SAN FRANCISCO
**PLANNING DEPARTMENT**

# Notice of Preparation of an Environmental Impact Report

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| | |
|---|---|
| *Date:* | January 22, 2014 |
| *Case No.:* | 2013.0154E |
| *Project Title:* | **Moscone Center Expansion Project** |
| *BPA Nos.:* | Not Applicable |
| *Zoning:* | Downtown Commercial Support C-3-S<br>340-I Height and Bulk District |
| *Block/Lot:* | Block 3723/ Lot 115; 3734/91 |
| *Lot Size:* | 830,000 square feet |
| *Project Sponsor:* | San Francisco Mayor's Office of Economic and Workforce Development<br>Adam Van de Water, Adam.Vandewater@sfgov.org |
| *Lead Agency:* | San Francisco Planning Department |
| *Staff Contact:* | Elizabeth Purl – (415) 575-9028<br>elizabeth.purl@sfgov.org |

## PROJECT DESCRIPTION

The Moscone Center—San Francisco's primary convention, exhibition, and meeting facility—is located on Howard Street between Third and Fourth Streets in the South of Market neighborhood of San Francisco, in an area referred to as Yerba Buena Gardens. The proposed Moscone Center Expansion Project would increase the gross square footage of the Moscone Center facility by about 20 percent, from approximately 1.2 million square feet to 1.5 million square feet. New construction would be primarily above grade both north and south of Howard Street in buildings up to approximately 95 feet tall. At completion, the expanded Moscone North structure would be approximately 54 feet in height and the Moscone South structure would be approximately 95 feet in height. Additional space would be created by excavating in two locations under Howard Street and expanding the existing below-grade exhibition halls that connect the Moscone North and South buildings. The proposed project would create a total of approximately 580,000 square feet of contiguous exhibition space below ground. The proposed project would also reconfigure the existing adjacent bus pick-up and drop off facilities and create two pedestrian bridges spanning Howard Street, which would connect Moscone North and South expansions at the second level above grade. The project does not include changes to the existing Moscone West building.

The project would require Planning Commission approval of a Downtown Project Authorization under Planning Code Section 309, among other approvals. The Downtown Project Authorization would be the project approval action under Chapter 31 of the San Francisco Administrative Code.

## FINDING

**This project may have a significant effect on the environment and an Environmental Impact Report (EIR) is required.** This determination is based upon the criteria of the State CEQA Guidelines, Sections 15063 (Initial Study), 15064 (Determining Significant Effect), and 15065 (Mandatory Findings of

Significance), and for the reasons documented in the Environmental Evaluation (Initial Study) for the project, which is attached.

## PUBLIC SCOPING PROCESS

Public comments will be accepted until 5:00 p.m. on February 21, 2014. Written comments should be sent to Sarah B. Jones, San Francisco Planning Department, 1650 Mission Street, Suite 400, San Francisco, CA 94103, or *sarah.b.jones@sfgov.org*.

If you work for a responsible State agency, we need to know the views of your agency regarding the scope and content of the environmental information that is germane to your agency's statutory responsibilities in connection with the proposed project. Your agency may need to use the EIR when considering a permit or other approval for this project. Please include the name of a contact person in your agency.

Members of the public are not required to provide personal identifying information when they communicate with the Commission or the Department. All written or oral communications, including submitted personal contact information, may be made available to the public for inspection and copying upon request and may appear on the Department's website or in other public documents.

January 22, 2014
Date

Viktoriya Wise for
Sarah B. Jones
Environmental Review Officer
for
John Rahaim
Director of Planning

# INITIAL STUDY

## Moscone Center Expansion Project
## Planning Department Case No. 2013.0154E

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# INITIAL STUDY

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## A. PROJECT DESCRIPTION

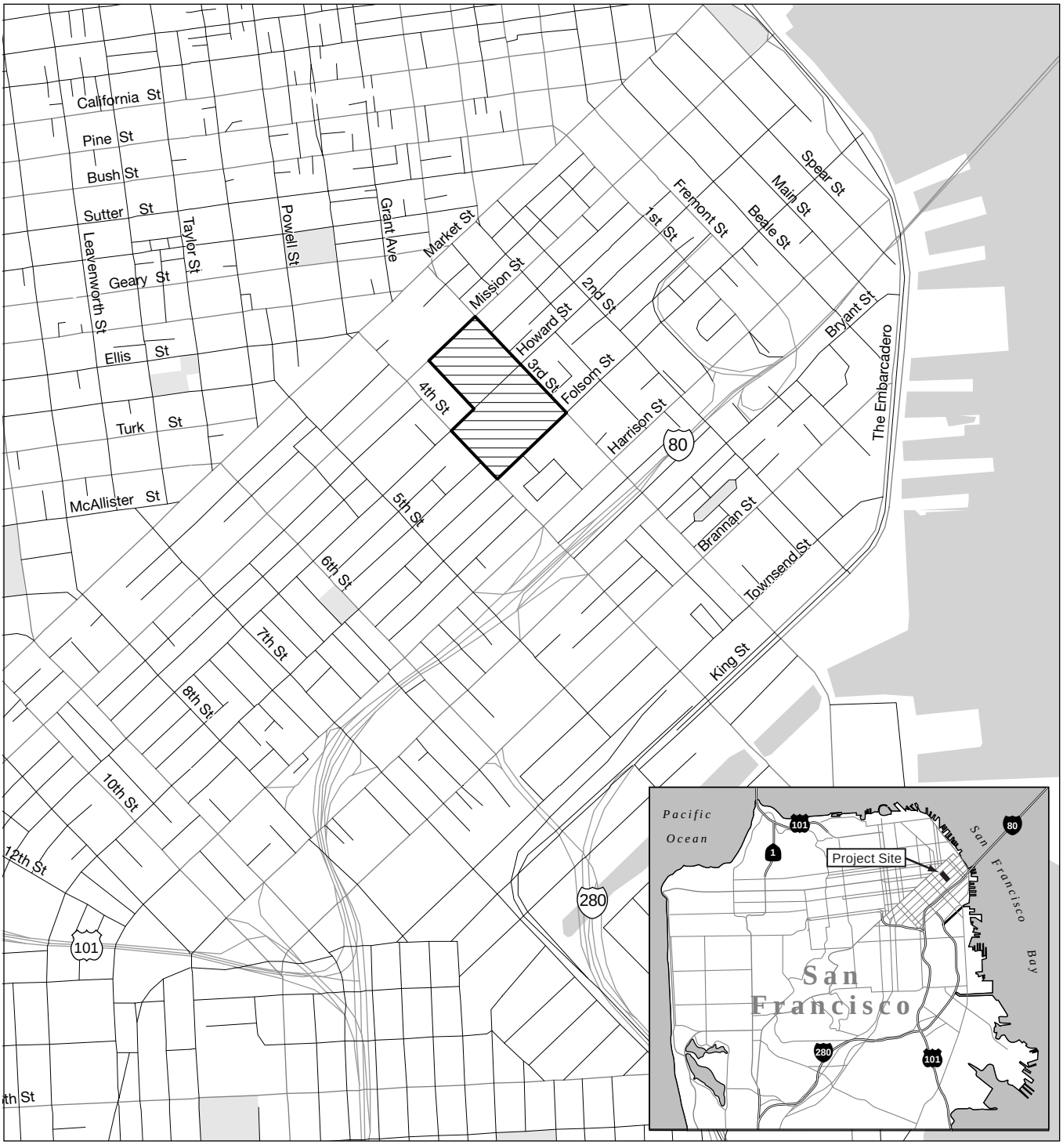
### Project Background and Overview

The Moscone Center—San Francisco's primary convention, exhibition, and meeting facility—is located on Howard Street between Third and Fourth Streets in the South of Market neighborhood of San Francisco, in an area referred to as Yerba Buena Gardens. The project site spans portions of two separate blocks: Assessor's Block 3723, Lot 115, and Assessor's Block 3734, Lot 91 (see **Figure 1**). The Moscone Center, which is owned by the City and County of San Francisco and privately managed, is made up of three main halls: Moscone North and Moscone South, which are located across Howard Street from each other between Third and Fourth Streets, and the Moscone West exhibition hall, located across Fourth Street, north of Howard Street.[1] This Project Description is focused primarily on Moscone North and South because no changes are proposed at Moscone West. Moscone North and South currently encompass a total of approximately 440,000 square feet of exhibition space (180,000 square feet at Moscone North and 260,000 square feet at Moscone South). All of the functional space at Moscone North and South is under ground, with the exception of the street-level North and South lobbies and the Esplanade Ballroom, located at grade along the Third Street frontage of Moscone South.

The proposed Moscone Center Expansion Project (the "proposed project") would increase the gross square footage of the Moscone North and South combined facility by about 20 percent, from 1.2 million square feet to 1.5 million square feet. Through this expansion, as well as through renovation and repurposing of the existing facility, the project would result in an approximately 42 percent increase in functional space, to about 888,300 square feet from 625,600 square feet, as well as reconfigured support space.[2] New construction would be primarily above grade both north and south of Howard Street in buildings up to approximately 95 feet tall. Additional space would be created by excavating and expanding the existing below-grade exhibition halls that connect the Moscone North and South buildings under Howard Street. This excavation and expansion would occur in two currently unexcavated areas or "plugs" inside the existing lower-level building footprint; excavation would not result in an outward expansion beyond that footprint (see the section entitled "Moscone Below-Grade: North and South Exhibition Hall" for further discussion on the location and size of the excavation area). The project would also expand the existing above-grade Moscone North and South buildings. At completion, the expanded Moscone North

[1] Howard Street is oriented in a northeast-southwest direction, but will be referred to as an east-west street in this report. Third and Fourth Streets are oriented in a northwest-southeast direction, but will be referred to as north-south streets in this report. This convention will be used to describe the locations of other buildings and uses in relation to the project site.

[2] "Functional" space is defined as the square footage directly used by facility patrons. It includes exhibition, lobby, pre-function, circulation, meeting, ballroom, and multipurpose areas, as well a portion of the proposed outdoor roof terrace areas. "Functional space" does not include "support space," which is defined as square footage that is not directly used by facility patrons. "Gross square footage" includes support space, as well as other spaces not directly used by facility patrons. "Functional space" figures are used in the remainder of this Project Description, unless otherwise noted.




SOURCE: ESA

Moscone Center Expansion Project 2013.0154E

**Figure 1**

Project Site Location Map

structure would be approximately 54 feet in height, and the Moscone South structure would be approximately 95 feet in height.

The proposed project would also reconfigure the existing adjacent bus pick-up and drop-off facilities and create two pedestrian bridges spanning Howard Street, which would connect Moscone North and South expansions at the second level above grade. As noted above, the proposed project would not affect the existing Moscone West building located at the northwest corner of the intersection of Howard Street and Fourth Street. Project implementation would occur using a coordinated, phased construction schedule that would maintain Moscone's convention operations during the construction period.

## Project Sponsor's Objectives

The Moscone Center Expansion Project is being undertaken jointly between the Moscone Expansion District (MED), managed by the San Francisco Tourism Improvement District (SFTID) Management Corporation, and the City and County of San Francisco's Convention Facilities Department. The objectives for the proposed project include the following:

- Maximizing economic impact by attracting new clients and maintain existing clients by creating contiguous exhibition space of up to approximately 580,000 square feet and increasing the quantity of flexible meeting and ballroom spaces.
- Increasing the amount of efficient, contiguous exhibition space and providing more functional, flexible meeting space.
- Maintaining continuous operations and revenue during improvement and expansion.
- Capitalizing on Moscone Center's unique location in the city by improving its connections and relationship to the city's fabric, by:
    1. Improving Moscone's civic presence on Howard Street by creating an iconic and architecturally significant arrival experience.
    2. Enhancing pedestrian circulation and interest by reintroducing lost mid-block passageways and reducing the length of uninterrupted frontages.
    3. Activating streets by redesigning or relocating vehicular and service functions to create uninterrupted pedestrian-favored sidewalks fronted by active uses wherever possible.
    4. Reinforcing and improving connections among existing public open spaces in the MED.

It is intended that, following project implementation, Moscone Center could more efficiently hold two or more events simultaneously, and the time required to set up or break down events would be reduced.

## Project Location

As noted above, the project site consists of portions of parcels on both sides of Howard Street, between Third and Fourth Streets. In combination, the total footprint of the project site is approximately 827,500 square feet below grade, and approximately 131,400 square feet above grade.[3] The project site is

[3] Existing and proposed bridges at level 2 are not included in this footprint total.

bordered by Third Street to the east; Folsom Street to the south; the Metreon (a commercial retail center housing shops, restaurants, and a movie theater), Children's Creativity Museum and Fourth Street to the west; and Yerba Buena Gardens and Mission Street to the north.[4]

In addition to Moscone North, the project block north of Howard Street shares Lot 115 with other buildings and uses above grade, including the large Yerba Buena Garden (a public park that contains the Sister Cities Garden, the Martin Luther King, Jr. Memorial, and various art installations), the Yerba Buena Center for the Arts Galleries and Forum building, and the Yerba Buena Center for the Arts Theater. In addition to the Moscone Center, the project block south of Howard Street shares Lot 91 with a variety of other buildings and uses, including the Yerba Buena Bowling and Ice Skating Center, the Children's Creativity Museum, the Child Development Center, the Children's Garden, and the restored 1905 Carousel. The project site is generally flat along Howard Street. However, other than the Moscone South Lobby building and Esplanade Ballroom entries on Howard Street, the majority of developed buildings and public open spaces sit atop the roof of the below-grade Moscone South Exhibition Halls A, B and C. That roof is approximately 12 feet above Howard Street. A pedestrian bridge over Howard Street connects the two blocks, sitting on top of part of the Moscone Center.

Market Street, a major east-west roadway in downtown San Francisco, is located two blocks north of the project site. Union Square is located approximately three-quarters of a mile to the north, and the Civic Center is located about 1 mile to the west (north of Market Street).

### *Existing Uses on the Project Site*

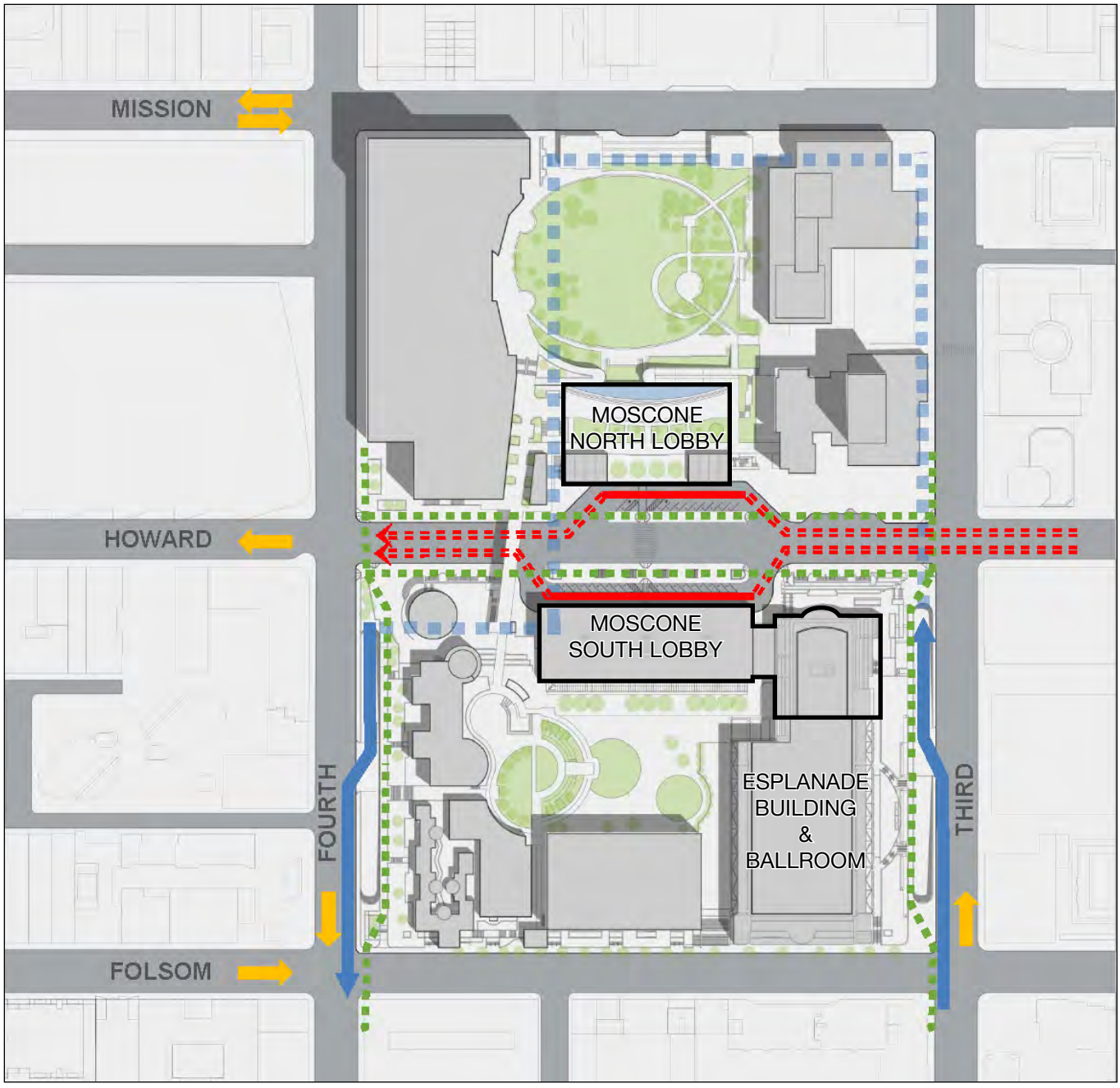
#### Existing Operations

Moscone Center—including Moscone North, South, and West—is the largest convention, exhibition, and meeting facility in San Francisco, hosting about 90 to 100 events during a typical year. It is owned by the City and County of San Francisco, and it is managed by SMG LLP. Some of the large events that have taken place at Moscone Center include Oracle OpenWorld, the American Bar Association's annual meeting, the Game Developers Conference, the Apple Worldwide Developers Conference, Google I/O, and JavaOne. Moscone Center also hosted the Democratic National Convention in 1984. Most events take place over two to five days and attract an average of 6,426 attendees per event-day. The largest convention/tradeshows typically held at the Moscone Center are Oracle's Open World and Salesforce's Dreamforce conferences with approximately up to 113,000 and 60,000 attendees, respectively; the largest consumer show is the San Francisco International Auto Show with up to 285,000 attendees.

#### Moscone North

Moscone North encompasses approximately 180,000 square feet of exhibition space, as well as associated support functions such as loading, meeting rooms, storage and mechanical spaces, all located below grade (see **Figure 2**). The ceiling height in the below-grade exhibit spaces (Halls D and E) ranges between

[4] The Yerba Buena Gardens were created as part of the development that occurred under the Yerba Buena Redevelopment Plan. The Yerba Buena Redevelopment Plan expired in 2010.




SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 2**
Existing Conditions

24 and 28 feet. Areas below grade are accessed by visitors from the street level via the existing Moscone North lobby, which is approximately 15,500 square feet in size. Two restaurants, Samovar and B, exist above the Moscone North Lobby; they face the Sister Cities Garden and Martin Luther King, Jr. Memorial and Fountain to the north.

### Moscone South and Esplanade[5]

Moscone South includes approximately 260,000 square feet of exhibition space (Halls A, B, and C) with associated support functions such as loading, meeting rooms, storage, and mechanical spaces, all located below grade. At its highest point, the column-free exhibit hall is 37 feet in height. Below grade, Moscone South also contains the Gateway Ballroom, a multi-purpose space of almost 25,000 square feet. At the street level, Moscone South consists of the Moscone South and Esplanade lobbies and circulation areas, totaling 21,800 square feet in size. At the mezzanine level are the Esplanade Ballroom, 42,000 square feet in size, as well as 7,300 square feet of space for meeting rooms, lobby, and prefunction[6] space.

**Table 1**, below, provides an overview of the number of events held at the Moscone Center, excluding Moscone West, over the past three years, along with associated total annual attendance at the Moscone Center during those event seasons. Moscone Center employs 317 full-time equivalent (FTE) employees.

**TABLE 1**
**NUMBER OF EVENTS AND TOTAL ANNUAL ATTENDANCE AT MOSCONE CENTER (EXCLUDING MOSCONE WEST) DURING THE LAST THREE YEARS**

| Year | Total Number of Events | Total Annual Attendance |
|---|---|---|
| 2011-2012 | 51 | 525,010 |
| 2010-2011 | 64 | 567,617 |
| 2009-2010 | 53 | 655,343 |

SOURCE: SF Department of Public Works, 2013.

### Existing Circulation and Pedestrian Access

Howard Street, which separates Moscone North from Moscone South, is a major east-west roadway in downtown San Francisco running from The Embarcadero through the South of Market area to South Van Ness Avenue. At the project site, it operates as a one-way arterial with four westbound travel lanes. The San Francisco General Plan identifies Howard Street as a Major Arterial[7] in the Congestion Management Program network.

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5 The southern block of the project site contains both Moscone South and the Esplanade buildings, which are currently separate. Upon completion of the proposed project, these buildings would become a single building. Therefore, for the purpose of this environmental analysis, they are described as one building, unless otherwise noted.

6 For convention spaces, a "prefunction" area is typically adjacent to the main event location and often used for receptions prior to a meal or coffee breaks during an event.

7 Major Arterials are defined by the Congestion Management Program and the San Francisco General Plan as cross-town thoroughfares whose primary function is to link districts within the city and to distribute traffic from and to the freeways; these are routes generally of citywide significance; of varying capacity depending on the travel demand for the specific direction and adjacent land uses.

Currently, two bus loading plazas front the south side of Moscone North and the north side of Moscone South on Howard Street, creating a separation of approximately 250 feet between the two lobby door entries. The Moscone North bus loading plaza is approximately 180 feet in length, three lanes wide, and is able to accommodate up to five buses. The Moscone South bus loading plaza is approximately 275 feet in length, three lanes wide, and is able to accommodate up to seven buses. According to the Project Sponsor, buses typically park parallel to the north and south sidewalks, loading and unloading in lanes one and three and using lane two as a by-pass lane. A signalized, mid-block pedestrian crosswalk 30 feet in width exists between the two bus loading plazas.

Truck access to the project site is provided via a one-way ramp located along Third Street mid-way between Howard and Folsom Streets. Eighteen loading spaces are located at the lower level – three are on the east side of Moscone South, five are on the west side of Moscone South, and ten are along the north side of Moscone North. Trucks exit the project site via a one-way ramp located along Fourth Street mid-way between Howard and Folsom Streets.

#### Parking

Currently no public parking is provided at the Moscone Center. Public parking is available at nearby garages, including the Fifth and Mission Garage and the Moscone Garage on Third Street across from Moscone South.

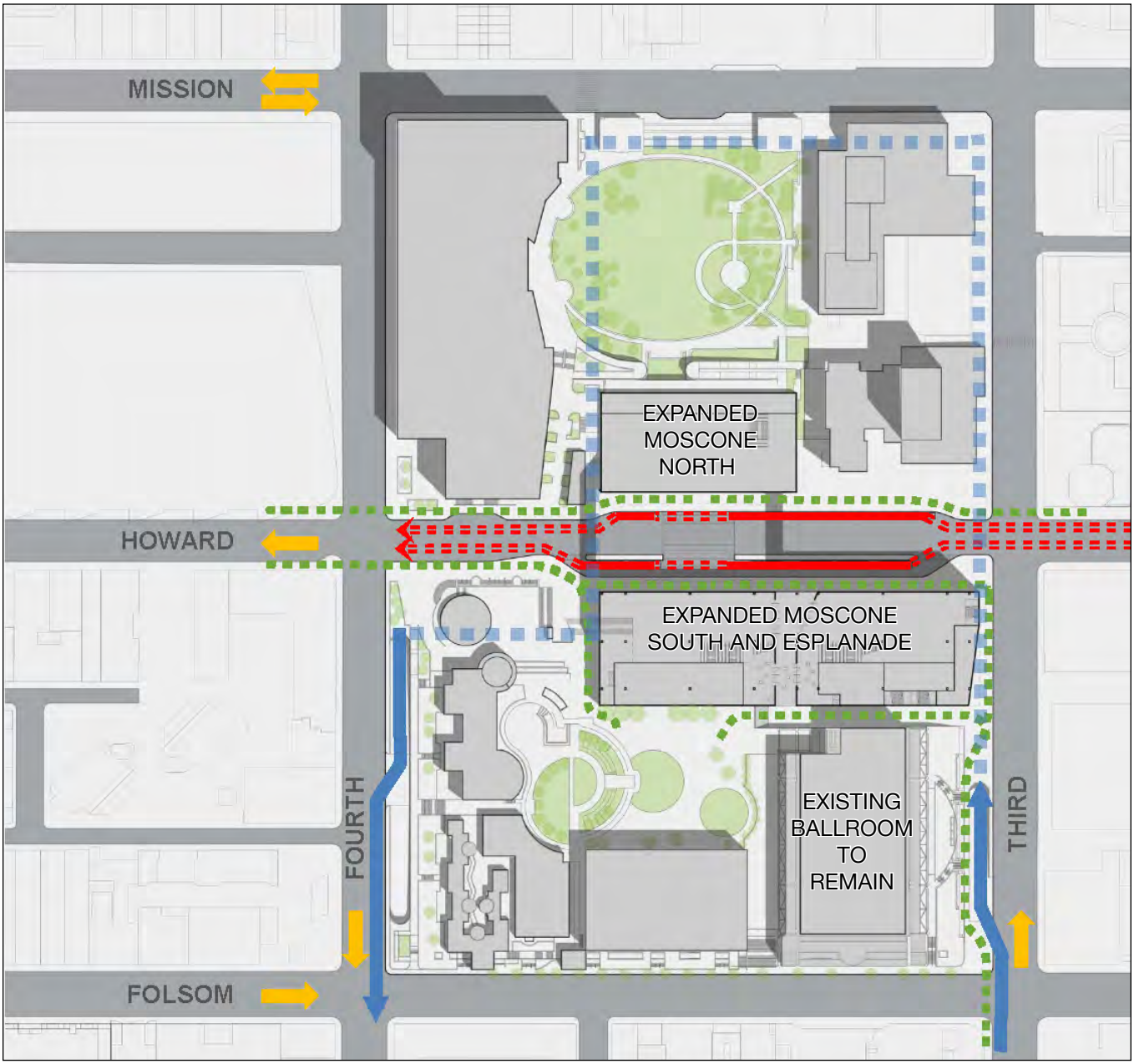
## Project Characteristics

### *Proposed Structural Changes*

The project would add approximately 306,000 gross square feet to the existing 1.2-million-gross-square-foot facility. Functional space for exhibitions, meetings, conventions, and trade shows would increase by about 42 percent, from 625,600 square feet to 888,300 square feet. Through more efficient allocation of building spaces, the proposed project would result in a net decrease in support space (food preparation, office, storage, and other "back of house" space) of about 1 percent, from approximately 570,300 square feet to approximately 563,000 square feet. **Figure 3** illustrates the proposed site plan and **Table 2** details the existing and proposed uses and total square footages at each level.

#### Moscone Below-Grade: North and South Exhibition Hall

On the lower level (see **Figure 4**), the proposed project would combine the exhibition area of Moscone South (Halls A, B, and C) with the existing Moscone South Gateway Ballroom, and expand this area to the north beneath Howard Street to create a better connection with the exhibition area of Moscone North (Halls D and E). The project would also combine Halls D and E, eliminate the existing kitchen and east loading dock (with three usable truck spaces) in the Moscone South lower level, and convert existing meeting space within Moscone North into a kitchen/support area, with a two-space loading dock constructed adjacent to the kitchen. At completion, the lower level would span a total area of 827,500 gross square feet.




SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 3**

Proposed Site Plan

**TABLE 2**
**EXISTING AND PROPOSED FUNCTIONAL SPACES BY BUILDING AND LEVEL**

| Level | Existing Conditions | | Proposed Project | |
|---|---|---|---|---|
| | Functional Uses[1] | Square Feet | Functional Uses[1] | Square Feet |
| Lower Level | Exhibition | 440,000 | Exhibition | 580,000 |
| | Meeting, Concourse, Ballroom | 80,000 | - | - |
| North Lower Mezz. | - | - | - | - |
| South Lower Mezz. | Meeting | 19,000 | Meeting | 7,000 |
| North Level 1 | Lobby | 15,500 | Lobby | 24,700 |
| South Level 1[2] | Lobby, Circulation | 21,800 | Lobby, Circulation, Multipurpose | 51,900 |
| South Mezz.[2] | Lobby, Prefunction, Ballroom | 49,300 | Lobby, Prefunction, Ballroom, Meeting | 69,700 |
| North Level 2 | - | - | Prefunction | 8,900 |
| South Level 2[2,3] | - | - | Prefunction, Ballroom, Meeting | 76,000 |
| South Level 3[2] | - | - | Prefunction, Meeting, Terrace | 70,084 |
| Support/Other Space | | 585,200 | | 628,391 |
| **Total** | - | **1,210,800** | **-** | **1,516,675** |

1 All levels include also support space, which are not included in the Functional Space totals.
2 Includes both Moscone South and Esplanade Spaces
3 Includes pedestrian bridges

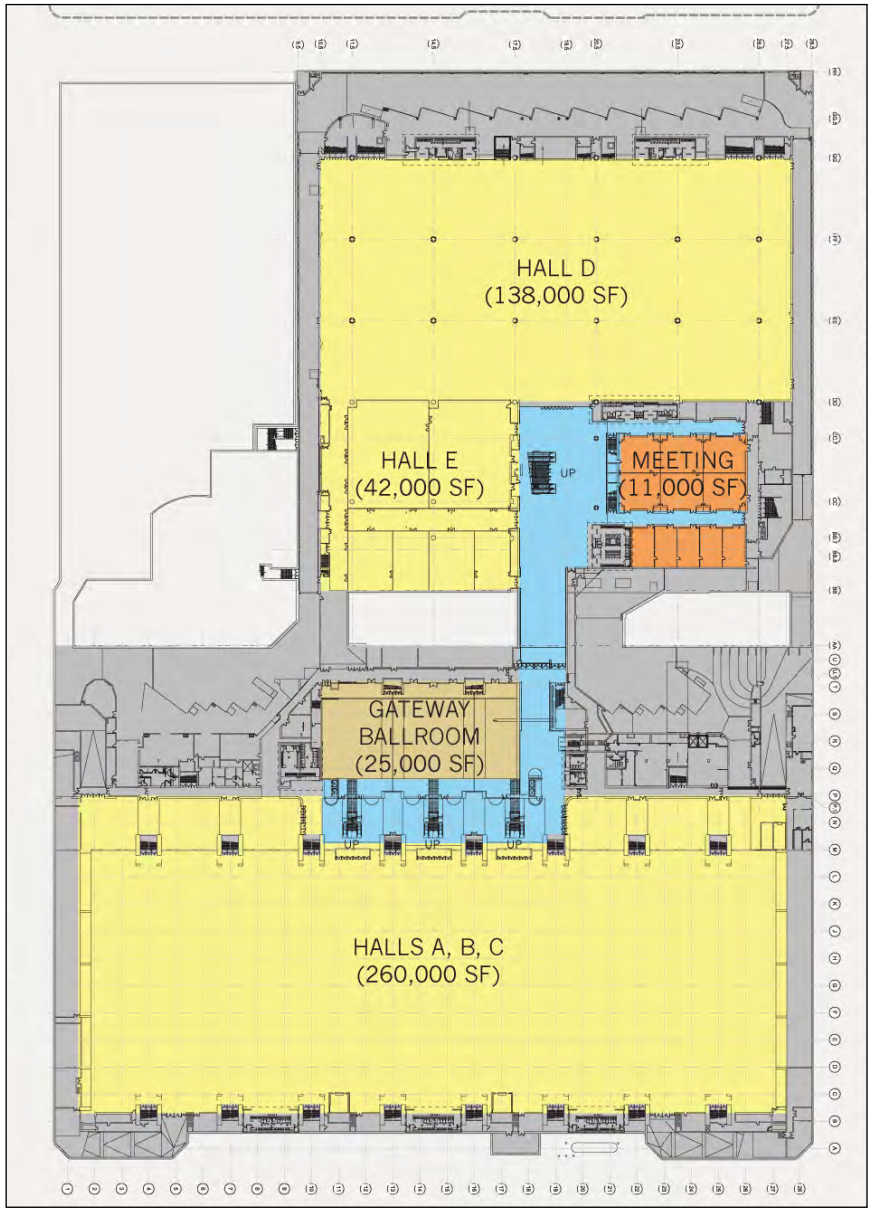
SOURCE: SOM, 2013

The Moscone North and South exhibition facilities would have the ability to function as one continuous space at the lower level. Exhibition space would be expanded by about 32 percent (140,000 square feet), to 580,000 square feet. This expansion would be partly accomplished by repurposing most meeting, concourse, and ballroom spaces. Expansion and reconfiguration of the lower level would require the excavation of two existing unexcavated areas contained by concrete walls under Howard Street, which are approximately 60 feet by 185 feet and 65 feet by 190 feet in size.[8]

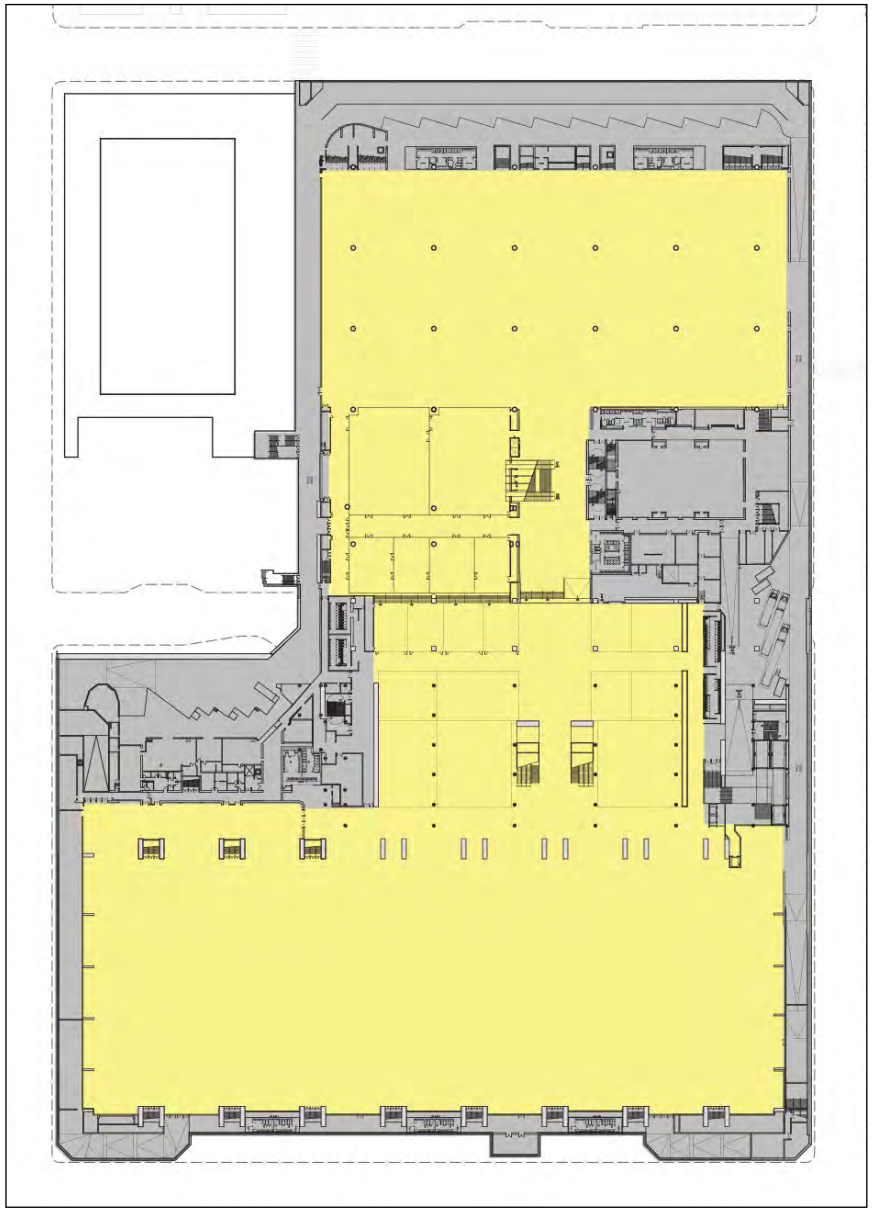
### Moscone North, Above Grade

Above grade, the functional space in the Moscone North portion of the project would expand by 117 percent, from 15,500 square feet to 33,600 square feet over two levels. The proposed Moscone North building would be approximately 54 feet in height above Howard Street. At level 1, the Moscone North lobby would extend south from its current location and would contain circulation space with registration and back of house support areas (see **Figure 5**). The building would be located between the north side of Howard Street and the south side of the two existing restaurants which face the existing Martin Luther King, Jr. Memorial and Fountain and the Sister Cities Garden. The Moscone North building, at

8 The east unexcavated area is located approximately 60 feet west from the center of the Howard and Third Street intersection. The west unexcavated area is located approximately 330 feet east of the center of the Howard and Fourth Street intersection.




Existing



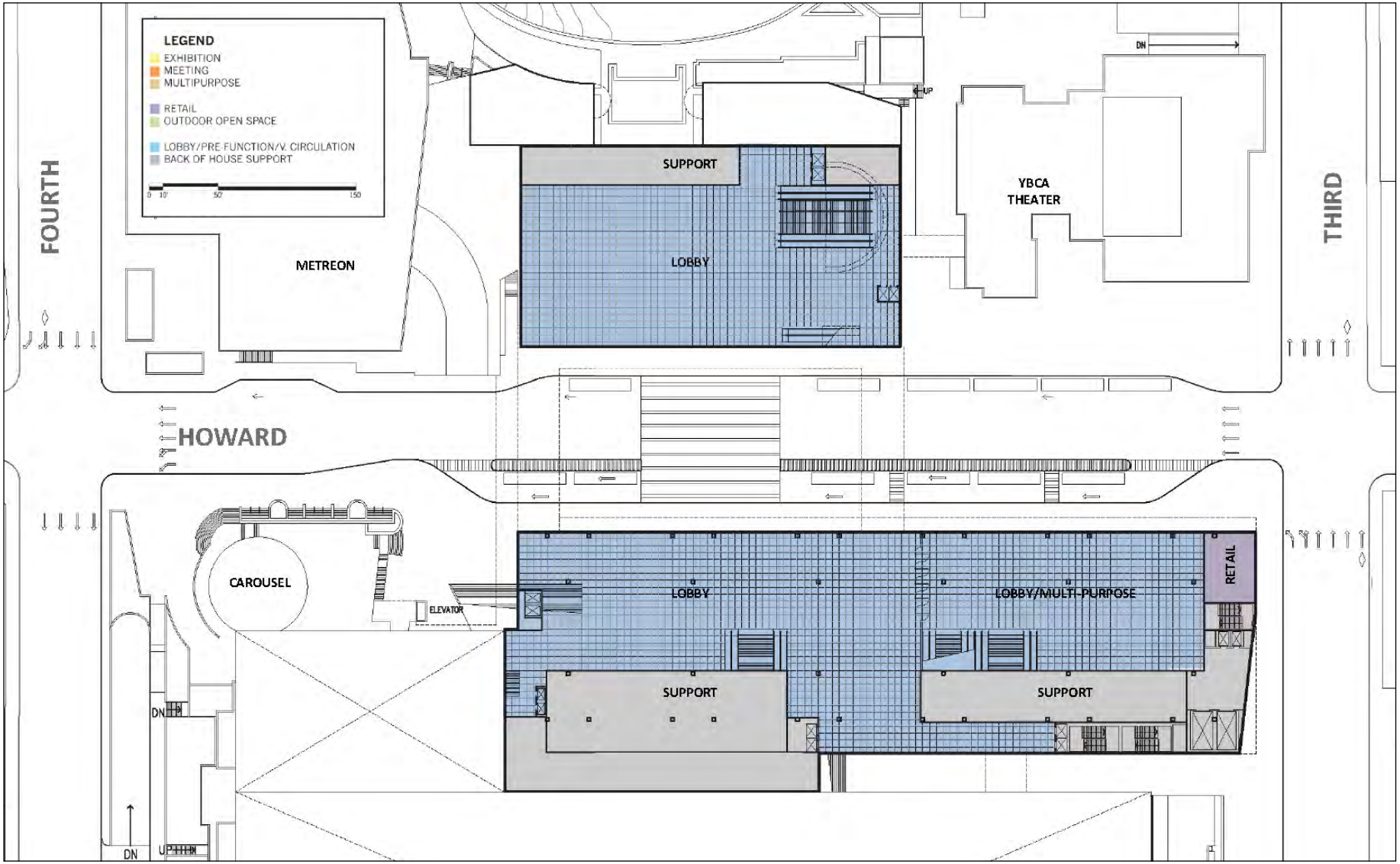
Proposed

SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects



**Figure 4**

Existing and Proposed Lower Level Plan






SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 5**

Proposed Level 1 Plan

approximately 54 feet above Howard Street, would be about 10 feet taller than the restaurants above the existing Moscone North lobby. The two restaurants, Samovar and B, as well as the Martin Luther King, Jr. Memorial and Fountains, and the Sister Cities Gardens would remain and would not be altered. At level 2, the proposed Moscone North building would contain additional multi-purpose space.

### Moscone South and Esplanade, Above Grade

The proposed above-grade Moscone South would consist of two elements: the Moscone Esplanade Expansion and the Moscone South Expansion. These two elements would be built in successive construction phases, and upon project completion, they would exist as one connected building. In the description below, they are described as one building.

Above grade, Moscone South and the Esplanade functional space would expand by a combined 277 percent, from 71,100 square feet to 267,700 square feet. The completed building would be approximately 95 feet in height above Howard Street. At level 1 (street level), the lobby, with an approximately 25-foot clear ceiling height, would contain a mix of registration space, offices, circulation space, retail space, back-of-house space, and multi-purpose space (flexible space to be used based on the needs of certain events).

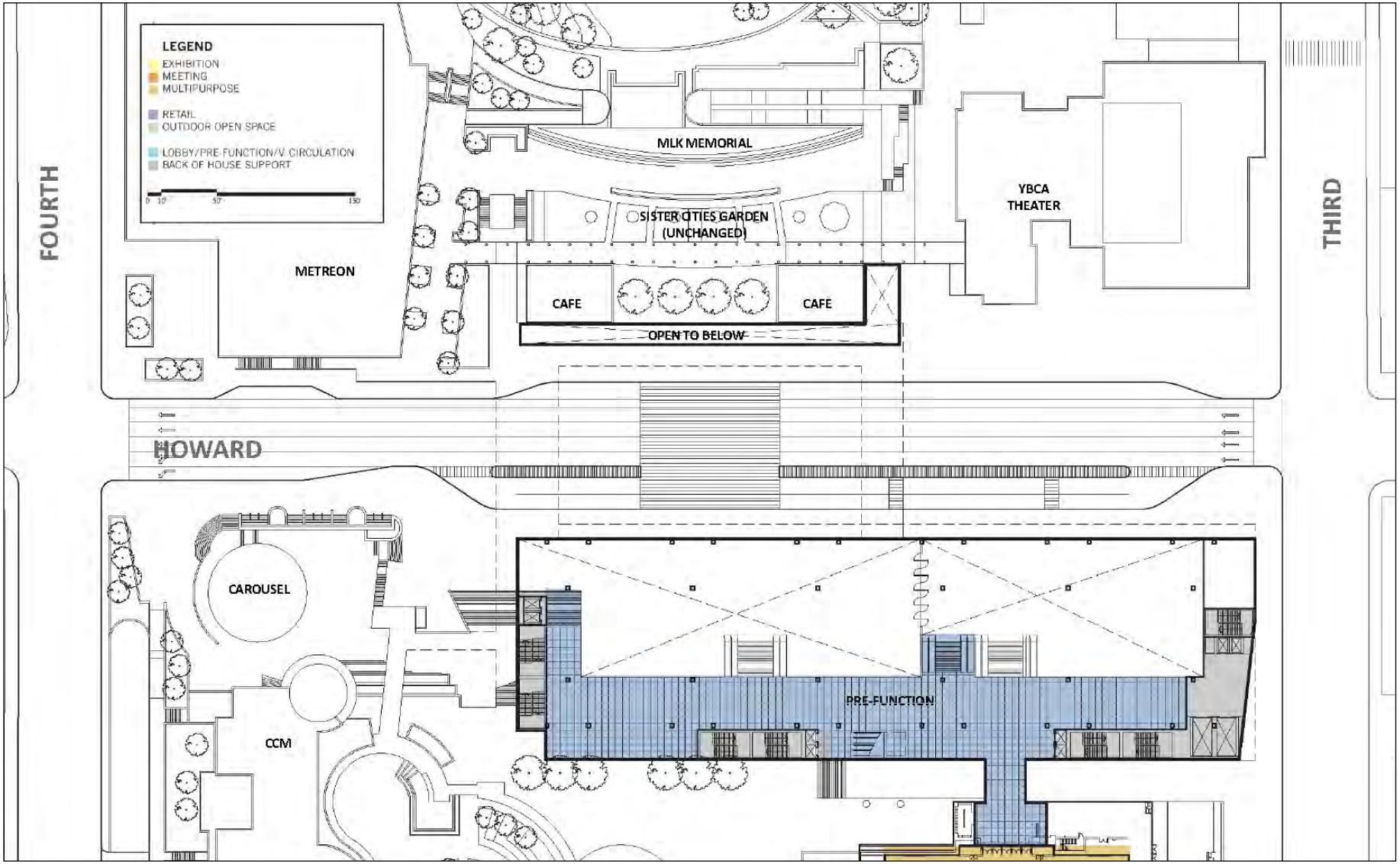
The lobbies of the South Expansion and Esplanade Expansion would be aligned to each other at the same street-level elevation, and their connection could be opened to create one large space, or separated, depending on the needs of client groups. Refer to Figure 5 for the plan and Table 2 for a detailed accounting of specific functional areas.

From the lobby level, a mezzanine level would elevate approximately 12 feet, occupying space across the southern portion of the lobby. The mezzanine primarily would contain circulation space, with office and support space located along its southern edges. This mezzanine level would connect south to the existing Esplanade Ballroom Building, whose ballroom would remain (and would not be altered by the proposed project). Escalators would connect from the mezzanine level up to levels 2 and 3 (see **Figure 6**).

At level 2, the south building would include a new column-free ballroom with a 27-foot clear ceiling height. This ballroom would allow for the flexibility to be used as several smaller meeting rooms or other multi-purpose functions. A circulation area would run along the edges of the ballroom. Support space would occupy the remainder of the floor (see **Figure 7**).

Also on level 2, two pedestrian bridges would span Howard Street, connecting the two proposed expansions between Moscone North and Moscone South and framing the main public arrival space at grade between the two new buildings (discussed further below). The eastern bridge would be fully enclosed to provide enhanced circulation for Moscone convention attendees while the western bridge would contain an uncovered public walkway intended for use by pedestrians moving between the Yerba Buena blocks. This public walkway would replace the existing pedestrian bridge located north of the Carousel (see Figures 2-7).

Level 3 would primarily comprise meeting rooms, prefunction space, and a roof terrace. About 13,700 square feet of support space would also occupy this level (see **Figure 8**).



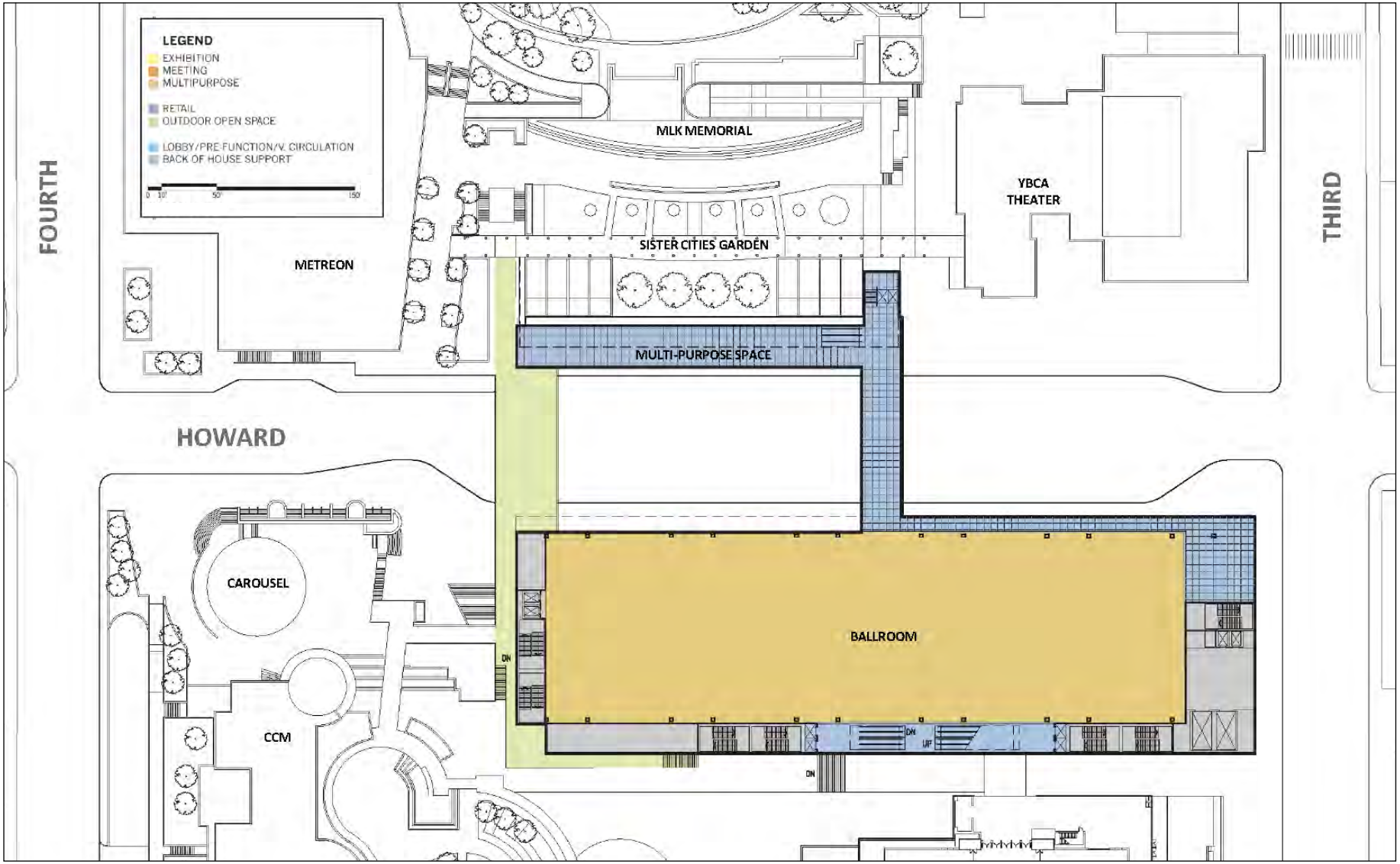



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 6**

Proposed Mezzanine Plan

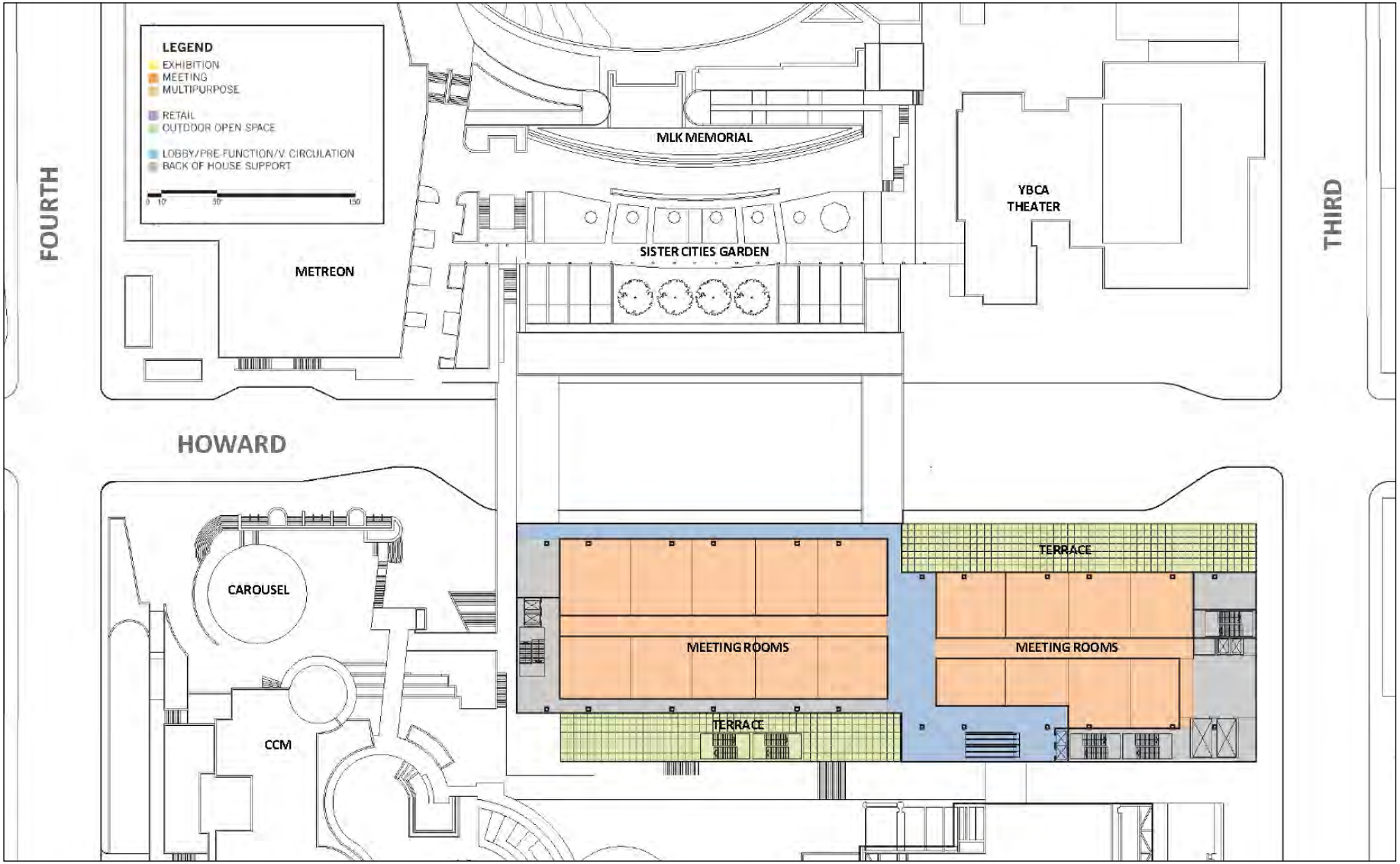



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects





**Figure 7**
Proposed Level 2 Plan






SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 8**

Proposed Level 3 Plan

**Figure 9** presents a cross-section of the proposed project showing all building levels.

### *Proposed Foundation and Excavation*

The proposed project site is almost entirely within the existing building footprints, with the exceptions of the two areas to be excavated beneath Howard Street. Thus, excavation activities would be limited to an area beneath Howard Street, between Moscone North and Moscone South, and at the location of proposed building footings and foundations. Excavation of approximately 45,000 cubic yards of soil would be required to accommodate the proposed project, as described below:

- Beneath Howard Street: approximately 35 feet in depth, requiring removal of approximately 30,400 cubic yards of soil.
- Moscone North Lobby Footings and Foundation: approximately 5 feet in depth, requiring removal of up to approximately 3,700 cubic yards of soil.
- Storm and ground water storage tanks: approximately 10 feet in depth, requiring removal of approximately 1,600 cubic yards of soil.
- Moscone South/Esplanade Lobby Footings and Foundation: approximately 5 feet in depth, requiring removal of approximately 11,000 cubic yards of soil.

