

## **4.11 MARITIME NAVIGATION AND SAFETY**

This section assesses the potential maritime navigation and safety impacts of the project alternatives, including impacts from construction and operations during the AC34 events.

### **4.11.1 Study Area/Context**

The study area for assessing potential impacts on maritime navigation and safety includes the waters of the Central Bay. Land-based activities associated with the event are not considered to have an effect on maritime navigation or safety. The context of the Bay is as a busy commercial and recreational waterway on which many different maritime activities occur simultaneously. The Bay is a regular host to maritime events and is a closely managed but challenging navigational setting. Challenges include navigational difficulties from wind, strong currents, fog and other hazards. The USCG frequently patrols the Bay with numerous small boats and patrol craft.

The navigational context includes shipping and other commercial vessel traffic, commuter ferries, tours and dinner cruises, recreational boating (sailing, power boating, fishing), and other aquatic uses such as swimming, rowing, wind surfing, and kite boarding. Shipping vessel traffic includes transit to and from several ports in the area, including San Francisco, Richmond, Redwood City, Benicia, Stockton, and Oakland, which is the third largest port on the West Coast. Other commercial vessel traffic includes tugs, barges, commercial fishing boats, cruise ships, and commuter ferries.

Maritime events are regularly held on the Bay, with the USCG issuing approximately 1,300 Marine Event Permits each year for events such as sailing regattas and swims. These events typically require issuance of a Marine Event Permit and are heaviest on weekends and in summer, with about 50 percent of events occurring during the summer season. In addition, each year in early October the Bay hosts Fleet Week, which draws visitors both on land and water. There are typically permitted events every weekend and some weekdays between July and September, when AC34 race activities are being proposed. In addition to the numerous laws, regulations and policies governing navigation in the Bay, USCG Vessel Traffic Service (VTS) San Francisco manages vessel traffic 24 hours a day.

The AC34 on-water race and spectator activities would require a Marine Event Permit from the USCG. Should the USCG issue a Marine Event Permit for the AC34 project it would also issue a Special Local Regulation (SLR). The SLR is necessary to ensure for the safety of life on the navigable waters immediately prior to, during, and immediately after any races that may occur. As described in Chapter 2 – Alternatives, the proposed regulation would temporarily restrict vessel traffic in a portion of the Bay and prohibit vessels not participating in AC34 events from entering the designated race area during race events without permission of the USCG Captain of the Port (COTP). The regulation would also establish a transit zone in 2013 extending along the San Francisco waterfront. This transit zone would ensure the safety, as well as continued ability to conduct commerce, of vessels requiring access to pier space and facilities along the San Francisco waterfront. This zone, as an accessway, would be only used for transit and so would serve to allow access to the waterfront and avoid congestion of anchored, moored, or stationary boats that could block access to the waterfront. The USCG can also make the transit zone one-way or close it to ensure navigational safety. Where the transit zone intersects the race course, the USCG may close this transit zone as necessary to accommodate race boats approaching the finish line. The

entire area is enforced and patrolled by the USCG and maritime traffic would be prohibited within the race area during race events. Spectator vessels would be allowed within the regulated area but are prohibited from the race area.

The combination of the above key setting components and those described in Section 3.11, makes up the context upon which potential impacts are analyzed.

#### **4.11.2 Issues**

The temporary closure of certain portions of the Central Bay to accommodate race events in 2012 and 2013 may affect the movements of existing commercial shipping, commuter ferry service, other commercial vessel uses and recreational boating activities on the Bay. Additional impacts could result from temporary construction and rehabilitation of piers, moorings, and barges as additional vessels visiting the Bay as a result of the AC34 events. As a result of these activities, maritime navigation and safety issues include restricting portions of the Central Bay during race events to commercial vessel traffic (including ferries), increased number of recreational and race support boats in the area, and the potential introduction of navigational hazards from temporary mooring of barges, dredging activities, and temporary berthing facilities.

#### **4.11.3 Guiding Regulations and Policies**

The following section describes the laws and policies governing maritime activities in the Bay. The USCG is the primary enforcement agency managing safe and legal boating activities in the Bay.

##### ***4.11.3.1 Federal***

##### **United States Coast Guard Permit Requirements**

The Code of Federal Regulations, Title 33, Chapter 1, sets forth regulations governing regattas and associated activities on navigable waters of the United States. Part 100.30 (33 CFR 100.30) requires any individual or organization planning a regatta that could introduce certain safety hazards on navigable waters to first obtain authorization, in the form of a permit, from the appropriate Coast Guard District Commander (CGDC). The CGDC may delegate such authorities to the COTP. The regulations require the CGDC or COTP to notify the applicant of any required changes to the proposed event or permit application, as necessary, to ensure safety of life on the navigable waters (33 CFR 100.25(a)(2)(ii)).

