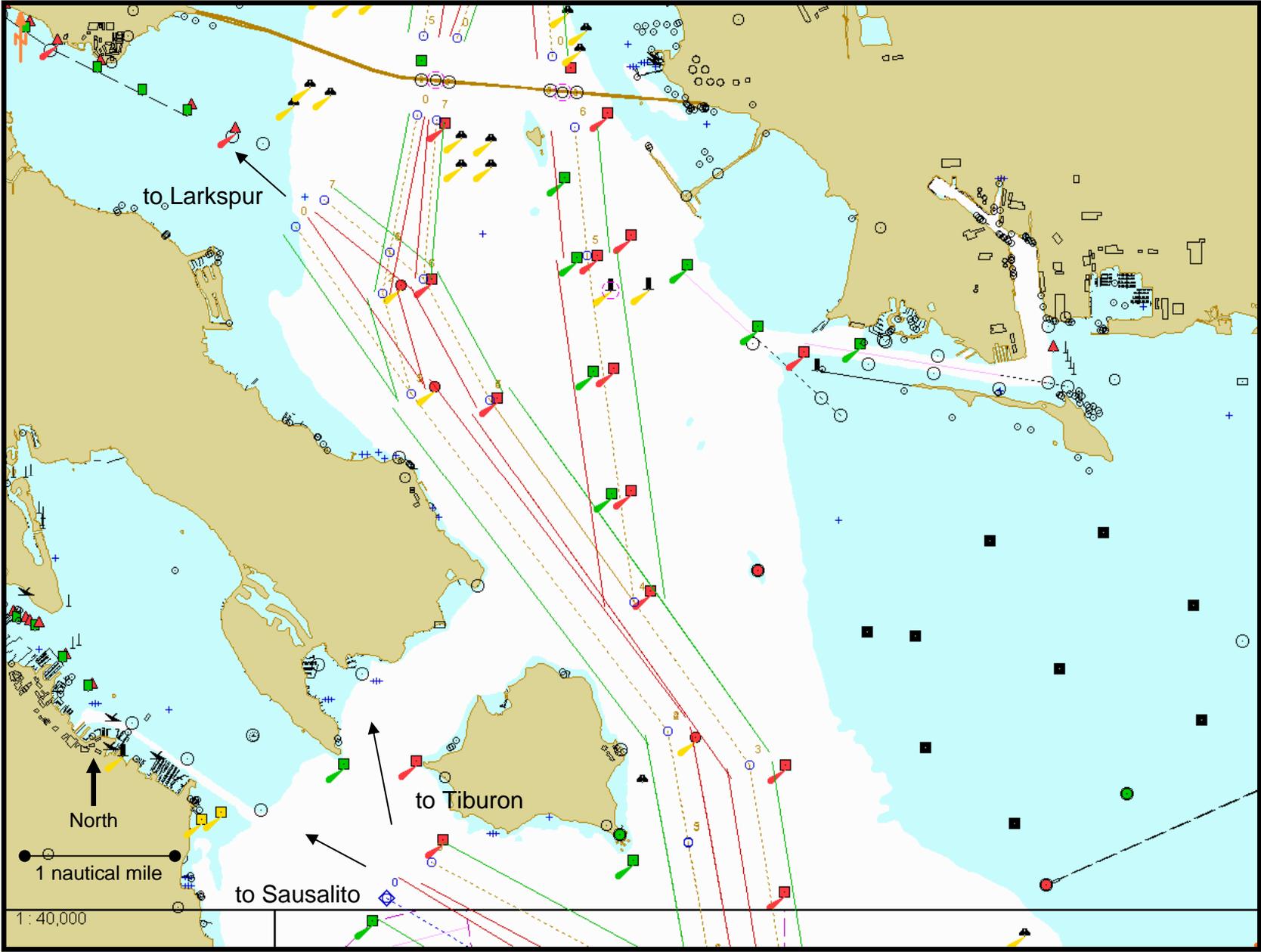
The following chart features are highlighted above.

- Route-line: Centerline of the ferry route.
- Cross-track Error: Left and right of route-line tolerance.
- Waypoints: Turns, route crossing points, and communications points.