Following excavation, building foundations would be installed at Moscone South and Moscone North and would consist of mat foundations,[9] similar to existing building foundations, with thickened footings at new column locations and at the edges of the Howard Street expansion.

### *Landscaping*

The proposed project would not remove any street trees, and no "significant trees" would be affected.[10] A significant tree is one that is either on property under the jurisdiction of the DPW or on privately owned land within 10 feet of the public-right-of-way, that is greater than 20 feet in height or which meets other criteria. The project site contains no landmark trees. The proposed project would also include the planting of street trees in accordance with *Planning Code* requirements. New trees would be planted along both the north and south sides of Howard Street. In addition, the proposed project would include several seating areas throughout the project site, including on the south side of Howard Street, just west of the pedestrian plaza, and on both the north and south sides of Howard Street, near Third Street (see **Figure 10**).

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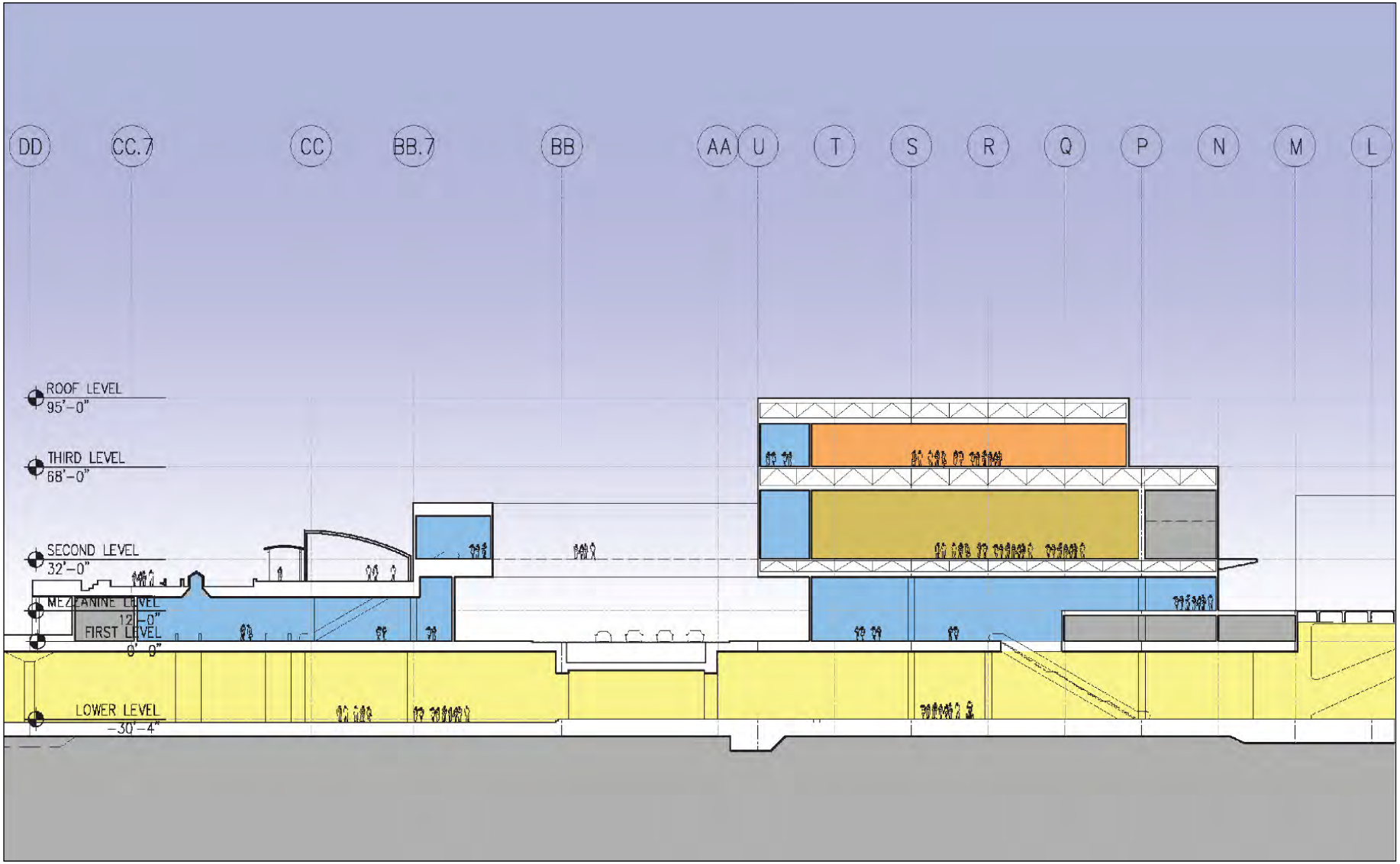
[9] A type of shallow foundation made by pouring concrete over a mat of reinforcing material, usually rebar.

[10] City and County of San Francisco, Department of Public Works, 2013. Significant and Landmark Trees website. Available online at: http://www.sfdpw.org/index.aspx?page=663, accessed June 2, 2013. City and County of San Francisco, Department of the Environment, 2013. Map of San Francisco's Landmark Trees website. Available online at: http://www.sfenvironment.org/article/landmark-tree-program/map-of-san-francisco%E2%80%9A%27s-landmark-trees, accessed June 2, 2013.



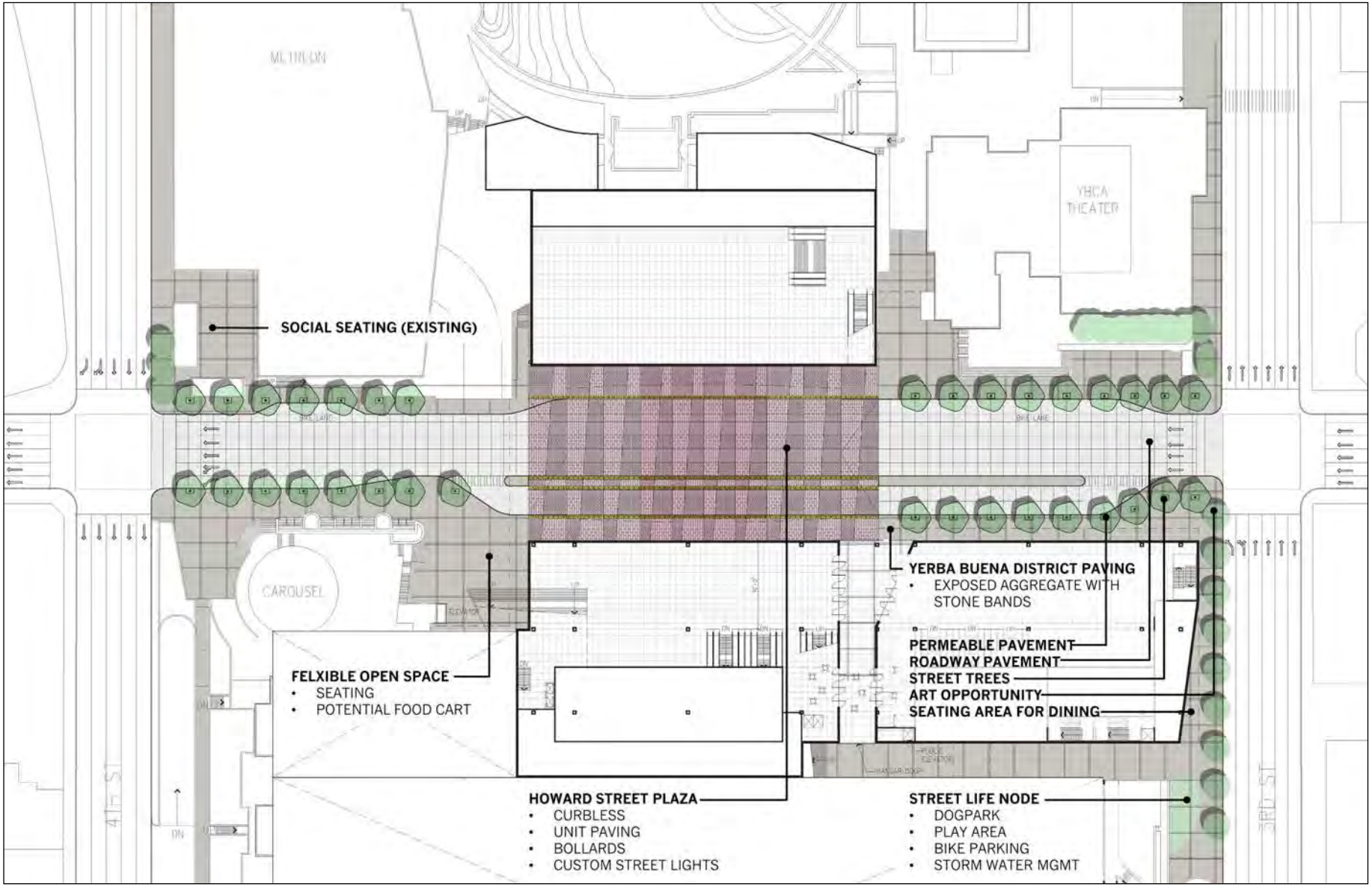



Moscone Center Expansion Project 2013.0154E

SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

**Figure 9**

Section Through North and South Lobby Buildings Looking East




SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects



**Figure 10**
Proposed Landscaping Plan

### *Proposed Access*

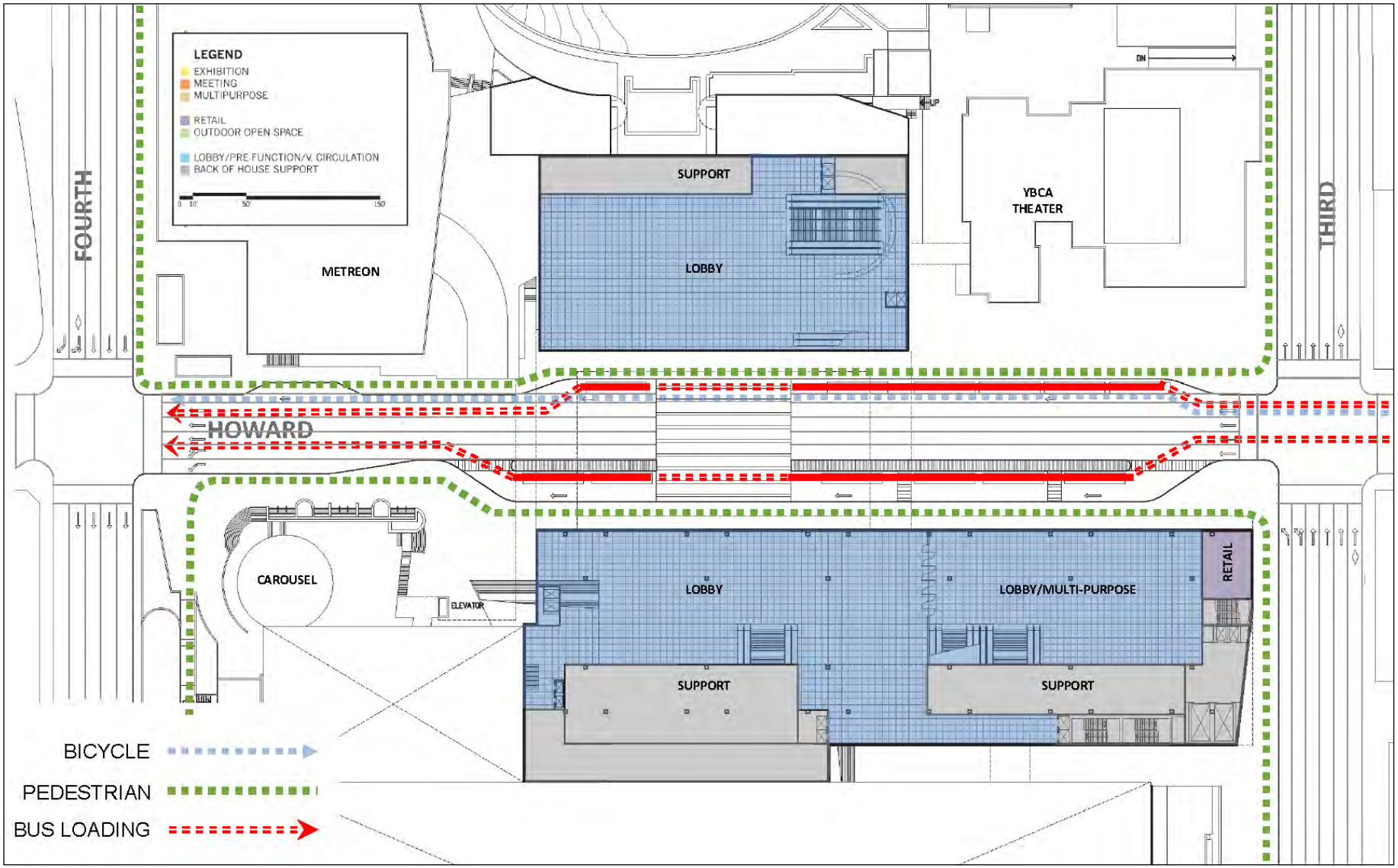
#### Visitor Pedestrian Access

On level 1, at street level (see Figure 5), the proposed project would extend the Moscone North and South lobbies toward Howard Street, decreasing the existing separation between the two lobby doors from the current distance of 250 feet to approximately 135 feet. Primary visitor access to Moscone North and Moscone South would be from Howard Street, similar to existing conditions (see **Figure 11**). The main point of arrival for visitors and convention attendees to both Moscone North and Moscone South would be the proposed "pedestrian-friendly zone" between the two entry lobbies. The pedestrian-friendly zone would consist of a 100-foot-wide, signalized, mid-block crosswalk with distinctive paving and streetscape elements for this segment of Howard Street. At either side of this crosswalk, the surface of Howard Street would be raised to create a curb-less transition from sidewalk to street. Pedestrian safety features, consisting of tactile paving and bollards, would be installed at the edges of Howard Street. These improvements are intended to create an enhanced sense of arrival to the Moscone Center while providing a more pedestrian-friendly environment along Howard Street.

On the Moscone South block, mid-block pedestrian passages would be constructed within the Moscone Center property to provide pedestrian connections to existing open spaces. This would include an at-grade mid-block pedestrian passage along the southern edge of the Esplanade Expansion portion of the building. This open-air passage would connect Third Street to the existing Children's Garden via a proposed stairway to be located south of the Moscone South lobby. These passages could be either left open to the public or closed to achieve the desired level of security during some events. Employee pedestrian access into the Moscone Center would continue as currently exists near the corner of Howard and Fourth Street.

#### Passenger Vehicle Loading

Currently there are two bus loading plazas fronting the Moscone North and Moscone South entrances on Howard Street, creating a separation of approximately 250 feet between the two lobby door entries. The proposed project would occupy a portion of the existing bus loading plazas on both sides of Howard Street, decreasing the separation of the two buildings to approximately 135 feet between lobby door entries. Proposed convention bus drop-off would occur along Howard Street in a traditional sidewalk drop-off configuration. On the north side, there would be a new lane for five buses north of the existing bike lane, dropping off riders on the right side of the bus directly onto the expanded sidewalk in front of the Moscone North lobby. On the south side, the existing bus drop off would be reconfigured from three lanes to two lanes. The first would be a bus lane located south of a dedicated bus loading and unloading island that would occupy the existing southern-most lane of Howard Street (currently a passenger loading lane and taxi stand). The second lane, closer to the Moscone South lobby, is proposed to be a bus by-pass lane that could also be used as a taxi lane. This second lane would prevent buses from blocking one another while entering, loading or unloading passengers, and exiting the bus loading zone. The south bus drop-off would accommodate seven buses. Overall, the re-configuration would provide up to 12 bus loading spaces, the same bus count as the existing configuration (see Figure 11).




NORTH

SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 11**

Proposed Howard Street Conditions

### Truck Loading

Truck loading access would continue to occur along Third Street between Howard and Folsom Streets. The existing Third Street truck ramp would be relocated approximately 185 feet farther south to accommodate the proposed Esplanade Expansion (see Figure 3). No excavation would be required to move the truck ramp. The project would remove the three loading spaces located beneath the proposed Esplanade Ballroom expansion. Two new loading spaces would be constructed beneath Howard Street, just west of Third Street (see Figure 4). The new truck ramp would allow level queuing space for three trucks before they reach the new above-mentioned loading spaces, relieving the occasional truck queue over-flow on Third Street. Trucks would continue to exit onto Fourth Street by way of the existing below-grade truck loop.

### Parking

Visitors and employees would continue to park at nearby garages, including the Fifth and Mission Street Garage and the Moscone Garage at Third and Folsom Streets, and no parking would be added under the proposed project. The project would provide 18 Class 1 bike parking spaces and a changing room with two showers for employees.

### Utilities

The project sponsor does not anticipate any improvements to the existing utilities beneath Howard Street. The project would connect to existing utility lines for water, sewer, and street lights.

Because of the relatively shallow depth to groundwater on site, foundation dewatering is required under existing conditions and would continue to be required with the proposed project. For dewatering purposes, Moscone has four sump pits located below grade along Folsom Street. These sump pits are fed by collection channels beneath utility tunnels in the lower level of Moscone. Groundwater is pumped from the sumps through a pipeline that travels through the Moscone facility prior to connection to the sewer. Two sumps discharge water directly to the City's combined sewer along Third Street; two sumps discharge water to the sewer along Fourth Street through an intermediate collection sump. Moscone annually pumps between 12 and 18 million gallons of groundwater produced during dewatering to the combined sewer, and the annual average discharge volume is 15.1 million gallons. The project would include reuse of groundwater that is currently discharged into the sewer system. Groundwater could be reused for irrigation, toilet flushing, street sweeping, and firefighting. Reuse of this ground water would require treatment, additional piping infrastructure, and storage by the below-grade water tank mentioned previously in the "Proposed Foundation and Excavation" section.

During construction of the proposed project, if water were to accumulate in an open excavation area as a result of groundwater seepage or precipitation, dewatering could be required to maintain a somewhat dry working environment so that construction activities could proceed. Dewatering typically involves pumping water out of the excavated area and, following appropriate on-site treatment, discharging the water over land or into a nearby sewer drain or open channel. Discharge from construction dewatering to the San Francisco combined sewer system would require a permit from the San Francisco Public Utilities Commission (SFPUC) Wastewater Enterprise. If construction requires discharge to an open channel or over

land, it must be performed in accordance with municipal stormwater permits and the requirements of the Statewide General Construction Permit for Stormwater Discharges Associated with Construction Activity issued by the State Water Resources Control Board. During construction of the proposed project, any dewatering that occurs would be discharged into the City sewer system.

### *Proposed Green Building Features*

Sustainability is one of the core principles of the Moscone Convention Center expansion. Although the specific building components and systems have not yet been developed, opportunities include but are not limited to: LEED certification, access to daylight; indoor air quality; and energy and water efficiency. The facility currently meets biodiesel fuel requirements established by City Code (Executive Directive 06-02), and would meet the City's green building requirements and Tier 2 pollution control requirements for construction vehicles, as required by Administrative Code Section 6.25 governing use of clean construction equipment for City-sponsored projects. The new facility would achieve a minimum 15 percent energy use reduction as compared to the 2008 California Energy Standards, as well as meet the requirement of a 30 percent reduction in indoor potable water use. The project would incorporate groundwater and stormwater retention and reuse. Construction materials would use low-emitting adhesives, paints, and finishes per Green Building requirements for City Buildings: Low Emitting Materials (San Francisco Environment Code, Chapter 7). (Further detail is provided in the Greenhouse Gas analysis; see Section E.)

Pursuant to the Stormwater Management Ordinance, the project sponsor would incorporate low-impact design (LID) techniques into the design and would implement stormwater best management practices (BMPs) to reduce the flow rate and volume of stormwater entering the combined sewer system. The project would reduce the existing stormwater runoff rate and volume by 25 percent by inclusion of a rainwater collection system that would collect and treat 32,000 gallons annually, based on initial calculations. Additionally, Moscone pumps between 12 and 18 million gallons of water per year into the City's sewer system as part of its dewatering system. The project would include a dewatering treatment system with a 42,500-gallon dewatering storage tank. The foundation dewatering water would be treated to non-potable water standards primarily by UV treatment, with secondary chlorine treatment. The rainwater and groundwater would be reused for non-potable uses—such as indoor toilet flushing and irrigation within the project and surrounding green spaces like Yerba Buena Gardens, and to supplement city-scale uses like street sweeping, fire-water, and other citywide opportunities. In the future, water could be exported to the Central South of Market (SoMa) Eco-District.[11] Stub-outs (capped connection points) would be provided by the proposed project to facilitate a future connection to the Eco-District system.

### *Height, Massing, and Design*

The proposed project would include extensions of Moscone North and South building facades toward Howard Street, as well as vertical extensions of all three building components (North, South and the Esplanade). The Moscone North expansion would add approximately one level above a renovated and

[11] Eco-Districts are neighborhood scale public-private partnerships that aim to reduce greenhouse gas emissions and achieve the City's goals to reduce water consumption, reduce waste, and capture efficiencies in sharing community-scale energy resources. An Eco-District proposed in the Moscone neighborhood would require further development and would be subject to its own environmental review once proposed.

expanded lobby along Howard Street, for a total height of approximately 54 feet. This building would be approximately 10 feet taller than the existing Moscone North lobby and restaurant structure.

The Moscone South Expansion would add two levels above a renovated and expanded lobby along Howard Street, for a total height of approximately 95 feet. The top level of the South Expansion would be set back approximately 35 feet from its southern edge for a roof terrace. The Esplanade Expansion would add an enlarged lobby / multi-purpose space, a mezzanine level, and two full stories, for a total height of approximately 95 feet. The top level of the Esplanade Expansion would be set back approximately 35 feet from its northern edge along Howard Street, also for a roof terrace. As noted previously, at project completion, the South Expansion and Esplanade Expansion would function and appear as one building. In addition, at project completion, the second stories of both North and South facades would extend over the ground level lobbies by approximately 15 feet in the North building and 15 feet in the South building, creating overhangs above the pedestrian space below (see Figure 9).

The ground level areas facing Howard and Third Streets, which would include the two lobbies and retail uses, are anticipated to be enclosed with a glass curtain wall. The levels above would be clad in a mixture of metal panels, glass curtain wall, and stone panels. In general, the architectural style would be of a contemporary design intended to coordinate with the existing aesthetic of the surrounding structures, as described above and shown in **Figure 12** through **Figure 16**, below. All glazing would be consistent with the City's Bird-Safe Building Ordinance (Section 139 of the *Planning Code*).

Figure 12 presents a map of viewpoints that are presented in this Project Description. **Figures 13–16** present a series of photographs from vantage points surrounding and near the project site, showing the existing Moscone Convention Center and surrounding buildings. Each figure includes a second image depicting a photomontage of the proposed project within the surrounding built environment.[12] These photosimulations were prepared by Square One Productions and reviewed by the San Francisco Planning Department, the environmental consultant (ESA), the project sponsor, and the project architect (SOM).

### *Proposed Operational Changes*

At project completion, the Moscone Center would be able to accommodate a greater number of exhibits and greater annual attendance is anticipated due to the increased event capacity. The proposed project would increase employment during events at the project site by 28 FTE, and it could increase total daily event attendance by 4,200.[13] This is a conservative assumption because although the proposed increase in exhibit floor space would likely increase the total number of exhibitors and their staff, it would not necessarily result in an increase in the number of event visitors.

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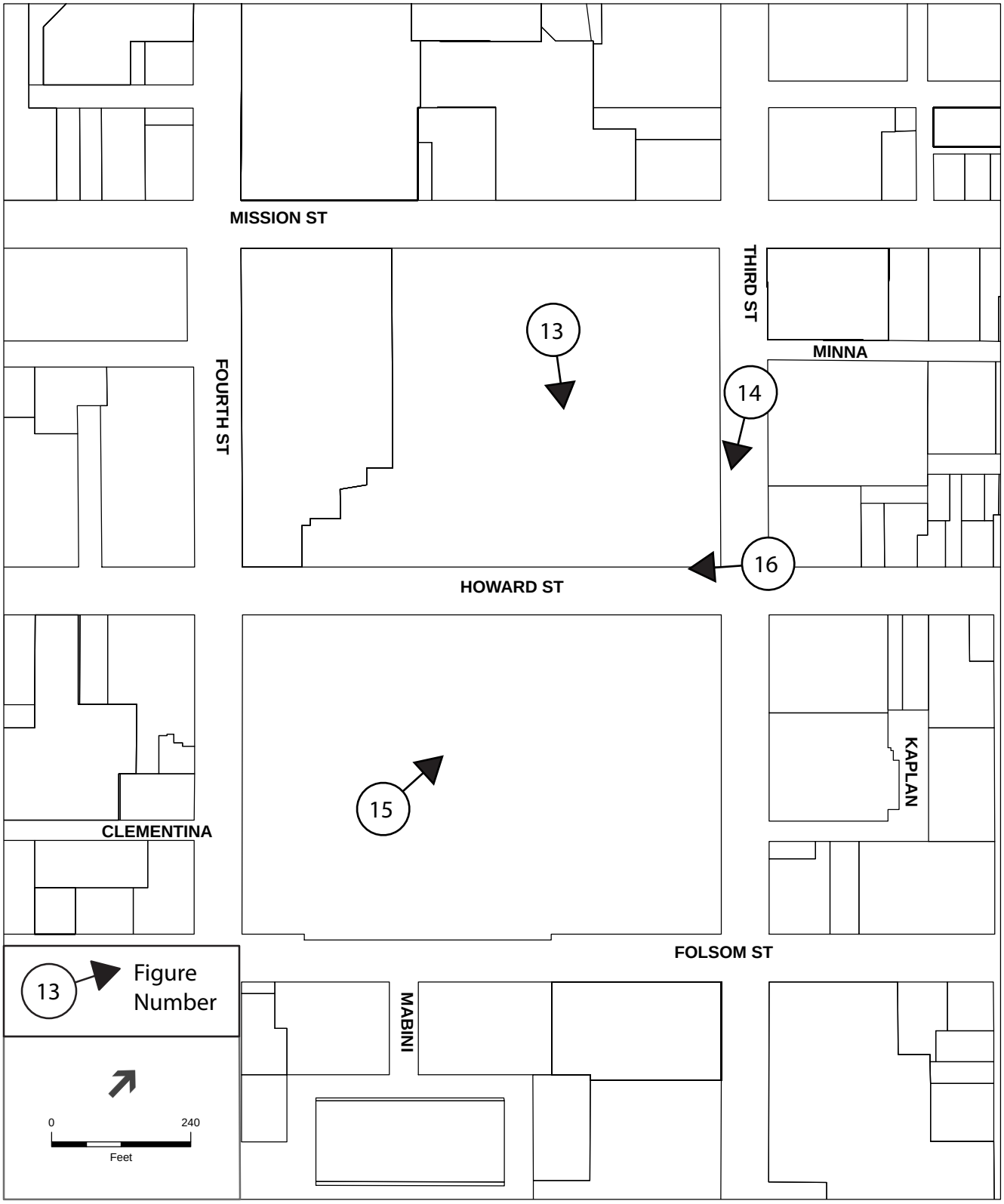
[12] The proposed project is subject to Public Resources Code Section 21099(d), which eliminates aesthetics as an impact in determining the significance of physical environmental effects under the California Environmental Quality Act for projects meeting certain criteria, as further described in Section E, in the section entitled 'Evaluation of Environmental Effects.' Accordingly, this Initial Study does not contain a separate discussion of the topic of aesthetics. Photosimulations of the proposed project are provided for informational purposes only.

[13] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.




SOURCE: ESA, 2013

Moscone Center Expansion Project 2013.0154E

**Figure 12**

Photosimulation Locations Map

Existing Conditions

With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

**Figure 13**

View from Yerba Buena Esplanade, Looking Southeast


Existing Conditions


With Proposed Project

SOURCE: Square One, 2013



**Figure 14**
View from Third Street at SFMOMA, Looking South

Existing Conditions

With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

**Figure 15**

View from Children's Garden, Looking North


Existing Conditions


With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

**Figure 16**

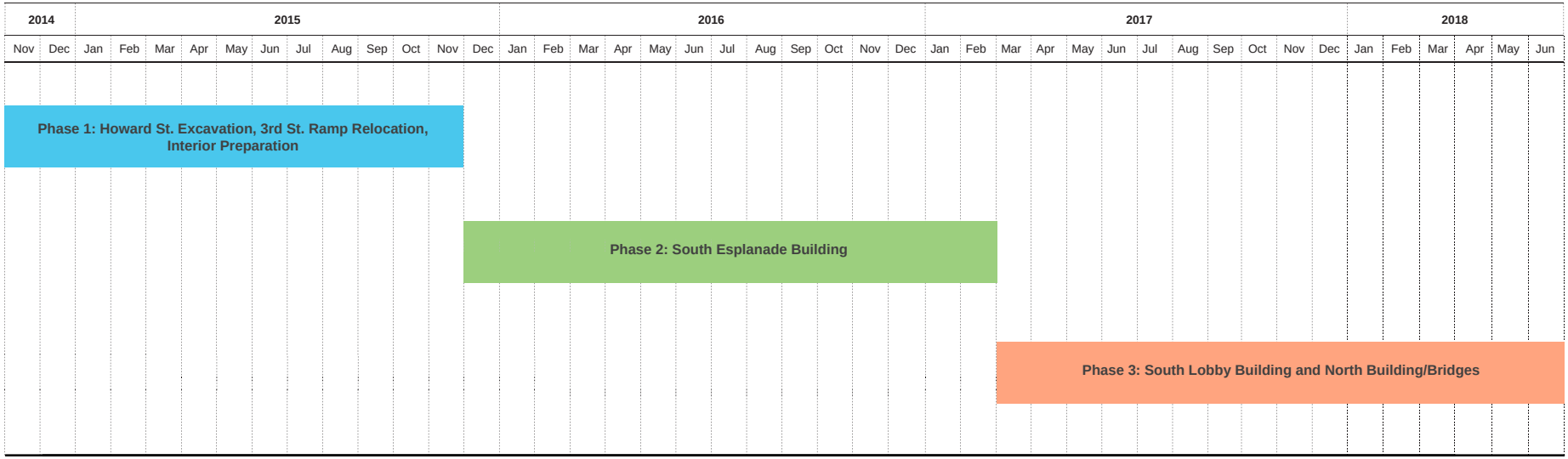
View from Howard Street at Third Street, Looking Southwest

### *Proposed Construction Schedule*

Construction of the Moscone Center Expansion Project is anticipated to begin in November 2014 and be completed in approximately 44 months (see **Figure 17**). In order to achieve maximum contiguous exhibition space within the existing Moscone below-grade footprint, the project would be carried out on a phased construction schedule coordinated with the present Moscone Center event calendar by executing the steps outlined below, divided among three major phases, as shown in **Table 3**. No pile driving is anticipated. The estimated cost for constructing the proposed project is approximately $350 million.

**TABLE 3**
**CONSTRUCTION DETAILS**

| Construction Steps | Construction Equipment/ Depth and Quantity of Excavation |
|---|---|
| ***Phase 1: Site Preparation (13 months)***<br>1. Construct a temporary, above-grade connection from the back of the existing south lobby building to the existing Esplanade Ballroom.<br>2. Relocate the main below-grade switchgear room to an area located under the existing Yerba Buena Theater and relocate/re-route all mechanical, electrical and plumbing systems (as required) to support the proposed project.<br>3. Convert existing meeting rooms under the existing Yerba Buena Theater to a new kitchen facility with new mechanical systems as required.<br>4. Excavate two existing unexcavated areas under Howard Street and excavate further as needed (temporary closure of Howard Street between Third and Fourth Streets required). | ***Excavation:*** Beneath Howard Street of approximately 35 feet in depth, requiring removal of approximately 30,400 cubic yards of soil.<br>2 drill rigs, 1 120 ton crane, 20 trucks<br>1,500 truck trips (15 to 20 days, 75 to 100 trips per day) |
| ***Phase 2: Esplanade Building (15 months)***<br>5. Demolish the existing kitchen facility, east loading dock and other support spaces under the existing Esplanade Ballroom lobby, allowing for construction of foundations and structure of a new building above. Convert area below to new exhibition space. Construct new loading docks, demolish old ramp sections, and connect the truck loop.<br>6. Demolish the existing Esplanade Ballroom support building to make way for the new Esplanade Expansion building. | ***Demolition***: 5 excavators, 2 cranes<br>1,400 truck trips (28 days, 25 trucks per day)<br>***Structure***: 3 excavators, and 1 crane<br>2,000 truck trips |
| ***Phase 3: South Lobby, North Lobby and Bridges (16 months)***<br>7. Reconfigure the Gateway Ballroom (below the existing Moscone South lobby) into exhibition space.<br>8. Demolish the remainder of the existing South Lobby building above grade and expand the Moscone South building, connecting its floors to the Esplanade Expansion building.<br>9. Reconfigure Hall E (below the existing Moscone North lobby) into exhibition space.<br>10. Expand the Moscone North lobby and construct the two proposed pedestrian bridges across Howard Street. Remove the existing pedestrian bridge located north of the Carousel. | ***Demolition:*** 3 excavators, 1 crane<br>1,920 truck trips (48 days, 20 trucks per day)<br>***Structure:*** 5 excavators, 2 cranes<br>2,450 truck trips |




SOURCE: ESA

Moscone Center Expansion Project 2013.0154E

**Figure 17**
Construction Phasing

## Applicable Zoning Regulations

Both portions of the Moscone Center Expansion project site (Moscone North and Moscone South) are within the C-3-S (Downtown Support) zoning district. The C-3-S district "encompasses Yerba Buena Gardens, which includes San Francisco's Convention Center, hotels, museums and cultural facilities, housing, retail, and offices arranged around public gardens and plazas. The district continues to accommodate important supporting functions such as wholesaling, printing, building services, and secondary office space. It also contains unique housing resources."[14] The proposed project, which would include convention, office, and retail facilities as primary uses, would be principally permitted within the C-3-S zoning district.

Both portions of the Moscone Center Expansion Project site are also within a 340-I height and bulk district (limiting height to 340 feet, and requiring that towers above 150 feet in height maintain a maximum of 170 feet in length and 200 feet in diagonal dimension). The proposed project would not exceed the height and bulk limits set forth by the *Planning Code* for this district.

The proposed project would be required to obtain authorization through a *General Plan* referral to allow the construction of the elevated pedestrian bridges across Howard Street.

## Approvals Required

Implementation of the Moscone Center Expansion Project would require the following approvals and other actions (with acting bodies shown in *italics*), with approval of a Planning Code Section 309 Downtown Project Authorization identified as the Approval Action for the project.

- Adoption of CEQA findings (*Planning Commission*).
- Approval of a Planning Code Section 309 Downtown Project Authorization (*Planning Commission*), including an exception to allow a Reduction of Ground-Level Wind Currents in C-3 Districts (Planning Code Section 148).
- Adoption of a General Plan Referral concerning the construction of pedestrian bridges over Howard Street, improvements to City-owned property, and changes to sidewalks and street widths (*Planning Commission*).
- Variance from the *Zoning Administrator* for deviation from bicycle parking requirements (Planning Code Section 155.2), and Street Frontages in Commercial District requirements (Planning Code Section 145.1).
- Remedial Action Agreement per Article 22 of the Health Code with the *San Francisco Department of Public Health (SFDPH)*, if contamination is identified.
- Approval of exterior design of structures on City property by *San Francisco Arts Commission, Civic Design Review Committee*.
- Approval of any necessary construction permits for work within roadways by *San Francisco Department of Public Works.*

[14] *Planning Code*, Section 210.3.

- Approval of any necessary construction permits for work within roadways by *San Francisco Department of Parking and Traffic.*
- Review of any construction-related changes to transit service or facilities by the *San Francisco Municipal Transit Agency (SFMTA), MUNI Street Operations Division.*
- Review and approval of a monitoring plan by *SFPUC* for construction activities near susceptible utilities.
- Erosion and Sediment Control Plan Approval by *SFPUC* in accordance with Article 4.1 of the San Francisco Public Works Code for construction activities.
- Batch Wastewater Discharge Permit Approval by *SFPUC* in accordance with Article 4.1 of the San Francisco Public Works Code for discharges of groundwater during dewatering.
- Approval of the Non-Potable Project Water Budget Application by *SFPUC* and associated Non-Potable Engineering Report by *SFDPH* for on-site reuse of groundwater and stormwater for non-potable purposes.
- Approval of Stormwater Control Plan by *SFPUC* demonstrating compliance with San Francisco's Stormwater Design Guidelines.
- Revision of Certificate of Registration from *SFDPH* and Hazardous Materials Business Plan for the storage and use of hazardous materials.
- Demolition and building permits from *Department of Building Inspection and Planning Department.*
- Approval for new water, sewer, and street light utility connections by *SFPUC.*
- Approval for any proposed curb or street modifications by *SFMTA Sustainable Streets Division*.
- Approval by the Board of Supervisors of changes to streets and sidewalk widths (*Board of Supervisors*).

## B. PROJECT SETTING

The existing setting surrounding the project site is depicted in the "before" images in Figures 13 through 16 of Section A, Project Description, under the heading "Height, Massing, and Design." As noted above, the project site consists of portions of parcels on both sides of Howard Street, between Third and Fourth Streets. The project site is bordered by Third Street to the east; Folsom Street to the south; the Metreon, Children's Creativity Museum and Fourth Street to the west; and Yerba Buena Gardens and Mission Street to the north. In addition to Moscone North, the project block north of Howard Street shares Lot 115 with other buildings and uses above grade, including the large Yerba Buena Garden (a public park that contains the Sister Cities Garden, the Martin Luther King, Jr. Memorial, and various art installations), the Yerba Buena Center for the Arts Galleries and Forum building, and the Yerba Buena Center for the Arts Theater. In addition to the Moscone Center, the project block south of Howard Street shares Lot 91 with a variety of other buildings and uses, including the Yerba Buena Bowling and Ice Skating Center, the Children's Creativity Museum, the Child Development Center, the Children's Garden, and the restored 1905 Carousel. The project site is located in a 340-I Height and Bulk District, with a maximum allowed building height of 340 feet.

The project site is generally flat along Howard Street. The Metreon—a retail center housing shops, restaurants, and movie theater—is adjacent to the site to the northwest. The San Francisco Museum of Modern Art (SFMOMA) is directly across Third Street, between Howard Street and Mission Street. Market Street, a major east-west roadway in downtown San Francisco, is located two blocks north of the project site. Union Square is located approximately three-quarters of a mile to the north, and the Civic Center is located about 1 mile to the west (north of Market Street).

## C. COMPATIBILITY WITH EXISTING ZONING AND PLANS

| | *Applicable* | *Not Applicable* |
|---|---|---|
| Discuss any variances, special authorizations, or changes proposed to the Planning Code or Zoning Map, if applicable. | ☒ | ☐ |
| Discuss any conflicts with any adopted plans and goals of the City or Region, if applicable. | ☒ | ☐ |
| Discuss any approvals and/or permits from City departments other than the Planning Department or the Department of Building Inspection, or from Regional, State, or Federal Agencies. | ☒ | ☐ |

### San Francisco Planning Code

The San Francisco *Planning Code* (*Planning Code*), which incorporates the San Francisco Zoning Maps, governs permitted uses, densities, and configuration of buildings within San Francisco. Permits to construct new buildings (or to alter or demolish existing ones) may not be issued unless the proposed project either conforms to the *Planning Code* or is granted an exception pursuant to provisions of the *Planning Code*.

### Use District

The project site is in the C-3-S Downtown Commercial Support use district. *Planning Code* Section 210.3 states that the district "encompasses Yerba Buena Gardens, which includes San Francisco's Convention Center, hotels, museums and cultural facilities, housing, retail, and offices arranged around public gardens and plazas. The district continues to accommodate important supporting functions such as wholesaling, printing, building services, and secondary office space. It also contains unique housing resources. The district is within walking distance of rapid transit on Market Street, and is served by transit lines on Third, Fourth, Mission and Folsom streets." According to *Planning Code* Sections 213 through 227, a wide range of uses are permitted in the C-3-S use district, including dwellings, institutions, retail sales, laundry, assembly, entertainment, wholesale, distribution, and automotive uses. The proposed project use includes various forms of assembly use, including exhibition, meeting, concourse, ballroom, pre-function, and lobby spaces. The project would be consistent with the C-3-S use district.

### Height and Bulk District

The project site is located in a 340-I Height and Bulk District, with maximum allowed building height of 340 feet. The portion of a building taller than 150 feet is allowed a 200-foot maximum diagonal and 170-foot maximum length (*Planning Code* Section 270). The proposed Moscone North expansion would rise 54 feet

above Howard Street, and the proposed Moscone South expansion would rise 95 feet above Howard Street. Thus, the proposed project would comply with the height limit, and the buildings would not exceed the bulk limit.

## Parking

Convention uses in the C-3 Districts are not required to provide parking (*Planning Code* Section 151.1). Currently no public parking is provided at the Moscone Center, and no parking would be provided under the proposed project.

## Loading

*Planning Code* Section 152.1 provides loading space requirements in C-3 districts based on proposed uses. The proposed loading spaces would meet these requirements. The Project Description explains the facility's proposed below-grade freight loading and at-grade bus passenger loading.

## Plans and Policies

### *San Francisco Plans and Policies*

#### San Francisco General Plan

The *San Francisco General Plan* (General Plan) provides general policies and objectives to guide land use decisions. The General Plan contains 10 elements (Commerce and Industry, Recreation and Open Space, Housing, Community Facilities, Urban Design, Environmental Protection, Transportation, Air Quality, Community Safety, and Arts) that set forth goals, policies, and objectives for the physical development of the City. The proposed project would not obviously or substantially conflict with any General Plan goals, policies, or objectives. The compatibility of the proposed project with the General Plan goals, policies, and objectives that do not relate to physical and environmental issues will be considered by decision-makers as part of their assessment whether to approve or disapprove the proposed project. Any potential conflicts identified as part of that process would not alter the physical environmental effects of the project.

**Downtown Area Plan.** The project is located in the Downtown Area Plan (Area Plan) and is designated for Mixed Use. The Plan states that Downtown San Francisco should encompass a compact mix of activities, historical values, and distinctive architecture and urban forms that engender a special excitement reflective of a world city. It calls for obtaining a diverse base of support commercial activity in and near downtown, and it specifically mentions the Moscone Convention Center as a node of activity around which the planning of other projects should be considered. The Downtown Area Plan also contains a transportation component, including a call for improved pedestrian circulation in the Downtown Area (Objective 22), including sufficient space for pedestrian movement, minimizing sidewalk obstructions, ensuring safe and convenient street crossings, and improving the Downtown pedestrian network. While many enhancements have been made to the Downtown pedestrian network since the Downtown Area Plan and accompanying Streetscape Plan (discussed below) were adopted, additional improvements are currently planned in the project vicinity under the auspices of the Central

SoMa Plan, discussed below under 'Approach to Cumulative Analysis.' The proposed project would not be inconsistent with the Downtown Area Plan, either with respect to land use or circulation.

The Downtown Streetscape Plan was adopted by the Planning Commission in 1995 to implement the Downtown Pedestrian Network that is called for in Objective 22 of the Downtown Area Plan. The Downtown Streetscape Plan has three goals: to provide a coordinated, comprehensive design vision for the Downtown Pedestrian Network; to provide standards and guidelines for the placement of streetscape elements by both the public and private sectors; and to provide a framework for future capital projects funded by dedicated sales tax revenue and privately funded to meet downtown open space requirements, as well as for projects funded by public-private partnerships. The proposed project would not be inconsistent with the Downtown Streetscape Plan, in that it would enhance pedestrian connections through and around Moscone Center.

**Commerce and Industry Element.** According to the General Plan, "the Commerce and Industry Element sets forth objectives and policies that address the broad range of economic activities, facilities and support systems that constitute San Francisco's employment and service base." Objective 8 states that the City should enhance San Francisco's position as a national center for conventions and visitor trade, given that their spending is important and provides input of new dollars to the local economy. Policy 3.1 notes that tourist- and service-related industries, such as hotels and restaurants serving convention-goers, typically hire a number of unskilled or semi-skilled labor, thereby providing entry-level jobs to a wider range of workers. The proposed Moscone Center Expansion project would further these policies. The proposed project would not be inconsistent with the Commerce and Industry Element.

**Urban Design Element.** As described in the *General Plan*, the Urban Design Element relates to the physical character and order of the city, and the relationship between people and their environment. The element specifically calls for centers of activity to be made more prominent through design of street features and other means (Policy 1.6). The proposed project's expansion toward Howard Street, as well as the pedestrian bridges, would enhance the entry to this activity center.

Although the Urban Design Element states that the City shall maintain a strong presumption against giving up street areas for construction of public buildings (policy 2.8), Policy 3.4 states that the City shall "promote building forms that will respect and improve the integrity of open spaces and other public areas." This policy's explanation specifically states that large buildings and developments should provide open space on their sites and consider separation of pedestrian and vehicular circulation levels where possible. Policy 4.4 states that walkways should be designed to minimize danger to pedestrians, as well as that pedestrian walkways be set apart where possible to provide a separate circulation system. Policy 2.9 states that streets should not be given up if doing so would result in obstruction of views, emergency access, or elimination of open space. Streets may be given up if doing so benefits a public assembly, such as the proposed convention center renovation. The proposed project's two pedestrian bridges would be consistent with these policies. The proposed project would not be inconsistent with the Urban Design Element.

**Recreation and Open Space Element.** The Recreation and Open Space Element (ROSE) indicates that downtown San Francisco, including the project site vicinity, has special problems and opportunities for

open space to provide visual relief for the surrounding intense development. Policy 2.12 calls on the City to ensure that downtown open spaces are accessible, usable, and activated. In addition, Policy 2.2 states that the City should preserve existing public open space, and Policy 4.2 states that City departments' own land and facilities have become important citywide and neighborhood recreational resources.

The project block north of Howard Street includes Yerba Buena Garden, the Yerba Buena Center for the Arts Galleries and Forum building, and the Yerba Buena Center for the Arts Theater. The project block south of Howard Street shares Lot 91 with a variety of other buildings and uses, including the Yerba Buena Bowling and Ice Skating Center, the Children's Creativity Museum, the Child Development Center, the Children's Garden, and the restored 1905 Carousel. These recreational uses would be maintained upon completion of the proposed project. In addition, the expansion of the Moscone South building would include private terraces, which would provide a passive outdoor recreational area for convention attendees. The proposed project would not be inconsistent with the Recreation and Open Space Element.

### The Accountable Planning Initiative

In November 1986, the voters of San Francisco approved Proposition M, the *Accountable Planning Initiative*, which added Section 101.1 to the *Planning Code* to establish the following eight priority policies:

- Preservation and enhancement of neighborhood-serving retail uses;
- Protection of neighborhood character (see Section E.1, Land Use and Land Use Planning, Question 1c);
- Preservation and enhancement of affordable housing (see Section E.2, Population and Housing, Question 3b, with regard to housing supply and displacement issues);
- Discouragement of commuter automobiles (see Section E.4, Transportation and Circulation, Questions 5a, 5b, and 5f);
- Protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership (see Section E.1, Land Use and Land Use Planning, Question 1c);
- Maximization of earthquake preparedness (see Section E.13, Geology and Soils, Questions 14a through 14d);
- Landmark and historic building preservation (see Section E.3, Cultural and Paleontological Resources, Question 4a); and
- Protection of open space (see Section E.8, Wind and Shadow, Questions 8a and 8b; and Question 9, Recreation, Questions 9a and 9c).

Prior to issuing a permit for any project that requires an Initial Study under the California Environmental Quality Act (CEQA), or issuing a permit for any demolition, conversion, or change of use, and prior to taking any action that requires a finding of consistency with the General Plan, the City is required to find that the proposed project would be consistent with these priority policies. Consistency with policies applicable to the proposed project is discussed in Section E (specific subsections are noted in parentheses

in the priority policies listed above). The proposed project would not be inconsistent with the Accountable Planning Initiative.

### *Regional Plans and Policies*

The recently adopted *Plan Bay Area*, which includes the region's Sustainable Communities Strategy, is a collaboration led by the Association of Bay Area Governments (ABAG) and the Metropolitan Transportation Commission (MTC), in partnership with the Bay Area Air Quality Management District (BAAQMD) and the San Francisco Bay Conservation and Development Commission (BCDC). *Plan Bay Area*, adopted by ABAG and MTC in July 2013, is the region's first integrated land use and transportation plan, combining elements of ABAG's former *Projections* series of housing and employment growth forecasts and MTC's former stand-alone *Regional Transportation Plan*. The Plan calls for concentrating housing and job growth around transit corridors, particularly within areas identified by local jurisdictions as Priority Development Areas (PDAs). *Plan Bay Area* also specifies strategies and investments to maintain, manage, and improve the region's multi-modal transportation network and proposes transportation projects and programs to be implemented with reasonably anticipated revenue. The Plan will be updated every four years. The project site, like much of eastern San Francisco, is within a PDA, where growth is anticipated and planned for in proximity to transit (see also the discussion on Population and Housing, below (Section E.2)). The proposed project would not conflict with any projects in the regional transportation plan. Therefore, the proposed project would be consistent with *Plan Bay Area*.

Other regional plans include:

- BAAQMD's *2010 Clean Air Plan* (2010 CAP), which is a road map that demonstrates how the San Francisco Bay Area will reduce emissions and decrease ambient concentration of harmful pollutants, achieve compliance with the state ozone standards and reduce the transport of ozone and ozone precursors to neighboring air basins. As described further in Section E.6, Air Quality, the proposed project includes applicable transportation and energy and climate control measures to reduce automobile trips and associated emissions and would not conflict with the 2010 CAP.

- BCDC's *San Francisco Bay Plan*, which guides the protection and use of the Bay and its shoreline and provides policy direction for BCDC's permit authority regarding various activities within its jurisdiction. The proposed project is not located within BCDC's jurisdiction and therefore would not conflict with the Bay Plan.

- The San Francisco Regional Water Quality Control Board's (RWQCB) *San Francisco Basin Plan* guides planning of the water basin. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. As described further in Section E.14, Hydrology and Water Quality, the proposed project would not result in substantial water quality effects; thus the project would not conflict with the Basin Plan.

The project would not obviously or substantially conflict with any environmental plan or policy adopted for the purpose of avoiding an environmental effect.

### *Required Approvals by Other Agencies*

See pages 31 to 32 for a list of required approvals.

## D. SUMMARY OF ENVIRONMENTAL EFFECTS

The proposed project could potentially affect the environmental factor(s) checked below. The following pages present a more detailed checklist and discussion of each environmental factor.

| | | |
|---|---|---|
| ☐ Land Use | ☐ Greenhouse Gas Emissions | ☐ Geology and Soils |
| ☐ Population and Housing | ☒ Wind and Shadow | ☐ Hydrology and Water Quality |
| ☒ Cultural and Paleo. Resources | ☐ Recreation | ☒ Hazards/Hazardous Materials |
| ☒ Transportation and Circulation | ☐ Utilities and Service Systems | ☐ Mineral/Energy Resources |
| ☐ Noise | ☐ Public Services | ☐ Agricultural and Forest Resources |
| ☒ Air Quality | ☐ Biological Resources | ☐ Mandatory Findings of Significance |

## E. EVALUATION OF ENVIRONMENTAL EFFECTS

All items on the Initial Study Checklist that have been checked "Less than Significant Impact," "No Impact" or "Not Applicable" indicate that, upon evaluation, staff has determined that the proposed project could not have a significant adverse environmental effect relating to that topic. A discussion is included for those issues checked "Less than Significant Impact" and for most items checked with "No Impact" or "Not Applicable." For all of the items checked "Not Applicable" or "No Impact" without discussion, the conclusions regarding potential significant adverse environmental effects are based upon field observation, staff experience and expertise on similar projects, and/or standard reference material available within the Department, such as the Department's *Transportation Impact Analysis Guidelines for Environmental Review* or the California Natural Diversity Data Base and maps, published by the California Department of Fish and Wildlife. For each checklist item, the evaluation has considered the impacts of the proposed project both individually and cumulatively.

### Senate Bill 743 and Public Resources Code Section 21099

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which became effective on January 1, 2014.[15] Among other provision, SB 743 amends the California Environmental Quality Act (CEQA) by adding Public Resources Code Section 21099 regarding analysis of aesthetics and parking impacts for urban infill projects.

#### *Aesthetics and Parking Analysis*

Public Resources Code Section 21099(d), effective January 1, 2014, provides that, "aesthetics and parking impacts of a residential, mixed- use residential, or employment center project on an infill site located within a transit priority area shall not be considered significant impacts on the environment."[16] Accordingly, aesthetics and parking are no longer to be considered in determining if a project has the potential to result in significant environmental effects for projects that meet all of the following three criteria:

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15 SB 743 can be found on-line at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743.
16 See Public Resources Code Section 21099(d).

a) The project is in a transit priority area;[17] and
b) The project is on an infill site;[18] and
c) The project is residential, mixed-use residential, or an employment center.[19]

The proposed project meets each of the above three criteria because it (1) is located within close proximity to several transit routes, (2) is located on an infill site that is already developed with commercial uses and is surrounded by other similar urban development, and (3) would be an expansion of existing commercial support uses, located within close proximity to several transit routes, and in an urban area on a site already developed and zoned for commercial uses with a FAR greater than 0.75.[20] Thus, this Initial Study and the EIR do not consider aesthetics and the adequacy of parking in determining the significance of project impacts under CEQA.

Public Resources Code Section 21099(e) states that a Lead Agency maintains the authority to consider aesthetic impacts pursuant to local design review ordinances or other discretionary powers and that aesthetics impacts do not include impacts on historical or cultural resources. As such, there will be no change in the Planning Department's methodology related to design and historic review.

The Planning Department recognizes that the public and decision makers nonetheless may be interested in information pertaining to the aesthetic effects of a proposed project and may desire that such information be provided as part of the environmental review process. Therefore, some of the information that would have otherwise been provided in an aesthetics section of this Initial Study (such as "before" and "after" visual simulations) has been included in Section A, Project Description. However, this information is provided solely for informational purposes and is not used to determine the significance of the environmental impacts of the project, pursuant to CEQA.

Similarly, the Planning Department acknowledges that parking conditions may be of interest to the public and the decision makers. Therefore, the EIR will present a parking demand analysis for informational purposes and will consider any secondary physical impacts associated with constrained supply (e.g., queuing by drivers waiting for scarce onsite parking spaces that affects the public right-of-way) as applicable in the transportation analysis.

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17 Public Resources Code Section 21099(a) defines a "transit priority area" as an area within one-half mile of an existing or planned major transit stop. A "major transit stop" is defined in Section 21064.3 of the California Public Resources Code as a rail transit station, a ferry terminal served by either a bus or rail transit service, or the intersection of two or more major bus routes with a frequency of service interval of 15 minutes or less during the morning and afternoon peak commute periods.

18 Public Resources Code Section 21099(a) defines an "infill site" as a lot located within an urban area that has been previously developed, or a vacant site where at least 75 percent of the perimeter of the site adjoins, or is separated only by an improved public right-of-way from, parcels that are developed with qualified urban uses.