##### **Special Local Regulations (SLRs) and Safety Zones**

Once the event is approved, the CGDC may promulgate SLRs, as necessary, to further ensure navigational safety. Such regulations may include a restriction on, or control of, the movement of vessels through a specified area immediately prior to, during, and immediately after the marine event. The COTP may also limit vessel traffic within certain areas and/or proximities to other vessels through the establishment of a safety zone (33 CFR 165). Safety zones generally exist for purposes of protecting safety and the environment. Entry into a safety zone is prohibited unless authorized by the COTP or CGDC.

### **Regulated Navigation Areas (RNAs)**

The USCG has established regulated navigation areas (RNAs) within the Bay, as shown in **Figure NAV-1**. RNAs are used to increase navigational safety by organizing traffic flow patterns; reducing meeting, crossing, and overtaking situations between large vessels in constricted channels; and limiting vessel speed. RNAs apply to “large vessels” (defined as power-driven vessels of 1,600 gross tons or greater). The San Francisco Bay RNA encompasses the entire study area except Anchorage Area 7, which is adjacent to the western shore of Treasure Island. When navigating within the RNA, vessels must adhere to the requirements described in 33 CFR 165.1181. The COTP, San Francisco Bay or the Supervisor of VTS as a representative of the COTP, may authorize a deviation from the requirements of this regulation when it is deemed necessary in the interests of safety.

### **Automatic Identification System (AIS)**

The Automatic Identification System (AIS) is an automatic tracking system used on ships and by the VTS for identifying and locating vessels by electronically exchanging data with other nearby ships and AIS base stations. AIS information supplements marine radar, which continues to be the primary method of collision avoidance for water transport.

The International Maritime Organization’s International Convention for the Safety of Life at Sea requires AIS to be fitted aboard international voyaging ships with gross tonnage of 300 or more tons, and all passenger ships regardless of size.

### **Vessel Traffic Service (VTS) Activities**

In accordance with the Ports and Waterways Safety Act of 1972 (33 U.S.C. § 1221 et seq.) the VTS (located on Yerba Buena Island) controls marine traffic throughout the Bay. The VTS is a mandatory system that applies to all vessels of 40 meters or more in length, all vessels certified to carry 50 or more passengers, and all commercial vessels eight meters or more in length engaged in towing another vessel. Although some small and private vessels are not required to coordinate their movements by contacting the VTS, the USCG monitors all commercial, military, government, and private marine traffic within the Bay and local coastal waters.

The VTS may issue directions to enhance navigation and vessel safety and protect the marine environment. During conditions of vessel traffic congestion, restricted visibility, adverse weather, or other dangerous conditions, the VTS may manage vessel traffic by specifying times of entry, movement, or departure to, from, or within the VTS area. The San Francisco VTS area extends from the outer limit of the Offshore Sector, a 38.7-nautical-mile radius around Mt. Tamalpais. To the north and east, it extends to the entrance of the Petaluma River, into the Napa River as far as Mare Island Causeway Bridge, and upriver to Sacramento and Stockton.

### **Local Notice to Mariners (LNM)**

The Local Notice to Mariners (LNM) is the primary means for disseminating information concerning aids to navigation, hazards to navigation, and other items of marine information of interest to mariners

on the waters of the United States, its territories, and possessions. These notices are essential to all navigators for the purpose of keeping their charts, Light Lists, Coast Pilots, and other nautical publications up-to-date. These notices are published weekly. The LNMs are available on the USCG Navigation Center website (<http://navcen.uscg.gov>). Vessels operating in ports and waterways in multiple USCG Districts will need to obtain the LNMs from each District in order to be fully informed.

The USCG issues Broadcast Notice to Mariners (BNM) on Very High Frequency (VHF) radio stations to report navigational warnings containing information of importance to the safety of navigation of vessels, such as the potential hazards and obstructions to navigation, defects, and changes to aids to navigation. Typically a LNM will begin on Channel 16 and potentially shift to another appropriate channel if necessary.

#### ***4.11.3.2 State***

The California Harbors and Navigation Code gives authority to the California Department of Boating and Waterways to regulate matters of navigational safety for the state's boating public.

