



DRAFT ENVIRONMENTAL IMPACT REPORT

Moscone Center Expansion Project

PLANNING DEPARTMENT
CASE NO. **2013.0154E**
STATE CLEARINGHOUSE NO. 2014012050



SAN FRANCISCO
PLANNING
DEPARTMENT

Draft EIR Publication Date:	APRIL 30, 2014
Draft EIR Public Hearing Date:	JUNE 5, 2014
Draft EIR Public Comment Period:	MAY 1, 2014, THROUGH JUNE 16, 2014

Written comments should be sent to:

Sarah B. Jones, Environmental Review Officer
1650 Mission Street, Suite 400 | San Francisco, CA 94103

ENVIRONMENTAL PLANNING | SAN FRANCISCO PLANNING DEPARTMENT

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SAN FRANCISCO PLANNING DEPARTMENT

DATE: April 30, 2014

TO: Distribution List for the Moscone Center Expansion Project EIR

FROM: Sarah B. Jones, Environmental Review Officer

SUBJECT: Request for the Final Environmental Impact Report for the Moscone Center Expansion Project (Case No. 2013.0154E)

1650 Mission St.
Suite 400
San Francisco,
CA 94103-2479

Reception:
415.558.6378

Fax:
415.558.6409

Planning
Information:
415.558.6377

This is the Draft of the Environmental Impact Report (EIR) for the Moscone Center Expansion Project. A public hearing will be held on the adequacy and accuracy of this document. After the public hearing, our office will prepare and publish a document entitled "Response to Comments," which will contain a summary of all relevant comments on this Draft EIR and our responses to those comments, along with copies of the letters received and a transcript of the public hearing. The Response to Comments document may also specify changes to this Draft EIR. Public agencies and members of the public who testify at the hearing on the Draft EIR will automatically receive a copy of the Response to Comments document, along with notice of the date reserved for certification; others may receive such copies and notice on request or by visiting our office. This Draft EIR, together with the Response to Comments document, will be considered by the Planning Commission in an advertised public meeting, and then certified as a Final EIR if deemed adequate.

After certification, we will modify the Draft EIR as specified by the Response to Comments document and print both documents in a single publication called the Final Environmental Impact Report. The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one rather than two documents. Therefore, if you receive a copy of the Response to Comments document in addition to this copy of the Draft EIR, you will technically have a copy of the Final EIR.

We are aware that many people who receive the Draft EIR and Response to Comments document have no interest in receiving virtually the same information after the EIR has been certified. To avoid expending money and paper needlessly, we would like to send copies of the Final EIR, in Adobe Acrobat format on a compact disk (CD), to private individuals only if they request them. Therefore, if you would like a copy of the Final EIR, please fill out and mail the postcard provided inside the back cover to the Environmental Planning division of the Planning Department within two weeks after certification of the EIR. Any private party not requesting a Final EIR by that time will not be mailed a copy.

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ACRONYMS, ABBREVIATIONS, AND GLOSSARY

Acronyms and Abbreviations

2010 CAP	2010 Clean Air Plan
3-D	three dimensional
ABAG	Association of Bay Area Governments
AC Transit	Alameda-Contra Costa County Transit District
ACP	American College of Physicians
ADA	Americans with Disabilities Act
Area Plan	Downtown Area Plan
BAAQMD	Bay Area Air Quality Management District
BART	Bay Area Rapid Transit
BCDC	San Francisco Bay Conservation and Development Commission
BMPs	best management practices
CCR	California Code of Regulations
CCSF	City and County of San Francisco
CEQA	California Environmental Quality Act
CMP	Congestion Management Plan
DEHP	Di(2-ethylhexyl) phthalate
DPW	San Francisco Department of Public Works
EIR	environmental impact report
EP	San Francisco Planning Department, Environmental Planning Division
FTE	full-time equivalent
GGT	Golden Gate Transit
GHG	greenhouse gas

HCM 2000	<i>Highway Capacity Manual 2000</i>
I-80	Interstate 80
I-280	Interstate 280
LEED	Leadership in Energy and Environmental Design
LID	low-impact design
LOS	Level of Service
MED	Moscone Expansion District
MLP	maximum load point
MTC	Metropolitan Transportation Commission
MTS	Metropolitan Transportation System
Muni	San Francisco Municipal Railway
NOP	notice of preparation
OCII	Office of Community Investment and Infrastructure
PCB	polychlorinated biphenyl
PCO	Parking Control Officers
PIC	Planning Information Center
POPOS	publicly accessible open spaces
proposed project or project	Moscone Center Expansion project
ROSE	Recreation and Open Space Element
RWQCB	Regional Water Quality Control Board
SamTrans	San Mateo County Transit District
SB	Senate Bill
SF-CHAMP	San Francisco Chained Activity Modeling Process
SFDPH	San Francisco Department of Public Health
SFMOMA	San Francisco Museum of Modern Art
SFMTA	City and County of San Francisco Municipal Transportation Agency
SFPUC	San Francisco Public Utilities Commission
SFTID	San Francisco Tourism Improvement District
SoMa	South of Market Area
TAAS	Theoretically Available Annual Sunlight
TASC	Transportation Advisory Staff Committee
TCDP	Transit Center District Plan

TEP	Transit Effectiveness Project
TIS	Transportation Impact Study
TTRP	Travel Time Reduction Proposal
U.S. 101	U.S. Highway 101
VDED	verified diesel emission control

Glossary of Terms

CEQA (California Environmental Quality Act). State law (Public Resources Code Section 21000, et seq.) that requires state, local, and other agencies to evaluate the environmental implications of their actions.

Cultural resource. A nonrenewable remain of human activity that is valued by or significantly representative of a culture or that contains significant information about a culture. Cultural resources encompass archaeological, traditional, and built environment resources, including landscapes or districts, sites, buildings, structures, objects, or cultural practices that are usually greater than 50 years of age and possess architectural, historic, scientific, or other technical value.

Cumulatively considerable. A CEQA term used to indicate whether or not a cumulative impact is significant.

EIR (environmental impact report). A report required by the California Environmental Quality Act to describe the environmental impact of a proposed project.

EIR certification. EIR adoption by a governing agency that involves acceptance of the document as being complete and adequate according to the California Environmental Quality Act.

Level of service (LOS). A qualitative description a facility's performance based on average delay per vehicle, vehicle density, or volume-to-capacity ratios. Levels of service range from LOS A, which indicates free-flow or excellent conditions with short delays, to LOS F, which indicates congested or overloaded conditions with extremely long delays.

Mitigation. One or all of the following: (1) Avoiding an impact altogether by not taking a certain action or parts of an action; (2) minimizing impacts by limiting the degree or magnitude of an action and its implementation; (3) rectifying an impact by repairing, rehabilitating, or restoring the affected environment; (4) reducing or eliminating an impact over time by preservation and maintenance operations during the life of an action; and (5) compensating for an impact by replacing or providing substitute resources or environments.

SUMMARY

This environmental impact report (EIR) analyzes potential environmental effects associated with the Moscone Center Expansion project (proposed project or project), which includes increasing the gross square footage of the Moscone Center from approximately 1.2 million square feet to 1.5 million square feet by expanding the Moscone North and South buildings and expanding the existing below-grade exhibition halls under Howard Street. The project is located on Howard Street between Third and Fourth Streets in the South of Market neighborhood of San Francisco.

A. Project Synopsis

The Moscone Center is San Francisco's primary convention, exhibition, and meeting facility. The project site spans portions of two separate blocks: Assessor's Block 3723, Lot 115, and Assessor's Block 3734, Lot 91 and 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 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.² The project site is 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.³

The proposed project is focused primarily on Moscone North and South, and 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 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,

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

³ The Yerba Buena Gardens were created as part of the development that occurred under the Yerba Buena Redevelopment Area. The Yerba Buena Redevelopment Area expired in 2010.

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.

Improvements to the Moscone North and South building would occur both below grade and above grade. On the lower level, 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). Several “back-of-house” facilities including the existing kitchen and loading docks would be reconfigured as well. At completion, the lower level would span a total area of 827,500 gross square feet. Exhibition space would be expanded by about 32 percent (140,000 square feet), to 580,000 square feet. Expansion and reconfiguration of the lower level would require the excavation of an existing unexcavated area contained by concrete walls under Howard Street, which is approximately 60 feet by 185 feet.⁴

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, approximately 10 feet taller than the existing Moscone North structure. 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.

The proposed above-grade Moscone South improvements 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. 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 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 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.

The proposed project also includes improvements to the Children’s Garden south of Howard Street, including a new plaza located between the children’s carousel and the proposed bridge, a tot lot with play equipment for children under age 5, relocation and expansion of the existing learning garden, replacement of the nature walk/allée of plum trees, an elevated social seating

⁴ The unexcavated area is located approximately 330 feet east of the center of the Howard and Fourth Street intersection.

area providing views throughout the garden, reconfiguration of the existing lawn, restrooms, and garden storage, and a public plaza alongside the Esplanade Ballroom.

Project implementation would occur using a coordinated, phased construction schedule that would maintain Moscone's convention operations during the construction period. Construction of the Moscone Center Expansion project would last approximately 44 months, beginning in November 2014. No pile driving is anticipated. The estimated cost for constructing the proposed project is approximately \$350 million.

The project's approval action would be a Section 309 Downtown Project Authorization. Other approvals required for the project are listed in Section II.D.

B. Summary of Impacts, Mitigation Measures, and Improvement Measures

This EIR analyzes the potential effects of the Moscone Center Expansion project, as determined in the Notice of Preparation (NOP) of an Environmental Impact Report, issued January 22, 2014 (Appendix A of this EIR). The Initial Study attached to the NOP (also in Appendix A) found that the proposed project would have potentially significant effects in the areas of transportation and circulation and shadow. It also found that the project's effects on other environmental resource areas either would not be significant or would be less-than-significant with mitigation, or that the project would have no impact.

Table S-1 (found at the end of this chapter) summarizes all impacts identified for the proposed project addressed in the environmental review for this EIR, whether their level of significance was found to be no impact, less-than-significant impact, or significant. For any impacts found to be significant, corresponding mitigation measures are included and the level of significance after mitigation is indicated.

The Initial Study identified resource topics that were determined not to apply to the proposed project and topics where the project would have no impact, less-than-significant impact, or less-than-significant with mitigation. For any impacts identified as significant in the Initial Study, corresponding mitigation measures are included that would reduce these impacts to a less-than-significant level. These topics, summarized in **Table S-2** (found at the end of this chapter), are not addressed in this EIR.

The proposed project would have significant and unavoidable project- and cumulative-level shadow impacts.

C. Summary of Project Alternatives

The project alternatives analyzed in this EIR include the No Project Alternative, Reduced Project Alternative, and Modified Massing Alternative. **Table S-3** (found at the end of this chapter) presents the significant impacts of the proposed project and summarizes the environmental impacts of the selected alternatives compared to those of the proposed project.

No Project Alternative

Under the No Project Alternative, the Moscone Center would remain in use and would not be expanded. The No Project Alternative includes those activities that would reasonably be expected to occur in the foreseeable future if the proposed project were not approved. It would fail to meet most of the project objectives. No construction would occur; as such, construction-related impacts to archeological resources, human remains, air quality, and hazardous materials would not occur. There would be no project-related increase in event attendees, increase in the number of events, or changes in the circulation of vehicles, bicyclists, and pedestrians on Howard Street. Therefore, there would be no impacts to passenger and truck loading/unloading. In addition, there would be no above-grade buildings under this alternative; as such, shadow impacts would be eliminated.

Reduced Project Alternative

Under the Reduced Project Alternative, similar renovations to the Moscone Center would be implemented as compared to the proposed project. However, the Reduced Project Alternative would not create additional space by excavating areas under Howard Street to expand the existing below-grade area that connects the Moscone North and South buildings. This would reduce excavation activities proposed by approximately 14,400 cubic yards. Available exhibition space would be reduced by up to approximately 49,000 square feet compared to the proposed project. The Reduced Project Alternative would meet or partially meet most of the project objectives. However, the additional below-ground exhibition space would be limited to reconfiguring and repurposing existing below-ground areas, and would not be contiguous between the Moscone North and South buildings. The underground expansion area would be less than under the proposed project, which would reduce the intensity of construction-related impacts. In particular, significant impacts to archeological resources and human remains would be reduced in severity, as would the generation of fugitive dust, criteria air pollutants, and toxic air contaminants. It is likely that air quality and hazardous materials impacts would still be significant and would require implementation of mitigation measures. Reduced exhibition space as compared to the proposed project would reduce the significant-but-mitigable impacts to pedestrian and truck loading and unloading, although mitigation measures would still be required. Significant and unavoidable shadow impacts at the project- and cumulative-level would result.

Modified Massing Alternative

Under the Modified Massing Alternative, similar renovations to the Moscone Center would be implemented as compared to the proposed project, including excavation of 14,400 cubic yards of material beneath Howard Street for the below-grade expansion. However, the above-grade expansion would be modified. The Moscone South expansion would be approximately 74 feet in height above Howard Street. The above-grade Moscone Esplanade expansion would be approximately 119 feet above Howard Street. The Modified Massing Alternative would meet or partially meet the project objectives, although it would result in a less efficient building.

The Modified Massing Alternative would result in all of the same construction-related impacts as the proposed project, including significant-but-mitigable impacts to archaeological resources,

human remains, air quality, and hazardous materials. The alternative would also result in the same total exhibition space as the proposed project, which would result in the same increases in convention employment and attendance that would result in significant-but-mitigable impacts to passenger and truck loading/unloading. This alternative would reduce the project's significant-and-unavoidable shadow impact on the Children's Garden to a less-than-significant level.

Environmentally Superior Alternative

Alternative 3: Modified Massing Alternative would be the Environmentally Superior Alternative. Alternative 3 would result in construction-related impacts on archeological resources, human remains, air quality, and hazardous materials, all of which would be less-than-significant with the implementation of mitigation measures. Alternative 3 would also result in significant-but-mitigable truck and passenger loading transportation impacts during operations. The alternative would result in less-than-significant project- and cumulative-level shadow impacts.

D. Areas of Controversy and Issues to Be Resolved

On the basis of public comments on the NOP, potential areas of controversy and unresolved issues for the proposed project include the following:

- The project's impact on recreational facilities located on the Moscone South block,
- Impacts on pedestrian circulation at sidewalks and intersections surrounding the project site, as well as mitigation measures that would reduce such impacts, and
- Shadows impacts on existing recreational areas on both project blocks, as well as a potential alternative that redistributes project massing to reduce such impacts.

An additional area of controversy may emerge regarding the provisions of Senate Bill (SB) 743 as they relate to the proposed project and this EIR. SB 743, which amended the Public Resources Code to add section 21099, was signed by Governor Brown on September 27, 2013. Section 21099(d) directs that the aesthetic and parking impacts of mixed-use residential, residential, or employment center infill projects located in transit priority areas are not considered impacts on the environment under the California Environmental Quality Act (CEQA).⁵ The proposed project meets the definition of an employment center infill project in a transit priority area.⁶ Accordingly, this EIR does not contain a separate discussion of the topic of aesthetics. The EIR nonetheless provides visual simulations for informational purposes as part of Chapter II, Project Description. Similarly, parking is discussed for informational purposes in Section IV.A.

⁵ San Francisco Planning Department, Memorandum RE: CEQA Update: Senate Bill 743 Summary – Aesthetics, Parking and Traffic, November 12, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

⁶ 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.

TABLE S-1
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation			
<p>Impact TR-1: The proposed project would have less than significant impacts at 24 study intersections under Existing plus Project conditions.</p>	Less than Significant	<p>Improvement Measure IM-TR-1a: Transportation Demand Management</p> <p>As an improvement measure to encourage use of alternate modes and reduce the unmet parking demand, the proposed project could develop and implement a Transportation Demand Management (TDM) Plan designed to reduce use of single-occupant vehicles and to increase the use of rideshare, transit, bicycle, and walk modes for trips to and from the proposed project. The TDM plan could include such measures as the following to reduce single occupancy vehicles and encourage alternate modes of travel:</p> <ul style="list-style-type: none"> • Ensure that bicycle safety strategies are developed along the Howard Street side of the property (e.g., avoiding conflicts with event shuttle buses and taxis accessing the on-site passenger loading/unloading zone). • Bikeshare tickets for attendees. • Facilitate access to the Howard Street bicycle route through on-site signage. • Points of access to Class 1 bicycle parking could include signage indicating the location of these facilities. • Class 2 bicycle parking for event attendees could be provided. • Bicycle rental/loaner for event attendees for local travel could be provided. • A TDM contact person could be designated to be responsible for conducting employee surveys, coordinating carpool/ridematch services, and conducting annual TDM events. • Provide information to employees and visitors on transit options and locations where transit passes can be purchased. • Transit pass subsidies for employees purchasing transit passes could be provided. • Moscone Center could require event organizers to provide an option for attendees registering online to purchase a one, three, or seven day Muni Passport or pre-loaded Clipper Card. 	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-1 (cont.)		<ul style="list-style-type: none"> Moscone Center could have Muni Passports and pre-loaded Clipper Cards available for purchase. <p>Moscone Center could provide information on the facility website about how to access the convention center and nearby hotels and attractions via transit, walking, and bicycling.</p> <p>Improvement Measure IM-TR-1b: Improved Fifth & Mission/Yerba Buena Center Garage Signage</p> <p>As an improvement measure to reduce queuing on Fifth and Mission streets associated with access to the Fifth & Mission/Yerba Buena Center Garage during very large events such as the San Francisco International Auto Show, the project sponsor could fund new and more visible “GARAGE FULL” signs at the Fifth & Mission/Yerba Buena Center Garage.</p>	
Impact TR-2: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity; nor would it cause a substantial increase in delays or costs such that significant adverse impacts to Muni transit service could occur.	Less than Significant	None required	
Impact TR-3: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by regional transit capacity; nor would it cause a substantial increase in delays or costs such that significant adverse impacts to regional transit service could occur.	Less than Significant	None required	
Impact TR-4: The proposed project would not result in a substantial overcrowding on public sidewalks, nor create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.	Less than Significant	<p>Improvement Measure IM-TR-4a: Fund the Design and Construction of Sidewalk Widening along Sidewalks Adjacent to Moscone Center</p> <p>Consistent with the requirements of the <i>Better Streets Plan</i> and <i>Planning Code</i> Section 138.1, the project sponsor could fund the widening of the following sidewalk segments adjacent to the Moscone Center, consistent with ongoing planning efforts. Once the relevant planning effort has concluded and the relevant EIR has been certified and the project is approved, the project sponsor could fund the design and implementation of the sidewalk widening projects listed below, if approved, totaling three block faces:</p>	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-4 (cont.)		<ul style="list-style-type: none"> Fourth Street east sidewalk between Mission and Howard streets to 15 feet (upon certification of the Central SoMa Plan EIR and if the Plan is approved): one block face. Third Street west sidewalk between Mission and Howard streets to 15 feet (upon certification of the Central SoMa Plan EIR and if the Plan is approved): one block face. Mission Street south sidewalk between Third and Fourth streets to 15 feet (upon certification of the Better Market Street EIR and if the project is approved): one block face. <p>Improvement Measure IM-TR-4b: Fund the Design and Implementation of Upgraded Crosswalks at Intersections Adjacent to Moscone Center</p> <p>Crosswalks could be widened and should be restriped to the Continental design, consistent with the <i>Better Streets Plan</i>. The project sponsor could reimburse the San Francisco Municipal Transit Agency (SFMTA) for costs associated with the design and implementation of upgrading all crosswalks at the following intersections:</p> <ul style="list-style-type: none"> Fourth/Mission Third/Mission Fourth/Howard Third/Howard Fourth/Folsom Third/Folsom Fourth/Minna Yerba Buena Lane/Mission 	
Impact TR-5: The proposed project would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.	Less than Significant	None required	
Impact TR-6: The proposed project's loading demand would not be accommodated within the proposed on-site freight and passenger loading facilities, and would create potentially hazardous conditions or significant delays for traffic, transit, bicyclists or pedestrians.	Significant	<p>Mitigation Measure M-TR-6a: Moscone Center Transportation Operations Master Plan</p> <p>The project sponsor shall develop and implement a Moscone Center Transportation Operations Master Plan (Master Plan), which shall require that each Moscone Center event have its own unique Transportation Operations Event Plan (TOEP), tailored to the size, duration and characteristics of the individual event. Each TOEP shall adhere to a set of guidelines related to the following fundamental transportation elements:</p>	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-6 (cont.)		<ol style="list-style-type: none"> 1. Plan development and approval 2. Passenger loading/unloading zone attendants 3. Shuttle bus operations 4. Taxi, rideshare, and private vehicle passenger loading/unloading operations 5. Truck operations 6. Parking control office (PCO) operations 7. Pedestrian operations 8. Bicycle operations 9. Emergency vehicle operations 10. Large events that include changes to traffic operations 11. Adherence 12. Revisions to Master Plan <p>The Moscone Center Transportation Operations Master Plan is included in Appendix C.</p> <p>The requirements specific to truck operations described in the Master Plan will ensure that a significant impact related to freight loading does not occur. Specifically, the Master Plan will ensure that inbound trucks do not queue along the west curb of Third Street while waiting for an available loading dock.</p> <p>The requirements specific to passenger loading/unloading described in the Master Plan will ensure that a significant impact related to passenger loading/unloading, with associated secondary impacts to bicyclists and traffic, does not occur. Specifically, the Master Plan will ensure that no vehicles stop to pick-up or drop-off passengers in the Howard Street travel lanes or bicycle lane.</p> <p>The Master Plan will be a living document maintained by the Planning Department. The Master Plan will be revised as necessary to reflect changes in generally accepted technology or operation protocols, or changes in conditions. All revisions will be reviewed and approved by the ERO of the Planning Department to ensure that the Master Plan adheres to this mitigation measure.</p>	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-6 (cont.)		<p>Mitigation Measure M-TR-6b: Fund Additional Parking Control Officers</p> <p>Working with the SFMTA, the project sponsor shall fund one or more additional Parking Control Officer (PCO) beat(s) during Moscone Center events with 20,000 or more attendees. The additional PCOs shall supplement the existing PCOs, except the additional PCOs shall perform an active patrol of on-street loading conditions around the Moscone area (rather than be stationary at an intersection or crosswalk). The number of officers required to staff the additional beat(s) and the hours that the beat(s) would be staffed shall be determined by SFMTA based on the size and hours of the event, and could include events with fewer than 20,000 daily attendees.</p> <p>The additional PCO beat(s) shall focus enforcement on the following loading issues:</p> <ul style="list-style-type: none"> Ensuring that stopped vehicles, especially shuttle buses and trucks, do not idle their engine while stopped, per San Francisco Transportation Code §7.2.86. Drivers that idle their engines longer than is necessary would be subject to citation. Legible and visible signs could be posted in multiple languages (i.e., English, Spanish, Chinese) in designated queuing areas to remind operators of the two-minute idling limit. Ensuring that vehicles do not load or unload passengers while stopped in any crosswalk, bicycle lane or travel lane on Howard and Folsom streets, per California Vehicle Code §22500 and San Francisco Transportation Code §7.2.70. This enforcement shall be focused on all vehicles, including shuttle buses, taxis, trucks, and private vehicles. Drivers of vehicles stopped along the north curb of Howard Street or the south curb of Folsom Street would be required to ensure that their vehicle is not obstructing the bicycle lane. Consistent with existing SFMTA policy, the only vehicles that would be permitted to stop within a bicycle lane would be vehicles actively loading or unloading a disabled passenger. Vehicles that stop within a bicycle lane to load or unload a passenger that is not disabled would be subject to citation. 	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-7: The proposed project would not result in significant impacts on emergency vehicle access	Less than Significant	None required	
Impact TR-8: The proposed project would not result in construction-related transportation impacts because of their temporary and limited duration.	Less than Significant	<p>Improvement Measure IM-TR-8: Construction Measures</p> <p><i>Traffic Control Plan for Construction.</i> As an improvement measure to reduce potential conflicts between construction activities and pedestrians, transit and autos at the Project site, the contractor could prepare a traffic control plan for Project construction. The Project Sponsor and construction contractor(s) could meet with the Department of Public Works (DPW), SFMTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (not anticipated, but if determined necessary) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during construction of the proposed project. The contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. In addition, to minimize the construction-related disruption of the general traffic flow on adjacent streets during the a.m. and p.m. peak periods, truck movements and deliveries should be limited during peak hours (generally 7 to 9 a.m. and 4 to 6 p.m., or other times, as determined by SFMTA and its Transportation Advisory Staff Committee (TASC). The proposed project's traffic control plan for construction should be reviewed by SFMTA's Street Operations and Special Events Office to minimize impacts to Third Street and its Muni transit service during Phase I of the Moscone construction effort.</p> <p><i>Carpool and Transit Access for Construction Workers.</i> As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor should include methods to encourage carpooling and transit access to the Project site by construction workers in the Construction Management Plan.</p>	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact TR-8 (cont.)		<p><i>Project Construction Updates for Adjacent Businesses and Residents.</i> As an improvement measure to minimize construction impacts on access for nearby institutions and businesses, the DPW could require the project sponsor to provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures.</p> <p>The Project Sponsor and construction contractor(s) could meet with DPW, the Traffic Engineering Division and Muni Division of the SFMTA, the Fire Department, the Planning Department and other City agencies to determine feasible measures to reduce traffic congestion. Prior to construction, the Project contractor could coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit vehicles.</p>	
Impact C-TR-1: Impact C-TR-1: The proposed project would not result in a considerable contribution to significant cumulative traffic impacts at 22 study intersections that would operate at LOS E or LOS F under 2040 Cumulative conditions, and would result in less-than-significant cumulative impacts at two study intersections that would operate at LOS D or better under 2040 Cumulative conditions.	Less than Significant	None required	
Impact C-TR-2: The proposed project would not result in a considerable contribution to significant 2040 Cumulative transit impacts at Muni screenlines.	Less than Significant	None required	
Impact C-TR-3: The proposed project would result in less-than-significant regional transit impacts on AC Transit, Caltrain, Golden Gate Transit, SamTrans and other regional ferry service under 2040 Cumulative conditions.	Less than Significant	None required	
Impact C-TR-4: The proposed project would not result in a considerable contribution to significant 2040 Cumulative pedestrian impacts.	Less than Significant	None required	
Impact C-TR-5: The proposed project would result in less-than-significant cumulative bicycle impacts.	Less than Significant	None required	

TABLE S-1 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THIS EIR

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Transportation and Circulation (cont.)			
Impact C-TR-6: The proposed project would result in less-than-significant cumulative loading impacts.	Less than Significant	None required	
Impact C-TR-7: The proposed project would result in less-than-significant cumulative emergency vehicle access impacts.	Less than Significant	None required	
Impact C-TR-8: The proposed project would result in less-than-significant cumulative construction-related transportation impacts.	Less than Significant	See Improvement Measure IM-TR-8	
Shadow			
Impact WS-2: The proposed project would not create new shadow in a manner that would affect the use of any park or open space under the jurisdiction of, or designated for acquisition by, the Recreation and Park Department.	No Impact	None required	
Impact WS-3: The proposed project would create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas.	Significant	None available	Significant and Unavoidable
Impact C-WS: The proposed project, in combination with past, present, or reasonably foreseeable future projects, would not create new shadow in a manner that would affect the use of any park or open space under the jurisdiction of the Recreation and Park Department, but it would create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas.	Significant	None available	Significant and Unavoidable

TABLE S-2
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE INITIAL STUDY

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Land Use and Land Use Planning			
Impact LU-1: The proposed project would not physically divide an established community.	Less than Significant	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	None required	
Impact LU-3: The proposed project would not have a substantial impact upon the existing character of the vicinity.	Less than Significant	None required	
Impact C-LU: The proposed project would not make a considerable contribution to any cumulative significant land use impacts.	Less than Significant	None required	
Population and Housing			
Impact PH-1: The proposed project would not induce substantial population growth in San Francisco, either directly or indirectly.	Less than Significant	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	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	None required	
Cultural and Paleontological			
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	None required	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2: The proposed project could result in a substantial adverse change in the significance of a unique archeological resource pursuant to CEQA Guidelines §15064.5, a significant impact.	Significant	<p>Mitigation Measure M-CP-2a: Archeological Testing, Monitoring, Data Recovery and Reporting</p> <p>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 (<i>Archaeological Research Design/Treatment Plan for the Moscone Center Expansion Project</i>, 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).</p> <p>Consultation with Descendant Communities. On discovery of an archeological site⁷ associated with descendant Native Americans, the Overseas Chinese, or other descendant group an appropriate</p>	Less than Significant

⁷ The term “archeological site” is intended here to minimally include any archeological deposit, feature, burial, or evidence of burial.