19 Public Resources Code Section 21099(a) defines an "employment center" as a project located on property zoned for commercial uses with a floor area ratio of no less than 0.75 and located within a transit priority area.

20 San Francisco Planning Department, Transit-oriented Infill Project Eligibility Checklist, January 10, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

## Approach to Cumulative Impact Analysis

Two approaches to a cumulative impact analysis are provided in CEQA Guidelines Section 15130(b)(1): (a) the analysis can be based on a list of past, present, and reasonably foreseeable probable future projects producing closely related impacts that could combine with those of a proposed project, or (b) a summary of projections contained in a general plan or related planning document can be used to determine cumulative impacts. The analyses in this Initial Study employ both the list-based approach and a projections approach, depending on which approach best suits the individual resource topic being analyzed. For instance, the Land Use analysis considers the degree to which the proposed project in combination with several large individual projects that are anticipated in the project site vicinity may alter the land use character, while at the same time incorporating assumptions regarding other development patterns that are likely to occur as part of normal long-range growth. By comparison, the Transportation and Circulation analysis will rely on a citywide growth projection model that also encompasses many individual projects anticipated in and surrounding the project site vicinity, which is the typical methodology the San Francisco Planning Department applies to analysis of transportation impacts. The projections model includes the individual projects described below and applies a quantitative growth factor to account for other growth that may occur in the area.

The following factors were used to determine an appropriate level for cumulative analysis in this Initial Study:

- **Similar Environmental Impacts.** A relevant project contributes to effects on resources that are also affected by the proposed project. A relevant future project is defined as one that is "reasonably foreseeable," such as a proposed project for which an application has been filed with the approving agency or has approved funding.
- **Geographic Scope and Location.** A relevant project is located within the geographic area within which effects could combine. The geographic scope varies on a resource-by-resource basis. For example, the geographic scope for evaluating cumulative effects to air quality consists of the affected air basin.
- **Timing and Duration of Implementation.** Effects associated with activities for a relevant project (e.g., short-term construction or demolition, or long-term operations) would likely coincide in timing with the related effects of the proposed project.

Based on the above, the following plans and projects in the project vicinity are examples of the types of projects considered in the cumulative impact analysis. This list is representative and may not include all of the projects considered in the cumulative analysis of each resource topic.

- **Central SoMa Plan.** The San Francisco Planning Department is in the process of developing an integrated community vision for the southern portion of the Central Subway rail corridor along Fourth Street. This area is located generally between Market Street on the north and Townsend Street on the south, and between Second Street on the east and Sixth Street on the west. The Moscone Center is within the Plan area. The plan's goal is to integrate transportation and land uses by implementing changes to the allowed land uses and building heights. The plan also includes a strategy for improving the pedestrian experience in this area. These changes are based on a synthesis of community input, past and current land use efforts, and analysis of long-range regional, citywide, and neighborhood needs. This plan is funded by a Transportation Planning Grant from Caltrans. An application has been filed for this project and it is currently undergoing environmental review (Case No. 2011.1356E).

- **5M Project**. A large project, various addresses, 925-971 Mission Street, colloquially "5M" or the "Chronicle site") is proposed on an approximately 4-acre site located on several parcels at the southwest corner of Fifth and Mission streets in the southern Financial District and SoMa neighborhoods. The proposal is to demolish several surface parking lots and buildings and rehabilitate two buildings, including the San Francisco Chronicle building at Fifth and Mission streets, resulting in seven mixed-use buildings totaling up to 1.8 million gross square feet of new and renovated space. Additionally, the project calls for the relocation of the Mary Street Alley between Minna and Natoma streets. This project is currently undergoing environmental review (Case No. 2011.0409E).

- **706 Mission Street:** The 706 Mission project consists of the construction of a new 47-story, 550-foot-tall tower, adjacent to and physically connected to the Aronson Building, which would be restored and rehabilitated. The new tower would contain up to 43 floors of residential space and 4 floors of museum space. The Aronson Building's existing retail and office uses would be reconfigured. The Mexican Museum would occupy the ground through fourth floors of the proposed tower and the second and third floors and possibly some of the ground floor of the Aronson Building. Certification of the project's environmental review was upheld by the Board of Supervisors (Case No. 2008.1084E).[21]

- **Harrison Gardens (725 Harrison Street):** A large project, various addresses, 725 to 765 Harrison Street, 120 and 130 Perry Street, and 425 Fourth Street, colloquially "Harrison Gardens") is proposed on an approximately 2.3-acre site on the block bounded by Harrison, Fourth, Perry and Third streets. The proposed project includes demolition of existing light industrial/commercial buildings and construction of over 730,000 square feet of office and commercial uses split among an approximately 240-foot-tall tower and 95-foot-tall mid-rise building that would be connected by a continuous podium base at the ground level (Case No. 2005.0759E).

- **250 Fourth Street:** The 250 Fourth Street project would demolish an existing three-story office and educational building and construct a hotel building with 215 guest bedrooms that would have an area of 93,460 square feet and be 119 feet (11 stories) tall. The new building would include restaurant/bar and/or retail space on the ground floor. It would include no off-street parking. The 10,400-square-foot project site is on the northwest corner of Fourth Street and Clementina Street. Building permits have been approved. The project was reviewed under Planning Department Case No. 2011.0038E.

- **900 Folsom Street:** This project, currently under construction, will develop a nine-story, 85-foot-tall building comprising up to 269 dwelling units, approximately 4,146 square feet of ground floor commercial space along Fifth Street, and up to 221 off-street parking spaces. Eight units on the ground floor fronting Folsom Street are designed to be "flexible occupancy" units that may contain certain commercial uses on the ground floor, as limited in the conditions of approval, while the remainder of the unit is residential. Open space will include a new publicly accessible mid-block pedestrian pathway connecting Folsom and Clementina Streets. The project was reviewed under Planning Department Case No. 2007.0689E.

- **260 Fifth Street:** The project, currently under construction, will be a nine-story, 85-foot-tall building with a basement level parking garage, creating up to 179 dwelling units, approximately 5,281 square feet of ground floor commercial space along Fifth Street, and up to 102 off-street parking spaces. The project was reviewed under Planning Department Case No. 2007.0690E.

[21] The EIR for 706 Mission Street is currently the subject of litigation in Sacramento County Superior Court.

- **206 Fifth Street/909-921 Howard Street:** The Tenderloin Neighborhood Development Corporation is proposing a 190,000-square-foot mixed-use building comprising nine stories, 178 dwelling units, and 8,000 square feet of commercial space between Tehama Street and Howard Street on the west side of Fifth Street. The site currently is developed with two low-rise commercial buildings and a public parking lot. The project is under review at the Planning Department as part of Case File No. 2012.1047E.

- **923 Folsom Street:** This proposed project would include development of two new buildings, one approximately four stories and 44 feet tall and a second nine stories and 85 feet tall. The proposed project would include approximately 118,115 square feet of residential use (for up to 114 dwelling units), approximately 1,800 square feet of ground-floor retail space, and 87 below-grade residential off-street parking spaces. The project is under review as part of Planning Department Case. No. 2012.1333E.

- **942 Mission Street:** The 942 Mission Street project would include the demolition of a vacant two-story-over-basement, 30-foot-tall, approximately 25,000-square-foot office and commercial building, and construction of a 15-story, 152-foot-tall, approximately 79,265-square-foot hotel. The proposed building would include 3,240 square feet of ground-floor retail space. Building permits have been approved, and the project is currently under construction. The project was reviewed under Planning Department Case No. 2008.0197E.

- **SF Museum of Modern Art Expansion:** The project includes a 230,000-square-foot expansion of the existing SFMOMA, located at 151 Third Street (between Howard and Mission Streets; demolition of two structures to the south of the current museum; and relocation of the San Francisco Fire Department Station No. 1 from 676 Howard Street to 935 Folsom Street. The existing building at 935 Folsom Street would be demolished, and both the new fires station and a residential building containing 13 multi-family units would be constructed (Case Nos. 2009.0291E and 2010.0275E). This project is under construction.

| *Topics:* | | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|---|
| **1.** | **LAND USE AND LAND USE PLANNING— Would the project:** | | | | | |
| a) | Physically divide an established community? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) | Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) | Have a substantial impact upon the existing character of the vicinity? | ☐ | ☐ | ☒ | ☐ | ☐ |

**Impact LU-1: The proposed project would not physically divide an established community. (Less than Significant)**

The analysis considers whether the project would contribute to the physical division of an established community by constructing physical barriers or obstacles to circulation that would restrict existing

patterns of movement between the project site and the adjacent neighborhoods. The project's contributions to the continuity of the existing land uses and circulation patterns are also considered in this analysis. This analysis does not consider the aesthetic or visual effect of new buildings on aesthetic or visual character, which is not required to be addressed as an environmental topic for this project, pursuant to SB 743 as discussed in Section E. Environmental Evaluation.

As discussed in the Project Description, above, the project site is located on Howard Street between Third and Fourth Streets in the South of Market neighborhood of San Francisco, in an area referred to as Yerba Buena Gardens. The project site is currently occupied by the existing Moscone Center, which, for purposes of this environmental review, is considered to be Moscone North and South and excludes Moscone West because no improvements are proposed at Moscone West. All of the function space at Moscone North and South is underground, with the exception of the street-level North and South lobbies and the Esplanade Ballroom, located at grade along the Third Street frontage of Moscone South. The site is generally flat.

The proposed project would increase the gross square footage of the Moscone Center facility by about 20 percent, from approximately 1.2 million square feet to 1.5 million square feet. The new construction would be largely above grade and would involve both Moscone North and Moscone South. The project would expand the existing above-grade Moscone North and South buildings, including the Esplanade portion of Moscone South, to enhance their public connection and presence on Howard Street and make the Moscone Center more pedestrian-oriented. In addition, the project would also involve some excavation beneath the project site in order to expand the existing below-grade exhibition halls that connect the Moscone North and South buildings under Howard Street. The proposed project would also reconfigure the existing adjacent bus pick-up and drop off facilities and create two pedestrian bridges spanning across Howard Street, which would connect Moscone North and South expansions at the second level above grade. All development would take place within the existing footprint and would not create or exacerbate barriers to access to or through the site.

The proposed project would be incorporated within the established street plan and would not create an impediment to the passage of persons or vehicles. The addition of mid-block pedestrian walkways and reorientation of access to public facilities to the south of Moscone South would increase connectivity across the site. Accordingly, the proposed project would not disrupt or divide the physical arrangement of the neighborhood. Because the proposed project would constitute a continuation of the same types of uses that currently exist on the site and because the proposed physical changes would not be out of scale with what already exists in the neighborhood, the project would not be anticipated to divide an established community. The impact would be ***less than significant***.

**Mitigation:** None required.

**Impact LU-2: The proposed project would not conflict with any applicable land use plans, policies or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect. (Less than Significant)**

Land use impacts are also considered to be significant if the proposed project would conflict with any plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect. Environmental plans and policies are those, like the BAAQMD *2010 Clean Air Plan*, which directly address environmental issues and/or contain targets or standards, which must be met in order to preserve or improve characteristics of the City's physical environment.

As described above Section C, Compatibility with Existing Zoning and Plans, the proposed project would not obviously or substantially conflict with the General Plan or applicable regional plans, policies, and regulations such that an adverse physical change would result. In addition, the proposed project would not obviously or substantially conflict with any such adopted environmental plan or policy including the 2010 CAP, the Greenhouse Gas Reduction Strategy, and the City's local tree ordinance, as discussed in Section E.6, Air Quality, Section E.7, Greenhouse Gases, and Section E.12 Biological Resources. Therefore, the proposed project would have a ***less-than-significant*** impact with regard to conflicts with land use plans, policies, or regulations.

**Mitigation:** None required.

**Impact LU-3: The proposed project would not have a substantial impact upon the existing character of the vicinity. (Less than Significant)**

The analysis of the project's effects on existing land use character includes consideration of the character of the proposed development relative to the existing land use context. An adverse effect could occur if a new use were placed next to an incompatible existing use, such that the basic function of either the existing use or the new use would be substantially impaired. For example, if a residential use were located next to a factory with toxic air emissions, either or both uses would be unable to function as intended.

Both portions of the Moscone Center Expansion project site (Moscone North and Moscone South) are within the C-3-S (Downtown Support) zoning district. The C-3-S district "encompasses Yerba Buena Gardens, which includes San Francisco's Convention Center, hotels, museums and cultural facilities, housing, retail, and offices arranged around public gardens and plazas."[22] The area's mixed-use character includes a variety of commercial, office, retail, residential, and institutional uses as well as a number of very large structures. Implementation of the proposed project would not be considered a significant impact because the proposed uses are principally permitted, already exist on site, and would be compatible with existing uses on adjacent and surrounding properties.

[22] San Francisco *Planning Code*, §201.3.

The proposed project is conservatively estimated to increase employment during events at the project site by 28 FTE, and it could increase total daily event attendance by 4,200 for larger events.[23] These increases in visitor attendance or employee numbers would not be substantial enough to result in fundamental changes in the way the project site is used. The facility would remain a convention space, with all convention uses taking place indoors, within the same project footprint. Although these uses would intensify as compared to existing conditions, they would not alter the overall land use of the site. Existing land uses surrounding the project site would continue to function as intended. The potential effects of increased attendance on the surrounding transportation network will be addressed in the EIR.

Nearby buildings range in height from a few stories to 40 stories, which presents a range of land use intensities. Across Mission Street to the north are the Contemporary Jewish Museum and St. Patrick's Church, both of which are only a few stories tall. That block also includes the 39-story (436 feet) Marriott Marquis Hotel and the 40-story (398 feet) Four Seasons Hotel and Residences, which together provide a dense concentration of hotel and residential uses. Buildings between 5 and 20 stories front Market Street. On the Moscone North block itself, the Metreon is a 4-story, 115-foot-tall building, and the Yerba Buena Center for the Arts comprises low-rise buildings arranged around the Yerba Buena Gardens Esplanade.

To the east of Moscone North, across Third Street, is the 42-story (484 feet) St. Regis Hotel and Residences, the 5-story SFMOMA and 8-story SFMOMA parking garage, the 29-story (315 feet) W hotel, and the 26-story (435 feet) Pacific Telephone and Telegraph Building. Farther south, on Third Street between Howard and Folsom Streets, is Convention Plaza, which comprises a 12-story office building and the 4-story Moscone garage.

South of the project site, across Folsom Street, are a 9-story senior housing building (which includes an adult day health center), a 12-story residential building, and an 8-story senior housing building in the interior of the block, all of which are relatively dense residential uses. Also south of the project site is a 5-story commercial building. The project block south of Howard Street contains low-rise buildings housing uses, including the Yerba Buena Bowling and Ice Skating Center, the Children's Creativity Museum, the Child Development Center, the Children's Garden, and the restored 1905 Carousel.

To the west of Moscone South are an 8-story senior housing building and 2-story commercial building. Farther north, on Fourth Street between Howard and Mission Streets, is the 3-story (110 feet) Moscone West building, as well as the 5-story SFMTA 5th and Mission Parking Garage.

The project would not introduce a new or incompatible land use to the area. Moreover, the project would not constitute a change in land use patterns and would be compatible with the overall character of the South of Market neighborhood (and with the character of the more immediate Yerba Buena Gardens area).

[23] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E. This is a conservative assumption since although the proposed increase in exhibit floor space will likely increase the total number of exhibitors and their staff; it does not necessarily imply an increase in the number of event visitors.

The proposed project building heights would be in the range of heights already present in the area. At completion, the expanded Moscone North structure would be approximately 54 feet in height, the Moscone South structure would be approximately 95 feet in height, and the Esplanade portion of Moscone South would be approximately 95 feet in height (the Esplanade would replace the existing approximately 65-foot-tall Esplanade Ballroom support building with a new structure).

The proposed project would intensify the use of the project site. However, at heights of 54 to 95 feet, the project would be well within the range of heights that already exist in the project area. Specifically, because the project area is within the City's commercial core, it contains some of the tallest structures in the City, some rising 300 feet or more. The project also would not alter the general land use pattern of the immediate area, since the Moscone Center regularly hosts large-scale events and conventions under existing conditions and would continue to do so after the project is implemented. Moreover, the reconfiguration of the existing bus pick-up and drop-off facilities and the construction of two pedestrian bridges across Howard Street are intended to allow the project site to function more effectively as a convention and event center. Thus, the proposed project would not substantially or adversely impact the character of this neighborhood.

Impacts of the proposed project would be considered significant if the project would have a substantial impact upon the existing land use character of the vicinity. The continuation, and intensification, of existing land uses on the project site would continue to be generally consistent with the surrounding uses, as well as the intent of the C-3-S Use District. Therefore, the proposed project's impact on the existing character of the project's vicinity would be ***less than significant***.

**Mitigation:** None required.

**Impact C-LU: The proposed project would not make a considerable contribution to any cumulative significant land use impacts. (Less than Significant)**

Cumulative land use impacts are evaluated in the context of existing, and reasonably foreseeable future development in the project site vicinity, as well as applicable land use policies that guide future development in the project site vicinity. The cumulative land use analysis is geographically based on specific projects in the vicinity that would affect the overall land use character of the Downtown and Central SoMa neighborhoods (generally between Market Street on the north and Townsend Street on the south, and between Second Street on the east and Sixth Street on the west), within a few blocks in each direction of the project site.

As discussed in the "Approach to Cumulative Impacts Analysis" section above, a number of projects are proposed in the vicinity of the proposed Moscone Expansion project. For example, as described above, the Central SoMa Plan would implement changes to allowed land uses and building heights to promote a greater mix of uses while also emphasizing office uses in the central portion of the plan area. The Central SoMa Plan and other projects would be required to undergo separate environmental review, as necessary. They would generally result in a continuation of existing mixed uses in the Downtown and Central SoMa areas of the City, or infill development of similar uses, that would intensify overall development patterns with taller buildings. Although these changes would result in a more dense urban fabric, they would not

alter the overall mix of residential, commercial, visitor-serving, retail, and institutional uses in the Downtown and Central SoMa areas, and they would not result in physical division of the established community. Some projects would require modifications, variances, or exceptions to *Planning Code* requirements or *General Plan* land use designations.

Given that the proposed project and uses would occur within the boundaries of the existing lot lines, no physical barriers to movement through the community would occur, and that the project would continue and intensify an existing use and be consistent with the *General Plan* and *Planning Code* land use designations for the project site, the project would not contribute considerably to any cumulative land use impacts, and the proposed project's contribution to cumulative land use impacts would be ***less than significant***.

**Mitigation:** None required.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **2. POPULATION AND HOUSING— Would the project:** | | | | | |
| a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Displace substantial numbers of existing housing units or create demand for additional housing, necessitating the construction of replacement housing? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact PH-1: The proposed project would not induce substantial population growth in San Francisco, either directly or indirectly. (Less than Significant)**

In general, a project would be considered growth-inducing if its implementation would result in substantial population increases and/or new development that might not occur if the project is not implemented. Currently there are no residential units on the project site and none are proposed.

As of 2012, San Francisco's employment is approximately 570,000 persons and projected to grow to approximately 766,500 by 2040, an increase of nearly 35 percent, according to Planning Department forecasts.[24] The project is estimated to generate approximately 28 net new employees.[25] Therefore, project-

[24] San Francisco Planning Department, *San Francisco Land Use Allocation, Central SoMa (July 2013)*, December 23, 2013.

[25] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E. This is a conservative assumption since although the proposed increase in exhibit floor space will likely increase the total number of exhibitors and their staff, it does not necessarily imply an increase in the number of event visitors.

related employment growth would amount to approximately 0.01 percent of citywide employment growth anticipated between 2010 and 2040, conservatively assuming that all employees would be new to San Francisco; in actuality, some new workers at the project would be likely to have relocated from other jobs already in San Francisco. This potential increase in employment would be minimal compared to the total employment expected in San Francisco and the greater San Francisco Bay area.

The increased employment and potential population generated by the proposed project would not induce substantial population growth in the area, either directly or indirectly. Therefore, the proposed project would have a ***less-than-significant*** impact on population growth.

**Mitigation:** None required.

**Impact PH-2: The proposed project would not displace existing housing units or substantial numbers of people, or create substantial demand for additional housing, necessitating the construction of replacement housing. (Less than Significant)**

As noted above, the project site has no residential units, nor is any planned. Hence, there would be no residents displaced as a result of the project and there would be ***no impact*** with regard to this criterion. The increase of 28 employees could result in a slight increase in demand for additional housing, assuming that some of these new employees would be new to the region. However, the number of such employees would be very small compared to the total population and the available housing stock in San Francisco and the Bay Area, and would not necessitate the construction of new housing. This impact would be ***less than significant***.

**Mitigation:** None required.

**Impact C-PH: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not make a considerable contribution to any cumulative population and housing impacts. (Less than Significant)**

The geographic scope for potential cumulative population and housing impacts encompasses the people living and working within the Bay Area region. The geographic scope generally includes the San Francisco peninsula, and adjacent areas in the North Bay, East Bay and South Bay that have access to transit serving the Central SoMa area. The project vicinity provides for a wide range of residential and office buildings.

The Central SoMa Plan would change allowable heights and land uses in an effort to accommodate forecasted growth in jobs and housing demand. Most of this growth would accommodate demand rather than induce growth.The increase in jobs due to the proposed project, approximately 28 FTE jobs, would have a negligible effect on demand for housing because it represents only 0.01 percent of the projected job growth between 2010 and 2040. Therefore, the proposed project would have a less-than-considerable contribution to cumulative impacts related to population and housing. The impact would be ***less than significant***.

**Mitigation:** None required.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **3. CULTURAL AND PALEONTOLOGICAL RESOURCES—Would the project:** | | | | | |
| a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5? | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Disturb any human remains, including those interred outside of formal cemeteries? | ☐ | ☒ | ☐ | ☐ | ☐ |

**Impact CP-1: The proposed project would not cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines §15064.5 including those resources listed in Article 10 or Article 11 of the San Francisco Planning Code. (No Impact)**

CEQA Guidelines Section 15064.5 requires a lead agency to consider the effects of a proposed project on historical resources. A historical resource is defined as any building, structure, site, or object listed in or determined to be eligible for listing in the California Register of Historical Resources (CRHR), or determined by a lead agency to be significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California, including those resources listed in Article 10 or Article 11 of the San Francisco *Planning Code*.

The CRHR includes resources that have been listed in or formally determined eligible for listing in the National Register of Historic Places (NRHP), as well as some California State Landmarks and Points of Historical Interest. Under U.S. Department of the Interior, National Park Service guidelines, buildings, structures, and objects usually need to be more than 50 years old to be eligible for listing in the NRHP.[26] The California Office of Historic Preservation (OHP) guidelines for project review and planning call for the identification and evaluation of resources that are more than 45 years old to account for the passage of time between the period of project review and project completion. Resources that are less than 50 years old are generally excluded from listing in the NRHP or CRHR, unless they can be shown to be exceptionally significant.

[26] NPS, National Register Bulletin 15: *How to Apply the National Register Criteria for Evaluation*, 1997, online version revised 2002. Available online at: http://www.nps.gov/nr/publications/bulletins/pdfs/nrb15.pdf, accessed January 14, 2014.

Given that Moscone Convention Center (North and South) was completed between 1981 and 1992, and these buildings are 32 – 23 years old respectively as of 2013, they would not meet the minimum age criteria for listing in either the CRHR or NRHP. There is no information to indicate that Moscone Center would meet the NRHP criteria for exceptional significance, required for buildings less than 50 years of age. Although the buildings are named after George R. Moscone (Mayor of San Francisco from 1976 until 1978), as a memorial to the late Mayor, this fact alone would not qualify as an exceptionally significant event or association. As such, these structures would not be considered historic resources per CEQA Guidelines Section 15064.5. In addition, there are no resources listed in Articles 10 or 11 of the Planning Code on the project site or within the immediate vicinity, the significance of which could be affected by the proposed project. Therefore, the project would have ***no impact*** on historic resources.

**Mitigation:** None required.

**Impact CP-2: The proposed project could result in a substantial adverse change in the significance of an archeological resource pursuant to CEQA Guidelines §15064.5, a significant impact. (Less than Significant with Mitigation)**

CEQA considers archaeological resources as an intrinsic part of the physical environment and, thus, requires for any project subject to CEQA-review that its potential to adversely affect an archaeological resource be analyzed (Public Resources Code Section 21083.2). For a project that may have an adverse effect on a significant archeological resource, CEQA requires preparation of an environmental impact report (Public Resources Code Section 21083.2 and CEQA Guidelines Section 15065). CEQA recognizes two different categories of significant archeological resources: a "unique" archeological resource (Public Resources Code Section Sect. 21083.2) and an archeological resource that qualifies as a "historical resource" under CEQA (Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5).

### *Significance of Archeological Resources*

An archeological resource can be significant as both or either a "unique" archeological resource and an "historical resource" but the process by which the resource is identified, under CEQA, as either one or the other is distinct (Public Resources Code 21083.2(g) and CEQA Guidelines Section 15064.5(a)(2)).
An archeological resource is an "*historical resource*" under CEQA if the resource is:

1) listed on or determined eligible for listing on the CRHR (CEQA Guidelines Section 15064.5). This includes NRHP-listed or –eligible archeological properties.

2) listed in a "local register of historical resources"[27]

3) listed in a "historical resource survey". (CEQA Guidelines Section 15064.5(a)(2))

Generally, an archeological resource is determined to be an "historical resource" due to its eligibility for listing to the CRHR/NRHP because of the potential scientific value of the resource, that is, "has yielded, or may be likely to yield, information important in prehistory or history" (CEQA Guidelines

[27] A "local register of historical resources" is a list of historical or archeological properties officially adopted by ordinance or resolution by a local government. (Public Resources Code Section 5020.1 (k).

Section 15064.5 (a)(3)). An archeological resource may be CRHR-eligible under other Evaluation Criteria, such as Criterion 1, association with events that have made a significant contribution to the broad patterns of history; Criterion 2, association with the lives of historically important persons; or Criterion 3, association with the distinctive characteristics of a type, period, region, or method of construction. Appropriate treatment for archeological properties that are CRHR-eligible under Criteria other than Criterion 4 may be different than that for a resource that is significant exclusively for its scientific value.

Failure of an archeological resource to be listed in any of these historical inventories, is not sufficient to conclude that the archeological resource is not an "historical resource". When the lead agency believes there may be grounds for a determination that an archeological resource is a "historical resource", then the lead agency should evaluate the resource for eligibility for listing to the CRHR (CEQA Guidelines Section 15064.5(a)(4)).

A "*unique archeological resource*" is a category of archeological resources created by the CEQA statutes (Public Resources Code 21083.2(g)). An archeological resource is a unique archeological resource if it meets any of one of three criteria:

1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information;

2) Has a special and particular quality such as being the oldest of its type or the best available example of its type;

3) Is directly associated with a scientifically recognized important prehistoric or historic event or person.

Under CEQA, evaluation of an archeological resource as an "historical resource" is privileged over the evaluation of the resource as a "unique archaeological resource", in that, CEQA requires that "when a project will impact an archaeological site, a lead agency shall first determine whether the site is an historical resource" (CEQA Guidelines Section 15064.5 (c)(1).

### *Evaluation of an Archaeological Resource as Scientifically Significant*

In requiring that a potentially affected archeological resource be evaluated as an historical resource, that is as an archeological site of sufficient scientific value to be CRHR-eligible, CEQA presupposes that the published guidance of the OHP for CEQA providers is to serve as the methodological standard by which the scientific, and thus, the CRHR-eligibility, of an archeological resource is to be evaluated. As guidance for the evaluation of the scientific value of an archeological resource, the OHP has issued two guidelines: *Archaeological Resource Management Reports* (1989) and the *Guidelines for Archaeological Research Designs* (1991).

### *Integrity of Archeological Resource*

Integrity is an essential criterion in determining that a resource, including an archeological resource, is an historical resource. In terms of CEQA "integrity" can, in part, be expressed in the requirement that an historical resource must retain "the physical characteristics that convey its historical significance" (CEQA Guidelines Section 15064.5 (b)).

For an archeological resource that is evaluated for CRHR-eligibility under Evaluation Criterion 4, "has yielded or may be likely to yield information important to prehistory or history", integrity is conceptually different than how it is usually applied to the built environment. For an historic building, possessing integrity means that the building retains the defining physical characteristics from the period of significance of the building. In archeology, an archeological deposit or feature may have undergone substantial physical change from the time of its deposition but it may yet have sufficient integrity to qualify as a historical resource. The integrity test for an archeological resource is whether the resource can yield sufficient data (in type, quantity, quality, diagnosticity) to address significant research questions. Thus, in archeology "integrity" is often closely associated with the development of a research design that identifies the types of physical characteristics ("data needs") that must be present in the archeological resource and its physical context to adequately address research questions appropriate to the archeological resource.

### *Significant Adverse Effect on an Archeological Resource*

The determination of whether an effect on an archeological resource is significant depends on the effect of the project on those characteristics of the archeological resource that make the archeological resource significant. For an archeological resource that is an historical resource because of its prehistoric or historical information value, that is, its scientific data, a significant effect is impairment of the potential information value of the resource.

The depositional context of an archeological resource, especially soils stratigraphy can be informationally important to the resource in terms of datation and reconstructing the characteristics of the resource present at the time of deposition and interpreting the impacts of later deposition events on the resource. Thus, for an archeological resource eligible to the CRHR under Criterion 4, a significant adverse effect to its significance may not be limited to impacts on the artifactual material but may include effects on the soils matrix in which the artifactual matrix is situated.

### *Mitigation of Adverse Effect to an Archeological Resource*

Preservation in place is the preferred treatment of an archeological resource ( Public Resources Code Section 21083.2(b) and CEQA Guidelines Section 15126.4 (b)(3)(a)). When preservation in place of an archeological resource is not feasible, data recovery, in accord with a data recovery plan prepared and adopted by the lead agency prior to any soils disturbance, is the appropriate mitigation (CEQA Guidelines Section 15126.4 (b)(3)(C)). In addition to data recovery, under CEQA, the mitigation of effects to an archeological resource that is significant for its scientific value, requires curation of the recovered scientifically significant data in an appropriate curation facility (CEQA Guidelines Section15126.4(b)(3)(C), that is a curation facility compliant with the *Guidelines for the Curation of Archaeological Collections*.[28] Final studies reporting the interpretation, results, and analysis of data recovered from the archeological site are to be deposited in the California Historical Resources Regional Information Center (CEQA Guidelines Section 15126.4(b)(3)(C).

[28] California Office of Historic Preservation, *Guidelines for the Curation of Archaeological Collections*, May 7, 1993.

*Effects to Human Remains*

Under State law, human remains and associated burial items may be significant resources in two ways: they may be significant to descendant communities for patrimonial, cultural, lineage, and religious reasons and human remains may also be important to the scientific community, such as prehistorians, epidemiologists, and physical anthropologists. The specific stake of some descendant groups in ancestral burials is a matter of law for some groups, such as Native Americans (CEQA Guidelines Section 15064.5 (d), Public Resources Code Section 5097.98). In other cases, the concerns of the associated descendent group regarding appropriate treatment and disposition of discovered human burials may become known only through outreach. Beliefs concerning appropriate treatment, study, and disposition of human remains and associated burial items may be inconsistent and even conflictual between descendent and scientific communities. CEQA and other State regulations concerning Native American human remains provide the following procedural requirements to assist in avoiding potential adverse effects to human remains within the contexts of their value to both descendants communities and the scientific community:

- When an initial study identifies the existence or probable likelihood that a project would impact Native American human remains, the lead agency is to contact and work with the appropriate Native American representatives identified through the Native American Heritage Commission (NAHC) to develop an agreement for the treatment and disposal of the human remains and any associated burial items (CEQA Guidelines Section15064.5 (d), Public Resources Code Section 5097.98)

- If human remains are accidentally discovered, the county coroner must be contacted. If the county coroner determines that the human remains are Native American, the coroner must contact the NAHC within 24 hours. The NAHC must identify the most likely descendant (MLD) to provide for the opportunity to make recommendations for the treatment and disposal of the human remains and associated burial items. If the MLD fails to make recommendations within 24 hours of notification or the project applicant rejects the recommendations of the MLD, the Native American human remains and associated burial items must be reburied in a location not subject to future disturbance within the project site (Public Resources Code Section 5097.98).

- If potentially affected human remains/burial may have scientific significance, whether or not having significance to Native Americans or other descendent communities, then under CEQA, the appropriate mitigation of effect may require the recovery of the scientific information of the remains/burial through identification, evaluation, data recovery, analysis, and interpretation (CEQA Guidelines Section 15064.5(c)(2)).

*Consultation with Descendant Communities*

Although not a requirement derived from CEQA, the cosmopolitan nature and history of San Francisco necessitates cultural management sensitivity to archeological remains associated with local indigenous, ethnic, overseas, and religious communities. On discovery of an archeological site[29] associated with descendant Native Americans, the Overseas Chinese or, as appropriate any other community, Environmental Planning's Environmental Review Officer (ERO) should seek consultation with an

[29] By the term "archeological site" is intended here to minimally included any archeological deposit, feature, burial, or evidence of burial.

appropriate representative[30] of the descendant group with respect to appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. Documentary products resulting from archeological research of the descendant community associated with the site should be made available to the community.

CEQA mandates California public agencies to consider the effects of projects on historical (including archeological) resources. The ERO concluded that preparation of an Archeological Research Design and Treatment Plan (ARDTP) was required for the project, to ensure that important archeological remains that may be present are identified, evaluated, and appropriately treated. The results of the ARDTP are discussed below. For archeological consideration, the ARDTP considered a larger Area of Potential Effects (APE), but particularly focused on the two rectangles of land along Howard Street that are proposed for additional excavation.

### *Archeological Context*

Results of a records search (File Search Number 12-1322 and 13-0149) at the Northwest Information Center (NWIC) of the California Historical Resources Information System at Sonoma State University indicate that a total of three archeological resources have been formally recorded through the NWIC within a 200-meter radius of the project area. All are prehistoric sites and only one site, identified as CA-SFR-114, falls within the project area. These three prehistoric sites are all Late Holocene (post 3800 cal BP,[31] or circa 1850 B.C.) shell middens formed within sand dunes along the north side of Mission Bay. The full extent of these prehistoric sites is uncertain because only the portions within the relevant construction areas were studied, and additional portions may extend beyond those limits. The northern portion of the site within the project area was well-defined during data recovery investigations during the previous construction of Moscone Center North. The southern portion of the site likely extended beyond the construction area, and its current southern boundary is defined by the northern edge of Howard Street. The data recovery work revealed a thick occupation deposit, structural features, and human burials—currently it represents the most substantial prehistoric archeological site documented in this portion of the City. The three prehistoric sites within the records search area, along with four other prehistoric sites in the vicinity, have been recently determined to be eligible for the NRHP under Criteria A and D, as part of a NRHP District.[32] These sites are considered to represent elements of a multi-village community network that was clustered around the shore of Mission Bay. As such, the project site vicinity is situated within a recently recognized NRHP District.

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30 An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America.

31 BP refers to a time scale that reflects radiocarbon dating, and is an acronym for "Before Present." January 1, 1950 is the considered to be the origin of the "present" time scale.

32 Criterion A of the National Register of Historic Places considers archaeological sites that are "associated with events that have made a significant contribution to the broad patterns of history." Criterion D notes the ability of a resource to yield information important in prehistory or history. Resources eligible for the National Register are also eligible for listing on the California Register of Historical Resources. Far Western Anthropological Research Group, Inc., ESA, and JRP, Archaeological Research Design and Treatment Plan for the Moscone Center Expansion, San Francisco, California, Planning Department Case No. 2013.0154E. Prepared for Randall Dean, San Francisco Planning Department, September, 2013.

Historic-era resources have been encountered during construction of a variety of projects in the study area, but were considered not substantial enough to be formally recorded as archeological sites, and no historic-era archeological sites have been recorded.[33] The NAHC was contacted to request a search of its Sacred Lands file to determine if there were known cultural sites within or near the project site. The Commission responded by stating that no Native American cultural resources were reported from the Sacred Lands file records search. The NAHC provided a list of interested Native American groups and individuals was who were contacted in request of concerns or information regarding Native American sites. No response has been received from the Native Americans contacted to date.[34]

*ARDTP and Subsurface Geoarcheological Investigations*

Background research on the potential for buried prehistoric archeological sites relies heavily on existing knowledge of the various geological formations in the project vicinity. Previous geological studies include geologic mapping of the northern San Francisco Peninsula; analysis of coring in Yerba Buena Cove; and recent geological mapping of Quaternary-age deposits.[35] Historic-era maps provide information on the natural environment prior to major development that has obscured every natural surface in the project area.[36] The results of a previous geoarcheological investigation in the vicinity also provided data on the nature and timing of geological formations underlying the study area.

Geoarcheological coring examination and analysis of the deposits recovered in six continuous cores from the project area resulted in the identification of four strata within the project area: Colma Formation, Bay/Marsh, Dune Sand, and Artificial Fill. While the depth of these strata varies, they are laterally extensive and can be traced across the project area, with the exception of the Bay/Marsh deposits that appear to be localized in the westernmost part of the project area. Radiocarbon dates associated with the Colma Formation indicate that prehistoric archeological deposits ranging in age from about 2180 cal BP to at least 4850 cal BP may be associated with this former land surface. The results also confirm that part of a prehistoric site, CA-SFR-114, extends under the north part of Howard Street. Radiocarbon dates from the site are in correct stratigraphic sequence and suggest that the cultural deposit is relatively undisturbed and retains some original systemic integrity. In addition, the more deeply buried deposit of charcoal and marine shells identified at the Colma surface suggests that a previously unidentified prehistoric archeological site may be located in or near this area.

Geoarcheological coring deposits found a thick deposit of historic-era material in the upper part of each of the six cores recovered from the two areas under Howard Street. Thickness of the deposit ranged from about 2.1 to nearly 4.6 meters (7 to nearly 15 feet). These variable deposits generally consisted of loose sand and one or more layers of modern construction debris and/or historic materials. No clearly intact archeological surfaces or historic-era artifacts were identified within the fill; instead this likely represents

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33 Ibid.

34 Ibid.

35 Keith L. Knudsen, Janet M. Sowers, Robert C. Witter, Carl M. Wentworth, and Edward J. Helley. Preliminary *Maps of Quaternary Deposits and Liquefaction Susceptibility, Nine-County San Francisco Bay Region, California: A Digital Database*. US Geological Survey Open-File Report 2000-444, Online Version 1.1, Menlo Park, California, http://pubs.usgs.gov/of/2000/of00-444/. 2000, updated September 22, 2005, accessed June 2013.

36 United States Coast Survey. City of San Francisco and its Vicinity, 1853, 1857. San Francisco Peninsula, 1869. Online versions available at www.davidrumsey.com, accessed January 14, 2014.

rubble associated with the 1906 earthquake. As the City was rebuilt, the geographical layout was mostly maintained. Although uses of specific City blocks changed, the layout of streets and alleys remained generally the same as before the earthquake. For these reasons, the historical archeological potential of the project area (within Howard Street) is considered to be low.

Based on the literature review and geoarcheological investigations of cores acquired from Howard Street it is clear that the project area has a very high sensitivity for prehistoric cultural resources. This includes both a southern extension of CA-SFR-114 and a much earlier potential archeological deposit. Because it appears that both of these deposits may be directly affected by project-related earth disturbances, archeological fieldwork and controlled excavation is needed to determine the nature and extent of the cultural deposits in order to realize their potential to contribute information important for understanding local and regional prehistory.

Ground-disturbing construction activity within the project area could adversely affect the significance of archeological resources under CRHR Criterion 4 (information potential) by impairing the ability of such resources to convey important scientific and historical information. This effect is considered a substantial adverse change in the significance of an historical resource and is considered to be a significant impact under CEQA. Implementation of **Mitigation Measure** M-**CP-2a** requires the development of an archeological testing plan, monitoring, and evaluation, and would reduce potential impacts to archeological resources to a ***less-than-significant*** level with respect to Criterion 4.

**Mitigation Measure M-CP-2a: Archeological Testing, Monitoring, Data Recovery and Reporting**

Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archaeological consultant from the Planning Department ("Department") pool of qualified archaeological consultants as provided by the Department archaeologist. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure and with the requirements of the project archeological research design and treatment plan (*Archaeological Research Design/Treatment Plan for the Moscone Center Expansion Project*, September, 2013), at the direction of the Environmental Review Officer (ERO). In instances of inconsistency between the requirement of the project archeological research design and treatment plan and of this archeological mitigation measure, the requirements of this archeological mitigation measure shall prevail. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sect. 15064.5 (a)(c).

***Consultation with Descendant Communities.*** On discovery of an archeological site[37] associated with descendant Native Americans, the Overseas Chinese, or other descendant group an appropriate representative[38] of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to consult with ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

***Archeological Testing Program.*** The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes an historical resource under CEQA.

At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If based on the archeological testing program the archeological consultant finds that significant archeological resources may be present, the ERO in consultation with the archeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. No archeological data recovery shall be undertaken without the prior approval of the ERO or the Planning Department archeologist. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either:

A) The proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource; or

B) A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

***Archeological Monitoring Program.*** If the ERO in consultation with the archeological consultant determines that an archeological monitoring program (AMP) shall be implemented the archeological monitoring program shall minimally include the following provisions:

- The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The

[37] The term "archeological site" is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

[38] An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the Department archeologist.

ERO in consultation with the archeological consultant shall determine what project activities shall be archeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context;

- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;

- The archeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with project archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;

- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;

- If an intact archeological deposit is encountered, all soils-disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/construction activities and equipment until the deposit is evaluated. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, and present the findings of this assessment to the ERO.

Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

***Archeological Data Recovery Program.*** The archeological data recovery program shall be conducted in accord with an archeological data recovery plan (ADRP). The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.

- *Cataloguing and Laboratory Analysis*. Description of selected cataloguing system and artifact analysis procedures.

- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

***Human Remains and Associated or Unassociated Funerary Objects.*** The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines. Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.

***Final Archeological Resources Report.*** The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.

Disturbance of archeological resources eligible for the CRHR would impact their association with historic events, as well as their data potential. Data recovery and reporting alone would be inadequate to mitigate such impacts to a less-than-significant level. That is, while data recovery can provide mitigation for Criterion 4, it does not address the association with events that are important to the past, that is, Criterion 1.

**Mitigation Measure M-CP-2b** would be required to reduce this impact to a ***less-than-significant*** level with respect to Criterion 1.

> **Mitigation Measure M-CP-2b: Interpretation**
>
> Mitigation Measure M-CP-2b, Interpretation, calls for a qualified archeological consultant to prepare and submit a plan for post-recovery interpretation of resources. Implementation of an approved program of interpretation under Mitigation Measure M-CP-2b would preserve and enhance the ability of the resource to convey its association with historic events under California Register of Historic Resources Criterion 1 (Events), as well as explain its importance under Criterion 4.

**Level of Significance After Mitigation:** With implementation of Mitigation Measures M-CP-2a and M-CP-2b, impacts to archeological resources, if present within the project area, would be reduced to a ***less-than-significant*** level.

**Impact CP-3: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. (No Impact)**

Paleontology is a multidisciplinary science that combines elements of geology, biology, chemistry, and physics in an effort to understand the history of life on earth. Paleontological resources, or fossils, are the remains, imprints, or traces of once-living organisms preserved in rocks and sediments. The fossil yielding potential of a particular area is highly dependent on the geologic age and origin of the underlying rocks. In general, older sedimentary rocks (more than 10,000 years old) are considered most likely to yield vertebrate fossils of scientific interest.

Geoarcheological coring within the project area indicates the presence of sedimentary Colma Formation, which have yielded significant vertebrate fossils within other areas of the San Francisco Bay, such as Telegraph Hill, but generally north of Market Street. Paleontological resources could exist within the Colma Formation, although this is unlikely based on the past history of disturbance and human use. In addition, due to the limited depth of excavation proposed (refer to Table 3, Construction Details), the project is not expected to affect such resources. Therefore, the project is considered to have ***no impact*** on paleontological resources.

> **Mitigation:** None required.

**Impact CP-4: The proposed project could disturb any human remains, including those interred outside of formal cemeteries. (Less than Significant with Mitigation)**

Results of the subsurface investigation discussed above indicate that the proposed project area has a high potential to contain buried cultural materials, including human remains. Prehistoric resources within the project area are anticipated to be associated with CA-SFR-114, which consists of midden that includes human burials. Given this, the possibility of uncovering human remains cannot be entirely discounted. California law also protects Native American burials, skeletal remains, and associated grave goods regardless

of their antiquity, and provides for the sensitive treatment and disposition of those remains (California Health and Safety Code Section 7050.5, Public Resources Code Sections 5097.94 et seq.). In the event that human remains are uncovered during ground-disturbing activity, the implementation of **Mitigation Measure M-CP-2a** requiring archeological testing, monitoring and data recovery and appropriate treatment of human remains and associated or unassociated funerary objects would reduce potential impacts to human remains to a ***less-than-significant*** level.

**Mitigation Measure:** Implementation of Mitigation Measure M-CP-2a.

**Level of Significance After Mitigation:** With implementation Mitigation Measure M-CP-2a, project impacts to human remains would be ***less than significant***.

**Impact C-CP: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant impacts to cultural resources. (Less than Significant with Mitigation)**

The geographic scope for potential cumulative cultural resources generally includes the Central South of Market area. Cumulative projects within the project vicinity would be required to undergo separate environmental review, as necessary. As the Moscone project would have no impacts to historic architectural resources it therefore would not contribute to any such cumulative impact. The cumulative projects could have a significant impact on both recorded and unrecorded archeological resources, including human remains interred outside of formal cemeteries, given the substantial amount of construction-related ground disturbance that could occur. These impacts could have a significant cumulative impact to cultural resources. However, implementation of Mitigation Measures M-CP-2a and -2b would also apply to cumulative projects based on each project's potential to affect archeological resources, which would reduce cumulative impacts to cultural resources to a less-than-significant level. The proposed project would be required to implement Mitigation Measures CP-2a, -2b, and 4 and would therefore not make a considerable contribution to cumulative adverse impacts to cultural resources. Impacts to cultural resources would ***be less than significant with mitigation***.

**Mitigation Measure:** Implementation of Mitigation Measures M-CP-2a and -2b identified above.

**Level of Significance After Mitigation:** With implementation Mitigation Measures M-CP-2a and -2b, cumulative impacts would be ***less than significant***.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **4. TRANSPORTATION AND CIRCULATION— Would the project:** | | | | | |
| a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit? | ☒ | ☐ | ☐ | ☐ | ☐ |
| b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways? | ☒ | ☐ | ☐ | ☐ | ☐ |
| c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location, that results in substantial safety risks? | ☐ | ☐ | ☐ | ☐ | ☒ |
| d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses? | ☒ | ☐ | ☐ | ☐ | ☐ |
| e) Result in inadequate emergency access? | ☒ | ☐ | ☐ | ☐ | ☐ |
| f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities? | ☒ | ☐ | ☐ | ☐ | ☐ |

The proposed project would not result in a change of air traffic patterns, and thus would not result in substantial safety risks related to air traffic. Therefore, Topic E.4(c) is not applicable to the proposed project.

The proposed project could result in transportation- and circulation-related impacts as a result of construction and operation activities. For purposes of this Initial Study, impacts to the transportation and circulation system are identified as ***potentially significant*** (except for air traffic patterns). Project effects on transportation and circulation, including intersection operations, transit demand, and impacts on pedestrian and bicycle circulation, will be analyzed in the EIR, which will determine the significance of the project's impacts on the transportation and circulation system following preparation of a detailed transportation impact study.

As discussed in Section E, in the section entitled 'Evaluation of Environmental Effects', on September 27, 2013, Governor Brown signed SB 743, which became effective on January 1, 2014 and amends Public Resources Code Section 21099. Key provisions of Public Resources Code Section 21099(d) include reforming the analysis of aesthetics and parking impacts for urban infill projects pursuant to CEQA. The proposed project meets the definition of an employment center, located on an infill site in a transit

priority area as discussed under the section entitled 'Evaluation of Environmental Effects' in Section E, above.[39] Accordingly, parking impacts can no longer be considered in determining the significance of the proposed project's physical environmental effects under CEQA. Although not required, the EIR will present a parking demand analysis for informational purposes. The EIR will also consider any secondary physical impacts associated with constrained supply (e.g., queuing by drivers waiting for scarce onsite parking spaces that affects the public right-of-way) as applicable in the transportation analysis.

| Topics: | | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less-Than-Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|---|
| **5.** | **NOISE—Would the project:** | | | | | |
| a) | Result in exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) | Result in exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) | Result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) | Result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) | For a project located within an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) | For a project located in the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels? | ☐ | ☐ | ☐ | ☐ | ☒ |
| g) | Be substantially affected by existing noise levels? | ☐ | ☐ | ☒ | ☐ | ☐ |

The project site is not within an airport land use plan area, nor is it in the vicinity of a private airstrip. Therefore, Topics 5e and 5f are not applicable.

[39] San Francisco Planning Department, Transit-oriented Infill Project Eligibility Checklist, January 10, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

**Impact NO-1: The proposed Moscone Center Expansion project would not result in a substantial permanent increase in ambient noise or vibration levels, would not expose persons to noise levels in excess of standards in the *San Francisco General Plan* and Noise Ordinance (Article 29 of the Police Code), and would not be substantially affected by existing noise levels. (Less than Significant)**

The proposed project is located in an urban area where the sound of vehicular traffic (autos, trucks, buses) on local streets dominates the existing ambient noise environment. According to the San Francisco General Plan Noise Map[40] (see **Figure 18**), noise levels immediately adjacent to all streets along the site frontages (Third, Fourth, Mission, Howard, and Folsom Streets) exceed 70 dBA ($L_{dn}$). However, noise levels decrease to 65 to 70 dBA ($L_{dn}$) along the site frontages adjacent to these streets.

Operation of the proposed project could increase ambient noise levels in the project vicinity, primarily through the on-site use of stationary equipment, such as heating and ventilation systems, and off-site increases in traffic associated with the expanded Moscone Center. Since future activities in the proposed new spaces in the Moscone Center would occur inside, they would not be expected to increase exterior noise levels at the site except for the following sources:

**Equipment Noise.** The proposed project would likely add new mechanical equipment, such as heating and ventilation systems, which would produce operational noise. However, such equipment would be similar to that currently used at the existing Moscone Center and would not be expected to result in a substantial, if any, increase in ambient noise levels in the project vicinity. Operational noise associated with the project would be subject to Section 2909 of the Noise Ordinance, which establishes noise limits for mechanical equipment. Under Section 2909, stationary sources are not permitted to result in noise levels that exceed (by more than 10 dBA on public property and 5 dBA on residential property) the existing ambient noise level on public property (i.e., in the public right-of-way), at a distance of 25 feet or more. Since noise levels on the site perimeter range between 65 and 70 dBA ($L_{dn}$), any mechanical equipment located along the site perimeter would be allowed to generate noise levels of up to 80 dBA ($L_{dn}$). There are noise-sensitive[41] residential uses located to the south, southeast, east, and west of Moscone South and northeast of Moscone North. The closest off-site noise-sensitive receptor to project-related surface construction activities is a senior residential development located at Fourth and Howard Streets, and these units are located a minimum of 250 feet from the Moscone South site. At this distance, equipment noise levels would attenuate to approximately 66 dBA ($L_{dn}$), which would not exceed ambient noise levels of over 70 dBA ($L_{dn}$) along Fourth and Howard Streets in the vicinity (see Figure 18).[42]Compliance with the Noise Ordinance would ensure that project-related noise increases associated with stationary equipment are maintained at acceptable levels and operational noise increases associated with the Moscone Center Expansion project would be ***less than significant*** at nearby residential receptors.

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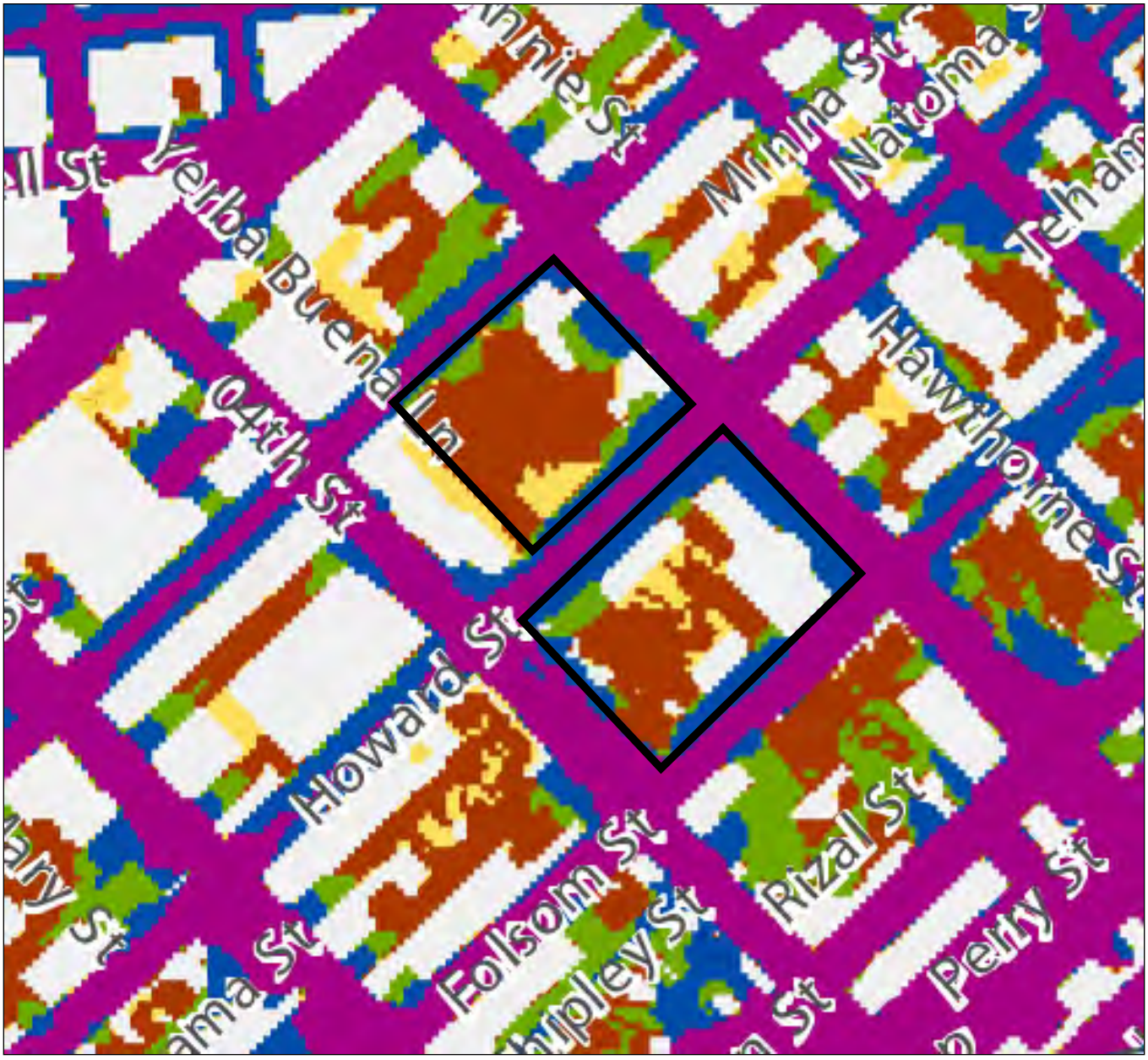
40 *San Francisco General Plan, Environmental Protection Element, Map 1: Background Noise Levels – 2009,* San Francisco Planning Department, 2009. This map is available online at http://www.sf-planning.org/ftp/general_plan/images/I6.environmental/NV_Map1_Background_Noise%20Levels.pdf.

