

## **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.

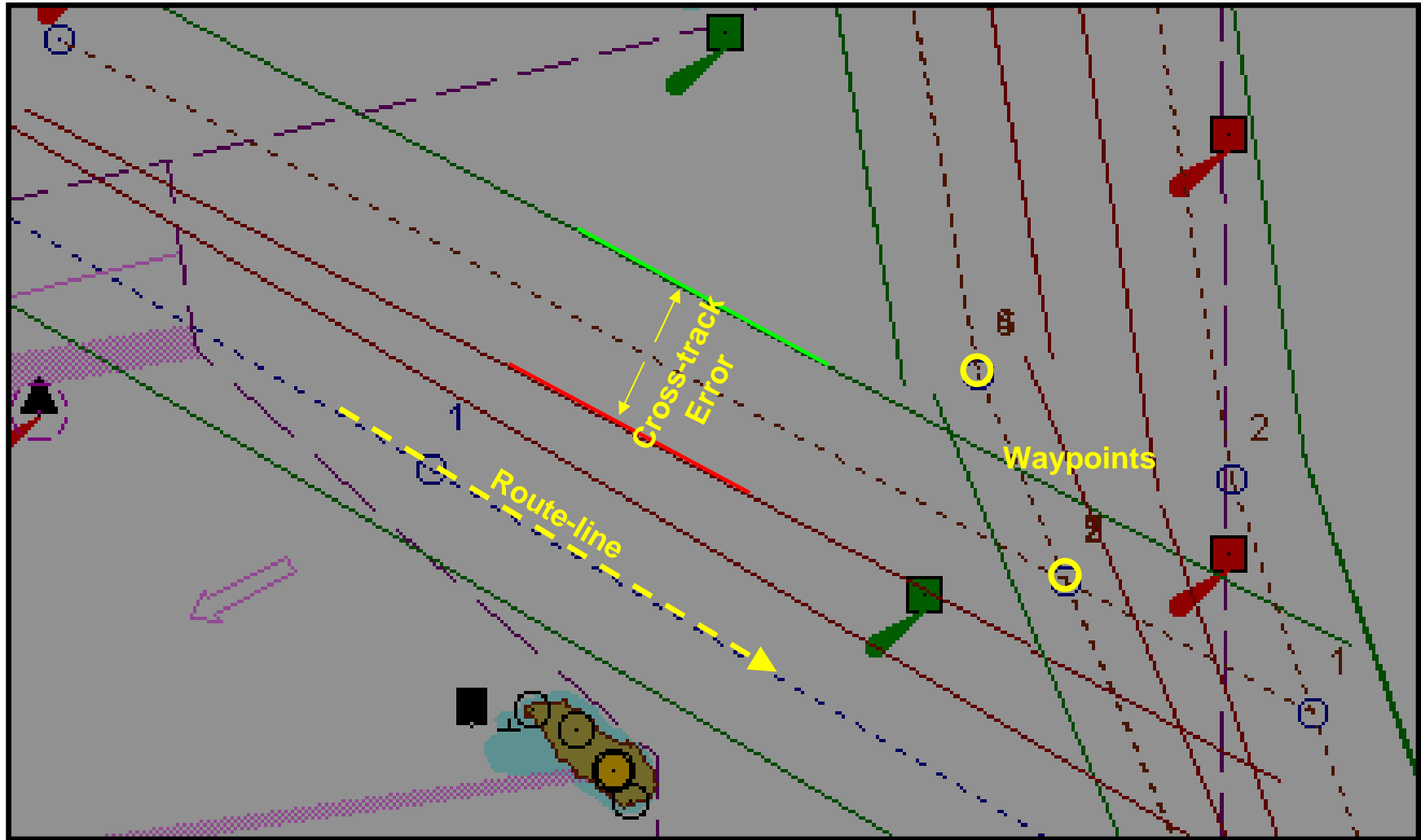
Within an approximately one-half nautical mile zone around the San Francisco Ferry Building, the protocol calls for port-to-port meeting and heightened radio communications. For