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2 (cont.)		<p>representative⁸ 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.</p> <p>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.</p> <p>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:</p>	

⁸ 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.

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2 (cont.)		<p>A) The proposed project shall be re-designed so as to avoid any adverse effect on the significant archeological resource; or</p> <p>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.</p> <p><i>Archeological Monitoring Program.</i> 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:</p> <ul style="list-style-type: none"> • 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; 	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2 (cont.)		<ul style="list-style-type: none"> 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. <p>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.</p> <p>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.</p> <p>The scope of the ADRP shall include the following elements:</p> <ul style="list-style-type: none"> <i>Field Methods and Procedures.</i> Descriptions of proposed field strategies, procedures, and operations. <i>Cataloguing and Laboratory Analysis.</i> Description of selected cataloguing system and artifact analysis procedures. 	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2 (cont.)		<ul style="list-style-type: none"> • <i>Discard and Deaccession Policy.</i> Description of and rationale for field and post-field discard and deaccession policies. • <i>Interpretive Program.</i> Consideration of an on-site/off-site public interpretive program during the course of the archeological data recovery program. • <i>Security Measures.</i> Recommended security measures to protect the archeological resource from vandalism, looting, and non-intentionally damaging activities. • <i>Final Report.</i> Description of proposed report format and distribution of results. • <i>Curation.</i> 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. <p><i>Human Remains and Associated or Unassociated Funerary Objects.</i> 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.</p> <p><i>Final Archeological Resources Report.</i> 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</p>	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Cultural and Paleontological (cont.)			
Impact CP-2 (cont.)		<p>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.</p> <p>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.</p> <p>Mitigation Measure M-CP-2b: Interpretation</p> <p>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.</p>	
Impact CP-3: The proposed project would not directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.	No Impact	None required	
Impact CP-4: The proposed project could disturb any human remains, including those interred outside of formal cemeteries.	Significant	Mitigation Measure: Implementation of Mitigation Measure M-CP-2a.	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.	Significant	Mitigation Measure: Implementation of Mitigation Measure M-CP-2a and 2b.	Less than Significant

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Noise			
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 <i>San Francisco General Plan</i> and Noise Ordinance (Article 29 of the Police Code), and would not be substantially affected by existing noise levels.	Less than Significant	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	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	None required	
Air Quality			
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.	Significant	<p>Mitigation Measure M-AQ-1: Construction Emissions Minimization.</p> <p>A. <i>Construction Emissions Minimization Plan.</i> 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:</p> <ol style="list-style-type: none"> 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: <ol style="list-style-type: none"> a) Where access to alternative sources of power are available, portable diesel engines shall be prohibited; b) All off-road equipment shall have: <ol style="list-style-type: none"> 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, <i>and</i> 	Less than Significant

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Air Quality (cont.)			
Impact AQ-1 (cont.)		<p>ii. Engines that are retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy (VDECS).⁹</p> <p>c) Exceptions:</p> <p>i. Exceptions to A(1)(a) <i>may</i> 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.</p> <p>ii. Exceptions to A(1)(b)(ii) <i>may</i> 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).</p> <p>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.</p>	

⁹ 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 S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation												
Air Quality (cont.)															
Impact AQ-1 (cont.)		<div>TABLE 9 OFF-ROAD EQUIPMENT COMPLIANCE STEP-DOWN SCHEDULE</div> <table><thead><tr><th>Compliance Alternative</th><th>Engine Emission Standard</th><th>Emissions Control</th></tr></thead><tbody><tr><td>1</td><td>Tier 3</td><td>ARB Level 2 VDECS</td></tr><tr><td>2</td><td>Tier 3</td><td>ARB Level 1 VDECS</td></tr><tr><td>3</td><td>Tier 3</td><td>Alternative Fuel*</td></tr></tbody></table> <p>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.</p> <p>* Alternative fuels are not a VDECS.</p> <div>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.</div> <div>3. The project sponsor shall require that construction operators properly maintain and tune equipment in accordance with manufacturer specifications.</div> <div>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</div>	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*	
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*													

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Air Quality (cont.)			
Impact AQ-1 (cont.)		<p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p> <p>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.</p>	
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.	Significant	Mitigation Measure: Implementation of Mitigation Measure M-AQ-1.	Less than Significant

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Air Quality (cont.)			
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	None required	
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	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	None required	
Impact AQ-6: The proposed project would not conflict with, or obstruct implementation of the 2010 Clean Air Plan.	Less than Significant	None required	
Impact AQ-7: The proposed project would not create objectionable odors that would affect a substantial number of people.	Less than Significant	None required	
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.	Significant	Mitigation: Implementation of Mitigation Measure M-AQ-1.	Less than Significant
Greenhouse Gas Emissions			
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	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	None required	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Wind and Shadow			
Impact WS-1: The proposed project would not alter wind in a manner that substantially affects public areas.	Less than Significant	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	None required	
Recreation			
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	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.	Less than Significant ¹⁰	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	None required	
Utilities and Service Systems			
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	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.	Less than Significant	None required	

¹⁰ Subsequent to publication of the Initial Study prepared for the proposed project, the project sponsor team modified the project description by incorporating enhancements to the Children's Garden recreational area (discussed further in Chapter II, Project Description). These changes are evaluated in Chapter V, Other CEQA Considerations, for resource topics that were addressed in the Initial Study. Improvements to the Children's Garden would not result in significant impacts to recreational resources.

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Utilities and Service Systems (cont.)			
Impact UT-3: The San Francisco Public Utilities Commission (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	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	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	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	None required	
Public Services			
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	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	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	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	None required	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Biological Resources			
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	None required	
Impact BI-2: The proposed project would not conflict with the City's local tree ordinance.	Less than Significant	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	None required	
Geology and Soils			
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	None required	
Impact GE-2: The proposed project would not result in substantial erosion or loss of top soil.	Less than Significant	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	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	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	None required	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Hydrology and Water Quality			
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	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	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	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	None required	
Hazards and Hazardous Materials			
Impact HZ-1: The proposed project would not create a significant hazard through routine transport, use, or disposal of hazardous materials.	Less than Significant	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	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.	Significant	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)	Less than Significant

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Hazards and Hazardous Materials (cont.)			
Impact HZ-3 (cont.)		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.	
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	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	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	None required	
Mineral and Energy Resources			
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	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	None required	
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	None required	

TABLE S-2 (Continued)
SUMMARY OF IMPACTS OF THE PROPOSED PROJECT – DISCLOSED IN THE IS

Environmental Impact	Level of Significance prior to Mitigation	Improvement/Mitigation Measures	Level of Significance after Mitigation
Mineral and Energy Resources (cont.)			
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	None required	
Agriculture and Forest Resources			
No impacts related to agriculture and forest resources.	No Impact	None required	

TABLE S-3
COMPARISON OF THE SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Category of Significant Environmental Impact	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Modified Massing Alternative
Description	The gross square footage of the Moscone Center would be increased from approximately 1.2 million square feet to 1.5 million square feet by expanding the Moscone North and South buildings and expanding the existing below-grade exhibition halls under Howard Street.	The gross square footage of the Moscone Center facility would not be increased. The Moscone North and Moscone South and Esplanade buildings would not be renovated. Additional space would not be created by excavating under Howard Street to expand the existing below-grade exhibition halls and the Moscone North and South buildings would continue to have limited connection below ground. The existing adjacent bus pick-up and drop off facilities would not be reconfigured and the existing pedestrian bridge would remain.	Under the Reduced Project Alternative, similar renovations to the Moscone Center would be implemented as compared to the proposed project. However, the Reduced Project alternative would not include excavation of additional areas under Howard Street. This would reduce excavation activities proposed by approximately 14,400 cubic yards; however, excavation required to construct building footings and foundations, and for storm and groundwater storage tanks would be required as under the proposed project (approximately 16,300 cubic yards).	The alternative would create additional space by excavating areas under Howard Street to expand the existing below-grade area that connects the Moscone North and South buildings resulting in excavation of 14,400 cubic yards, as well as excavation required for storm and groundwater storage tanks, as under the proposed project. The above-grade Moscone South expansion would be approximately 74 feet in height above Howard Street. The above-grade Moscone Esplanade expansion would be approximately 119 feet above Howard Street. This new expansion would replace the existing 63-foot tall Esplanade Ballroom support building.
Ability to Meet Project Sponsor's Objectives	The proposed project would fully meet the project objectives.	The No Project Alternative would only meet one project objective - to allow for continued operation of and revenue from the Moscone Center.	The Reduced Project Alternative would meet or partially meet all of the project objectives.	The Modified Massing Alternative would meet or partially meet some of the project objectives.
Cultural and Paleontological Resources				
Archaeological Resources	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. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur. (SM)	Same as the proposed project. (SM)
Disturbance of Human Remains	Impact CP-4: The proposed project could disturb any human remains, including those interred outside of formal cemeteries. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur from excavation associated with footings and groundwater storage tank. (SM)	Same as the proposed project. (SM)
Cumulative Impacts to Archaeological Resources or Human Remains	Impact C-CP: The proposed project, in combination with past, present, and reasonably foreseeable projects, would result in significant impacts to cultural resources. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur from excavation associated with footings and groundwater storage tank. (SM)	Same as the proposed project. (SM)

TABLE S-3 (Continued)
COMPARISON OF THE SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Category of Significant Environmental Impact	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Modified Massing Alternative
Transportation and Circulation				
Pedestrian and truck loading/ unloading	Impact TR-6: The proposed project's loading demand would not be accommodated within the proposed on-site freight and passenger loading facilities, and would create potentially hazardous conditions or significant delays for traffic, transit, bicyclists or pedestrians. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur. (SM)	Same as the proposed project. (SM)
Air Quality				
Air Quality Violations and Criteria Air Pollutants	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. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur. (SM)	Same as the proposed project. (SM)
Sensitive Receptors	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. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur. (SM)	Same as the proposed project. (SM)
Cumulative Air Quality Impacts	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. (SM)	No Impact. (NI)	Less than the proposed project, but a significant impact could occur. (SM)	Same as the proposed project. (SM)

TABLE S-3 (Continued)
COMPARISON OF THE SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Category of Significant Environmental Impact	Proposed Project	Alternative 1: No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Modified Massing Alternative
Shadow				
New shadow that could affect the use of other existing publicly accessible open space	Impact WS-3: The proposed project would create new shadow in a manner that could affect the use of the Children's Garden. (SU)	No Impact. (NI)	Same as the proposed project. (SU)	Less than the proposed project. (LTS)
Cumulative shadow	Impact C-WS-2: The proposed project in combination with past, present, or reasonably foreseeable future projects, would contribute to cumulative shadow in a manner that could affect the use of the Children's Garden. (SU)	No Impact. (NI)	Same as the proposed project. (SU)	Less than the proposed project. (LTS)
Hazards and Hazardous Materials				
Exposure to hazardous materials	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. (SM)	No Impact. (NI)	Similar to the proposed project. (SM)	Same as the proposed project. (SM)

Legend

NI No impact
LTS Less than significant or negligible impact; no mitigation required
SM Significant but mitigable
SU Significant and unavoidable adverse impact, no feasible mitigation
SUM Significant and unavoidable adverse impact, after mitigation

CHAPTER I

Introduction

This environmental impact report (EIR) analyzes potential environmental effects associated with the Moscone Center Expansion Project (proposed project or project), which includes increasing the gross square footage of the Moscone Center from approximately 1.2 million square feet to 1.5 million square feet by expanding the Moscone North and South buildings and expanding the existing below-grade exhibition halls under Howard Street. The project is located on Howard Street between Third and Fourth Streets in the South of Market neighborhood of San Francisco. Further details regarding the proposed project components that form the basis for the EIR analysis are discussed in depth in Chapter II, Project Description.

A. Environmental Review

The San Francisco Planning Department, serving as lead agency responsible for administering the environmental review on behalf of the City and County of San Francisco (CCSF), determined that the preparation of an EIR was required.

The California Environmental Quality Act (CEQA) requires that, before a decision can be made to approve a project that could pose potential adverse physical effects, an EIR must be prepared that fully describes the environmental effects of the project. An EIR is a public information document for use by governmental agencies and the public to identify and evaluate potential environmental impacts of a project, to identify mitigation measures to lessen or eliminate significant adverse impacts, and to examine feasible alternatives to the project. The information contained in an EIR is reviewed and considered by the decision-makers before arriving at a decision to approve, disapprove, or modify a project.

CEQA requires that the lead agency neither approve nor implement a project unless the project's significant environmental effects have been reduced to a less-than-significant level, essentially "eliminating, avoiding, or substantially lessening" the expected impact, except when certain findings are made. If the lead agency approves a project that will result in the occurrence of significant adverse impacts that cannot be mitigated to less-than-significant levels, the agency must state the reasons for its action in writing, demonstrate that its action is based on the EIR or other information in the record, and adopt a Statement of Overriding Considerations.

On January 22, 2014, CCSF sent a notice of preparation (NOP) of an EIR, including an Initial Study, to governmental agencies and organizations and persons who may have interest in the project. The NOP requested that agencies and interested parties comment on environmental

issues that should be addressed in the EIR. The NOP and Initial Study are included as Appendix A in this EIR. For discussion of impacts addressed in the Initial Study, see the Summary Chapter of this EIR.

The public comment period began on January 22, 2014 and extended to February 21, 2014. During this time, public comments were received in writing via U.S. mail, email, or fax. The environmental issues raised in the public comments were summarized as follows and the locations where these items are addressed in this environmental review are indicated in parentheses:

- Potential impacts on existing public open spaces at the project site, impacts due to construction of recreational spaces, and a quantification of how much space would be gained or lost under the proposed project (Chapter II, Project Description; Chapter V, Other CEQA Considerations);
- Potential cumulative impacts to vehicular levels of service for different event sizes (Section IV.A, Transportation and Circulation)
- Loading dock capacity, the impact of queued vehicles, and the impact of vehicular pullouts on transportation (Section IV.A, Transportation and Circulation)
- A detailed methodology and quantification of increased trips generated by the proposed project, as well as potential impacts on pedestrian facilities and the effects of potential mitigation measures (Section IV.A, Transportation and Circulation);
- Potential impacts due to shadow cast by the proposed buildings on Yerba Buena Gardens, including the Esplanade and Children's Playground (Section IV.B, Shadow);
- Inclusion of alternative(s) that reduces shadow on the Children's Garden, a modified building massing, and improved pedestrian circulation, as well as alternative locations for both the proposed project and other existing site development (Chapter VI, Alternatives).
- Inclusion of a Cultural Resource section that adequately assesses and mitigates project-related impacts on archaeological resources and human remains (Appendix A, Initial Study);
- Potential impacts of taller buildings on wind (Appendix A, Initial Study); and
- Potential impact on air quality and noise from idling trucks waiting to use the loading facilities, as well as idling shuttle buses, and suggested mitigation measures (Appendix A, Initial Study).

Issues raised by the public not directly related to environmental topics include:

- Ownership and jurisdiction of the project site (Chapter II, Project Description);
- Yerba Buena Gardens should be a shared multiple use facility; no one use should dominate Yerba Buena Gardens; and
- The project would result in economic benefits by attracting conventions and producing jobs.

During the approximately 45-day period that this Draft EIR is available for public review, written comments on the adequacy of the environmental analysis presented therein may be submitted to the Planning Department or in person during the public hearing on the Draft EIR (the hearing date is on the cover of this Draft EIR).

After the public hearing, the Planning Department will prepare and publish a document titled “Responses to Comments,” which will contain a summary of all relevant comments on this Draft EIR and responses to those comments, along with copies of the comment letters received and a transcript of the Draft EIR public hearing. The Responses to Comments document may also specify changes to this Draft EIR. This Draft EIR, together with the Responses to Comments document, will be considered by the Planning Commission in an advertised public meeting and then certified as a Final EIR if deemed adequate.

After certification, the Planning Department will modify the Draft EIR as specified by the Responses to Comments document and print both documents in a single publication called the Final Environmental Impact Report. The Final EIR will add no new information to the combination of the two documents except to reproduce the certification resolution. It will simply provide the information in one, rather than two documents.

B. Purpose of this EIR

This document is a project-level EIR and is intended as an informational document that, in and of itself, does not determine whether a project will be approved, but aids the planning and decision-making process by disclosing the potential for significant and adverse impacts. In conformance with CEQA, California Public Resources Code, Section 21000 et. seq., this EIR provides objective information addressing the environmental consequences of the project and identifies possible means of reducing or avoiding its potentially significant impacts.

The CEQA Guidelines help define the role and expectations of this EIR, as follows:

Informational Document. An EIR is an informational document that will inform public agency decision-makers and the public generally of the significant environmental effect(s) of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project. The public agency shall consider the information in the EIR along with other information which may be presented to the agency (Section 15121(a)).

Standards for Adequacy of an EIR. An EIR should be prepared with a sufficient degree of analysis to provide decision-makers with information that enables them to make a decision that intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR is to be reviewed in the light of what is reasonably feasible. Disagreement among experts does not make an EIR inadequate, but the EIR should summarize the main points of disagreement among the experts. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (Section 15151).

The CEQA Guidelines, Section 15382, define a significant effect on the environment as “a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project....” Therefore, in identifying the significant impacts of the project, this EIR concentrates on its substantial physical effects and on mitigation measures to avoid, reduce, or otherwise alleviate those effects.

C. Organization of the Draft EIR

This Draft EIR has been organized as follows:

- **Summary.** This chapter summarizes the EIR by providing a concise overview of the project, the environmental impacts that would result from the project, mitigation measures identified to reduce or eliminate these impacts, and alternatives to the proposed project.
- **Chapter I, Introduction.** This chapter includes a discussion of the environmental review process, a summary of the comments received on the scope of the EIR, the purpose of the EIR, and organization of the EIR.
- **Chapter II, Project Description.** This chapter discusses the project background and objectives, provides background data on the project location, describes the operational and physical characteristics of the proposed Moscone Center Expansion Project, and identifies project approvals.
- **Chapter III, Plans and Policies.** This chapter provides a summary of the plans, policies, and regulations of CCSF, regional, and State agencies that may be applicable to the project.
- **Chapter IV, Environmental Setting, Impacts and Mitigation Measures.** This chapter describes the project’s existing setting, environmental impacts, and cumulative impacts. Each environmental topic is discussed in a separate section within the chapter. Environmental topics included in this EIR chapter are:
 - Environmental Setting;
 - Transportation and Circulation; and
 - Shadow.
- **Chapter V, Other CEQA Considerations.** This chapter presents any growth-inducing impacts that could result from the proposed project, recapitulates the significant environmental effects that cannot be mitigated to a less-than-significant level, presents those resource topics for which the proposed project would not result in significant environmental effects, and presents any areas of controversy left to be resolved.
- **Chapter VI, Alternatives.** This chapter presents alternatives to the proposed project, including the No Project Alternative and the Reduced Project Alternative, and other alternatives considered but rejected as infeasible.
- **Chapter VII, EIR Prepares and Persons and Organizations Consulted.** This chapter presents a list of persons involved in preparation of this EIR.

- **Appendices.** The following appendices are included in this EIR: Notice of Preparation and Initial Study (Appendix A), Shadow Projection Images (Appendix B), Moscone Center Expansion Project- Estimation of Travel Demand and Moscone Center Transportation Operations Master Plan (Appendix C).

D. Public Participation

Chapter 31 of the San Francisco Administrative Code encourages public participation in the planning and environmental review processes. CCSF will provide opportunities for the public to present comments and concerns regarding this EIR and its CEQA process. These opportunities will occur during a public review and comment period and a public hearing before the San Francisco Planning Commission. Written public comments may be submitted to the Planning Department to the attention of Sarah B. Jones, Environmental Review Officer, at 1650 Mission Street, Suite 400, San Francisco, CA 94103, during the specified public review and comment period (indicated on the cover of this EIR), and written and oral comments may be presented at the public hearing concerning the project (also indicated on the cover of this EIR).

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.

The EIR is available for public review and comment on the Planning Department's Negative Declarations and EIRs web page (<http://tinyurl.com/sfceqadocs>). CDs and paper copies are also available at the Planning Information Center (PIC) counter on the first floor of 1660 Mission Street, San Francisco. Referenced materials are available for review by appointment at the Planning Department's office on the fourth floor of 1650 Mission Street. (Call (415) 575-9028.) Documents referenced in this EIR are available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

CHAPTER II

Project Description

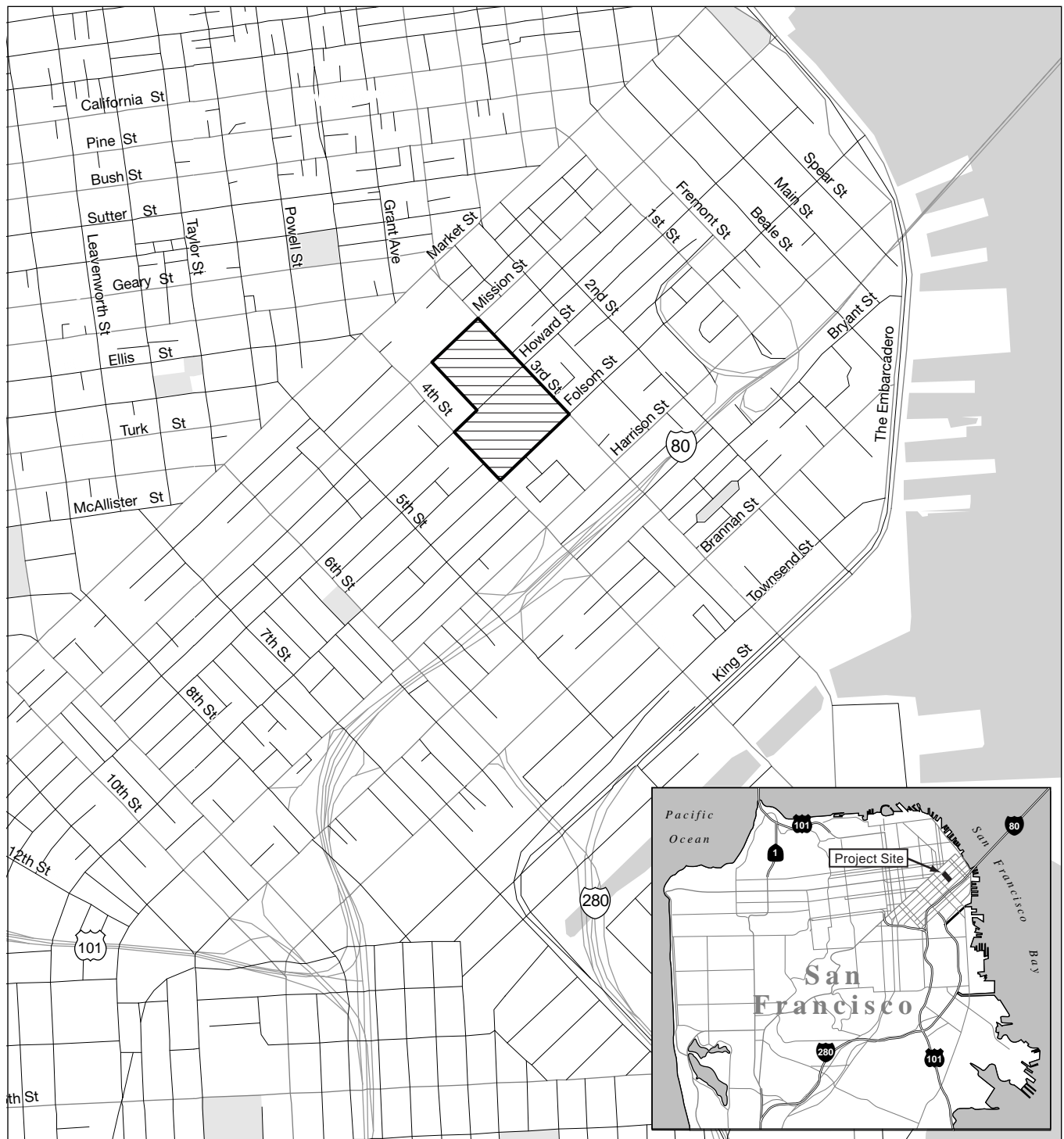
A. Overview and Project Objectives

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 II-1**). 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.¹ Moscone South, with the exception of the Esplanade Ballroom, and Moscone West are owned by the City and County of San Francisco and privately managed. Moscone North and the Esplanade Ballroom, are owned by the Office of Community Investment and Infrastructure (OCII), successor to the San Francisco Redevelopment Agency. OCII is expected to transfer ownership of Moscone North to the City when the outstanding bonds and lease payments for Moscone North are paid, which is expected to occur in July 2014. 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

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.