41 Sensitive noise receptors are generally considered to include hospitals, nursing homes, senior citizen centers, schools, churches, libraries, and residences.

42 *San Francisco General Plan, Environmental Protection Element, Map 1: Background Noise Levels – 2009,* San Francisco Planning Department, 2009. This map is available online at http://www.sf-planning.org/ftp/general_plan/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf.




SOURCE: Map 1 of the SF General Plan Environmental Protection Element

Moscone Center Expansion Project 2013.0154E

**Figure 18**

Background Noise Levels – 2009

**Traffic Noise.** Increases in traffic as a result of the project would result in noise increases along local streets. In general, traffic noise increases of less than 3 dBA are barely perceptible to people, while a 5-dBA increase is readily noticeable.[43] Therefore, permanent increases in ambient noise levels of less than 3 dBA are typically considered to be less than significant because they are barely perceptible. Project-related traffic noise level changes were estimated for the major streets in the project vicinity, based on traffic volumes developed as part of the project's traffic impact analysis (see **Table 4**). Noise levels generated by project-related traffic would increase by less than 1 dBA, compared to existing conditions, and thus would not be perceptible. The greatest project-related traffic noise increase would be 0.4 dBA and this would occur along the section of Third Street south of Howard. Such traffic noise increases would be ***less than significant*** because potential increases in traffic noise would be less the 1 dBA and likely not perceptible to persons in the vicinity.

**Groundborne Vibration and Noise.** Ground-borne vibration is not a common environmental problem and even large vehicles (e.g., trucks and buses) do not generally result in perceptible vibration. Therefore, long-term vibration impacts associated with project implementation would be ***less than significant***.

**Compatibility of Proposed Use with Existing Noise Environment.** The Environmental Protection Element of the San Francisco General Plan contains Land Use Compatibility Guidelines for Community Noise under Policy 11.1.[44] These guidelines, which are similar to State guidelines promulgated by the Governor's Office of Planning and Research, indicate maximum acceptable noise levels for various newly developed land uses. The proposed project would be a continuation of an existing use and would not constitute a new use. As under existing conditions, the proposed project would be generally compatible with the surrounding noise environment.

The proposed project is located in an urban area where the sound of vehicular traffic (autos, trucks, buses) on local streets dominates the existing ambient noise environment. According to the San Francisco Planning Department's Background Noise Levels Map[45] (see Figure 18), noise levels immediately adjacent to all streets along the site frontages (Third, Fourth, Mission, Howard, and Folsom Streets) exceed 70 dBA ($L_{dn}$).[46] However, noise levels decrease to 65 to 70 dBA ($L_{dn}$) along the site frontages adjacent to these streets. Noise levels on the remainder of the site (away from street frontages) are generally 60 dBA ($L_{dn}$) or less. Project-related traffic noise levels along roadways adjacent to the site would not substantially increase noise levels along site frontages. In areas with noise levels up to 70 dBA

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43 California Department of Transportation, Division of Environmental Analysis, "Technical Noise Supplement," November 2009; pp. 2-48 – 2-49. Available on the internet at: http://www.dot.ca.gov/hq/env/noise/pub/tens_complete.pdf.

44 *San Francisco General Plan,* Environmental Protection Element, Policy 11.1

45 *San Francisco General Plan, Environmental Protection Element, Map 1: Background Noise Levels – 2009,* San Francisco Planning Department, 2009. This map is available online at http://www.sf-planning.org/ftp/general_plan/images/I6.environmental/ENV_Map1_Background_Noise%20Levels.pdf.

46 Because the human ear is not equally sensitive to all sound frequencies within the entire spectrum, human response is factored into sound descriptions in a process called "A-weighting," expressed as "dBA." The A-weighted decibel, dBA, refers to a scale of noise measurement that approximates the range of sensitivity of the human ear to sounds of different frequencies. On this scale, the normal range of human hearing extends from about 0 dBA to about 140 dBA. Because community receptors are more sensitive to unwanted noise intrusion at night, state law requires that, for planning purposes, an artificial dBA increment be added to "quiet time" noise levels to form a 24-hour noise descriptor called the day-night noise level (Ldn). Ldn adds a 10-dBA penalty to all nighttime noise events between 10 p.m. and 7 a.m.

**TABLE 4**
**PROJECT-RELATED AND CUMULATIVE TRAFFIC NOISE INCREASES**

| Segment | Noise Level (CNEL) at 50 feet from centerline, in dBA | | | | | | |
|---|---|---|---|---|---|---|---|
| | Existing | Existing during an Event | Change from Existing | Existing + Expansion during an Event | Change from Existing | Cumulative (With Expansion during an Event) | Change from Existing |
| Montgomery/Post Sts. (North of Market) | 67.1 | 67.1 | 0.0 | 67.1 | 0.0 | 67.1 | 0.0 |
| Market St. (East of Montgomery/Post) | 65.2 | 65.2 | 0.0 | 65.2 | 0.0 | 63.7 | -1.5 |
| Market St. (West of Montgomery/Post) | 65.3 | 65.3 | 0.0 | 65.3 | 0.0 | 64.4 | -0.8 |
| Market St. (East of Third) | 65.6 | 65.6 | 0.0 | 65.6 | 0.0 | 64.3 | -1.3 |
| Market St. (West of Third) | 64.4 | 64.4 | 0.0 | 64.5 | 0.0 | 63.6 | -0.8 |
| Third St. (South of Market) | 68.4 | 68.5 | 0.1 | 68.6 | 0.1 | 68.9 | 0.5 |
| Market St. (East of Stockton/Ellis) | 62.8 | 62.8 | 0.0 | 62.8 | 0.0 | 61.1 | -1.7 |
| Market St. (West of Stockton/Ellis) | 64.6 | 64.6 | 0.0 | 64.6 | 0.0 | 63.2 | -1.4 |
| Stockton/Ellis Sts. (North of Market) | 67.5 | 67.5 | 0.0 | 67.5 | 0.0 | 67.6 | 0.2 |
| Market St. (East of Fifth) | 63.8 | 63.8 | 0.0 | 63.8 | 0.0 | 62.0 | -1.8 |
| Market St. (West of Fifth) | 62.9 | 62.9 | 0.0 | 62.9 | 0.0 | 61.3 | -1.6 |
| Fifth St. (North of Market) | 66.7 | 66.8 | 0.1 | 66.8 | 0.1 | 68.5 | 1.8 |
| Fifth St. (South of Market) | 67.1 | 67.2 | 0.1 | 67.2 | 0.1 | 68.8 | 1.7 |
| Mission St. (East of New Montgomery) | 67.6 | 67.7 | 0.1 | 67.7 | 0.1 | 68.4 | 0.8 |
| Mission St. (West of New Montgomery) | 67.9 | 68.0 | 0.1 | 68.0 | 0.1 | 68.8 | 0.9 |
| New Montgomery St. (North of Mission) | 67.2 | 67.2 | 0.0 | 67.2 | 0.0 | 67.9 | 0.7 |
| Mission St. (East of Third) | 67.5 | 67.6 | 0.1 | 67.6 | 0.1 | 68.4 | 0.9 |
| Mission St. (West of Third) | 66.4 | 66.6 | 0.1 | 66.6 | 0.2 | 67.2 | 0.8 |
| Third St. (South of Mission) | 68.1 | 68.3 | 0.1 | 68.3 | 0.2 | 68.7 | 0.6 |
| Mission St. (East of Fourth) | 67.1 | 67.2 | 0.1 | 67.3 | 0.1 | 67.9 | 0.7 |
| Mission St. West of Fourth) | 67.8 | 68.1 | 0.2 | 68.1 | 0.3 | 68.3 | 0.5 |
| Fourth St. (North of Mission) | 68.0 | 68.1 | 0.0 | 68.1 | 0.0 | 68.5 | 0.5 |
| Mission St. (East of Fifth) | 68.0 | 68.1 | 0.1 | 68.1 | 0.1 | 68.3 | 0.3 |
| Mission St. (West of Fifth) | 67.8 | 67.8 | 0.0 | 67.8 | 0.1 | 68.3 | 0.5 |
| Fifth St. (North of Mission) | 67.1 | 67.2 | 0.1 | 67.2 | 0.1 | 68.8 | 1.7 |
| Fifth St. (South of Mission) | 67.6 | 67.7 | 0.1 | 67.7 | 0.1 | 69.5 | 1.9 |
| Howard St. (East of New Montgomery) | 66.1 | 66.1 | 0.0 | 66.1 | 0.0 | 66.4 | 0.3 |
| New Montgomery St. (North of Howard) | 66.8 | 66.8 | 0.0 | 66.8 | 0.0 | 67.6 | 0.8 |
| Howard St. (East of Hawthorne) | 69.5 | 69.5 | 0.0 | 69.7 | 0.2 | 69.7 | 0.2 |
| Howard St. (East of Third) | 69.2 | 69.2 | 0.0 | 69.2 | 0.0 | 69.2 | -0.1 |
| Third St. (South of Howard) | 69.0 | 69.3 | 0.3 | 69.4 | 0.4 | 69.2 | 0.2 |
| Howard St. (East of Fourth) | 69.4 | 69.6 | 0.2 | 69.6 | 0.2 | 69.1 | -0.2 |
| Fourth St. (North of Howard) | 68.1 | 68.4 | 0.3 | 68.4 | 0.3 | 68.4 | 0.3 |
| Howard St. (East of Fifth) | 68.1 | 68.4 | 0.3 | 68.4 | 0.3 | 69.5 | 1.3 |
| Fifth St. (North of Howard) | 68.3 | 68.3 | 0.0 | 68.3 | 0.1 | 70.1 | 1.8 |
| Fifth St. (South of Howard) | 67.8 | 67.8 | 0.1 | 67.8 | 0.1 | 69.5 | 1.7 |

**TABLE 4 (Continued)**
**PROJECT-RELATED AND CUMULATIVE TRAFFIC NOISE INCREASES**

| Segment | Noise Level (CNEL) at 50 feet from centerline, in dBA | | | | | | |
|---|---|---|---|---|---|---|---|
| | Existing | Existing during an Event | Change from Existing | Existing + Expansion during an Event | Change from Existing | Cumulative (With Expansion during an Event) | Change from Existing |
| Folsom St. (West of Hawthorne) | 67.0 | 67.1 | 0.1 | 67.1 | 0.1 | 68.1 | 1.1 |
| Hawthorne St. (North of Folsom) | 64.3 | 64.3 | 0.0 | 64.3 | 0.0 | 66.5 | 2.2 |
| Folsom St. (West of Third) | 68.5 | 68.6 | 0.1 | 68.6 | 0.1 | 69.1 | 0.7 |
| Third St. (South of Fourth) | 68.4 | 68.4 | 0.0 | 68.4 | 0.0 | 68.8 | 0.4 |
| Folsom St. (West of Fourth) | 68.4 | 68.4 | 0.0 | 68.4 | 0.0 | 69.1 | 0.8 |
| Fourth St. (North of Folsom) | 68.8 | 69.0 | 0.2 | 69.1 | 0.2 | 67.7 | -1.1 |
| Folsom St. (West of Fourth) | 68.1 | 68.2 | 0.0 | 68.2 | 0.0 | 68.8 | 0.7 |
| Fourth St. (North of Folsom) | 68.1 | 68.2 | 0.1 | 68.2 | 0.1 | 69.6 | 1.5 |
| Fourth St. (South of Folsom) | 67.8 | 67.9 | 0.1 | 67.9 | 0.1 | 69.6 | 1.8 |
| Harrison St. (East of Hawthorne) | 67.0 | 67.0 | 0.0 | 67.0 | 0.0 | 68.5 | 1.5 |
| Harrison St. (West of Hawthorne) | 68.4 | 68.4 | 0.0 | 68.4 | 0.0 | 69.8 | 1.4 |
| Hawthorne St. (North of Harrison) | 63.6 | 63.6 | 0.0 | 63.6 | 0.0 | 65.3 | 1.7 |
| Harrison St. (East of Third) | 69.0 | 69.0 | 0.0 | 69.0 | 0.0 | 70.1 | 1.1 |
| Third St. (South of Harrison) | 69.5 | 69.5 | 0.0 | 69.5 | 0.0 | 70.1 | 0.6 |
| Harrison St. (East of Fourth) | 69.2 | 69.2 | 0.0 | 69.2 | 0.0 | 70.1 | 0.9 |
| Fourth St. (North of Harrison) | 68.6 | 68.8 | 0.2 | 68.8 | 0.2 | 67.8 | -0.8 |
| Harrison St. (East of Fifth) | 68.8 | 68.8 | 0.0 | 68.8 | 0.0 | 71.6 | 2.8 |
| Fifth St. (North of Harrison) | 68.9 | 69.0 | 0.1 | 69.0 | 0.1 | 69.7 | 0.8 |

NOTES: Traffic noise modeling was completed using the Federal Highway Administration RD-77-108 model. Assumptions include: 35 mph travel speed on all streets; vehicle mix of 97.42% autos/ 1.84% medium trucks/0.74% heavy trucks; day-night split: 77.71% day (7 a.m. to 7 p.m.), 12.68% evening (7 p.m. to 10 p.m.), & 9.61% night (10 p.m. to 7 a.m.). Background noise levels due to traffic on other roadways and non-traffic related activities are not reflected in these noise levels. Noise levels in this table are intended to indicate incremental noise changes due to future growth and project development. Since they do not include background noise levels, they do not necessarily reflect actual noise levels along these roadway segments. Changes between scenarios analyzed may not show change due to rounding in the noise modeling.

Cumulative noise levels include the anticipated operating conditions of the transportation network under future year cumulative conditions with traffic associated with the proposed project and other reasonably foreseeable development projects.

CNEL = Community Noise Equivalent Level, is a 24-hour noise descriptor which adds a 5-dBA "penalty" during the evening hours (7:00 p.m. to 10:00 p.m.) and a 10-dBA penalty during the night hours (10:00 p.m. to 7:00 a.m.) because community receptors are more sensitive to unwanted noise intrusion during the evening and at night.

SOURCE: Orion Environmental Associates, 2013; Fehr and Peers, 2013

CNEL, normal conventional construction is usually sufficient to achieve acceptable interior noise levels. Since noise levels do not exceed 70 dBA ($L_{dn}$) along site frontages, additional noise insulation features, beyond conventional construction features, would not be required. It is also expected that interior noise levels for below-grade program space would be substantially lower than interior noise levels for street-level spaces. Therefore, the proposed project would be compatible with the noise environment, and this impact would be ***less than significant***.

**Mitigation:** None required.

**Impact NO-2: During construction, the proposed Moscone Center Expansion project would not result in a substantial temporary increase in ambient noise levels and vibration in the project vicinity above levels existing without the project, and would not expose persons to substantial noise levels in excess of standards established in the Noise Ordinance (Article 29 of the Police Code). (Less than Significant)**

The San Francisco Noise Ordinance (Article 29 of the *San Francisco Police Code*, revised November 25, 2008) regulates construction-related noise. Section 2907 limits noise levels from individual pieces of equipment to 80 dBA at 100 feet, which is equivalent to 86 dBA at 50 feet. Impact tools such as jackhammers and pile drivers are exempt from this noise limit if they are equipped with intake and exhaust mufflers approved by the Director of Public Works. Pile driving is not anticipated to be needed for project construction. Section 2908 allows for construction work during nighttime hours (defined by the code as 8:00 p.m. to 7:00 a.m.) as long as construction-related noise does not exceed the ambient noise level by 5 dBA at the nearest property line or unless a special permit is granted by the Director of Public Works.

**On-site Construction Activities.** Construction hours at all project sites are proposed to occur during regular working hours, as defined by Article 29 of the Police Code (7:00 a.m. to 8:00 p.m.). While the proposed construction hours would be consistent with the San Francisco Noise Ordinance, it is possible that construction may have to occur during the nighttime hours within the facility or on weekends if unforeseen delays occur. Any required extended construction hours into the nighttime hours (8:00 p.m. to 7:00 a.m.) that creates noise outside of the facility would be required to comply with Section 2908 of the Police Code and would not be allowed to exceed the 5 dBA limit above the ambient noise level at the nearest property line. With required conformance with ordinance noise level and time limits, no conflicts with local ordinances are expected to occur during project construction. Therefore, this impact would be ***less than significant***.

The types of construction equipment that would be used during construction of the proposed project are listed in Table 3 in the Project Description. The proposed equipment types (drill rigs, mobile and stationary cranes, excavators, and trucks) typically generate maximum noise levels ranging from about 74 to 84 dBA ($L_{max}$) at a distance of 50 feet from the source,[47] and each piece of equipment would thus normally be anticipated to comply with the equivalent daytime ordinance noise limit of 86 dBA at 50 feet.

The closest sensitive receptor is a senior residential development at Fourth and Howard Streets and it is located a minimum of 250 feet from areas where construction activities are proposed to occur. At this distance, the maximum noise level of 84 dBA would attenuate to 70 dBA. Most structures of typical construction with windows closed can attenuate noise levels by 25 dBA, resulting in interior noise levels of 45 dBA, which is an acceptable daytime interior noise level. Therefore, maximum project-related construction noise levels at these residences and more distant residential uses would be ***less than significant***.

[47] U.S. Department of Transportation, Federal Highway Administration, *Construction Noise Handbook, 9.0 Construction Equipment Noise Levels and Ranges, Table 9.1, RCNM Default Noise Emission Reference Levels and Usage Factors.* Available online at http://www.fhwa.dot.gov/environment/noise/construction_noise/handbook/handbook09.cfm. Accessed on August 28, 2013.

Yerba Buena Gardens (YBG) park is located immediately north of proposed construction area at the Moscone North site, while the YBG Children's Garden is located immediately south of proposed construction at the Moscone South site. The YBG concert area to the north and YBG Children's Garden active play area to the south are located as close as 50 feet from proposed construction, and maximum noise levels could reach 84 dBA at this distance. Such noise levels would interfere with outdoor concerts that are held on weekdays and could, at time, discourage use of the YBG Children's Garden. Since construction would not occur on weekends, weekend concerts and weekend use of the YBG Children's Garden would not be affected. Such effects on weekdays would be temporary, affecting each park for approximately one year. Therefore, temporary noise impacts on park users is considered to be ***less than significant***.

**Groundborne Vibration and Noise.** Some groundborne noise and vibration would be generated by project-related excavation activities under Howard Street that would be associated with foundation work, but the closest receptor would be the adjacent underground facilities at the Moscone Center. Since activities at the Moscone Center would be scheduled so as not to cause noise conflicts or vibration, the potential for such conflicts would be avoided (***no impact***).

This analysis applies significance thresholds related to cosmetic damage to buildings of 0.5 in/sec PPV for transient or intermittent vibration[48] and 0.4 in/sec PPV for continuous vibration.[49] For buried utilities, the analysis uses a higher threshold of 4.0 in/sec PPV.[50] Typical vibration levels associated with the operation of various types of construction equipment at 25 feet, some of which are similar to those proposed to be used for this project, are listed in **Table 5**.

**TABLE 5**
**VIBRATION LEVELS FOR CONSTRUCTION EQUIPMENT**

| | Peak Particle Velocity (PPV) (in/sec) |
|---|---|
| **Equipment** | **At 25 Feet[1]** |
| Caisson Drilling, Large Bulldozer | 0.089 |
| Loaded Trucks | 0.076 |
| Jackhammer | 0.035 |

[1] Vibration amplitudes for construction equipment assume normal propagation conditions.

SOURCE: FTA, 2006. Transit Noise and Vibration Impact Assessment, DTA-VA-90-1003-06. May 2006. U.S. Department of Transportation. Available on *http://www.fta.dot.gov/documents/FTA_Noise_and_Vibration_Manual.pdf* (accessed February 1, 2012).

48 American Association of State Highway and Transportation Officials (AASHTO), *Evaluation of Transportation- Related Earthborne Vibrations, R 8- 96,* 2004. Transient vibration is typically less than 20 seconds in duration per occurrence (occurring infrequently), while intermittent vibration is typically 20 seconds or less per occurrence (occurring several times per hour on regular basis). The transient vibration standard applies to impact pile driving methods, while the continuous vibration standard applies to vibratory methods such as a vibratory compactor or vibratory pile driver.

49 Wilson Ihrig & Associates, Inc. (WIA), *Final Technical Memo, Crystal Springs Pipeline No. 2, Noise and Vibration Study, Impacts and Mitigation*, September 24, 2009. The AASHTO guidelines include a discussion regarding the potential fatigue and damage caused by sources of continuous vibration, such as vibratory compactors and vibratory pile drivers, and they indicate that that such vibration could be limited to a level of 0.4 in/sec PPV to avoid threshold damage.

50 Vibration under the ground surface is lower than that measured at the ground surface. A threshold of 4.0 in/sec PPV is commonly used for underground optical-fiber cables. Underground or restrained concrete structures can withstand vibration of 10.0 in/sec PPV before threshold cracks appear. Thus, underground utilities are less sensitive than surface structures (WIA, 2009). The 4.0 in/sec PPV threshold is consistent with thresholds recommended by the American Association of State Highway and Transportation Officials (AASHTO, 2004).

As indicated in Table 5, project-related construction activities would generate vibration levels well below the 0.5-in/sec PPV and 0.4-in/sec PPV vibration thresholds for buildings and 4.0-in/sec PPV vibration threshold for buried utilities, respectively, even if two pieces of equipment (e.g., drill rig and truck or two trucks) were both operating 25 feet from a structure. Since all structures adjacent to Moscone North and South are located more than 25 feet from project construction activities, construction-related vibration levels would be less than those listed in Table 5. Therefore, vibration effects on adjacent or nearby buildings or structures would be ***less than significant***.

However, proposed construction activities could occur closer than 25 feet from existing buried utilities, and therefore, these utilities could be subject to higher levels of construction- generated vibration. For buried pipelines located more than approximately 2 feet from construction activities, vibration levels are not expected to exceed the 4.0 in/sec PPV damage threshold for buried pipelines. However, the 4.0 in/sec PPV threshold could be exceeded for the utilities that cross the alignment or are located closer than 2 feet from construction equipment. Therefore, existing utilities located in such proximity to project-related construction work would be required to be supported, protected, and monitored by SFPUC (see Section A, Project Description, under the heading "Approvals Required"). Further, protection of existing utilities by the contractor is required by the standard DPW contractor specifications, which state, "104.02 GOVERNMENTAL FACILITIES. The Contractor shall satisfactorily support, work around, and protect, as approved by the Engineer, all facilities, whether shown on the plans or not, which exist within any excavation and which are owned or controlled, and maintained, by a City department or other authority in the exercise of a governmental function."[51] Therefore, impacts on buried utilities would be ***less than significant***.

**Mitigation:** None required.

**Impact C-NO: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not result in cumulative noise impacts. (Less than Significant)**

The geographic scope of potential cumulative noise impacts encompasses the Moscone North and South site, its immediate vicinity, and areas adjacent to routes providing access to the Moscone site. Identified cumulative projects in the site vicinity would be required to comply with Article 29 of the Police Code for new stationary noise sources (i.e. HVAC, etc.) and construction-related noise limits and hours. Thus, there would be less-than-significant cumulative construction-related and operational noise impacts in areas adjacent to or near the site.

However, cumulative traffic increases and associated traffic noise increases would occur as a result of the proposed project in combination with cumulative projects because traffic from these projects, along with the proposed project, would be distributed along the local roadway network. Cumulative traffic noise increases have been estimated and are presented in Table 4. As shown in this table, the greatest cumulative incremental peak-hour noise increases would occur along Fifth, Fourth, Hawthorne, and

[51] Order No. 167, 707, Regulations for Excavating and Restoring Streets in San Francisco, http://www.sfdpw.org/ftp/uploadedfiles/sfdpw/boe/manager/DPW_Order_176-707.pdf., accessed November 12, 2013.

Harrison, Streets, with the largest incremental increase occurring on the section of Harrison Street east of Fifth Street. These increases would range between 1.7 and 2.8 dBA, which would be imperceptible to the human ear. Therefore, there would be a ***less-than-significant*** cumulative noise impact.

**Mitigation:** None required.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **6. AIR QUALITY—Would the project:** | | | | | |
| a) Conflict with or obstruct implementation of the applicable air quality plan? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation? | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? | ☐ | ☒ | ☐ | ☐ | ☐ |
| d) Expose sensitive receptors to substantial pollutant concentrations? | ☐ | ☒ | ☐ | ☐ | ☐ |
| e) Create objectionable odors affecting a substantial number of people? | ☐ | ☐ | ☒ | ☐ | ☐ |

The BAAQMD is the regional agency with jurisdiction over the nine-county San Francisco Bay Area Air Basin (SFBAAB), which includes San Francisco, Alameda, Contra Costa, Marin, San Mateo, Santa Clara, and Napa Counties and portions of Sonoma and Solano Counties. The BAAQMD is responsible for attaining and maintaining air quality in the SFBAAB within federal and state air quality standards, as established by the federal Clean Air Act (CAA) and the California Clean Air Act (CCAA), respectively. Specifically, the BAAQMD has the responsibility to monitor ambient air pollutant levels throughout the SFBAAB and to develop and implement strategies to attain the applicable federal and state standards. The CAA and the CCAA require plans to be developed for areas that do not meet air quality standards, generally. The most recent air quality plan, the *2010 Clean Air Plan*, was adopted by the BAAQMD on September 15, 2010. The *2010 Clean Air Plan* updates the *Bay Area 2005 Ozone Strategy* in accordance with the requirements of the CCAA to implement all feasible measures to reduce ozone; provide a control strategy to reduce ozone, particulate matter, air toxics, and greenhouse gases in a single, integrated plan; and establish emission control measures to be adopted or implemented. The *2010 Clean Air Plan* contains the following primary goals:

- Attain air quality standards;
- Reduce population exposure and protect public health in the San Francisco Bay Area; and
- Reduce greenhouse gas emissions and protect the climate.

The *2010 Clean Air Plan* represents the most current applicable air quality plan for the SFBAAB. Consistency with this plan is the basis for determining whether the proposed project would conflict with or obstruct implementation of air quality plans.

### *Criteria Air Pollutants*

In accordance with the state and federal CAAs, air pollutant standards are identified for the following six criteria air pollutants: ozone, carbon monoxide (CO), particulate matter (PM), nitrogen dioxide ($NO_2$), sulfur dioxide ($SO_2$), and lead. These air pollutants are termed criteria air pollutants because they are regulated by developing specific public health- and welfare-based criteria as the basis for setting permissible levels. In general, the SFBAAB experiences low concentrations of most pollutants when compared to federal or state standards. The SFBAAB is designated as either in attainment[52] or unclassified for most criteria pollutants with the exception of ozone, $PM_{2.5}$, and $PM_{10}$, for which these pollutants are designated as non-attainment for either the state or federal standards. By its very nature, regional air pollution is largely a cumulative impact in that no single project is sufficient in size to, by itself, result in non-attainment of air quality standards. Instead, a project's individual emissions contribute to existing cumulative air quality impacts. If a project's contribution to cumulative air quality impacts is considerable, then the project's impact on air quality would be considered significant.[53]

Land use projects may contribute to regional criteria air pollutants during the construction and operational phases of a project. **Table 6** identifies air quality significance thresholds followed by a discussion of each threshold. Projects that would result in criteria air pollutant emissions below these significance thresholds would not violate an air quality standard, contribute substantially to an air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants within the SFBAAB.

**TABLE 6**
**CRITERIA AIR POLLUTANT SIGNIFICANCE THRESHOLDS**

| | Construction Thresholds | Operational Thresholds | |
|---|---|---|---|
| **Pollutant** | **Average Daily Emissions (lbs./day)** | **Average Daily Emissions (lbs./day)** | **Maximum Annual Emissions (tons/year)** |
| ROG | 54 | 54 | 10 |
| $NO_x$ | 54 | 54 | 10 |
| $PM_{10}$ | 82 (exhaust) | 82 | 15 |
| $PM_{2.5}$ | 54 (exhaust) | 54 | 10 |
| Fugitive Dust | Construction Dust Ordinance or other Best Management Practices | Not Applicable | |

[52] "Attainment" status refers to those regions that are meeting federal and/or state standards for a specified criteria pollutant. "Non-attainment" refers to regions that do not meet federal and/or state standards for a specified criteria pollutant. "Unclassified" refers to regions where there is not enough data to determine the region's attainment status.

[53] Bay Area Air Quality Management District (BAAQMD), *California Environmental Quality Act Air Quality Guidelines,* May 2011, page 2-1.

**Ozone Precursors.** As discussed previously, the SFBAAB is currently designated as non-attainment for ozone and particulate matter. Ozone is a secondary air pollutant produced in the atmosphere through a complex series of photochemical reactions involving reactive organic gases (ROG) and oxides of nitrogen ($NO_x$). The potential for a project to result in a cumulatively considerable net increase in criteria air pollutants, which may contribute to an existing or projected air quality violation, are based on the state and federal Clean Air Acts emissions limits for stationary sources. To ensure that new stationary sources do not cause or contribute to a violation of an air quality standard, BAAQMD Regulation 2, Rule 2 requires that any new source that emits criteria air pollutants above a specified emissions limit must offset those emissions. For ozone precursors ROG and $NO_x$, the offset emissions level is an annual average of 10 tons per year (or 54 pounds (lbs.) per day).[54] These levels represent emissions by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants.

**Particulate Matter ($PM_{10}$ and $PM_{2.5}$).**[55] The federal New Source Review (NSR) program was created by the federal CAA to ensure that stationary sources of air pollution are constructed in a manner that is consistent with attainment of federal health based ambient air quality standards. For $PM_{10}$ and $PM_{2.5}$, the emissions limit under NSR is 15 tons per year (82 lbs. per day) and 10 tons per year (54 lbs. per day), respectively. These emissions limits represent levels at which a source is not expected to have an impact on air quality.[56]

Although the regulations specified above apply to new or modified stationary sources, land use development projects result in ROG, $NO_x$, $PM_{10}$ and $PM_{2.5}$ emissions as a result of increases in vehicle trips, architectural coating and construction activities. Therefore, the above thresholds can be applied to the construction and operational phases of land use projects and those projects that result in emissions below these thresholds would not be considered to contribute to an existing or projected air quality violation or result in a considerable net increase in ozone precursors or particulate matter. Due to the temporary nature of construction activities, only the average daily thresholds are applicable to construction phase emissions.

**Fugitive Dust.** Fugitive dust emissions are typically generated during construction phases. Studies have shown that the application of best management practices (BMPs) at construction sites significantly control fugitive dust.[57] Individual measures have been shown to reduce fugitive dust by anywhere from 30 to 90 percent.[58] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities,[59] and the City's Construction Dust Control Ordinance (Ordinance 176-08, effective

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54 BAAQMD, Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, October 2009, page 17.

55 $PM_{10}$ is often termed "coarse" particulate matter and is made of particulates that are 10 microns in diameter or smaller. $PM_{2.5}$, termed "fine" particulate matter, is composed of particles that are 2.5 microns or less in diameter.

56 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* October 2009, page 16.

57 Western Regional Air Partnership. *2006. WRAP Fugitive Dust Handbook.* September 7, 2006. This document is available online at http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf, accessed February 16, 2012.

58 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* October 2009, page 27.

59 BAAQMD, *CEQA Air Quality Guidelines,* May 2011.

July 30, 2008) requires fugitive dust control measures to ensure that construction projects do not result in visible dust. The BMPs employed in compliance with the City's Construction Dust Control Ordinance is an effective strategy for controlling construction-related fugitive dust.

*Local Health Risks and Hazards*

In addition to criteria air pollutants, individual projects may emit toxic air contaminants (TACs). TACs collectively refer to a diverse group of air pollutants that are capable of causing chronic (i.e., of long-duration) and acute (i.e., severe but of short-term) adverse effects to human health, including carcinogenic effects. Human health effects of TACs include birth defects, neurological damage, cancer, and death. There are hundreds of different types of TACs with varying degrees of toxicity. Individual TACs vary greatly in the health risk they present; at a given level of exposure, one TAC may pose a hazard that is many times greater than another.

Unlike criteria air pollutants, TACs do not have ambient air quality standards but are regulated by the BAAQMD using a risk-based approach. This approach uses a health risk assessment to determine which sources and pollutants to control as well as the degree of control. A health risk assessment is an analysis in which human health exposure to toxic substances is estimated, and considered together with information regarding the toxic potency of the substances, to provide quantitative estimates of health risks.[60]

Air pollution does not affect every individual in the population in the same way, and some groups are more sensitive to adverse health effects than others. Land uses such as residences, schools, children's day care centers, hospitals, and nursing and convalescent homes are considered to be the most sensitive to poor air quality because the population groups associated with these uses have increased susceptibility to respiratory distress or, as in the case of residential receptors, their exposure time is greater than for other land uses. Therefore, these groups are referred to as sensitive receptors. Exposure assessment guidance typically assumes that residences would be exposed to air pollution 24 hours per day, 350 days per year, for 70 years. Therefore, assessments of air pollutant exposure to residents typically result in the greatest adverse health outcomes of all population groups.

Exposures to fine particulate matter ($PM_{2.5}$) are strongly associated with mortality, respiratory diseases, and lung development in children, and other endpoints such as hospitalization for cardiopulmonary disease.[61] In addition to $PM_{2.5}$, diesel particulate matter (DPM) is also of concern. The California Air Resources Board (ARB) identified DPM as a TAC in 1998, primarily based on evidence demonstrating

[60] In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggest a potential public health risk. The applicant is then subject to a health risk assessment for the source in question. Such an assessment generally evaluates chronic, long-term effects, estimating the increased risk of cancer as a result of exposure to one or more TACs.

[61] SFDPH, *Assessment and Mitigation of Air Pollutant Health Effects from Intra-Urban Roadways: Guidance for Land Use Planning and Environmental Review,* May 2008.

cancer effects in humans.[62] The estimated cancer risk from exposure to diesel exhaust is much higher than the risk associated with any other TAC routinely measured in the region.

In an effort to identify areas of San Francisco most adversely affected by sources of TACs, San Francisco partnered with the BAAQMD to inventory and assess air pollution and exposures from mobile, stationary, and area sources within San Francisco. Areas with poor air quality, termed "Air Pollutant Exposure Zones," were identified based on two health-protective criteria: (1) excess cancer risk from the contribution of emissions from all modeled sources greater than 100 per one million population, and/or (2) cumulative $PM_{2.5}$ concentrations greater than 10 micrograms per cubic meter ($\mu g/m^3$).

**Excess Cancer Risk.** The above 100 per one million persons (100 excess cancer risk) criteria is based on United State Environmental Protection Agency (USEPA) guidance for conducting air toxic analyses and making risk management decisions at the facility and community-scale level.[63] As described by the BAAQMD, the USEPA considers a cancer risk of 100 per million to be within the "acceptable" range of cancer risk. Furthermore, in the 1989 preamble to the benzene National Emissions Standards for Hazardous Air Pollutants (NESHAP) rulemaking,[64] the USEPA states that it "…strives to provide maximum feasible protection against risks to health from hazardous air pollutants by (1) protecting the greatest number of persons possible to an individual lifetime risk level no higher than approximately one in one million and (2) limiting to no higher than approximately one in ten thousand [100 in one million] the estimated risk that a person living near a plant would have if he or she were exposed to the maximum pollutant concentrations for 70 years." The 100 per one million excess cancer cases is also consistent with the ambient cancer risk in the most pristine portions of the Bay Area based on BAAQMD regional modeling.[65]

**Fine Particulate Matter.** In April 2011, the USEPA published *Policy Assessment for the Particulate Matter Review of the National Ambient Air Quality Standards*, "Particulate Matter Policy Assessment." In this document, USEPA staff concludes that the then-current federal annual $PM_{2.5}$ standard of 15 $\mu g/m^3$ should be revised to a level within the range of 13 to 11 $\mu g/m^3$, with evidence strongly supporting a standard within the range of 12 to 11 $\mu g/m^3$. Air Pollutant Exposure Zones for San Francisco are based on the health protective $PM_{2.5}$ standard of 11 $\mu g/m^3$, as supported by the USEPA's Particulate Matter Policy Assessment, although lowered to 10 $\mu g/m^3$ to account for uncertainty in accurately predicting air pollutant concentrations using emissions modeling programs.

Land use projects within these Air Pollutant Exposure Zones require special consideration to determine whether the project's activities would expose sensitive receptors to substantial air pollutant concentrations or add emissions to areas already adversely affected by poor air quality.

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62 California Air Resources Board (ARB), Fact Sheet, "The Toxic Air Contaminant Identification Process: Toxic Air Contaminant Emissions from Diesel-fueled Engines," October 1998.

63 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* October 2009, page 67.

64 54 Federal Register 38044, September 14, 1989.

65 BAAQMD, *Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance,* October 2009, page 67.

### *Construction Air Quality Impacts*

Project-related air quality impacts fall into two categories: short-term impacts from construction and long-term impacts from project operation. The following addresses construction-related air quality impacts resulting from the proposed project.

**Impact AQ-1: The proposed project's construction activities would generate fugitive dust and criteria air pollutants that would contribute substantially to an existing or projected air quality violation and would result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant with Mitigation)**

Construction activities (short-term) typically result in emissions of ozone precursors and particulate matter in the form of dust (fugitive dust) and exhaust (e.g., vehicle tailpipe emissions). Emissions of ozone precursors and particulate matter are primarily a result of the combustion of fuel from on-road and off-road vehicles. However, ROGs are also emitted from activities that involve painting, other types of architectural coatings, or asphalt paving. The proposed project includes demolition of the Esplanade Support Building, excavation beneath Howard Street, and approximately 306,000 gross square feet of new construction. During the project's approximately 44-month construction period, construction activities would have the potential to result in emissions of fugitive dust, ozone precursors, and particulate matter, as discussed below.

### *Fugitive Dust*

Project-related demolition, excavation, grading, and other construction activities may cause wind-blown dust that could contribute particulate matter into the local atmosphere. Although there are federal standards for air pollutants and implementation of state and regional air quality control plans, air pollutants continue to have impacts on human health throughout the country. California has found that particulate matter exposure can cause health effects at lower levels than national standards. The current health burden of particulate matter demands that, where possible, public agencies take feasible available actions to reduce sources of particulate matter exposure. According to the ARB, reducing $PM_{2.5}$ to state and federal standards of 12 $\mu g/m^3$ in the SFBAAB would prevent between 210 and 1,300 premature deaths.[66]

Dust can be an irritant causing watering eyes or irritation to the lungs, nose, and throat. Demolition, excavation, grading, and other construction activities can cause wind-blown dust that adds particulate matter to the local atmosphere. Depending on exposure, adverse health effects can occur due to this particulate matter in general and also due to specific contaminants such as lead or asbestos that may be constituents of soil.

The San Francisco Health Code Article 22B and San Francisco Building Code § 106A.3.2.6 collectively constitute the City's Construction Dust Control Ordinance (adopted in July 2008). The Construction Dust

66 ARB, *Methodology for Estimating Premature Deaths Associated with Long-term Exposure to Fine Airborne Particulate Matter in California Draft Staff Report*, Table 4d, December 7, 2009, page 36.

Control Ordinance requires that all site preparation work, demolition, or other construction activities within the City that have the potential to create dust or to expose or disturb more than 10 cubic yards or 500 square feet of soil comply with specific dust control measures whether or not the activity requires a permit from the Department of Building Inspection (DBI).

The Construction Dust Control Ordinance requires project sponsors and contractors responsible for construction activities to control construction dust on the site or implement other practices that result in equivalent dust control that are acceptable to the Director of Public Health. Dust suppression activities, referred to as best management practices (BMPs), may include watering all active construction areas sufficiently to prevent dust from becoming airborne; increased watering frequency may be necessary whenever wind speeds exceed 15 miles per hour. Reclaimed water must be used if required by Article 21, § 1100 et seq. of the San Francisco Public Works Code. The Construction Dust Control Ordinance has a mandate for "no visible dust." Section 1247 of Article 22B of the Public Health Code requires that all City Agencies that authorize construction or other improvements on City property adopt rules and regulations to ensure that the dust control requirements identified in Article 22B are followed.

As discussed above, studies have shown that the application of BMPs at construction sites substantially control fugitive dust,[67] and individual measures have been shown to reduce fugitive dust by anywhere from 30 percent to 90 percent.[68] The BAAQMD has identified a number of BMPs to control fugitive dust emissions from construction activities and the City's Construction Dust Control Ordinance requires many of these measures, as well as others, to be implemented during construction. The BMPs employed in compliance with the City's Construction Dust Control Ordinance provide an effective strategy for controlling fugitive dust.

For projects over one half-acre, such as the proposed project, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. DBI will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the Director waives the requirement. Interior-only tenant improvement projects that are over one-half acre in size that will not produce exterior visible dust are exempt from the site-specific Dust Control Plan requirement.

The site-specific Dust Control Plan would require the project sponsor to: submit of a map to the Director of Public Health showing all sensitive receptors within 1,000 feet of the site; wet down areas of soil at least three times per day; provide an analysis of wind direction and install upwind and downwind particulate dust monitors; record particulate monitoring results; hire an independent, third-party to conduct inspections and keep a record of those inspections; establish shut-down conditions based on wind, soil migration, etc.; establish a hotline for surrounding community members who may be potentially affected by project-related dust; limit the area subject to construction activities at any one

[67] Western Regional Air Partnership, Fugitive Dust Handbook, September 7, 2006, p. 3-16. Available online at: http://www.wrapair.org/forums/dejf/fdh/content/FDHandbook_Rev_06.pdf. Accessed December 5, 2013.

[68] BAAQMD, Revised Draft Options and Justification Report, California Environmental Quality Act Thresholds of Significance, October 2009, p. 27. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Revised%20Draft%20CEQA%20Thresholds%20%20Justification%20Report%20Oct%202009.ashx?la=en. Accessed December 4, 2013.

time; install dust curtains and windbreaks on the property lines, as necessary; limit the amount of soil in hauling trucks to the size of the truck bed and securing with a tarpaulin; enforce a 15 mph speed limit for vehicles entering and exiting construction areas; sweep affected streets with water sweepers at the end of the day; install and utilize wheel washers to clean truck tires; terminate construction activities when winds exceed 25 miles per hour; apply soil stabilizers to inactive areas; and sweep off adjacent streets to reduce particulate emissions. The project sponsor would be required to designate an individual to monitor compliance with these dust control requirements.

Compliance with the regulations and procedures set forth by the San Francisco Dust Control Ordinance would ensure that potential dust-related air quality impacts would be reduced to a ***less than significant*** level.

*Criteria Air Pollutants*

On-road vehicle trips include emissions from haul trucks for delivering construction material and removing debris and excavation spoils, and on-road emissions also include worker commutes that may occur locally or elsewhere in the region.

Section 6.25 of Chapter 6 of the San Francisco Administrative Code (Clean Construction Ordinance) requires clean construction practices for all City projects that require 20 or more cumulative days of construction. The ordinance requires that off-road equipment and engines with 25 horsepower or greater: 1) be fueled by biodiesel fuel grade B20 or higher; and 2) if used more than 20 hours, either meet or exceed Tier 2 emissions standards[69] for off-road engines or operate with the most effective verified diesel emission control technology. Portable or stationary generators (engines) do not have to meet this requirement.

A detailed quantification of construction-related criteria air pollutant emissions was conducted for the proposed Moscone Center Expansion project.[70] Project construction-related emissions were estimated using CalEEMod emissions estimator model (version 2013.2.2). This version of the CalEEMod model was released in October 2013 and uses emission factors from the OFFROAD2007 model and the 2011 Inventory Model for the In-use Off-road Equipment Rule of the ARB. Construction worker and vendor truck emissions were also calculated using CalEEMod, which uses EMFAC2011 emission factors and estimated daily trips based on the square feet of expanded space. Default haul trip estimates in CalEEMod for removal of demolition and excavated materials were adjusted to reflect the truck trips identified in Table 3 of the Project Description.

For the purpose of this analysis, CalEEMod default construction phase durations were adjusted to reflect the construction phasing of the proposed project which is assumed to begin in November 2014 and be completed in approximately 44 months. An equipment mix and staging provided by the project sponsor in the Project Description in Table 3 were used as adjusted inputs into CalEEMod and assume Tier 2 engines in

[69] Federal emission standards (Tier 1 through 4) for off-road diesel engines, including construction equipment, are based on the engine horsepower and year manufactured.

[70] ESA, Moscone Center Expansion Project Air Quality Technical Report, prepared for San Francisco Planning Department, December 2013. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103.

all mobile equipment, consistent with the Clean Construction Ordinance. It was assumed that the project would result in excavation of up to approximately 46,700 cubic yards of soil, requiring the truck trips identified in Table 3 of the Project Description. Following excavation, building foundations would be installed at Moscone South and Moscone North, followed by construction of the Moscone South-Esplanade Expansion, and then both the Moscone North and South lobbies and the pedestrian bridges.

Construction equipment, construction-related vehicle trips, worker vehicle trips, and ground disturbing activities would generate direct emissions of toxic air contaminants (addressed in Impact AQ-2), criteria air pollutants (*e.g.*, ROG, NOx, $PM_{10}$, and $PM_{2.5}$), and fugitive dust emissions. **Table 7** summarizes uncontrolled results. In the final three calendar years of construction, NOx emissions would exceed the 54 lbs/day threshold identified in Table 6 for construction-related criteria air pollutants, and the project would have a ***significant*** impact related to construction criteria air pollutant emissions.

**TABLE 7**
**UNCONTROLLED AVERAGE DAILY CONSTRUCTION-RELATED EMISSIONS**

| | Average Daily Construction Emissions (lbs./day) | | | |
|---|---|---|---|---|
| | **ROG** | **NOx** | **$PM_{10}$** | **$PM_{2.5}$** |
| 2014 | 1.37 | 23.65 | 0.49 | 0.48 |
| 2015 | 1.82 | 31.83 | 0.70 | 0.69 |
| 2016 | 2.98 | 57.76 | 1.58 | 1.58 |
| 2017 | 10.87 | 65.52 | 1.72 | 1.71 |
| 2018 | 11.76 | 59.78 | 1.60 | 1.59 |

SOURCE: ESA, 2013

Implementation of **Mitigation Measure M-AQ-1** would require the use of Tier 3 diesel engines for construction equipment. A mitigated construction scenario was calculated using CalEEMod assuming all construction equipment operated using Tier 3 engines. The requirement for equipment with Tier 3 engines would reduce emissions to the levels presented in **Table 8**. As shown in Table 8, controlled emissions of criteria NOx during construction of the proposed project would be reduced by 37 to 42 percent with implementation of **Mitigation Measure M-AQ-1**, thereby reducing the project's construction criteria air pollutant impact to a ***less than significant*** level.

**TABLE 8**
**CONTROLLED AVERAGE DAILY CONSTRUCTION-RELATED EMISSIONS**

| | Average Daily Construction Emissions (lbs./day) | | | |
|---|---|---|---|---|
| | **ROG** | **NOx** | **$PM_{10}$** | **$PM_{2.5}$** |
| 2014 | 1.38 | 14.55 | 0.49 | 0.49 |
| 2015 | 1.73 | 19.94 | 0.68 | 0.67 |
| 2016 | 2.31 | 33.42 | 1.43 | 1.43 |
| 2017 | 10.16 | 40.11 | 1.56 | 1.55 |
| 2018 | 11.10 | 36.00 | 1.45 | 1.43 |

SOURCE: ESA, 2013

**Mitigation Measure M-AQ-1: Construction Emissions Minimization**

A. ***Construction Emissions Minimization Plan.*** Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project compliance with the following requirements:

1. All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

   a) Where access to alternative sources of power is available, portable diesel engines shall be prohibited;

   b) All off-road equipment shall have:

      i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 3 off-road emission standards, *and*

      ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).[71]

   c) Exceptions:

      i. Exceptions to A(1)(a) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation.

      ii. Exceptions to A(1)(b)(ii) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS is: (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to A(1)(b)(ii), the project sponsor must comply with the requirements of A(1)(c)(iii).

      iii. If an exception is granted pursuant to A(1)(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedule in Table 9.

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.

[71] Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required.

**TABLE 9**
**OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE**

| Compliance Alternative | Engine Emission Standard | Emissions Control |
|---|---|---|
| 1 | Tier 3 | ARB Level 2 VDECS |
| 2 | Tier 3 | ARB Level 1 VDECS |
| 3 | Tier 3 | Alternative Fuel* |

**How to use the table**: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met.

* Alternative fuels are not a VDECS.

3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, reporting shall indicate the type of alternative fuel being used.

5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of the Plan to members of the public as requested.

B. ***Reporting.*** Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.

C. ***Certification Statement and On-site Requirements.*** Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

**Level of Significance After Mitigation:** With implementation of Mitigation Measure M-AQ-1, impacts related to emission of criteria air pollutants during construction, would be reduced to a ***less-than-significant*** level.

**Impact AQ-2: The proposed project's construction activities would generate toxic air contaminants, including diesel particulate matter that would expose sensitive receptors to substantial pollutant concentrations. (Less than Significant with Mitigation)**

As discussed above, San Francisco, in partnership with BAAQMD, has modeled and assessed air pollutant impacts from mobile, stationary and area sources within the City. This assessment has resulted in the identification of Air Pollutant Exposure Zones, based on significance thresholds for $PM_{2.5}$ and excess cancer risk, or areas within the City that deserve special attention when siting uses that either emit TACs or uses that are considered sensitive to air pollution. The project site is located within an Air Pollutant Exposure Zone, meaning that existing excess cancer risk exceeds 100 per one million and/or ambient $PM_{2.5}$ concentrations exceed 10 μg/m3. Sensitive land uses exist on the project block south of Howard Street. The project shares Lot 91 with a variety of other buildings and uses, including the Child Development Center. In addition, upper story condominiums exist at the southwest corner of Howard and Fourth Streets across from Moscone Center South and Moscone Center West. These uses are considered sensitive for purposes of this evaluation. The Moscone Center itself, under both existing and proposed conditions, is not a sensitive land use.

Off-road equipment (which includes construction-related equipment) is a large contributor to DPM emissions in California, although since 2007, the ARB has found the emissions to be substantially lower than previously expected.[72] Newer and more refined emission inventories have substantially lowered the estimates of DPM emissions from off-road equipment such that off-road equipment is now considered the sixth largest source of DPM emissions in California.[73] For example, revised estimates of PM emissions (of which DPM is a major component) for the SFBAAB for the year 2010 have decreased by 83 percent from 2010 emissions estimates.[74] Approximately half of the reduction in emissions can be attributed to the economic recession and half to updated methodologies used to better assess construction emissions.[75]

Additionally, a number of federal and state regulations are requiring cleaner off-road equipment. Specifically, both the USEPA and California have set emissions standards for new off-road equipment engines, ranging from Tier 1 to Tier 4. Tier 1 emission standards were phased in between 1996 and 2000 and Tier 4 Interim and Final emission standards for all new engines would be phased in between 2008 and 2015. To meet the Tier 4 emission standards, engine manufacturers will be required to produce new engines with advanced emission-control technologies. Although the full benefits of these regulations will not be realized for several years, the USEPA estimates that by implementing the federal Tier 4 standards, $NO_x$ and PM emissions will be reduced by more than 90 percent.[76] Furthermore, California regulations

72 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, p.1 and p. 13 (Figure 4), October 2010.

73 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010.

74 ARB, "In-Use Off-Road Equipment, 2011 Inventory Model," Query accessed online, April 2, 2012, http://www.arb.ca.gov/msei/categories.htm#inuse_or_category.

75 ARB, *Staff Report: Initial Statement of Reasons for Proposed Rulemaking, Proposed Amendments to the Regulation for In-Use Off-Road Diesel-Fueled Fleets and the Off-Road Large Spark-Ignition Fleet Requirements*, October 2010.

76 USEPA, *"Clean Air Nonroad Diesel Rule: Fact Sheet,"* May 2004.

limit maximum idling times to five minutes, which further reduces public exposure to $NO_x$ and PM emissions.[77]

In addition, construction activities do not lend themselves to analysis of long-term health risks because of their temporary and variable nature. As explained in the BAAQMD's *CEQA Air Quality Guidelines*:

> "Due to the variable nature of construction activity, the generation of TAC emissions in most cases would be temporary, especially considering the short amount of time such equipment is typically within an influential distance that would result in the exposure of sensitive receptors to substantial concentrations. Concentrations of mobile-source diesel PM emissions are typically reduced by 70 percent at a distance of approximately 500 feet (ARB 2005). In addition, current models and methodologies for conducting health risk assessments are associated with longer-term exposure periods of 9, 40, and 70 years, which do not correlate well with the temporary and highly variable nature of construction activities. This results in difficulties with producing accurate estimates of health risk."[78]

Therefore, project-level analyses of construction activities have a tendency to produce overestimated assessments of long-term health risks. However, within Air Pollutant Exposure Zones, as discussed above, additional construction activity may adversely affect populations that are already at a higher risk for adverse long-term health effects from existing sources of air pollution.

The proposed project would require construction activities for the approximate 44-month construction period. Project construction activities would result in short-term emissions of DPM and other TACs. The project site is located in an area that already experiences poor air quality, and project construction activities would generate additional air pollution, affecting nearby sensitive receptors.

Compliance with the fuel and emissions standards of the Clean Construction Ordinance would reduce these effects, but the ordinance does not specifically identify the best available control technologies in an already impacted area. Therefore, project construction would result in a significant impact. Implementation of Mitigation Measure M-AQ-1 would reduce this impact to a ***less-than-significant*** level.

> **Mitigation Measure:** Implementation of Mitigation Measure M-AQ-1.

**Level of Significance After Mitigation:** While emissions reductions from limiting idling, educating workers and the public and properly maintaining equipment are difficult to quantify, other measures, specifically the requirement for equipment with Tier 3 engines and Level 3 Verified Diesel Emission Control Strategy (VDECS) can be quantified and would reduce construction emissions by 89 to 94 percent compared to equipment with engines meeting no emission standards and without a VDECS. Emissions reductions from the combination of Tier 3 equipment with level 3 VDECS is almost equivalent to requiring only equipment with Tier 4 Final engines, which is not yet readily available for engine sizes subject to the mitigation. Therefore, compliance with Mitigation Measure M-AQ-1 would reduce the impact of construction-related TAC emissions, including DPM, on nearby sensitive receptors to a ***less-than-significant*** level.

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[77] California Code of Regulations, Title 13, Division 3, § 2485.
[78] BAAQMD, *CEQA Air Quality Guidelines,* May 2011, page 8-6.

*Operational Air Quality Impacts*

Land use projects typically result in emissions of criteria air pollutants and toxic air contaminants primarily from an increase in motor vehicle trips. However, land use projects may also result in criteria air pollutants and toxic air contaminants from combustion of natural gas, landscape maintenance, use of consumer products, and architectural coating. The following addresses air quality impacts resulting from operation of the proposed project.

**Impact AQ-3: During project operations, the proposed project would result in emissions of criteria air pollutants, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)**

The emissions increases attributable to operation of the proposed project would be from the total of the increase in operational vehicle trips generated by increased use and occupation of the proposed project, and area sources such as use of natural gas for heating and cooking. The project would intensify the existing convention center development within walking distance of major transit hubs. As such, the project would generate a relatively low number of new motor vehicle trips compared to development in a non-urban or suburban setting.