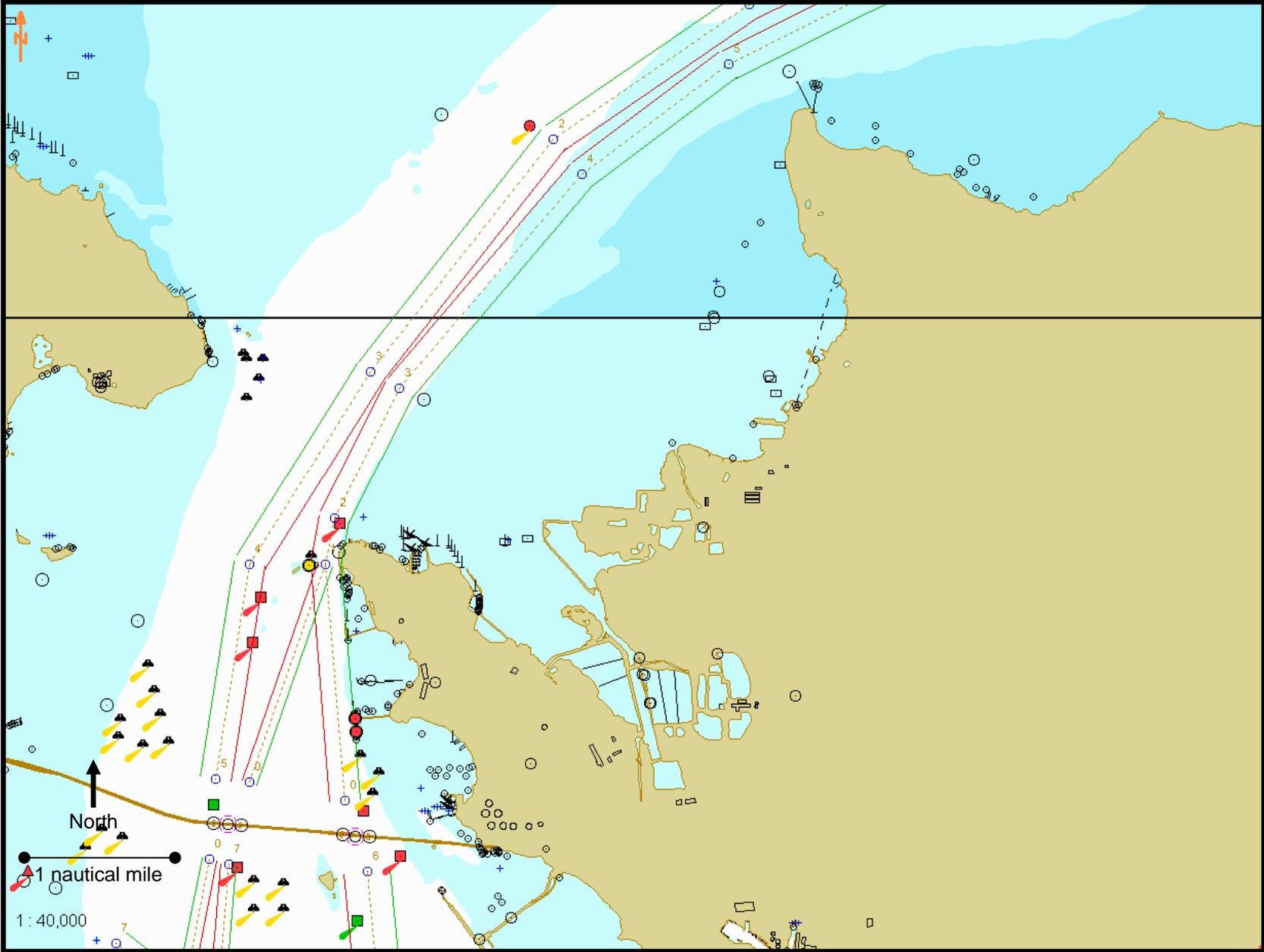
Central Bay and South San Francisco Bay