inbound Ferry Building ferries, the protocol requires planning far enough in advance to avoid getting within approximately 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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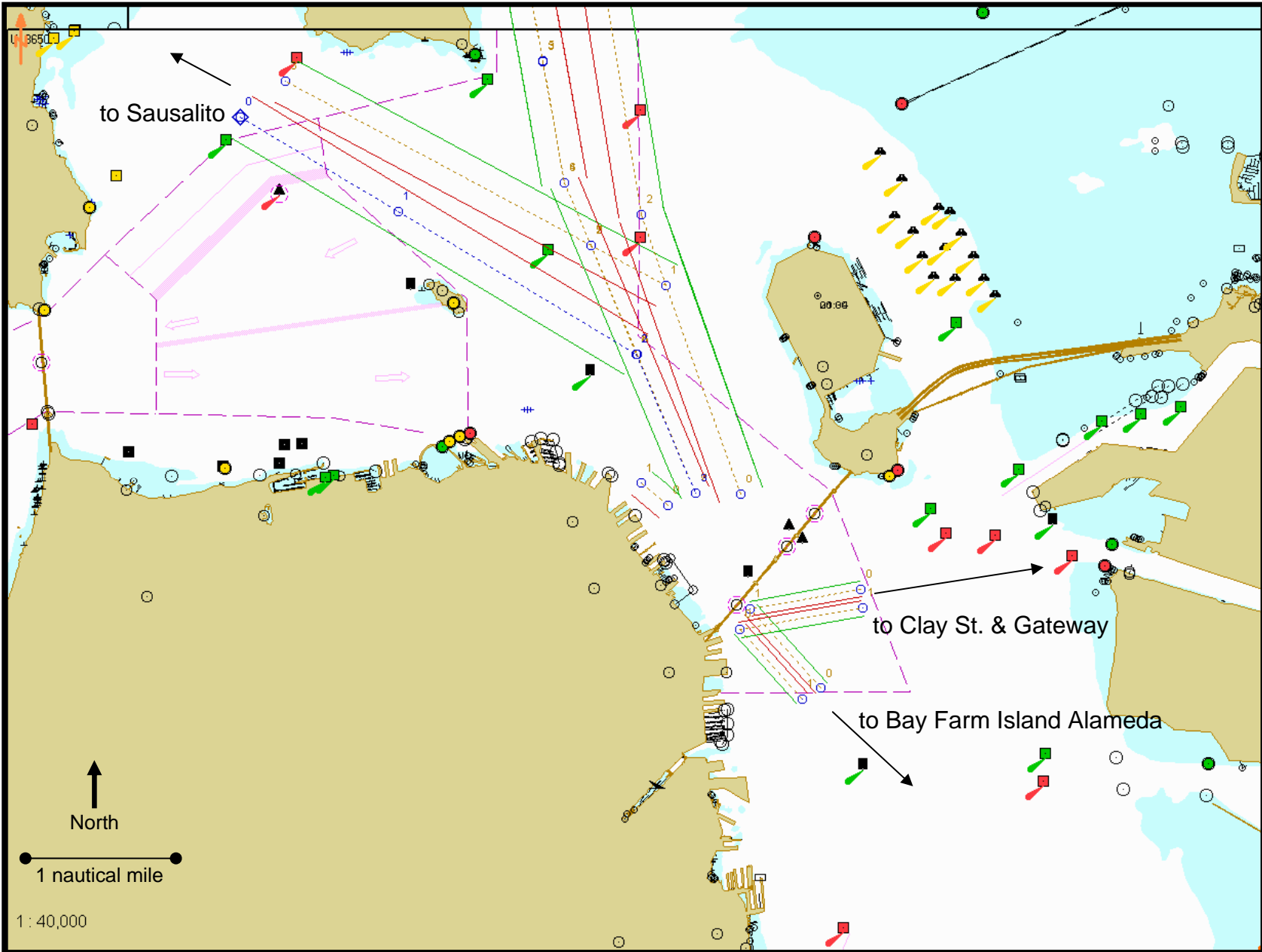
# Diagram Key