Project operational criteria pollutant emissions were also estimated using the CalEEMod model for all sources except operational truck, bus, and forklift emissions, which were calculated using EMFAC2011 emission factors for trucks and buses and the OFFROAD model for forklifts. The CalEEMod model was refined to reflect the project-specific trip generation determined in the Travel Demand Memorandum prepared for the proposed project, which considered the availability of transit systems within the area.[79] Vehicle trip lengths from CalEEMod, which were developed with input from the BAAQMD, were used to determine the increase in vehicle miles travelled from the proposed project, as project-specific trip lengths were not estimated in the Travel Demand Memorandum. CalEEMod default emission factors for motor vehicle trips are based on EMFAC2011 emission factors. Estimated emissions of ROG from maintenance applications of architectural coatings reflect volatile organic compound (VOC) content limits of Regulation 8, Rule 3 of the BAAQMD.

Forklift emissions were calculated assuming one-half hour of forklift operations are associated with each additional truck trip based on consultation with personnel at Moscone Center loading docks during a site visit. Forklift emissions assume operation of 50 horsepower compressed natural gas engines which is consistent with the fleet observed on-site. Forklifts are operated by union employees and are not used to unload food and beverage trucks, which are unloaded by hand truck or using the truck driver's dolly.

[79] Adavant Consulting, "Moscone Center Expansion Project – Estimation of Travel Demand," January 9, 2014. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103.

Three operational scenarios were assumed to correlate with different intensity of truck trips associated with each scenario:

1. **Move-in day:** Loaded trucks arrive to unload decorating equipment and exhibit freight.
2. **Event Day:** Attendee passenger car trips and shuttle bus trips. A lesser amount of freight truck activity occurs.
3. **Breakdown day:** Trucks return to offhaul equipment and freight. This day has the highest number of truck trips.

According to the Travel Demand Memorandum, the proposed expansion would result in an average increase of 42 daily truck trips on move-in days, 34 daily truck trips on event days and 160 truck trips on break-down days. Overlapping of events can occur at Moscone north and Moscone south such that there would be an average of 177 move-in days, 654 event days, and 118 breakdown days per year. These data were used with the EMFAC2011 emission factors for medium-duty heavy trucks (T6) to determine the maximum annual emission increase as well as average daily emission increases. Because of uncertainties with regard to overlapping events and varying size of events, annual emission were estimated using the estimated increase in the average number of truck trips. These annual emissions were then averaged by the number of event, break down and move-in days, respectively, to determine average daily emissions.

Emissions from expansion-related increases in shuttle bus operations were also calculated using EMFAC2011 emission factors and bus trip generation based on the transportation analysis. Specifically, the transportation analysis estimates the increase in bus trips for the peak day but also provides the relative percentages of bus levels of service between heavy, medium, light, and none. Fifty-three percent of all events have no bus service, 27 percent of events have light bus service, 11 percent of events have medium bus service and 9 percent have heavy or peak bus service. These percentages were applied to the 654 annual event days to determine the annual number of bus trips based on the peak day estimate of the Travel Demand Memorandum. All of the above assumptions are detailed in the project-specific Air Quality Technical Report.[80]

Criteria pollutant emissions from the anticipated project-related operational sources are quantified in **Tables 10** and **11**. As shown, operation of the Moscone Center Expansion project would not exceed significance thresholds for criteria air pollutants, and the project would result in a ***less-than-significant*** impact.

**Mitigation:** None required.

[80] Environmental Science Associates, *Moscone Center Expansion Project, San Francisco, California Air Quality Technical Report*, December 2013. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103.

**TABLE 10**
**AVERAGE DAILY OPERATIONAL EMISSIONS OF THE PROPOSED PROJECT**

| Source | ROG | NOx | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| **Average Daily Emissions (pounds/day)** | | | | |
| Area Source | 6.37 | <0.01 | <0.01 | <0.01 |
| Energy | 0.20 | 1.81 | 0.14 | 0.14 |
| Mobile – Passenger Vehicles | 2.86 | 5.43 | 3.00 | 0.86 |
| Mobile – Freight Trucks | 0.86 | 38.42 | 4.01 | 0.45 |
| Mobile – Shuttle Buses | 0.16 | 3.24 | 0.24 | 0.07 |
| Fork Lifts | 0.05 | 2.27 | 0.04 | 0.04 |
| **Total** | **10.50** | **51.17** | **7.43** | **1.56** |

SOURCE: ESA, 2013

**TABLE 11**
**MAXIMUM ANNUAL OPERATIONAL EMISSIONS OF THE PROPOSED PROJECT**

| Source | ROG | NOx | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|
| **Maximum Annual Emissions (tons/year)** | | | | |
| Area Source | 1.16 | <0.01 | <0.01 | <0.01 |
| Energy | 0.04 | 0.33 | 0.03 | 0.03 |
| Mobile – Passenger Vehicles | 0.48 | 0.95 | 0.52 | 0.15 |
| Mobile – Freight Trucks | 0.16 | 7.02 | 0.73 | 0.08 |
| Mobile – Shuttle Buses | 0.03 | 0.59 | 0.04 | 0.01 |
| Fork Lifts | 0.01 | 0.41 | 0.01 | 0.01 |
| **Total** | **1.88** | **9.29** | **1.33** | **0.28** |

SOURCE: ESA, 2013

**Impact AQ-4: During project operations, the proposed project would result in emissions of carbon monoxide, but not at levels that would violate an air quality standard, contribute to an existing or projected air quality violation, or result in a cumulatively considerable net increase in criteria air pollutants. (Less than Significant)**

Emissions from traffic at congested intersections can, under certain circumstances, cause a localized build-up of CO concentrations. Regional ambient air quality monitoring data demonstrate that CO concentrations are well below the applicable standards, despite long-term upward trends in vehicle miles traveled. This confirms that the potential for localized increases in CO concentrations from increased traffic has been greatly reduced in recent years. Improvements in motor vehicle exhaust controls since the early 1990s and the use of oxygenated fuels have substantially reduced CO emissions from motor vehicles.

Elevated concentrations of localized CO from congested traffic would not have the potential to cause a violation of ambient air quality standards because the following three criteria would be met:

- 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. The proposed project would be consistent with these regional plans, which include the Congestion Management Program adopted by the San Francisco County Transportation Authority in December 2011 and the Plan Bay Area adopted by the Metropolitan Transportation Commission on July 18, 2013. The project would be consistent with these plans by providing shuttle buses and increasing density in an area proximate to multiple transit options.

- The project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour. The study intersections with the highest volumes would experience fewer than 10,000 vehicles per peak hour under existing plus project and cumulative scenarios.[81]

- The project traffic would not increase traffic volumes at affected intersections where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, below-grade roadway).

Because each of the three criteria would be met, elevated concentrations of localized CO from congested traffic would not cause a violation of ambient air quality standards.

The proposed expansion would also result in an increase of forklift operations inside the Moscone Center. It is not anticipated that additional forklifts would be acquired and it is expected that the existing fleet of forklifts would operate with increased frequency. Forklifts are propane powered and result in exhaust emissions within Moscone Center. These emissions include carbon monoxide, which could accumulate within the building. A Phase 1 Site Assessment conducted in March 2013 indicated that records at the SFDPH contain several letters from organizations representing Moscone Center employees, raising concerns about potential indoor air quality issues related to vehicle exhaust, former underground storage tanks (USTs), and ventilation systems at the facility.[82] After reviewing documentation for the ventilation systems operation, interviewing on-site workers, and performing a site visit to evaluate working conditions, the California Department of Health Service, Occupational Health Branch (Cal-OSHA) issued a letter dated September 11, 1996, recommending more limited use of propane forklifts at the site, installation of carbon monoxide monitors in work areas, and a formal engineering review to evaluate the air flow in the loading docks and truckway areas. Moscone Center has responded to this issue by developing an Air Quality Program that is now part of the Sustainable Programs at Moscone Center.[83] The Air Quality Program includes the following elements:

- Indoor air quality monitoring of the exhibit floor is now conducted on move-in and breakdown days.

- Trucks may not idle at loading docks.

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81 Moscone Center Expansion Project Cumulative Traffic Forecasts, Fehr and Peers, 2013. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103.

82 Northgate Environmental Management, *Phase 1 Environmental Site Assessment, Moscone Center North and South, 747 and 750 Howard Street, San Francisco, CA*, March 21, 2013.

83 Moscone Center's Exhibitor Green Guide, Revised August, 2012.

- Forklifts and carts have been retrofitted with emission reduction equipment. Any forklifts in violation of the standard are removed from the floor. A full time air quality technician regularly monitors and tests conditions.
- Capital renovations completed in 2012 upgraded all air handling systems.

These measures would continue to be implemented under the proposed project. Therefore, because the Moscone Convention center has implemented the above measures, increased forklift operations within the Moscone Center under the proposed project would not be expected to result in localized concentrations of CO at unhealthful levels and CO impacts would be ***less than significant***.

**Mitigation:** None required.

**Impact AQ-5: During project operations, the proposed project would generate toxic air contaminants, including diesel particulate matter, but would not expose sensitive receptors to substantial air pollutant concentrations. (Less than Significant)**

As discussed above in the section entitled 'Local Health Risks and Hazards', San Francisco, in partnership with BAAQMD, has modeled and assessed air pollutant impacts from mobile, stationary and area sources within the City. This assessment has resulted in the identification of Air Pollutant Exposure Zones, or areas within the City that deserve special attention when siting uses that either emit TACs or uses that are considered sensitive to air pollution. Sensitive land uses exist on the project block south of Howard Street, which shares Lot 91 with a variety of other buildings and uses, including the Child Development Center. Upper story condominiums exist at the southwest corner of Howard and Fourth Streets across from Moscone Center South and Moscone Center West.

Individual projects result in emissions of toxic air contaminants primarily as a result of an increase in vehicle trips. The BAAQMD considers roads with less than 10,000 vehicles per day to be "minor, low-impact" sources that do not pose a significant health impact even in combination with other nearby sources and recommends that these sources be excluded from the environmental analysis. The proposed project's 696 net new daily vehicle trips and the 160 net new worst case day truck trips would be well below this level, and would be distributed among the local roadway network. Therefore, an assessment of project-generated TACs resulting from vehicle trips is not required. The proposed project does not include any other sources of TACs and thus, would not generate a substantial amount of TAC emissions that could affect nearby sensitive receptors.

The proposed project would expand an existing exhibition land use and would not result in siting of new sensitive receptors and would therefore have no impacts with regard to exposing new sensitive receptors to risks and hazards.

The proposed project would result in a ***less-than-significant*** impact with respect to exposing sensitive receptors to substantial levels of air pollution.

**Mitigation:** None required.

**Impact AQ-6: The proposed project would not conflict with, or obstruct implementation of the *2010 Clean Air Plan*. (Less than Significant)**

The most recently adopted air quality plan for the SFBAAB is the *2010 Clean Air Plan*. The *2010 Clean Air Plan* is a road map that demonstrates how the San Francisco Bay Area will achieve compliance with the state ozone standards as expeditiously as practicable and how the region will reduce the transport of ozone and ozone precursors to neighboring air basins. In determining consistency with the *2010 Clean Air Plan* (CAP), this analysis considers whether the project would: (1) support the primary goals of the CAP, (2) include applicable control measures from the CAP, and (3) avoid disrupting or hindering implementation of control measures identified in the CAP.

The primary goals of the CAP are to: (1) Reduce emissions and decrease ambient concentration of harmful pollutants; (2) Safeguard the public health by reducing exposure to air pollutants that pose the greatest risk; and (3) Reduce greenhouse gas emissions. To meet the primary goals, the CAP recommends specific control measures and actions. These control measures are grouped into various categories and include stationary and area source measures, mobile source measures, transportation control measures, land use measures, and energy and climate measures. The CAP recognizes that to a great extent, community design dictates individual travel mode, and that a key long-term control strategy to reduce emissions of criteria pollutants, air toxics, and greenhouse gases from motor vehicles is to channel future Bay Area growth into vibrant urban communities where goods and services are close at hand, and people have a range of viable transportation options. To this end, the *2010 Clean Air Plan* includes 55 control measures aimed at reducing air pollution in the SFBAAB.

The measures most applicable to the proposed project are transportation control measures and energy and climate control measures. The proposed project's impact with respect to GHGs are discussed in Section E.7, Greenhouse Gas Emissions, which demonstrates that the proposed project would comply with the applicable provisions of the City's Greenhouse Gas Reduction Strategy. The project would exceed California Building Code Title 24 standards, as well as provide at least 1 percent of the facility's energy with on-site renewables,[84] resulting in reduced energy consumption as compared with traditional development.

Regarding transportation control measures, the proposed project includes expansion of an existing exhibition space within the existing facility's footprint, thereby increasing the intensity of convention use at the project site. The site is served by numerous viable transportation options, including Muni bus lines, regional rail (BART) lines, and the Moscone Convention Center's own shuttle buses. The project's improvements to Howard Street, as well as the project site's location in proximity to a concentration of hotels in Downtown San Francisco, ensure that convention attendees can walk and ride shuttle buses or other transit services to and from the project site instead of taking trips via private automobile. Employees currently receive pre-tax commuter checks upon request, and, the project would include

[84] Per City of San Francisco Environment Code Chapter &, Sections 705(b) and 706 (a), this requirement applies to all municipal construction projects. The ordinance defines "Construction Project" as any building, planning or construction activity, including demolition, new construction, major alteration, or building additions by a City department at a City-owned Facility or City Leasehold.

bicycle parking spaces for employees. These features all help to reduce growth in automobile trips and vehicle miles traveled. The proposed project would be generally consistent with the *San Francisco General Plan*, as discussed in Section C. Transportation control measures that are identified in the CAP are implemented by the *San Francisco General Plan* and the Planning Code, for example, through the City's Transit First Policy. By complying with these applicable requirements, the project would include relevant transportation control measures specified by the CAP. Therefore, the proposed project includes applicable control measures identified in the CAP to meet the primary goals of the Plan.

Examples of a project that could cause the disruption or delay of CAP control measures are projects that would preclude the extension of a transit line or bike path, or projects that propose excessive parking beyond parking requirements. The proposed project would add approximately 306,000 gross square feet of convention and exhibition land uses to a dense, walkable urban area near a concentration of regional and local transit service. It would not preclude the extension of a transit line or a bike path or any other transit improvement, and thus would not disrupt or hinder implementation of control measures identified in the CAP.

For the reasons described above, the proposed project would not interfere with implementation of the *2010 Clean Air Plan*, and because the proposed project would be consistent with the applicable air quality plan that demonstrates how the region will improve ambient air quality and achieve the state and federal ambient air quality standards, this impact would be ***less than significant***.

**Mitigation:** None required.

**Impact AQ-7: The proposed project would not create objectionable odors that would affect a substantial number of people. (Less than Significant)**

Observation indicates that the project site is not substantially affected by sources of odors.[85] Typical odor sources of concern include wastewater treatment plants, sanitary landfills, transfer stations, composting facilities, petroleum refineries, asphalt batch plants, chemical manufacturing facilities, fiberglass manufacturing facilities, auto body shops, rendering plants, and coffee roasting facilities. The proposed expansion of an existing convention center would not create a significant source of new odors. During construction, diesel exhaust from construction equipment would generate some odors. However, construction-related odors would be temporary and would not persist upon project completion. Therefore, odor impacts would be ***less than significant***.

**Mitigation:** None required.

[85] Environmental Science Associates staff visited the site on November 24, 2013. No odors were detected.

**Impact C-AQ-1: The proposed project, in combination with past, present, and reasonably foreseeable future development in the project area would contribute to cumulative air quality impacts. (Less than Significant with Mitigation)**

As discussed above, regional air pollution is by its very nature largely a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.[86] The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, because the proposed project's construction (Impact AQ-1) emissions would exceed the project-level thresholds for criteria air pollutants, the proposed project would be considered to result in a cumulatively considerable contribution to regional air quality impacts during construction. Additionally, construction activities would temporarily add new sources of TACs (including DPM) to areas of the City that are already adversely affected by poor air quality. The proposed project, however, would be subject to Mitigation Measure M-AQ-1, which would reduce construction period emissions of criteria air pollutants to below the thresholds shown in Table 6 and would substantially reduce emissions of TACs, including DPM.

Compliance with this mitigation measure would ensure that the proposed project would not result in a considerable contribution to cumulative construction-related air quality impacts and impacts would be reduced to ***less than significant with mitigation***.

Upon completion of construction activities, the proposed project would not have the potential to result in cumulative air quality impacts. As shown in Tables 10 and 11, the proposed project's operational emissions would not increase emissions above stated thresholds (the levels at which a project is considered to contribute significantly to cumulative air quality impacts). Furthermore, the proposed project would not result in sources of TACs or DPM emissions that would contribute considerably to local health risks. Therefore, upon completion of construction activities, the proposed project's contribution to cumulative regional and localized air quality impacts would be ***less than significant***.

**Mitigation Measure:** Implementation of Mitigation Measure M-AQ-1.

**Level of Significance After Mitigation:** With implementation Mitigation Measure M-AQ-1, cumulative impacts to air quality would be ***less than significant***.

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[86] BAAQMD, *CEQA Air Quality Guidelines,* May 2011, page 2-1.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **7. GREENHOUSE GAS EMISSIONS— Would the project:** | | | | | |
| a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? | ☐ | ☐ | ☒ | ☐ | ☐ |

## Environmental Setting

Gases that trap heat in the atmosphere are referred to as greenhouse gases (GHGs) because they capture heat radiated from the sun as it is reflected back into the atmosphere, much like a greenhouse does. The accumulation of GHGs has been implicated as the driving force for global climate change. The primary GHGs are carbon dioxide (CO2), methane (CH4), nitrous oxide (N2O), ozone, and water vapor.

Individual projects emit GHGs during demolition, construction, and operational phases. While the presence of the primary GHGs in the atmosphere is naturally occurring, CO2, CH4, and N2O are largely emitted from human activities, accelerating the rate at which these compounds occur within earth's atmosphere. Emissions of CO2 are largely byproducts of fossil fuel combustion, whereas methane results from off-gassing associated with agricultural activities and landfills. Black carbon has recently emerged as a major contributor to global climate change, possibly second only to CO2. Black carbon results from incomplete combustion of fossil fuels, biofuels, and biomass.[87] N2O is emitted from agricultural activities, fossil fuel combustion, wastewater management, and industrial processes, such as the production of nitric acid, which is used to make synthetic commercial fertilizer.[88] Other GHGs generated in industrial processes include hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Greenhouse gases are typically reported in "carbon dioxide-equivalent" measures (CO2E).[89]

There is international scientific consensus that human-caused increases in GHGs have contributed and will continue to contribute to global warming. Many impacts resulting from climate change, including increased fires, floods, severe storms and heat waves, occur already and will only become more frequent and more costly.[90] Secondary effects of climate change are likely to include a global rise in sea levels; impacts to agriculture, the state's electricity system, and native freshwater fish ecosystems; an increase in

87 Center for Climate and Energy Solutions. *What is Black Carbon?*, April 2010. Available online at: http://www.c2es.org/docUploads/what-is-black-carbon.pdf. Accessed November 12, 2013.

88 U.S. Environmental Protection Agency. *Overview of Greenhouse Gases, Climate Change*, September 9, 2013. Available online at: http://epa.gov/climatechange/ghgemissions/gases/n2o.html. Accessed November 12, 2013.

89 Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," a weighted average based on each gas's heat absorption (or "global warming") potential.

90 California Climate Change Portal. Available online at: http://www.climatechange.ca.gov. Accessed November 12, 2013.

the vulnerability of levees in the Sacramento-San Joaquin Delta; changes in disease vectors; and changes in habitat and biodiversity.[91,92]

The ARB estimated that in 2010, California produced approximately 451 million gross metric tons of CO2E (MMTCO2E) emissions.[93] ARB determined that transportation is the source of 38 percent of the State's GHG emissions, followed by electricity generation (both in-state and out-of-state) at 21 percent and industrial sources at 19 percent. Commercial and residential fuel use (primarily for heating) accounted for approximately 10 percent of CO2E emissions.[94] In the Bay Area, the transportation (on-road motor vehicles, off-highway mobile sources, and aircraft) and the industrial and commercial sector were the two largest sources of GHG emissions, each accounting for approximately 36 percent of the Bay Area's 95.8 MMTCO2E emitted in 2007.[95] Electricity generation accounts for approximately 16 percent of the Bay Area's GHG emissions, followed by residential fuel usage (e.g., home water heaters, furnaces, etc.) at 7 percent, off-road equipment at 3 percent, and agriculture at 1 percent.[96]

## Regulatory Setting

In 2005, in recognition of California's vulnerability to the effects of climate change, former Governor Arnold Schwarzenegger established Executive Order S-3-05, which set forth a series of target dates by which statewide emissions of GHGs would be progressively reduced:

- By 2010: reduce GHG emissions to 2000 levels (approximately 457 MMTCO2E);
- By 2020: reduce emissions to 1990 levels (estimated at 427 MMTCO2E); and
- By 2050: reduce state-wide GHG emissions to 80 percent below 1990 levels (about 85 MMTCO2E).

In response, in 2006, the California legislature passed Assembly Bill No. 32 (AB 32; California HSC Division 25.5, Section 38500, et seq.) also known as the Global Warming Solutions Act. AB 32 requires ARB to design and implement emission limits, regulations, and other measures to reduce GHG emissions to 1990 levels by the year 2020.[97]

Pursuant to AB 32, ARB adopted the Climate Change Scoping Plan (Scoping Plan) in December 2008, as the state's overarching plan for addressing climate change. The Scoping Plan outlines measures to meet the required GHG reductions by 2020 and sets out an implementation timeline for GHG reduction strategies. In order to meet the goals of AB 32, California must reduce its GHG emissions by 30 percent below projected

91 Ibid.
92 California Energy Commission. California Climate Change Center. *Our Changing Climate 2012*. Available online at: http://www.energy.ca.gov/2012publications/CEC-500-2012-007/CEC-500-2012-007.pdf. Accessed November 12, 2013.
93 California Air Resources Board. California Greenhouse Gas Inventory for 2000-2010— by Category as Defined in the Scoping Plan. Available online at: http://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_00-11_2013-08-01.pdf. Accessed December 30, 2013.
94 Ibid.
95 Bay Area Air Quality Management District, Source Inventory of Bay Area Greenhouse Gas Emissions: Base Year 2007, updated February 2010. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/Emission%20Inventory/regionalinventory2007_2_10.ashx. Accessed November 12, 2013.
96 Ibid.
97 Governor's Office of Planning and Research. *Technical Advisory- CEQA and Climate Change: Addressing Climate Change through California Environmental Quality Act (CEQA) Review*, June 19, 2008. Available online at: http://opr.ca.gov/docs/june08-ceqa.pdf. Accessed November 13, 2013.

2020 business as usual emissions levels, or about 15 percent from 2008 levels.[98] The Scoping Plan estimates a reduction of 174 million MMTCO2E (about 191 million U.S. tons) from the transportation, energy, agriculture, forestry, and high global warming potential sectors, as summarized in **Table 12**.[99]

**TABLE 12**
**GREENHOUSE GAS REDUCTIONS BY SECTOR FROM THE AB32 SCOPING PLAN**

| Sector | GHG Reductions ($MMTCO_2E$) |
|---|---|
| Transportation Sector | 62.3 |
| Electricity and Natural Gas | 49.7 |
| Industry | 1.4 |
| Landfill Methane Control Measure (Discrete Early Action) | 1 |
| Forestry | 5 |
| High Global Warming Potential GHGs | 20.2 |
| Additional Reductions Needed to Achieve the GHG Cap | 34.4 |
| **Total** | **174** |
| **Other Sectors/Recommended Measures** | |
| Government Operations | 1-2 |
| Agriculture - Methane Capture at Large Dairies | 1 |
| Water | 4.8 |
| Green Buildings | 26 |
| High Recycling/ Zero Waste<br>• Commercial Recycling<br>• Composting<br>• Anaerobic Digestion<br>• Extended Producer Responsibility<br>• Environmentally Preferable Purchasing | 9 |
| **Total** | **41.8 - 42.8** |

The AB 32 Scoping Plan recommendations are intended to curb projected business-as-usual growth in GHG emissions and reduce those emissions to 1990 levels. Meeting the reduction goals of the Scoping Plan would result in an overall annual net decrease in GHGs relative to current levels, accounting for projected increases in emissions resulting from anticipated growth.[100]

In addition, Senate Bill 375 (SB 375) was implemented to reduce carbon emission by aligning local land use and transportation planning to further achieve the state's GHG reduction goals. SB 375 requires Metropolitan Planning Organizations to incorporate a "sustainable communities strategy" in regional

[98] California Air Resources Board. *California's Climate Plan: Fact Sheet*, September 25, 2010. Available online at: http://www.arb.ca.gov/cc/cleanenergy/clean_fs2.pdf. Accessed November 13, 2013.

[99] California Air Resources Board. *Assembly Bill 32: Global Warming Solutions Act*. Available online at: http://www.arb.ca.gov/cc/ab32/ab32.htm/. Accessed November 13, 2013.

[100] The AB 32 Scoping Plan is currently undergoing a 5-year update, as required by the legislation. A discussion draft was released on October 1, 2013. ARB plans to release the draft plan in January 2014 and will hold a hearing in spring 2014 to consider adoption of the final plan.

transportation plans (RTPs) to achieve GHG emission reduction targets set by ARB. The Bay Area MTC's 2013 RTP, Plan Bay Area, Strategy for a Sustainable Region, was adopted on July 18, 2013, and is the first plan subject to SB 375.[101]

In conformance with AB 32, ARB has identified a GHG reduction target of 15 percent from current levels for local governments, noting that successful implementation of the Scoping Plan relies on local governments' land use planning and urban growth decisions because local governments have the primary authority to plan, zone, approve, and permit land development to accommodate population growth and the changing needs of their jurisdictions.[102] The BAAQMD conducted an analysis of the actions outlined in the Scoping Plan and determined that in order for the Bay Area to meet the GHG reduction goals, the region would need to achieve an additional 2.3 percent reduction in GHG emissions from the land use sector.[103]

The BAAQMD is the primary agency responsible for air quality in the nine-county San Francisco Bay Area air basin. The BAAQMD recommends that local agencies adopt a Greenhouse Gas Reduction Strategy consistent with the goals of AB 32 and that significance of GHG emissions from a project be based on the degree to which that project complies with a Greenhouse Gas Reduction Strategy. As described below, this recommendation is consistent with the approach to analyzing GHG emissions outlined in the CEQA Guidelines.

At a local level, the City of San Francisco has developed a number of plans and programs to reduce the City's contribution to global climate change. San Francisco's 2008 Greenhouse Gas Reduction ordinance requires that by 2008, the City determine its GHG emissions for the year 1990, the baseline level with reference to which target reductions are set; by 2017, reduce GHG emissions by 25 percent below 1990 levels; by 2025, reduce GHG emissions by 40 percent below 1990 levels; and finally by 2050, reduce GHG emissions by 80 percent below 1990 levels. San Francisco's Strategies to Address Greenhouse Gas Emissions (Greenhouse Gas Reduction Strategy) documents the City's actions to pursue cleaner energy, energy conservation, alternative transportation, and solid waste reduction. As identified in the Greenhouse Gas Reduction Strategy, the City has implemented a number of mandatory requirements and incentives that have measurably reduced GHG emissions including, but not limited to, increasing the energy efficiency of new and existing buildings, installation of solar panels on building roofs, implementation of a green building strategy, adoption of a zero waste strategy, a construction and demolition debris recovery ordinance, a solar energy generation subsidy, incorporation of alternative fuel vehicles in the City's transportation fleet (including buses), and a mandatory recycling and composting ordinance. The strategy also identifies 42 specific regulations for new development that would reduce a project's GHG emissions.

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[101] ABAG and MTC, *Draft Bay Area Plan, Strategy for a Sustainable Region*. March 2013. Available online at: http://www.mtc.ca.gov/planning/plan_bay_area/. Accessed November 13, 2013.

[102] CARB. *Climate Change Scoping Plan*, December 2008.

[103] BAAQMD. California Environmental Quality Act, *Proposed Thresholds of Significance*, December 7, 2009. Available online at: http://www.baaqmd.gov/~/media/Files/Planning%20and%20Research/CEQA/Draft%20BAAQMD%20CEQA%20Guidelines_Dec%207%202009.ashx?la=en. Accessed November 13, 2013.

San Francisco's policies and programs have resulted in a reduction in GHG emissions below 1990 levels of approximately 6.15 MMTCO2E. A recent third-party verification of the City's 2010 community-wide and municipal emissions inventory confirmed that San Francisco reduced its GHG emissions to 5.26 MMTCO2E, representing a 14.5 percent reduction in GHG emissions below 1990 levels, which exceeds the statewide AB 32 GHG reduction goals.[104]

## Approach to Analysis

The potential for a project to result in significant GHG emissions that contribute to the cumulative effects of global climate change is determined by an assessment of the project's compliance with local and state plans, policies and regulations adopted for the purpose of reducing the cumulative effects of climate change. GHG emissions are analyzed in the context of their contribution to the cumulative effects of climate change because a single land use project could not generate enough GHG emissions to noticeably change the global average temperature. Sections 15064.4 and 15183.5 of the CEQA Guidelines address the analysis and determination of significant impacts from a proposed project's GHG emissions.

Section 15183.5 of the CEQA Guidelines allows public agencies to analyze and mitigate GHG emissions as part of a larger plan for the reduction of greenhouse gases and describes the required contents of such a plan. As discussed above, San Francisco has prepared its own Greenhouse Gas Reduction Strategy and reduced community-wide GHG emissions to below 1990 levels, meeting GHG reduction goals outlined in AB 32. The City is also well on its way to meeting the long-term GHG reduction goal of reducing emissions 80 percent below 1990 levels by 2050. Chapter 1 of the Greenhouse Gas Reduction Strategy describes how the strategy meets the requirements of CEQA Guidelines Section 15183.5. The BAAQMD has reviewed San Francisco's Greenhouse Gas Reduction Strategy, concluding that "[a]ggressive GHG reduction targets and comprehensive strategies like San Francisco's help the Bay Area move toward reaching the state's AB 32 goals, and also serve as a model from which other communities can learn."

Factors to be considered in making a significance determination in accordance with CEQA Guidelines Section 15064.4(b), include: 1) the extent to which GHG emissions would increase or decrease as a result of the proposed project; 2) whether or not a proposed project exceeds a threshold that the lead agency determines applies to the project; and finally 3) demonstrating compliance with plans and regulations adopted for the purpose of reducing or mitigating GHG emissions.

The GHG analysis provided below includes a qualitative assessment of GHG emissions that would result from the proposed project, including emissions from an increase in vehicle trips, natural gas combustion, and/or electricity use among other things. Consistent with the CEQA Guidelines and BAAQMD recommendations for analyzing GHG emissions, the significance of GHG emissions generated during project construction and operation is based on whether the project complies with the City's Greenhouse Gas Reduction Strategy, and associated policies, programs and regulations, including specific regulations that address the reduction of GHG emissions. Projects that comply with the Greenhouse Gas Reduction

[104] San Francisco Department of the Environment, Community Greenhouse Gas Inventory 3rd Party Verification Memo, http://www.sfenvironment.org/download/community-greenhouse-gas-inventory-3rd-party-verification-memo, accessed December 27, 2013.

Strategy would not result in a substantial increase in GHGs, since the City has shown that overall community-wide GHGs have decreased and the City has met AB 32 GHG reduction targets. Consequently, such projects would not be considered to result in a significant cumulative impact from GHG emissions. Individual project compliance with the City's Greenhouse Gas Reduction Strategy is demonstrated by completion of the *Compliance Checklist for Greenhouse Gas Analysis*.[105]

In summary, the two applicable greenhouse gas reduction plans, the AB 32 Scoping Plan and the Greenhouse Gas Reduction Strategy, are intended to reduce GHG emissions below current levels. Given that the City's local greenhouse gas reduction targets are more aggressive than the state's 2020 GHG reduction targets and consistent with the long-term 2050 reduction targets, the City's Greenhouse Gas Reduction Strategy is consistent with the goals of AB 32. Therefore, proposed projects that are consistent with the Greenhouse Gas Reduction Strategy would be consistent with the goals of AB 32, would not conflict with either plan, and would therefore not exceed the applicable GHG threshold of significance. Furthermore, a locally compliant project would not result in a substantial increase in GHGs because, as demonstrated in the GHG Reduction Strategy, San Francisco's policies have resulted in a measurable reduction in GHGs, to 14.4 percent below 1990 levels.

The following analysis of the proposed project's impact on climate change focuses on the project's contribution to cumulatively significant GHG emissions. Given the analysis in a cumulative context, project-specific impact statements are not provided.

**Impact C-GG-1: The proposed project would generate greenhouse gas emissions, but not at levels that would result in a significant impact on the environment. (Less than Significant)**

The most common GHGs resulting from human activity associated with land use decisions are CO2, black carbon, CH4, and N2O. Individual projects contribute to the cumulative effects of climate change by directly or indirectly emitting GHGs during construction and operational phases. Direct operational emissions include GHG emissions from new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers, energy required to pump, treat, and convey water, and emissions associated with landfill operations.

The proposed project would increase the activity onsite by constructing and operating an expanded Moscone Center, with associated increases in employment and visitors to the project site. Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of increased vehicle trips (mobile sources) and commercial operations that result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. Construction activities would also result in temporary increases in GHG emissions.

[105] SF Planning Department. *Compliance Checklist for Greenhouse Gas Analysis: Table 2. Municipal Projects*, Moscone Center Expansion Project, January 10, 2014. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103. Information from this document is provided in Table 13.

Projects that are consistent with San Francisco's Greenhouse Gas Reduction Strategy would result in a less-than-significant GHG impact. As shown in **Table 13**, the proposed project would comply with applicable policies, programs, and ordinances identified in the Greenhouse Gas Reduction Strategy. Depending on a proposed project's size, use, and location, a variety of controls are in place to ensure that a proposed project would not impair the state's ability to meet statewide GHG reduction targets outlined in AB 32, or impact the City's ability to meet San Francisco's local GHG reduction targets. Given that: (1) San Francisco has implemented regulations to reduce GHG emissions specific to new construction and renovations of municipal projects; (2) San Francisco's sustainable policies have resulted in the measured reduction of annual GHG emissions; (3) San Francisco has met and exceeds AB 32 GHG reduction goals for the year 2020 and is on track towards meeting long-term GHG reduction goals; (4) current and probable future state and local GHG reduction measures will continue to reduce a project's contribution to climate change; and (5) San Francisco's Strategies to Address Greenhouse Gas Emissions meet the CEQA and BAAQMD requirements for a Greenhouse Gas Reduction Strategy, projects that are consistent with San Francisco's regulations would not contribute considerably to global climate change. The proposed project would be required to comply with the requirements listed above, and was determined to be consistent with San Francisco's Strategies to Address Greenhouse Gas Emissions. Therefore, the proposed project would result in ***a less-than-significant*** impact with respect to GHG emissions.

**Mitigation**: None required.

**Impact C-GG-2: The proposed project would not conflict with any policy, plan, or regulation adopted for the purpose of reducing greenhouse gas emissions. (Less than Significant)**

San Francisco's *Compliance Checklist for Greenhouse Analysis* is used to demonstrate compliance of the proposed project with San Francisco's Greenhouse Gas Reduction Strategy.[106] Direct operational GHG emissions associated with the project would include new vehicle trips and area sources (natural gas combustion). Indirect emissions include emissions from electricity providers, energy required to pump, treat, and convey water, and emissions associated with landfill operations. The discussion of Impact C-GG-1 includes a qualitative assessment of GHG emissions that would result from the proposed project, including emissions from an increase in vehicle trips, natural gas combustion, and/or electricity use among other activities. The proposed project was determined to comply with the Greenhouse Gas Reduction Strategy.[107]

As shown in Table 13, the proposed project would comply with applicable policies, programs, and ordinances implementing the Greenhouse Gas Reduction Strategy, and therefore would not conflict with plans, policies, or regulations adopted for the purpose of reducing GHG-related impacts, and this impact would be ***less than significant***.

**Mitigation:** None required.

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[106] SF Planning Department. *Compliance Checklist for Greenhouse Gas Analysis: Table 2. Municipal Projects*, Moscone Center Expansion Project, January 10, 2014. This document is available for review as part of Case File No. 2013.0154E at the SF Planning Department, 1650 Mission Street, Suite 400, San Francisco, California, 94103. Information from this document is provided in Table 13.

[107] Ibid.

**TABLE 13**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Transportation sector** | | | |
| Emergency Ride Home Program | All City employees are automatically eligible for the emergency ride home program. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Taxi vouchers are available to employees requiring emergency transportation home. |
| Healthy Air and Clean Transportation Ordinance, Section 403 (San Francisco Environment Code, Chapter 4, Section 403) | Requires all City officers, boards, commissions and department heads responsible for departments that require transportation to fulfill their official duties to reduce the Municipal Fleet by implementing Transit First policies by:<br>(A) maximizing the use of public transit, including taxis, vanpools, and car-sharing;<br>(B) facilitating travel by bicycle, or on foot; and,<br>(C) minimizing the use of single-occupancy motor vehicles, for travel required in the performance of public duties. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone provides commuter checks to employees to encourage use of public transportation. The proposed project would provide bike parking and would not build a new parking garage (no parking is currently provided), thus discouraging use of single-occupancy vehicles for travel. |
| Healthy Air and Clean Transportation Ordinance (San Francisco Environment Code, Chapter 4) | Requires the reduction of the number of passenger vehicles and light-duty trucks in the Municipal Fleet. In addition, requires new purchases or leases of passenger vehicles and light-duty trucks to be the cleanest and most efficient vehicles available on the market. There are also requirements for medium and heavy duty vehicles and for phasing out highly polluting vehicles (diesel MUNI buses). | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone has one (1) 14′ stake bed "recycling" truck and has retrofitted its propane-powered forklifts and carts with emission reduction equipment. Operations and maintenance activities would be performed by Moscone staff at the existing location, so existing fleet vehicles may be utilized.<br>The project would not require expansion of the existing fleet. If any new fleet vehicles are required for project operations and maintenance activities, new purchases would be required to be consistent with these vehicle efficiency requirements. |
| Biodiesel for Municipal Fleets (Executive Directive 06-02) | Requires all diesel using City Departments to begin using biodiesel (B20). Sets goals for all diesel equipment to be run on biodiesel by 2007 and goals for increasing biodiesel blends to B100. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Consistent with this requirement, all diesel fuel vehicles owned and operated by Moscone currently use B20. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Transportation sector (cont.)** | | | |
| Clean Construction Ordinance (San Francisco Administrative Code, Section 6.25) | Effective March 2009, all contracts for large (20+ day) City projects are required to:<br>A. Fuel diesel vehicles with B20 biodiesel, and<br>B. Use construction equipment that meet USEPA Tier 2 standards or best available control technologies for equipment over 25 hp. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | All diesel fuel vehicles would use B20, and construction equipment shall meet USEPA Tier 2 standards or use best possible pollution control technologies. |
| Bicycle Parking in City-Owned and Leased Buildings (San Francisco Planning Code, Section 155.1) | Class 1 and 2 Bicycle Parking Spaces<br>Class 1 Requirements:<br>(A) Provide two spaces in buildings with 1-20 employees.<br>(B) Provide four spaces in buildings with 21 to 50 employees.<br>(C) In buildings with 51 to 300 employees, provide bicycle parking equal to at least five percent of the number of employees at that building, but no fewer than five bicycle spaces.<br>(D) In buildings with more than 300 employees, provide bicycle parking equal to at least three percent of the number of employees at that building, but no fewer than 16 bicycle spaces.<br>In addition to the Class 1 bicycle parking spaces provide Class 2 bicycle parking.<br>Class 2 Requirements:<br>(A) In buildings with one to 40 employees, at least two bicycle parking spaces shall be provided.<br>(B) In buildings with 41 to 50 employees, at least four bicycle parking spaces shall be provided.<br>(C) In buildings with 51 to 100 employees, at least six bicycle parking spaces shall be provided.<br>(D) In buildings with more than 100 employees, at least eight bicycle parking spaces shall be provided. Wherever a responsible City official is required to provide eight or more Class 2 bicycle parking spaces, at least 50 percent of those parking spaces shall be covered. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone would have over 300 employees at project completion. The proposed project would provide 18 Class 1 bike parking spaces for employees. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Energy Efficiency Sector** | | | |
| Green Building requirements for City Buildings: Indoor Water Use Reduction (San Francisco Environment Code, Chapter 7) | The LEED Project Administrator shall submit documentation verifying a minimum 30 percent reduction in the use of indoor potable water, as calculated to meet and achieve LEED credit WE3.2. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would meet the requirement of a 30% reduction in the use of indoor potable water (LEED Standard). Documentation would be provided to the Department of Building Inspection (DBI) during the permit approval process. |
| Resource Efficiency and Green Building Ordinance (San Francisco Environment Code, Chapter 7) | All new construction must comply achieve at a minimum the LEED® Gold standard.<br>City leaseholds are subject to all of the requirements of the Commercial Water Conservation Ordinance of Chapter 13A of the San Francisco Building Code, including provisions requiring the replacement of non-compliant water closets and urinals on or before January 1, 2017.<br>1. All water closets (toilets) with a rated flush volume exceeding 1.6 gallons per flush and all urinals with a rated flush volume exceeding 1.0 gallon per flush must be replaced with high-efficiency water closets that use no more than 1.28 gallons per flush and high efficiency urinals that use no more than 0.5 gallons per flush, respectively.<br>2. Showerheads must use no more than 1.5 gal/ min. In addition, all showerheads in the facility having a maximum flow rate exceeding 2.5 gallons per minute must be replaced with showerheads that use no more than 1.5 gal/ min.<br>3. All faucets and faucet aerators in the facility with a maximum flow rate exceeding 2.2 gallons per minute are replaced with fixtures having a maximum flow rate not to exceed 0.5 gallons per minute per appropriate site conditions. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | All existing and new water closets, urinals and faucets in the project would comply with the Commercial Water Conservation Ordinance of Chapter 13A of the San Francisco Building Code. |
| Green Building requirements for City Buildings: Energy Efficient Lighting Retrofit Requirements. (San Francisco Environment Code, Chapter 7) | These requirements (or those in the CCR Title 24, Part 6, or subsequent State standards, whichever are more stringent) shall apply in all cases except those in which a City department is not responsible for maintenance of light fixtures or exit signs.<br>**Exit Signs -** At the time of installation or replacement of broken or non-functional | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The project would comply with the San Francisco Environment Code, Chapter Environment Code Chapter 7, Energy Efficient Lighting Retrofit Requirements. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Energy Efficiency Sector** | | | |
| Green Building requirements for City Buildings: Energy Efficient Lighting Retrofit Requirements. (San Francisco Environment Code, Chapter 7) (cont.) | exit signs, all exit signs shall be replaced with light-emitting diode (L.E.D.)-type signs. Edge-lit compact fluorescent signs may be used as replacements for existing edge-lit incandescent exit signs.<br>**Fluorescent Fixtures - Mercury Content.** The mercury content of each 4-foot or 8-foot fluorescent lamp ("tube" or "bulb") installed in a luminaire shall not exceed 5 mg for each 4-foot fluorescent lamp, or 10 mg for each 8-foot fluorescent lamp.<br>**Fluorescent Fixtures - Energy Efficiency.** The lamp and ballast system in each luminaire that utilizes one or more 4-foot or 8-foot linear fluorescent lamps to provide illumination in a City-Owned Facility must meet the specified requirements.<br>**Exterior Light Fixtures -** At the time of installation or replacement of broken or non-functional exterior light fixtures, a photocell or automatic timer shall be installed to prevent lights from operating during daylight hours. | | |
| Green Building requirements for City Buildings: Energy Performance (San Francisco Environment Code, Chapter 7) | Using an Alternative Calculation Method (ACM) approved by the California Energy Commission, the LEED Project Administrator shall calculate the project's energy use, and compare it to the standard or "budget" building to achieve LEED credit EA1 by either:<br>(A) A 15 percent compliance margin over Title 24, Part 6, 2008 California Energy Standards; or,<br>(B) Document compliance with Title 24, Part 6, 2008 California Energy Standards, including submittal of all standard documentation, and additionally demonstrate that the project achieves a 15 percent or greater compliance margin over the ASHRAE 90.1 2007 energy cost baseline using the published LEED 2009 rules. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would achieve a 15% energy reduction compared to 2008 California Energy Code, Title 24, Part 6. Documentation would be provided to DBI during the permit approval process. |
| Green Building requirements for City Buildings: Renewable Energy (San Francisco Environment Code, Chapter 7) | The LEED Project Administrator shall confer with SFPUC on renewable energy opportunities for municipal construction projects.<br>The LEED Project Administrator shall submit documentation verifying that either: | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | At a minimum, at least 1% of the building's energy would be generated on-site with renewable sources, achieving LEED Credit A2. Documentation would be provided. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Energy Efficiency Sector (cont.)** | | | |
| Green Building requirements for City Buildings: Renewable Energy (San Francisco Environment Code, Chapter 7) (cont.) | (A) At least 1 percent of the building's energy costs are offset by on-site renewable energy generation, achieving LEED credit A 2, including any combination of: photovoltaic, solar thermal, wind, biofuel-based electrical systems, geothermal heating, geothermal electric, wave, tidal, or low impact hydroelectric systems, or as specified in Section 25741 of the California Public Resources Code; or,<br>(B) In addition to meeting LEED prerequisite EA 1 Energy performance requirement, achieve an additional 10 percent compliance margin over Title 24, Part 6, 2008 California Energy Standards, for a total compliance margin of at least 25 percent. | | |
| Green Building requirements for City Buildings: Commissioning (San Francisco Environment Code, Chapter 7) | The LEED Project Administrator shall submit documentation verifying that the facility has been or will meet the criteria necessary to achieve LEED credit EA 3.0 (Enhanced Commissioning), in addition to LEED prerequisite EAp1 (Fundamental Commissioning of Building Energy Systems.) | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would have fundamental and enhanced commissioning to meet LEED EAp1 and EA 3.0. This would be verified during the design and construction phases. |
| **Waste Reduction Sector** | | | |
| Resource Efficiency and Green Building Ordinance (San Francisco Environment Code, Chapter 7) | The ordinance requires all demolition (and new construction) projects to prepare a Construction and Demolition Debris Management Plan designed to recycle construction and demolition materials to the maximum extent feasible, with a goal of 75% diversion.<br>The ordinance specifies requires for all city buildings to provide adequate recycling space | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The project would comply with this requirement by working with local waste management companies to create a sorting and recycling program to divert at least 75% of the demolition and construction debris from landfills. This would be accomplished by establishing the requirement with the subcontractors and vendors and providing proper supervision to make sure it is enforced. This would be tracked by monthly reports provided by the waste management company. |
| Resource Conservation Ordinance (San Francisco Environment Code, Chapter 5) | This ordinance establishes a goal for each City department to (i) maximize purchases of recycled products and (ii) divert from disposal as much solid waste as possible so that the City can meet the state-mandated 50% division requirement. Each City department shall prepare a Waste Assessment. The ordinance also requires the Department | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone Center has a conservation program that has been implemented for the past 15 years, and this program would continue with the proposed project. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Waste Reduction Sector (cont.)** | | | |
| Resource Conservation Ordinance (San Francisco Environment Code, Chapter 5) (cont.) | of the Environment to prepare a Resource Conservation Plan that facilitates waste reduction and recycling. The ordinance requires janitorial contracts to consolidate recyclable materials for pick up. Lastly, the ordinance specifies purchasing requirements for paper products. | | |
| Green Building Requirements for City Buildings: Recycling (San Francisco Environment Code, Chapter 7) | All City departments are required to recycle used fluorescent and other mercury containing lamps, batteries, and universal waste as defined by California Code of Regulations Section 66261.9 | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone Center currently complies with this requirement and would continue to do so with the proposed project. |
| Mandatory Recycling and Composting Ordinance (San Francisco Environment Code, Chapter 19) | The mandatory recycling and composting ordinance requires all persons in San Francisco to separate their refuse into recyclables, compostables and trash, and place each type of refuse in a separate container designated for disposal of that type of refuse. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Moscone would continue its current system of sorting trash, compostables and recyclables at project completion in a manner that complies with the City's mandatory ordinance. |
| Construction Recycled Content Ordinance (San Francisco Administrative Code, Section 6.4) | Ordinance requires the use of recycled content material in public works projects to the maximum extent feasible and gives preference to local manufacturers and industry. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | To the extent possible, the proposed project would use recycled content materials and give preference to local manufacturers and industry. |
| **Environment/Conservation Sector** | | | |
| Street Tree Planting Requirements for New Construction (San Francisco Planning Code Section 138.1) | Planning Code Section 138.1 requires new construction, significant alterations or relocation of buildings within many of San Francisco's zoning districts to plant on 24-inch box tree for every 20 feet along the property street frontage | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | It is not feasible to plant the number of trees required by the Planning Code. The Department of Public Works would pay the required fee in lieu of planted trees to meet this requirement. |
| Green Building requirements for City Buildings: Enhanced Refrigerant Management (San Francisco Environment Code, Chapter 7) | The LEED Project Administrator shall submit documentation verifying that the project will reduce ozone depletion, while minimizing direct contribution to climate change, achieving LEED credit EA 4. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The project LEED Administrator would submit the required documentation, stating the project achieves LEED credit EA 4. The new or relocated project components, including the kitchen, would not have installed equipment that contains CFCs or halons. |
| Green Building requirements for City Buildings: Low Emitting Materials (San Francisco Environment Code, Chapter 7) | The LEED Project Administrator shall submit documentation verifying that the project is using low-emitting materials, subject to onsite verification, achieving LEED credits EQ 4.1. EQ 4.2. EQ 4.3. and EQ 4.4 wherever applicable: | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would use low-emitting materials to achieve LEED credits EQ 4.1, EQ 4.2, EQ 4.3, and EQ 4.4, wherever applicable. Documentation would be submitted to the Green Building Certification Institute (GBCI) to that effect. Pursuant to Environmental |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Environment/Conservation Sector (cont.)** | | | |
| Green Building requirements for City Buildings: Low Emitting Materials (San Francisco Environment Code, Chapter 7) (cont.) | (A) Adhesives, sealants and sealant primers shall achieve LEED credit EQ 4.1. including compliance with South Coast Air Quality Management District (SCAQMD) Rule 1168.<br>(B) Interior paints and coatings applied on-site shall achieve LEED credit EQ 4.2. including:<br>(i) Architectural paints and coatings shall meet the VOC content limits of Green Seal Standard GS-11.<br>(ii) Anti-corrosive and anti-rust paints applied to interior ferrous metal substrates shall not exceed the VOC content limit of Green Seal Standard GC-03 of 250 g/L.<br>(iii) Clear wood finishes, floor coatings, stains, primers, and shellacs applied to interior elements shall not exceed SCAQMD Rule 1113 VOC content limits.<br>(C) Flooring systems shall achieve LEED credit EQ 4.3 Option 1. including:<br>(i) Interior carpet shall meet the testing and product requirements of the Carpet and Rug Institute Green Label Plus program.<br>(ii) Interior carpet cushioning shall meet the requirements of the carpet and Rug Institute Green Label Program.<br>(iii) Hard surface flooring, including linoleum, laminate flooring, wood flooring, ceramic flooring, rubber flooring, and wall base shall be certified as compliant with the FloorScore standard, provided.<br>However, that 100 percent reused or 100 percent post-consumer recycled hard surface flooring may be exempted from this LEED credit EQ 4.3 requirement. Projects exercising this exemption for hard surface flooring shall otherwise be eligible (or LEED credit EQ 4.3.<br>(D) Interior composite wood and agrifiber products shall achieve | | Code, Chapter 7, upon receiving the LEED rating from the GBCI, the LEED Project Administrator shall submit the LEED ratings and the final LEED Scorecard to the Department of the Environment for review.<br>The proposed project would explore the possibility of achieving LEED Pilot Credit 2. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Environment/Conservation Sector (cont.)** | | | |
| Green Building requirements for City Buildings: Low Emitting Materials (San Francisco Environment Code, Chapter 7) (cont.) | LEED credit EQ 4.4 by containing no added urea formaldehyde resins. Interior and exterior hardwood plywood, particleboard, and medium density fiberboard composite wood products shall additionally meet California Air Resources Board Air Toxics Control Measure for Composite Wood (17 CCR 93120 et seq.), by or before the dates specified in those sections.<br>(E) Project sponsors are encouraged to achieve LEED Pilot Credit 2: Persistent Bioaccumulative Toxic Chemicals Source Reduction: Dioxins and Halogenated Organic Compounds. This standard is consistent with Environment Code Chapter 5: Non-PVC Plastics. | | |
| Stormwater Management Ordinance and Construction Pollution Prevention (San Francisco Environment Code, Chapter 7) | For City sponsored projects, the LEED Project Administrator shall submit documentation verifying that a construction project that is located outside the City and County of San Francisco achieves the LEED SS6.2 credit.<br>Construction projects located within the City and County of San Francisco shall implement the applicable stormwater management controls adopted by the San Francisco Public Utilities Commission (the "SFPUC").<br>All construction projects shall develop and implement construction activity pollution prevention and stormwater management controls adopted by the SFPUC, and achieve LEED prerequisite SSp1 or similar criteria adopted by the SFPUC, as applicable. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would comply using its current storm water holding tank system to which the new construction would connect.<br>All new and existing project storm water management systems would comply with SFPUC Regulations. Documentation to that effect would be provided to SFPUC during permit review. |
| Environmentally Preferable Purchasing Ordinance (Formerly Precautionary Purchasing Ordinance) | Requires City Departments to purchase products on the Approved Green Products List, maintained by the Department of the Environment. The items in the Approved Green Products List has been tested by San Francisco City Depts. and meet standards that are more rigorous than ecolabels in protecting our health and environment. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | Any products purchased by City departments would be from the Approved Green Products List, whenever possible. |
| Tropical Hardwood and Virgin Redwood Ban (San Francisco Environment Code, Chapter 8) | The ordinance prohibits City departments from procuring, or engaging in contracts that would use the ordinance-listed tropical hardwoods and virgin redwood. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | All contracts associated with construction of the proposed project would prohibit use of the ordinance-listed tropical hardwood or virgin redwood in the proposed project. |

**TABLE 13 (Continued)**
**GREENHOUSE GAS REDUCTION STRATEGIES APPLICABLE TO THE PROPOSED PROJECT**

| Regulation | Requirement | Project Compliance | Discussion |
|---|---|---|---|
| **Environment/Conservation Sector (cont.)** | | | |
| Wood Burning Fireplace Ordinance (San Francisco Building Code, Chapter 31, Section 3111.3) | Bans the installation of wood burning fire places except for the following:<br>• Pellet-fueled wood heater<br>• EPA approved wood heater<br>• Wood heater approved by the Northern Sonoma Air Pollution Control District | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | The proposed project would not include the installation of fire places, wood burning or otherwise. |
| Regulation of Diesel Backup Generators (San Francisco Health Code, Article 30) | Requires:<br>All diesel generators to be registered with the Department of Public Health<br>All new diesel generators must be equipped with the best available air emissions control technology. | ☒ Project Complies<br>☐ Not Applicable<br>☐ Project Does Not Comply | All diesel generators used would be registered with the Department of Public Health, and new generators would be equipped with the best available air emissions control technology. |

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **8. WIND AND SHADOW—Would the project:** | | | | | |
| a) Alter wind in a manner that substantially affects public areas? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas? | ☒ | ☐ | ☐ | ☐ | ☐ |

The proposed project could create new shadow in a manner that substantially affects outdoor recreation facilities or other public areas. For the purposes of this Initial Study, shadow impacts are identified as potentially significant. However, the EIR will include a detailed analysis of the project's shadow impact, both individually and cumulatively.

**Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas. (Less than Significant)**

This discussion summarizes the results of the Wind Technical Memorandum prepared for the proposed project by ESA.[108] Wind impacts are generally caused by large building masses extending substantially above their surroundings, and by buildings oriented such that a large wall catches a prevailing wind,

[108] ESA, *Technical Memorandum: Potential Section 148 Wind Impacts, Proposed Expansion of Moscone Center*, October 15, 2013.

particularly if such a wall includes little or no articulation. Average wind speeds in San Francisco are the highest in the summer and lowest in winter; however, the strongest peak winds occur in winter. Throughout the year, the highest wind speeds occur in mid-afternoon and the lowest in the early morning. Westerly to northwesterly winds are the most frequent and strongest winds regardless of season. Of the primary wind directions, four have the greatest frequency of occurrence and also make up the majority of the strong winds that occur; these include the northwest, west -northwest, west, and west-southwest.

Per Section 148 of the *Planning Code*, the proposed project would have a significant wind impact if it would cause the 26 mile per hour (mph) wind hazard criterion to be exceeded for more than one hour per year. Under Section 148, new buildings and additions may not cause wind speeds that meet or exceed this hazard criterion.[109] Under Section 148, no exception may be granted for buildings that result in winds that exceed the hazard criterion.

Planning Code Section 148 also includes requirements for buildings to meet the pedestrian comfort criterion of 11 mph, unless an exception is granted. No exceptions may be granted for buildings that exceed the wind hazard criterion. A project that would cause exceedances of the pedestrian comfort criterion, of 11 mph, but not the wind hazard criterion, would not be considered to have a significant impact under CEQA.[110]

Upwind development in the vicinity is characterized by:

- to the northwest – the relatively open space of the Yerba Buena Gardens, backstopped by the wall of high-rise buildings along Market Street;
- to the west-northwest and west – the block-long Metreon Building, with the Moscone West building, Fifth and Mission Garage, and the San Francisco Center further blocking the free flow of wind; and,
- to the southwest – a long open fetch on Howard Street, narrowed by buildings along the street.

Extensive prior experience with wind testing indicates that this is a windy area. Here, upwind high-rise buildings contribute to wind turbulence, while a substantial fetch of open space allows winds to gain strength and increase in speed while approaching the site.

The proposed Moscone Center Expansion project would include new construction, primarily above grade, both north and south of Howard Street. The new project buildings would result in higher Moscone Center frontages along Howard Street. Moscone North, at 54 feet, would be approximately 10 feet taller than the existing Moscone North lobby and restaurant structure. At project completion, the Moscone

[109] Because the hazard criterion is stated in terms of 1 hour of exceedance, it is most appropriate to report exceedances of this criterion in terms of the number of hours per year that the excess occurs, rather than the accompanying wind speeds. Thus, for each wind analysis, the number of locations and the total sum of the durations of exceedances of the hazard criterion are important measures of effect. This differs from reporting of both comfort criteria, for which wind speeds exceeded 10% of the time are examined and presented, but statistics other than the number of locations are not detailed.

[110] The hazard and comfort criteria are derived from SF Planning Code §148, which applies to the City's downtown area, and are used by extension in CEQA analysis citywide.

South Expansion and Esplanade Expansion would function and appear as one building 95 feet in height, which would be 68 feet taller than the existing Moscone South lobby.

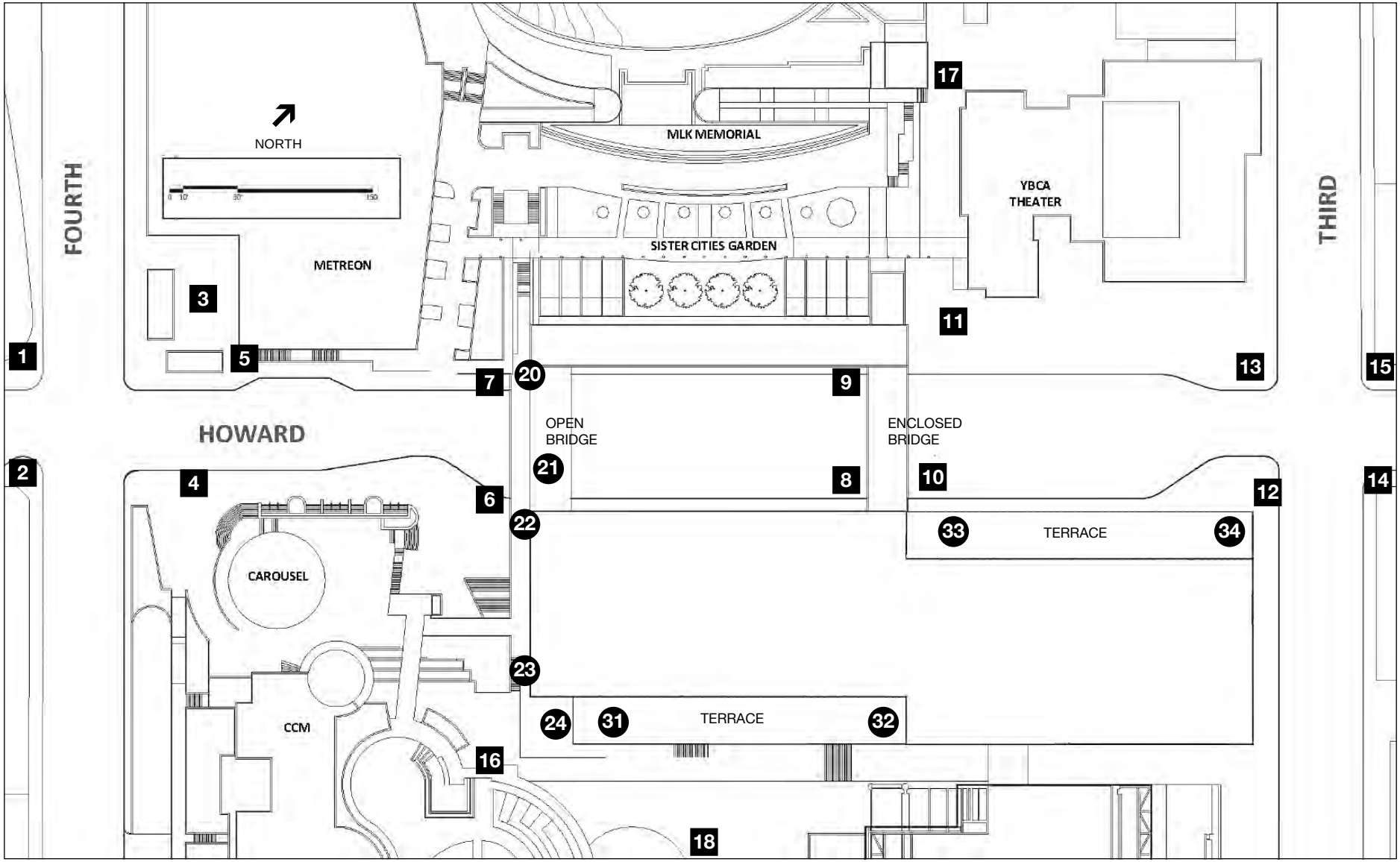
Also, the expansion would extend the frontages of Moscone Center towards Howard Street, and would add one elevated walkway and one enclosed structure that would cross Howard Street to connect the North and South parts of the Moscone Center.

A 1-inch to 50-foot scale model of the project site and vicinity was constructed in order to simulate the project and its existing and future contexts. The project's effects on wind were tested in a wind tunnel using 18 different test points. Wind test-point locations are shown in **Figure 19**. The results of the wind analysis are presented in **Table 14**.

**TABLE 14**
**WIND ANALYSIS: EXISTING, PROJECT, AND CUMULATIVE SCENARIOS**
**MOSCONE EXPANSION – WIND-TUNNEL TEST, AUGUST 2013**

| References | | Existing | | | Project | | | | Cumulative | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Test Location Number | Wind Comfort Criterion Speed, miles/hour | Equivalent Wind Speed Exceeded 10% of Time, miles/hour | Percent of Time Wind Speed Exceeds Criterion | SOURCE | Equivalent Wind Speed Exceeded 10% of Time, miles/hour | Percent of Time Wind Speed Exceeds Criterion | Speed Change Relative to Existing, miles/hour | SOURCE | Equivalent Wind Speed Exceeded 10% of Time, miles/hour | Percent of Time Wind Speed Exceeds Criterion | Speed Change Relative to Project, miles/hour | SOURCE |
| 1 | 11 | *9* | 5 | | 10 | *6* | | | 10 | *8* | | |
| 2 | 11 | *11* | 11 | | 11 | *11* | | | 12 | *13* | | **s** |
| 3 | 11 | *8* | 1 | | 8 | *1* | | | 9 | *2* | | |
| 4 | 11 | *11* | 10 | | 11 | *8* | | | 11 | *11* | 1 | |
| 5 | 11 | *9* | 4 | | 9 | *2* | -1 | | 10 | *5* | 1 | |
| 6 | 11 | *11* | 8 | | 12 | *12* | 1 | **p** | 13 | *17* | 1 | **p** |
| 7 | 11 | *8* | 1 | | 10 | *4* | 1 | | 9 | *3* | | |
| 8 | 11 | *15* | 22 | **e** | 12 | *12* | -3 | **e** | 13 | *15* | 1 | **e** |
| 9 | 11 | *15* | 19 | **e** | 9 | *2* | -6 | - | 9 | *3* | 1 | |
| 10 | 11 | *15* | 21 | **e** | 12 | *11* | -3 | **e** | 13 | *16* | 1 | **e** |
| 11 | 11 | *11* | 10 | | 9 | *3* | -2 | | 9 | *3* | | |
| 12 | 11 | *11* | 11 | | 10 | *8* | -1 | | 11 | *9* | | |
| 13 | 11 | *9* | 2 | | 9 | *2* | | | 9 | *2* | | |
| 14 | 11 | *10* | 5 | | 9 | *2* | -1 | | 9 | *3* | | |
| 15 | 11 | *10* | 4 | | 11 | *10* | 1 | | 11 | *10* | | |
| 16 | 11 | *16* | 29 | **e** | 16 | *26* | | **e** | 17 | *31* | 1 | **e** |
| 17 | 11 | *9* | 4 | | 10 | *4* | | | 9 | *4* | | |
| 18 | 11 | *15* | 26 | **e** | 9 | *3* | -6 | - | 10 | *4* | | |
| **Ave. of 10%** | | **11.4 mph** | | | **10.3 mph** | | **-1.1 mph** | | **10.8 mph** | | **-0.6 mph** | |
| | **percent:** | | **11%** | | | **7%** | | | | **9 %** | | |
| **Total Exceedances:** | | **Total** | **5** | | | **Total** | **4** | | | **Total** | **5** | |
| *Subtotals by type:* | | *Existing* | 5 | **e** | *Existing* | | 3 | **e** | *Existing or Project* | | 4 | **e/p** |
| | | | | | *New, due to project* | | 1 | **p** | *New, due to Cumulative* | | 1 | **s** |
| | | | | | *New, at new location* | | 0 | n | *New, at new location* | | 0 | n |
| SOURCE: Environmental Science Associates | | | | | *Eliminated by Project* | | 2 | - | *Eliminated by Cumulative* | | *0* | - |

NOTES:
Comfort criterion: **e** = Existing exceedance; **p** = Exceedance due to project; **s** = Exceedance due to cumulative conditions.
Hazard criterion: Points that exceed the hazard criterion are shown in **bold** (none does).
Wind speeds and durations are rounded, so column totals and row differences may not add.




# Ground Level

# Elevated

SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

**Figure 19**

Wind Test-Point Locations

Under existing conditions, 13 of the 18 pedestrian test points are at or less than the Planning Code's pedestrian comfort criterion of 11 mph. The project would create one new pedestrian-comfort criterion exceedance at street level, near the northwest corner of Moscone South. The project would also eliminate two existing pedestrian-comfort criterion exceedances, one on the north side of Howard Street, in front of the North Lobby entrance, and one in the open space south of the Moscone South building. A total of 14 of the 18 pedestrian test points would meet the Planning Code's pedestrian-comfort criterion of 11 mph. The Code's wind hazard criterion would not be exceeded at any of the 18 pedestrian test locations under existing conditions. The proposed project's walkway and terraces would be similarly free of wind hazards.[111]

For this reason, any changes in wind speeds due to the project would be considered to be ***less than significant***.

**Mitigation**: None required.

**Impact C-WS: The proposed project, in combination with past, present, and reasonably foreseeable future projects, would not alter wind in a manner that substantially affects public areas. (Less than Significant)**

Wind tunnel testing was also conducted for cumulative conditions. The cumulative development scenario includes projects within proximity to the project site that could combine with the proposed project to affect wind conditions. Given that wind is redirected to the ground level on a building-by-building basis, wind impacts are highly localized. Cumulative developments that could affect these localized wind impacts are located within the immediate project site vicinity and in areas that are upwind from the project site. The cumulative development scenario includes the proposed project, as well as the three following proposed cumulative developments replacing the existing buildings at those project sites:

- 706 Mission Street,
- 5M Project, at Fifth Street between Mission and Howard Streets, and
- 250 Fourth Street.

These projects are further described in "Approach to Cumulative Analysis" on p. 40.

Compared to existing conditions, the cumulative development scenario would create one new pedestrian-comfort criterion exceedance at street level, on the southwest corner of Fourth and Howard Streets and a second new pedestrian-comfort criterion exceedance at street level, near the northwest corner of Moscone South. However, cumulative development would also eliminate two existing pedestrian-comfort criterion exceedances, one in front of the North Lobby entrance on Howard Street and one in the open space south of the Moscone South building. Thirteen of the 18 pedestrian test points would meet the Planning Code's pedestrian-comfort criterion of 11 mph.

[111] The test model did not include simulated parapet walls or railings around the walkway or the terraces, and the measured wind speeds therefore represent maximum expected values. Solid parapet walls or railings to a height of approximately 4 feet are expected to reduce wind speeds by several miles per hour.

Under the cumulative development scenario, a wind hazard would not exist at any of the 18 pedestrian locations. For this reason, cumulative wind impacts would be considered to be ***less than significant***. Given that the project and cumulative development would not result in a wind hazard exceedance, no cumulatively significant wind impacts would occur and cumulative wind impacts would be ***less than significant***.

**Mitigation**: None required.

| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **9. RECREATION—Would the project:** | | | | | |
| a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Physically degrade existing recreational resources? | ☐ | ☐ | ☒ | ☐ | ☐ |

**Impact RE-1: The proposed project would increase the use of existing neighborhood parks or other recreational facilities, but not to the extent that substantial physical deterioration or degradation of the facilities would occur or be accelerated. (Less than Significant)**

The Moscone Center is made up of three main halls: Moscone North and Moscone South, which are located across Howard Street from each other between Third and Fourth Streets, and the Moscone West exhibition hall, located across Fourth Street, north of Howard Street. In addition to Moscone North, the project block north of Howard Street shares Lot 115 with other buildings and uses above grade, including the large Yerba Buena Garden (a public park that contains the Sister Cities Garden, the Martin Luther King, Jr. Memorial, and various art installations), the Yerba Buena Center for the Arts Galleries and Forum building, and the Yerba Buena Center for the Arts Theater. The project block south of Howard Street shares Lot 91 with a variety of other buildings and uses, including the Yerba Buena Bowling and Ice Skating Center, the Children's Creativity Museum, the Child Development Center, the Children's Garden, and the restored 1905 Carousel.

The Moscone Center currently employs 317 full-time-equivalent (FTE) employees. The project is expected to increase FTE employees by approximately 28 persons, totaling 345 employees upon project completion. Also, up to 4,200 additional visitors could attend the largest events, although this is a conservative estimate because the additional space would likely be used to increase space devoted to exhibition, not

necessarily to visitor circulation.[112] Although new employees or an increased number of visitors may utilize parks and recreational spaces in the vicinity of the proposed project, the increased use would likely be minimal as the employees' and visitors' main destination would be the proposed project site. Furthermore, it is unlikely that any possible increased use could cause a substantial physical deterioration to recreation facilities as the duration of time spent in the area by employees and visitors would be far less than those of nearby residents. Therefore, this impact would be ***less than significant***.

**Mitigation:** None required.

**Impact RE-2: The proposed project would not require the construction or expansion of recreational facilities that would have a significant effect on the environment. (No impact)**

The proposed project does not include recreational facilities or residential use. As discussed in RE-1, the proposed project would not substantially increase use of nearby recreational facilities and thus would not require the construction or expansion of recreational facilities. The project proposes modifications to the circulation system that are intended to enhance access from the site to and through the Yerba Buena Gardens and surrounding area. Therefore, the project would not result in the construction of recreational facilities that would themselves have a physical environmental impact. There would be ***no impact*** with regard to this criterion.

**Mitigation:** None required.

**Impact C-RE: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would not result in considerable contribution to cumulative recreation impacts. (Less than Significant)**

The geographic scope for potential cumulative recreation impacts encompasses recreational facilities and parks in the vicinity of the Moscone Center. The area generally includes the Central South of Market area, which includes Yerba Buena Gardens, Yerba Buena Center for the Arts Galleries and Arts Theater, Yerba Buena Bowling and Ice Skating Center, and other nearby recreational facilities and parks. Similar to the proposed project, projects within the vicinity would utilize such recreational facilities and parks, which may increase the use of these facilities or result in physical deterioration of the facilities.

The Central SoMa Plan would implement changes to allowed land uses and building heights to promote a greater mix of uses while also emphasizing office uses in the central portion of the plan area, allowing the area to accommodate additional jobs and residential uses. Like the proposed project, cumulative projects in the area would be subject to Planning Code open space requirements regarding the provision of public and/or private open space. Cumulative projects could result in cumulative impacts to recreational facilities and parks, but would be subject to implementation of the Planning Code and other

[112] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

requirements, as needed. However, the use of recreational facilities in the vicinity of the project site is not expected to noticeably increase as a result of the proposed project, the increase of new employees and visitors in the project vicinity as a result of the proposed project would be relatively small compared to the existing conditions. Furthermore recreational facilities would not be the focal point for Moscone Center employees and visitors. For these reasons, the proposed project would not result in a considerable contribution to any potential cumulative impact to recreational facilities and cumulative impacts would be ***less than significant***.

**Mitigation:** None required.

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| Topics: | | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|---|
| **10.** | **UTILITIES AND SERVICE SYSTEMS— Would the project:** | | | | | |
| a) | Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) | Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) | Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) | Have sufficient water supply available to serve the project from existing entitlements and resources, or require new or expanded water supply resources or entitlements? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) | Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments? | ☐ | ☐ | ☒ | ☐ | ☐ |
| f) | Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs? | ☐ | ☐ | ☒ | ☐ | ☐ |
| g) | Comply with federal, state, and local statutes and regulations related to solid waste? | ☐ | ☐ | ☒ | ☐ | ☐ |

**Impact UT-1: Implementation of the proposed project would not result in significant impacts to wastewater collection and treatment facilities or require or result in the construction of new wastewater facilities, the construction of which could cause significant environmental impacts. (Less than Significant)**

The project site is served by San Francisco's combined sewage system. The sewage system is designed to collect and treat both sanitary sewage and rainwater runoff in the same sewer and treatment plants. Wastewater treatment for the east side of the City is provided primarily by the Southeast Water Pollution

Control Plant. The SFPUC Commission approved Phase 1 of the Sewer System Improvement Program to improve the function of the wastewater system citywide on August 28, 2012.[113] Additional efforts are under way to address wastewater needs in the San Francisco capital improvement program (CIP) to reduce the potential for on-street flooding during heavy rains.

**Operational Sanitary Flows.** The proposed project would utilize high-efficiency water fixtures as required by the City's Commercial Water Conservation Ordinance. Analysis of wastewater flows under the proposed project indicates that use of high-efficiency water fixtures, as required by San Francisco's Green Building Code, would result in a project-related increase in water use of approximately 9,300 gallons per day, or 3.4 million gallons annually.[114] If it is conservatively assumed that 100 percent of water used on site would be converted to wastewater, the proposed project would result in additional wastewater flows of up to an additional 3.4 million gallons annually. While the proposed project would increase sanitary sewage flows in the area, it would not cause collection treatment capacity of the sewer system in the City to be exceeded. The proposed project would meet wastewater pre-treatment requirements of the SFPUC, as required by the San Francisco Industrial Waste Ordinance.[115] Additionally, the proposed project would be subject to the City's Wastewater Capacity Charge. As required, funds raised through the capacity charge would be directly used to offset the cost of future wastewater capital improvement projects and repairs.

**Operational Groundwater Flows.** Under the proposed project, groundwater would be re-used at the project site. The average amount of groundwater pumped from the existing sumps is approximately 41,400 gallon per day (15.1 million gallons annually). Due to the relatively shallow depth of groundwater on site, foundation dewatering for the new excavated area would likely be required, slightly increasing the amount of groundwater pumped. Under the proposed project, the below-ground area would be slightly enlarged to include the currently unexcavated "plugs," and the groundwater that is currently pumped for dewatering would be treated on-site and reused for non-potable purposes, such as landscape irrigation, toilet flushing, street sweeping, or firefighting under the City's voluntary non-potable water program described above. Reuse of the approximately 15.1 million gallons of groundwater produced during permanent dewatering for non-potable purposes would result in a net reduction of wastewater discharges to the combined sewer system by an average of 11.7 million gallons per year when the addition of 3.4 million gallons per year of wastewater is considered. The impacts to the sewage system resulting from the proposed project would be negligible.[116]

**Construction Groundwater Flows.** The proposed project could also require additional dewatering during construction activities, which would also increase the amount of groundwater discharge. Any dewatering that occurs would be discharged into the City sewer system; this would require a permit pursuant to Public Works Code Article 4.1, which regulates the quantity and quality of discharges to the combined sewer system. Public Works Code Article 4.1 incorporates and implements the City's National Pollutant Discharge Elimination System (NPDES) permits. Generally, the City's requirements include the development of a

[113] SFPUC, History of the SSIP, available online at http://www.sfwater.org/index.aspx?page=609, accessed September 10, 2013.
[114] Built Ecology, 2013. *SFPUC Meeting Follow Up – Summary of Water Flows*. March 13.
[115] San Francisco Public Works Code, Article 4.1 (amended by Ordinance No. 19-92, January 13, 1992).
[116] Scarpulla, John, San Francisco Public Utilities Commission, personal communication with Brook Mebrahtu, San Francisco Department of Public Works, November 12, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

stormwater pollution prevention plan (SWPPP), which includes an erosion and sediment control plan, and review of that plan by SFPUC. The San Francisco Public Works Code also requires the use of BMPs during the construction and operational periods. However, this discharge would be temporary in nature and would not generate additional wastewater that would require the construction of new, or expansion of existing, wastewater facilities. In light of the above, the proposed project would not exceed wastewater treatment requirements of the Regional Water Quality Control Board, and it would have a ***less than significant*** impact with regard to this criterion. The project would not require the construction of new wastewater treatment facilities or expansion of existing ones, and it would have ***no impact*** with regard to requiring new wastewater facilities that could result in significant environmental effects.

**Mitigation:** None required.

**Impact UT-2: Implementation of the proposed project would not require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (No Impact)**

The proposed project would primarily extend structures above existing impervious surfaces or involve expansion below grade. The proposed project would not increase the amount of impervious surfaces at the project site. The project would reduce the existing stormwater runoff rate and volume by 25 percent by including a rainwater treatment system that would collect and treat 32,000 gallons annually. Additionally, the project proposes the use of low impact design features to capture stormwater runoff. The proposed project would be required to meet the standards for stormwater management identified in the San Francisco Stormwater Management Ordinance and would be designed to meet the San Francisco *2010 Stormwater Design Guidelines*, which would reduce the total stormwater runoff volume and peak stormwater runoff rate through the use of low impact designs approaches and BMPs including landscape planters designed to capture rain water. The project sponsor would be required to submit for SFPUC's approval a Stormwater Control Plan that complies with the stormwater design guidelines, and implementation of the plan would would ensure that the project meets performance measures set by the SFPUC related to storm water runoff rate and volume. Since the proposed project would not substantially increase the amount of impervious surfaces, it would not create a substantial amount of additional runoff water. Therefore, the proposed project would not require or result in the construction of a new or expansion of an existing storm drainage facility, and ***no impact*** would occur.

**Mitigation:** None required.

**Impact UT-3: The SFPUC has sufficient water supply and entitlements to serve the proposed project, and implementation of the proposed project would not require expansion or construction of new water treatment facilities. (Less than Significant)**

Water for the proposed project is provided by the SFPUC, which provides both water supply and wastewater collection and treatment. On June 14, 2011, the SFPUC adopted the *2010 Urban Water Management Plan* (UWMP) for the City and County of San Francisco. The UWMP includes citywide demand projections to the year 2035, compares available water supplies to meet demands, and presents

water demand management measures to reduce long-term water demand. In May 2013, SFPUC updated citywide water supply and demand projections with the *2013 Water Availability Study* (WAS).[117] According to the WAS, available water supply in 2015 will be 83.5 mgd. Retail water use[118] will be 83.7 mgd in 2015, comprising 78.1 mgd of in-City retail and irrigation use and 5.6 mgd of suburban retail use. Total retail demand is expected to hold relatively steady, at 83.4 mgd in 2020 and 84.2 mgd in 2035, with the relatively small increase in demand due primarily to expected growth in business and industry. The SFPUC plans to augment local supplies by extracting up to 4 mgd of groundwater from new wells in the City's Westside Groundwater Basin, as well as 4.0 mgd of recycled water from new recycled water projects. Total retail supply is expected to increase to 90.3 mgd by 2035.[119]

The SFPUC updated forecasts for future water demand using updated Planning Department forecasts based on the ABAG and Metropolitan Transportation Commission (MTC) Bay Area Sustainable Communities Strategy "Land Use Allocation," which was released in 2012. According to the WAS, the SFPUC can meet the current and future water demand in years of average or above-average precipitation. It can also meet future water demand in single-dry-year and multiple-dry-year events, with the exception of 2015. The proposed project construction is anticipated to be completed in 2018, and would therefore not be affected by any short-term water supply shortfall. With the Water Shortage Allocation Plan in place, and the addition of local supplies developed under the SFPUC Water System Improvement Program, the SFPUC concluded that it has sufficient water available to serve existing customers and planned future uses.[120]

The proposed project would increase employment during events at the project site by 28 FTE, and it could increase total daily event attendance by 4,200.[121] Due to this increase the proposed project would increase the demand for water. The proposed project would use approximately 9,269 gallons of water per day, or 3.3 million gallons annually.[122]

No new water delivery facilities would be required to serve the proposed project. The proposed project would be subject to the City's Commercial Water Conservation Ordinance, which is designed to minimize water use, and would be designed to incorporate water-conserving measures, such as low-flush toilets and urinals, as required by the water conservation ordinances and Chapter 4 of the California Plumbing Code. As required by the City's Commercial Water Conservation Ordinance the proposed project would utilize high-efficiency water fixtures. To further offset the need for water, the proposed project would re-use groundwater for irrigation, toilet flushing, street sweeping and firefighting. Furthermore, the proposed

[117] SFPUC, 2013 Water Availability Study for the City and County of San Francisco, March 2013.: http://sfwater.org/index.aspx?page=75, accessed December 27, 2013.

[118] Retail water use is distinguished from wholesale use, under which the SFPUC provides potable water to suburban water agencies throughout the San Francisco Bay Area.

[119] SFPUC, 2013 Water Availability Study for the City and County of San Francisco, March 2013. Available online at: http://sfwater.org/index.aspx?page=75, accessed December 27, 2013.

[120] SFPUC, 2010 Urban Water Management Plan for City and County of San Francisco, adopted June 14, 2011.

[121] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E. This is a conservative assumption since although the proposed increase in exhibit floor space will likely increase the total number of exhibitors and their staff; it does not necessarily imply an increase in the number of event visitors.

[122] Built Ecology, Memorandum: SFPUC Meeting Follow Up: Summary of Water Flows, March 13, 2013.

project would be subject to the Recycled Water Ordinance, adopted as Article 22 of the San Francisco Public Works Code. The proposed project would include all necessary plumbing for the future use of recycled water for non-potable applications. Therefore, the proposed project would incorporate required water-saving and groundwater re-use features that would reduce water consumption. Since the proposed project would have sufficient water supply available from existing entitlements, it would not require new water supply or water treatment facilities, and this impact would be ***less than significant***.

**Mitigation:** None required.

**Impact UT-4: The proposed project would be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs. (Less than Significant)**

San Francisco uses a three-cart collection program: residents and businesses sort solid waste into recyclables, compostable items such as food scraps and yard trimmings, and garbage. The City's Mandatory Recycling and Composting Ordinance (Ordinance 100-09) requires everyone in San Francisco to separate their refuse into recyclables, compostables, and trash. Recology (formerly Norcal Waste Systems, Inc.) provides solid waste collection, recycling, and disposal services for residential and commercial garbage, recycling, and composting in San Francisco through its subsidiaries San Francisco Recycling and Disposal, Golden Gate Disposal and Recycling, and Sunset Scavenger. Materials collected are hauled to the Recology transfer station/recycling center on Tunnel Avenue, near the southeastern city limit, for sorting and subsequent transportation to other facilities. Recyclable materials are taken to Recology's Pier 96 facility, where they are separated into commodities (e.g., aluminum, glass, and paper) and transported to other users for reprocessing. Compostables (e.g., food waste, plant trimmings, soiled paper) are transferred to a Recology composting facility in Solano County, where they are converted to soil amendment and compost. The remaining material that cannot otherwise be reprocessed ("trash") is transported to, and disposed of at, the Altamont Landfill in Alameda County.

The Altamont Landfill has a permitted peak maximum daily disposal of 11,150 tons per day and accepted 1.16 million tons in 2012.[123] The landfill has an estimated remaining capacity of approximately 46 million cubic yards or 74 percent of its permitted capacity. The estimated closure date of the landfill is January 2025.[124] In 2012, San Francisco generated approximately 454,500 tons of solid waste and sent approximately 375,000 tons to the Altamont Landfill, about 40 percent of the total volume of waste received at that facility.[125]

In 1988, San Francisco contracted for the disposal of 15 million tons of solid waste at the Altamont Landfill. The City contract with the Altamont Landfill expires in 2015. Through August 1, 2009, the City

[123] CalRecycle, "2012 Landfill Summary Tonnage Report". Available online at: http://www.calrecycle.ca.gov/SWFacilities/Landfills/tonnages; accessed January 21, 2014.

[124] CalRecycle, "Active Landfills Profile for Altamont Landfill and Resource Recovery (01-AA-0009)". Available online at: http://www.calrecycle.ca.gov/SWFacilities/Directory/01-AA-0009/Detail/, accessed on May 28, 2013.

[125] Data includes only landfilled waste. Most of the City's remaining solid waste was sent to the Ox Mountain Landfill in San Mateo County. CalRecycle, Single-year Countywide Origin Detail, 2012, San Francisco. Available online at: http://www.calrecycle.ca.gov/LGCentral/Reports/Viewer.aspx?P=OriginJurisdictionIDs%3d438%26ReportYear%3d2012%26ReportName%3dReportEDRSJurisDisposalByFacility. Reviewed November 27, 2013.

had used approximately 12.5 million tons of this contract capacity. The City projects that the remaining contract capacity will be reached no sooner than August 2014. In 2009, the City announced that it could award its landfill disposal contract to a Recology subsidiary for shipment of solid waste by truck and rail to the Recology Ostrom Road Landfill in Yuba County. This facility has an expected closure date of 2066 with a total design capacity of over 41 million cubic yards.[126] The ultimate determination with respect to future landfill contracting will be made by the Board of Supervisors on the basis of solid waste planning efforts being undertaken by the City's Department of the Environment.

Recycling, composting, and waste reduction are expected to increasingly divert waste from the landfill, per California and local requirements. The City was required by the State's Integrated Waste Management Act (AB 939) to divert 50 percent of its waste stream from landfill disposal by 2000. The City met this threshold in 2003 and has since increased it to 69 percent in 2005 and 70 percent in 2006. San Francisco exceeded its goal to divert 75 percent of its waste by 2010 and will implement new strategies to meet its zero waste goal by 2020.[127] In 2011, the target disposal rate for San Francisco residents and employees was 6.6 pounds/resident/day and 10.6 pounds/employee/day. Both of these targeted disposal rates were met in 2011 (the most recent year reported), with San Francisco generating about 2.9 pounds/resident/day and about 4.4 pounds/per employee/per day.[128]

Regardless of whether San Francisco renews its contract with the Altamont Landfill, switches to the Ostrom Road Landfill, or selects another facility, the proposed project would be subject to the City's Mandatory Recycling and Composting Ordinance, which requires the separation of refuse into recyclables, compostables, and trash, thereby minimizing solid waste disposal and maximizing recycling and composting. Although the proposed project could incrementally increase total waste generation from the City by increasing employment and attendance at Moscone events, the increasing rate of diversion through recycling and other methods would result in a decreasing share of total waste that requires deposition into the landfill. Given this, and given the existing and potential future long-term capacity available at the applicable landfill(s), the solid waste generated by the proposed project during operation would not result in the landfill exceeding its permitted capacity, and the proposed project would result in a ***less-than-significant*** solid waste generation impact.

As described in the Project Description, construction activities would result in an estimated 45,000 cubic yards of excess soils from the excavation activities beneath Howard Street, between Moscone North and South, and at the location of proposed building footings and foundations. Excavated soil would be would be taken to an appropriate facility for recycling, reuse, or disposal. The proposed project would be subject to the City's Construction and Demolition Debris Recovery Ordinance, which requires all construction and

[126] San Francisco is currently participating as a responsible agency in the environmental review process that Yuba County has begun for the Recology Ostrom Road Green Rail and Permit Amendment Project and to conduct CEQA review of San Francisco's proposal to enter into one or more new agreements with Recology. On March 28, 2013, Yuba County and San Francisco entered into a Cooperative Agreement to designate Yuba County as the lead agency for this project and to outline their cooperative efforts concerning environmental review.

[127] San Francisco Department of the Environment, Zero Waste webpage. Available at: http://www.sfenvironment.org/zero-waste/overview/goals.

[128] CalRecycle, Jurisdiction Diversion/Disposal Rate Detail, San Francisco, 2011. Available on the internet at: http://www.calrecycle.ca.gov/LGCentral/reports/diversionprogram/JurisdictionDiversionDetail.aspx?JurisdictionID=438&Year=2011, accessed December 4, 2013. These data do not provide separate averages for residential and non-residential generation, but merely different metrics for averaging overall citywide waste generation.

demolition debris to be transported to a registered facility that can divert a minimum of 65 percent of the material from landfills. The Altamont Landfill and Corinda Los Trancos Landfill are registered facilities available to accept waste from San Francisco that could accept excess soils generated during construction. The Corinda Los Trancos Landfill is permitted to receive 3,598 tons of waste per day; it has a remaining capacity of approximately 44.6 million cubic yards and with this capacity, the landfill can operate until 2018.[129] Because the proposed project would be consistent with City ordinances and because the local landfills would have sufficient capacity to accept the remaining construction waste, the proposed project would be served by landfills with sufficient permitted capacity to accommodate the project's solid waste disposal needs. This impact would be ***less than significant***.

**Mitigation:** None required.

**Impact UT-5: Construction and operation of the proposed project would follow all applicable statutes and regulations related to solid waste. (No Impact)**

The California Integrated Waste Management Act of 1989 (AB 939) requires municipalities to adopt an Integrated Waste Management Plan (IWMP) to establish objectives, policies, and programs relative to waste disposal, management, source reduction, and recycling. Reports filed by the San Francisco Department of the Environment show that the City generated approximately 870,000 tons of waste material in 2000. By 2010, that figured decreased to approximately 455,000 tons. Waste diverted from landfills is defined as recycled or composted. San Francisco has a goal of 75 percent landfill diversion by 2010, and 100 percent by 2020.[130] As of 2012, 80 percent of San Francisco's solid waste was being diverted from landfills, having met the 2010 diversion target.[131]

The San Francisco Construction and Demolition Ordinance (Ordinance No. 27-06) requires a minimum of 65 percent of all construction and demolition debris to be recycled and diverted from landfills. Furthermore, the proposed project would be required to comply with the City's Ordinance 100-09, the Mandatory Recycling and Composting Ordinance, which requires separation of refuse into recyclables, compostables, and trash.

As discussed in Section E.15, Hazards and Hazardous Materials, soils from excavation activities, as well as building materials (e.g., fluorescent lights) could be classified as a California hazardous waste. Accordingly, the proposed project would be required to follow state and federal regulations for the disposal of hazardous wastes and would be transported to a permitted disposal or recycling facility.

[129] CalRecycle, Facility/Site Summary Details: Corinda Los Trancos Landfill (Ox Mtn)( 41-AA-0002), Available online at http://www.calrecycle.ca.gov/SWFacilities/Directory/41-AA-0002/Detail/, accessed September 10, 2013.

[130] San Francisco Department of the Enviroment, Zero Waste FAQ. Available online at http://www.sfenvironment.org/zero-waste/overview/zero-waste-faq. Accessed on December 27, 2013.

[131] San Francisco Department of the Environmental, *Recology & City Recycling & Compost Program Creates Jobs, Stimulates Growth of Green Economy & Supports City's 2020 Zero Waste Goal*, October 5, 2012. Available online at http://www.sfenvironment.org/news/press-release/mayor-lee-announces-san-francisco-reaches-80-percent-landfill-waste-diversion-leads-all-cities-in-north-america. Accessed November 14, 2013.

The proposed project would comply with all applicable local, state, and federal laws and regulations pertaining to solid waste, and there would be ***no impact***.

**Mitigation**: None required.

**Impact C-UT: In combination with past, present, and reasonably foreseeable future development in the project site vicinity, the proposed project would have a less-than-significant cumulative impact on utilities and service systems. (Less than Significant)**

The geographic scope for potential cumulative wastewater systems impacts encompasses the City and County of San Francisco. Wastewater system facilities in the project vicinity include the San Francisco's combined sewage system and the Southeast Water Pollution Control Plant. Similar to the proposed project, projects within the vicinity would utilize the same wastewater systems, which increase the demand on such facilities.

Like the proposed project, cumulative projects in the area would be subject to the City's Wastewater Capacity Charge. The Wastewater Capacity Charge funds the cost of expansion of the wastewater conveyance and treatment system, if necessary. All funds raised through the capacity charge are directly used to offset the cost of future wastewater capital improvement projects and repairs. Furthermore, cumulative projects would utilize high-efficiency water fixtures as required by the City's Commercial Water Conservation Ordinance or Green Building Ordinance, as applicable, which would further decrease the amount of wastewater and water entering treatment facilities.

The proposed project, like cumulative projects in the area, would utilize low impact design features to comply with the Stormwater Ordinance. Project designs would be required meet the San Francisco *2010 Stormwater Design Guidelines,* which would reduce the total stormwater runoff volume and peak stormwater runoff rate through the use of low impact designs approaches and other BMPs. As noted above the proposed project would comply with all applicable regulations, and would reuse wastewater, and reduce operational discharges to the combined sewer. Therefore its contribution to San Francisco's combined sewer system would not be cumulatively considerable.

The geographic scope for potential cumulative water supply impacts encompasses the SFPUC water supply system. SFPUC water supply system supplies the City and County of San Francisco as well as others in the region with water. Similar to the proposed project, projects within the vicinity or the region would require the use of the SFPUC water supply.

Like the proposed project, cumulative projects in the area would be subject to the City's Commercial Water Conservation Ordinance or Green Building Ordinance, as applicable, which requires project to utilize high-efficiency water fixtures to offset the need for water. In addition, cumulative projects in the vicinity would be subject to the Recycled Water Ordinance. Such requirements would cumulatively reduce the increase demand for water. The proposed project, in addition to cumulative projects in the region, would incrementally increase demand on the water supply. However, as discussed above, SFPUC has available water supply to serve existing and projected growth. Therefore, cumulative impacts to the SFPUC water system would be ***less than significant***.

The geographic scope for potential cumulative waste generation impacts encompasses Recology and those jurisdictions that haul and dump their waste at the Altamont Landfill in Alameda County and Ostrom Road Landfill in Yuba County. Similar to the proposed project, projects within the vicinity, or jurisdictions that have contracts with these landfills, would affect the landfills' capacity by hauling and dumping their waste.

Increased waste generation from the proposed project and cumulative developments would be partially offset by existing San Francisco ordinances and policies regarding waste reduction. The increasing rate of diversion through recycling, composting, and other methods would result in a decreasing share of total waste that requires deposition in local landfills. As stated under Impact UT-4, Ostrom Road Landfill (Yuba County) will be the future disposal site of all solid waste collected in the City until 2025, or until 5 million tons have been deposited.[132] The total permitted capacity of the landfill is approximately 41 million cubic yards with an estimated closure date of 2066.

Therefore, the increased generation of solid waste from the proposed project and nearby proposed cumulative development would not exceed the permitted landfill capacity, and this impact would be ***less than significant***.

**Mitigation:** None required.

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| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **11. PUBLIC SERVICES— Would the project:** | | | | | |
| a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services? | ☐ | ☐ | ☒ | ☐ | ☐ |

The proposed project's impacts to parks are analyzed in Section E.9, Recreation, above.

[132] City and County of San Francisco Board of Supervisors, 2011 (July 26). Resolution No. 322-11: Resolution Approving a Ten-Year Landfill Disposal Agreement and Facilitation Agreement with Recology San Francisco under Chapter Section 9.118. Available online at: http://www.sfbos.org/ftp/uploadedfiles/bdsupvrs/resolutions11/r0322-11.pdf, accessed September 10, 2013.

**Impact PS-1: The proposed project would increase demand for police protection and fire protection, but not to an extent that would require new or physically altered governmental facilities, the construction of which could cause significant environmental impacts. (Less than Significant)**

The project site currently receives emergency services from the San Francisco Fire Department, Station 1 at 935 Folsom at Fifth Street, which is 0.6 miles southwest of the project site, and the San Francisco Police Department, Southern Station at 850 Bryant Street, which is 1 mile southwest of the project site.[133]

The proposed project would add approximately 306,000 gross square feet of floor area to the existing 1.212-million-square-foot facility and result in a 42 percent increase in functional (exhibition and meeting) space, from 625,600 square feet to 888,300 square feet, as well as additional support space. No new structures would be habitable. The proposed structures would be subject to, and would comply with, the regulations of the California Fire Code, which establishes requirements pertaining to fire protection systems, including the provision of state-mandated smoke alarms, fire extinguishers, appropriate building access, and emergency response notification systems.

The proposed project would increase the service population (employees and visitors) at the Moscone Center. Up to 28 additional FTE employees could work at the site, and up to 4,200 additional visitors could attend major conventions.[134] This increased population could result in an incremental increase in demand for fire and police protection services, but not in excess of amounts expected and provided for in this area. No new or physically altered facilities would be required.

Given that the proposed project is located near, and already served by, existing police and fire protection services, the proposed new and modified structures would be required to comply with fire codes, and the proposed project would only incrementally increase service population in the area of the Moscone Center, impacts to police and fire services would be ***less than significant***.

**Mitigation:** None required.

**Impact PS-2: The proposed project would not substantially increase the population of school-aged children and would not require new or physically altered school facilities. (Less than Significant)**

The San Francisco Unified School District (SFUSD) provides school services to residents in the project vicinity. The proposed project would not construct any new habitable structures. As described in the Population and Housing analysis, the 28 additional FTE employees at the project site could be new employees living in San Francisco. These employees could have children that would attend local schools. However, most of these additional employees are likely to be residents of San Francisco or the Bay Area

[133] San Francisco Fire Department, website: http://www.sf-fire.org/, accessed online on September 19, 2013. San Francisco Police Department, website: http://sf-police.org/, accessed online on September 19, 2013.

[134] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E. This is a conservative assumption since although the proposed increase in exhibit floor space will likely increase the total number of exhibitors and their staff, it does not necessarily imply an increase in the number of event visitors.

and the number of additional school-age children associated with them would be very small compared to the total SFUSD enrollment. Therefore, the proposed project would not increase the population of school-aged children to the extent that new school facilities would be required, and the project would have a ***less-than-significant*** impact to schools.

**Mitigation**: None required.

**Impact PS-3: The proposed project would not increase demand for other government services to the extent that it would require new or physically altered government facilities. (Less than Significant)**

The proposed project would not construct any new habitable structures. Although the project would increase the service population (employees and visitors) of the Moscone Center, this increased population would not generate demand for libraries, community centers, and other public facilities to the extent that new or physically altered facilities would be required. Therefore, the proposed project would have a ***less-than-significant*** impact on other government services.

**Mitigation:** None required.

**Impact C-PS: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the vicinity, would result in a less than cumulatively considerable impact to public services. (Less than Significant)**

The geographic scope for potential cumulative public services impacts encompasses public service providers in the vicinity of the Moscone Center. Public services in the project vicinity include services provided by the San Francisco Police Department, San Francisco Fire Department, SFUSD, and City and County of San Francisco. Similar to the proposed project, projects within the vicinity would utilize services provided by these departments.

The Central SoMa Plan would implement changes to allowed land uses and building heights to promote a greater mix of uses while also emphasizing office uses in the central portion of the plan area, allowing the area to accommodate additional jobs and residential uses. Cumulative development in the project vicinity could incrementally increase demand for public services, which could result in the need for new or altered government facilities. The proposed project's increase in employment and visitor attendance would incrementally increase demand for public services, but this increase would not be cumulatively considerable because the increase in demand would not be beyond levels anticipated and planned for in the project site vicinity. For these reasons, the proposed project would not result in a considerable contribution to cumulative public service impacts, and this impact would be ***less than significant***.

**Mitigation:** None required.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **12. BIOLOGICAL RESOURCES— Would the project:** | | | | | |
| a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service? | ☐ | ☐ | ☐ | ☐ | ☒ |
| c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means? | ☐ | ☐ | ☐ | ☐ | ☒ |
| d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? | ☐ | ☐ | ☒ | ☐ | ☐ |
| f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? | ☐ | ☐ | ☐ | ☐ | ☒ |

The project area does not include riparian habitat or other sensitive natural communities as defined by the California Department of Fish and Wildlife and the United States Fish and Wildlife Service; therefore, Topic E.12(b) is not applicable to the proposed project. In addition, the project area does not contain any wetlands as defined by Section 404 of the Clean Water Act; therefore Topic E.12(c) is not applicable to the proposed project. Moreover, the proposed project does not fall within any local, regional or state habitat conservation plans; therefore, Topic E.12(f) is not applicable to the proposed project.

The project is located in an area that does not contain sensitive or protected habitat and generally does not provide suitable habitat for special-status species.

**Impact BI-1: The proposed project would not have a substantial adverse effect on special-status species or interfere with native resident or migratory wildlife. (Less than Significant)**

A review of the California Natural Diversity Database (CNDDB) was conducted for historic occurrences of listed species within the San Francisco North USGS 7.5-minute quadrangle (where the project area is

located) and the surrounding quadrangles.[135] The project site is located in a developed area that is primarily covered by paved, impervious surfaces and thus most of the listed species identified in the records search have been extirpated from this area. With the exception of trees (primarily street trees) and landscaped areas, the project area does not support or provide habitat for any known rare or endangered species and project development would not interfere with any resident or migratory species. The project would replace existing structures in the same location. The proposed project would increase the height of Moscone North by about 10 feet and Moscone South by 68 feet, and therefore would not alter species movement or migratory corridors. The project would not conflict with any local policies or ordinances directed at protecting biological resources. Tree protection regulations are discussed separately under Impact BI-2, below.

The San Francisco Board of Supervisors adopted Standards for Bird-Safe Buildings, Planning Code Section 139, on July 14, 2011.[136] The Standards for Bird-Safe Buildings include guidelines for use and types of glass and façade treatments, wind generators and grates, and lighting treatments. The project would be subject to the Standards for Bird-Safe Buildings. The project would also be required to comply with the California Fish and Game Codes and the Migratory Bird Treaty Act (MBTA) which protect special-status bird species.

Existing street trees could support native nesting birds protected under the California Fish and Game Code or the MBTA. Although the majority of these existing trees would not be directly affected by construction activities, the activities could occur during the breeding season. However, compliance with the requirements of the Fish and Game Code and the MBTA would ensure that there would be no loss of active nests or bird mortality. These requirements include one or more of the following if construction takes place during the bird nesting season (January 15–August 15):

- Preconstruction surveys conducted by a qualified biologist no more than 15 days prior to the start of work during the nesting season to determine if any birds are nesting in or in the vicinity of the vegetation to be removed or construction to be undertaken.
- Avoidance of any nests identified and the establishment by the qualified biologist of a construction-free buffer zone, to be maintained until nestlings have fledged.

Given the foregoing, effects on special-status species, including those protected by the California Fish and Game Codes and the MBTA, would be ***less than significant.***

**Mitigation:** None required.

[135] California Department of Fish and Wildlife, 2013. California Natural Diversity Database Commercial Version dated May 7, 2013.

[136] San Francisco Planning Department, *Standards for Bird-Safe Buildings*, July 2011. Available online at http://www.sf-planning.org/ftp/files/publications_reports/bird_safe_bldgs/Standards_for_Bird-Safe_Buildings_8-11-11.pdf. Accessed September 7, 2011.

**Impact BI-2: The proposed project would not conflict with the City's local tree ordinance. (Less than Significant)**

The San Francisco Planning Department, Department of Building Inspection (DBI), and Department of Public Works (DPW) have established guidelines to ensure that legislation adopted by the Board of Supervisors governing the protection of trees is implemented. DPW Code Section 8.02-8.11 requires disclosure and protection of landmark, significant, and street trees, collectively referred to as "protected trees," located on private and public property. As described in Section 2.D, Project Characteristics, under the heading "Landscaping," the proposed project would not remove any street trees, and no significant trees would be affected.[137] A significant tree is one that is either on property under the jurisdiction of the DPW or on privately owned land within 10 feet of the public-right-of-way, that is greater than 20 feet in height or which meets other criteria. The proposed project would also include the planting of street trees in accordance with *Planning Code* Section 138.1 requirements, which would require up to approximately 220 street trees, or would meet the requirement through payment of an in-lieu fee. New trees would be planted along both the north and south sides of Howard Street. In addition, the proposed project would include several seating areas throughout the project site, including on the south side of Howard Street, just west of the pedestrian plaza, and on both the north and south sides of Howard Street, near Third Street that could include additional landscaping and trees (see Figure 10). Therefore, the project would not conflict with the City's local tree ordinance. Thus, this impact would be ***less than significant***.

**Mitigation:** None required.

**Impact C-BI-1: The proposed project in combination with other past, present or reasonably foreseeable projects, would not result in a considerable contribution to cumulative impacts on biological resources. (Less than Significant)**

The geographic scope for potential cumulative biological resources impacts encompasses land uses in the vicinity of the Moscone Center. The area generally includes the Central SoMa area, bounded by Market Street to the north, Sixth Street to the west, Second Street to the east, and Townsend Street to the south, and including the southern portion of the Central Subway transit line along Fourth Street. Similar to the project area, the project vicinity does not include riparian habitat or other sensitive natural communities and with the exception of trees (primarily street trees) and landscaped areas, the area does not support or provide habitat for any known rare or endangered species and project development would not interfere with any resident or migratory species.

Like the proposed project, cumulative projects in the area would also be required to comply with the federal Endangered Species Act, California Fish and Game Codes and the MBTA which protect special-status bird species and the Standards for Bird-Safe Buildings. Projects could result in cumulative impacts

[137] City and County of San Francisco, Department of Public Works, 2013. Significant and Landmark Trees website. Available online at: http://www.sfdpw.org/index.aspx?page=663, accessed June 2, 2013. City and County of San Francisco, Department of the Environment, 2013. Map of San Francisco's Landmark Trees website. Available online at: http://www.sfenvironment.org/article/landmark-tree-program/map-of-san-francisco%E2%80%9A%27s-landmark-trees, accessed June 2, 2013.

to street trees or other protected trees, but would be subject to DPW Code Section 8.02-8.11, as well as Planning Code Section 138.1 regarding planting of street trees. The project would not include removal of street trees or affect protected trees and thus would not have the potential to contribute to potential cumulative impacts on biological resources.

In summary, as noted above, the project would not have significant impacts on special status species, avian species, riparian, wetland, or sensitive natural communities; would not conflict with an approved local, regional, or state habitat conservation plan or tree protection ordinance; and would not contribute to potential cumulative impacts on biological resources. Therefore, the proposed project's contribution to cumulative impacts to biological resources would not be cumulatively considerable (***less than significant***).

**Mitigation:** None required.

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| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **13. GEOLOGY AND SOILS— Would the project:** | | | | | |
| a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving: | | | | | |
| i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.) | ☐ | ☐ | ☒ | ☐ | ☐ |
| ii) Strong seismic ground shaking? | ☐ | ☐ | ☒ | ☐ | ☐ |
| iii) Seismic-related ground failure, including liquefaction? | ☐ | ☐ | ☒ | ☐ | ☐ |
| iv) Landslides? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Result in substantial soil erosion or the loss of topsoil? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial risks to life or property? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) Change substantially the topography or any unique geologic or physical features of the site? | ☐ | ☐ | ☐ | ☒ | ☐ |

The proposed project would connect to the combined sewer system which is the wastewater conveyance system for San Francisco, and would not use septic tanks or other on-site land disposal systems for sanitary sewage. Therefore, initial study Topic E.13(e) is not applicable.

The project site is generally flat, with no unique topographic, geologic, or physical features. Neither construction of the expanded Moscone North and South buildings and expanded exhibition areas nor reconfiguration of the bus drop-off and pick-up facilities would substantially alter the topography of the site. Therefore, there is no impact related to initial study Topic E.13(f).

Evaluation of geology and soils impacts is based on a preliminary geotechnical report prepared for the project and on previous geotechnical investigations at the site and in the vicinity as well as published geologic maps.[138] Potential seismic impacts related to the project include seismically induced groundshaking, as well as liquefaction and related ground failures that could damage below-grade structures at the Moscone Center. Construction-related impacts include potential erosion, excavation instability, and settlement from excavation dewatering. The final features to be included in the project to avoid or withstand seismic and geologic effects would be determined on the basis of a design-level geotechnical investigation required as part of the building permit process administered by the San Francisco Department of Building Inspection (DBI), as discussed below.

At an elevation of 20 feet San Francisco City Datum (SFD),[139] the project site is relatively level. Prior to development in the 1800s, the project site was located on a marsh at the edge of Mission Bay, and was covered with Holocene -aged dune sands. The original structures at this site were destroyed in the 1906 earthquake and fire, and the earthquake debris was incorporated into fill materials. As a result, the site is immediately underlain by artificial fill materials and dune sands. These are in turn underlain by older sedimentary deposits of Pleistocene age, including marsh deposits, Older Alluvium, the Colma Formation, and Old Bay Clay (also referred to as the Yerba Buena Mud or the San Antonio Formation). Bedrock beneath San Francisco consists of sedimentary and volcanic rocks of the Jurassic and Cretaceous age Franciscan complex. These geologic units are described as follows (from youngest to oldest):

- **Artificial fill** – ranging in thickness from a few feet to 20 feet, artificial fill beneath the site was primarily derived from the dune deposits that were used to level the site when it was developed in the mid to late 1800s and from debris from the 1906 earthquake and fire. The average thickness of the fill is 15 feet. It is typically gray to brown, loose to medium dense sand with some clay and silt, and contains fragments of brick, wood, asphalt, concrete, and gravel.
- **Dune Sand** (Holocene) – encountered at a depth of 11 to 23 feet below ground surface, the dune sands consist of fine to very fine grained, gray to brown medium dense sand with minor amounts of sand with silt. The thickness of dune sands ranges from 4 to 17 feet.