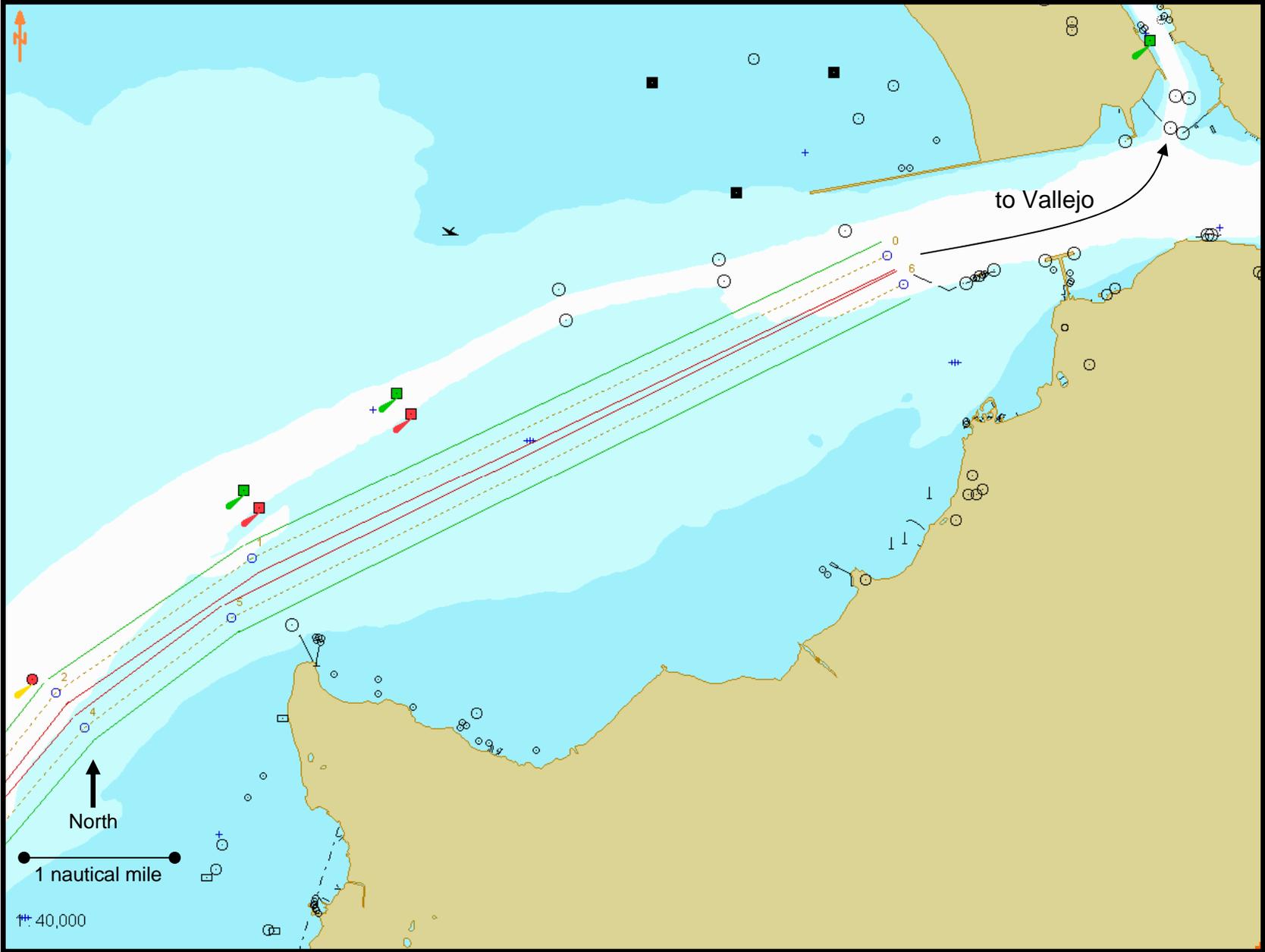
North Channel and Southampton Shoal Channel