 Project Site

0  1000
Feet

SOURCE: ESA

Moscone Center Expansion Project 2013.0154E

Figure II-1
Project Site Location Map

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 a currently unexcavated area or “plug” 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 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 above grade. The proposed project also includes improvements to the Children’s Garden south of Howard Street. 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, the City and County of San Francisco’s Convention Facilities Department, the Mayor’s Office of Economic and Workforce Development (OEWD), and the San Francisco Department of Public Works (DPW). These entities collectively compose the project sponsor team. The objectives for the proposed project include the following:

- Maximizing the economic value of Moscone Center by attracting new clients and maintaining 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.

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.

- 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 Center’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.

B. Project Site Characteristics and Setting

Project Location and Setting

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 (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.³ 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.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. The Metreon—a 4-story, 115-foot-tall retail center housing shops, restaurants, and movie theater—is adjacent to the site to the northwest.

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.

³ The Yerba Buena Gardens were created as part of the development that occurred under the Yerba Buena Redevelopment Area. The Yerba Buena Redevelopment Area expired in 2010.

⁴ Existing and proposed bridges at level 2 are not included in this footprint total.

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.

To the east of Moscone North, across Third Street, is the 42-story (484 feet) St. Regis Hotel and Residences, the 5-story San Francisco Museum of Modern Art (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 San Francisco Metropolitan Transportation Agency 5th and Mission Parking Garage.

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. 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 up to approximately 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 II-2**). The ceiling height in the below-grade exhibit spaces (Halls D and E) ranges between 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 Esplanade⁵

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 (see Figure II-2). 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 space.⁶

Table II-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. For the three calendar years 2010 through 2010, there were an average of six small events (from 500 to 10,000 registered attendees per event), 34 medium events (from 10,000 to 20,000 registered attendees per event), and 17 large events (more than 20,000 registered attendees per event).⁷

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

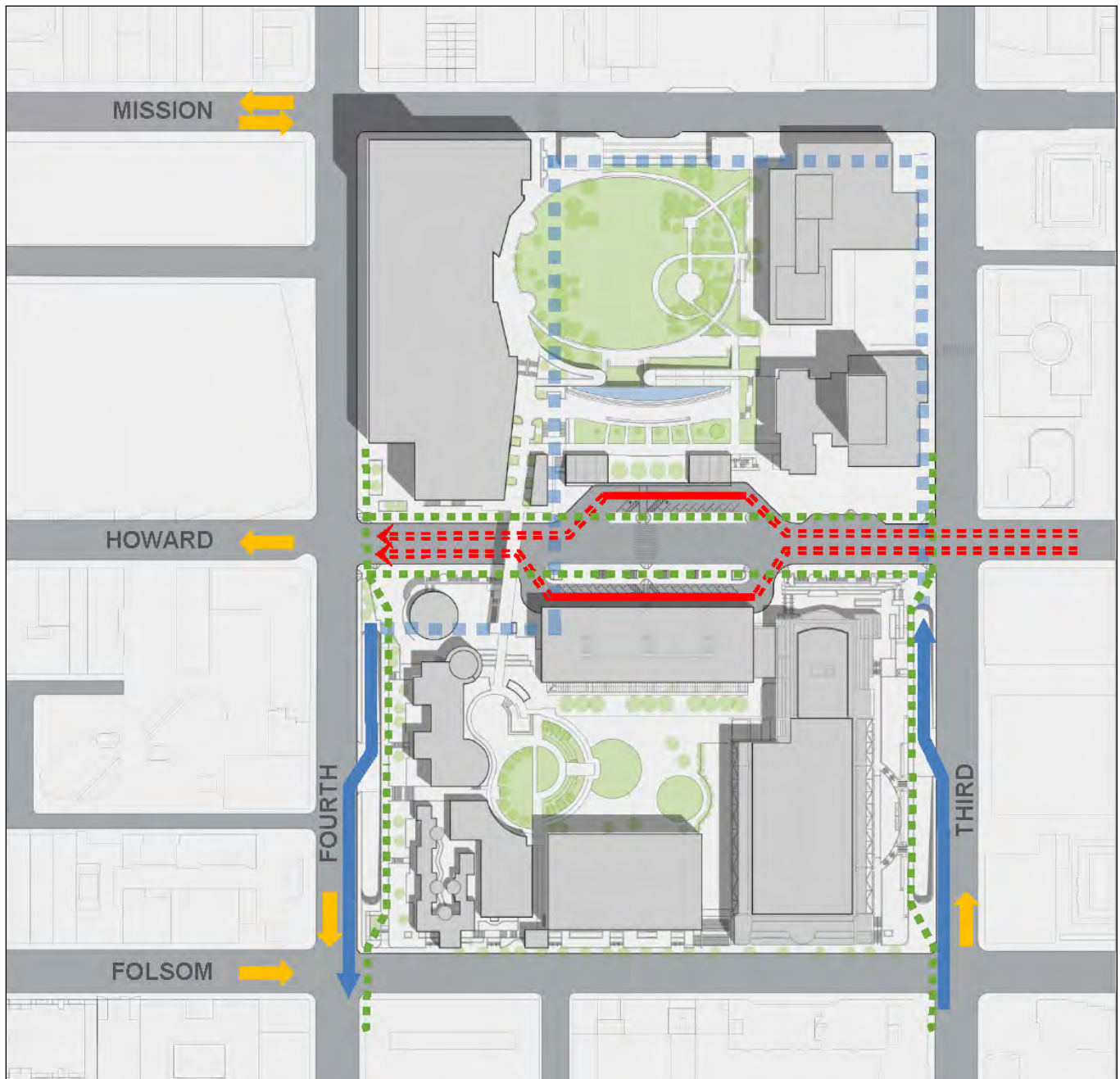
Year	Total Number of Events	Total Annual Attendance
2011-2012	51	525,010
2010-2011	64	567,617
2009-2010	53	655,343

SOURCE: Moscone Center, 2011, 2012, 2013.

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 be combined. 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 Advant 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: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects

Moscone Center Expansion Project 2013.0154E

Figure II-2
Existing Conditions

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 in the Congestion Management Program network.⁸

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 team, 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.

C. 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, such as mechanical or HVAC space) of about 1 percent, from approximately 570,300 square feet to

⁸ 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 and of varying capacity depending on the travel demand for the specific direction and adjacent land uses.

approximately 563,000 square feet. **Figure II-3** illustrates the proposed site plan and **Table II-2** details the existing and proposed uses and total square footages at each level.

TABLE II-2
EXISTING AND MAXIMUM PROPOSED FUNCTIONAL SPACES BY BUILDING AND LEVEL

Level	Existing Conditions		Proposed Project	
	Functional Uses ¹	Square Feet	Functional Uses ¹	Maximum 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	-	Up to 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.

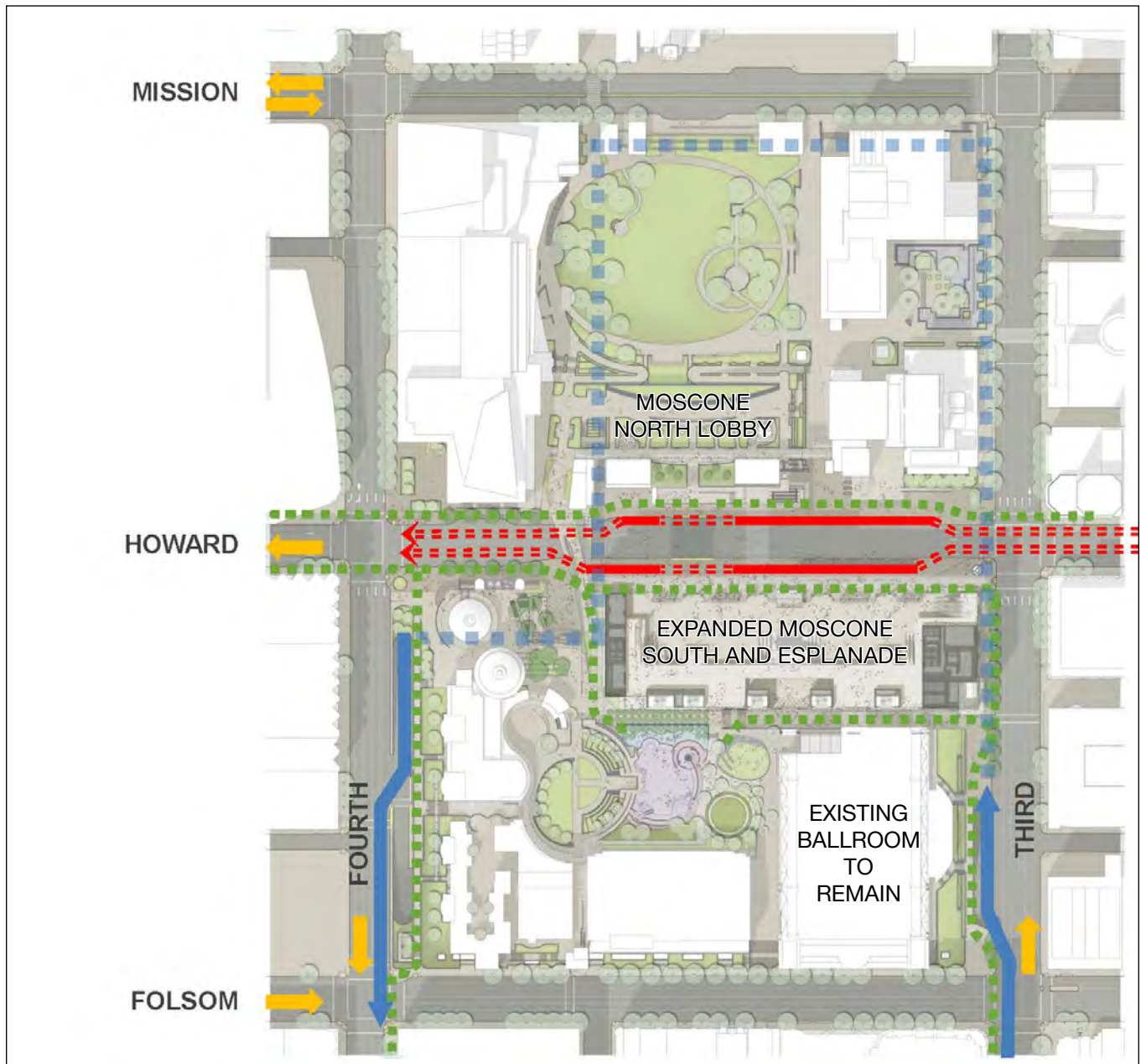
SOURCE: SOM, 2013

Moscone Below-Grade: North and South Exhibition Hall

On the lower level (see **Figure II-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 convert existing meeting space within Moscone North into a kitchen/support area. At completion, the lower level would span a total area of 827,500 gross square feet.

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 up to 32 percent (up to 140,000 square feet), for a total of up 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 an existing unexcavated area contained by concrete walls under Howard Street, which is approximately 60 feet by 185 feet in size.⁹

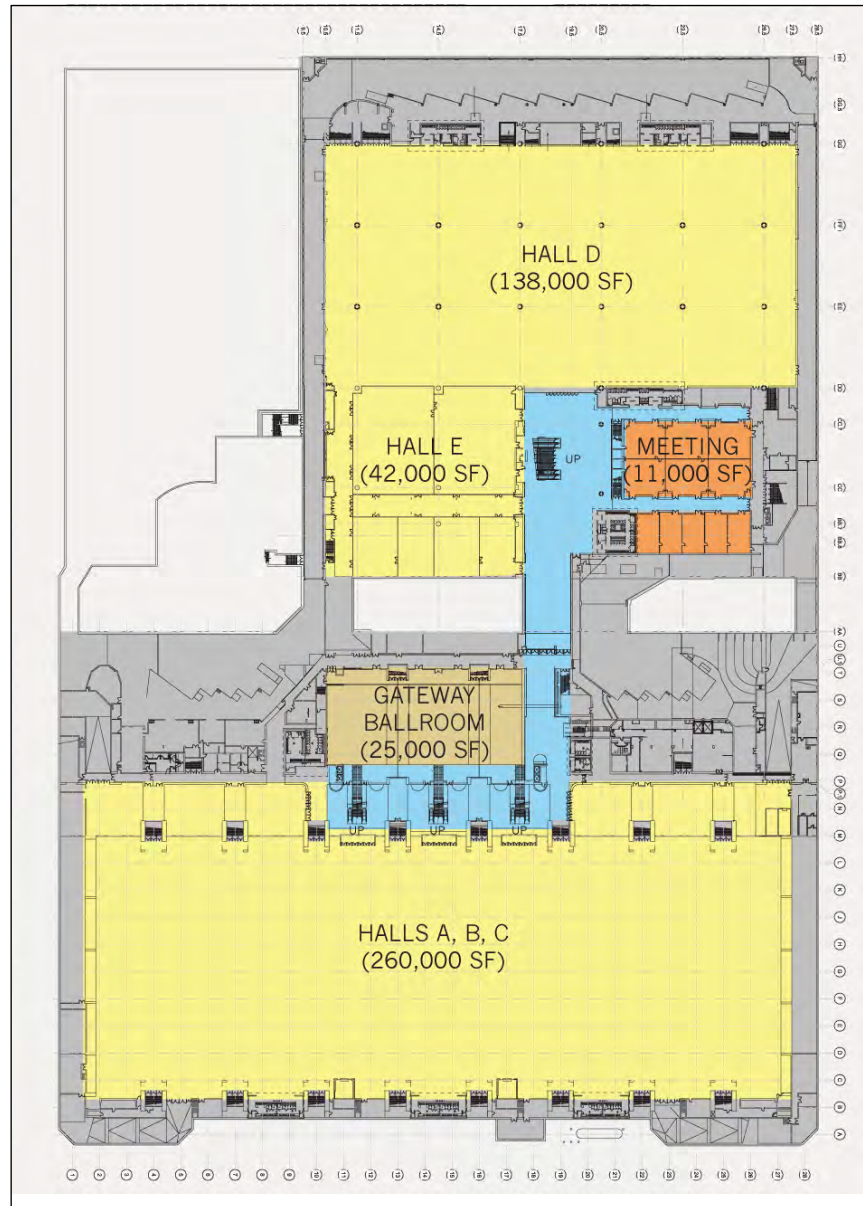
⁹ The unexcavated area is located approximately 330 feet east of the center of the Howard and Fourth Street intersection.



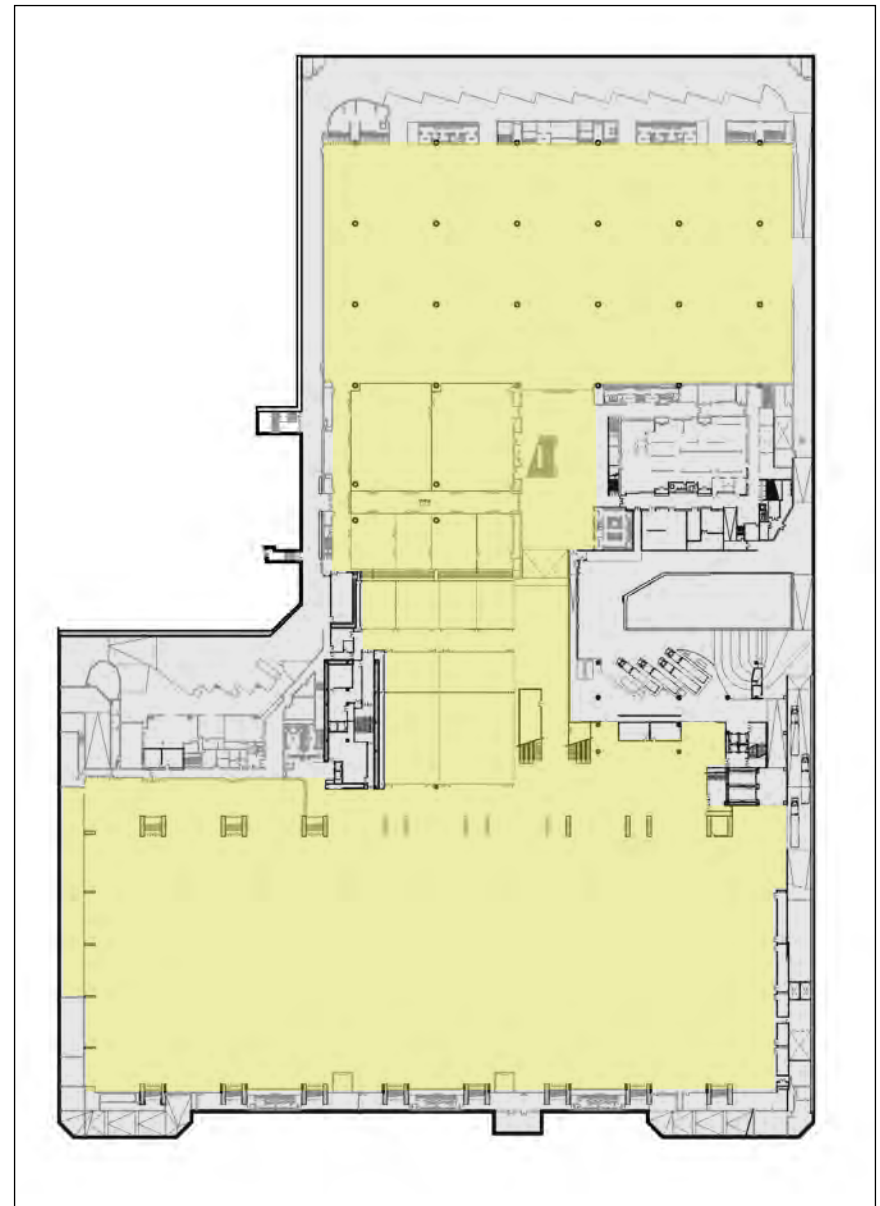
SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-3
Proposed Site Plan



Existing



Proposed

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

Moscone Center Expansion Project 2013.0154E

Figure II-4
Existing and Proposed Lower Level Plan

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 II-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 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 II-5 for the plan and Table II-2 for a detailed accounting of specific functional areas.

A mezzanine level would be located approximately 12 feet above the lobby level, 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 II-6**).

At level 2, the south building would include a new column-free ballroom with a 27-foot clear ceiling height. This ballroom could also be used as several smaller meeting rooms or for 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 II-7**).



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

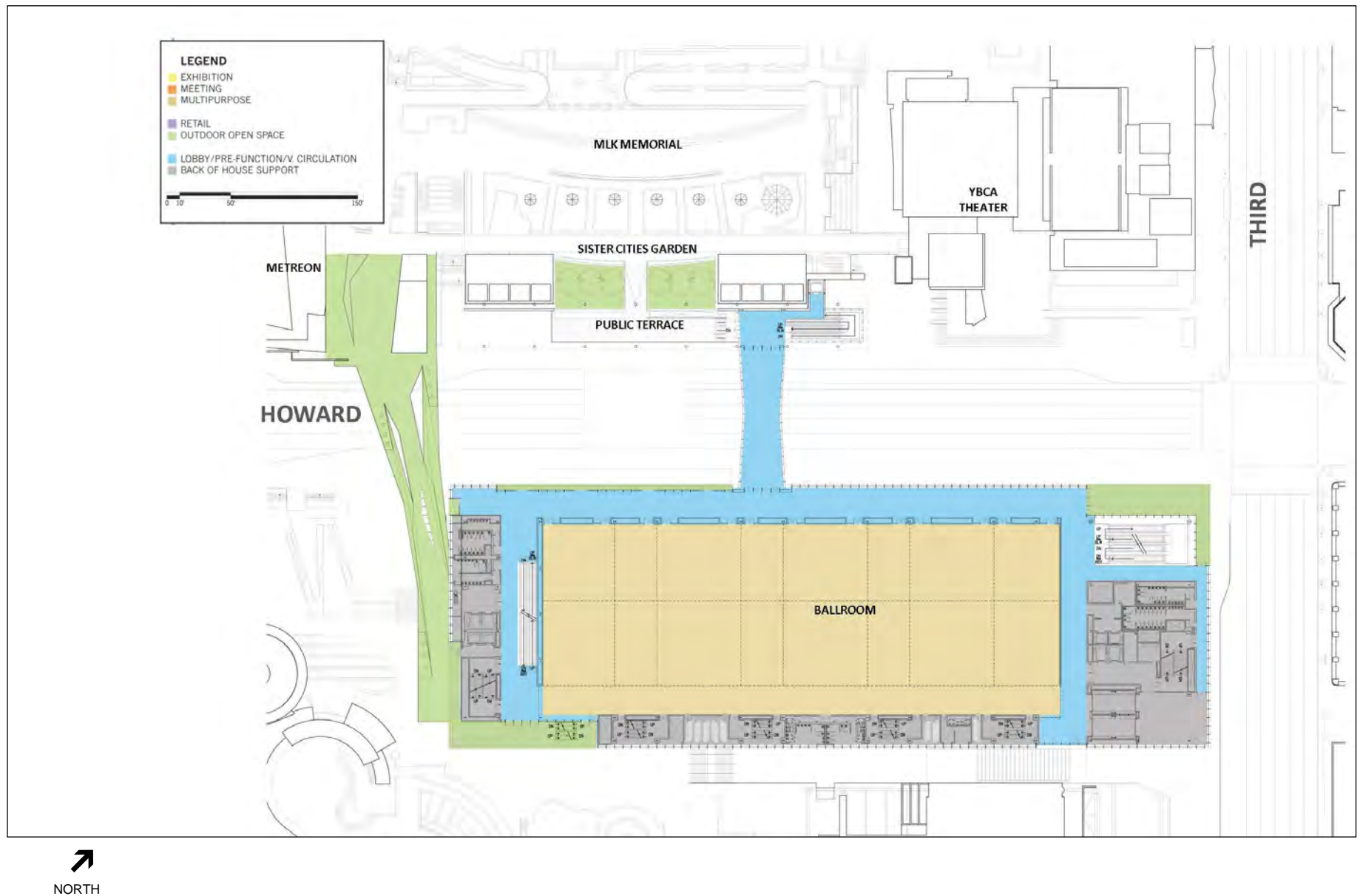
Figure II-5
Proposed Level 1 Plan



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-6
Proposed Mezzanine Plan



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-7
Proposed Level 2 Plan

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 Figure II-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 II-8**).

Figure II-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 footprint, with the exception of the area to be excavated beneath Howard Street. Thus, excavation activities would be limited to the area beneath Howard Street, between Moscone North and Moscone South, and at the location of proposed building footings and foundations. Excavation of approximately 29,000 cubic yards of soil would be required to accommodate the proposed project, as described below:

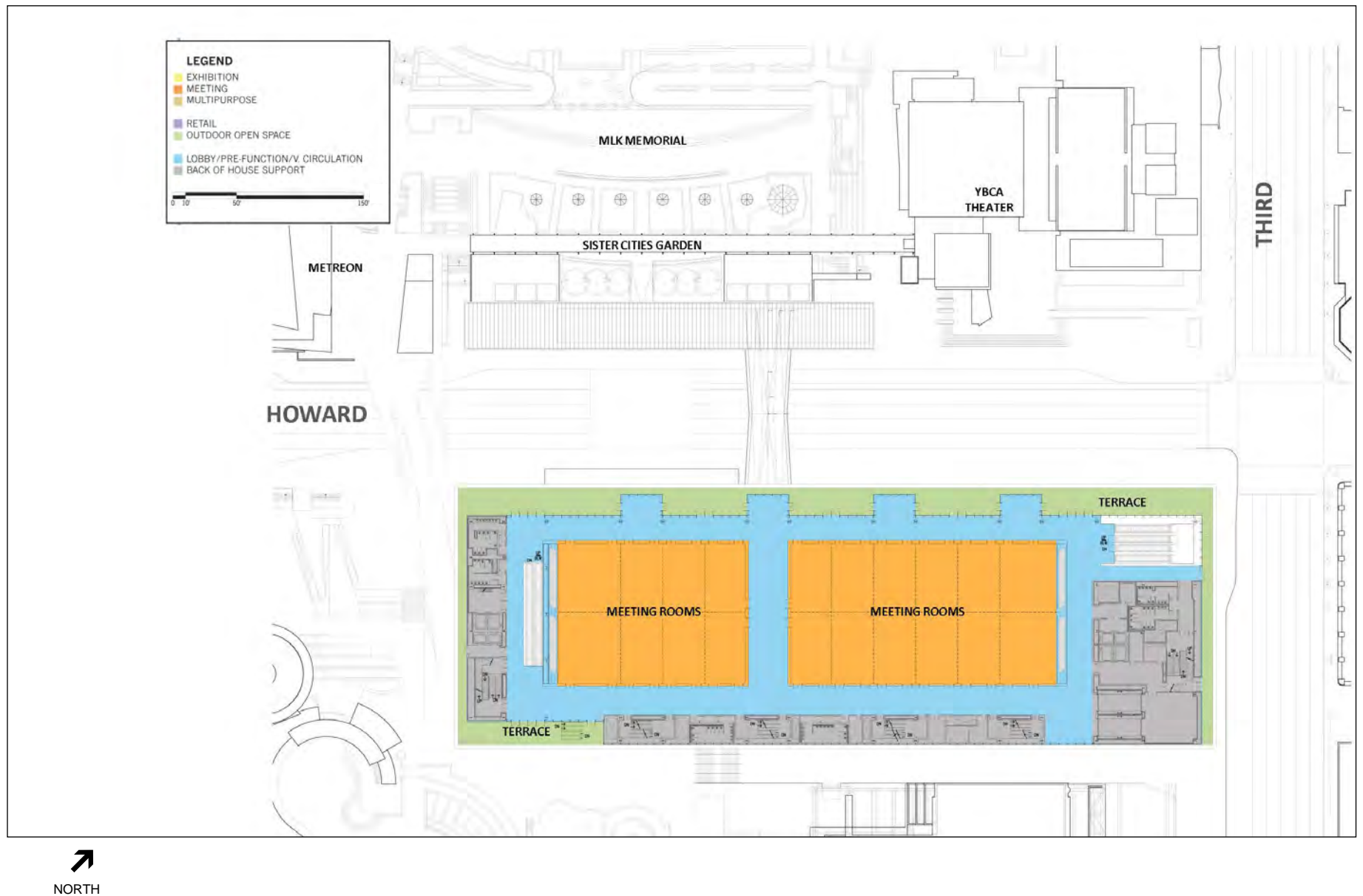
- Beneath Howard Street: approximately 35 feet in depth, requiring removal of approximately 14,400 cubic yards of soil.
- Moscone North Lobby Footings and Foundation: approximately 5 feet in depth, requiring removal of up to approximately 3,700 cubic yards of soil.
- Storm and ground water storage tanks: 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,¹⁰ similar to existing building foundations, with thickened footings at new column locations and at the edges of the Howard Street expansion.