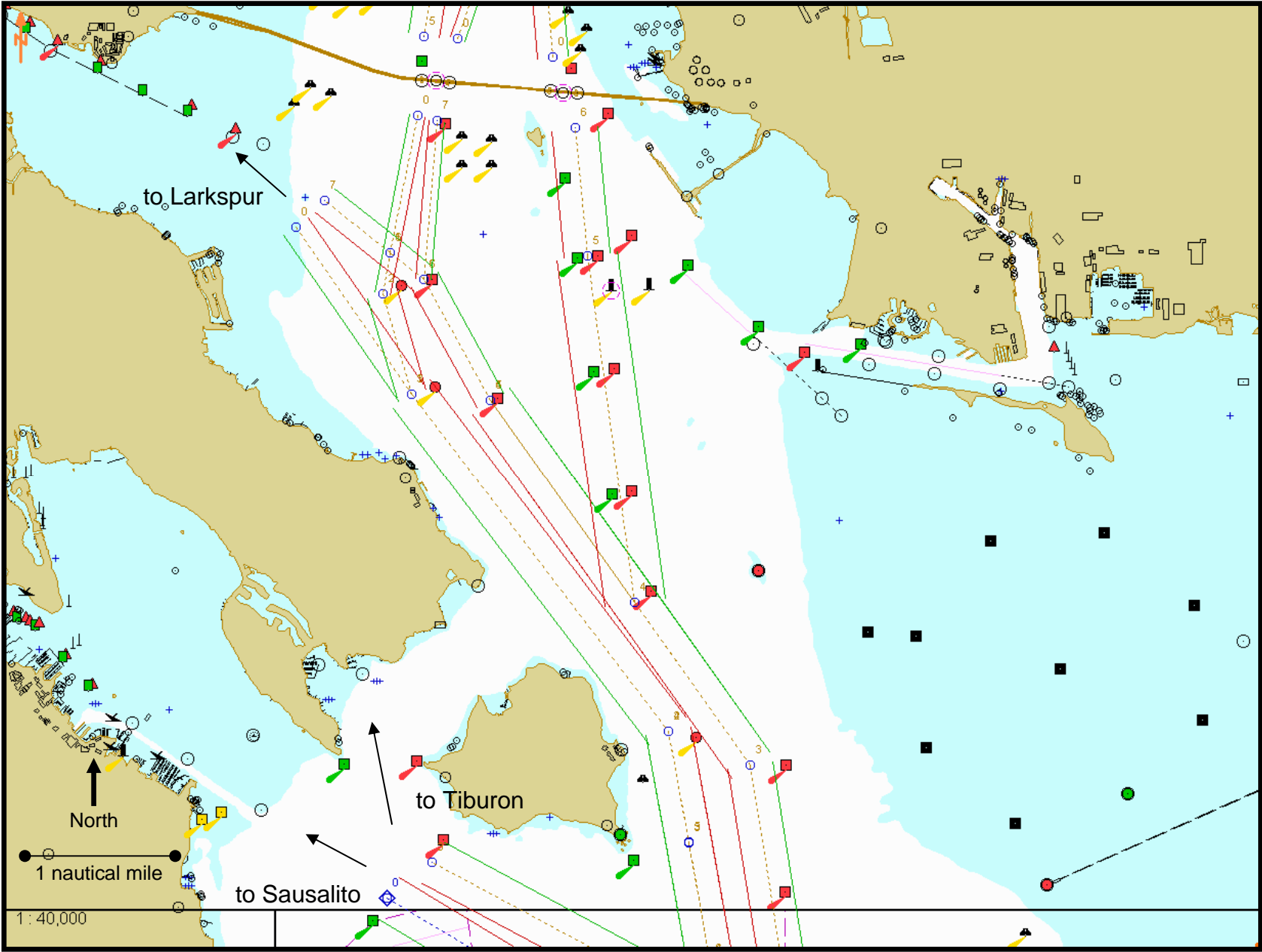
The following chart features are highlighted above.