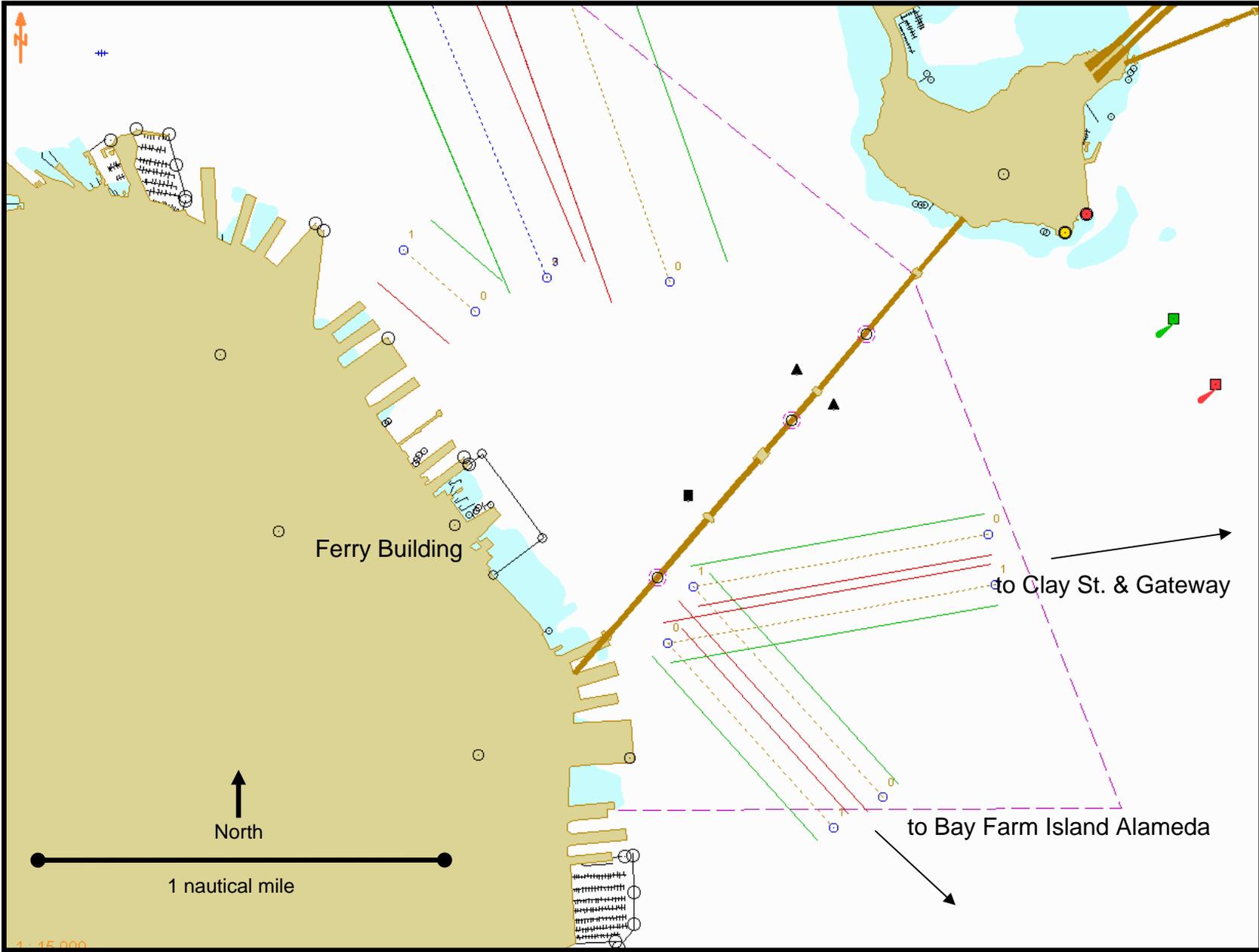
San Pablo Strait Channel



San Pablo Bay and Mare Island Strait



Ferry Building Approach/Departure Zone



Source and Contact Information

Diagrams are screen print files from vector-based electronic nautical charts (ENCs).

Additional lines and labels were added to the screen print files for emphasis and clarity.

For more information contact:

Scott Humphrey

Training Director

Sector San Francisco Vessel Traffic Service

Phone: +1 415 399 7444

Email: scott.humphrey@uscg.mil

Communication Procedures to Improve Safety During Bunker Barge Transfer Operations Alongside Container Vessels

Container Vessel Bunker Barge Safety Program and Delivery Notice. This document outlines the process for essential communication between the agents, bunker barge operators (tankermen) and terminal's Marine Department to ensure a safe and productive work environment. The Container Operator has adopted this Best Management Practices Program and has instituted it to assist all parties involved in the vessel operations when vessel bunkering is involved in the operation.

The "Bunker Delivery Notice" appears at the end of this section. The Agent will e-mail the notice to the Ship, Terminal and the Bunker Barge operator prior to the stevedoring operation. The terminal, ship and barge operator will reply to the E-mail by including the contact phone/cell number of the person working that vessel/shift. This will be the cross check that all parties are aware of during a planned bunkering operation.

Essential Communications: Contact between the Tankerman and Terminal

- The Bunker Barge Operator (Tankerman/Person in Charge (PIC)) must contact the Designated Facility Contact prior to beginning the barge operation.
- This will allow the Tankerman/PIC to learn the planned stevedore operation in the CFS/CLO and highlight any possible conflicts. (A Check Sheet shall be used for this function.)
- The Bunker Barge representative (Tankerman/PIC), must communicate with the Designated Facility Contact, and Chief Engineer/Chief Mate, (vessel PIC) prior to beginning the barge operation. This will allow the Tankerman to learn the planned stevedore operation and highlight any possible conflicts so they may be eliminated.

Essential Communications: Tankerman Check Sheet

- a. What are the bay designations directly forward and aft of the house on this vessel that overlap the bunker barge?
- b. Is there any planned loading, discharging, or lashing in these bays?
- c. When does the terminal plan to work these bays?
- d. Is any of the work in these bays going to extend into the two or three offshore positions?
- e. Can these positions be worked in a specific time frame so possible conflicts are avoided?
- f. What time periods is the stevedore going to shut down cargo operations for breaks, lunch, etc.?

Understanding the Bunkering Process #1

- Vessels contract for Bunkers
 - Oil Companies notify barge operators
 - Agents coordinate delivery notifications with barge operators and terminals
 - Bunker Barge arrival time and duration of pumping is established

Understanding the Bunkering Process #2

- Vessel Arrives for Cargo Operations
- Agent Coordinates bunker barge arrival
- Terminal plans operations
- Cargo Flow Sheet or Crane letter of Operations (CFS or CLO) is prepared
 - Outlines what cargo is to be moved in what sequence
 - Terminal will plan around bunker operations if possible
- Terminal gives CFS/CLO to Agent to pass to Chief Engineer/PIC and Tankerman/PIC

Understanding the Bunkering Process #3

- Bunker Barge Arrives for Bunker Ops
 - Optimal placement to minimize exposure.
 - Vessel insures BUNKER OPERATION SIGN is posted.
 - DOI is signed by Chief Engineer/PIC and Tankerman/PIC.
 - Tankerman/PIC /Chief Mate/Chief Engineer/PIC will have a copy of Cargo Flow Sheet or Crane letter (CFS/CLO).
- Tankerman/PIC should understand what cargo adjacent to the barge is to be handled and when.
- Tankerman/PIC shall have contact with the vessel Superintendent at all times.