Landscaping and Yerba Buena Gardens Improvements

The improvements described in this section were added to the proposed project following publication of the Notice of Preparation/Initial Study (see Section 1.A, Environmental Review). The proposed project includes improvements to the Children's Garden south of Howard Street, including a new plaza located between the children's carousel and the proposed bridge

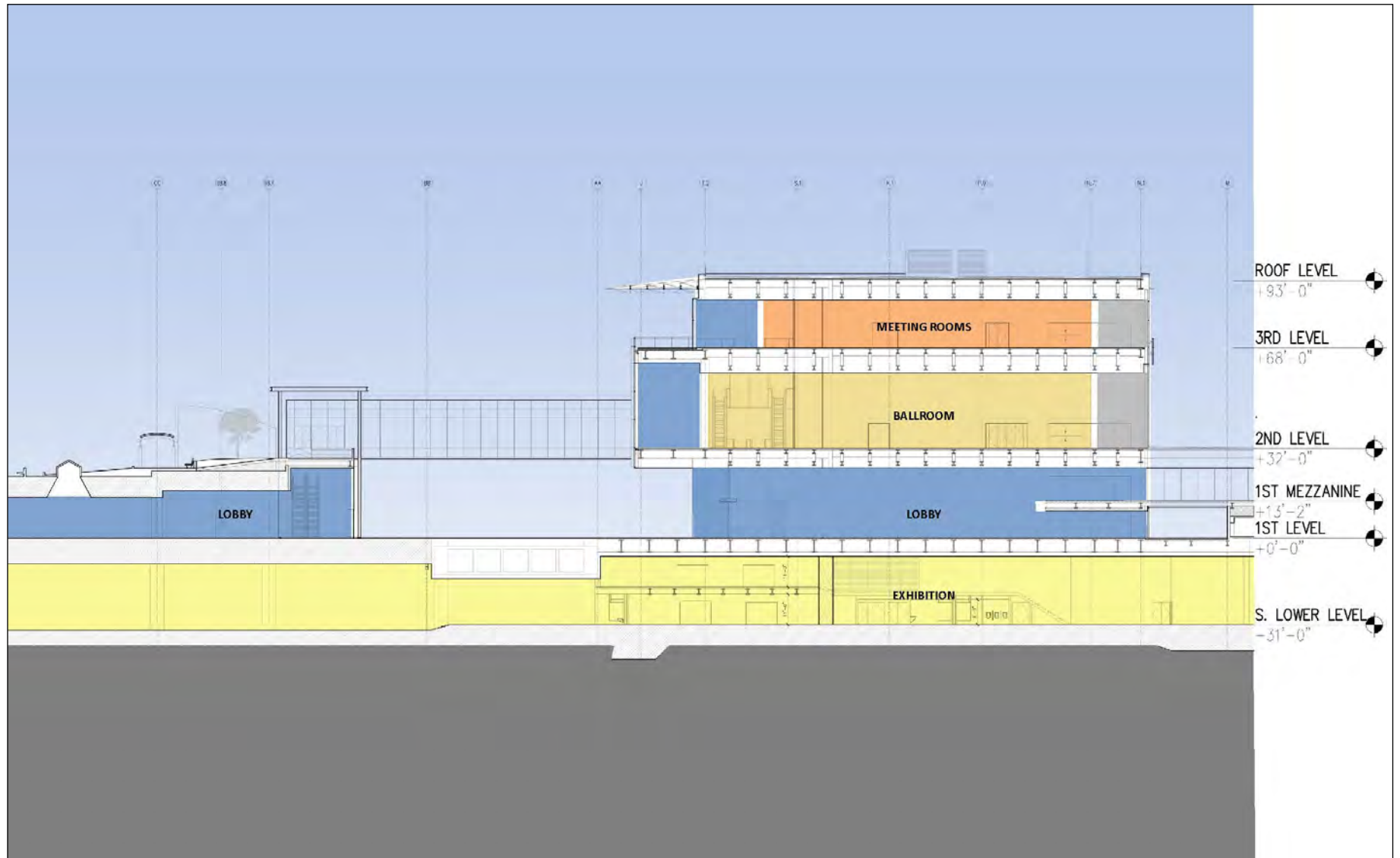
¹⁰ A type of shallow foundation made by pouring concrete over a mat of reinforcing material, usually rebar.



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-8
Proposed Level 3 Plan



(discussed within the section entitled “Proposed Access”, below), a tot lot with play equipment for children under age five, relocation and expansion of the existing learning garden, replacement of the nature walk/allée of plum trees, an elevated social seating area providing views throughout the gardens, reconfiguration of the existing lawn, restrooms, and gardens storage, and a public plaza alongside the Esplanade Ballroom (see **Figure II-10a**). The proposed project would not alter the existing garden amphitheater or play circle but would remove the existing sundial garden and replace it with other publicly-accessible open space. By reconfiguring the public and convention center access routes, the area of proposed open space in the vicinity of the Moscone South building (excluding sidewalks, but including internal walkways) would increase from 100,700 square feet to 118,200. The portion dedicated to children’s use would increase from 38,740 square feet to 39,100 square feet.¹¹ Overall, the proposed project increases public open space south of Howard Street by approximately 17,500 square feet, while maintaining the amount of space dedicated for children’s use. As discussed in Section V.C, Effects Found Not to Be Significant, these additions to the project description would not result in significant environmental effects.

The proposed project would not remove any street trees, and no “significant trees” would be affected.¹² A significant tree is one that is either on property under the jurisdiction of the San Francisco Department of Public Works (DPW) or on privately owned land within 10 feet of the public-right-of-way, that is greater than 20 feet in height or 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 II-10b**).

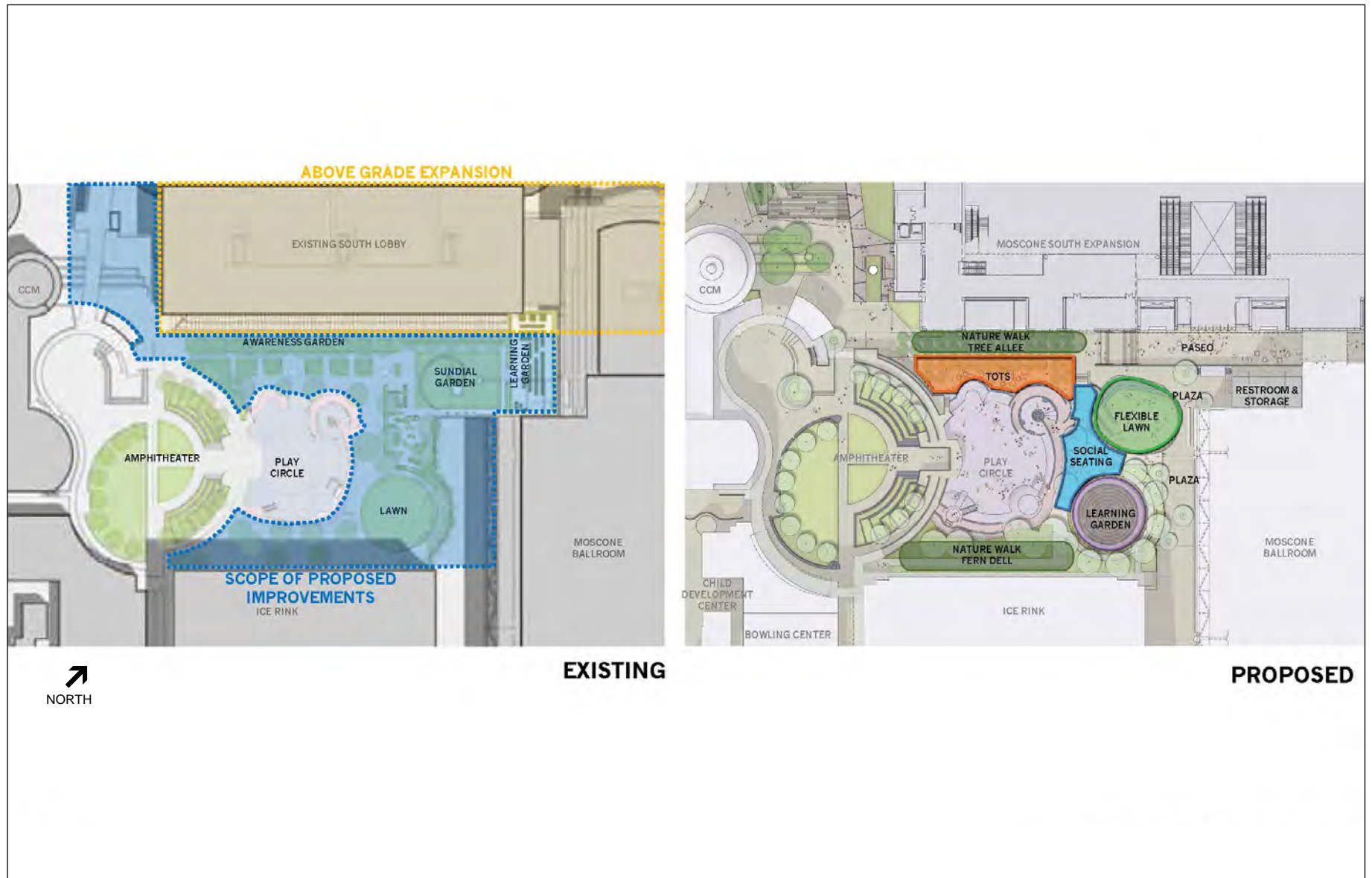
Proposed Access

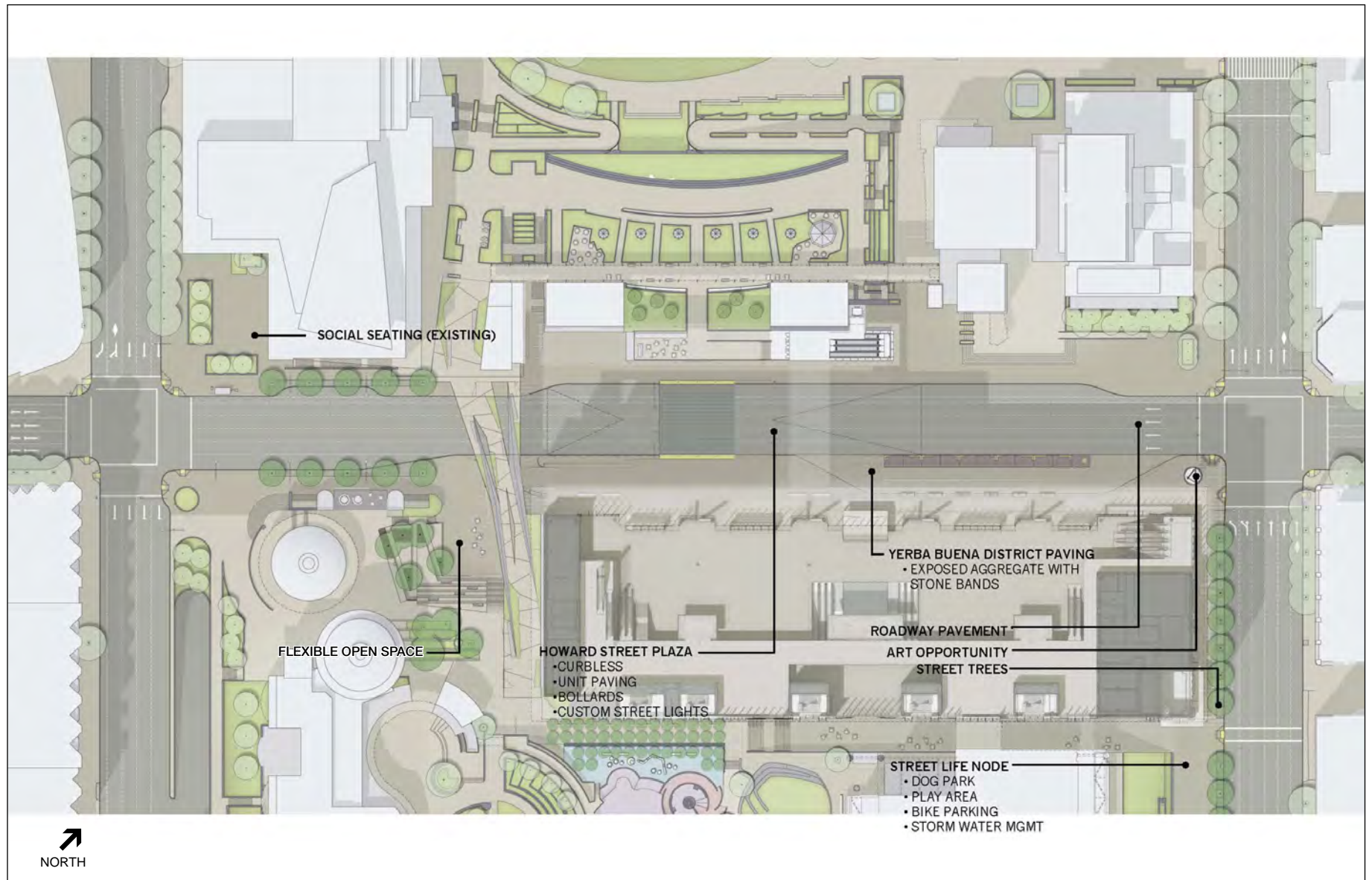
Visitor Pedestrian Access

On level 1, at street level (see Figure II-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 II-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”

¹¹ Adam Van de Water, Office of Economic and Workforce Development, personal communication, February 11, 2014.

¹² 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%99s-landmark-trees>, accessed June 2, 2013.

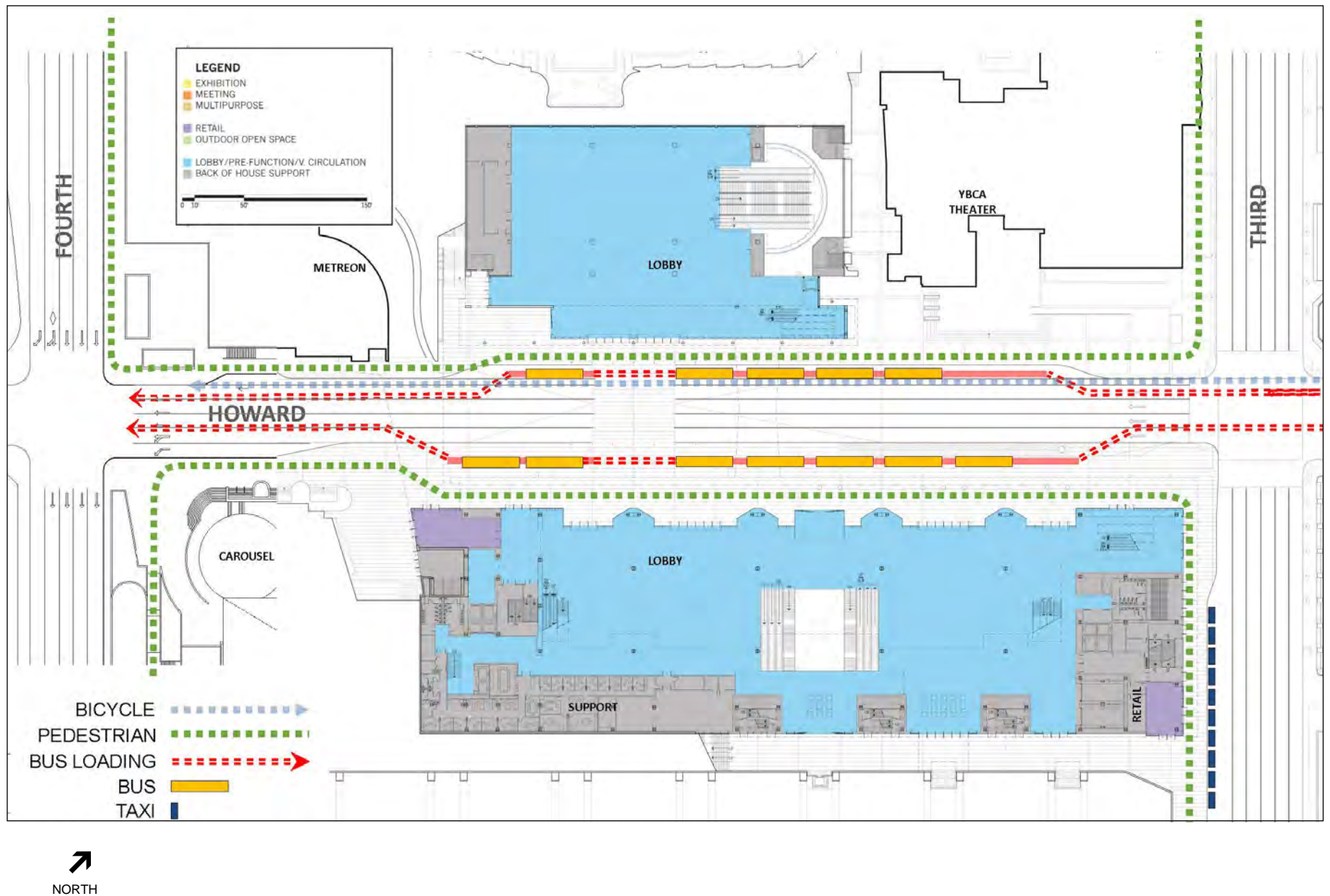




SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-10b
Proposed Landscaping Plan



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-11

Proposed Howard Street Conditions

between the two entry lobbies. The pedestrian-friendly zone would consist of a 60-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. 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. It would also include construction of a staircase and ramp to the west of the Moscone South building to provide more direct pedestrian access from Howard Street to the Children's Garden. 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. The incorporation of first-floor glazing on the expanded Moscone South and Esplanade Building would enhance the pedestrian experience by providing visual access into the lobby.

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 II-11).

The proposed project would remove the designated taxi stand on the south curb of Howard Street west of Third Street, as well as the taxi/passenger vehicle drop-off and pick-up area on the north curb of Howard Street west of Third Street. The proposed curbside loading zones on the north and south sides of Howard Street west of the midblock crosswalk could be used by taxis

and other passenger vehicles loading/unloading passengers when the spaces are not required for shuttle bus use. The project would provide a new traditional on-street taxi stand and short-term passenger loading zone on the west side of Third Street south of Howard Street for use during peak periods of passenger loading activity.

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 II-12**). No excavation would be required to move the truck ramp. The existing east loading dock would remain; the number of loading spaces would not change. The new truck ramp would provide queuing space for two trucks before they reach the existing loading spaces, relieving the occasional truck queue over-flow onto Third Street (see **Figure II-13**). In addition, the proposed project would add a large drive-in door to improve truck access onto the exhibit hall floor for loading/unloading operations. Trucks would continue to exit onto Fourth Street by way of the existing below-grade truck loop.

Parking

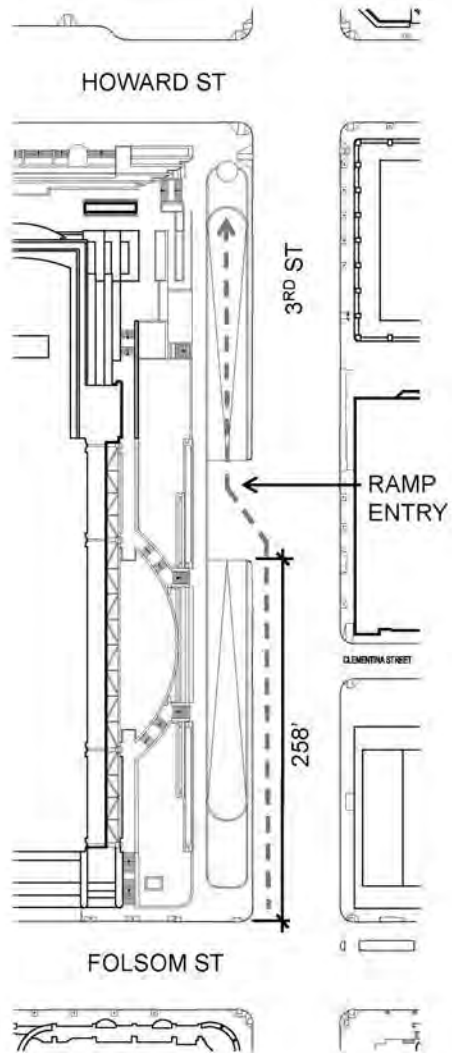
Visitors and employees would continue to park at nearby garages, including the Fifth and Mission Street Garage and the Moscone Garage at Third and Folsom Streets, and no parking would be added under the proposed project. The project would provide 18 Class 1 bike parking spaces and a changing room with two showers for employees. The project would also provide 10 Class 2 bicycle parking spaces in two bicycle racks that would be located on the south side of Howard Street within the west plaza between Moscone South and the Children’s Creativity Museum.

Utilities

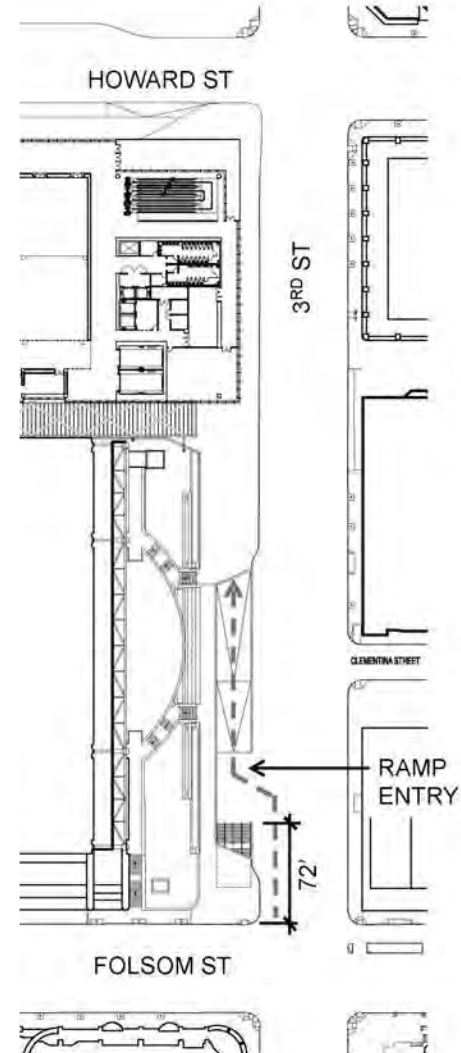
The project sponsor team does not anticipate any improvements to the existing utilities beneath Howard Street. The project would connect to existing utility lines for water, sewer, and street lights.

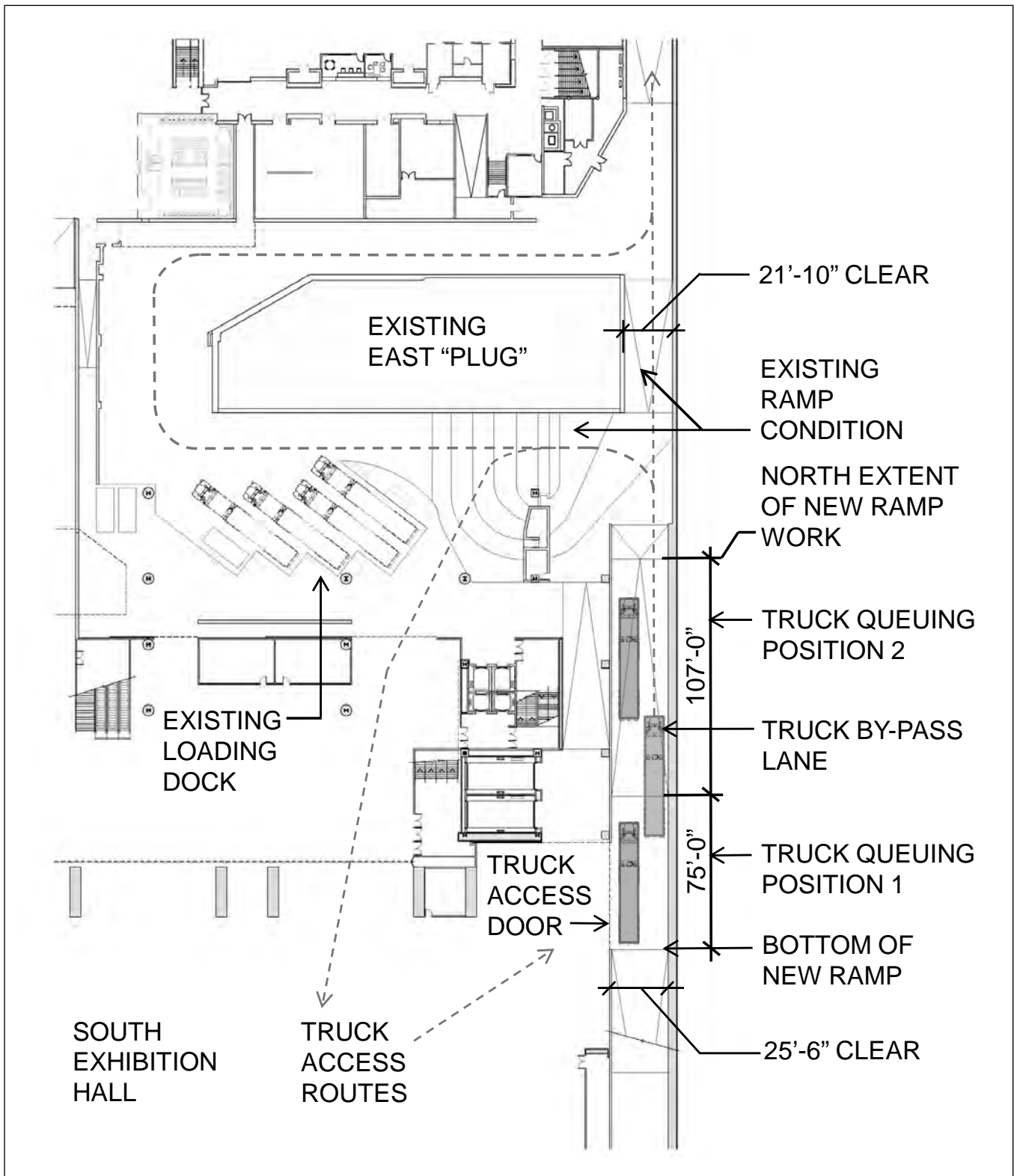
Because of the relatively shallow depth to groundwater on site, foundation dewatering is required under existing conditions and would continue to be required with the proposed project. For dewatering purposes, Moscone has four sump pits located below grade along Folsom Street. These sump pits are fed 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 in the below-grade water tank mentioned previously in the “Proposed Foundation and Excavation” section.