- 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.

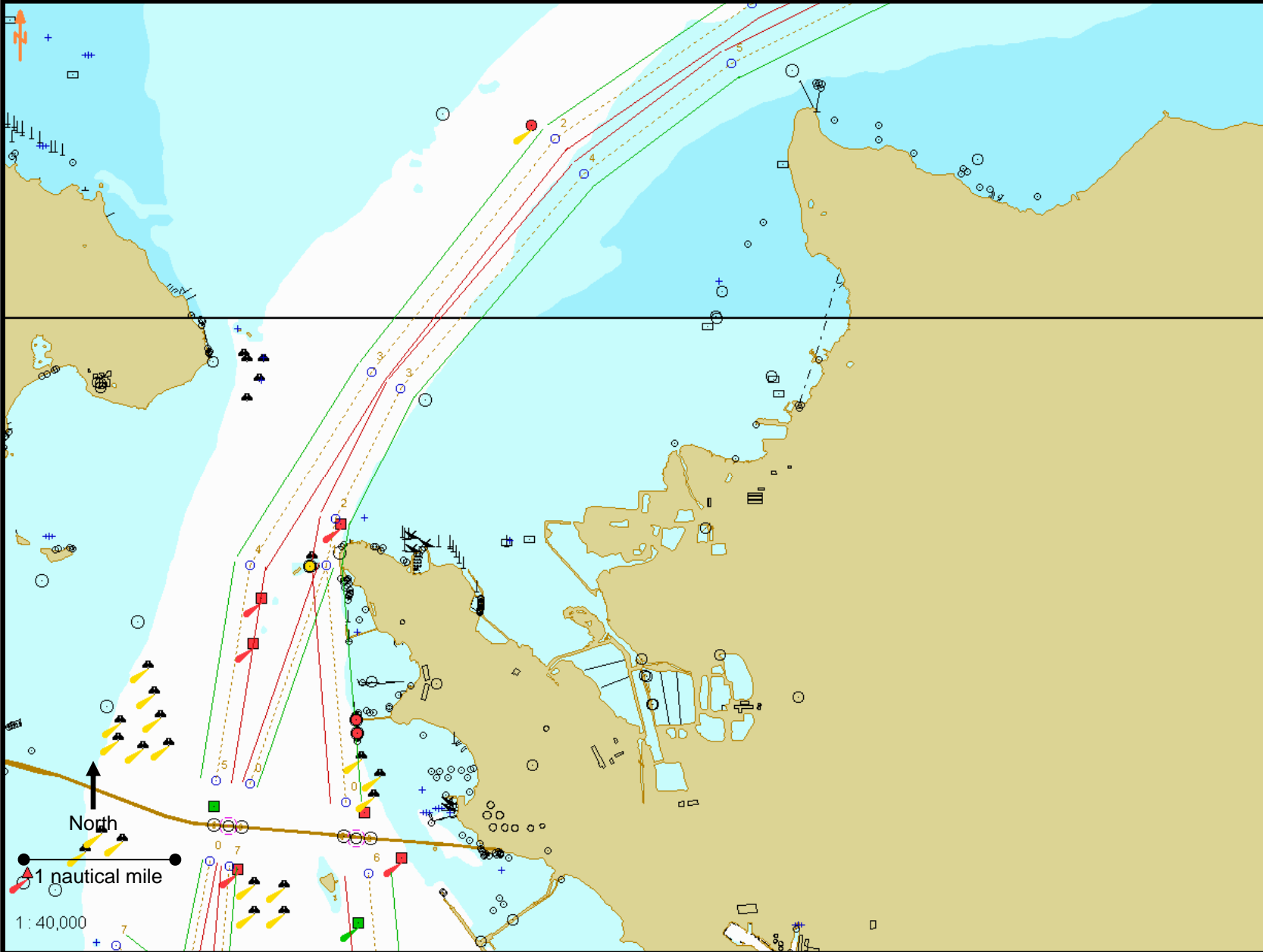
# Central Bay and South San Francisco Bay