Understanding the Bunkering Process #4

- Vessel cargo operations commence.
 - Lashers sent aboard to unlash containers.
 - Crane lowered over hold/hatch to be worked.
- Work commences in accordance with CFS/CLO
 - Lashers sent aboard to re-lash containers
- Bunker operations could start before, during or after cargo operations
 - Tankerman/PIC, Chief Mate & Superintendent must understand where the stevedore operator is relative to the Cargo Flow Sheet or Crane letter and the bunkering process.

Area or Zone of Concern

- Tankerman/PIC, Terminal Personnel, (Superintendents, Foremen, Lashers, Crane Operators) and Vessel Personnel (Chief Mate and Engineer/PIC) all must be mindful of and take particular care when lashing or cargo operations take place in the outer three stacks of containers in bays adjacent to the bunker barge if the transfer is in progress.

Essential Communications: Bunker Delivery Notice

- To inform all concerned parties of the planned bunkering operations, the Vessel Agent (or other carrier assigned representative), will complete a “Bunker Delivery Notice”.
- The Agent will forward the notice by E-mail to BOTH the terminal and the bunker barge operator prior to the start of any stevedoring operation.

Post Incident Response

- It is expected that the Tankerman will be alert to the crane working near the barge and the cargoflow that has been planned.
- It is expected that the Tankerman/PIC will determine the proper action to take regarding oil transfer process should any incident occur which affects the safety of the operation.
- Any incident will require direct communications between the parties involved who shall be readily available. This will allow for adjustments to working plans to correct conflicts.

Long Term Incident Resolution

- It is expected that the Operations Department’s management personnel, vessel representative, and the barge operator will discuss mutually agreeable adjustments to minimize Tankerman exposures that may be determined as the result of the incident and the post incident investigation.
- Ideas and lessons learned will be shared among all parties including the other Port Terminals.

Adopted February 2009.

Bunker Delivery Notice

Date:	Port:	
Vessel:	Voyage:	
Reference #:		
Bunker Barge Co.		
& Phone:		
Name of Bunker Barge:		
Name of Bunker Barge PIC:		
Contact Phone # of Barge PIC:		
Bunker Barge Emergency Contact #:		
Amount and type to be bunkered:		
Delivery Time of Bunkers:		
Location of Delivery of Bunkers:		
Bunker Barge to Land Side to as Vessel (select Port or Starboard):	Port	or Starboard
Estimated duration of bunker delivery:		
Designated Facility Contact:		
Terminal Emergency Phone #:		
Name of Vessel PIC for bunkers:		
Telephone number of vessel:		
Location of Bunker Manifold/Riser:		
Agent for Vessel:		
Agent Cell Phone #:		
Agent 24 Hour Contact #:		

NATIONAL TRANSPORTATION SAFETY BOARD
Public Meeting of February 18, 2009
(Information subject to editing)

Marine Accident Report
Allision of Hong Kong-Registered Containership M/V *Cosco Busan*
With the Delta Tower of the San Francisco-Oakland Bay Bridge
San Francisco, California
November 7, 2007
NTSB/MAR-09/01

This is a synopsis from the Safety Board's report and does not include the Board's rationale for the conclusions, probable cause, and safety recommendations. Safety Board staff is currently making final revisions to the report from which the attached conclusions and safety recommendations have been extracted. The final report and pertinent safety recommendation letters will be distributed to recommendation recipients as soon as possible. The attached information is subject to further review and editing.

EXECUTIVE SUMMARY

On Wednesday, November 7, 2007, about 0830 Pacific standard time, the Hong Kong-registered, 901-foot-long container ship M/V *Cosco Busan* allided with the fendering system at the base of the Delta tower of the San Francisco–Oakland Bay Bridge. The ship was outbound from berth 56 in the Port of Oakland, California, and was destined for Busan, South Korea. Contact with the bridge tower created a 212-foot-long by 10-foot-high by 8-foot-deep gash in the forward port side of the ship and breached the Nos. 3 and 4 port fuel tanks and the No. 2 port ballast tank. As a result of the breached fuel tanks, about 53,500 gallons of fuel oil were released into San Francisco Bay. No injuries or fatalities resulted from the accident, but the fuel spill contaminated about 26 miles of shoreline, killed more than 2,500 birds of about 50 species, temporarily closed a fishery on the bay, and delayed the start of the crab-fishing season. Total monetary damages were estimated to be \$1.24 million for the ship, \$1.5 million for the bridge, and more than \$70 million for environmental cleanup.