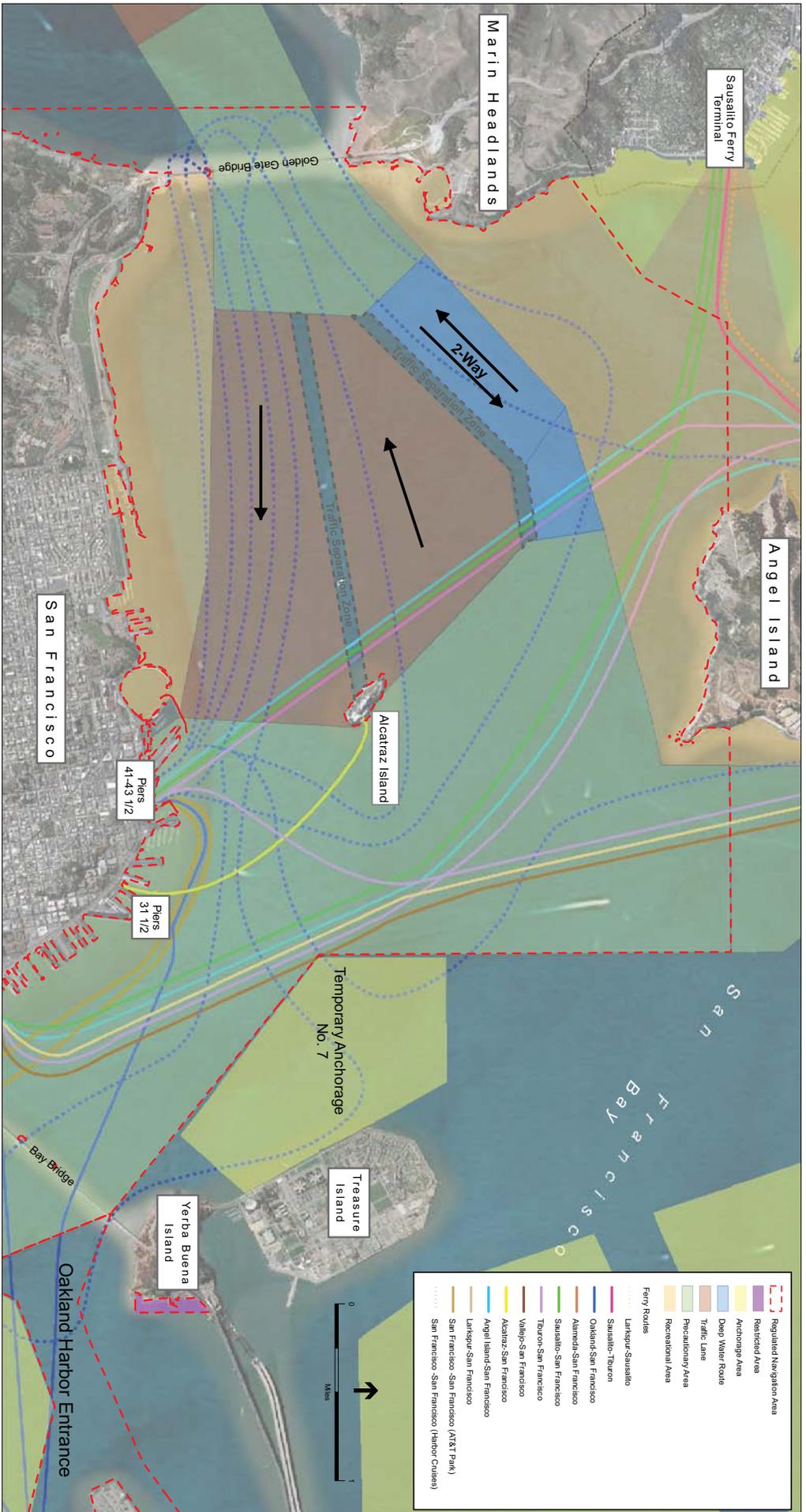
#### ***4.11.3.3 Local***

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

In 1990, the California Legislature enacted the Lempert-Keene-Seastrand Oil Spill Prevention and Response Act (OSPRA) (California Government Code Chapter 7.4). OSPRA created Harbor Safety Committees for the major harbors of California to prepare Harbor Safety Plans, encompassing all vessel traffic, for the safe navigation and operation of tankers, barges, and other vessels within each harbor. OSPRA also mandates that each Harbor Safety Committee annually review its previously adopted Harbor Safety Plan and recommendations and submit the annual review to the Oil Spill Prevention and Response Administrator for comment. The most recent available San Francisco Bay Region Harbor Safety Plan is for 2001.