[138] Geotechnical Consultants, Inc. Phase I Preliminary Geotechnical Report, Moscone Center Expansion, San Francisco, California. April 2013. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.154E.

[139] San Francisco City Datum (SFD) establishes the City's zero point for surveying purposes at approximately 8.6 feet above the mean sea level established by 1929 U.S. Geological Survey datum, and approximately 11.3 feet above the current 1988 North American Vertical Datum. Because tides are measured from mean lower low water, which is about 3.1 feet below mean sea level (MSL), an elevation of 0, SFD, is approximately 8.2 feet above MSL.

- **Marsh Deposits** (late Pleistocene) – encountered at a depth of 23 to 40 feet below ground surface, the marsh deposits are typically black to gray and locally contain decaying vegetation. The composition ranges from peat to silt to fat clay to clayey sand. The thickness of marsh deposits ranges from 0 to 5 feet, and the average thickness is about 1.5 feet.

- **Older Alluvium** (late Pleistocene) – encountered at depths of 14 to 33 feet below ground surface, this unit consists of layered and interfingered older alluvial, estuarine, and marine deposits. The layers are typically gray to brown with many color variations within this range. The soils consist of medium dense to dense sand, sandy clay and clayey silty sand. The clay layers are stiff. The thickness of older alluvium ranges from 6 to 19 feet.

- **Colma Formation** (late Pleistocene) – encountered at depths of 39 to 44 feet below ground surface, this unit consists of dense to very dense sand to silty sand with local layers of clayey sand. The thickness of the Colma Formation ranges from approximately 40 to 60 feet.

- **Old Bay Clay** (late Pleistocene) – encountered at a depth of 78 to 91 feet below ground surface, this unit consists of a thick sequence of marine clay and interfingered estuarine and alluvial clayey sand, silty sand, and sand. The interfingered clay layers consist primarily of dark gray to greenish gray, stiff to hard silty clay with local thin layers of gray, very stiff sandy clay. The clay contains some small shells, angular gravel, and coarse sand. The interfingered sand layers consist of dense to very dense, dark gray to gray clayey sand, fine to medium grained sand, and silty sand. The thickness of the Old Bay Clay ranges from approximately 35 to 180 feet, thinning to the east.

- **Franciscan Complex** (Jurassic and Cretaceous) – encountered at depths of about 140 to 250 feet below ground surface, the Franciscan Complex beneath the site consists of black shale, black to dark gray interbedded shale and sandstone, and black chert with thin shale interbeds.

The depth to groundwater at the project site is on the order of 20 to 24 feet below ground surface, corresponding to an elevation of 0 to -4 feet SFD, and groundwater can be perched above the marsh deposits. Groundwater levels beneath the marsh deposits are highly variable, and are affected by construction-related dewatering and possibly by permanent dewatering systems in the project vicinity.

**Impact GE-1: The proposed project would not expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, seismic groundshaking, seismically induced ground failure, or landslides. (Less than Significant)**

**Fault Rupture.** The project site is not located within an Alquist-Priolo Earthquake Fault Zone, and no active or potentially active faults exist on or in the immediate vicinity of the site. Therefore, the potential for surface fault rupture is low, and this impact would be ***less than significant***.

**Groundshaking.** The intensity of seismic shaking, or strong ground motion, at the project site during an earthquake is dependent on the distance between the site and the epicenter of the earthquake, the magnitude of the earthquake, and the geologic conditions underlying and surrounding the site. Earthquakes occurring on faults closest to the site would most likely generate the largest ground motions. The intensity of earthquake-induced ground motions can be described in terms of "peak ground acceleration," which is represented as a fraction of the acceleration of gravity (g).[140]

[140] Acceleration of gravity (g) = 980 centimeters per second squared. 1.0 g of acceleration is a rate of increase in speed equivalent to a car traveling 328 feet from rest in 4.5 seconds.

The U.S. Geological Survey (USGS) concluded that there is a 63 percent probability of a strong earthquake (Mw 6.7[141] or higher) occurring in the San Francisco Bay region in the 30-year period between 2007 and 2036.[142] The faults that would be capable of causing strong groundshaking at the project site are the San Andreas Fault, located within 8 miles; the Hayward fault, located within 10 miles; the San Gregorio fault, located within 12 miles; and the Calaveras, Mt. Diablo and Rodgers Creek faults, located 21 or more miles away.[143] Based on shaking hazard mapping by ABAG, the project site would experience very strong ground shaking due to an earthquake along the peninsula segment of the San Andreas Fault or the northern and southern Hayward fault, which are the faults closest to the project site.[144] The California Geological Survey estimates that peak ground accelerations in the project site vicinity would range from approximately 0.45 to 0.57g.[145] Although the project site would be subject to very strong ground shaking in the event of a major earthquake, the project would not expose people or structures to substantial adverse effects related to ground shaking because the project would be designed and constructed in accordance with the most current *San Francisco Building Code*, which incorporates *California Building Code* requirements. The *California Building Code* specifies definitions of seismic sources and the procedure used to calculate seismic forces on structures during groundshaking. The preliminary geotechnical report estimates that when site specific conditions are considered, the peak ground acceleration would be about 0.35g.[146] However, the design level geotechnical investigation will refine this estimate at a level suitable for project design in accordance with the *San Francisco Building Code*.

Incorporation of appropriate engineering and design features in accordance with the *San Francisco Building Code,* subject to review by the DBI as part of the building permit approval process, would ensure that the structure would not suffer substantial damage, that substantial debris such as building exterior finishes or windows would not separate from the building, that building occupants would be able to safely vacate the building following an earthquake, and that pedestrians and other bystanders would not be injured. While some damage could occur, building occupants could reoccupy the building after an earthquake with the completion of any necessary repairs. Therefore, impacts related to ground shaking would be ***less than significant***.

**Liquefaction, Lateral Spreading, and Earthquake-Induced Settlement.** Liquefaction is a phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of earthquake-induced, strong groundshaking. The susceptibility of a site to liquefaction is a function of the depth,

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[141] An earthquake is classified by the amount of energy released, expressed as the magnitude of the earthquake. Traditionally, magnitudes have been quantified using the Richter scale. However, seismologists now use a moment magnitude (Mw) scale because it provides a more accurate measurement of the size of major and great earthquakes. Moment magnitude is directly related to the average slip and fault rupture area.

[142] U.S. Geologic Survey (USGS), The Uniform California Earthquake Rupture Forecast, Version 2 (UCERF 2), by the Working Group on California Earthquake Probabilities, Open File Report 2007-1437, 2008.

[143] Distance obtained from Geotechnical Consultants, Inc. Phase I Preliminary Geotechnical Report, Moscone Center Expansion, San Francisco, California. April 2013. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

[144] Association of Bay Area Governments, Hazard Maps, Shaking Maps, 2003, www.abag.ca.gov, accessed May 5, 2013.

[145] California Department of Conservation, Division of Mines and Geology, Seismic Hazard Zone Report 043, Seismic Hazard Zone Report for the City and County of San Francisco, California, 2000.

[146] Geotechnical Consultants, Inc. Phase I Preliminary Geotechnical Report, Moscone Center Expansion, San Francisco, California. April 2013. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

density, and water content of the granular sediments and the magnitude of earthquakes likely to affect the site. Saturated, unconsolidated silts, sands, silty sands, and gravels within 50 feet of the ground surface are most susceptible to liquefaction. The primary liquefaction-related phenomena include vertical settlement[147] and lateral spreading.[148]

The project site is located in an area of liquefaction potential identified by the California Department of Conservation under the Seismic Hazards Mapping Act of 1990,[149] and could therefore be subject to both liquefaction and earthquake-induced settlement due to the presence of shallow groundwater and the loose to medium dense sands that make up the artificial fill materials and dune sands. However, the foundations of the proposed structures would not be subjected to liquefaction damage because they would be supported on a mat foundation or drilled shafts founded in the underlying Colma Formation, which has a low liquefaction potential. Further, the below-grade walls would be properly drained and designed for increased forces resulting from liquefaction effects. However, adjacent roadways, sidewalks, and utilities that are supported within the artificial fill and dune sand could experience damage as a result of liquefaction, as could any tiebacks used to anchor the east wall of the existing truck ramp along Third Street within the sandy deposits (see Impact GE-3 for a discussion of the tiebacks). The potential for lateral displacement is low because the project site is located in a developed area of downtown San Francisco and there are no nearby exposed slopes or stream banks that could be susceptible to lateral displacement.

To address the potential for liquefaction and earthquake-induced settlement, and to develop specific design elements to be included in the project design to avoid adverse effects related to these phenomena, the project sponsor would be required to prepare a site-specific, design-level geotechnical report pursuant to the State Seismic Hazards Mapping Act. The report would assess the nature and severity of the hazard(s) on the site and recommend project design, soil improvement requirements, and construction features that would reduce the identified hazard(s). The building plans and geotechnical report would be submitted as part of the building permit application and reviewed by DBI to ensure compliance with all *San Francisco Building Code* provisions regarding structural safety. Therefore, impacts related to liquefaction, earthquake-induced settlement, and lateral spreading would be ***less than significant***.

**Earthquake-Induced Landslides.** The project site is relatively flat and does not include any areas of mapped earthquake-induced landslide susceptibility identified by the California Department of Conservation under the Seismic Hazards Mapping Act of 1990.[150] Therefore, there would be ***no impact*** related to earthquake-induced landslides.

**Mitigation:** None required.

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[147] During an earthquake, settlement can occur as a result of the relatively rapid rearrangement, compaction, and settling of subsurface materials (particularly loose, non-compacted, and variable sandy sediments). Settlement can occur both uniformly and differentially (i.e., where adjoining areas settle at different rates). Areas are susceptible to differential settlement if underlain by compressible sediments, such as poorly engineered artificial fill or bay mud.

[148] Of the liquefaction hazards, lateral spreading generally causes the most damage. This is a phenomenon in which large blocks of intact, non-liquefied soil move downslope on a liquefied substrate that covers a large area.

[149] California Department of Conservation, Division of Mines and Geology, State of California Seismic Hazard Zones, City and County of San Francisco, Official Map, November 17, 2000.

[150] California Department of Conservation, Division of Mines and Geology, State of California Seismic Hazard Zones, City and County of San Francisco, Official Map, November 17, 2000.

**Impact GE-2: The proposed project would not result in substantial erosion or loss of top soil. (Less than Significant)**

Soil movement for foundation excavation and other improvements could create the potential for wind- and water-borne soil erosion. However, the project site is flat, and the proposed project would affect only relatively small areas where site soils would be exposed; therefore, substantial erosion and loss of soil would not be expected to occur during site preparation and construction. Furthermore, the project sponsor would be required to implement an erosion and sediment control plan during construction activities in accordance with Article 4.1 of the San Francisco Public Works Code (discussed in Topic 14, "Hydrology and Water Quality") to reduce the impact of runoff from the construction site. The SFPUC must review and approve the erosion and sediment control plan prior to implementation, and would conduct periodic inspections to ensure compliance with the plan. Therefore, impacts related to soil erosion would be ***less than significant***.

The project site is built out and covered with impervious surfaces, including buildings of the Moscone Center, streets, and sidewalks. Previous construction of these features would have involved removal of any top soil (a fertile soil horizon that typically contains a seed base). Therefore, impacts of the proposed project related to loss of top soil would be ***less than significant***.

**Mitigation:** None required.

**Impact GE-3: The project site is not located on a geologic unit or soil that is unstable, or that could become unstable as a result of the project. (Less than Significant)**

Ground settlement could result from excavation for construction of the expanded exhibit hall areas beneath Howard Street and from construction dewatering. These potential effects are described below, followed by DBI procedures that are in place to ensure that unstable conditions do not result.

*Excavation*

Construction of the proposed expansions would require excavation to a depth of approximately 40 feet below ground surface. During excavation, the existing concrete walls and mat foundations of Moscone Center North and South and the adjoining tunnels under Howard Street would be exposed on all four sides of the excavation. Settlement, and potentially collapse, could occur if these structures and the underlying soil were not adequately supported during construction. Shoring systems--such as soldier beams,[151] walers,[152] and cross lot struts[153] or corner braces[154]--would be required to provide the necessary support, and the adjoining structures my need to be underpinned, as well. Tiebacks anchored in the fill material, dune sand, or alluvial materials could be required along the east wall of the existing truck ramp along Third Street. Further, a monitoring program utilizing an inclinometer would be

[151] A soldier beam system uses piles and lagging to retain soil behind the lagging. Soldier beam refers to the pile.
[152] Walers are horizontal timbers or beams used to support the soil behind the shoring.
[153] Cross lot struts are internal bracing that extends between the walls of an excavation, the struts typically rest on a series of walers.
[154] Corner braces are used to support the corners of an excavation.

required to monitor for movement at the face of the excavations. The monitoring program would include a baseline survey and frequent surveying of the excavation as construction progresses to evaluate the effects of construction and ensure that the soil and existing walls do not become unstable.

### *Construction-Related Dewatering*

The 40-foot excavation depth would extend 15 to 20 feet below the anticipated groundwater levels. Therefore, there is the potential for substantial water inflow into the excavated areas during construction. Without an adequate groundwater control program, groundwater could also intrude into the existing buildings where the existing mat foundation or waterproofing systems would be penetrated to install features such as foundations and tiedown anchors. Dewatering would be required to maintain the groundwater level beneath the depth of excavation and could potentially result in settlement of adjacent structures, including buildings, sidewalks, streets, and utilities. To prevent adverse settlement during construction, a site-specific dewatering plan could be necessary.

### *DBI Requirements*

DBI would review the detailed geotechnical report to ensure that the potential settlement and subsidence impacts of excavation and dewatering are appropriately addressed in accordance with Section 1704.15 of the *San Francisco Building Code*. DBI would also require that the report include a determination as to whether a lateral movement and settlement survey should be done to monitor any movement or settlement of surrounding buildings and adjacent streets during construction. If a monitoring survey were recommended, DBI would require that a Special Inspector be retained by the project sponsor to perform this monitoring. Groundwater observation wells could be required to monitor potential settlement and subsidence during dewatering. If, in the judgment of the Special Inspector, unacceptable movement were to occur during construction, corrective actions would be used to halt this settlement. Groundwater recharge could be used to halt settlement due to dewatering. Further, the final building plans would be reviewed by DBI, which would determine if additional site-specific reports would be required.

With implementation of the recommendations provided in the detailed geotechnical study, subject to review and approval by DBI, and monitoring by a DBI Special Inspector (if required), impacts related to the potential for settlement and subsidence due to construction on soil that is unstable, or could become unstable as a result of the project, would be ***less than significant***.

**Mitigation:** None required.

**Impact GE-4: The proposed project would not create substantial risks to life or property as a result of being located on expansive soil. (Less than Significant)**

The presence of expansive soils is not expected because the artificial fill and dune sand beneath the project area do not contain high proportions of clay particles that can shrink or swell with changes in moisture content and thus would not be expansive. The marsh deposits and deeper deposits beneath the

project site are generally below the groundwater table and are permanently saturated. Therefore, impacts related to expansive soils would be ***less than significant***.

**Mitigation:** None required.

**Impact C-GE-1: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in a considerable contribution to cumulative impacts related to geologic hazards. (Less than Significant)**

Geologic impacts are usually restricted to the immediate vicinity and geologic impacts resulting from the proposed project are limited to seismic effects and the potential for creation of an unstable geologic unit. Seismic effects could occur in the project vicinity, including the financial district and south of Market area. Therefore, these areas are considered the geographic scope for seismic effects. The creation of unstable geologic units is a local effect; therefore, the geographic scope for this cumulative impact is the project area and immediate vicinity.

**Seismic Safety.** Several cumulative projects would contribute to an increase in the number of persons potentially exposed to seismic risks in the south of Market and greater downtown San Francisco areas, which could result in a potential cumulative impact. However, as noted in Impact GE-1, the project site is not subject to fault rupture because there are no known earthquake faults that cross the site or vicinity. The proposed project and any development within the project area would be subject to very strong groundshaking and could experience liquefaction effects in the event of an earthquake on a nearby fault. However, the project and any new buildings would be constructed in accordance with the most current building code requirements for seismic safety, providing for increased life-safety protection of residents and workers. These requirements would reduce potential cumulative impacts to a ***less-than-significant*** level, and the proposed project's compliance with these requirements would ensure that it would not make a cumulatively considerable contribution to cumulative impacts related to seismic safety.

**Unstable Geologic Unit.** As discussed in Impact GE-3, implementation of the proposed project could result in ground settlement from excavation for construction of the expanded exhibition areas or from construction dewatering. The nearby projects that could contribute to cumulative impacts related to an unstable geologic unit are the 706 Mission Street Project, 250 Fourth Street Project, and the SF Museum of Modern Art Expansion. However, as for the proposed project, these projects would be required to implement the DBI procedures described above, including preparation of a detailed geotechnical report and site-specific reports as needed to address the potential settlement and subsidence impacts of excavation and dewatering; implementation of a lateral movement and settlement survey to monitor any movement or settlement of surrounding buildings and adjacent streets during construction and monitoring by a Special Inspector, if needed; and implementation of corrective actions, as necessary. With implementation of these requirements, cumulative impacts related to ground settlement would be ***less than significant***.

**Mitigation:** None required.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **14. HYDROLOGY AND WATER QUALITY— Would the project:** | | | | | |
| a) Violate any water quality standards or waste discharge requirements? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion of siltation on- or off-site? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site? | ☐ | ☐ | ☒ | ☐ | ☐ |
| e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff? | ☐ | ☐ | ☒ | ☐ | ☐ |
| f) Otherwise substantially degrade water quality? | ☐ | ☐ | ☒ | ☐ | ☐ |
| g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other authoritative flood hazard delineation map? | ☐ | ☐ | ☐ | ☐ | ☒ |
| h) Place within a 100-year flood hazard area structures that would impede or redirect flood flows? | ☐ | ☐ | ☐ | ☐ | ☒ |
| i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam? | ☐ | ☐ | ☒ | ☐ | ☐ |
| j) Expose people or structures to a significant risk of loss, injury or death involving inundation by seiche, tsunami, or mudflow? | ☐ | ☐ | ☐ | ☒ | ☐ |

The proposed project does not include the construction of housing. Further, the project site is not located within an area of sewer-related flooding identified by the SFPUC;[155] within a Special Flood Hazard Area identified on San Francisco's Interim Floodplain Map;[156] or an area that would be inundated with a

[155] San Francisco Planning Department, Planning Director Bulletin No. 4, Review of Project Identified in Areas Prone to Flooding.

[156] City and County of San Francisco, San Francisco Interim Floodplain Map, Northeast. Final Draft July, 2008.

sea level rise of 55 inches by 2100 based on mapping by the Pacific Institute.[157] Therefore, initial study Topics E.14(g) and E.14(h) are not applicable.

The project site is not located in an area subject to reservoir inundation hazards[158] and is not located on or near a slope that could be subject to mudflow. Based on the state's official tsunami inundation maps, the project site is not located within a tsunami inundation zone.[159] Therefore, there is ***no impact*** related to initial study Topic E.14(j).

**Impact HY-1: The proposed project would not violate water quality standards, contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems, provide substantial additional sources of polluted runoff, or otherwise substantially degrade water quality. (Less than Significant)**

*Construction-Related Stormwater Discharges*

During construction of the proposed project, water quality could be affected by erosion from grading and earthmoving operations, a release of fuels or other chemicals used during construction, or a release of materials generated during demolition and construction. Grading and earthmoving would expose soil during construction and could result in erosion and excess sediments carried in stormwater runoff to the combined sewer system. Stormwater runoff from temporary on-site use and storage of vehicles, fuels, wastes, and building materials could also carry pollutants into the combined sewer system if these materials were improperly handled.

**Erosion and Use of Hazardous Materials During Construction.** The federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with a NPDES permit. Stormwater from the project site is collected in the Eastern Basin of the City's combined sewer system. Construction stormwater discharges to the system would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code (supplemented by Department of Public Works [DPW] Order No. 158170), which incorporates and implements the City's NPDES permit for the Southeast Water Pollution Control Plant (Southeast Plant), the North Point Wet Weather Facility, and all of the Bayside wet weather facilities. This permit also incorporates the requirements of the federal Combined Sewer Overflow (CSO) Control Policy. At a minimum, the City requires that a project sponsor develop and implement an erosion and sediment control plan to reduce the impact of runoff from a construction site. The plan must be reviewed and approved by the City prior to implementation, and the City conducts periodic inspections to ensure compliance with the plan. Any stormwater drainage during construction that flows to the City's combined sewer system would receive treatment at the Southeast Plant or other wet weather facilities and would be discharged through an existing outfall or overflow structure in compliance with the City's existing NPDES permit. Therefore, water quality impacts related

[157] Pacific Institute, California Flood Risk: Sea Level Rise, San Francisco North Quadrangle, 2009.
[158] URS Corporation, City and County of San Francisco Hazard Mitigation Plan, December, 2008. Map C-14.
[159] California Emergency Management Agency, California Geological Survey, University of Southern California. Tsunami Inundation Map for Emergency Planning, San Francisco North Quadrangle/San Francisco South Quadrangle (SF Bay). June 15, 2009.

to a violation of water quality standards or degradation of water quality due to discharge of construction-related stormwater runoff would be ***less than significant***.

**Construction-Related Groundwater Dewatering Discharges.** As noted in Topic 13, "Geology and Soils," the 40-foot excavation depth would extend 15 to 20 feet below the anticipated groundwater levels. Therefore, there is the potential for water inflow into the excavations during construction. If the groundwater produced during dewatering contained contaminants or excessive sediment, discharge of the groundwater into the combined sewer system could potentially degrade water quality.

Groundwater produced during construction-related dewatering would be discharged to the City's combined sewer system in accordance with a permit issued by the Wastewater Enterprise Collection System Division of the SFPUC in accordance with Article 4.1 of the *San Francisco Public Works Code*, as supplemented by Order No. 158170, which regulates the quantity and quality of discharges to the combined sewer system. This permit would contain appropriate discharge standards and may require installation of meters to measure the volume of the discharge. Although the groundwater could contain contaminants related to past site activities--as discussed in Topic 15, "Hazards and Hazardous Materials"--as well as sediment and suspended solids, the groundwater would be treated as necessary to meet permit requirements prior to discharge. With discharge to the combined sewer system in accordance with regulatory requirements, water quality impacts related to a violation of water quality standards or degradation of water quality due to discharge of groundwater during construction would be ***less than significant***.

### *Combined Sewer Overflows During Operation*

The proposed project is located in the Eastern Basin of the City's combined sewer system, within the Channel and North Shore sub-basins. Three aspects of the project in combination could result in long-term changes in the wastewater flows to the City's combined sewer system in these sub-basins: (1) increased visitors and employees at the Moscone Center would increase the amount of wastewater generation (2) implementation of stormwater best management practices (BMPs) in accordance with the San Francisco Stormwater Design Guidelines would decrease the volume of stormwater runoff to the combined sewer system; and (3) the project would include reuse of groundwater produced from dewatering (currently discharged to the combined sewer system) for non-potable purposes, which would decrease the volume of discharges to the combined sewer system. The effects of these factors on the combined sewer system are closely related, and the combined effect on the volume and/or frequency of combined sewer discharges to the Bay is discussed below.

**Changes in Sanitary Sewage Flows**. As described in Topic 10, "Utilities and Service Systems," the proposed project would increase the number of visitors to the Moscone Center and employees at the center, which would result in an increase in wastewater generation at the site. Without use of high-efficiency water fixtures or reuse of the groundwater produced during dewatering, the project-related increase in water use would be approximately 11,700 gallons per day, or 4.3 million gallons annually.[160] However, in accordance with San Francisco's Green Building Code requirements (Chapter 13C of the *San Francisco Building Code*),

[160] Built Ecology, 2013. *SFPUC Meeting Follow Up – Summary of Water Flows*. March 13.

and Section 706 of the San Francisco Environment Code, the project sponsor would be required to reduce indoor use of potable water by 30 percent compared to conventional development (defined in the California Building Code). Chapter 13C would also require a 20 percent reduction in wastewater production. The reduction in wastewater generation is directly related to the amount of water used in the operation of the building, and may be achieved by using water conservation fixtures, such as toilets. Analysis of water flows under the proposed project indicates that use of high-efficiency water fixtures, as required by San Francisco's Green Building Code would reduce the project-related increase in water flows to approximately 9,300 gallons per day, or 3.4 million gallons annually.[161] If it is conservatively assumed that 100 percent of water used on site would be converted to wastewater, the proposed project would result in additional wastewater flows of up to an additional 3.4 million gallons annually.

During dry weather (typically, May 1st to October 15th), all wastewater generated from the proposed project would be treated at the Southeast Plant, which currently operates at about 75 percent of its dry-weather design flow capacity of 84.5 million gallons per day.[162] The increased discharge with the use of high efficiency water fixtures represents less than 0.05 percent of the remaining treatment capacity. Therefore, the additional dry weather flow under the proposed project would be accommodated within the system's existing capacity.

During wet weather (typically, October 16th to April 30th), there is a variation in volume of wet weather flow due to the addition of stormwater and the increased flows can exceed the 400 million gallon per day treatment capacity of the eastside wet weather facilities. The volume of wet weather flows is directly related to the rainfall intensity, and treatment of the wet weather flows varies depending on the characteristics of any individual rainstorm. Flows in excess of the treatment capacity are conveyed to storage and transport boxes which provide "flow-through treatment" to remove settleable solids and floatable materials, which is similar to primary treatment. The excess flows are then eventually discharged through 29 combined sewer discharge structures located along the City's bayside waterfront from the Marina Green to Candlestick Point. Wet weather flows are intermittent throughout the rainy season, and combined sewer overflow events vary in nature and duration depending largely on the intensity of individual rainstorms. All discharges from the combined sewer system to the Bay, through either the primary outfalls or the combined sewer discharge structures, are operated in compliance with the federal Clean Water Act and the State's Porter-Cologne Water Quality Control Act through permits issued by the California Regional Water Quality Control Board, San Francisco Bay Region (RWQCB).

While the system is in compliance with current regulations and permits, an incremental increase in wastewater volume could affect the overall system's wet weather operations in the Channel and North Shore sub-basins. Unless offset by decreases in stormwater flows, an increase in wastewater discharges to the combined sewer system could contribute to an increase in wet-weather discharges through the 15 combined sewer discharge structures associated with the Channel and North Shore sub-basins. Nine of these structures discharge from the Channel sub-basin, including two located at Howard and at Brannan

[161] Built Ecology, 2013. *SFPUC Meeting Follow Up – Summary of Water Flows*. March 13. Available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

[162] SFPUC, *Sewer System Improvement Program Report: Draft Report for SFPUC Commission Review*, prepared by Wastewater Enterprise Staff, August 10, 2010.

Streets and seven that discharge to Mission Creek. These discharge facilities are constructed to capture flows for a long-term average of 10 overflow events per year. Six combined sewer discharge structures located along the northern Bay shore discharge overflows from the North Shore sub-basin. These structures are located at Baker, Pierce, Laguna, Beach, Sansome, and Jackson Streets. They are constructed to capture flows for a long-term average of four overflow events per year.

An increase in the volume of combined sewer discharges could be a concern because the RWQCB has designated Mission Creek and Central Bay as impaired water bodies under Section 303(d) of the Clean Water Act, which indicates water quality standards are not expected to be met after implementation of technology-based effluent limitations, and because combined sewer discharges contain pollutants for which these water bodies are impaired.

The total volume of combined sewer discharges from the Eastern Basin of the combined sewer system was approximately 1,234 million gallons per year and the total volume of discharges to Mission Creek was 353 million gallons per year in 2007.[163] The additional project-related wastewater flows with the use of high efficiency water fixtures would be approximately 1.6 million gallons per year during the wet season. This total volume represents a very small part of combined sewer discharges (less than 0.2 percent and 0.5 percent, respectively). However, a large part of the increased wastewater flows would treated at the Southeast Plant and North Point Wet Weather facility, and would not contribute to combined sewer discharges.

In addition, the project-related increase in wastewater flows could be reduced if the project sponsor elects to reuse grey water generated at the site for non-potable uses under the City's voluntary non-potable water program that promotes and provides incentives for the on-site reuse of non-potable water. Established through an ordinance adopted by the San Francisco Board of Supervisors in September 2012, this voluntary program includes guidelines for installing non-potable water systems and local regulations to ensure that appropriate water quality standards are met. To use a non-potable water system, the project applicant must submit a Water Budget Application to the SFPUC, and a Non-Potable Engineering Report to the San Francisco Department of Public Health. The Engineering report must demonstrate compliance with the SFDPH rules and regulations regarding the operation of on-site non-potable water treatment and reuse systems. A plumbing permit must also be obtained from DBI.

Further, the SFPUC is developing a Sewer System Improvement Program that would include measures by the City to reduce the quantity and frequency of overflows and improve the water quality of overflows.

**Changes in Stormwater Runoff**. Stormwater runoff in an urban location, such as the project site, is a known source of pollution. Runoff from the site may contain polynuclear aromatic hydrocarbons[164]

[163] San Francisco Public Utilities Commission, *Task 600 Technical Memorandum No. 603, Collection System Configurations Analysis and Impact on Combined Sewer Discharge, Final Draft*, December 2010.

[164] Polynuclear aromatic hydrocarbons (PAHs) are group of chemicals that are formed during the incomplete burning of coal, oil, gas, wood, garbage, or other organic substances, such as tobacco and charbroiled meat. PAHs usually occur naturally, but they can be manufactured. A few PAHs are used in medicines and to make dyes, plastics, and pesticides. Others are contained in asphalt used in road construction. They can also be found in substances such as crude oil, coal, coal tar pitch, creosote, and roofing tar. They are found throughout the environment in the air, water, and soil. They can occur in the air, as vapors or attached to dust or ash particles, or as solids in soil or sediment.

(PAHs) from vehicle emissions; heavy metals, such as copper from brake pad wear and zinc from tire wear; dioxins as products of combustion; and mercury resulting from atmospheric deposition. All of these materials, and others, may be deposited on paved surfaces and rooftops as fine airborne particles, thus yielding stormwater runoff pollution that is unrelated to use of the convention, exhibition, and meeting facility. In addition, during operations the project could contribute specific pollutants including sediments, nutrients, oil and grease, organics, and trash that can be washed into the combined sewer system. These pollutants can all affect water quality.

The project site is almost entirely covered by impervious surfaces and would continue to be under the proposed project. In accordance with San Francisco's Stormwater Ordinance (Article 4.2 of the *San Francisco Public Works Code*) and Stormwater Design Guidelines, the project sponsor would be required to achieve the standards specified in LEED® SS6.1 (Stormwater Design: Quantity Control) to minimize the flow and volume of stormwater into the combined sewer system. For the project site, this standard specifies that the project sponsor must implement a stormwater management plan that results in a 25 percent decrease in the peak rate and total volume of stormwater runoff from the two-year 24-hour design storm, compared to existing conditions.

Accordingly, the project sponsor would be required to incorporate low-impact design (LID) techniques into the design and to implement stormwater BMPs to reduce the flow rate and volume of stormwater entering the combined sewer system. As discussed in the Project Description, the project sponsor would achieve the necessary reduction in stormwater flows by collecting and treating stormwater runoff for on-site reuse. Capturing the rainwater for reuse would also reduce the amount of stormwater pollutants that would otherwise be discharged to the combined sewer system. Peak stormwater discharge rates would also be reduced, which would lessen the effects on combined sewer discharges.

The Stormwater Control Plan for the project would describe the rainwater collection system and any other BMPs that would be implemented to achieve the specified reduction in stormwater flows as well as a plan for post-construction operation and maintenance of the BMPs. Specifically, the plan would include the following elements:

- Site characterization
- Design and development goals
- Site plan
- Site design
- Source controls
- Treatment BMPs
- Comparison of design to established goals
- Operations and maintenance plan

The Stormwater Control Plan must be reviewed and stamped by a licensed landscape architect, architect, or engineer. The SFPUC would review the plan and certify compliance with the Stormwater Design Guidelines, and would inspect stormwater BMPs once they are constructed. Any issues noted by the inspection must be corrected before the Certificate of Occupancy can be issued for the building. Following occupancy, the owner would be responsible for completing an annual self-certification inspection, and must submit completed checklists and maintenance logs for the year to the SFPUC. In addition, the SFPUC would inspect all stormwater BMPs every third year and any issues identified by either inspection must be resolved before the SFPUC could renew the certificate of compliance.

With implementation of stormwater control measures as required by San Francisco's Stormwater Ordinance (Article 4.2 of the *San Francisco Public Works Code*) and Stormwater Design Guidelines, implementation of the proposed project would contribute to a decrease in stormwater flows from the project site relative to existing conditions.

**Changes in Groundwater Discharges.** As described in the Project Description, Moscone annually pumps between 12 and 18 million gallons of groundwater produced during dewatering to the combined sewer, and the annual average discharge volume is 15.1 million gallons. Under the proposed project, new exhibit hall space would be constructed in the unexcavated area beneath Howard Street to create contiguous below ground exhibit space. The outer footprint of the below ground structures would not be substantially enlarged or deepened. Based on this, it is unlikely that there would be any substantial changes in groundwater dewatering requirements under the proposed project, and the volume of groundwater discharges to the combined sewer system would remain similar to existing conditions. Therefore, there would be no effect on combined sewer discharges if the groundwater produced during dewatering were not used on site.

However, under the proposed project, the groundwater that is currently pumped for dewatering would be treated on-site and reused for non-potable purposes, such as landscape irrigation, toilet flushing, street sweeping, or firefighting under the City's voluntary non-potable water program described above. With discontinuation of dewatering discharges to the combined sewer and reuse of the groundwater produced during dewatering for non-potable purposes, average discharges to the combined sewer would be reduced by at approximately 15.1 million annually and this would result in a reduction in combined sewer discharges.

**Net Impact on Combined Sewer Discharges**. Based on the above discussion, there would be a negligible increase in wastewater flows under the proposed project and this increase would be at least partially off-set by the mandated 25 percent reduction the peak rate and total volume of stormwater runoff from the project site in compliance with San Francisco's Stormwater Ordinance and Stormwater Design Guidelines. Therefore, there would not likely be a substantial effect on the frequency or duration of combined sewer discharges. Further, reuse of the approximately 15.1 million gallons of groundwater produced during permanent dewatering for non-potable purposes would result in a net reduction of wastewater discharges to the combined sewer system by an average of 11.7 million gallons per year when the addition of 3.4 million gallons per year of wastewater is considered. This would result in a reduction in combined sewer discharges compared to existing conditions. Therefore, implementation of the proposed project would result in ***less-than-significant*** water quality impacts related to violation of water quality standards or degradation of water quality associated with changes in combined sewer discharges into the Bay.

### *Exceedance of Storm System Capacity and Additional Sources of Polluted Runoff*

As discussed above, in accordance with the San Francisco's Stormwater Ordinance and the Stormwater Design Guidelines, the peak rate and volume of stormwater discharged from the site would be reduced by 25 percent relative to existing conditions. Further, the only outside features constructed under the project would be the expanded Moscone North and South buildings, and these would not constitute a

new source of stormwater pollutants. Capture and reuse of rainwater as a stormwater control would also reduce the amount of stormwater pollutants discharged to the combined sewer system. Therefore, the project would not contribute runoff water which would exceed the capacity of an existing or planned stormwater drainage system or provide substantial additional sources of polluted runoff, and impacts related to these topics would be ***less than significant***.

**Mitigation:** None required.

**Impact HY-2: The proposed project would not substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. (Less than Significant)**

As discussed in the Project Description, Moscone annually pumps between 12 and 18 million gallons of groundwater produced during dewatering to the combined sewer, and the annual average discharge volume is 15.1 million gallons. Although additional groundwater dewatering would be required temporarily during construction, this dewatering would not deplete groundwater supplies because the dewatering would be temporary, the Downtown San Francisco Groundwater Basin is not used as a potable water supply, and there are no plans for development of this basin for groundwater production. As discussed in Impact HY-1, the amount of permanent groundwater dewatering would not be expected to substantially increase once the project is constructed because the footprint of the below ground facilities would not be substantially enlarged or deepened.

Project implementation would not interfere with groundwater recharge because the project site is almost completely covered with impervious surfaces under existing conditions and would continue to be under the proposed project. Given groundwater is not used as a potable water supply, there are no plans for development of the basin for groundwater production, and there would be no net increase in impervious surfaces, impacts related to the depletion of groundwater resources and interference with groundwater recharge would be ***less than significant***.

**Mitigation:** None required.

**Impact HY-3: The proposed project would not alter the existing drainage pattern of the area in a manner that would result in substantial erosion, siltation, or flooding on- or off-site. (Less than Significant)**

The project site does not include any existing streams or water course that could be altered or diverted, and there are no surface impoundments, wetlands, natural catch basins, or settling ponds within the project site. Therefore, there would be no impact related to alteration of drainage patterns by altering the course of a stream in a manner that would cause erosion or flooding on or off-site.

Currently, surface water runoff from the project site is conveyed to the combined sewer system. As discussed in Impact HY-1 and in the Project Description, the project would capture rainwater and reuse it on-site to comply with stormwater flow reductions required by San Francisco's Stormwater Design

Guidelines. Street changes under the proposed project would only include only minor modifications to the pedestrian crossing and the planned changes would not substantially affect the flood carrying capacity of Howard Street.

Compliance with the Stormwater Design Guidelines would reduce the quantity and rate of stormwater runoff to the City's combined sewer system, decreasing the potential for erosion and flooding, and would result in a ***less-than-significant*** impact.

**Mitigation:** None required.

**Impact C-HY: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would not result in a considerable contribution to cumulative impacts on hydrology and water quality. (Less than Significant)**

Impacts resulting from the proposed project are limited to potential water quality impacts on the Eastern Drainage Basin of the combined sewer system and central San Francisco Bay as well as adverse effects on groundwater resources of the Downtown Groundwater Basin. Therefore, the geographic scope of potential cumulative impacts on water quality encompasses central San Francisco Bay and the Downtown Groundwater Basin.

*Water Quality Standards, Degradation of Water Quality, and Storm Sewer Capacity*

**Erosion and Use of Hazardous Materials During Construction and Groundwater Dewatering Discharges**. As described in Impact HY-1, construction activities associated with the proposed project could degrade water quality as a result of increased soil erosion and associated sedimentation as well as an accidental release of hazardous materials. Discharges of dewatering effluent from excavated areas could also adversely affect water quality. However, these discharges would flow into San Francisco's combined sewer system and would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code (supplemented by SFDPW Order No. 158170), which incorporates and implements the SFPUC's NPDES permit and the federal CSO Control Policy for discharges from the combined sewer system. The cumulative projects within the vicinity and throughout San Francisco that would also include discharges to the combined sewer system would be subject to the same regulatory requirements, and adherence to the SFPUC's NPDES permit stipulations would ensure compliance with water quality objectives. Therefore, cumulative impacts related to degradation of water quality would be ***less than significant***.

**Combined Sewer Overflows During Operation and Storm Sewer Capacity.** As discussed in Impact HY-1, implementation of the proposed project would be expected to result in an 11.7 million gallons per year net decrease in wastewater flows to the combined sewer system through minimizing wastewater flows in accordance with San Francisco's Green Building Code and discontinuation of dewatering discharges. The stormwater runoff peak rate and total discharge volume would also be reduced by implementation of stormwater control measures in compliance with San Francisco's Stormwater Ordinance and Stormwater Design Guidelines. Other development projects in the City would also be required to minimize wastewater flows and reduce stormwater flows in accordance with the same regulatory requirements. The net effect of

these projects on combined sewer discharges would depend on the relative volume of wastewater increases and stormwater decreases. However, the project would not have a cumulatively considerable contribution to any increase in combined sewer discharges because of the net 11.7 million gallons per year reduction in wastewater discharges and additional decrease in stormwater flows that would be achieved. Therefore, the project's contribution to combined sewer overflows and sewer capacity would not be cumulatively considerable and this impact would be ***less than significant***. Similarly, the proposed project and all of the cumulative projects would be required to decrease the peak rate and total stormwater flow to the combined sewer system in accordance with the City's Stormwater Design Guidelines, and cumulative impacts related to exceedance of storm sewer capacity and additional sources of stormwater pollutants would be ***less than significant***.

### *Depletion of Groundwater Resources*

The proposed project and many of the cumulative projects would require groundwater dewatering, and groundwater pumping under the proposed project, in combination with other groundwater pumping in the vicinity, could result in a cumulatively significant impact from the depletion of groundwater resources. However, as discussed in Impact HY-2, the project would not result in the depletion of groundwater resources because any effects of dewatering would be temporary in nature, and groundwater levels would return to normal once dewatering has stopped. Further, the Downtown San Francisco Groundwater Basin is not used as a potable water supply, and there are no plans for development of this basin for groundwater production. Therefore, the proposed project's contribution to cumulative impacts related to groundwater depletion would not be cumulatively considerable (***less than significant***).

**Mitigation:** None required.

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| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **15. HAZARDS AND HAZARDOUS MATERIALS— Would the project:** | | | | | |
| a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials? | ☐ | ☐ | ☒ | ☐ | ☐ |
| b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment? | ☐ | ☐ | ☒ | ☐ | ☐ |
| c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school? | ☐ | ☐ | ☒ | ☐ | ☐ |
| d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment? | ☐ | ☐ | ☒ | ☐ | ☐ |

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☐ | ☒ |
| f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area? | ☐ | ☐ | ☐ | ☐ | ☒ |
| g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan? | ☐ | ☐ | ☒ | ☐ | ☐ |
| h) Expose people or structures to a significant risk of loss, injury or death involving fires? | ☐ | ☐ | ☒ | ☐ | ☐ |

The project site is not located within an airport land use plan area or in the vicinity of a private airstrip. Therefore, initial study Topics E.15(e) and E.15(f) are not applicable.

**Impact HZ-1: The proposed project would not create a significant hazard through routine transport, use, or disposal of hazardous materials. (Less than Significant)**

### *Regulatory Framework for Hazardous Materials Handling*

Several articles of the *San Francisco Health Code* implemented by the SFDPH address the handling of hazardous materials, extremely hazardous materials, and hazardous wastes:

- Article 21 of the *San Francisco Health Code* provides for safe handling of hazardous materials in the City. It requires any person or business that handles, sells, stores, or otherwise uses specified quantities of to keep a current certificate of registration and to implement a hazardous materials business plan. A special permit is required for underground storage tanks (USTs). This article also incorporates state tank regulations.
- Article 21A of the *San Francisco Health Code* provides for safe handling of federally regulated hazardous, toxic, and flammable substances in the City, requiring businesses that use these substances to register with SFDPH and prepare a Risk Management Plan that includes an assessment of the effects of an accidental release and programs for preventing and responding to an accidental release. (While chlorine would be used under the proposed project and is identified as a regulated substance in accordance with Article 21A, the quantity stored would be less than the threshold quantity of 2,500 pounds, therefore this article does not apply to the proposed project.)
- Article 22 of the *San Francisco Health Code* provides for safe handling of hazardous wastes in the City. It authorizes SFDPH to implement the state hazardous waste regulations, including authority to conduct inspections and document compliance.

*Impacts Related to Hazardous Materials Use*

Operation and maintenance of the existing Moscone Center involves the use of common types of hazardous materials, such as cleaners, disinfectants, and chemical agents required to maintain the sanitation of commercial bathrooms and food preparation areas.[165] These commercial products are labeled to inform users of potential risks and to instruct them in appropriate handling procedures. Various chemicals, including degreasers, lubricants, oils, kerosene, diesel, coolants, paints, thinners, sealants, adhesives, resins, refrigerants, water treatment (for the cooling towers), batteries, and compressed gasses are also used for building maintenance.

The facility currently manifests organic solids, liquids, alkaline solutions, halogenated organic compounds, solvent mixtures, and waste oil for off-site disposal.[166] These materials are commonly associated with maintenance activities. In addition, vendors that currently use the facilities use photo-processing chemicals during conventions, and manifest these materials for off-site disposal. These waste disposal practices would be expected to continue following completion of the proposed project. There have been no documented spills or releases associated with generation of these wastes.

Currently, most of the hazardous materials at the convention center are stored in a paint shop and maintenance shop located along the western perimeter of the Moscone South exhibit halls, as well as at Moscone North where chemicals associated with the cooling towers are stored.[167] The expanded facilities (including the expanded Moscone North and South facilities above-ground and exhibition halls below grade) would include the use of the same types of common hazardous materials and generate the same types of hazardous wastes, but somewhat greater amounts would be required. Vendors utilizing the expanded space may also use hazardous materials or generate hazardous wastes specific to their business. Groundwater reused at the site for non-potable purposes would be treated by ultraviolet (UV) disinfection or ozone disinfection. Small amounts of chlorine could be used to provide residual treatment of the water.

To ensure the safe handling of these materials, the project sponsor and future exhibitors would continue to comply with the requirements of the City's hazardous materials handling requirements specified in Article 21 of the *San Francisco Health Code*. In accordance with this article, the facility's Certificate of Registration and Hazardous Materials Business Plan on file with the SFDPH would be revised to reflect the increased quantities of hazardous materials used. The Hazardous Materials Business Plan includes chemical inventories, a program for reducing the use of hazardous materials and generation of hazardous wastes, site layouts, a program and implementation plan for training all new employees and annual training for all employees, and emergency response procedures and plans which provides for safe handling of hazardous materials, and also allows emergency responders to safely respond to a chemical emergency at the facility, if one were to occur. Vendors would also be required to submit a Certificate of Registration at a minimum if they use hazardous materials above threshold quantities specified in

[165] SMG, Moscone Center Hazardous Chemical Communication Program. February 27, 2013.
[166] Northgate Environmental Management, Inc. Phase I Environmental Site Assessment, Moscone Center North and South, 747 and 750 Howard Street, San Francisco, California. March 21, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.
[167] Ibid.

Article 21 (500 pounds, 55 gallons, or 200 cubic feet for compressed gasses). Any hazardous wastes produced would continue to be managed in accordance with Article 22 of the *San Francisco Health Code*.

The facility currently stores diesel to supply emergency generators at both Moscone North and South. There are two 500-gallon above-ground storage tanks at Moscone North and one 6,000-gallon above-ground storage tank at Moscone South.[168] Both tanks include secondary containment, and there is a Ni-Cad battery pack for the Moscone South generator. Under the proposed project, there would be no change in the use of diesel fuel or the battery pack used to supply emergency generators.

Compliance with the *San Francisco Health Code*, which incorporates state and federal requirements, would minimize potential exposure of site personnel and the public to any accidental releases of hazardous materials or waste and would also protect against potential environmental contamination. In addition, transportation of hazardous materials is well regulated by the California Highway Patrol and the California Department of Transportation. Therefore, the potential impacts related to the routine use, transport, and disposal of hazardous materials associated with implementation of the project would be ***less than significant***.

**Mitigation:** None required.

**Impact HZ-2: The proposed project would be constructed on a site identified on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. Excavation could also require the handling of contaminated soil and groundwater, potentially exposing workers and the public to hazardous materials, or resulting in a release of hazardous materials into the environment during construction. (Less than Significant)**

Based on historic land uses, the presence of earthquake fill, and existing contamination at the site (discussed below), workers and the public could be exposed to hazardous material during construction, and previously unidentified USTs may be encountered during excavation. Soil and groundwater could also require special handling/disposal procedures. Following construction, workers could potentially be exposed to any hazardous materials left in place. Site conditions related to the potential presence of hazardous materials and previously identified USTs are described below, along with regulatory requirements that would be required and would ensure that workers, site occupants and visitors, and the public do not experience adverse effects related to hazardous materials exposure.

### *Discussion of Existing Conditions*

**Previous Site Uses.** The proposed project site has a long history of industrial and commercial land uses prior to the initial development of the Moscone Center that began in 1981.[169] Based on Sanborn Maps reviewed for the Phase I Environmental Site Assessment (ESA) completed for the project, historic land uses at the site and in the immediate vicinity since 1887 that could have involved the use of hazardous materials include launderettes; a copper and wire shop; wood and coal yards; a tin shop; a soda water factory; a

[168] Ibid.
[169] Ibid.

cleaning, soldering, and storage yard for kerosene cans; a veterinary stable; a junk yard; an electric shop; machine shops; paint shops; metal works; a printer; an iron warehouse; a wagon factory; a dairy; a lithography shop; a wire products factory; two gasoline service stations; auto repair shops; an auto parking facility with a fuel island; a paper company; a meat market; a dry battery manufacturer; an iron and bronze shop and engraving shop; and a brass foundry. Also, the environmental database review conducted for the Phase I ESA indicates that five dry cleaning facilities were situated at the property between 1930 and 1966.

The buildings within large portions of the project site were demolished sometime between 1970 and 1974 and replaced with parking or vacant lots. Automobile parking and a car wash were located in the southeast portion of the site in 1974. Moscone South was constructed in 1981 and the Esplanade Building was constructed in 1989. Moscone North was constructed in 1991, along with pedestrian tunnels and truck access routes that connect the north and south facilities beneath Howard Street.

**Underground Storage Tanks.** The Moscone Center previously used two 10,000-gallon USTs for the storage of diesel to fuel emergency generators.[170] One of the USTs failed a leak test in 1989. As a result the Moscone Center is identified in the Leaking Underground Storage Tank (LUST) database as well as in environmental databases identifying sites with historic USTs. Environmental investigations conducted between 1989 and 1995 identified total petroleum hydrocarbons as diesel (8,800 milligrams per kilogram [mg/kg]), toluene (0.08 mg/kg), ethylbenzene (0.37 mg/kg) and elevated levels of lead in the UST backfill materials and soil. Both of the diesel USTs, as well as some of the contaminated soil, were removed in 1993, but not all of the contaminated soil could be removed due to structural limitations related to the adjacent buildings. Groundwater was minimally affected by total petroleum hydrocarbons as diesel (70 micrograms per liter [µg/L]) and toluene (0.05 µg/L), but these compounds were not detected in the groundwater down gradient of the former UST location at the completion of the soil removal. Based on the findings of this investigation, the San Francisco Local Oversight Program issued a Remedial Action Completion Certificate on December 10, 2009.[171]

In addition, 12 historical 1,000-gallon USTs of unspecified uses and an additional UST were encountered during construction of Moscone North and were removed during construction. Soil excavated during construction contained elevated levels of petroleum hydrocarbons as gasoline, diesel, and oil (110,000 mg/kg, 64,000 mg/kg, and 130,000 mg/kg, respectively). Ethylbenzene (120 mg/kg) and xylene (33 mg/kg) were also detected in the soil, but no petroleum products or associated compounds were detected in groundwater samples. Soil was excavated to a depth of 40 feet for construction of the underground exhibit hall, at least 17 feet below the deepest UST encountered. At the completion of soil excavation, the only compounds detected were total petroleum hydrocarbons as diesel and oil (450 mg/kg and 4,000 mg/kg, respectively). Based on these results, the San Francisco Local Oversight Program issued a Remedial Action Completion Certificate regarding these 12 USTs on December 11, 2009.[172]

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[170] Ibid.

[171] San Francisco Department of Public Health, Remedial Action Completion Certification, Underground Storage Tank (UST) Case, Moscone Center, 747 Howard Street, San Francisco, LOP Case Number: 10523. December 10, 2009.

[172] San Francisco Department of Public Health, Remedial Action Completion Certification, Underground Storage Tank (UST) Case, Moscone Center Expansion, 750 Howard Street, San Francisco, LOP Case Number: 10594. December 11, 2009.

**Fill Materials.** As discussed in Topic 13, "Geology and Soils," the site is underlain by up to 20 feet of artificial fill materials. The fill is primarily derived from dune sands, and fragments of brick, wood, asphalt, and concrete were encountered within the fill. Because fill materials in San Francisco commonly include industrial refuse and building debris from the 1906 earthquake, these materials commonly contain PAHs, heavy metals, oil and grease, and volatile organic compounds.[173]

**Surrounding Sites.** The Phase I ESA prepared for the proposed project did not identify any sites in the vicinity of the proposed project that were considered to have the potential to affect soil or groundwater quality at the project site. However, the assessment concluded that there is the potential for regional degradation of groundwater quality given that there are 32 sites identified in the California ENVIROSTOR database within a 1-mile radius of the project site (this database includes sites with known contamination, or sites for which there may be a reason to investigate further); 152 sites identified in the LUST database within 0.5-mile (this database includes sites with leaking underground storage tanks); 23 historic dry cleaning facilities located within 1/8-mile; and 11 historic gasoline service stations within 1/8-mile.

**Existing Soil Quality.** Based on historic industrial uses of the project site that handled hazardous materials, as well as the presence of earthquake fill at the site, there is a high potential to encounter hazardous materials in the soil. A Phase II investigation, including the installation of six soil borings for soil sample collection (three in each of the planned excavation areas), was completed in July 2013.[174] For this analysis, the soil analytical results are compared to the following criteria that are applicable to the disposal of the soil and potential health risks associated with exposure to the soil:

- ***Hazardous waste criteria adopted by the State of California (Title 22 of the California Code of Regulations, Section 66261.20, et seq.).*** In accordance with these criteria, excavated soil would be classified as a hazardous waste if it contains a specified chemical at a total concentration greater than the State total threshold limit concentration (TTLC); a soluble concentration greater than the State soluble threshold limit concentration (STLC); a soluble concentration greater than federal toxicity regulatory levels using a test method called the toxicity characteristic leaching procedure (TCLP); or specified carcinogenic substances at a single or combined concentration of 0.001 percent.
- ***Environmental screening levels published by the Regional Water Quality Control Board.***[175] Environmental Screening Levels (ESLs) are conservative estimates of safe levels of a chemical that a person could be exposed to in soil. If the concentration of a chemical in the soil is below the ESL, then it can be assumed that the chemical would not pose a health risk to a person. Because construction workers, site workers and residents would experience different exposures to soil, there are different ESLs for each of these receptors. In general, residents would be expected to have the longest exposure to soil and therefore residential ESLs are generally lower than construction or site worker screening levels, and are the most stringent of the three criteria. Typically, a site can be suitable for unrestricted land uses if the chemical concentrations in soil

[173] Volatile organic compounds are emitted as gases from certain solids or liquids, such as paints and lacquers, paint strippers, cleaning supplies, pesticides, building materials and furnishings, or office equipment (i.e., copiers and printers, correction fluids and carbonless copy paper, graphics and craft materials including glues and adhesives, permanent markers, and photographic solutions).

[174] Northgate Environmental Management, Inc. Phase II Soil and Groundwater Investigation, Moscone Center Expansion Project, San Francisco, California. July 1, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

[175] California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final. November 2007, revised May 2008.

and groundwater are less than the residential ESL, but land use restrictions can be imposed on a property if the chemical concentrations exceed the commercial ESL, or another less stringent requirement. Therefore, the discussion of analytical results below compares available results to the residential ESL.

On the basis of the soil analytical results from the Phase II investigation, soil from the uppermost 3.5 feet of soil from the eastern excavation area could be classified as a California hazardous waste because the concentration of soluble lead was 33 milligrams per liter (mg/L), determined using California's waste extraction test methodology, which is greater than the STLC of 5.0 mg/L. Soil from below this depth in the eastern excavation area and from the entire western excavation area would not be classified as a hazardous waste because none of the total chemical concentrations detected exceeded California's TTLC and none of the soluble concentrations exceeded California's STLC or the federal TCLP level.