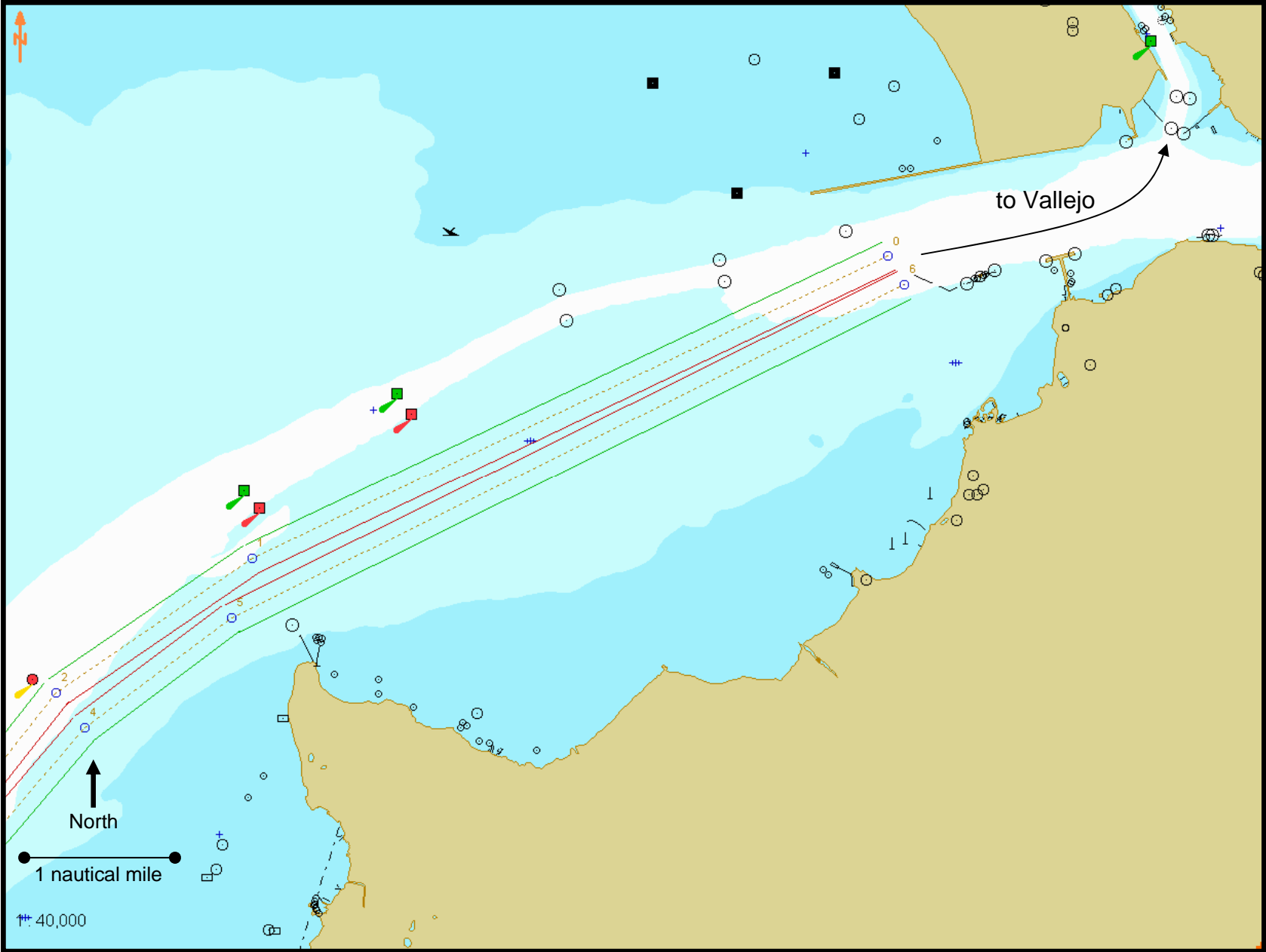
# North Channel and Southampton Shoal Channel



