Appendix 6-1

CO Screening Memorandum

ESA

550 Kearny Street
Suite 800
San Francisco, CA 94108
415.896.5900 phone
415.896.0332 fax

www.esassoc.com

memorandum

date	December 23, 2016
to	Wade Wietgrefe, San Francisco Planning Department
cc	Shannon Hatcher, ICF Erin Efner, ICF Tania Sheyner, San Francisco Planning Department
from	Brian Schuster, ESA
subject	Seawall Lot 337 and Pier 48 Mixed-Use Project EIR: Carbon Monoxide Screening Memorandum

Introduction

This memo discusses Localized Carbon Monoxide impacts from the Seawall Lot 337 and Pier 48 Mixed-Use Project (proposed project) to supplement the Draft EIR. It includes background information on carbon monoxide (CO), Bay Area Air Quality Management District (BAAQMD) significance criteria, and an evaluation of the localized CO impact from the proposed project.

Carbon Monoxide

Carbon monoxide is a colorless, odorless toxic gas that is produced by incomplete combustion of carbon substances, such as gasoline or diesel fuel. The primary adverse health effect associated with CO is interference with normal oxygen transfer to the blood, which may result in tissue oxygen deprivation.

Significance Criteria

With regard to localized carbon monoxide, the project would have a significant effect if it would result in any of the conditions listed below.

- Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

- Result in a cumulatively considerable net increase in any criteria pollutant for which the project region is in nonattainment status under an applicable federal, state, or regional ambient air quality standard (including through the release of emissions that exceed quantitative thresholds for ozone precursors).

The threshold for localized carbon monoxide is a violation of the California Ambient Air Quality Standards (CAAQS) or National Ambient Air Quality Standards (NAAQS), per BAAQMD screening criteria. The NAAQS are $\geq$ 9 ppm for 8-hour and $\geq$ 35 ppm for 1-hour; the CAAQS are $\geq$ 9.0 ppm for 8-hour and $\geq$ 20 ppm for 1-hour.[1]

Localized Carbon Monoxide Screening Criteria

Heavy traffic congestion can contribute to high levels of CO. Individuals who are exposed to such hot spots may have a greater likelihood of developing adverse health effects. BAAQMD has adopted screening criteria that provide a conservative indication of whether project-generated traffic would cause a potential CO hot-spot. If the screening criteria are not met, a project is presumed to not result in a potential CO hot-spot, a quantitative analysis through site-specific dispersion modeling of project-related CO concentrations would not be necessary and a project is considered less than significant under CEQA. BAAQMD's CO screening criteria are summarized below. [2]

1. Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.

2. Project traffic would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., a tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

3. The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, regional transportation plan, and local congestion management agency plans.

Localized Carbon Monoxide Impacts

Continuous engine exhaust may elevate localized CO concentrations. Receptors that are exposed to these CO hot spots may have a greater likelihood of developing adverse health effects. CO hot spots are typically observed at heavily congested intersections where a substantial number of gasoline-powered vehicles idle for prolonged durations throughout the day. Section 4.E, Transportation, analyzes peak-hour traffic volumes at intersections in the transportation study area. The analysis indicates that the highest traffic volumes would occur under the High Commercial Assumption at Third Street and King Street during the p.m. peak hour under baseline plus-project conditions (5,113 vehicles per hour) and during the p.m. peak hour with a Giants game under 2040 cumulative

[1] California Air Resources Board (ARB). 2016. *Ambient Air Quality Standards*. June 4. Available at: http://www.arb.ca.gov/research/aaqs/aaqs2.pdf. Accessed: August 19, 2016.

[2] Bay Area Air Quality Management District (BAAQMD). 2010. *California Environmental Quality Act Air Quality Guidelines*. May. San Francisco, CA. Available at: http://www.baaqmd.gov/~/media/files/planning-and-research/ceqa/draft_baaqmd_ceqa_guidelines_may_2010_final.pdf?la=en. Accessed: December 21, 2016.

plus-project conditions (5,919 vehicles per hour). The highest traffic volumes would occur under the High Residential Assumption at Third Street and King Street during the p.m. peak hour under baseline plus-project conditions (5,061 vehicles per hour) and during the p.m. peak hour with a Giants game under 2040 cumulative plus-project conditions (5,867 vehicles per hour). Maximum hourly traffic volumes are presented in Table 1.

TABLE 1. MAXIMUM HOURLY TRAFFIC VOLUMES BY SCENARIO AND TIME PERIOD

		Maximum Hourly Traffic Volumes		
Scenario	**Intersection**	**A.M.**	**P.M.**	**P.M. with Giants Game**
Baseline plus Project				
High Commercial	Third Street and King Street	4,497	**5,113**	4,344
High Residential	Third Street and King Street	4,518	**5,061**	4,292
2040 Cumulative plus Project				
High Commercial	Third Street and King Street	5,123	5,671	**5,919**
High Residential	Third Street and King Street	5,144	5,619	**5,867**

Source:

Fehr & Peers. 2016. Screencheck Draft - Transportation Impact Study: Mission Rock (Seawall Lot 337/Pier 48). Prepared for the City and County of San Francisco Planning Department. July. San Francisco, CA.

Notes:

Maximum traffic volumes for all time periods shown in **bold**.

These levels, under each project and cumulative condition, would be far below the congested traffic volume modeled by BAAQMD (44,000 vehicles per hour) that would be needed to contribute to a localized CO hot spot and below the congested traffic volume modeled by BAAQMD (24,000 vehicles per hour) that would be needed to contribute to a localized CO hot spot at an intersection where vertical and/or horizontal mixing is substantially limited. Therefore, given the proposed project would result in traffic volumes below BAAQMD's CO screening criteria and the Bay Area's attainment status with regards to the CAAQS and NAAQS, the proposed projects would not result in a increases in CO concentrations in excess of the CAAQS nor NAAQS, a quantitative CO hot-spot analysis is not required, and potential CO impacts associated with the proposed project is considered less than significant under CEQA.