##### **Bar Pilots**

California law requires every foreign flag ship (and some U.S. vessels) greater than 750 gross tons to be served by a San Francisco Bar Pilot if the ship is scheduled to pass through the Golden Gate or is to be maneuvered on waters inside the Golden Gate. Bar Pilots are stationed on a pilot boat, stationed near the "SF" buoy which lies 12 miles west of the Golden Gate, and ensure the safe and efficient movement of the largest vessels that traverse the San Francisco (San Francisco Bar Pilots 2012). These pilots navigate the sand bar just west of the Golden Gate, and help navigate the waters, hazards, and currents in San Francisco Bay. San Francisco Bar Pilots provide these services for vessel movements to and from all terminals in the Bay.



SOURCE: NOAA EMC 2011; ESA 2011  
 Note: This map is for illustrative purposes only and does not represent all regulations applicable to navigation in Bay waters

AC34 / Environmental Assessment (210317)  
**Figure NAV-1**  
 Navigational Designations and Ferry Routes

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#### 4.11.4 Assessment Methods/Thresholds

To analyze the potential effects of the AC34 race events, the assessment examines current vessel use levels and considers the ability to manage for the continued allowance of multiple uses on the Bay. The following assumptions have been made in this analysis:

- Commercial vessel use levels during proposed race events would be similar to current conditions;
- On-water boat estimates during race events would be the same for all alternatives and are based in part by observations made during Fleet Week 2011; and
- On-water boat estimates include large private yachts (also known as “super yachts”).

The following thresholds were identified to assess the intensity of potential impacts. Unless otherwise indicated all impacts discussed are local, short-term, and adverse.

**Negligible:** Impacts would be considered negligible if vessel traffic conditions would be similar to (i.e., within 10 percent of) baseline conditions as defined by other Marine Events Permits issued for the Bay; and/or if the ability of the USCG and other maritime response agencies to respond to emergencies and maintain the navigational safety of the Bay would be similar to baseline conditions.

**Minor:** Impacts would be considered minor if they would result in temporary interference with vessel traffic (less than 1 hour) that cannot be rescheduled for a period outside in-water race events or rerouted around the race area; and/or result in changes to USCG or other maritime response agencies services but would not increase emergency response time, and thereby would not degrade service.

**Moderate:** Impacts would be considered moderate if they would result in temporary interference with vessel traffic (not to exceed the duration of in-water America’s Cup race events plus 30 minutes prior to and following); and/or would result in a reduction in revenue as defined as moderate or less in Section 4.13, Socioeconomics; and/or would result in the temporary (not to exceed the duration of America’s Cup race events) introduction of incompatible uses. Incompatible uses would be those that either prohibit other existing uses of the Bay (for a duration that exceeds America’s Cup Race events) or result in unmanageable hazardous conditions; and/or would result in delays in commuter ferry service of less than 10 minutes on average.

**Major:** Impacts would be considered major if they caused substantial interference with vessel traffic in relation to the existing traffic, causing delays or displacement of other vessels in the area. “Substantial” is defined as the inability of the vessel to conduct its business, or loss of significant revenue as defined in Section 4.13 Socioeconomics; and/or if they introduced incompatible uses or a substantial increase in vessel traffic that would result in hazards (unsafe conditions) over current baseline conditions. Incompatible uses would be those that either permanently prohibit other existing uses of the Bay or result in unmanageable hazardous conditions. Major would also be defined as a degradation in the ability of the USCG or other maritime response agencies to respond to emergencies. Also substantial interference with regularly scheduled ferry service, resulting in a delay of 10 minutes on average or more would be considered a major impact. Delays greater than 10 minutes on average would result in cancellation of scheduled service for most ferry routes.

#### 4.11.5 Impacts of Alternative A—No Action

Under the No Action Alternative, no AC34 race events would take place. There would be no established race course or SLR requirements, and therefore vessel traffic conditions are expected to be similar to existing conditions. There would continue to be increased vessel congestion on the Bay during large-event weekends, such as Fleet Week. Commuter ferries would operate as normal; these normal operations would include temporary rerouting around event areas such as Fleet Week, which results in increased speeds and transit distances to maintain commuter schedules. Because the No Action Alternative would be a continuation of current maritime safety and navigation conditions and management, there would not result in an impact.