EXISTING TRUCK RAMP ENTRY



PROPOSED TRUCK RAMP ENTRY





NORTH

SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E

Figure II-13
Proposed Truck Ramp Queuing and Bypass Lanes Below Grade

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: Leadership in Energy and Environmental Design (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).

Pursuant to the Stormwater Management Ordinance, the project sponsor team 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, as discussed above, 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. 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.¹³ 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

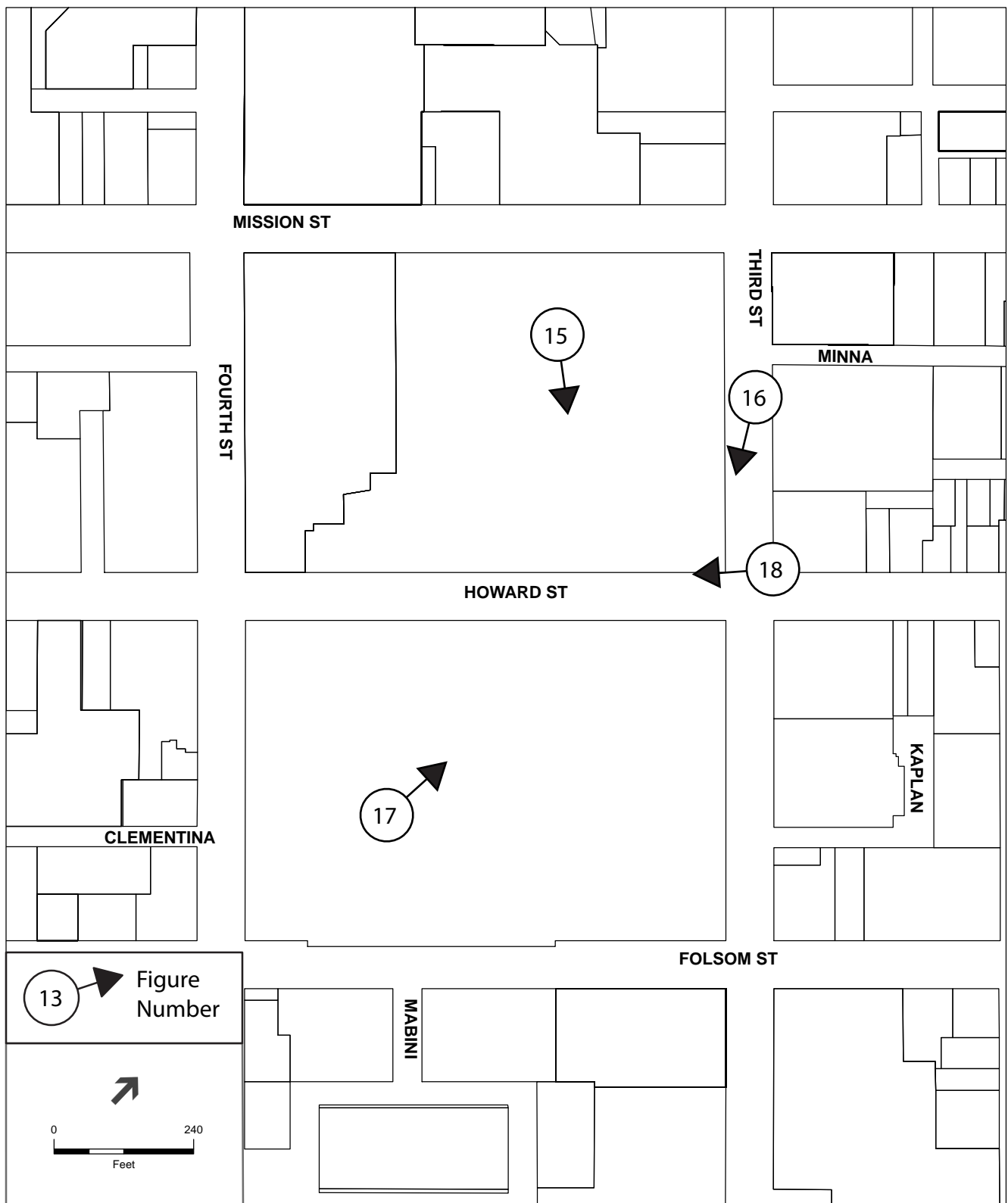
The proposed project would include extensions of Moscone North and South building facades toward Howard Street, as well as vertical extensions of all three building components (North, South, and the Esplanade). The Moscone North expansion would add one level above a renovated and expanded lobby along 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 II-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 II-14** through **Figure II-18**, below. All glazing would be consistent with the City's Bird-Safe Building Ordinance (Section 139 of the *Planning Code*).

Figure II-14 presents a map of viewpoints that are presented in this Project Description. Figures II-15 through II-18 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. These photosimulations were prepared by Square One Productions and reviewed by the San Francisco Planning Department, the environmental consultant (ESA), the project sponsor team, and the project architect (SOM).

¹³ 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.



SOURCE: ESA, 2013

Moscone Center Expansion Project 2013.0154E

Figure II-14
 Photosimulation Locations Map



Existing Conditions



With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

Figure II-15
View from Yerba Buena Esplanade, Looking Southeast



Existing Conditions



With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

Figure II-16
View from Third Street at SFMOMA, Looking South



Existing Conditions



With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

Figure II-17
View from Children's Garden, Looking North



Existing Conditions



With Proposed Project

SOURCE: Square One, 2013

Moscone Center Expansion Project 2013.0154E

Figure II-18
View from Howard Street at Third Street, Looking Southwest

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 IV, in the section entitled 'SB 743'. Accordingly, this EIR does not contain a separate discussion of the topic of aesthetics. Photosimulations of the proposed project are provided for informational purposes only.

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 4,200.¹⁴ This is a conservative (i.e., high) 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.

Proposed Construction Schedule

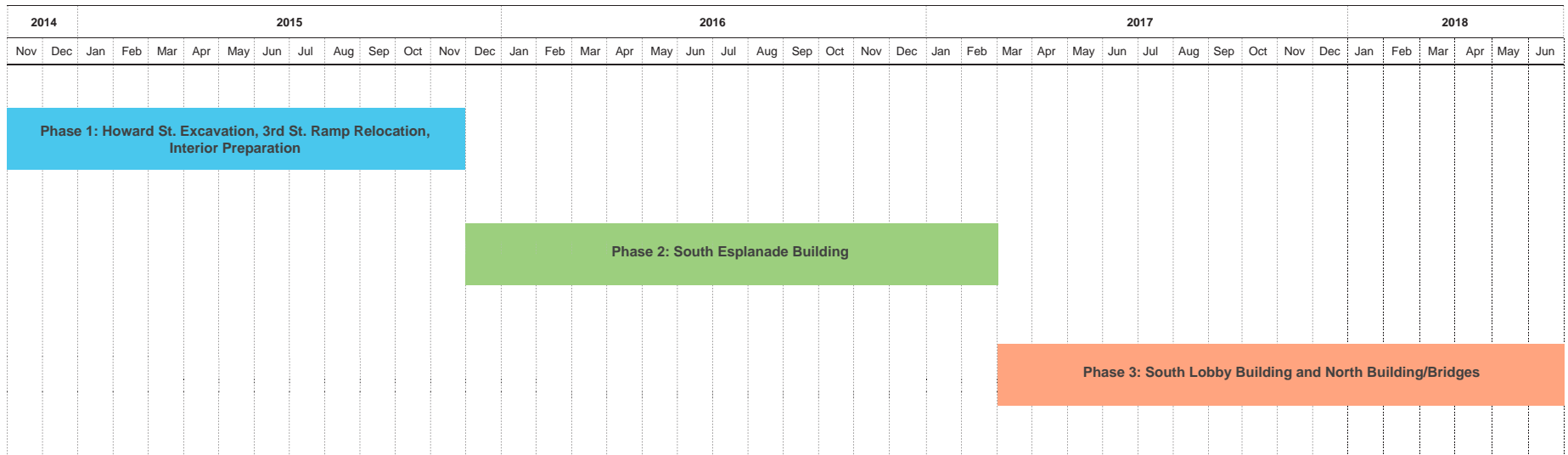
Construction of the Moscone Center Expansion project is anticipated to begin in November 2014 and be completed in approximately 44 months (see **Figure II-19**). In order to achieve maximum contiguous exhibition space within the existing Moscone below-grade footprint, the project would be carried out 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 II-3**. No pile driving is anticipated. The estimated cost for constructing the proposed project is approximately \$350 million.

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."¹⁵ 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.

¹⁴ Advant 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.

¹⁵ *Planning Code*, Section 210.3.



**TABLE II-3
CONSTRUCTION DETAILS**

Construction Steps	Construction Equipment/ Depth and Quantity of Excavation
<p>Phase 1: Site Preparation (13 months)</p> <ol style="list-style-type: none"> 1. Construct a temporary, above-grade connection from the back of the existing south lobby building to the existing Esplanade Ballroom. 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. 3. Convert existing meeting rooms under the existing Yerba Buena Theater to a new kitchen facility with new mechanical systems as required. 4. Excavate existing unexcavated area under Howard Street and excavate further as needed (temporary closure of Howard Street between Third and Fourth Streets required). 	<p>Excavation: Beneath Howard Street of approximately 35 feet in depth, requiring removal of approximately 14,400 cubic yards of soil.</p> <p>2 drill rigs, 1-120 ton crane, 20 trucks 1,500 truck trips (15 to 20 days, 75 to 100 trips per day)</p>
<p>Phase 2: Esplanade Building (15 months)</p> <ol style="list-style-type: none"> 5. Demolish the existing kitchen facility, 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. Demolish old ramp sections, and connect the truck loop. 6. Demolish the existing Esplanade Ballroom support building to make way for the new Esplanade Expansion building. 	<p>Demolition: 5 excavators, 2 cranes 1,400 truck trips (28 days, 25 trucks per day)</p> <p>Structure: 3 excavators and 1 crane 2,000 truck trips</p>
<p>Phase 3: South Lobby, North Lobby and Bridges (16 months)</p> <ol style="list-style-type: none"> 7. Reconfigure the Gateway Ballroom (below the existing Moscone South lobby) into exhibition space. 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. 9. Reconfigure Hall E (below the existing Moscone North lobby) into exhibition space. 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. 	<p>Demolition: 3 excavators, 1 crane 1,920 truck trips (48 days, 20 trucks per day)</p> <p>Structure: 5 excavators, 2 cranes 2,450 truck trips</p>

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.

D. Approvals

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 (SFPDH)*, if contamination is identified.
- Approval of exterior design of structures on City property by *San Francisco Arts Commission (SFAC)*, Civic Design Review Committee.
- Approval of any necessary construction permits for work within roadways by *San Francisco Department of Public Works (DPW)*.
- Approval of any necessary construction permits for work within roadways by *San Francisco San Francisco Municipal Transit Agency (SFMTA)*.
- Review of any construction-related changes to transit service or facilities by the *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 *SFPDH* 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 *SFPDH* and Hazardous Materials Business Plan for the storage and use of hazardous materials.

- Demolition and building permits from *Department of Building Inspection (DBI)* 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*).
- Approvals by the *Office of Community Investment and Infrastructure* may be required for any improvements owned by OCII.

CHAPTER III

Plans and Policies

A. Overview

Pursuant to the California Environmental Quality Act (CEQA) Guidelines Section 15125(d), this chapter provides a general description of land use plans applicable to the Moscone Center Expansion project (“proposed project” or “project”), and identifies the proposed project’s potential to conflict with those plans or policies adopted for the purpose of avoiding or mitigating an environmental effect. Policy conflicts do not, in and of themselves, indicate a significant environmental effect within the context of CEQA environmental review, in that the intent of CEQA is to determine physical effects associated with a project. Many of the plans of the City and County of San Francisco and the other relevant jurisdictions contain policies that address multiple goals pertaining to different resource areas. To the extent that physical environmental impacts of a proposed project may result from conflicts with one of the goals related to a specific resource topic, such impacts are analyzed in this Environmental Impact Report (EIR) in that respective topical section in Chapter IV (Transportation and Circulation, Shadow) and Appendix A, Section E (other topics).

Land use plans typically contain numerous policies emphasizing differing legislative goals, and an interpretation of consistency requires a balancing of all relevant policies. The board or commission that enacted the plan or policy determines the meaning of such policies and how individual projects satisfy those policies at the time it considers the approval of the project. Whether a project is consistent with particular plans will be determined at the time of project approval by the agency charged with making that consistency determination. In the case of this project, the San Francisco Planning Commission will evaluate the proposed project in accordance with provisions of the *San Francisco General Plan*, including Priority Policies and the Downtown Area Plan, an area plan within the *General Plan* that encompasses downtown San Francisco. In each case, the approving agency will consider any potential conflicts between the project and adopted plans or policies in the context of all applicable objectives and policies and will determine consistency based on a balancing of relevant policies as part of the decision-making process.

Plans and policies addressed in this chapter include:

- **City and County of San Francisco (CCSF).** *San Francisco General Plan*, including the *Downtown Area Plan*, *Accountable Planning Initiative*, *Better Streets Plan*, *Transit First Policy*, *Climate Action Plan*, and the *San Francisco Bicycle Plan*.

- **Other Plans and Policies.** Plan Bay Area Sustainable Communities Strategy, San Francisco Regional Water Quality Control Board's (RWQCB) *San Francisco Basin Plan*, and Bay Area Air Quality Management District's (BAAQMD) *2010 Clean Air Plan*.

Permit requirements are described in Chapter II, "Project Description" (Section II.D). In some cases, these requirements include permits to be obtained from local jurisdictions for specific activities or to comply with specific ordinances. Sections IV.A through IV.B of this EIR describe pertinent resource-specific plans and policies.

B. Plans and Policies Relevant to the Project

City and County of San Francisco Plans and Policies

The proposed project is subject to the *San Francisco General Plan*, as amended, which sets forth CCSF's comprehensive, long-term planning land use policy. In addition, the San Francisco Mayor's Office of Economic and Workforce Development and Department of Public Works, as the project sponsor team, are guided by the San Francisco City Charter, along with other San Francisco plans and policies. These plans include the *San Francisco General Plan*, as well as the Accountable Planning Initiative, which established Priority Policies to guide decision-makers in balancing the objectives of the *San Francisco General Plan*; the Transit First Policy, which aims to restore balance to the transportation system long dominated by the automobile; and the Climate Action Plan, which articulates CCSF's actions toward reducing greenhouse gas emissions.

San Francisco General Plan¹

The *San Francisco General Plan* sets forth CCSF's comprehensive, long-term land use policy and, as such, is primarily applicable to projects within CCSF's jurisdictional boundaries. The *General Plan* contains 10 elements (Housing, Commerce and Industry, Recreation and Open Space, Transportation, Urban Design, Environmental Protection, Community Facilities, Community Safety, Arts, and Air Quality,) that provide goals, policies, and objectives for the physical development of San Francisco.

Land use policies relevant to the proposed project are included in the Downtown Area Plan as well as the Commerce and Industry, Urban Design, and Recreation and Open Space elements of the *General Plan*, as described below.

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 commercial and support activity in and near downtown, and it specifically mentions the

¹ City and County of San Francisco, *General Plan*, 1988, as amended through 2009, available online at: http://www.sf-planning.org/ftp/General_Plan/index.htm.

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) by providing 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 as part of the Central SoMa Plan, discussed below under 'Approach to Cumulative Analysis.' The proposed project would not be inconsistent with the Downtown Area Plan, with respect to either 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 private funds 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 visitor spending is an important benefit 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 workers, 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 should 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 significant public or semi-public use or a public assembly use, 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 land and facilities belonging to City departments 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 that would provide passive outdoor recreational areas for convention attendees and improvements to the Children's Garden, as described in Chapter II, Project Description. The proposed project would not be inconsistent with the Recreation and Open Space Element.

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 Appendix A, Section E.1, Land Use and Land Use Planning, Question 1c);
- Preservation and enhancement of affordable housing (see Appendix A, Section E.2, Population and Housing, Question 2b, with regard to housing supply and displacement issues);
- Discouragement of commuter automobiles (see Appendix A, Section E.7, Greenhouse Gas Emissions and Section IV.A of the EIR);

- Protection of industrial and service land uses from commercial office development and enhancement of resident employment and business ownership (see Appendix A, Section E.1, Land Use and Land Use Planning, Question 1c);
- Maximization of earthquake preparedness (see Appendix A, Section E.13, Geology and Soils, Questions 13a through 13d);
- Landmark and historic building preservation (see Appendix A, Section E.3, Cultural and Paleontological Resources, Question 3a); and
- Protection of open space (see Appendix A, Section E.8, Wind and Shadow, Questions 8a and 8b and Section IV.B of the EIR; and Appendix A, Section E.9, Recreation, Questions 9a and 9c).

Prior to issuing a permit for any project that requires an Initial Study under 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 Chapter IV and Appendix A (specific subsections are noted in parentheses in the priority policies listed above). The proposed project would not be inconsistent with the Accountable Planning Initiative.

Better Streets Plan

The *San Francisco Better Streets Plan* (*Better Streets Plan*) was adopted in 2010 to support the City's efforts to enhance the streetscape and the pedestrian environment. It classifies the City's public streets and rights-of-way and creates a unified set of standards, guidelines, and implementation strategies, which govern how the City designs, builds, and maintains its public streets and rights-of-way. It comprises the Streetscape Master Plan and the Pedestrian Transportation Master Plan. Major project concepts applicable to the Moscone Center Expansion project include (1) pedestrian safety and accessibility features, such as enhanced pedestrian crossings, corner or midblock curb extensions, pedestrian countdown and priority signals, and other traffic calming features; (2) universal pedestrian-oriented streetscape design with incorporation of street trees, sidewalk plantings, streetscape furnishing, street lighting, efficient utility location for unobstructed sidewalks, shared single surface for small streets/alleys, and sidewalk/median pocket parks; (3) and integrated pedestrian/transit functions using bus bulb-outs and boarding islands (bus stops located in medians within the street). Please see Section IV.A, Transportation and Circulation, for an analysis of the proposed project's impacts on pedestrian circulation.

Transit First Policy

The City of San Francisco's Transit First policy, adopted by the Board of Supervisors in 1973, was developed in response to the damaging impacts over previous decades of freeways on the City's urban character. The policy is aimed at improving overall mobility for residents and visitors whose reliance chiefly on the automobile would result in severe transportation deficiencies. It encourages multi-modalism - the use of transit and other alternatives to the single-occupant

vehicle as modes of transportation - and gives priority to the maintenance and expansion of the local transit system and the improvement of regional transit coordination.

The following ten principles constitute the City's Transit First policy:

1. To ensure quality of life and economic health in San Francisco, the primary objective of the transportation system must be the safe and efficient movement of people and goods.
2. Public transit, including taxis and vanpools, is an economically and environmentally sound alternative to transportation by individual automobiles. Within San Francisco, travel by public transit, by bicycle and on foot must be an attractive alternative to travel by private automobile.
3. Decisions regarding the use of limited public street and sidewalk space shall encourage the use of public rights-of-way by pedestrians, bicyclists, and public transit, and shall strive to reduce and improve public health and safety.
4. Transit policy improvements, such as designated transit lanes and streets and improved signalization, shall be made to expedite the movement of public transit vehicles (including taxis and vanpools) and to improve public safety.
5. Pedestrian areas shall be enhanced wherever possible to improve the safety and comfort of pedestrians and to encourage travel by foot.
6. Bicycling shall be promoted by encouraging safe streets for riding, convenient access to transit, bicycle lanes, and secure bicycle parking.
7. Parking policies for areas well served by public transit shall be designed to encourage travel by public transit and alternative transportation.
8. New transportation investment should be allocated to meet the demand for public transit generated by new public and private commercial and residential developments.
9. The ability of the City and County of San Francisco to reduce traffic congestion depends on the adequacy of regional public transportation. The City and County shall promote the use of regional mass transit and the continued development of an integrated, reliable, regional public transportation system.
10. The City and County shall encourage innovative solutions to meet public transportation needs wherever possible and where the provision of such service will not adversely affect the service provided by the Municipal Railway. (Added November 1999.)

The proposed project is located within walking distance to multiple transit options and would thus encourage use of transit and alternative transportation modes, and some events provide shuttle service. These factors minimize single-person auto travel to the project site, and would be expected to do so in the future, which would be consistent with the intent of the Transit First Policy.

Section IV.A, Transportation and Circulation, analyzes potential transportation impacts of the proposed project, including possible impacts on alternative transportation modes. The development of the proposed project in proximity to transit hubs and local and regional transit lines would be generally consistent with the Transit First Policy.

Climate Action Plan

In February 2002, the San Francisco Board of Supervisors passed the *Greenhouse Gas Emissions Reduction Resolution* (Number 158-02) committing the City and County of San Francisco to a greenhouse gas (GHG) emissions reductions goal of 20 percent below 1990 levels by the year 2012. The resolution also directs the San Francisco Department of the Environment, the SFPUC, and other appropriate City agencies to complete and coordinate an analysis and planning of a local action plan targeting GHG emission reduction activities. In September 2004, the Department of the Environment and the SFPUC published the *Climate Action Plan for San Francisco: Local Actions to Reduce Greenhouse Gas Emissions*. The *Climate Action Plan* examines the causes of global climate change and human activities that contribute to global warming and provides projections of climate change impacts on California and San Francisco from recent scientific reports; presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets; describes recommended emissions reduction actions in the key target sectors – transportation, energy efficiency, renewable energy, and solid waste management – to meet stated goals by 2012; and presents next steps required over the near term to implement the plan. Although the Board of Supervisors has not formally committed the City to perform the actions addressed in the Plan, and many of the actions require further development and commitment of resources, the Plan serves as a blueprint for GHG emission reductions, and several actions are now in progress.

The *Climate Action Plan* cites an array of potential environmental impacts to San Francisco from climate change, including rising sea levels that could threaten coastal wetlands, infrastructure, and property; increased storm activity that could increase beach erosion and cliff undercutting; warmer temperatures that could result in more frequent El Niño storms causing more rain than snow in the Sierras, reducing snow pack that is an important source of the region's water supply; decreased summer runoff and warming ocean temperatures that could affect salinity, water circulation, and nutrients in the Bay, potentially altering Bay ecosystems; other possible effects to food supply and the viability of the state's agricultural system; possible public health effects related to degraded air quality and changes in disease vectors; and other social and economic impacts.

The plan presents estimates of San Francisco's baseline GHG emissions inventory and reduction targets. It indicates that burning fossil fuels in vehicles and for energy use in buildings and facilities are the major contributors to San Francisco's GHG emissions, and the Plan includes GHG reduction strategies such as targeting emission reductions from fossil fuel use in cars, power plants and commercial buildings, developing renewable energy technologies like solar, wind, fuel cells and tidal power, and expanding residential and commercial recycling programs. According to the Plan, achieving these goals will require the cooperation of a number of different

city agencies. An analysis of potential effects on global warming and GHGs is presented in Appendix A, Section E.7, Greenhouse Gas Emissions.

Other Plans and Policies

The recently adopted Plan Bay Area, which includes the region's Sustainable Communities Strategy, is a collaboration of the following four principal regional planning agencies and their policy documents that guide planning in the nine-county Bay Area:

- Association of Bay Area Governments (ABAG), *Projections*, which includes long-term forecasts of population, housing, and employment for the nine-county Bay Area, but does not include policies or goals; thus the proposed project would not be inconsistent with ABAG projections. See also the discussion on Population and Housing in the Initial Study included in Appendix A.
- BAAQMD 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 in Appendix A, 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.
- Metropolitan Transportation Commission (MTC), *Regional Transportation Plan – Transportation 2040*, which provides a long-range road map to guide the Bay Area's MTC transportation investments for a 25-year period. The project is not in the vicinity of any of the planned investments and therefore would not conflict with the Regional Transportation Plan.
- San Francisco Bay Conservation and Development Commission (BCDC) *San Francisco Bay Plan*, which provides 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.

In addition, the RWQCB *San Francisco Basin Plan* guides planning of the San Francisco Bay 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 the Initial Study (included in Appendix A), 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.

Summary

The renovation and expansion of the Moscone Center does not appear to conflict with any adopted plans and goals for the purposes of mitigating an environmental effect under CEQA.

CHAPTER IV

Environmental Setting, Impacts and Mitigation Measures

Overview

This chapter provides a project-level impact analysis of the physical environmental effects of implementing the Moscone Center Expansion project as described in Chapter II, “Project Description.” This chapter describes the environmental setting, assesses impacts, and identifies mitigation measures for significant impacts. Significant effects that were determined to be reduced to less than significant with mitigation are identified in the Initial Study (Appendix A).

Scope and Format of Analysis

This chapter is organized by environmental resource topic, as follows:

Chapter IV Sections

- A. Transportation and Circulation
- B. Shadow

Sections B and C of Chapter IV contain the following elements, based on the requirements of California Environmental Quality Act (CEQA):

- **Setting.** This subsection presents a description of the existing physical environmental conditions in the project area with respect to each resource topic at an appropriate level of detail to allow the reader to understand the impact analysis.
- **Regulatory Framework.** This subsection describes the relevant laws and regulations that apply to protecting the environmental resources within the project area and the governmental agencies responsible for enforcing those laws and regulations.
- **Impacts.** This subsection evaluates the potential for the proposed project to result in adverse effects on the physical environment described in the setting. Significance criteria for evaluating the environmental impacts are defined at the beginning of each impact analysis section, and the “Approach to Analysis” explains how the significance criteria are applied in evaluating the impacts of the project. The conclusion of each impact analysis is expressed in terms of the impact significance, which is discussed further under “Significance Determinations,” below.

- **Mitigation Measures.** In each resource section, mitigation measures are identified for all of the impacts considered significant or potentially significant, consistent with CEQA Guidelines Section 15126.4, which states that an environmental impact report (EIR) “shall describe feasible measures which could minimize significant adverse impacts....” The San Francisco Mayor’s Office of Economic and Workforce Development and Department of Public Works, as the project sponsor team, has indicated that, if the project is approved, it would incorporate all mitigation measures identified in this EIR as part of the project.
- **Improvement Measures.** Pursuant to CEQA Guidelines Section 15126.4, mitigation measures are not required for environmental effects that are not found to be significant. Furthermore, CEQA requires that mitigation measures have an essential nexus and be roughly proportional to the significant effect identified in the EIR. Therefore, for resource topics in which this EIR found the proposed project’s physical environmental impact to be less than significant, but for which the San Francisco Planning Department has identified measures that would further lessen the already less than significant effects of the project, these measures have been identified as Improvement Measures.
- **Cumulative Impacts.** In each resource section, where applicable, cumulative impacts are discussed immediately following the description of the direct project-specific impacts and identified mitigation measures. Cumulative impacts, described in detail below, consider the effects of the proposed project together with those of other past, present, or reasonably foreseeable future projects proposed by San Francisco Mayor’s Office of Economic and Workforce Development or other parties. The analysis of cumulative impacts under each resource topic is based on the same setting, regulatory framework, and significance criteria as the direct project-specific impacts. Additional mitigation measures are identified if the analysis determines that the project’s contribution to a significant cumulative, adverse impact would be considerable.