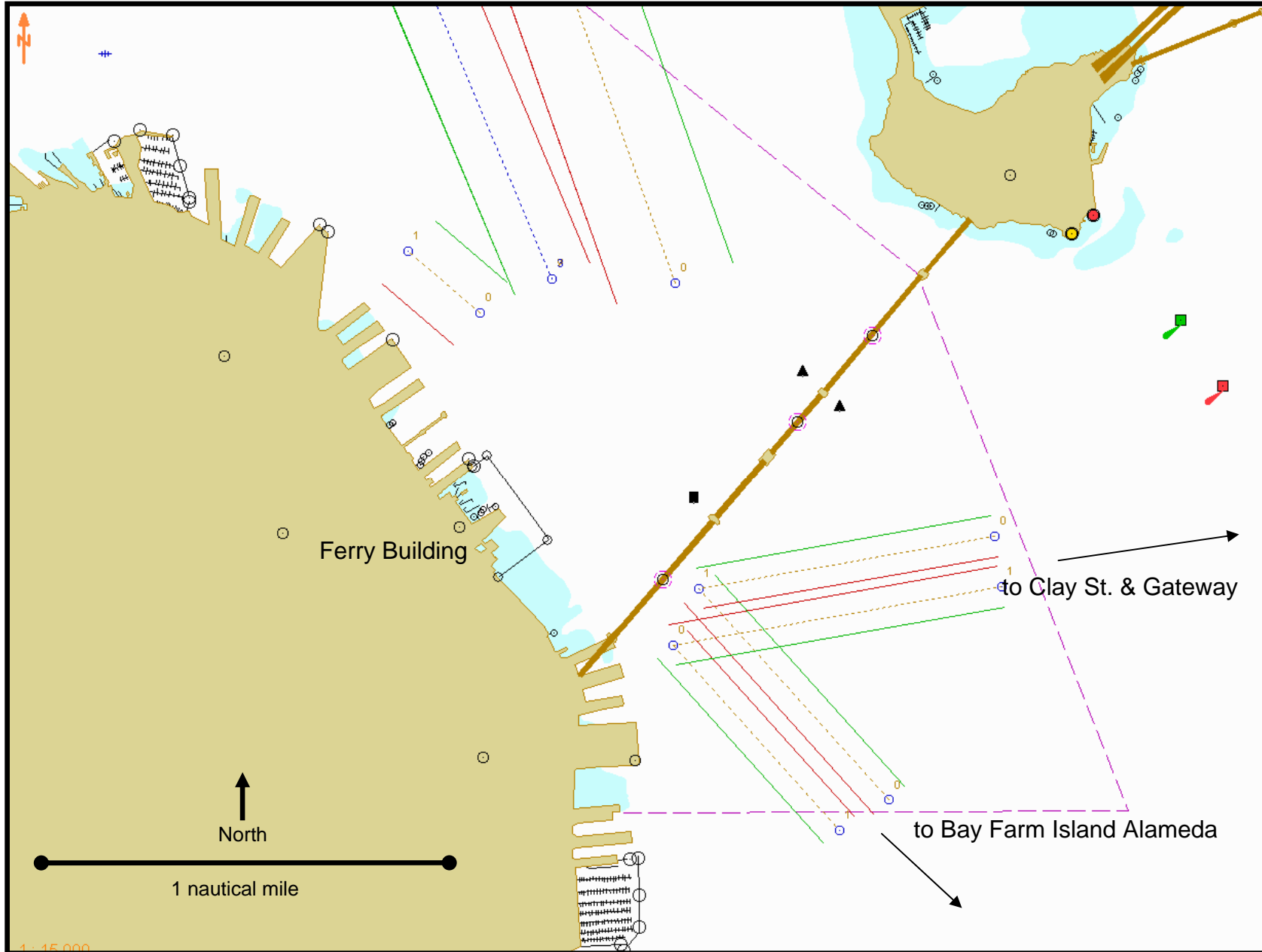
# San Pablo Strait Channel



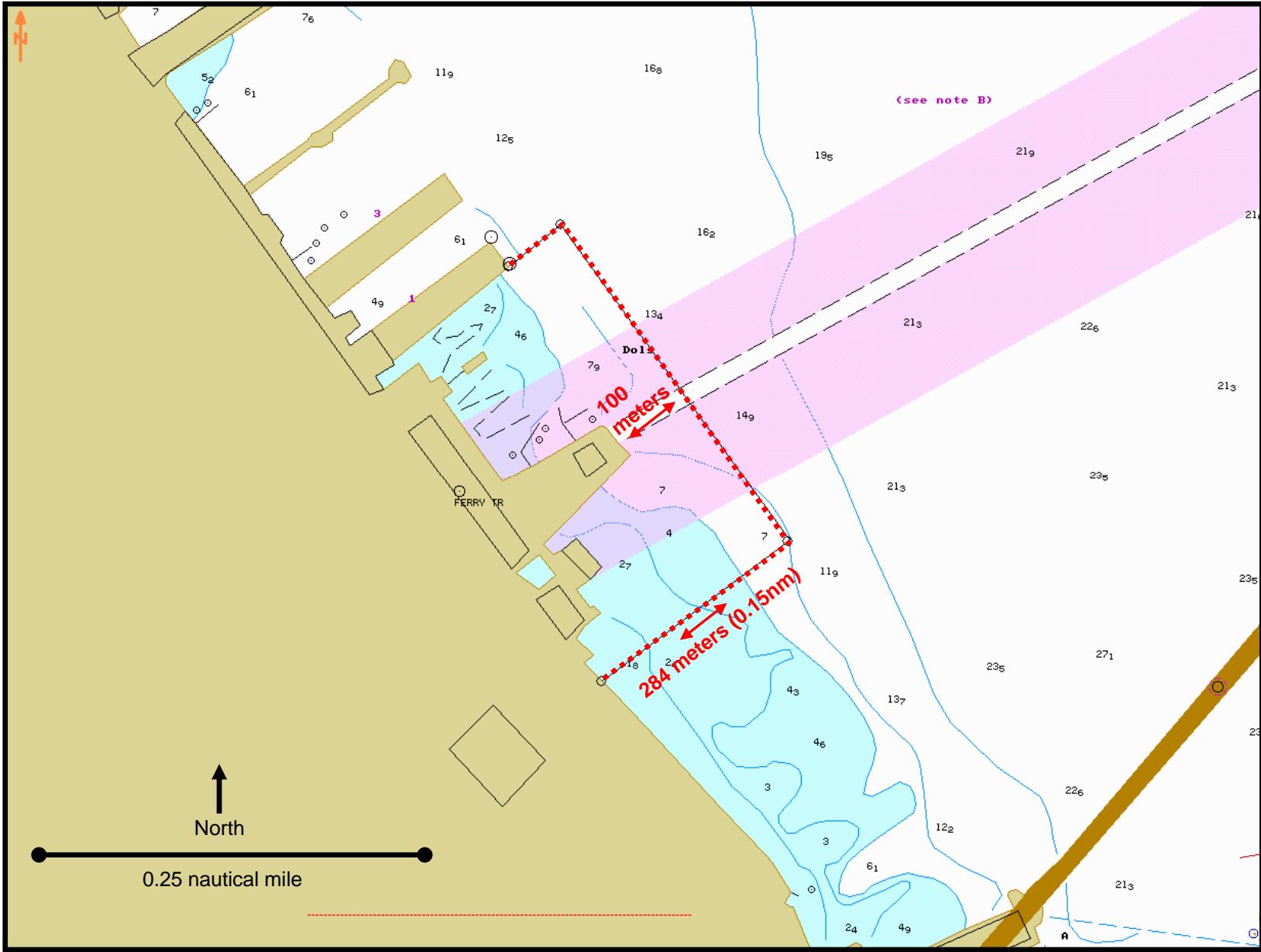
# San Pablo Bay and Mare Island Strait



# Ferry Building Approach/Departure Zone



# Ferry Building Maneuvering Area



# Source and Contact Information

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

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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....”