#### 4.11.6 Impacts Common to All Action Alternatives

##### 4.11.6.1 Vessel Traffic

Under all action alternatives for both 2012 and 2013, the USCG would establish a regulated area and safety zone. The regulated area is the identified body of water within which the ACRM would be authorized to conduct races and would remain in effect on all race days from no earlier than 12:00 p.m. to no later than 5:00 p.m. If races end early, the USCG intends to open the race area to normal maritime activity as soon as possible. ACRM will establish a race course within the race area and delineated by marker boats. Maritime traffic, with the exception of spectator vessels, is prohibited from entering the race area. A temporary safety zone would require vessels to remain at least 300 feet from race boats during the designated race periods. This safety zone is necessary for public safety during exceptional circumstances when AC34 race boats are competing outside of the race area (e.g., under the Golden Gate Bridge during opening day ceremonies). No vessels, except those approved by the COTP, would be allowed in the safety zone. The boats allowed within the safety zone would be the America's Cup race boats and flagged support boats and potentially other boats that receive permission from the COTP to pass through the zone escorted. The geographic location and extent of the race area would vary by action alternative. Spectator boats are allowed to enter the regulated area but are restricted from entering the race area. As a result, under all action alternatives, vessel traffic may be temporarily displaced or rerouted during race activities. Additionally, under all action alternatives, the number of recreational boats in the Bay is expected to increase above normal levels as a result of the race events. The estimated number of boats is shown below in Tables NAV-6 and NAV-7.

On-water spectator levels were estimated for two scenarios for the 2012 races: average peak weekend and weekday race days. Table NAV-6 shows the estimated on-water spectator levels. These estimates do not include commercial vessel levels except for commercial charters. In comparison, the number of boats estimated on peak weekend race days is approximately 68 percent of recreational boats observed during peak Fleet Week times; therefore, vessel traffic conditions are anticipated to be well within the capacity of the Bay and the ability of the USCG and VTS to monitor and safely regulate vessel traffic.

In 2013, spectator and other recreational boats would be permitted to operate in the Bay outside the race course, similar to 2012 conditions. The on-water spectator boat estimates are expected to reach a maximum of 880 boats on peak weekend race days (see Table NAV-7). This level of recreational vessel traffic is approximately 158 percent of peak boat estimates observed for 2011 Fleet Week. This level of

**TABLE NAV-6: ESTIMATED NUMBER OF BOATS AND ON-WATER VISITATION FOR 2012 – ALL ACTION ALTERNATIVES**

Boat Types	Peak Weekend Race Day		Peak Weekday Race Day	
	% of Boats	# of Boats	% of Boats	# of Boats
Recreational				
Motorized pleasure craft (e.g., small powered yachts)	18.2%	62	18.3%	24
Sailboats (may contain small outboard motors)	77%	262	76.3%	100
Non-motorized craft	2.4%	8	3.1%	4
<b>Total Recreational</b>	<b>98%</b>	<b>332</b>	<b>97%</b>	<b>128</b>
Commercial Charters	2.4%	8	2.3%	3
Large private yachts (e.g., super yachts)	0%	0	0%	0
<b>Total All Boats</b>	<b>100%</b>	<b>340</b>	<b>100%</b>	<b>131</b>

NOTE: The above estimates do not include commercial vessel levels, which were expected to be similar to current conditions.  
SOURCE: AECOM, *Draft Report: America's Cup 34 NEPA Alternatives Visitation Analysis Draft, January 4, 2012*; and *Draft Report: America's Cup 34 NEPA Alternatives Visitation Analysis Draft, January 6, 2012*.

**TABLE NAV-7: ESTIMATED NUMBER OF BOATS AND ON-WATER VISITATION FOR 2013 – ALL ACTION ALTERNATIVES**

Boat Types	Average Peak Weekday		Average Peak Weekend Race Day		Medium High Weekend Race Day		Average Weekend Race Day	
	% of Boats	# of Boats	% of Boats	# of Boats	% of Boats	# of Boats	% of Boats	# of Boats
Recreational								
Motorized pleasure craft (e.g., small powered yachts)	16%	24	17%	152	16%	90	16%	45
Sailboats (may contain small outboard motors)	69%	102	73%	640	72%	400	70%	200
Non-motorized craft	5%	8	1%	8	2%	10	3%	10
<b>Total Recreational</b>	<b>91%</b>	<b>134</b>	<b>91%</b>	<b>800</b>	<b>90%</b>	<b>500</b>	<b>89%</b>	<b>255</b>
Commercial Charters	2%	3	2%	20	3%	15	4%	12
Large private yachts (e.g., super yachts)	7%	10	7%	60	7%	40	7%	20
<b>Total All Boats</b>	<b>100%</b>	<b>147</b>	<b>100%</b>	<b>880</b>	<b>100%</b>	<b>555<sup>a</sup></b>	<b>100%</b>	<b>287</b>