Significance Determinations

The significance criteria used in this EIR are based on the San Francisco Planning Department’s Environmental Planning Division (EP) guidance regarding the thresholds of significance used to assess the severity of environmental impacts of the project. EP guidance is based on Appendix G of the CEQA Guidelines, with modifications as set forth in Chapter 31.10 of the San Francisco Administrative Code. The significance criteria used to analyze each environmental resource topic are presented in each resource section of Chapter IV before the discussion of impacts. The categories used to designate impact significance are described as follows:

- **Not Applicable.** An impact is considered not applicable (no impact) if there is no potential for impacts or the environmental resource does not occur within the project area or the area of potential effects. For example, there would be no impacts related to displacement of housing if there is no existing housing at the project site.
- **No Impact.** No adverse changes (or impacts) to the environment are expected.
- **Less-Than-Significant Impact.** This determination applies if there is potential for some limited impact, but not a substantial, adverse effect that qualifies under the significance criteria as a significant impact. No mitigation is required for impacts determined to be less-than-significant.

- **Less-Than-Significant-Impact with Mitigation.** This determination applies if there is certainty that the project would result in an adverse effect that meets the significance criteria, but feasible mitigation is available that would reduce the impact to a less-than-significant level.
- **Significant and Unavoidable Impact with Mitigation.** This determination applies if there is certainty that the project would result in an adverse effect that meets the significance criteria, and although feasible mitigation might lessen the impact, the residual effect after implementation of the measure(s) would remain significant, and therefore the impact would be unavoidable.
- **Significant and Unavoidable Impact.** This determination applies if there is certainty that the project would result in an adverse effect that meets the significance criteria, and there appears to be no feasible mitigation available to reduce the impact to a less-than-significant level. Therefore, the significant impact would be unavoidable.

Cumulative Impacts

Cumulative impacts, as defined in Section 15355 of the CEQA Guidelines, refer to two or more individual effects that, when taken together, are “considerable” or that compound or increase other environmental impacts. A cumulative impact from several projects is the change in the environment that would result from the incremental impact of the project when added to those of other closely related past, present, or reasonably foreseeable future projects. Pertinent guidance for cumulative impact analysis is provided in Section 15130 of the CEQA Guidelines:

- An EIR shall discuss cumulative impacts of a project when the project’s incremental effect is “cumulatively considerable” (e.g., the incremental effects of an individual project are considerable when viewed in connection with the effects of past, current, and probable future projects, including those outside the control of the agency, if necessary).
- An EIR should not discuss impacts that do not result in part from the project evaluated in the EIR.
- A project’s contribution is less than cumulatively considerable, and thus not significant, if the project is required to implement or fund its fair share of a mitigation measure or measures designed to alleviate the cumulative impact.
- The discussion of impact severity and likelihood of occurrence need not be as detailed as for effects attributable to the project alone.
- The focus of analysis should be on the cumulative impact to which the identified other projects contribute, rather than on attributes of the other projects that do not contribute to the cumulative impact.

The cumulative impact analysis for each individual resource topic is described in each resource section of this chapter immediately following the description of the direct project impacts and identified mitigation measures.

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 following factors were used to determine an appropriate level for cumulative analysis in this EIR:

- **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.

The analyses in this EIR 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 Shadow analysis considers large individual projects that are anticipated in the project site vicinity that may alter shadow conditions in public spaces. By comparison, the Transportation and Circulation analysis relies 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 individual projects and applies a quantitative growth factor to account for other growth that may occur in the area. See Sections IV.A and IV.B for a discussion of cumulative impacts and identification of the cumulative projects and plans considered in the cumulative impact analysis.

Senate Bill 743/Public Resources Code 21099

On September 27, 2013, Governor Brown signed Senate Bill (SB) 743, which became effective on January 1, 2014.¹ Among other provisions, SB 743 amends CEQA by adding Public Resources Code Section 21099 regarding analysis of aesthetics and parking impacts for urban infill projects.²

¹ SB 743 can be found on-line at: http://leginfo.legislature.ca.gov/faces/billNavClient.xhtml?bill_id=201320140SB743.

² San Francisco Planning Department, Memorandum from Viktoriya Wise to San Francisco Planning Commission, *CEQA Update: Senate Bill 743 Summary – Aesthetics, Parking and Traffic*, November 26, 2013. The memorandum can be found on-line at: [http://sfmea.sfplanning.org/CEQA Update-SB 743 Summary.pdf](http://sfmea.sfplanning.org/CEQA%20Update-SB%20743%20Summary.pdf).

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.”³ 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:⁴

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

The proposed project meets each of the above three criteria: it is in a transit priority area because of its location within one-half mile of a major transit stop; it is an infill site because it is located on a previously developed site in an urban area; and it is an employment center because it would be an expansion of existing commercial support uses, located in a transit priority area on a site already developed and zoned for commercial uses.⁵ Thus, this EIR does 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. Therefore, there is 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 EIR (such as “before” and “after” visual simulations) has been included in Chapter II, 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.

³ A “transit priority area” is defined in Section 21099 of the California Public Resources Code 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.

⁴ See Public Resources Code Section 21099(d).

⁵ 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.

Similarly, the Planning Department acknowledges that parking conditions may be of interest to the public and the decision makers. Therefore, this EIR presents a parking demand analysis for informational purposes and considers 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.

IV.A Transportation and Circulation

This section analyzes the potential project-level and cumulative impacts on transportation and circulation resulting from implementation of the Moscone Center Expansion Project. Transportation-related issues of concern that are addressed include traffic on local and regional roadways, transit, bicycles, pedestrians, parking, loading, and construction-related activities. This section provides an overview of existing transportation conditions, a description of applicable transportation regulations and policies, methodologies and assumptions used in the impact analysis, and impact assessment and mitigation measures. This section is based on information and analysis contained in the Moscone Center Expansion Project Transportation Impact Study (TIS).¹

Environmental Setting

The transportation study area for the proposed project is bounded by Market Street to the north, Fifth Street to the west, Bryant Street to the south, and New Montgomery/Hawthorne Street to the east. A total of 24 intersections within the transportation study area (see **Figure IV.A-1**, p. IV.A-2) were identified as the intersections most likely to be affected by the proposed project. All of the study intersections are signalized. No freeway segments were analyzed because the proposed project would not measurably affect the operation of the freeway system.

The transportation setting within the study area is presented first, and is followed by a description of transportation operations at the Moscone Center.

Regional and Local Roadways

Regional Access

Interstate 80 (I-80) provides the primary regional access to the proposed project site. Interstate 80 runs through the southern portion of the study area and connects San Francisco to the East Bay and other points east via the San Francisco-Oakland Bay Bridge. There are two sets of on-ramps and off-ramps in the study area (at Fifth Street and at Fourth Street) that provide access to and from eastbound and westbound I-80. Within the study area, I-80 has eight lanes (four in each direction).

U.S. Highway 101 (U.S. 101) provides access to the north and south of the study area. Interstate 80 joins U.S. 101 to the southwest of the study area and provides access to the Peninsula and South Bay. U.S. 101 connects San Francisco and the North Bay via the Golden Gate Bridge. There is no direct access to U.S. 101 within the study area. Within the northern part of San Francisco, U.S. 101 operates on surface streets (i.e., Van Ness Avenue and Lombard Street). Van Ness Avenue and Lombard Street are part of the Citywide Pedestrian Network outlined in the Transportation Element of the *San Francisco General Plan*.

¹ Advant Consulting, Fehr & Peers and LCW Consulting, *Moscone Center Expansion Project Transportation Impact Study*, April 2014. A copy of this document is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File No. 2013.0154E.

Note: Only intersections within Moscone Center study area analyzed for Moscone Center Expansion Project.

Interstate 280 (I-280) provides regional access from the South Bay and Peninsula. Interstate 280 and U.S. 101 have an interchange to the south of the study area, and I-280 terminates just south of the study area at the intersection of King/Fifth. There is no direct access to I-280 within the study area. Nearby access points to I-280 are located on Sixth Street at Brannan Street, and on King Street at Fifth Street. Interstate 280 is generally a six-lane freeway.

Local Street System

Local access to the proposed project study area is provided by an urban street grid network. Key local roadways through the study area are discussed in detail below and defined according to roadway classifications identified in the *San Francisco General Plan* Transportation Element.

New Montgomery Street runs southbound for two blocks between Market and Howard streets. It has three travel lanes during the p.m. peak period (p.m. peak period tow-away on the west side of the street) and two travel lanes throughout the rest of the day. New Montgomery Street sidewalk widths generally meet the San Francisco Planning Department's *Better Streets Plan* (2010) recommended width.²

Hawthorne Street runs southbound for two blocks between Howard and Harrison streets. It has one travel lane between Howard and Folsom streets and two travel lanes between Folsom and Harrison streets. Hawthorne Street sidewalk widths are less than the minimum required by the *Better Streets Plan*.

Third Street is the principal north-south arterial in the southeast part of San Francisco, extending from its interchange with U.S. 101 and Bayshore Boulevard to its intersection with Market Street. It is the main commercial street in the Bayview Hunters Point district and also serves as a through street and an access way to the industrial areas north and east of U.S. 101. Third Street generally has two travel lanes in each direction, but in the study area it operates northbound only. In the *San Francisco General Plan*, Third Street is designated as a Major Arterial in the Congestion Management Program (CMP) network, a Metropolitan Transportation System Street, a Primary Transit Preferential Street (Transit Important Street between Market Street and Townsend Street, and between Mission Rock Street and Bayshore Boulevard), a Citywide Pedestrian Network Street and Trail (between 24th Street and Yosemite Avenue), and a Neighborhood Commercial Pedestrian Street. South of China Basin, the T Third light rail operates in a semi-exclusive center median right-of-way, with the exception of the segment between Kirkwood Avenue and Thomas Avenue, where the light rail runs within a mixed-flow travel lane.

North of China Basin, Muni routes 8X/8AX/8BX Bayshore Expresses, 30 Stockton, 45 Union-Stockton, 76 Marin Headlands, and 81X Caltrain Express run on portions of Third Street in a bus-and taxi-only travel lane. Third Street between China Basin and Townsend Street is also part of

² For all streets in the proposed project vicinity, the *Better Streets Plan* minimum sidewalk width is 12 feet, and the recommended sidewalk width is 15 feet.

Bicycle Route 536 (Class III).³ South of Howard Street, Third Street sidewalk widths are less than the minimum required by the *Better Streets Plan*; north of Howard Street, sidewalks widths meet the *Better Streets Plan* minimum but are less than the recommended width.

Fourth Street is a principal north-south arterial between Market Street and Channel Street. Fourth Street runs southbound and has four travel lanes. In the *San Francisco General Plan*, it is classified as a CMP network Major Arterial and a part of the Metropolitan Transportation System. Fourth Street is designated as a Primary Transit Important Preferential Street; is a part of the Citywide Pedestrian Network from Market Street to Folsom Street; is part of the Bay Trail between King and Mission streets; and is designated as a Neighborhood Commercial Pedestrian Street. Muni routes 8X/8AX/BX Bayshore Express, 30 Stockton, and 45 Union-Stockton, and the 76 Marin Headlands run on Fourth Street in a bus- and taxi-only travel lane. Fourth Street has bicycle lanes (Class II) in both directions between Channel and 16th streets. South of Folsom Street, Fourth Street sidewalk widths are less than the minimum required by the *Better Streets Plan*; north of Folsom Street, sidewalk widths generally meet the *Better Streets Plan* recommended width, with the exception of the east sidewalk between Folsom and Howard streets adjacent to Moscone South whose width is less than the minimum required by the *Better Streets Plan*.

Fifth Street is a north-south roadway between Market Street and Townsend Street. It is a two-way roadway with two travel lanes in each direction. In the *San Francisco General Plan*, it is classified as a CMP network Major Arterial and a part of the Metropolitan Transportation System. Muni route 27 Bryant runs on Fifth Street between Market and Bryant streets and 47 Van Ness runs on Fifth Street between Harrison and Townsend streets. Fifth Street is part of Bicycle Route 19 (Class III) between Townsend Street and Market Street. Fifth Street sidewalk widths within the study area generally are less than the minimum required by the *Better Streets Plan*.

Market Street bisects downtown San Francisco, running east-west from The Embarcadero to Grand View Avenue. Market Street is a two-way, four-lane roadway with center-running transit only lanes between Gough and Fifth streets. Market Street is classified in the *San Francisco General Plan* as a Transit Conflict Street between The Embarcadero and Gough Street. Between The Embarcadero and 17th Street it is classified as a Primary Transit Preferential Street (Transit Oriented Street), a Citywide Pedestrian Network Street, and a Neighborhood Commercial Pedestrian Street. It is part of the CMP network. Bicycle Route 5 runs on Market Street between Steuart and Eighth streets as a Class III facility, and has a bicycle lane (Class II) between Eighth and 17th streets. The majority of Muni routes operate along some portion of Market Street. The Embarcadero, Montgomery, Powell and Civic Center Bay Area Rapid Transit (BART) stations are accessible along Market Street in the study area. Market Street sidewalk widths within the study area meet the *Better Streets Plan* recommended width.

Mission Street is a four-lane arterial that runs in an east-west direction between The Embarcadero and South Van Ness Avenue. The roadway continues in a north-south direction

³ Class I bikeways are bicycle paths with exclusive right-of-way for use by bicyclists. Class II bikeways are bicycle lanes striped within the paved areas of roadways and established for the preferential use of bicycles, while Class III bikeways are signed bicycle routes that allow bicycles to share the travel lane with vehicles.

west of Van Ness Avenue. Left turns from Mission Street are generally prohibited between Main and Tenth streets. The *San Francisco General Plan* identifies Mission Street as a Transit Conflict Street in the CMP network, a Primary Transit Preferential Street (Transit Oriented Street), a Citywide Pedestrian Network Street (between The Embarcadero and Cesar Chavez Street), and a Neighborhood Commercial Pedestrian Street. Muni routes 14 Mission and 14L Mission Limited and regional operators San Mateo County Transit District (SamTrans) and Golden Gate Transit run along Mission Street in the study area. Mission Street curb lanes are restricted to bus and taxi use only. Mission Street sidewalk widths within the study area generally meet the *Better Streets Plan* recommended width; sidewalk widths on the south side of Mission Street between Third and Fifth streets are less than the minimum required by the *Better Streets Plan*.

Howard Street runs in the east-west direction between The Embarcadero and 13th/Division streets. From The Embarcadero to Fremont Street, Howard Street has two travel lanes in each direction; from Fremont Street to 13th/Division streets it has three westbound lanes. In the *San Francisco General Plan*, it is a Major Arterial in the CMP network and part of the Metropolitan Transportation System (MTS) network. Muni route 76 Marin Headlands runs on Howard Street between First and Eighth streets, and Golden Gate Transit runs on Howard Street between First and Fourth streets. Howard Street is part of Bicycle Route 30, with Class II bicycle lanes between Fremont and 11th streets and a Class III bicycle route between The Embarcadero and Fourth Street and on the south side of the street between Fourth and Fifth streets. Howard Street sidewalk widths within the study area generally meet the *Better Streets Plan* minimum; sidewalk widths meet the *Better Streets Plan* recommended width between Third and Fifth streets where the sidewalks are adjacent to the Moscone Center.

Folsom Street is an east-west roadway that runs between The Embarcadero and 11th Street in the study area. It operates one-way eastbound with four travel lanes for much of its length; east of Essex Street it has one westbound lane. In the *San Francisco General Plan*, Folsom Street is classified as a CMP network Major Arterial and is part of the MTS network in the study area. Muni route 12 Folsom runs on Folsom Street between Second and 11th streets, and Golden Gate Transit operates service on Folsom Street between Eighth Street and the Temporary Transbay Terminal at Beale Street. Through the study area Folsom Street is part of Bicycle Route 30 (Class II) with bicycle lanes in the eastbound direction. Folsom Street sidewalk widths within the study area generally are less than the minimum required by the *Better Streets Plan*; sidewalk width on the north side of Folsom Street between Third and Fourth streets adjacent to Moscone South meets the *Better Streets Plan* minimum but is less than the recommended width.

Harrison Street runs in the east-west direction between The Embarcadero and 13th/Division streets, operating one-way westbound between Third and Tenth streets. Harrison Street runs in the north-south direction between 13th/Division and Norwich streets. In the downtown area, Harrison Street is a primary route to the I-80 freeway, with on-ramps at the First Street and Essex Street intersections, and to U.S. 101 southbound, with an on-ramp at Fourth Street. In the *San Francisco General Plan*, it is a designated Major Arterial in the CMP network (between The Embarcadero and Division Street), a Primary Transit Preferential Street (Transit Important Street between Fourth Street and Seventh Street), a Secondary Transit Preferential Street (between Seventh and 11th streets), and a Neighborhood Commercial Pedestrian Street (between Fourth and 16th streets).

Muni routes 8X/8AX/BX Bayshore Expresses, 12 Folsom, 27 Bryant, and 47 Van Ness operate along portions of Harrison Street between 11th and Second streets. Harrison Street sidewalk widths within the study area are less than the minimum required by the *Better Streets Plan*.

Bryant Street extends from The Embarcadero in the South of Market area to Precita Avenue in Peralta Heights. Between The Embarcadero and Second Street, Bryant Street operates two-way in the east-west direction with two to three lanes. Bryant Street is designated as a Primary Transit Preferential Street (Transit Important Street between Fourth and Seventh streets) and a Second Transit Preferential Street (between Seventh and Eleventh streets). It is used by the 8X/ 8AX/BX Bayshore Expresses (between Seventh and Third streets), 27 Bryant (between Division and Fifth streets), and 47 Van Ness (between Division and Fifth streets). Bryant Street sidewalk widths within the study area are less than the minimum required by the *Better Streets Plan*.

Intersection Operations

Existing intersection operating conditions were evaluated at 24 study intersections for the weekday p.m. peak hour (generally between 5 and 6 p.m.) of the 4 to 6 p.m. peak period. The p.m. peak hour was selected for analysis because the transportation network (including traffic operating conditions) in downtown San Francisco is generally less congested during the a.m. peak hour than during the p.m. peak hour. Traffic counts at the study intersections were obtained from previous transportation studies within the study area and from new intersection turning movement counts. Intersection counts for existing conditions were conducted on non-event and event days between December 2009 and April 2013. The events during which vehicle counts were conducted hosted on average 6,400 total daily attendees.⁴ As discussed below in the section entitled “Approach to Analysis,” the impact analysis for the proposed project assesses the increase in exhibition space for conditions during an 85th percentile event day, which as discussed below has been determined to be an event day with 22,000 attendees. The 85th percentile event day of 22,000 attendees per day means that there is a 15 percent change during the span of one year, that there would be an event with more than 22,000 attendees per day. Because traffic volume were counted during an event day with 6,400 attendees per day (i.e., on an event day not representing the 85th percentile design day), the existing traffic volumes at the study intersections were adjusted to reflect conditions during a large event with 22,000 attendees per day (i.e., an increase from a 6,400-attendee event day to a 22,000-attendee event day).⁵

Traffic conditions at the study intersections were evaluated using the Level of Service (LOS) methodology described in the *Highway Capacity Manual 2000* (HCM 2000). LOS is a qualitative description of an intersection’s performance based on the average delay per vehicle. Intersection levels of service range from LOS A, which indicates free flow or excellent vehicle flow conditions with short delays, to LOS F, which indicates congested or overloaded vehicle flow conditions with

⁴ Attendance ranges between about 500 and 10,000 attendees per day for small events, between 10,000 and 20,000 attendees per day for medium events, and with more than 20,000 attendees per day for large events. (*Moscone Center Expansion Project – Estimation of Travel Demand*, Advant Consulting, January 9, 2014).

⁵ The transportation impact analysis is based on the 85th percentile of the total daily attendance, which represents the attendance level that has a probability of 15 percent or less, of being exceeded during the year. The existing 85th percentile of total daily attendance is 22,000, considered a large event.

extremely long delays. In San Francisco, LOS A through D are considered acceptable, and LOS E and LOS F are considered unsatisfactory service levels. On days with an 85th percentile event (i.e., a large event with 22,000 attendees per day), 12 of the 24 study intersections operate satisfactorily during the p.m. peak hour; eight intersections operate at LOS E (i.e., the intersections of Market/New Montgomery, Market/Fourth, Market/Fifth, Mission/New Montgomery, Mission/Third, Howard/Fourth, Folsom/Hawthorne, and Harrison/Fifth) and four operate at LOS F (i.e., intersections of Howard/Third, Folsom/Third, Folsom/Fourth, and Bryant/Fifth). See the section below entitled “Approach to Analysis” and Table IV.A-15 for more information regarding intersection average vehicle delays and LOS at each study intersection for the weekday p.m. peak hour.

Transit Service

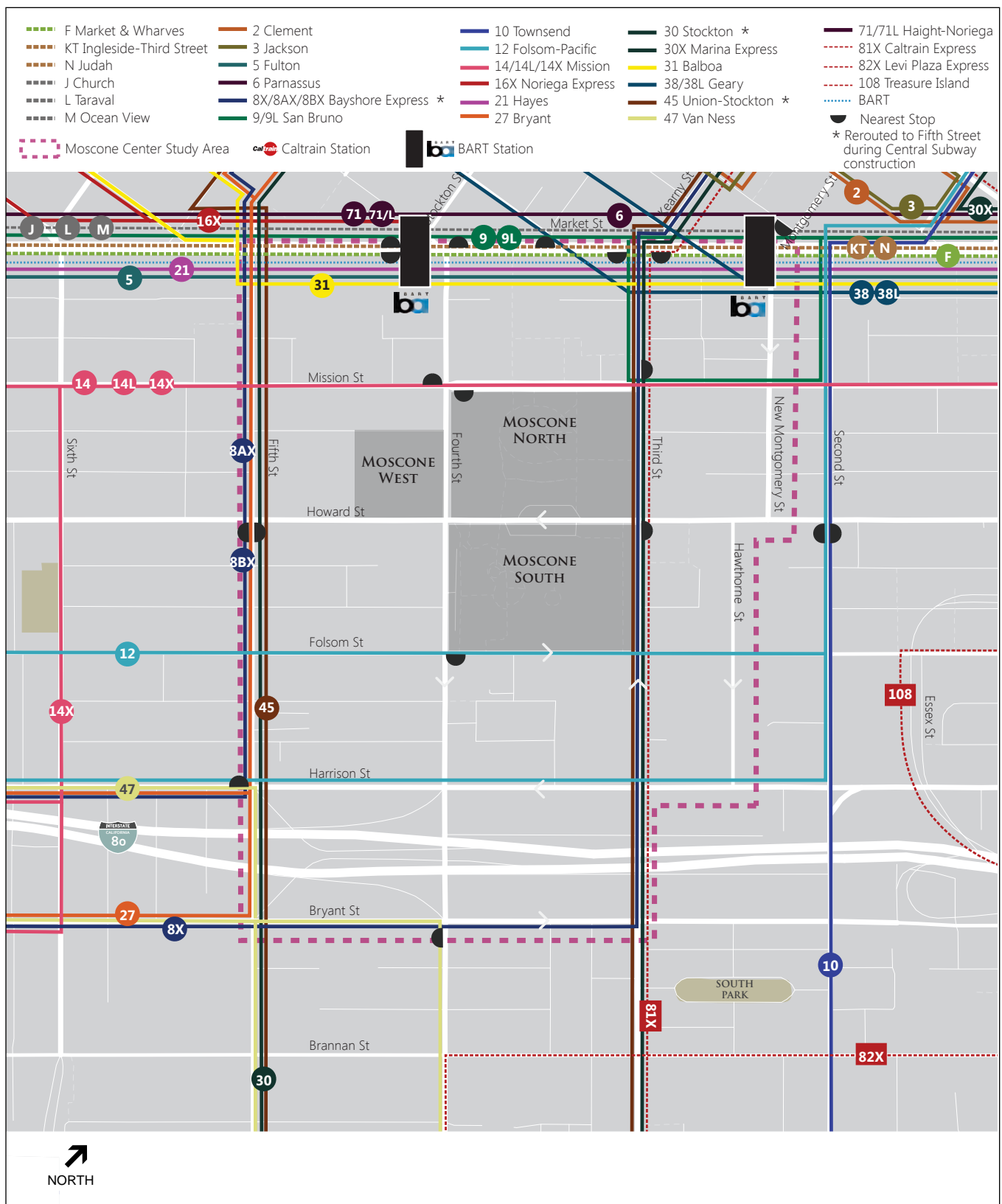
The study area is well served by public transit, both local and regional. Local service is provided by the San Francisco Municipal Railway (Muni) bus and light rail lines, which can be used to access regional transit operators. Service to and from the East Bay is provided by Bay Area Rapid Transit, Alameda-Contra Costa County Transit District (AC Transit) and ferries; service to and from the North Bay is provided by Golden Gate Transit buses and ferries; service to and from the Peninsula and South Bay is provided by SamTrans, BART, and Caltrain.

Local Muni Service

Muni provides transit service within the City and County of San Francisco, including bus (both diesel and electric trolley), light rail (Muni Metro), cable car and electric streetcar lines. **Figure IV.A-2** presents the local transit routes in the vicinity of the project site. **Table IV.A-1** presents the Muni routes serving the transit study area and route characteristics, including service frequencies during the weekday morning and evening peak periods, nearest stop location, as well as ridership and capacity utilization at each line’s maximum load point (MLP). The MLP is the location where the route has its highest number of passengers relative to its capacity. Capacity utilization relates the number of passengers per transit vehicle to the design capacity of the vehicle. The capacity per vehicle includes both seated and standing capacity, where standing capacity is between 30 to 80 percent of seated capacity (depending upon the specific transit vehicle configuration). The capacity of a light rail vehicle is 119 passengers, the capacity of a historic streetcar is 70 passengers, and the capacity of a standard bus is 63 passengers.

In January 2012, San Francisco Municipal Transportation Agency (SFMTA) temporarily rerouted southbound 30 Stockton, 45 Union-Stockton, and 8X/8AX/8BX Bayshore Express from Fourth Street to Fifth Street to accommodate the Central Subway construction (northbound route has not been revised). In addition, a temporary supplemental 8 Shuttle service has been initiated, which in the study area runs south on Fourth Street to Folsom Street. This route is not included in the subsequent transit analysis because it is temporary.