The following safety issues were identified during this accident investigation:

- Medical oversight of the *Cosco Busan* pilot
- Medical oversight of mariners in general;
- Guidance for vessel traffic service operators in exercising authority to manage traffic;
- Procedures for improving the assessment of oil spills in California waters; and
- Training and oversight of the *Cosco Busan* crew.

As a result of its investigation of this accident, the Safety Board makes safety recommendations to the U.S. Coast Guard, the American Pilots' Association, and Fleet Management Limited.

CONCLUSIONS

1. The following were neither causal nor contributory to the accident: wind and current; the vessel propulsion and steering systems; the bridge navigation systems; bridge team response to orders; vessel harbor traffic; navigation aids, including the RACON at the center of the Delta–Echo span; maintenance of a proper lookout; pilot training and experience; and vessel traffic service equipment and operational capability.
2. The California Department of Transportation’s assessment of damage to the San Francisco—Oakland Bay Bridge following the allision was timely and appropriate.
3. The California Department of Transportation’s decision to allow the bridge to remain open to traffic after the allision was appropriate.
4. In this accident, the bridge tower fendering system worked as intended to protect the pier structure and to limit damage to the striking vessel to the area above the waterline.
5. The pilot’s order for hard port rudder at the time of the allision was appropriate and possibly limited the damage to the vessel and the bridge fendering system.
6. Although the pilot had been diagnosed with sleep apnea, he was being treated for the condition, and there was no evidence that he was sleep-deprived at the time of the accident.
7. As evidenced by his prescription history and duty schedule, the pilot was most likely taking a number of medications, the types and dosages of which would be expected to degrade cognitive performance, and these effects were present while the pilot was performing piloting duties, including on the day of the accident.
8. The Cosco Busan pilot, at the time of the allision, experienced reduced cognitive function that affected his ability to interpret data and that degraded his ability to safely pilot the ship under the prevailing conditions, as evidenced by a number of navigational errors that he committed.
9. The pilot and the master of the Cosco Busan failed to engage in a comprehensive master/pilot information exchange before the ship departed the dock and failed to establish and maintain effective communication during the accident voyage, with the result that they were unable to effectively carry out their respective navigation and command responsibilities.
10. The master of the Cosco Busan did not implement several procedures found in the company safety management system related to safe vessel operations, which placed the vessel, the crew, and the environment at risk.
11. The interactions between the pilot and the master on the day of the allision were likely influenced by a disparity in experience between the pilot and the master in navigating the San Francisco Bay and by cultural differences that made the master reluctant to assert authority over the pilot.
12. Because the *Cosco Busan* crew was not drug tested, no conclusive evidence exists as to whether or not crew use of illegal drugs played a role in the accident.
13. Vessel Traffic Service San Francisco personnel, in the minutes before the allision, provided the pilot with incorrect navigational information that may have confused him about the vessel’s heading.
14. Vessel traffic service communications that identify the vessel, not only the pilot, would enhance the ability of vessel masters and crew to monitor and comprehend vessel traffic service communications.

15. Although Vessel Traffic Service San Francisco personnel should have provided the pilot and the master with unambiguous information about the vessel's proximity to the Delta tower, the Safety Board could not determine whether such information, had it been provided, would have prevented the allision.
16. The lack of U.S. Coast Guard guidance on the use of vessel traffic service authority limited the ability of Vessel Traffic Service San Francisco personnel to exercise their authority to control or direct vessel movement to minimize risk.
17. Even though the pilot's personal physician, who prescribed the majority of medications to the pilot, was aware of the pilot's occupation and his medical history, including his documented history of alcohol dependence, he continued to inappropriately prescribe medications that, either individually or in concert, had a high likelihood of adversely affecting the pilot's job performance.
18. Although the pilot did not disclose to the physician who conducted his January 2007 medical evaluation all of his medical conditions or medication use, as he was required to do, the physician exercised poor medical oversight on behalf of the California Board of Pilot Commissioners by finding the pilot fit for duty despite having collected sufficient information regarding his multiple medical conditions and medications to call into question his ability to perform his piloting duties safely.
19. Although the pilot did not disclose to the U.S. Coast Guard and the California Board of Pilot Commissioners all of his medical conditions or medication use, as he was required to do, the information he did provide should have been sufficient to prompt the Coast Guard, at a minimum, to conduct additional review of the pilot's fitness for duty.
20. The U.S. Coast Guard, which had the ultimate responsibility for determining the pilot's medical qualification for retaining his merchant mariner's license, should not have allowed the pilot to continue his duties because the pilot was not medically fit.
21. The U.S. Coast Guard's system of medical oversight of mariners continues to be deficient in that it lacks a requirement for mariners to report changes in their medical status between medical evaluations.
22. Because the *Cosco Busan* was crewed with mariners who were new to the vessel, who had not worked together previously, who for the most part were new to the company, and who were insufficiently trained in vessel operations and company safety procedures, Fleet Management placed the vessel and crew at risk when the vessel got under way in South Korea.
23. Providing a safety management system manual to the *Cosco Busan* crew only in English and not also in the vessel's working language limited the crewmembers' ability to review and follow the SMS.
24. Fleet Management had not successfully instilled in the *Cosco Busan* master and crew the importance of following all company safety management system procedures.
25. The failure of the U.S. Coast Guard and the California Department of Fish and Game's Office of Spill Prevention and Response to quickly quantify and relay an accurate estimate of the quantity of oil spilled to the Unified Command did not affect the overall on-water recovery effort in this accident.
26. The Federal on-scene coordinator failed to aggressively use the resources available to him to obtain timely and accurate information about the extent of the spill in order to fulfill his responsibilities.