NOTE: The above estimates do not include commercial vessel levels, which were expected to be similar to current conditions.  
<sup>a</sup> This is approximately the same number of boats observed in the Central Bay during the 2011 Fleet Week peak event times (October 8, 2011).  
SOURCE: AECOM, *Draft Report: America's Cup 34 NEPA Alternatives Visitation Analysis Draft, January 4, 2012*; and *Draft Report: America's Cup 34 NEPA Alternatives Visitation Analysis Draft, January 6, 2012*.

traffic would result in congested vessel traffic conditions on the Bay. The area of congestion would vary depending on the race course location and is described by alternative in the following sections.

Vessel traffic in Aquatic Park cove is regulated by the NPS. During race events, as with all major waterfront events such as the Fourth of July and Fleet Week, the NPS monitors the cove and restricts access when the cove is determined to be full. While capacity of Aquatic Park cove depends on many factors, 40 visiting vessels is generally the capacity or limit. Two NPS patrol boats would be inside the cove to manage activities during AC34 events.

#### ***4.11.6.2 AC34 Race-Related Infrastructure Work***

Under all action alternatives, some in-water and on-water infrastructure work would be the same. As described in more detail in Chapter 2 –Alternatives, in-water development would include temporary dredging activities, and the installation of piles, floating docks, and mooring anchors along the San Francisco waterfront.

This in-water development and construction would occur near shore adjacent to existing docks and piers. The construction areas would be outside commercial traffic lanes and ferry routes and would therefore not affect commercial maritime navigation and safety. This construction would therefore result in a negligible effect on such activities.

The AC34 dredging work, described more fully in Chapter 2—Alternatives, may result in a temporary increase in the transiting of dredging equipment and barges within the Bay. Depending on where project dredge materials are disposed, this activity could increase traffic between the San Francisco shoreline and the Alcatraz disposal grounds, or disposal areas outside the Golden Gate Bridge. The increased barge and tug traffic would be managed in the same manner in which all dredge and barge traffic is currently managed within the Bay. The increase in traffic would not disrupt other regularly scheduled commercial traffic. Further, as these dredging activities would be conducted in order to accommodate mooring of the AC34 boats and other support and spectator boats, they would take place prior to race events and would not affect maritime and navigation safety during race activities. The impact would be minor.

In addition to dredging activities for AC34 events, the Port of San Francisco oversees the existing permitted maintenance dredging program to ensure adequate access to port facilities. Maintenance dredging necessary in the project area would not take place during AC34 race events, in order to accommodate the increased vessel traffic anticipated during events.

#### ***4.11.6.3 Other Commercial Water Uses***

Sand mining in the area of Point Knox Shoal and Presidio Shoal could be potentially affected by AC34 race activities, as the lease areas are within the race areas for all action alternatives and sand mining peaks in the summer. Mining activity in July and August peaked at about 90 events per month (from March 2002 to February 2003), when races would occur. However, as mining can occur 24 hours a day and mining events typically last only 3.0 to 4.5 hours; mining operations could be rescheduled to take

place outside the hours of 12:00 p.m. and 5:00 p.m. on race days (ESA 2011). Because this impact would be of temporary duration, it is considered minor.

#### **4.11.7 Impacts of Alternative B—Sponsor Proposed Project**

Under Alternative B – Sponsor Proposed Project, the proposed race areas for the 2012 and 2013 races are of different sizes and would be managed differently (Figure NAV-2). Consequently, the potential impacts on vessel traffic for each race year would be different and are described separately below. However, the impacts described in Section 4.11.5 would be common to both years for all action alternatives.