For analysis purposes, most Muni service into and out of downtown is grouped into one of four “screenlines” (Northeast, Northwest, Southeast, and Southwest) that transit vehicles cross when traveling between downtown and a quadrant of the City. Each screenline is further divided into key corridors such as the Geary Corridor within the Northwest screenline and the Mission corridor



SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E

Figure IV.A-2
Existing Transit Network

**TABLE IV.A-1
NEARBY MUNI SERVICE – EXISTING CONDITIONS**

Route	A.M. Peak Weekday Headways (7-9 a.m.)¹	P.M. Peak Weekday Headways (4-6 p.m.)¹	Nearest Stop Location (Inbound, Outbound)	Distance to Project Site (feet)	P.M. Peak Ridership at MLP	Capacity Utilization at MLP
F Market & Wharves	6	6	Market & Third, Market & Fourth	1800-1900	249 (IB) 718 (OB)	36% (IB) 103% (OB)
KT Ingleside-Third	9	9	Market & Fourth	2000	508 750	71% 90%
N Judah	7	7	Market & Fourth	2000	880 1,773	46% 83%
J Church	9	9	Market & Fourth	2000	189 498	20% 60%
L Taraval	8	8	Market & Fourth	2000	609 1,360	29% 71%
M Ocean View	9	9	Market & Fourth	2000	488 864	29% 61%
2 Clement	12	12	Post & Montgomery, Sutter & Kearny	2600-2700	170 260	54% 83%
3 Jackson	12	12	Kearny & Sutter	2600-2800	125 210	40% 67%
5 Fulton	5	5	Market & Third, Market & Grant	1900-2200	600 659	71% 83%
6 Parnassus	10	10	Market & Third, Market & Stockton	1800-1900	156 252	41% 67%
8X Bayshore Express	8	8	Third & Howard, Fifth & Howard	600-1500	408 416	54% 55%
8AX Bayshore Express	8	8	Third & Howard, Fifth & Howard	600-1500	-- 472	-- 63%
8BX Bayshore Express	8	8	Third & Howard, Fifth & Howard	600-1500	-- 568	-- 76%
9 San Bruno	12	12	Market & Third, Market & Stockton	1800-1900	180 215	57% 68%
9L San Bruno Limited	12	12	Market & Third, Market & Stockton	1800-1900	140 200	44% 63%
10 Townsend	15	20	Second & Howard	1400	186 171	98% 90%
12 Folsom-Pacific	20	20	Folsom & Fourth, Second & Howard	1100-1400	135 126	71% 67%
14 Mission	8	8	Mission & Fourth	1100-1250	232 360	31% 48%
14L Mission Limited	9	9	Mission & Fourth	1100-1250	293 427	47% 68%
14X Mission Express	8	10	Mission & Fourth	1100-1250	-- 368	-- 52%
16X Noriega Express	9	10	Market & Fourth, Cyril Magnin & Eddy	1700-2900	-- 253	-- 49%
21 Hayes	9	10	Market & Fourth, Market & Grant	1700-1900	156 306	41% 81%
27 Bryant	15	15	Fifth & Howard	1400-1500	160 116	63% 46%

TABLE IV.A-1 (Continued)
NEARBY MUNI SERVICE – EXISTING CONDITIONS

Route	a.m. Peak Weekday Headways (7-9 a.m.)¹	p.m. Peak Weekday Headways (4-6 p.m.)¹	Nearest Stop Location (Inbound, Outbound)	Distance to Project Site (feet)	p.m. Peak Ridership at MLP	Capacity Utilization at MLP
30 Stockton	7	6	Third & Howard, Fifth & Howard	600-1500	705 660	58% 53%
30X Marina Express	5	7	Howard & Main, Howard & Spear	3300-3800	-- 432	-- 86%
31 Balboa	12	14	Market & Fourth, Market & Grant	1700-1900	141 223	52% 83%
38 Geary	6	6	Market & Third, Market & Geary	1900-2000	352 450	47% 64%
38L Geary Limited	5	5	Market & Third, Market & Geary	1900-2000	556 862	54% 84%
45 Union-Stockton	8	12	Third & Howard, Fifth & Howard	600-1500	240 260	76% 83%
47 Van Ness	10	10	Harrison & Fifth, Bryant & Fourth	2400-2600	276 258	73% 68%
71 Haight-Noriega	10	10	Market & Grant, Market & Stockton	1700-1900	258 324	68% 86%
71L Haight-Noriega Limited	10	10	Market & Grant, Market & Stockton	1700-1900	258 324	68% 86%
81X Caltrain Express	20	-	Third & Mission	1100	-- --	-- --
82X Levi Plaza Express	20	15	Main & Howard, Beale & Howard	3000-3300	-- 145	-- 46%
108 Treasure Island	10	15	Main & Howard, Beale & Folsom	3200-3300	112 104	44% 41%

NOTES: **Bold** indicates capacity utilization of 85 percent or greater.

¹ Headway in minutes.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

within the Southwest screenline, for which ridership and capacity are presented separately from other routes. Together the routes included in the screenline analysis represent the primary commute routes into and out of the greater Downtown area.

A total of 18,540 passengers cross the four Muni screenlines during the weekday p.m. peak hour. The majority of the trips (61 percent) cross the Northwest (28 percent) and Southwest (33 percent) screenlines. The remaining trips cross the Northeast (15 percent) and Southeast (24 percent) screenlines. Existing capacity utilization of the screenlines is between 60.3 and 75.6 percent. Overall, all corridors are currently operating below the 85 percent capacity utilization standard, and could accommodate additional passengers. See the section below entitled “Approach to Analysis” and **Table IV.A-16** for more information regarding the existing outbound transit passenger load, capacity and capacity utilization at each screenline during the weekday p.m. peak hour.

Regional Service Providers

Table IV.A-2 presents the regional transit routes serving the transit study area and route characteristics, including service frequencies during the weekday morning and evening peak periods, and nearest stop location.

**TABLE IV.A-2
REGIONAL TRANSIT SERVICE – EXISTING CONDITIONS**

Route	a.m. Peak Weekday Headways (7-9 a.m.)¹	p.m. Peak Weekday Headways (4-6 p.m.)¹	Nearest Stop Location (Inbound, Outbound)	Distance to Project Site (feet)
Caltrain Local	-	-	Townsend & Fourth	3700
Caltrain Limited-Stop	10-20	20-60	Townsend & Fourth	3700
Caltrain Baby Bullet	10-40	20-40	Townsend & Fourth	3700
BART	5-15	5-15	Market & Fourth	2000
AC Transit	15-20	15-20	Beale between Folsom & Howard	3400
SamTrans Route 292	10-15	20	Mission & Fourth (IB), Mission & Third (OB)	1100
SamTrans Route 397	60	60	Mission & Fourth (IB), Mission & Third (OB)	1100
GGT commuter and basic bus routes	15-90	15-90	Folsom & Fifth (IB), Howard & Fourth (OB)	500-2000

NOTES:

¹ Headway in minutes between buses.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Caltrain

Caltrain provides passenger rail service on the Peninsula between San Francisco and Downtown San Jose with several stops in San Mateo County and Santa Clara County. Limited service is available south of San Jose. Caltrain service headways during the a.m. and p.m. peak periods are 10 to 60 minutes, depending on the type of train. The peak direction of service is southbound during the a.m. peak period and northbound during the p.m. peak period. Caltrain service terminates at the San Francisco Station at King/Fourth in the study area. The Fourth/King station is served by local, limited, and express “Baby Bullet” trains.

Bay Area Rapid Transit

BART provides regional commuter rail service between San Francisco and the East Bay (Pittsburg/Bay Point, Richmond, Dublin/Pleasanton and Fremont), as well as between San Francisco and San Mateo County (SFO Airport and Millbrae). Weekday hours of operation are between 4 a.m. and midnight. During the weekday p.m. peak period, headways are five to 15 minutes along each line. Within San Francisco, BART operates underground along Market Street to Civic Center Station where it turns south through the Mission District towards Daly City. There are two BART stations within the proposed project study area: Montgomery Station at Market/New Montgomery and Powell Station at Market/Fifth.

Alameda-Contra Costa County Transit District

AC Transit operates bus service in western Alameda and Contra Costa Counties, as well as routes to the City of San Francisco and San Mateo County. AC Transit operates 33 “Transbay” bus routes between the East Bay and the Temporary Transbay Terminal, temporarily located at Howard Street and Beale Street. The Temporary Transbay Terminal lies just outside of the proposed project study area and is easily accessible via Muni and regional transit lines. The majority of Transbay service is provided only during commute periods in the peak direction of travel, with headways between buses from 15 to 20 minutes. The peak direction of service is into San Francisco during the a.m. peak period and out of San Francisco during the p.m. peak period. All-day service is provided on a few lines, with headways of approximately 30 minutes.

San Mateo County Transit District

SamTrans operates bus and rail service in San Mateo County. A few SamTrans routes also serve the Temporary Transbay Terminal in downtown San Francisco, including Routes 292, 391, and 397. Route 292 makes San Francisco stops along Potrero Avenue and Mission Street throughout the day. Peak hour a.m. headways are between 10 and 15 minutes, and p.m. peak hour headways are 20 minutes. Routes 391 and 397 run along Mission Street in San Francisco but stop only at the Temporary Transbay Terminal. Route 391 operates only during the peak travel periods with 15 minute headways; Route 397 is a late night service route with headways of one hour.

Golden Gate Transit

The Golden Gate Bridge, Highway, and Transportation District operates Golden Gate Transit (GGT), which provides bus and ferry service between the North Bay (Marin and Sonoma counties) and San Francisco. GGT operates 22 commuter bus routes, nine basic bus routes, and 16 ferry feeder bus routes into San Francisco. Bus routes operate at headways of 15 to 90 minutes depending on time and day of week and bus type. In the study area Golden Gate Transit operates commuter and basic routes on Mission Street, Howard Street, and Folsom Street. Golden Gate Transit also operates ferry service between the North Bay and San Francisco, connecting Larkspur and Sausalito with the Ferry Building during the morning and evening commute periods.

Regional transit operations are evaluated at three regional screenlines (East Bay, North Bay, and South Bay) for the peak direction of travel and patronage loads, which corresponds with the evening commute in the outbound direction from downtown San Francisco to the region. Approximately 38,300 transit riders currently cross the three regional screenlines during the p.m. peak hour, with about 60 percent crossing the East Bay screenline, 6 percent crossing the North Bay screenline, and 34 percent crossing the South Bay screenline. See the section below entitled “Approach to Analysis” for more information regarding the existing weekday p.m. peak-hour ridership and capacity information for each regional screenline.

All of the regional transit operators have a one-hour load factor standard of 100 percent, which would indicate that all seats are full. During the weekday p.m. peak hour, all regional transit providers operate at less than their load factor standards, which indicates that seats are generally available.

Pedestrian Conditions

Pedestrian Facilities

Sidewalks adjacent to Moscone Center buildings generally meet or exceed the *Better Streets Plan* minimum or recommended widths, with the exception of the Mission Street sidewalk north of Moscone North, and the Third and Fourth Street sidewalks adjacent to Moscone South. Sidewalks on Howard Street adjacent to Moscone North are between 16 and 19 feet wide, and are between 16 and 17 feet wide adjacent to Moscone South. Adjacent to Moscone South, along Third and Fourth streets, sidewalks adjacent to the curb are not provided because the access ramps to the on-site truck loading areas are located there; instead, there is a pedestrian pathway between 8 and 10 feet wide west of the ramps to the Moscone South below grade level on Third Street and east of the ramps to the Moscone South below grade level on Fourth Street. Pedestrian signal heads and countdown signals are currently provided at all study intersections.

Third Street at Howard Street has two northbound left-turn lanes turning across the west crosswalk. This condition can result in increased conflicts between vehicles and pedestrians in the west crosswalk because the inside turning car can block the visibility of the driver of the outside turning car. To compensate for this effect, pedestrians crossing Howard Street within the west crosswalk have a leading pedestrian green interval that allows them to enter the crosswalk before northbound vehicles get a green signal. A leading pedestrian interval gives pedestrians an advance walk signal before motorists get a green signal, giving the pedestrian several seconds to start walking in the crosswalk before a concurrent signal is provided to vehicles. This makes pedestrians more visible to motorists, and motorists more likely to yield to them.

At the intersection of Howard/Fourth there are also two westbound left turn lanes across the south crosswalk. However, there are separate signal phases for vehicles and pedestrians, which limits conflicts associated with the multiple turn lanes.

There are existing impediments to pedestrians within the study area to the south, east and west of the Moscone Center, along Folsom, Harrison, Bryant, Hawthorne, Third, Fourth and Fifth streets. These impediments include: (1) narrow sidewalks, (2) construction zones that reduce sidewalk width or close crosswalks, at times for extended periods, (3) lack of Americans with Disabilities Act (ADA)-compliant curb ramps or use of shared diagonal curb ramps at intersection corners, (4) freeway on- and off-ramps with short pedestrian crossing phases and/or high vehicle volumes turning into crosswalks across multiple traffic lanes, and (5) long distances between intersections, limiting crossing opportunities.

Individuals are currently permitted to gather for First Amendment activity in the freedom of speech zones on the pedestrian islands in front of the Moscone South and Moscone North entrances. Per a City decision on the public right to engage in First Amendment activity in the Moscone Center driveway (July 21, 2003), the Moscone Center is allowed to regulate First Amendment activity within its driveways to ensure that the driveways function for their intended purpose.

In the vicinity of Moscone Center, there are a number of senior housing complexes, and therefore, a number of the pedestrians at the study area locations are seniors and persons with disabilities.

Senior pedestrians and pedestrians with disabilities have special safety considerations that affect their walking experience including reduction in vision, agility, balance, speed, concentration and strength, difficulties hearing vehicles approaching from behind, and reduced ability under low light/night conditions.⁶ Seniors are more prone to suffer a fatality if involved in a crash when compared to the general population.⁷ A number of senior residents of the nearby housing complexes have expressed concerns regarding difficulty crossing Howard, Folsom, Fourth, and Third streets, all of which are one-way arterials with multiple travel lanes and higher travel speeds during non-peak periods, and have also indicated they have difficulty walking along sidewalks during Moscone Center events with high attendance levels. In response to residents' concerns, over the years SFMTA and Moscone Center have implemented pedestrian safety measures aimed at reducing pedestrian-vehicle conflicts and reducing vehicle speeds within the South of Market neighborhood, such as an all-pedestrian signal phase (at Fourth/Howard) and leading pedestrian intervals at other intersections (e.g., at Third/Howard), corner bulbouts (e.g., southwest corner of Fourth/Howard), and sidewalk widening (e.g., adjacent to Moscone West). In addition, Moscone Center includes an existing pedestrian bridge across Howard Street. See the section entitled "Approach to Analysis" for a description of the Planning Department's Central SoMa Plan and the measures included in that project that would improve the pedestrian experience in this area.

Pedestrian Crosswalk, Sidewalk and Corner LOS

Pedestrian conditions were quantitatively assessed at the following locations:

- At the four crosswalks at the intersections of Mission/Third, Howard/Third, Mission/Fourth, and Howard/Fourth.
- At the three midblock crosswalks on Mission Street at Yerba Buena Lane, on Howard Street between Third and Fourth streets, and on Third Street between Mission and Howard streets.
- At six sidewalk locations: both sides of the street on Third and Fourth streets, between Market and Mission streets and between Mission and Howard streets; on Howard Street between Third Street and the Moscone North and Moscone South entrances, and on Howard Street between Fourth Street and the Moscone North and Moscone South entrances.
- At the four corners at the intersections of Mission/Third, Howard/Third, Mission/Fourth, and Howard/Fourth.

The crosswalks and corners at the intersections of Folsom/Third and Folsom/Fourth were not analyzed due to lower pedestrian volumes at these locations than at intersections to the north (i.e., at Howard and Mission streets) and because the predominant direction of pedestrian flow during Moscone Center events is to and from the north of Howard Street.

⁶ Federal Highway Association, FHWA University Course on Bicycle and Pedestrian Transportation, Publication No. FHWA-HRT-05-100, slide 10.

⁷ Loukaitou-Sideris, Anastasia, Is it Safe to Walk? Neighborhood Safety and Security Considerations and Their Effects on Walking, *Journal of Planning Literature*, Vol. 20, No. 3, February 2006, p. 226.

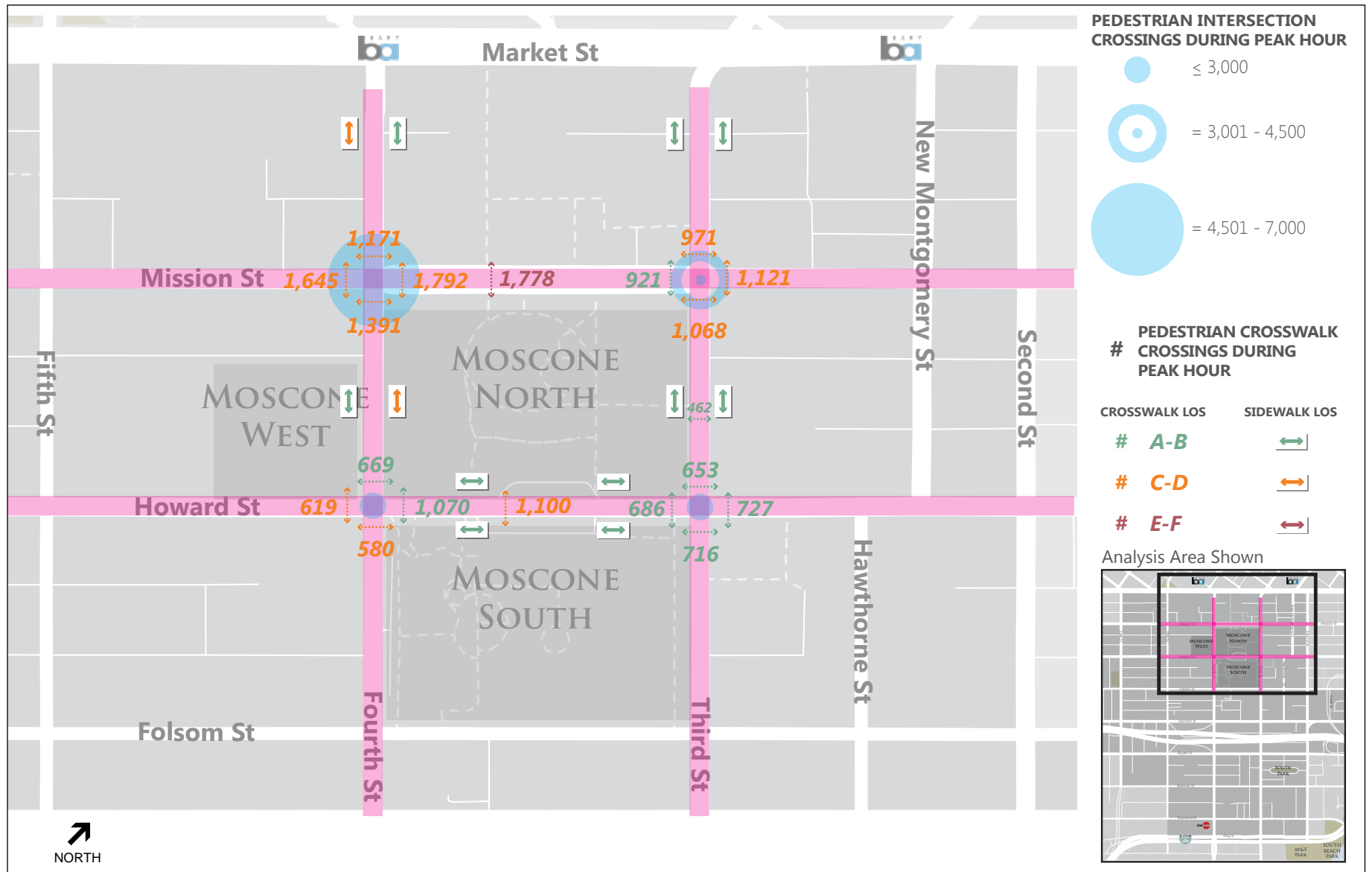
Existing pedestrian crosswalk, sidewalk and corner LOS conditions were analyzed for the peak hour of the midday and p.m. peak periods (i.e., 11:00 a.m. to 1:00 p.m. and 4:00 to 6:00 p.m., respectively) on a day when an event was held at the Moscone Center. Two sets of pedestrian counts were conducted for this analysis – one on a day with a medium event and another at selected locations on a day with a large event.⁸ At locations where pedestrian counts were conducted during both a medium and large event, the higher of the two counts was used to ensure that the analysis captured the more conservative condition. Analysis of operating characteristics of the pedestrian sidewalk, crosswalk and corner locations was conducted using the *HCM 2000* methodology.

- Sidewalk operating conditions are measured by average pedestrian flow rate, which is defined as the average number of pedestrians that pass a specific point on the sidewalk during a certain period (pedestrians per minute per foot or p/m/f). The width of the sidewalk at this point is considered the “effective width,” which accounts for reduction in amount of sidewalk available for travel due to street furniture and the side of buildings. The level of service for sidewalks is presented for “platoon” conditions, which represents the conditions when pedestrians are walking together in a group. Pedestrian level of service conditions were calculated at the most restrictive sidewalk location (i.e., at the “pinch point”) along a given block face.
- Crosswalk and corner LOS are measurements of the amount of space (square feet) each pedestrian has in the crosswalk or corner. These measurements depend on pedestrian volumes, signal timing, corner dimensions, crosswalk dimensions and roadway widths.

With the HCM methodology, an upper limit for acceptable conditions is LOS D, which equals approximately 15 to 24 square feet per pedestrian for crosswalks, approximately 10 to 15 pedestrians per minute per foot for sidewalks, and approximately 3 to 6 square feet per pedestrian for corners. Level of Service E and LOS F represent unacceptable conditions. At LOS E normal walking gaits must be adjusted due to congested conditions, and independent movements are difficult; at LOS F walking speeds are severely restricted.

Figure IV.A-3 presents the pedestrian volumes and pedestrian LOS crosswalk and sidewalk conditions at the study area locations for the midday peak hour, while **Figure IV.A-4** presents this information for the p.m. peak hour. **Figure IV.A-5** presents the pedestrian volumes and pedestrian LOS conditions at the four corners of the four study intersections for the midday peak hour, while **Figure IV.A-6** presents this information for the p.m. peak hour. As illustrated on the figures, during both analysis periods, pedestrian volumes are higher on Mission Street than on Howard Street, and the highest pedestrian volume is at the intersection of Mission/Fourth. As shown on the figures, almost all pedestrian study locations currently operate satisfactorily at LOS D or better during the midday and p.m. peak hours. The only exception is the midblock crosswalk on Mission Street at Yerba Buena Lane, which operates at LOS E during the midday peak hour.

