ESA Biological Resources

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500 phone
916.564.4501 fax

www.esassoc.com

technical memorandum

date October 1, 2015

to Sally Oerth, OCII, and Chris Kern, SF Planning Department

from Garret Leidy and Chris Fitzer, Environmental Science Associates

subject Presence of Steelhead in San Francisco Bay adjacent to the Proposed Event Center and Mixed-Use Development at Mission Bay Blocks 29-32, San Francisco, CA.

The purpose of this technical memorandum is to address comments concerning potential impacts of the proposed Event Center and Mixed-Use Development at Mission Bay Blocks 29-32 (project) in San Francisco on steelhead and/or steelhead critical habitat in the immediate vicinity of the project site located on the eastern shoreline of San Francisco Bay. This technical memorandum includes a discussion on steelhead presence and habitat use in San Francisco Bay and water quality.

Steelhead Presence and Habitat Use in San Francisco Bay

Two Distinct Population Segments (DPS) of steelhead use the San Francisco Estuary as a migration corridor:

Central California Coast steelhead (*Oncorhynchus mykiss*)
Threatened (71 FR 834; January 5, 2006)
Critical Habitat (70 FR 52488; September 2, 2005)

Central Valley steelhead (*O. mykiss*)
Threatened (71 FR 834; January 5, 2006)
Critical Habitat (70 FR 52488; September 2, 2005)

The life history and critical habitat designations for these two DPS, as it relates to the likelihood of occurrence in proximity to the project site, are discussed in detail below.

Relevant Life History

Steelhead are anadromous forms of rainbow trout typically rearing in freshwater for 1 to 3 years before migrating to the ocean as smolts. Steelhead normally remain in the ocean for 2 to 3 years before returning to their natal

streams to spawn[1]. Juvenile steelhead migrate as smolts to the ocean from January through May, with peak outmigration in March and April. Adults return from the ocean to freshwater between December and April, typically peaking in January and February[2].

Little is known about the transit times and migratory pathways of steelhead within San Francisco Bay. Results from a 2008-2009 study of outmigration and distribution of juvenile hatchery-raised steelhead released in the lower Sacramento River show that steelhead spend an average of 2.5 days in transit time within San Pablo and San Francisco Bays[3]. The study concluded that transit time was greater in the upper estuary (Suisun Bay and Delta) than in the lower estuary (San Francisco Bay). This could be due to lower salinity in the upper estuary that serves as a transition between fresh and salt water, allowing steelhead to transition from freshwater to saltwater. Once steelhead reach San Francisco Bay, salinities are similar to ocean water, which may lead steelhead to spending less time in this portion of the estuary.

Although information on migratory pathways of juvenile steelhead were largely inconclusive, a positive correlation between smolt captures and water depth was observed between 3 and 37 feet, suggesting that the deeper the water, the more fish were present (up to 37 feet deep)[4]. Studies conducted by National Marine Fisheries Service (NMFS) and California Department of Fish and Wildlife (CDFW) indicate that the primary migration corridor is through the northern portions of San Francisco Bay (Raccoon Straight and north of Yerba Buena Island)[5, 6]. Additionally, a recent study evaluating 30-years of Interagency Ecological Program (IEP) monthly mid-water fish trawl data and three-years of acoustic tag data of hatchery-raised salmonids suggests that the presence of outmigrating juvenile salmonids (steelhead and Chinook salmon [*Oncorhynchus tshawytscha*]) along the Port of San Francisco waterfront appeared to be more the result of capture by tidal flow rather than active foraging or intentional swimming to those areas of the Bay[7].

Critical Habitat

Critical habitat is defined in Section 3(5)A of the Endangered Species Act as the specific portions of the geographic area occupied by the species in which physical or biological features essential to the conservation of

1 Busby, P.J., T.C. Wainwright, G.J. Bryant., L. Lierheimer, R.S. Waples, F.W. Waknitz, and I.V. Lagomarsino. 1996. Status review of west coast steelhead from Washington, Idaho, Oregon, and California. United States Department of Commerce, National Oceanic and Atmospheric Administration Technical Memorandum NOAA Fisheries-NWFSC-27. 261 pages.

2 Fukushima, L., E.W. Lesh. 1998. Adult and juvenile anadromous salmonid migration timing in the California streams. California Department of Fish and Game 84(3):133-145.

3 Klimley, P., D. Tu, W. Brostoff, P. LaCivita, A. Bremner, and T. Keegan. 2009. Juvenile Salmonid Outmigration and Distribution in the San Francisco Estuary: 2006-2008 Interim Draft Report. Prepared for U.S. Army Corps of Engineers.

4 *Ibid.*

5 NMFS (National Marine Fisheries Service). 2015. Biological Opinion for the San Francisco-Oakland Bay Bridge Seismic Safety Project to address the Pier 3 Demonstration Project (WRC-2015-2708).