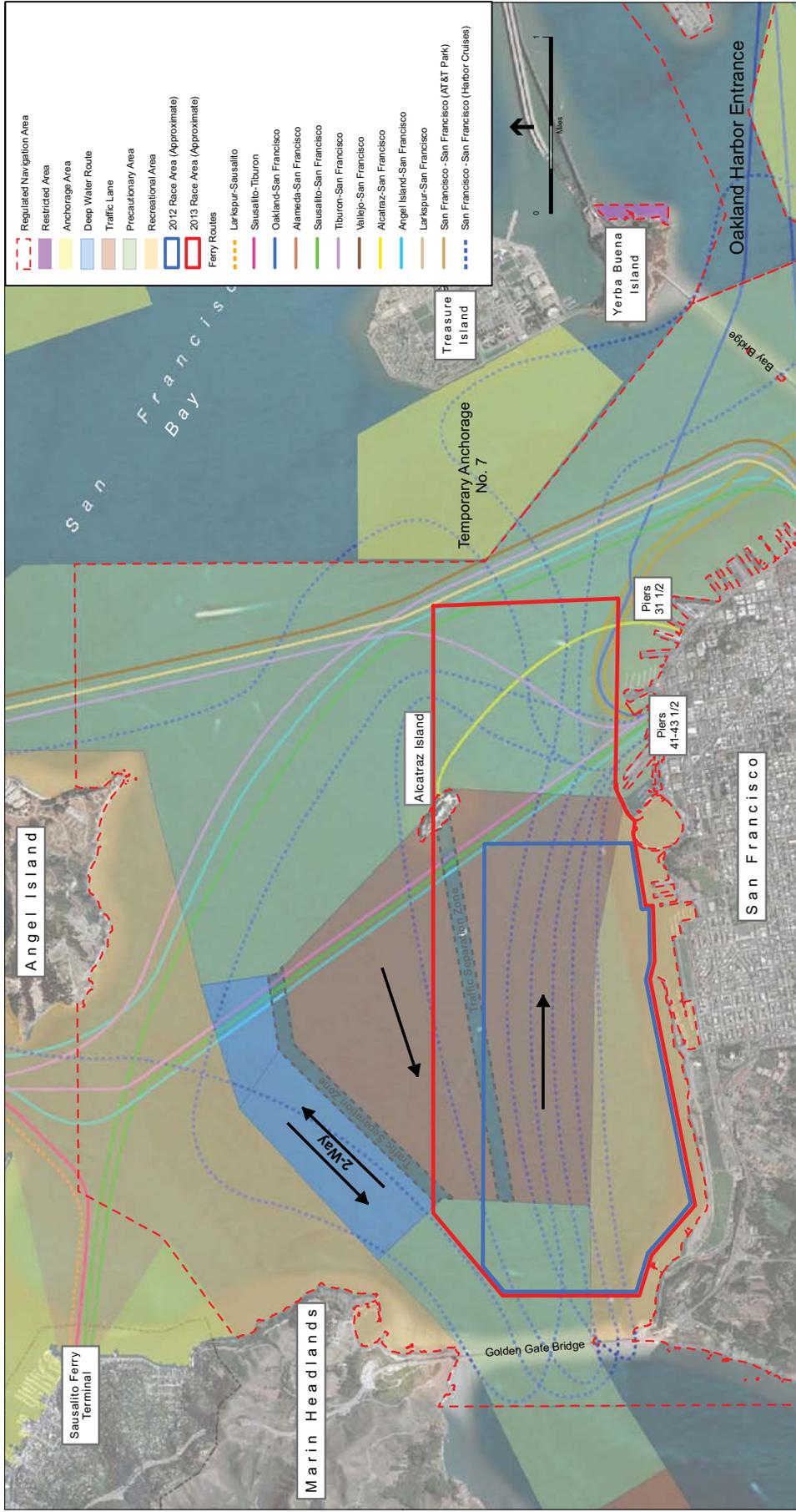
The area regulated by the SLR is east of the Golden Gate Bridge, south of Alcatraz Island, west of Treasure Island, and in the vicinity of the San Francisco waterfront. Internal movement within the marinas, pier spaces, and facilities along the waterfront would not be managed under the regulation. The primary regulated area includes an area reserved for recreational swimmers, rowers, kayakers, and other users between Fort Point and Marina Yacht Harbor mouth, ranging from 450 to 1,000 feet off the San Francisco waterfront. During race periods, this area would be closed to motorized vessels and all other vessels greater than 20 feet. All proposed regulations would apply between 12:00 pm and 5:00 p.m. on race days, with normal maritime activity resuming earlier when races conclude early. The regulated area would be slightly larger than the race area to accommodate changing weather conditions and for safety. The SLR would also establish a contingent race area in the event that north-south wind conditions make the primary race area unsuitable. This contingent area would extend into navigation channels east of Alcatraz Island and northwest of Treasure Island. Racing within this area would only take place with the approval of the COTP, and would not displace scheduled commercial traffic.