27. Effective communication regarding response activities was established and maintained between the oil spill response organizations, the qualified individual, the U.S. Coast Guard, and the Unified Command on the day of the accident.
28. The designated oil spill response organizations' level of response to the Cosco Busan fuel oil spill was timely and effective.
29. A mechanism for the collection and regular communication among pilot oversight organizations of pilot-related performance data and information regarding pilot oversight and best practices would enhance the ability of those organizations to effectively oversee pilots.
30. Recently implemented international regulations with regard to the protection of fuel oil tanks on nontank vessels will, over time, reduce the likelihood of oil spills in mishaps such as occurred with the *Cosco Busan*.

PROBABLE CAUSE

The National Transportation Safety Board determines that the probable cause of the allision of the Cosco Busan with the San Francisco–Oakland Bay Bridge was the failure to safely navigate the vessel in restricted visibility as a result of (1) the pilot's degraded cognitive performance from his use of impairing prescription medications, (2) the absence of a comprehensive pre-departure master/pilot exchange and a lack of effective communication between the pilot and the master during the accident voyage, and (3) the master's ineffective oversight of the pilot's performance and the vessel's progress. - Contributing to the accident was Fleet Management Limited's failure to properly train and prepare crew members prior to the accident voyage, and their failure to adequately ensure that the crew understood and complied with the safety management system; and the U.S. Coast Guard's failure to provide adequate medical oversight of the pilot in view of the medical and medication information that the pilot had reported to the Coast Guard.

SAFETY RECOMMENDATIONS

New Recommendations

As a result of this accident investigation, the National Transportation Safety Board makes the following safety recommendations:

To the U.S. Coast Guard:

1. Propose to the International Maritime Organization that it include a segment on cultural and language differences and their possible influence on mariner performance in its bridge resource management curricula. (M-09-XX)
2. Revise your vessel traffic service policies to ensure that vessel traffic service communications identify the vessel, not only the pilot, when vessels operate in pilotage waters. (M-09-XX)
3. Provide Coast Guard-wide guidance to vessel traffic service personnel that clearly defines expectations for the use of existing authority to direct or control vessel movement when such action is justified in the interest of safety. (M-09-XX)

4. Require mariners to report to the Coast Guard, in a timely manner, any substantive changes in their medical status or medication use that occur between required medical evaluations. (M-09-XX) Supersedes M-05-05
5. Establish a mechanism through which representatives of pilot oversight organizations collect and regularly communicate pilot performance data and information regarding pilot oversight and best practices. (M-09-XX)

To Fleet Management Limited:

1. When assigning a new crew to a vessel, ensure that all crewmembers are thoroughly familiar with vessel operations and company safety procedures before the vessel departs the port. (M-09-XX)
2. Provide safety management system manuals that are in the working language of a vessel's crew. (M-09-XX)

To the American Pilots' Association:

Inform your members of the circumstances of this accident, remind them that a pilot card is only a supplement to a verbal master/pilot exchange, and encourage your pilots to include vessel masters and/or the officer in charge of the navigational watch in all discussions and decisions regarding vessel navigation in pilotage waters. (M-09-XX)

Previously Issued Recommendations Reclassified in This Report

To the U.S. Coast Guard:

M-05-04

Revise regulation 46 CFR 10.709 to require that the results of all physical examinations be reported to the Coast Guard, and provide guidance to mariners, employers, and mariner medical examiners on the specific actions required to comply with these regulations.

Safety Recommendation M-05-04, previously classified "Open—Acceptable Response," is reclassified "Closed—Acceptable Alternate Action" in the "Coast Guard Medical Oversight of Mariners" section of this report.