6 NMFS (National Marine Fisheries Service). 2012. Biological Opinion for the 34th America's Cup (2011/06500).

7 Jahn, A. 2011. Young Salmonid Out-migration through San Francisco Bay with Species Focus on their Presence at the San Francisco Waterfront. Draft Report. Prepared for the Port of San Francisco. January 2011.

the species are found. Specific areas outside of the geographic area occupied by the species may also be included in critical habitat designations upon a determination that such areas are essential for the conservation of the species. As part of the designation of critical habitat for steelhead (70 FR 52488; September 2, 2005), it was determined that the CALWATER Hydrologic Subareas (HSAs) would be the analytical unit used in delineating specific areas in which those pertinent physical or biological features are found.

The proposed project site at Mission Bay Blocks 29-32 falls within the San Mateo Bayside HSA, which, as part of the 2005 determination (70 FR 52488; September 2, 2005), was excluded from designated critical habitat for Central California Coastal steelhead DPS. The nearest designated stream critical habitat is Arroyo Corte Madera del Presidio, located approximately 11 miles north and San Francisquito Creek and 20 miles south of the project site. Similarly, the San Mateo Bayside HSA, as well as the neighboring South San Francisco Bay HSA, is excluded from the designation of critical habitat for Central Valley steelhead DPS.

The seasonal timing, short residence time, and depth preferences of migrating steelhead indicate that any presence in the immediate proximity of Mission Bay Blocks 29-32 is likely to be incidental and of brief duration. This is further supported by the exclusion of the San Mateo Bayside and South San Francisco Bay HSAs from designated critical habitat for Central California Coastal steelhead DPS and Central Valley steelhead DPS, respectively (70 FR 52488; September 2, 2005).

Water Quality

As described in Section 5.9 of the SEIR, Hydrology and Water Quality, San Francisco Bay waters are under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board (RWQCB), which established regulatory standards and objectives for water quality in the Bay in the Water Quality Control Plan for the San Francisco Bay, commonly referred to as the Basin Plan.[8] The Basin Plan identifies existing and potential beneficial uses for surface waters and provides numerical and narrative water quality objectives designed to protect those uses. The preparation and adoption of water quality control plans is required by the California Water Code (Section 13240) and supported by the federal Clean Water Act (CWA). Because beneficial uses, together with their corresponding water quality objectives, can be defined per federal regulations as water quality standards, the Basin Plan is a regulatory reference for meeting the state and federal requirements for water quality control.

The proposed project site is located in the Mission Bay area of San Francisco, and bounded by 16th Street, Third Street, and the future realignment of Terry A. Francois Boulevard. With the realignment of Terry A. Francois

[8] San Francisco Bay Regional Water Quality Control Board (RWQCB), Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), June 29, 2013. Available online at http://www.swrcb.ca.gov/rwqcb2/water_issues/programs/planningtmdls/basinplan/web/docs/BP_all_chapters.pdf

Boulevard, the project site would be located approximately 200 to 400 feet from San Francisco Bay with the proposed Bayfront Park and the roadway in between the site and the Bay. This area is adjacent to Lower San Francisco Bay, as designated in the Basin Plan, which approximately extends from the Bay Bridge on the north to the Dumbarton Bridge on the south. Identified beneficial uses for Central Basin of Lower San Francisco Bay and Mission Creek include commercial and sport fishing, estuarine habitat, wildlife habitat, water contact recreation, noncontact water recreation, and navigation. Identified beneficial uses for Lower San Francisco Bay include industrial service supply, commercial and sport fishing, shellfish harvesting, estuarine habitat, fish migration, preservation of rare and endangered species, fish spawning, wildlife habitat, water contact recreation, noncontact water recreation, and navigation.

The impact evaluation discussed in SEIR Section 5.9, Hydrology and Water Quality, evaluates the project's potential impacts on water quality and concludes that the project would not violate water quality standards or otherwise substantially degrade water quality with respect to construction‐related dewatering; and operation of the proposed project would not contribute to a substantial increase in combined sewer discharges, including potential water quality impacts of the proposed project related to dry weather wastewater flows and compliance with the wastewater treatment requirements of the RWQCB; wet weather wastewater flows; effluent discharges from the Southeast Water Pollution Control Plant; direct discharges of stormwater; and litter (see SEIR pages 5.9-31 through 5.9-41). Because the impact evaluation criteria include regulatory standards and objectives for water quality in the Bay (Water Quality Control Plan for the San Francisco Bay Basin [Basin Plan]), the evaluation inherently addresses impacts to associated beneficial uses, including commercial and sport fishing, estuarine habitat, and wildlife habitat, which would include Central California Coastal steelhead DPS, Central valley steelhead DPS.

Conclusion

As described above, the seasonal timing, short residence time, and depth preferences of migrating steelhead indicate that any presence in Lower San Francisco Bay in the immediate proximity of Mission Bay Blocks 29-32 is likely to be incidental and of brief duration. Additionally, all discharges to San Francisco Bay are currently required to, and under the proposed project would, continue to be required to comply with regulatory standards and objectives for water quality consistent with the Basin Plan, which have been developed to be protective of beneficial uses, including commercial and sport fishing, estuarine habitat, and wildlife habitat. Therefore, any potential impacts to steelhead or steelhead critical habitat associated with discharges or runoff originating from the proposed project are expected to be similar to the existing conditions and less than significant.