Under Alternative B, the USCG would issue a notice of 12 race days via (published and broadcasted) LNM and the Federal Register between August 11 and September 2, 2012 and 45 race days between July 4 and September 24, 2013. In addition, the VTS would coordinate with the ports served by San Francisco Bay to manage shipping traffic such that, if possible, vessel transits are minimized 12:00 p.m. and 5:00 p.m. on race days.

##### **4.11.7.1 Impacts of 2012 Races**

###### **Commercial Vessels (Not Including Ferries, Tours, and Dinner Cruises)**

In 2012, the SLR would close the eastbound and westbound traffic lanes to vessels greater than or equal to 100 gross tons during designated race periods. Vessels less than 100 gross tons would not be barred from the traffic lanes as long as they stay out of the race area. Commercial vessels greater than or equal to 100 gross tons may need to transit through the closed traffic lanes to conduct operations that would not interfere with the America's Cup sailing events, and therefore the SLR would provide for entry into the closed traffic lanes with COTP permission. Shipping traffic would continue to operate using the two-way deep water traffic lane. The RNA would continue to contain provisions for certain vessels such as those greater than 1,600 gross tons carrying dangerous cargo. At the COTP's



AC34 / Environmental Assessment (210317) **Figure NAV-2**  
 Alternatives B and C - Navigational Designations and Ferry Routes

SOURCE: NOAA ENC 2011; ESA 2011

Note: This map is for illustrative purposes only and does not represent all regulations applicable to navigation in Bay waters

discretion, vessels in addition to those listed in the RNA could be restricted to one-way traffic as coordinated by the VTS. In addition, the VTS would coordinate with the commercial shipping ports to manage shipping traffic such that if possible, vessel transits would be minimized between 12:00 p.m. and 5:00 p.m. on race days. Implementation of the SLR, as described in Chapter 2 – Alternatives, would result in slightly increased transit time for large commercial vessels, which would normally transit using the eastbound traffic lane. Based on transit counts from 2005 to 2010, an average of 3.6 commercial vessels transit the Bay between 12:00 p.m. and 6:00 p.m. on weekends. Conservatively estimating that none of the commercial vessels are deep draft vessels already restricted to the deep draft channel, an average of four ships on weekdays and one ship on weekends would be rerouted around the race area, on days when races occur. Based on the number of commercial vessels rerouted and the additional transit time, this would be a minor impact on commercial vessel traffic.

### **Commuter Ferries, Tours, and Harbor Cruises**

Based on 2011 ferry schedules for both commercial ferries and harbor cruises, there are an average of 33.5 round trip ferry transits per day between 12:00 p.m. and 5:00 p.m. on weekdays and 30.5 round trip transits on weekends (see Table NAV-4). The number of commuter ferries is greater on weekdays than on weekends, while the number of tours and cruises increases on the weekend.

Commuter ferries whose routes normally transit the race area would likely be rerouted around the race area. Commuter ferries operating out of the San Francisco Ferry Building to North Bay destinations would generally be unaffected, as their normal routes would occur outside the race area. Ferries operating from Piers 41 and 43½ would have a portion of their standard routes bisected by the race area (Figure NAV-2). As stated previously, ferries are not constrained to operating within set traffic lanes. However, the most direct route between San Francisco and points north would be temporarily cut off. In order to maintain commuter schedules, ferries would need to travel a greater distance to the east in order to circumnavigate the race area. This would require ferries to operate at increased speed in order to maintain schedules as the distance would be greater. The docking and turnaround time for commuter ferries does not permit extended delays without affecting the entire commuter ferry schedule. Consequently, for impacts to be considered minor, the potential for delays must be less than 10 minutes on average. Given the limited area where the race area would overlap with ferry routes and the distance ferries operating out of Piers 41 and 43½ would need to travel around the area, potential delays under Alternative B would be no greater than 10 minutes on average. Therefore, the potential impacts on commuter ferries would be minor.

Bay sightseeing cruises and other commercial tours would continue their circular routes by transiting north of the 2012 race area. The Alcatraz ferry route runs through the race area but would be able to continue on its current schedule and navigation course, with an escort if needed. Those cruises that tour the San Francisco waterfront would likely either be diverted north of the race area, changed to tour different areas of the Bay, or repurposed as spectator tours for AC34 race events. This could occur on a maximum of 18 days between August and September. Because this impact would be of temporary duration, the potential impact on maritime navigation and safety would be considered minor.