M-05-05

In formal consultation with experts in the field of occupational medicine, review your medical oversight process and take actions to address, at a minimum, the lack of tracking of performed examinations; the potential for inconsistent interpretations and evaluations between medical practitioners; deficiencies in the system of storing medical data; the absence of requirements for mariners or others to report changes in medical condition between examinations; and the limited ability of the Coast Guard to review medical evaluations made by personal health care providers.

Safety Recommendation M-05-05, previously classified “Open—Acceptable Response,” is reclassified “Closed—Acceptable Action—Superseded” in the “Coast Guard Medical Oversight of Mariners” section of this report.

2008 Harbor Safety Committee of the Year Nomination Form

Harbor Safety Committee Name: Harbor Safety Committee of the San Francisco Bay Region

2008 Accomplishments/Reasons for nomination (500 - 550 words or less submissions above this criteria will be disqualified)*: Note: Submissions will be judged based on the organization's activities conducted from **January 2008 – December 2008** and the cited **beneficial outcomes** resulting from those activities. Examples of areas in which activities may reside include: commerce and/or trade; communications and outreach; safety; emergency response; security; port management; economics, time management, etc.

2008 was exceptionally active for the Harbor Safety Committee of the San Francisco Bay Region. In November 2007, the container ship Cosco Busan struck the Bay Bridge in dense fog, spilling 53,000 gallons of oil, with damage to the ship, bridge fendering, and the environment. Spill clean-up costs totaled \$70 million.

Governor Schwarzenegger directed the state to analyze the allision and develop recommendations addressing vessel movements. The Office of Spill Prevention and Response assigned the Harbor Safety Committee (HSC) to report to the Governor on preventing similar vessel accidents. The HSC report findings and recommendations also informed the National Transportation Safety Review Board (NTSB) incident investigation.

At the same time the Committee through its five Work Groups held months of public meetings with extensive discussion by the maritime community, adopting a series of Best Maritime Practice Guidelines to enhance navigation safety. Since the base cause of the allision was human error, these guidelines focus on vessels operating in limited visibility, as San Francisco is one of the foggiest harbors in the U.S. with eleven bridges over shipping lanes. The guidelines are now published in the U.S. Coast Pilot, the Coast Guard Vessel Traffic Service (VTS) Manual, the Bar Pilots Operations Manual and the San Francisco Harbor Safety Plan. We note the guidelines are not meant to relieve the mariner of responsibility to follow applicable rules and regulations addressing prudent seamanship.

These self-enforced guidelines have been a great success. Over the succeeding months of transits, VTS found it necessary to use its authority to enforce compliance on only two occasions.

Highlights:

- Guidelines for Vessels Over 1600 Gross Tons Navigating in Reduced Visibility. Reduced visibility was a causal factor in the Cosco Busan incident. The San Francisco Bay Region is a series of microclimates with variable fog conditions. The new guidelines advise that vessels not commence transits if visibility is less than 0.5 miles at the dock; underway vessels should anchor if visibility at the destination is less than 0.5 miles; and additional care is advised when transiting designated Critical Maneuvering Areas where the channel is restricted, et al.
- Guidelines for Vessels Over 1600 Gross Tons Navigating in Severe Weather Conditions. Winter storms bring high winds and adverse sea conditions that may cause the San Francisco Bar Channel be closed to vessel traffic. The guidelines list a number of factors to consider when closing the Bar or limiting transits in the Bay.
- Guidelines for Tugs with Tows and Commute Ferries Navigating in Reduced Visibility and in Severe Weather Conditions. Similar guidelines were adopted for other vessels in the

Please e-mail submission in Word or Adobe format to:

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2008 Harbor Safety Committee of the Year Nomination Form

Bay, as the region is an active mix of high-speed commute ferries, tankers, container ships, tugs with tows, and recreational boaters.

- Guidelines for the Use of Simulator Training for Tanker Escort Crews and for Tug Assist and Docking Other Large Vessels. The Tug Escort Work Group is exploring the opportunity for maritime simulators to replicate local conditions to conduct emergency training for pilots and tug personnel. We are reaching out to encourage industry to use this soon-to-be available training tool.
- Recommendation to State Board of Pilot Commissioners. The HSC urged the Board to require that licensed pilots be equipped and trained in the use of Portable Pilot Units.

Contact Name for more info: Joan Lundstrom, Chair, Harbor Safety Committee of the San Francisco Bay Region

Name of person from HSC attending the conference: Joan Lundstrom, Committee Chair

***Note: the submission will be judged in regards to the following areas: commerce's, innovation efforts with beneficial outcomes (safety, economics, time management), safety, security aspects, communications and community outreach, etc.**

****Deadline for submissions are March 6, 2009****

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