Volatile organic compounds were detected in only two soil samples (1,2,4-trimethylbenzene at 0.0055 mg/kg and naphthalene at 0.007 mg/kg), and each of these chemicals is a common component of either gasoline or diesel. Total petroleum hydrocarbons as diesel were detected in eight of the 16 soil samples analyzed at concentrations ranging from 1.0 to 20 mg/kg, and total petroleum hydrocarbons as oil were detected in ten of the 16 samples at concentrations ranging from 5.2 to 100 mg/kg. Several metals were detected in the soil samples. With the exception of arsenic and lead, none of the chemical concentrations detected in the soil samples exceeded ESLs established by the RWQCB for residential land uses, commercial land uses, or construction workers.

Ranging from 1.3 to 4.4 mg/kg, all of the detected arsenic concentrations exceeded the residential ESL of 0.39 mg/kg. However, these concentrations are less than the background concentration of 11 mg/kg in the San Francisco Bay Area[176] and would therefore not normally require remediation. At 310 mg/kg, only the lead concentration in one composite sample exceeded the residential ESL of 80 mg/kg, but this elevated lead concentration does not exceed the ESL of 320 mg/kg for commercial land uses and construction workers. This elevated lead level is associated with the shallow soil that would require disposal as a hazardous waste, as discussed in the preceding paragraph. Total petroleum hydrocarbons as gasoline, semivolatile organic compounds, polychlorinated biphenyls (PCBs), organochlorine pesticides, and asbestos were not detected in any of the soil samples.

Because the detected lead concentrations are all below the ESL for commercial land uses and construction workers, and all of the other detected chemical concentrations are below the residential ESLs or background levels, there would not be potential health risks associated with exposure to the soil, and the soil would be suitable for off-site re-use. Any soil with elevated lead levels would be disposed of off-site as a hazardous waste based on the soluble lead levels detected and would therefore not pose a health threat to site occupants and visitors because it would be removed from the site during construction and appropriately disposed of.

[176] Duverge, Dylan. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region. December, 2011.

**Existing Groundwater Quality.** The Phase II investigation[177] also included the analysis of grab groundwater samples from four of the borings (two in each of the excavation areas). The analytical results for these samples are representative of the quality of the groundwater that would be discharged to the combined sewer system or reused at the site for non-potable purposes under the proposed project. For this analysis, the groundwater analytical results are compared to the following criteria to evaluate the suitability of the groundwater for discharge and also potential health risks to site occupants and visitors as a result of vapor intrusion:

- ***Discharge limitations specified in Article 4.1 of the San Francisco Public Works Code, as supplemented by Order No. 158170.*** Article 4.1 of the *San Francisco Public Works Code* and Order No. 158170 regulate the quantity and quality of discharges to the combined sewer system.
- ***ESLs for Vapor Intrusion.***[178] Volatile organic compounds in groundwater can volatilize, and if present at high enough concentrations in the soil, can produce vapors that could affect indoor air quality, depending on the specific building design. Groundwater ESLs for vapor intrusion represent the level of volatile organic compounds that would not be expected to result in adverse vapor intrusion, regardless of the building design.

The groundwater samples were analyzed for total petroleum hydrocarbons as gasoline, diesel, and oil; volatile organic compounds; and metals. Total petroleum hydrocarbons as gasoline, diesel, and oil were not detected in the groundwater samples. Only three volatile organic compounds were detected (trichloroethene at 3.8 µg/L, cis-1,2-dichloroethene at 0.53 µg/L, and carbon disulfide at 13 µg/L). The trichloroethene concentration is well below the ESL of 52 µg/L for vapor intrusion and also below the discharge limitation of 500 µg/L specified in Article 4.1 of the San Francisco Public Works Code as supplemented by Order No. 158170, but these criteria have not been established for cis-1,2-dichloroethene or carbon disulfide. While several dissolved metals were detected in the groundwater samples (arsenic, barium, chromium, cobalt, lead, mercury, molybdenum, nickel, and vanadium), none of the concentrations exceeded the Article 4.1 and Order No. 158170 discharge limitations.

As summarized in the Phase I ESA, a 2011 study conducted to evaluate the feasibility of using groundwater from building dewatering operations for non-potable uses found that groundwater samples collected from two of the four dewatering sumps at the Moscone Center contained two volatile organic chemicals (trichloroethene and cis-1,2-dichloroethene) as well as several metals (arsenic, barium, chromium, cobalt, copper, nickel, vanadium, and zinc). The detected levels were below ESLs established by the RWQCB for evaluating non-drinking water sources.

### *Regulatory Requirements for Site Investigation and Cleanup*

The SFDPH provides oversight for the assessment and remediation of contaminated sites in the City and County of San Francisco under the Site Assessment and Mitigation Program. Types of sites managed under this program include sites subject to the Maher Program and sites affected by a release from a UST

[177] Northgate Environmental Management, Inc., Phase II Soil and Groundwater Investigation, op cit.
[178] California Regional Water Quality Control Board (RWQCB), San Francisco Bay Region. Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater. Interim Final. November 2007, revised May 2008.

being addressed under the Local Oversight Program. The SFDPH also administers UST and facility closure requirements.

**Maher Program.** Article 22A of the *San Francisco Health Code (*also known as the Maher Ordinance) requires, prior to issuance of a building permit, that the project sponsor retain the services of a qualified professional to prepare a Phase I ESA that meets the requirements of *San Francisco Health Code* Section 22.A.6. The Phase I ESA would determine the potential for site contamination and level of exposure risk associated with the project. Based on that information, the project sponsor may be required to conduct soil and/or groundwater sampling and analysis. Where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the project sponsor is required to submit a site mitigation plan (SMP) to SFDPH or other appropriate state or federal agency(ies), and to remediate any site contamination in accordance with an approved SMP prior to the issuance of any building permit. For departments, boards, commissions and agencies of the City and County of San Francisco that authorize construction or improvements on land under their jurisdiction where no building or grading permit is required, the ordinance requires protocols be developed between that entity and SFDPH that will achieve the environmental and public health and safety goals of Article 22A.

Article 22A of the *San Francisco Health Code* applies to any site identified within the Maher area as well as any site that is:

- on a lot either currently or previously either zoned for or permitted for industrial use;
- within 150 feet of any of the elevated portions of U.S. Highway 101, Interstate 80 or Interstate 280;
- on a lot known or suspected by SFDPH to contain hazardous substances in the soil and/or groundwater; or
- on a lot known or suspected by SFDPH to contain or to be within 100 feet of an underground storage tank.

The project would be subject to Article 22A because it is located on a site that has been permitted for an industrial use and there are suspected underground storage tanks in the project vicinity.

**Local Oversight Program.** Under the Local Oversight Program, the SFDPH provides oversight for sites that have experienced a release from a UST, pursuant to Title 23 of the California Code of Regulations, Chapter 16. Under this program, the State Water Resources Control Board provides regulatory guidance and also reviews, comments on, and approves site assessment reports, feasibility studies, and work plans; reviews monitoring data to evaluate the effectiveness of the remediation strategy; and upon completion of remediation, issues a letter or other document that certifies that the cleanup goals have been met.

**UST and Facility Closure.** Article 21 of the *San Francisco Health Code* addresses closure of USTs and other hazardous materials handling facilities. To close a facility (including USTs), a closure plan must be prepared that identifies how the need for future maintenance of the facility will be eliminated; how the threat to the environmental and public health and safety will be eliminated, and how all hazardous materials in the facility will be removed and appropriately disposed of. The plan must be submitted to the City for approval prior to closure.

This article also requires that soil from the UST excavation, and possibly the groundwater, be sampled. Upon completion of closure, a final report documenting UST removal activities and any residual contamination left in place must be submitted to the City. Upon approval of this report, the City would issue a Certificate of Completion. If a release were indicated, the site owner would be required to assess the extent of any contamination and conduct a site remediation, as needed, in compliance with the SFDPH Local Oversight Program requirements. The SFDPH could approve abandonment of the UST in place if removal were infeasible.

*Impacts Related to Exposure to Hazardous Materials in Soil and Groundwater*

**Closure of previously unidentified USTs.** As discussed above, previously unidentified USTs were discovered during construction of Moscone North. Based on historic use of the proposed project site for a number of industrial uses, there is also the potential to encounter previously unidentified USTs during construction of the expanded exhibit areas. Without proper precautions, workers and the public could be exposed to petroleum products potentially remaining in the USTs or in the surrounding soil.

If a previously unidentified UST were encountered, the project sponsor would be required to close the UST in accordance with Article 21 of the *San Francisco Health Code.* This article would require a closure plan identifying appropriate requirements for disposition of any remaining hazardous materials in the tank and the tank itself. The closure plan would be submitted to the City for approval prior to removal of the UST. Soil from the UST excavation, and possibly the groundwater, would also be sampled in accordance with Article 21. Upon completion of closure, a release or contamination report would be submitted to SFDPH if a release were indicated on the basis of visual observations or sampling, and a final report documenting tank removal activities and any residual contamination left in place would be submitted to SFDPH. Upon approval of this report, SFDPH would issue a Certificate of Completion. If a release were indicated, the project sponsor would be required to submit a corrective action plan, including a community health and safety plan, to SFDPH and the RWQCB, and remediation would be required in accordance with federal, state and local regulations. Alternatively, the tank could be abandoned in place if removal were infeasible. Implementation of the measures required in accordance with Article 21 of the *San Francisco Health Code* would ensure that hazardous materials impacts associated with encountering previously unidentified USTs would be ***less than significant***.

**Construction within contaminated materials.** As discussed above, the project sponsor has conducted a Phase I ESA to describe historic uses of the project site, and implemented a Phase II soil and groundwater quality investigation. Because the detected lead concentrations are all below the ESL for commercial land uses and for construction workers, and all of the other detected chemical concentrations are below the residential ESLs or background levels, there would not be potential health risks associated with exposure to the soil, and the soil would be suitable for off-site re-use based on the sampling conducted to date.

Additionally, the proposed project site is subject to Article 22A of the *San Francisco Health Code*. The Phase I ESA has been prepared for the project in accordance with Article 22A and complies with its requirements for a site history report. The Phase II investigation also generally complies with the requirements for a subsurface soil and groundwater investigation, but several analyses required by Article 22A were not conducted, including pH, cyanide, and methane. Accordingly, the SFDPH may

require additional sampling and analysis prior to construction. To enable SFDPH to make this determination, the project sponsor has submitted a Maher Application to the SFDPH in accordance with Article 22A, and the application is currently under review. Upon its review of the Phase I and II reports, the SFDPH will either issue a no further action letter or require additional investigation.

If the additional investigation reveals the presence of hazardous substances in excess of state or federal standards, the project sponsor would be required to submit a site mitigation plan (SMP) to SFDPH or other appropriate state or federal agency(ies), and to remediate any site contamination in accordance with an approved SMP prior to the issuance of the building permit. The proposed project would be required to remediate potential contamination in accordance with Article 22A. Thus, the proposed project would not result in a significant hazard to the public or environment from site contamination and the proposed project would result in a ***less than significant*** impact related to construction within contaminated materials.

**Disposal of contaminated materials.** As discussed above, the uppermost 3.5 feet of soil from the eastern excavation area could be classified as a California hazardous waste because the concentration of soluble lead in the shallow composite soil sample from this area was 33 mg/L (determined using California's waste extraction test methodology), which is greater than the STLC of 5.0 mg/L. Further, if previously unidentified USTs are encountered, the tanks and associated soil would require off-site disposal. However, as the generator of the hazardous wastes, the project sponsor would be required to follow state and federal regulations for manifesting the wastes, using licensed waste haulers, and disposing the materials at a permitted disposal or recycling facility. With compliance with these regulatory requirements, impacts related to disposal of hazardous wastes would be ***less than significant***.

As noted in Topic 13, "Geology and Soils," the depth to groundwater at the project site is about 20 to 24 feet below ground surface. During construction of the proposed facility, groundwater produced by dewatering would be discharged to the combined sewer system in compliance with Article 4.1 of the *San Francisco Public Works Code* as supplemented by Order No. 158170. As discussed above, the groundwater quality meets the discharge limitations of Article 4.1 and Order No. 158170, and would therefore not require treatment other than to remove sediments. Impacts related to discharge of the groundwater produced during construction-related dewatering would be ***less than significant*** with compliance with the specified discharge limitations.

Moreover, once construction of the expanded facilities is completed, groundwater produced during long-term dewatering would be captured and reused for non-potable uses as described in the Project Description. Reuse of this water in accordance with San Francisco's voluntary non-potable water program (described in Topic 14, "Hydrology and Water Quality)," would further ensure that impacts related to the long-term discharge of groundwater would be ***less than significant.***

**Mitigation:** None required.

**Impact HZ-3: Demolition and renovation of the exhibit halls would expose workers and the public to hazardous building materials including asbestos-containing materials, lead-based paint, polychlorinated biphenyls (PCBs), bis(2-ethylhexyl) phthalate (DEHP), and mercury, or result in a release of these materials into the environment during construction. (Less than Significant with Mitigation)**

As described in the Project Description, the Esplanade Ballroom support building and additional Esplanade facilities would be demolished to allow for construction of the proposed facilities, including new underground exhibit hall space and the new Esplanade Expansion Building. In addition, a portion of the South Lobby building would be demolished to allow for construction of the expanded Moscone South Building. The Gateway Ballroom (below the existing Moscone South lobby) and Hall E (below the existing Moscone North lobby) would be reconfigured into exhibit space.

The Moscone South building was constructed in 1981, the Esplanade Building was constructed in 1989, and the Moscone North building was constructed in 1991.[179] Although these buildings were constructed after the manufacture of asbestos-containing building materials was banned in the 1970s, existing stocks of these materials were allowed to be sold until they were used up. Similarly, while the manufacture of lead-based paints was banned in 1978, existing supplies continued to be used until the stocks were used up and lead-based paint continued to be used in some industrial applications. Therefore, there is the potential for these materials to be present in the structures that would be demolished or renovated under the proposed project. Other hazardous building materials that could be present include electrical equipment containing PCBs; fluorescent light ballasts containing PCBs or bis(2-ethylhexyl) phthalate (DEHP); and fluorescent light tubes containing mercury vapors.

If these materials were present, workers and the public could be exposed to hazardous building materials if they were not abated prior to demolition or renovation. However, as discussed below, there is a well-established regulatory framework for the abatement of asbestos-containing materials and lead-based paint, and impacts related to exposure to these hazardous building materials would be less than significant with compliance with regulatory requirements. Impacts related to exposure to other hazardous building materials could be significant, as discussed below.

**Asbestos-Containing Materials.** An asbestos and lead-based paint survey was conducted for the portion of the Esplanade Building that would be demolished under the proposed project.[180] The survey identified a total of approximately 17,100 square feet of asbestos-containing materials, including black tar within the mechanical crawl space at the east end of the South Lobby area; floor tile and mastic in the mezzanine level substation and corridor; and white terrazzo flooring in the stairwells at levels 1 through 4. In addition, the survey identified 7,500 batting clip mastics in the west end of the mezzanine level plan room that are asbestos-containing. The survey reports that there could be a vapor barrier under the basement level concrete slab and under ceramic tiled floors within the restrooms and janitor closets, and this barrier could contain asbestos. There could also be below-ground transite (asbestos cement) piping and valves servicing

[179] Northgate Environmental Management, Inc. Phase I Environmental Site Assessment, op. cit.

[180] North Tower Environmental, Inc. Asbestos and Lead-Based Paint Survey Report, Moscone Center, Esplanade Building Pre-Demolition, 747 Howard Street, San Francisco, California. March 25, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

the building that could contain asbestos. These materials could not be accessed as part of the survey, but should be sampled prior to demolition to determine their asbestos content if encountered. The South Lobby building, Gateway Ballroom, and Hall E have not been surveyed for asbestos-containing materials.

Section 19827.5 of the *California Health and Safety Code* requires that local agencies not issue demolition or alteration permits until an applicant has demonstrated compliance with notification requirements under applicable federal regulations regarding hazardous air pollutants, including asbestos. The BAAQMD is vested by the California legislature with authority to regulate airborne pollutants, including asbestos, through both inspection and law enforcement, and is to be notified of any demolition or renovation project that involves the removal of 100 square feet or more of asbestos-containing materials 10 days in advance of the work.

Notification includes the names and addresses of operations and persons responsible; description and location of the structure to be demolished/altered including size, age, and prior use; the approximate amount of friable asbestos that would be removed or disturbed; the scheduled starting and completion dates of demolition or abatement; the nature of the planned work and methods to be employed; the procedures to be employed to meet BAAQMD requirements; and the name and location of the waste disposal site to be used. Approved methods for control of asbestos-containing materials during abatement include adequate wetting of all asbestos-containing materials and providing containment with a negative air pressure ventilation system to prevent migration of asbestos-containing materials. BAAQMD randomly inspects asbestos removal operations. In addition, BAAQMD will inspect any removal operation when a complaint has been received.

The local office of the State Occupational Safety and Health Administration (Cal/OSHA) must be notified of asbestos abatement to be carried out. Asbestos abatement contractors must follow state regulations contained in 8CCR1529 and 8CCR341.6 through 341.17 where there is asbestos-related work involving 100 square feet or more of asbestos-containing material. Asbestos removal contractors must be certified as such by the Contractors Licensing Board of the State of California. The owner of the property where abatement is to occur must have a Hazardous Waste Generator Number assigned by and registered with the Office of the California Department of Health Services in Sacramento. The contractor and hauler of the material are required to file a Hazardous Waste Manifest which details the hauling of the material from the site and the disposal of it. Pursuant to California law, the San Francisco Department of Building Inspection (DBI) would not issue the required permit until the applicant has complied with the notice and abatement requirements described above.

Accordingly, the project sponsor would ensure that the South Lobby building, Gateway Ballroom, and Hall E are surveyed for asbestos-containing materials prior to demolition or renovation, and would provide BAAQMD with notification of any planned demolition or renovation activities a minimum of 10 days prior to these activities. The project sponsor would retain a certified asbestos removal contractor to completely remove all asbestos-containing materials prior to demolition or renovation using BAAQMD-approved methods, and would also retain a licensed waste hauler to legally dispose of the removed materials. Implementation of the required procedures in accordance with the legal requirements described above, already established as a part of the permit review process, would ensure that any

potential impacts due to demolition or renovation of structures with asbestos-containing materials would be ***less than significant***.

**Lead-based Paint.** 17 CCR Section 35033 defines lead-based paint as paint that contains 1.0 milligram of lead per square centimeter of paint, or 5,000 mg/kg of lead. The asbestos and lead-based paint survey conducted for the portion of the Esplanade building that would be demolished under the proposed project determined that the yellow paint on the loading docks is lead-based paint.[181] The ceramic tile glazing on tiles in the administration office restrooms, kitchen, and restrooms in the kitchen are also lead-based. All other painted surfaces on the interior and exterior of the building also contain detectable lead, but at concentrations less than 1.0 milligrams per square centimeter.

Section 3426 of the *San Francisco Building Code*, Work Practices for Lead-Based Paint on Pre-1979 Buildings and Steel Structures, applies to the exterior of all buildings on which original construction was completed prior to 1979 (which are assumed to have lead-based paint on their surfaces, unless demonstrated otherwise through laboratory analysis) and to any steel structures with lead-based paint, such as the Moscone Center. Therefore, demolition of any exterior building features such as metal bumpers painted with the yellow lead-based paint must comply with Section 3426 if the total amount of disturbance would be greater than 100 square feet. Regarding building interiors, this section of the building code applies only to the interior of residential buildings, hotels, and childcare centers, and would therefore not apply to demolition of the building interior under the proposed project.

Section 3426 of the *San Francisco Building Code* requires specific notification and work standards, and identifies prohibited work methods and penalties. (The reader may be familiar with notices commonly placed on residential and other buildings in San Francisco that are undergoing re-painting. Generally affixed to a drape that covers all or portions of a building, these notices are a required part of the Section 3426 notification procedure.) The notification requirements include notification of DBI and posting of required signs. Prior to the commencement of work, the responsible party must provide written notice to the Director of DBI of the address and location of the project; the scope of work, including specific location; methods and tools to be used; the approximate age of the structure; anticipated job start and completion dates for the work; whether the building is residential or nonresidential, owner-occupied or rental property; the dates by which the responsible party has fulfilled or will fulfill any tenant or adjacent property notification requirements; and the name, address, telephone number, and pager number of the party who will perform the work. The responsible party must also post notices informing the public and adjacent property owners of the work and also restricting public access to the work area, or provide specific notice to adjacent property owners. Section 3426 also contains provisions regarding inspection and sampling for compliance by DBI, enforcement, and penalties for non-compliance with the requirements of the ordinance.

The specified performance standards include establishment of containment barriers at least as effective at protecting human health and the environment as those in the U.S. Department of Housing and Urban Development Guidelines (the most recent Guidelines for Evaluation and Control of Lead-Based Paint

[181] Ibid.

Hazards), and identification of practices that may not be used in disturbance or removal of lead-based paint. Any person performing work subject to the ordinance shall, to the maximum extent possible, protect the ground from contamination during exterior work and make all reasonable efforts to prevent migration of lead paint contaminants beyond containment barriers during the course of the work. Clean-up standards require the removal of visible work debris, including the use of a High Efficiency Particulate Air Filter (HEPA) vacuum following interior work.

Demolition or renovation of other structures that include lead-containing materials could result in exposure of workers and the public to lead. However, these activities would be subject to the Cal/OSHA Lead in Construction Standard (8 CCR Section 1532.1). This standard requires development and implementation of a lead compliance plan when materials containing lead would be disturbed during construction. The plan must describe activities that could emit lead, methods that will be used to comply with the standard, safe work practices, and a plan to protect workers from exposure to lead during construction activities. Cal/OSHA would require 24-hour notification if more than 100 square feet of materials containing lead would be disturbed. For activities disturbing the yellow lead-based paint described above, the project sponsor would also be required to comply with Section 3426 of the San Francisco Building Code if more than 100 square feet of lead-based paint were disturbed, although notification under the Lead in Construction Standard could satisfy the requirements of the building code.

Implementation of procedures required by Section 3426 the *San Francisco Building Code* and Lead in Construction Standard (8 CCR Section 1532.1) would ensure that potential impacts of demolition or renovation of structures with lead-based paint would be ***less than significant***.

**Other Hazardous Building Materials.** Other hazardous building materials that could be present within the portions of the Moscone Center that would be demolished or renovated include electrical transformers that could contain PCBs, fluorescent light ballasts that could contain PCBs or DEHP, and fluorescent light tubes that could contain mercury vapors. Disruption of these materials could pose health concerns for construction workers if not properly handled or disposed of, a significant impact. However, implementation of **Mitigation Measure M-HZ-3, Hazardous Building Materials Abatement**, would require that the presence of such materials be evaluated prior to demolition or renovation and, if such materials were present, that they be properly handled during removal and building demolition or renovation. This would reduce the potential impacts of exposure to these hazardous building materials to a ***less-than-significant*** level.

**Mitigation Measure M-HZ-3: Hazardous Building Materials Abatement**

The project sponsor shall ensure that any area of the Moscone Center planned for demolition or renovation is surveyed for hazardous building materials including PCB-containing electrical equipment, fluorescent light ballasts containing polychlorinated biphenyls (PCBs) or bis(2-ethylhexyl) phthalate (DEHP), and fluorescent light tubes containing mercury vapors. These materials shall be removed and properly disposed of prior to the start of demolition or renovation. Light ballasts that are proposed to be removed during renovation shall be evaluated for the presence of PCBs and in the case where the presence of PCBs in the light ballast cannot be verified, they shall be assumed to contain PCBs, and handled and disposed of as such, according to applicable laws and regulations.

Any other hazardous building materials identified either before or during demolition or renovation shall be abated according to federal, state, and local laws and regulations.

**Level of Significance after Mitigation:** Implementation of Mitigation Measure M-HZ-3 would reduce impacts related to exposure hazardous building materials under the proposed project to a ***less-than-significant*** level.

**Impact HZ-4: Implementation of the proposed project would not result in adverse effects related to hazardous emissions or handling of acutely hazardous materials within one-quarter mile of an existing school. (Less than Significant)**

Bessie Carmichael Middle School is located within one-quarter mile of the proposed project. The State of California defines extremely hazardous materials in Section 25532 (2)(g) of the Health and Safety Code. Construction of the proposed project would use only common hazardous materials such as paints, solvents, cements, adhesives, and petroleum products (such as asphalt, oil, and fuel), and none of these materials is considered extremely hazardous. Further, operation of the expanded Moscone Center would not involve the use of extremely hazardous materials. There would be a ***less-than-significant*** impact.

**Mitigation:** None required.

**Impact HZ-5: Implementation of the proposed project would not impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or expose people or structures to a significant risk of loss, injury or death involving fires. (Less than Significant)**

The proposed project would increase the number of employees at the Moscone Center by 28, and could increase the number of daily visitors by up to 4,200.[182] The increased number of employees and visitors to the expanded Moscone Center could contribute to congestion if an emergency evacuation of the greater Downtown area were required. However, Section 12.202(e)(1) of the *San Francisco Fire Code* requires that all owners of high-rise buildings (taller than 75 feet), such as the expanded Moscone South structure, "shall establish or cause to be established procedures to be followed in case of fire or other emergencies. All such procedures shall be reviewed and approved by the chief of division." Additionally, project construction would have to conform to the provisions of the *Building Code* and *Fire Code*, which require additional life-safety protections for high-rise buildings and the final building plans for the expanded facilities would be reviewed by the San Francisco Fire Department (as well as DBI) to ensure conformance with the applicable provisions, including development of an emergency procedure manual and an exit drill plan.

Although not "adopted" by legislative action, the City has a published Emergency Response Plan, prepared by the Department of Emergency Management as part of the City's Emergency Management Program,

[182] Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

which also includes plans for hazard mitigation and disaster preparedness and recovery.[183] The Emergency Response Plan identifies hazards to which San Francisco is particularly susceptible as earthquake, hurricane, tsunami, flood, winter storm, and act of terrorism, including use of chemical, biological, radiological, nuclear, and explosive weapons. The Emergency Response Plan complies with several relevant state and federal directives for emergency planning, including the California Standardized Emergency Management System and the Incident Command System. The Plan includes sections on operations, including management and procedures; staffing, operations, and logistics regarding the City's emergency operations center; and mutual aid involving other agencies. The Emergency Response Plan assigns responsibilities for disaster planning, operations (including fire and rescue, law enforcement, human services, infrastructure, transportation, communications, and community support), and logistics, as well as finance and administration, to City agencies and departments. The Emergency Response Plan also identifies volunteer agencies, such as the American Red Cross, that are integral to disaster response efforts.

The Emergency Response Plan contains 16 "annexes" (similar to appendices), consistent with a federally established framework, that cover topics including firefighting, public works and engineering, mass casualty care, and earthquakes, among numerous others. The Earthquake Annex, in particular, sets forth planning assumptions for a series of earthquakes of varying magnitudes on different faults, and sets forth procedures for assessment of damage and injuries, and operational response and strategies in the event of a major earthquake.

Operation of the expanded Moscone Center would increase the number of on-site employees and also the number of visitors to the center that would be subject to a potential disaster, including a major earthquake or any of the other hazards identified in the Emergency Response Plan. With regard to earthquake hazards, in particular, the project site, like other parts of San Francisco and the Bay Area, is subject to ground shaking from potentially large earthquakes on the San Andreas and Hayward faults, as well as on other faults in the region as discussed in Topic 13, "Geology and Soils." The project site is also subject to stronger groundshaking intensity than some other parts of the City because it is built on fill materials. However, the expanded facilities would be subject to more stringent building and structural standards than the structures that are being replaced. New employees and visitors would be relatively safer than under existing conditions. As discussed under Topic 13, Geology and Soils, impacts related to seismic groundshaking would be ***less than significant***.

The Moscone project would be required to meet the life safety requirements of the Building and Fire Codes; therefore, the proposed project would not obstruct implementation of the City's Emergency Response Plan, nor would it necessarily interfere with emergency evacuation planning.

Further, the project would be constructed in a developed area of San Francisco, which lacks an "urban-wildland interface" and where fire, medical, and police services are available and provided. The existing street grid provides ample access for emergency responders and egress for event attendees and workers,

[183] San Francisco Department of Emergency Management, City and County of San Francisco Emergency Response Plan, December 2009. Available at: http://www.sfdem.org/Modules/ShowDocument.aspx?documentid=1154. Reviewed September 9, 2011.

and the proposed project would neither directly nor indirectly alter that situation. Therefore, the proposed project would not directly or indirectly result in the additional exposure of persons to fire risk.

Compliance with the life safety requirements of the *San Francisco Building Code* and *Fire Code* through the City's ongoing permit review process and implementation of the Emergency Response Manual and exit drill plan, would ensure that impacts related to interference with emergency response or evacuation plans as well as potential fire hazards would be ***less than significant***.

**Mitigation:** None required.

**Impact C-HZ-1: The proposed project, in combination with past, present, and reasonably foreseeable future projects in the site vicinity, would not result in a considerable contribution to cumulative impacts related to hazardous materials. (Less than Significant)**

Hazardous materials impacts related to the project could result from use of hazardous materials, conducting construction activities within potentially contaminated soil and groundwater, and demolition of structures that contain hazardous building materials. These impacts would be primarily restricted to the project area and immediate vicinity; therefore, the geographic scope for cumulative impacts related to hazards includes the project area and immediate vicinity.

*Use of Hazardous Materials*

As discussed in Impact HZ-1, the proposed project could involve an increase in the use of hazardous materials and generation of hazardous wastes during operation. Similarly, most of the cumulative projects could also include an increase in the use of hazardous materials and generation of hazardous wastes. However, the proposed project and all reasonably foreseeable cumulative projects would comply with Articles 21, 21A, and 22 of the *San Francisco Health Code* which would minimize potential exposure of site personnel and the public to any accidental releases of hazardous materials or waste and would also protect against potential environmental contamination. With implementation of these regulatory requirements, cumulative impacts related to the use of hazardous materials and generation of hazardous wastes would be ***less than significant***.

*Exposure to Hazardous Materials in Soil and Groundwater*

There is a high potential for soil and groundwater contamination in the project vicinity based on historic land uses and the presence of earthquake fill. There are also many previously unidentified USTs in the area as a result of previous land uses. As discussed in Impact HZ-2, the Phase II investigation conducted for the proposed project site found that a portion of the soil excavated could be characterized as a hazardous waste and would require legal disposal, but that none of the chemical constituents exceeded residential ESLs or background levels. In addition, the proposed project and many of the cumulative projects could also encounter previously unidentified USTs. However, construction activities at the project site and for cumulative, reasonably foreseeable future projects would be subject to the regulatory requirements discussed in Impact HZ-2, including Articles 21 and 21A of the *San Francisco Health Code* and the Local Oversight Program. Because each project would need to assess the potential for soil and groundwater contamination to occur, and implement requirements in compliance with the Health Code

for any unacceptable risks identified in accordance with these regulatory requirements, cumulative impacts related to exposure to hazardous materials in soil and groundwater would be ***less than significant***.

*Hazardous Building Materials*

As discussed in Impact HZ-3, hazardous building materials would be encountered during demolition of the Esplanade Ballroom support building, additional Esplanade facilities, and a portion of the South Lobby building as well as during reconfiguration of the Gateway Ballroom and Hall E. Based on the age of many buildings in the south of Market area, many cumulative projects that include demolition and renovation could also encounter hazardous building materials. However, abatement of asbestos-containing and lead-containing materials would be subject to the well-established regulatory requirements discussed in Impact HZ-3. With implementation of these regulatory requirements, cumulative impacts related to encountering asbestos-containing and lead-based materials would be ***less than significant***.

As for the proposed project, many cumulative projects could encounter other hazardous building materials during demolition or renovation, including electrical transformers that could contain PCBs, fluorescent light ballasts that could contain PCBs or DEHP, and fluorescent light tubes that could contain mercury vapors. The regulatory framework for handling these materials is less-well established, and disruption of these materials could pose health concerns for construction workers if not properly handled or disposed of. However, such effects would be project-specific impacts that would not be likely to combine with other impacts to result in cumulative effects, and the project's contribution to any cumulative impacts related to hazardous building materials would not be cumulatively considerable (***less than significant***).

*Interference with an Adopted Emergency Response Plan or Emergency Evacuation Plan*

The Central SoMa Plan would implement changes to allowed land uses and building heights to promote a greater mix of uses while also emphasizing office uses in the central portion of the plan area, allowing the area to accommodate additional jobs and residential uses. Like the proposed project, cumulative projects in the area would be subject to life safety requirements of the Building and Fire Codes. With implementation of these regulatory requirements, cumulative impacts related to interference with an adopted emergency response plan or emergency evacuation plan would be ***less than significant***.

**Mitigation:** None required.

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| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **16. MINERAL AND ENERGY RESOURCES— Would the project:** | | | | | |
| a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Encourage activities which result in the use of large amounts of fuel, water, or energy, or use these in a wasteful manner? | ☐ | ☐ | ☒ | ☐ | ☐ |

**Impact ME-1: The proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. (No Impact)**

The project site is mapped by the California Geologic Survey as either MRZ-1 or MRZ-4, indicating that substantial mineral resources do not occur at the site.[184] Therefore, construction and operation of the proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. There would be ***no impact***.

**Mitigation:** None required.

**Impact ME-2: The proposed project would not result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan. (No Impact)**

There are no mineral resources identified at the project site and it is not an important mineral resource recovery site. The *San Francisco General Plan* does not identify any areas of important mineral resources in San Francisco. There would be ***no impact***.

**Mitigation:** None required.

[184] California Department of Conservation, Division of Mines and Geology (CDMG), 1987. Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area, Special Report 146, Part II. Available online at: https://archive.org/stream/minerallandclass00stin#page/n5/mode/2up, accessed January 14, 2014.

**Impact ME-3: The proposed project would not encourage activities that result in the use of large amounts of fuel, water, or energy, or use these resources in a wasteful manner. (Less than Significant)**

The proposed project would include expansion of existing uses, which would consume incrementally more energy that under existing conditions. These expanded uses would not result in the use of large amounts of fuel, water, or energy in the context of energy use throughout the City and region. The Greenhouse Gas analysis includes a description of energy-conservation measures that would be implemented or continued under the proposed project.

The project's energy demand would be typical for a development of this scope and nature and would comply with current State and local codes concerning energy consumption, including Title 24 of the California Code of Regulations, enforced by DBI. The proposed project would also be require to comply with the City of San Francisco green building ordinance for municipal buildings, as outlined in Chapter 7 of the Environment Code.[185]

The project site is served by existing utility systems, and it would not require a major expansion of power facilities. As stated in the Utilities analysis, the project would be served by adequate water supplies. In addition, the project site is located in a developed urban area. The area is served by the SFMTA. Use of this transit system by employees and convention attendees would reduce the amount of energy expended in private automobiles.

Therefore, the energy demand associated with the proposed project would result in a ***less-than-significant*** impact.

**Mitigation:** None required.

**Impact C-ME: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in significant adverse cumulative mineral and energy impacts. (Less than Significant)**

The geographic scope for potential cumulative mineral resources impacts encompasses the aggregate minerals in the South San Francisco Bay Production-Consumption Region. Similar to the project area, the project vicinity is mapped by the California Geologic Survey as either MRZ-1 or MRZ-4, indicating that substantial mineral resources do not occur at the site.[186] As stated above, the project site is not designated as a statewide-, regionally-, or locally-important mineral resource recovery site, and the proposed project would result in no impact to mineral resources. Therefore, the project would not contribute to any cumulative impact to mineral resources.

[185] City and County of San Francisco, Department of Building Inspection, May 31, 2013. Green Building Ordinance website. Available online at: http://sfdbi.org/index.aspx?page=268, accessed November 11, 2013.

[186] California Department of Conservation, Division of Mines and Geology (CDMG), 1987. Mineral Land Classification: Aggregate Materials in the San Francisco-Monterey Bay Area, Special Report 146, Part II. Available online at: https://archive.org/stream/minerallandclass00stin#page/n5/mode/2up, accessed January 14, 2014.

The geographic scope for potential cumulative impacts to energy resources impacts encompasses the SFPUC water and power supply system. SFPUC supplies the City and County of San Francisco as well as others in the region with water and power. Similar to the proposed project, projects within the vicinity or the region would require the use of fuel, water, or energy.

Like the proposed project, cumulative projects in the area would be required to comply with the California Green Building Standards Code at a minimum and would also be subject to the San Francisco green building ordinance, which is more stringent. Because these building codes encourage sustainable construction practices related to planning and design, energy efficiency, and water efficiency and conservation, energy consumption would be expected to be reduced compared to conditions without such regulations. Therefore, cumulative impacts related to wasteful use of energy resources would be ***less than significant***.

**Mitigation:** None required.

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| *Topics:* | *Potentially Significant Impact* | *Less Than Significant with Mitigation Incorporated* | *Less Than Significant Impact* | *No Impact* | *Not Applicable* |
|---|---|---|---|---|---|
| **17. AGRICULTURE AND FOREST RESOURCES:** In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board.— **Would the project** | | | | | |
| a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use? | ☐ | ☐ | ☐ | ☒ | ☐ |
| b) Conflict with existing zoning for agricultural use, or a Williamson Act contract? | ☐ | ☐ | ☐ | ☒ | ☐ |
| c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)) or timberland (as defined by Public Resources Code Section 4526)? | ☐ | ☐ | ☐ | ☒ | ☐ |
| d) Result in the loss of forest land or conversion of forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ | ☐ |
| e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use? | ☐ | ☐ | ☐ | ☒ | ☐ |

**Impact AG-1: Construction and operation of the proposed project would not (a) convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance; (b) conflict with existing zoning for agricultural use, or a Williamson Act contract; (c) conflict with existing zoning for or cause rezoning of forest land or timberland; (d) result in the loss of forest land or conversion of forest land to non-forest use; or (e) involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland to non-agricultural use or forest land to non-forest use. (No Impact)**

The project site is located within an urban area in the City and County of San Francisco. The California Department of Conservation's Farmland Mapping and Monitoring Program identifies the site as *Urban and Built-Up Land*, which is defined as "…land [that] is used for residential, industrial, commercial, institutional, public administrative purposes, railroad and other transportation yards, cemeteries, airports, golf courses, sanitary landfills, sewage treatment, water control structures, and other developed purposes."[187]

The project site contains no Prime Farmland, Unique Farmland, Farmland of Statewide Importance, forest, or timberlands; does not support agricultural or timber uses; is not zoned for agricultural or timber uses;[188] and is not under a Williamson Act contract.[189] The project site is designated as "urban land" by the United States Department of Agriculture Natural Resources Conservation Services.[190]

The project would not displace existing farmland or forest land. There would be ***no impact***.

**Mitigation:** None required.

**Impact C-AG: The proposed project, in combination with other past, present, and reasonably foreseeable future projects, would not result in significant adverse cumulative agricultural resource or forestry impacts. (No Impact)**

The geographic scope for potential cumulative agricultural resources impacts encompasses land uses in the vicinity of the Moscone Center. The area generally includes the Central South of Market area, bounded by Market Street to the north, Sixth Street to the west, Second Street to the east, and Townsend Street to the south. Similar to the project area, the project vicinity does not include any agricultural or forestry/timberland resources. Neither the proposed project nor any of the nearby projects would result in conversion of farmland or forest land to non-farm or non-forest use, nor would any of the proposed developments conflict with existing agricultural or forest use or zoning for these uses. Therefore, the proposed project in combination with other projects would not result in cumulative impacts to such resources. There would be ***no impact***.

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[187] California Department of Conservation, Division of Land Resource Protection (DLRP), Bay Area Region Important Farmland 2010, published July 2013. Available online at ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/regional/2010/bay_area_fmmp2010.pdf. Accessed October 11, 2013.

[188] San Francisco Planning Department, Zoning Map, available online: http://www.sf-planning.org/index.aspx?page=1569, accessed February 12, 2013.

[189] California Department of Conservation ibid.

[190] United States National Resources Conservation Service. Web Soil Survey, website: http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, United States Department of Agriculture, accessed December 30, 2013.

**Mitigation:** None required.

| Topics: | Potentially Significant Impact | Less Than Significant with Mitigation Incorporated | Less Than Significant Impact | No Impact | Not Applicable |
|---|---|---|---|---|---|
| **18. MANDATORY FINDINGS OF SIGNIFICANCE— Would the project:** | | | | | |
| a) Have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory? | ☐ | ☒ | ☐ | ☐ | ☐ |
| b) Have impacts that would be individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.) | ☐ | ☒ | ☐ | ☐ | ☐ |
| c) Have environmental effects that would cause substantial adverse effects on human beings, either directly or indirectly? | ☐ | ☒ | ☐ | ☐ | ☐ |

The proposed project could result in adverse impacts to the environment with respect to transportation and circulation and shadow. These topics will be addressed in the EIR. Mitigation measures have been included in this Initial Study to reduce potential impacts related to cultural resources, air quality, and hazardous materials to a less-than-significant level.

During construction of the proposed project, emissions would exceed thresholds for criteria air pollutants, as well as temporarily add new sources of toxic air contaminants (TACs) to areas of the City that are already adversely affected by poor air quality, resulting in cumulatively considerable contribution to air quality impacts. Implementation of **Mitigation Measure M-AQ-1: Construction Emissions Minimization** would reduce construction-period emissions and emissions of TACs, such that the project would result in a less-than-cumulatively considerable contribution to these impacts.

Regarding the potential to eliminate important examples of the major periods of California history or prehistory, ground-disturbing construction activity within the project area could adversely affect the significance of archeological resources under CRHR Criterion 4 (information potential) by impairing the ability of such resources to convey important scientific and historical information. This effect is considered a substantial adverse change in the significance of an historical resource and is considered to be a significant impact under CEQA. Implementation of **Mitigation Measure** M-**CP-2a** requires the development of an archeological testing plan, monitoring, and evaluation, and would reduce potential impacts to archeological resources to a ***less-than-significant*** level.

For all other topics that are analyzed in this Initial Study, the proposed project would not have cumulatively considerable impacts, as discussed under each applicable environmental topic. Cumulative transportation and circulation impacts, as well as cumulative shadow impacts, are identified in this Initial Study as potentially significant; however, these topics will be the subject of further analysis in the EIR.

Regarding adverse effects on human beings, the proposed project's construction activities would generate toxic air contaminants, including diesel particulate matter, that would expose sensitive receptors to substantial pollutant concentrations. Implementation of **Mitigation Measure M-AQ-1: Construction Emissions Minimization** would reduce this impact to a less-than-significant level. Also, the proposed project would be constructed on a site identified on a list of hazardous materials sites, and excavation could potentially expose workers and the public to hazardous materials. Implementation of **Mitigation Measure M-HZ-3: Hazardous Building Materials Abatement** would reduce this impact to a less-than-significant level.

## F. MITIGATION MEASURES AND IMPROVEMENT MEASURES

**Mitigation Measure M-CP-2a: Archeological Testing, Monitoring, Data Recovery and Reporting**

Based on a reasonable presumption that archeological resources may be present within the project site, the following measures shall be undertaken to avoid any potentially significant adverse effect from the proposed project on buried or submerged historical resources. The project sponsor shall retain the services of an archaeological consultant from the Planning Department ("Department") pool of qualified archaeological consultants as provided by the Department archaeologist. The archeological consultant shall undertake an archeological testing program as specified herein. In addition, the consultant shall be available to conduct an archeological monitoring and/or data recovery program if required pursuant to this measure. The archeological consultant's work shall be conducted in accordance with this measure and with the requirements of the project archeological research design and treatment plan (*Archaeological Research Design/Treatment Plan for the Moscone Center Expansion Project*, September, 2013), at the direction of the Environmental Review Officer (ERO). In instances of inconsistency between the requirement of the project archeological research design and treatment plan and of this archeological mitigation measure, the requirements of this archeological mitigation measure shall prevail. All plans and reports prepared by the consultant as specified herein shall be submitted first and directly to the ERO for review and comment, and shall be considered draft reports subject to revision until final approval by the ERO. Archeological monitoring and/or data recovery programs required by this measure could suspend construction of the project for up to a maximum of four weeks. At the direction of the ERO, the suspension of construction can be extended beyond four weeks only if such a suspension is the only feasible means to reduce to a less than significant level potential effects on a significant archeological resource as defined in CEQA Guidelines Sect. 15064.5 (a)(c).

***Consultation with Descendant Communities.*** On discovery of an archeological site[191] associated with descendant Native Americans, the Overseas Chinese, or other descendant group an appropriate representative[192] of the descendant group and the ERO shall be contacted. The representative of the descendant group shall be given the opportunity to monitor archeological field investigations of the site and to consult with ERO regarding appropriate archeological treatment of the site, of recovered data from the site, and, if applicable, any interpretative treatment of the associated archeological site. A copy of the Final Archaeological Resources Report shall be provided to the representative of the descendant group.

***Archeological Testing Program.*** The archeological consultant shall prepare and submit to the ERO for review and approval an archeological testing plan (ATP). The archeological testing program shall be conducted in accordance with the approved ATP. The ATP shall identify the property types of the expected archeological resource(s) that potentially could be adversely affected by the proposed project, the testing method to be used, and the locations recommended for testing. The purpose of the archeological testing program will be to determine to the extent possible the presence or absence of archeological resources and to identify and to evaluate whether any archeological resource encountered on the site constitutes an historical resource under CEQA.

At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If based on the archeological testing program the archeological consultant finds that significant archeological resources may be present, the ERO in consultation with the archeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. No archeological data recovery shall be undertaken without the prior approval of the ERO or the Planning Department archeologist. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either:

C) The proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource; or

D) A data recovery program shall be implemented, unless the ERO determines that the archeological resource is of greater interpretive than research significance and that interpretive use of the resource is feasible.

***Archeological Monitoring Program.*** If the ERO in consultation with the archeological consultant determines that an archeological monitoring program (AMP) shall be implemented the archeological monitoring program shall minimally include the following provisions:

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[191] The term "archeological site" is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

[192] An "appropriate representative" of the descendant group is here defined to mean, in the case of Native Americans, any individual listed in the current Native American Contact List for the City and County of San Francisco maintained by the California Native American Heritage Commission and in the case of the Overseas Chinese, the Chinese Historical Society of America. An appropriate representative of other descendant groups should be determined in consultation with the Department archeologist.

- The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the AMP reasonably prior to any project-related soils disturbing activities commencing. The ERO in consultation with the archeological consultant shall determine what project activities shall be archeologically monitored. In most cases, any soil-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context;

- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;

- The archeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with project archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;

- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;

- If an intact archeological deposit is encountered, all soils-disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/construction activities and equipment until the deposit is evaluated. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall make a reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, and present the findings of this assessment to the ERO.

Whether or not significant archeological resources are encountered, the archeological consultant shall submit a written report of the findings of the monitoring program to the ERO.

***Archeological Data Recovery Program.*** The archeological data recovery program shall be conducted in accord with an archeological data recovery plan (ADRP). The archeological consultant, project sponsor, and ERO shall meet and consult on the scope of the ADRP prior to preparation of a draft ADRP. The archeological consultant shall submit a draft ADRP to the ERO. The ADRP shall identify how the proposed data recovery program will preserve the significant information the archeological resource is expected to contain. That is, the ADRP will identify what scientific/historical research questions are applicable to the expected resource, what data classes the resource is expected to possess, and how the expected data classes would address the applicable research questions. Data recovery, in general, should be limited to the portions of the historical property that could be adversely affected by the proposed project. Destructive data recovery methods shall not be applied to portions of the archeological resources if nondestructive methods are practical.

The scope of the ADRP shall include the following elements:

- *Field Methods and Procedures*. Descriptions of proposed field strategies, procedures, and operations.

- *Cataloguing and Laboratory Analysis*. Description of selected cataloguing system and artifact analysis procedures.
- *Discard and Deaccession Policy*. Description of and rationale for field and post-field discard and deaccession policies.
- *Interpretive Program*. Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program.
- *Security Measures*. Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities.
- *Final Report*. Description of proposed report format and distribution of results.
- *Curation*. Description of the procedures and recommendations for the curation of any recovered data having potential research value, identification of appropriate curation facilities, and a summary of the accession policies of the curation facilities.

***Human Remains and Associated or Unassociated Funerary Objects.*** The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal laws. This shall include immediate notification of the Coroner of the City and County of San Francisco and in the event of the Coroner's determination that the human remains are Native American remains, notification of the California State Native American Heritage Commission (NAHC) who shall appoint a Most Likely Descendant (MLD) (Pub. Res. Code Sec. 5097.98). The archeological consultant, project sponsor, and MLD shall make all reasonable efforts to develop an agreement for the treatment of, with appropriate dignity, human remains and associated or unassociated funerary objects (CEQA Guidelines. Sec. 15064.5(d)). The agreement should take into consideration the appropriate excavation, removal, recordation, analysis, custodianship, curation, and final disposition of the human remains and associated or unassociated funerary objects.

***Final Archeological Resources Report.*** The archeological consultant shall submit a Draft Final Archeological Resources Report (FARR) to the ERO that evaluates the historical significance of any discovered archeological resource and describes the archeological and historical research methods employed in the archeological testing/monitoring/data recovery program(s) undertaken. Information that may put at risk any archeological resource shall be provided in a separate removable insert within the final report.

Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Environmental Planning division of the Planning Department shall receive one bound, one unbound and one unlocked, searchable PDF copy on CD of the FARR along with copies of any formal site recordation forms (CA DPR 523 series) and/or documentation for nomination to the National Register of Historic Places/California Register of Historical Resources. In instances of high public interest in or the high interpretive value of the resource, the ERO may require a different final report content, format, and distribution than that presented above.

**Mitigation Measure M-CP-2b: Interpretation**

Mitigation Measure M-CP-2b, Interpretation, calls for a qualified archeological consultant to prepare and submit a plan for post-recovery interpretation of resources. Implementation of an approved program of interpretation under Mitigation Measure M-CP-2b would preserve and enhance the ability of the resource to convey its association with historic events under California Register of Historic Resources Criterion 1 (Events), as well as explain its importance under Criterion 4.

**Mitigation Measure M-AQ-1: Construction Emissions Minimization.**

A. Construction Emissions Minimization Plan. Prior to issuance of a construction permit, the project sponsor shall submit a Construction Emissions Minimization Plan (Plan) to the Environmental Review Officer (ERO) for review and approval by an Environmental Planning Air Quality Specialist. The Plan shall detail project compliance with the following requirements:

1. All off-road equipment greater than 25 hp and operating for more than 20 total hours over the entire duration of construction activities shall meet the following requirements:

   a) Where access to alternative sources of power are available, portable diesel engines shall be prohibited;

   b) All off-road equipment shall have:

      i. Engines that meet or exceed either U.S. Environmental Protection Agency (USEPA) or California Air Resources Board (ARB) Tier 3 off-road emission standards, *and*

      ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).[193]

   c) Exceptions:

      i. Exceptions to A(1)(a) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that an alternative source of power is limited or infeasible at the project site and that the requirements of this exception provision apply. Under this circumstance, the sponsor shall submit documentation of compliance with A(1)(b) for onsite power generation.

      ii. Exceptions to A(1)(b)(ii) *may* be granted if the project sponsor has submitted information providing evidence to the satisfaction of the ERO that a particular piece of off-road equipment with an ARB Level 3 VDECS is: (1) technically not feasible, (2) would not produce desired emissions reductions due to expected operating modes, (3) installing the control device would create a safety hazard or impaired visibility for the operator, or (4) there is a compelling emergency need to use off-road equipment that are not retrofitted with an ARB Level 3 VDECS and the sponsor has submitted documentation to the ERO that the requirements of this exception provision apply. If granted an exception to A(1)(b)(ii), the project sponsor must comply with the requirements of A(1)(c)(iii).

[193] Equipment with engines meeting Tier 4 Interim or Tier 4 Final emission standards automatically meet this requirement, therefore a VDECS would not be required.

iii. If an exception is granted pursuant to A(1)(c)(ii), the project sponsor shall provide the next cleanest piece of off-road equipment as provided by the step down schedules in Table 9.

**TABLE 9**
**OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE**

| Compliance Alternative | Engine Emission Standard | Emissions Control |
|---|---|---|
| 1 | Tier 3 | ARB Level 2 VDECS |
| 2 | Tier 3 | ARB Level 1 VDECS |
| 3 | Tier 3 | Alternative Fuel* |

**How to use the table**: If the requirements of (A)(1)(b) cannot be met, then the project sponsor would need to meet Compliance Alternative 1. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 1, then Compliance Alternative 2 would need to be met. Should the project sponsor not be able to supply off-road equipment meeting Compliance Alternative 2, then Compliance Alternative 3 would need to be met.

* Alternative fuels are not a VDECS.

2. The project sponsor shall require the idling time for off-road and on-road equipment be limited to no more than two minutes, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment. Legible and visible signs shall be posted in multiple languages (English, Spanish, Chinese) in designated queuing areas and at the construction site to remind operators of the two minute idling limit.

3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.

4. The Plan shall include estimates of the construction timeline by phase with a description of each piece of off-road equipment required for every construction phase. Off-road equipment descriptions and information may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed: technology type, serial number, make, model, manufacturer, ARB verification number level, and installation date and hour meter reading on installation date. For off-road equipment using alternative fuels, reporting shall indicate the type of alternative fuel being used.

5. The Plan shall be kept on-site and available for review by any persons requesting it and a legible sign shall be posted at the perimeter of the construction site indicating to the public the basic requirements of the Plan and a way to request a copy of the Plan. The project sponsor shall provide copies of Plan to members of the public as requested.

B. ***Reporting.*** Quarterly reports shall be submitted to the ERO indicating the construction phase and off-road equipment information used during each phase including the information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.

Within six months of the completion of construction activities, the project sponsor shall submit to the ERO a final report summarizing construction activities. The final report shall indicate the start and end dates and duration of each construction phase. For each phase, the report shall include detailed

information required in A(4). In addition, for off-road equipment using alternative fuels, reporting shall include the actual amount of alternative fuel used.

C. ***Certification Statement and On-site Requirements.*** Prior to the commencement of construction activities, the project sponsor must certify (1) compliance with the Plan, and (2) all applicable requirements of the Plan have been incorporated into contract specifications.

**Mitigation Measure M-HZ-3: Hazardous Building Materials Abatement**

The project sponsor shall ensure that any area of the Moscone Center planned for demolition or renovation is surveyed for hazardous building materials including PCB-containing electrical equipment, fluorescent light ballasts containing polychlorinated biphenyls (PCBs) or bis(2-ethylhexyl) phthalate (DEHP), and fluorescent light tubes containing mercury vapors. These materials shall be removed and properly disposed of prior to the start of demolition or renovation. Light ballasts that are proposed to be removed during renovation shall be evaluated for the presence of PCBs and in the case where the presence of PCBs in the light ballast cannot be verified, they shall be assumed to contain PCBs, and handled and disposed of as such, according to applicable laws and regulations. Any other hazardous building materials identified either before or during demolition or renovation shall be abated according to federal, state, and local laws and regulations.

## G. DETERMINATION

On the basis of this Initial Study:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, no further environmental documentation is required.

Viktoriya Wise for

Sarah B. Jones
Environmental Review Officer
for
John Rahaim
Director of Planning

DATE January 22, 2014

## H. INITIAL STUDY PREPARERS

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