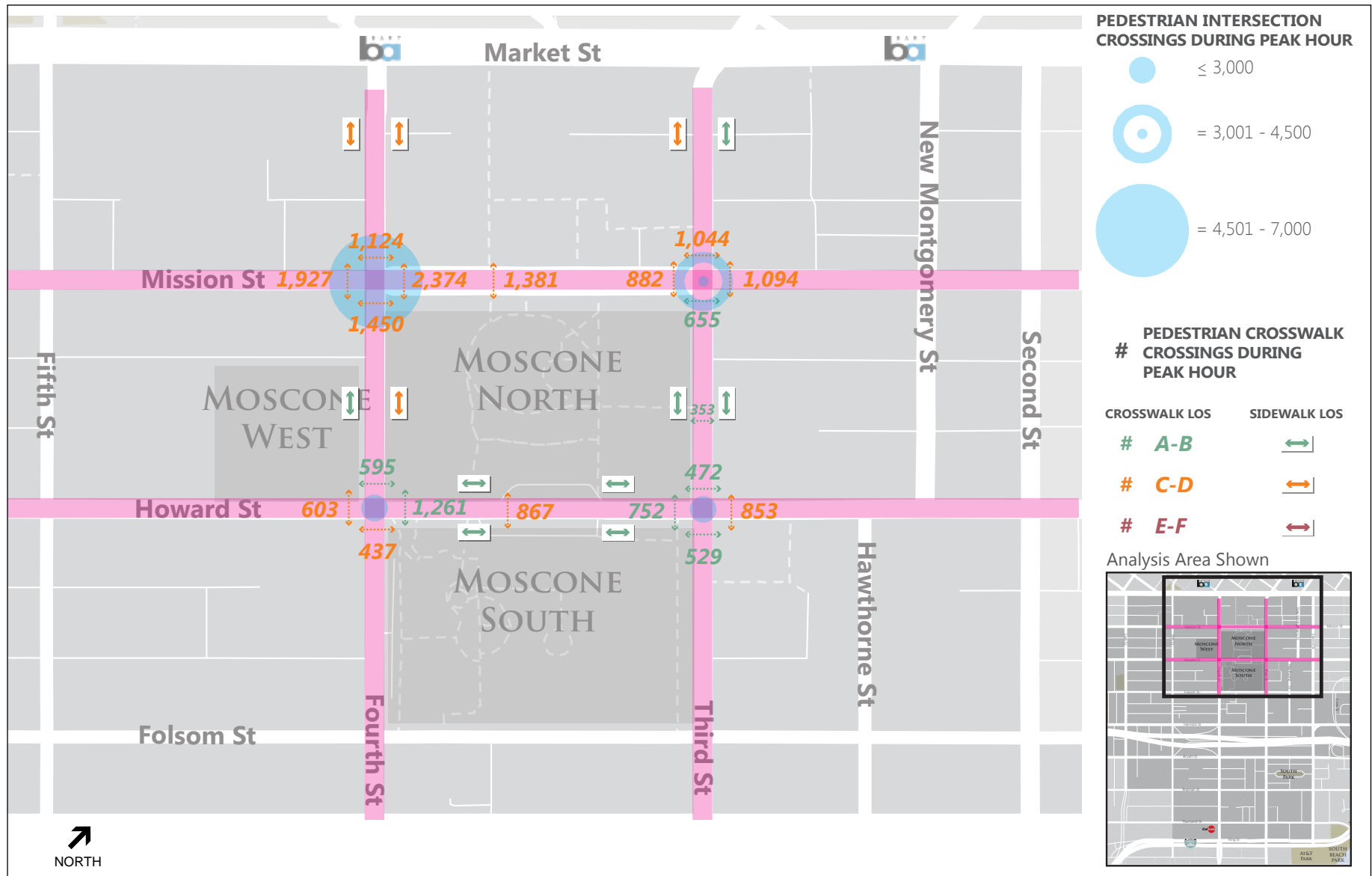
⁸ Attendance ranges between about 500 and 10,000 attendees per day for small events and between 10,000 and 20,000 attendees per day for medium events, with more than 20,000 attendees per day for large events. (*Moscone Center Expansion Project – Estimation of Travel Demand*, Adavant Consulting, January 9, 2014)



SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E

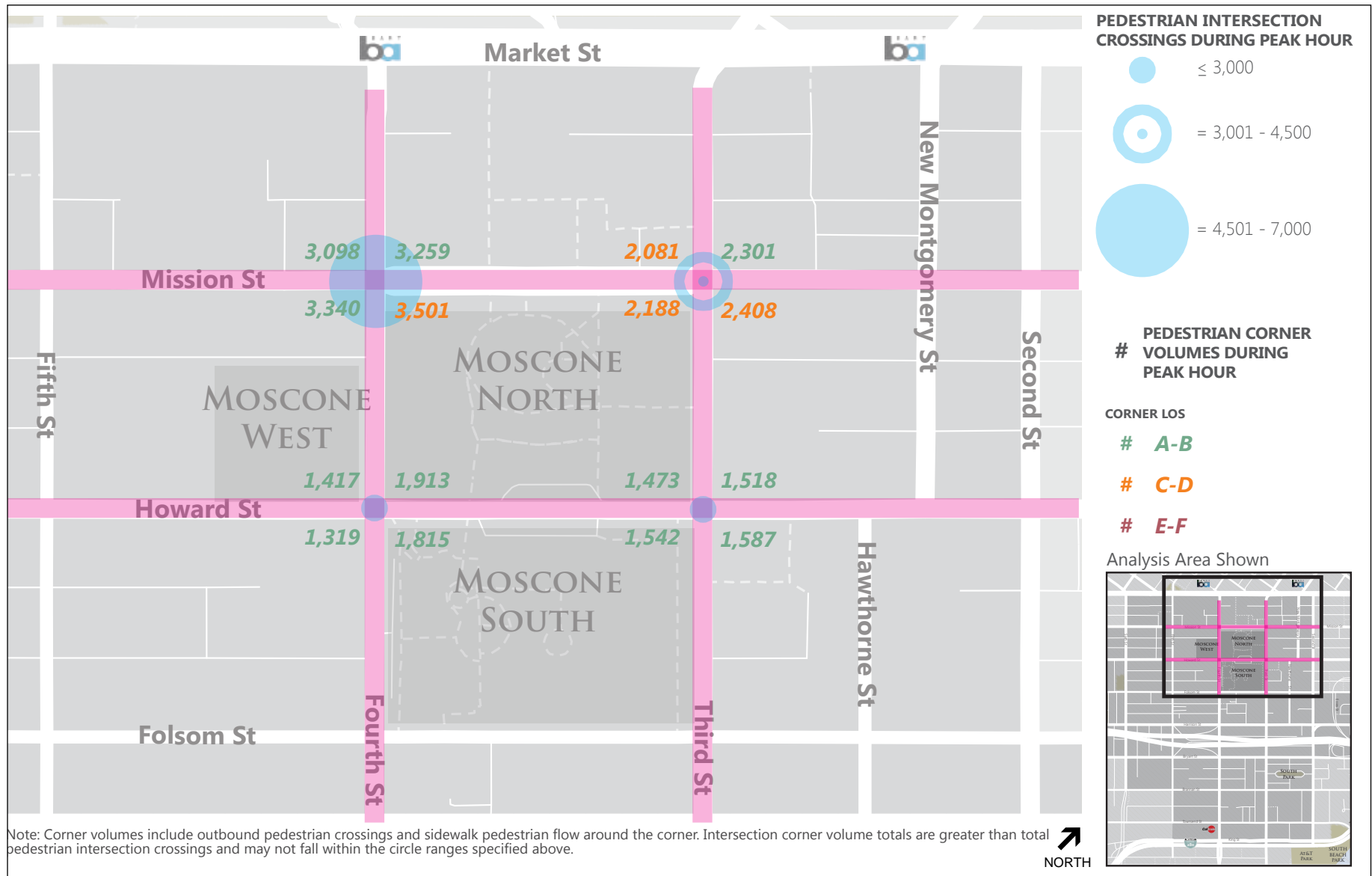
Figure IV.A-3
Existing Pedestrian Volumes and LOS - Midday Peak Hour



SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E

Figure IV.A-4
Existing Pedestrian Volumes and LOS - PM Peak Hour





SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E
Figure IV.A-6
 Existing Pedestrian Corner Volumes and LOS - PM Peak Hour

Bicycle Conditions

Designated bicycle routes in the vicinity of the proposed project are presented on **Figure IV.A-7**. Bikeways are typically classified as Class I, Class II, or Class III facilities. Class I bikeways are bike paths with exclusive right-of-way for use by bicyclists. Class II bikeways are bicycle lanes striped within the paved area of roadways and established for the preferential use of bicycles, while Class III bikeways are signed bicycle routes where bicycles share the travel lane with vehicles. In the vicinity of the project site, Bicycle Routes 11 and 19 run northbound and southbound on Second and Fifth streets, respectively, as Class III facilities. Bicycle Route 30 runs on Folsom Street (eastbound) and Howard Street (westbound) as Class II bicycle lanes. Bicycle Route 50 runs eastbound and westbound on Market Street as a Class III facility. The majority of the study area is flat, with limited changes in grades, facilitating bicycling within and through the area.

The 2009 *San Francisco Bicycle Plan (Bicycle Plan)* includes planned short-term improvements to Bicycle Route 11 on Second Street and Bicycle Route 19 on Fifth Street. Second Street improvements include the construction of Class II separated bicycle lanes in both directions between Market and Townsend streets. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend streets. Both planned improvements would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking.

Bicycle approach volumes based on bicycle counts conducted during the a.m. (7 to 9 a.m.) and p.m. (4 to 6 p.m.) peak hours in the spring of 2013 at six study intersections are presented on Figure IV.A-7. The highest approach volumes during the a.m. peak hour were observed on Folsom and Townsend streets (eastbound), while during the p.m. peak hour the highest approach volumes were observed on Howard and Townsend streets (westbound). Folsom and Howard streets are popular bicycle commute routes for people working in SoMa, and Townsend Street is a popular route for commuters headed to and from the Caltrain station on Fourth and King streets.

Primary bicycle access to the Moscone Center is along Howard and Folsom streets, east-west roadways with Class II bicycle lanes (Bicycle Route 30). Bicycle access from the north and south is largely on Second and Fifth streets, both designated Class III bicycle routes (Bicycle Routes 11 and 19).

The Moscone Center has one on-street bicycle rack that can accommodate five bicycles on the south sidewalk of Howard Street just east of the Moscone South entrance. According to the project sponsor, some employees who bicycle to work bring their bicycles into the building to their work spaces.

Additionally, there are two Bay Area Bike Share stations in the study area: one on the north sidewalk of Howard Street west of Third Street with a capacity for 19 bicycles, and one within the east curb lane of Fifth Street north of Howard Street with a capacity for 15 bicycles.



SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E

Figure IV.A-7
Existing Bicycle Route Network and
AM and PM Peak Hour Bicycle Volumes

Loading Conditions

There are no on-street commercial loading spaces adjacent to the Moscone Center. Moscone Center truck loading occurs in off-street below-grade facilities, with an entrance on Third Street between Folsom and Howard streets and an exit on Fourth Street between Howard and Folsom streets. Moscone North and South have designated on-street passenger loading/unloading zones on the north and south curbs of Howard Street just west of Third Street. In addition, there is designated passenger loading/unloading for Moscone West along the north curb of Howard Street between Fourth and Fifth streets.

Emergency Vehicle Access

Emergency transport vehicles typically use major streets through the study area when heading to and from an emergency and/or emergency facility, including Howard, Folsom, Third and Fourth streets. Arterial roadways allow emergency vehicles to travel at higher speeds and provide enough clearance space to permit other traffic to maneuver out of the path of the emergency vehicle and yield the right of way.⁹ There are three San Francisco Fire Department fire stations near the project site: Station 1 (Folsom Street at Fifth Street), Station 8 (Bluxome Street at Fourth Street), and Station 35 (The Embarcadero at Harrison Street).

Parking Conditions

Off-Street Parking Supply

The Moscone Center does not include a public parking facility. Visitors using the Moscone Center website are directed to four public parking garages in close proximity to the Moscone Center, including the Fifth & Mission/Yerba Buena Center Garage, the Moscone Garage, the Hearst Parking Center, and the Museum Parc Garage (see **Table IV.A-3** and **Figure IV.A-8**). Within these four parking garages there are about 4,300 parking spaces. In addition to these four facilities, the Jessie Square Garage and the San Francisco Museum of Modern Art (SFMOMA) Garage, with a total of about 760 parking spaces, are located in close proximity to the Moscone Center.

The public parking garages in the vicinity of the Moscone Center currently have availability throughout the day. For example, the Fifth & Mission/Yerba Buena Garage, centrally located on this segment of the corridor, contains 2,585 parking spaces, and is about 52 percent occupied during weekday midday.¹⁰ Other public garages with available space in the area include the Moscone Garage (732 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), the Hearst Garage (796 parking spaces and about 95 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday).¹¹

⁹ Per the California Vehicle Code, Section 21806, all vehicles must yield right of way to emergency vehicles and remain stopped until the emergency vehicle has passed.

¹⁰ SFMTA, SFpark Parking Garage Data, LCW Consulting, March and June 2013.

¹¹ Ibid.

**TABLE IV.A-3
OFF-STREET PARKING SUPPLY – EXISTING CONDITIONS**

Facility	Location	Hours of Operation	Spaces
Fifth & Mission/ Yerba Buena Garage	833 Mission Street between Fourth and Fifth Streets	24 Hours	2,585
Jessie Square Garage	223 Stevenson Street	MON – FRI 5:00 a.m. – 11:00 p.m. SAT – SUN 6:00 a.m. – 11:00 p.m.	350
Hearst Parking Center	45 Third Street (entrance on Stevenson)	MON – FRI 5:00 a.m. – 12:00 a.m. SAT 6:00 a.m. – 12:00 a.m. SUN 10:00 a.m. – 10:00 p.m.	796
SFMOMA Garage	147 Minna Street	MON – SAT 6:00 a.m. – 11:00 p.m. SUN 9:00 a.m. – 11:00 p.m.	410
Moscone Garage (not operated by Moscone Center)	255 Third Street between Folsom and Howard Streets	MON-THU 6:00 a.m. – 12:00 a.m. FRI 6:00 a.m. – 2:30 a.m. SAT 8:00 a.m. – 2:30 a.m. SUN 9:00 a.m. – 9:00 p.m.	732
Museum Parc Garage	300 Third Street (entrance on Third and Folsom Streets)	MON – FRI 5:30 a.m. – 11:00 p.m. SAT 8:00 a.m. – 11:00 p.m. SUN 8:00 a.m. – 6:00 p.m.	150

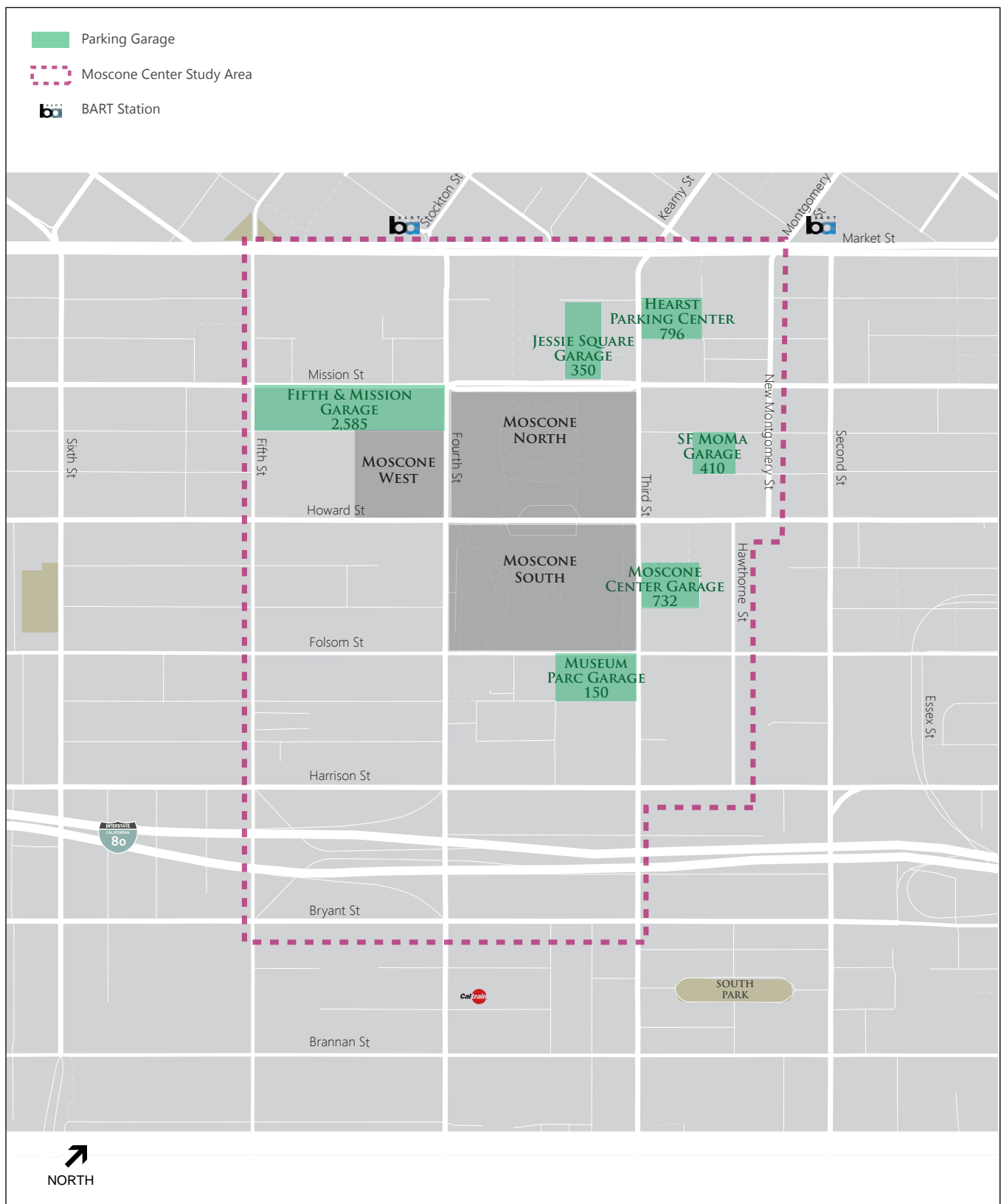
SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

On-Street Parking Supply

Based on information from SFMTA's *SFpark* data, there are about 1,200 on-street metered parking spaces within the parking study (i.e., area bounded by Market, Fifth, Bryant, New Montgomery/Hawthorne and Third Street). More than 60 percent of these spaces are general metered parking, around 20 percent are commercial loading spaces, and almost 15 percent are motorcycle parking. The remaining metered spaces are disabled parking, passenger loading/unloading zones, and unrestricted spaces.

Parking conditions adjacent to the project site are as follows:

- On Third Street between Folsom and Howard streets there is a 120-foot bus stop. On-street parking is not permitted on either side of the street.
- On Third Street between Howard and Mission streets there are 22 general metered parking spaces.
- On-street parking is not permitted on either side of Howard Street between Third and Fourth streets.
- On the west side of Fourth Street between Folsom and Howard streets there are 16 general metered parking spaces. There is no permitted parking on the east side of the block.
- On Fourth Street between Howard and Mission streets there is a 130-foot bus stop, a 140-foot passenger loading/unloading zone directly in front of the Moscone West entrance, and a 100-foot passenger loading/unloading zone opposite the Moscone West entrance. On-street parking is not permitted on either side of the street.



SOURCE: LCW Consulting, Fehr & Peers, 2014

Moscone Center Expansion Project 2013.0154E
Figure IV.A-8
 Existing Off-Street Public Parking Facilities
 and Parking Supply

- On Folsom Street between Third and Fourth streets there is a 110-foot bus stop, a 140-foot passenger loading/unloading zone, five metered commercial loading spaces and 38 general metered parking spaces.

Overall, the on-street parking spaces are well utilized throughout the day, with availability during the overnight hours at the commercial loading spaces.

Existing Transportation Operations at Moscone Center

Transportation operating conditions for a typical medium event (i.e., between 10,000 and 20,000 attendees per day) and a large event (i.e., with more than 20,000 attendees per day) at the Moscone Center was observed in April and July 2013. The observed medium event was the American College of Physicians (ACP) conference, which took place over the course of four days from April 11th through April 13th, 2013, and attracted approximately 12,000 daily attendees. The observed large event was the Semicon convention, which took place over the course of three days from July 9th through July 11th, 2013, with about 30,000 daily attendees.

Moscone Center Pedestrian Conditions

Pedestrian operating conditions were observed throughout the area surrounding Moscone Center, between Third and Fourth streets and Market and Howard streets, during the midday and evening peak periods of the ACP and Semicon events in 2013. Pedestrian facilities around Moscone Center are generally sufficient to accommodate pedestrian activity through the area, for both a medium and large Moscone Center event. Most sidewalks meet the *San Francisco Better Streets Plan* minimum width, curbs ramps are ADA compliant, and major intersection crossings are signalized with countdowns, leading pedestrian intervals, and advanced stop bars.

Several facilities provide direct pedestrian access between Moscone North and Moscone South. A signalized at-grade pedestrian crosswalk 30 feet in width crosses Howard Street between the two building entrances. Moscone North and Moscone South are also connected by two grade-separated walkways, a public aerial passage and an underground tunnel used for events only.

Pedestrians traveling to Moscone Center events typically appear to access the facility from the north, as numerous hotels and parking garages are located around Market Street, Mission Street and Union Square. As such, the highest levels of pedestrian activity occur in the north-south direction along Third Street, Fourth Street and Yerba Buena Lane (crossing Mission Street), as well as in the east-west direction along Mission Street. Pedestrian volumes are generally similar during both the midday and p.m. peak periods, with pedestrian volumes at some locations higher in the midday than during the p.m. (e.g., at the intersection of Howard/Third), and some pedestrian volumes higher in the p.m. than in the midday (e.g., at the intersection of Mission/Fourth). Event attendees travel largely along Fourth Street between Mission and Howard streets, along Yerba Buena Lane between Market Street and the Yerba Buena Gardens, and, during large Moscone Center events, between Moscone North and South and Moscone West. Pedestrian crosswalk volumes at the intersections of Mission/Third and Howard/Third are often high enough to delay turning motorists and bicyclists.

Relatively high levels of pedestrian activity occur on the east sidewalks of Fourth Street between Howard and Market streets. Pedestrian activity is particularly high at the Fourth Street and Howard Street intersection (especially the east leg) and Fourth and Mission Street intersection. During a large Moscone Center event, the corners of the Fourth and Mission Street intersection were observed to become so crowded with pedestrians waiting to cross that it was difficult for other pedestrians to pass behind the waiting crowd. This may be partially caused by the increased use of the Fifth & Mission/Yerba Buena Garage for larger events, and the subsequent increased number of pedestrians accessing the parking garage from its entrance on the southwest corner of Fourth and Mission streets.

Although Moscone Center attendants monitor the Howard Street midblock crosswalk to direct pedestrian traffic between Moscone North and Moscone South during events, frequent uncontrolled diagonal pedestrian crossings on Howard and Fourth streets to minimize walking distances were observed during field surveys. The highest frequency of uncontrolled diagonal crossings were observed during large Moscone Center events that hold programming in Moscone West, generating substantial attendee pedestrian traffic between the West and South Moscone buildings. Midblock crossings outside of the designated crosswalk are also common on Mission Street between Third and Fourth streets. This block of Mission Street is an important connector between offices to the north (Market Street and the Financial District) and retail shops and restaurants to the south (Yerba Buena and the Metreon). Pedestrians were also observed crossing Mission Street through the roadway's landscaped median to the east of the crosswalk in order to connect directly to existing pedestrian alleyways on either side of the street.

There is a three-phase signal at the intersection of Fourth and Howard streets that includes an all-pedestrian crossing phase, and during field surveys, some pedestrians were observed crossing diagonally.

The pedestrian islands in front of Moscone North and Moscone South are specifically set aside as "Free Speech Zones" for public demonstrations during Moscone Center events. The space is rarely utilized, and its use does not affect general pedestrian circulation through the area.

Moscone Center Bicycle Conditions

Potential conflict points between bicyclists and other roadway users exist along the Howard Street bicycle lanes adjacent to the Moscone Center. Taxis and passenger vehicles often park in the bicycle lane as they stop to pick up and drop off passengers along the north curb of Howard Street between Third and Fifth streets. From time to time during large events when both the Moscone South and Moscone North driveways were used for event shuttle buses, and when all shuttle bus spaces in the Moscone North driveway are occupied, incoming shuttle buses also have been observed to queue along the north curb of Howard Street to load and unload passengers. The parked vehicles create challenging conditions for bicyclists, blocking the Howard Street bicycle lane and forcing bicyclists to either stop short or merge into vehicle traffic to avoid the parked buses, taxis and passenger vehicles.

Additionally, high pedestrian volumes in the north crosswalk of the intersection of Howard/Third delays vehicles turning right onto Third Street from Howard Street. The queue of right-turning

vehicles blocks the Howard Street bicycle lane. There is also a designated truck access driveway for another underground loading facility adjacent to the Moscone Center on the north curb of Howard Street just east of Fourth Street. At times, truck loading/unloading activity temporarily spills onto Howard Street, blocking the bicycle lane along the north curb of Howard Street.

Moscone Center Traffic Conditions

During a typical Moscone Center event, on days during which there are thousands of conference attendees in the vicinity of the project site, traffic conditions along Howard, Third, and Fourth streets were observed to not experience substantially more congestion than when an event is not occurring. This is because the majority of attendees arrive by modes other than private vehicles or taxis (taxis are already traveling in the project vicinity regardless of whether there is an event at the Moscone Center), so a Moscone Center event does not add a substantial number of additional vehicles onto the street network.

The traffic signal at the intersection of Howard/Fourth is configured so that turning vehicles have a separate signal phase from pedestrian crossings, which reduces conflicts between vehicles and pedestrians and improves traffic flow. However, at the intersections of Mission/Third and Howard/Third, the traffic signals have a typical two-phase operation, and pedestrians conflict with turning vehicles, resulting in delay to vehicles.

Curbside drop-off and pick-up activity with both taxis and private vehicles were observed to substantially increase during Moscone Center events. At times, this curbside loading activity results in conflicts with through traffic on Howard, Third and Fourth streets, especially when loading vehicles cannot access a curb and instead double-park within a traffic lane or bicycle lane.

The Moscone Center retains Parking Control Officers (PCOs) from the SFMTA to assist with traffic enforcement for all large events (i.e., events with more than 20,000 attendees per day). The number of officers and the location of their postings depend on the event size and the building in which the event is held. For the largest events with heavy shuttle bus service levels, enforcement is provided at the intersection of Howard/Fourth to direct vehicle traffic and pedestrian crossings, the exit of the north and south driveways to help buses merge into westbound traffic on Howard Street, and both sides of the midblock crosswalk on Howard Street between Third and Fourth streets to ensure safe pedestrian movement between the north and south buildings.

Moscone Center Freight Loading Conditions

Truck loading/unloading operations at Moscone Center North and South take place at a combined network of underground loading docks. Truck access to the project site is provided via a one-way inbound ramp located on Third Street located midblock between Howard and Folsom streets, and access is controlled by an attendant. Egress is via a one-way outbound ramp located on Fourth Street between Howard and Folsom streets. Trucks delivering freight to the Moscone Center cannot exceed 53 feet in length (tractor and trailer) and 14 feet in height.

Eighteen functional loading spaces are located at the lower level of the project site – three are on the east side of Moscone South (blue dock), five are on the west side of Moscone South (green

dock) and ten are on the north side of Moscone North (red dock). All of the existing general-purpose loading docks are sized to accommodate a semi-trailer truck up to 53 feet in length.

During periods of peak truck activity (typically immediately following the conclusion of a large event), all of the underground loading docks are at times fully occupied. Any inbound trucks that arrive at this time are prevented from entering the inbound truck ramp on Third Street by the driveway attendant, until a loading space becomes available. This can cause inbound trucks waiting for a loading dock to queue along the west curb of Third Street, at times all the way south to Folsom Street.

There are also two designated on-street commercial loading zones for facilities adjacent to the Moscone Center. One is located on the east curb of Fourth Street just north of Howard Street; the second is located on the north curb of Howard Street just east of Fourth Street. During the morning peak period temporary truck loading activity was observed to spillover into Howard Street when multiple trucks were stopped simultaneously. These trucks blocked the bicycle lane along the north curb of Howard Street.

According to the project sponsor, the busiest day for truck loading is the day after an event. Typically, most events are broken down over one to two days. For example, the Semicon convention in July 2013 was broken down within 24 hours of the final program and the truck loading completed by the afternoon following the last event day.

Moscone Center Event Shuttle Bus Conditions

Event Shuttle Bus Service: Medium and large attendance events at the Moscone Center generally provide complimentary bus shuttle transportation for attendees between designated hotels outside of walking distance and the Moscone Center. Most guests using shuttles stay at hotels in the Union Square area, although depending on the size of the event, bus service can be extended to other areas in San Francisco. Bus riders are typically required to have an event badge in order to use the service.

The Moscone Center operator classifies the event bus shuttle operations into four levels of service: no service, light, medium and heavy, depending on the expected daily event attendance. **Table IV.A-4** provides a summary of the approximate number of daily event shuttle buses provided by each service level. No event shuttle bus service is typically provided for more than half of the total number of events at Moscone North and South. Medium and heavy event shuttle bus service occurs during about 20 percent of all events.

Shuttle bus schedules differ by event, but event shuttle buses generally run throughout the day from around 6:00 a.m. when registration opens to around 8:00 p.m. when event programming ends. Shuttle bus frequencies vary depending on the event type, event day, and time of day, typically arriving every 10 to 20 minutes during peak demand periods (usually at the beginning and end of the day) and every 20 to 30 minutes at all other times.

TABLE IV.A-4
MOSCONE CENTER NORTH AND SOUTH
EVENT SHUTTLE BUS BY SERVICE LEVEL – EXISTING CONDITIONS

Bus Service Level	Average Annual Percentage of All Events	Total Number of Buses in Operation per Day
Heavy	9%	25 to 38
Medium	11%	6 to 20
Light	27%	2 to 6
No Service	53%	None

SOURCE: *Moscone Center Expansion Project Transportation Impact Study*, April 2014.

The number of shuttle bus lines and their routes also differ by Moscone Center event. **Figure IV.A-9** illustrates a typical set of four event shuttle bus routes and stops for a medium-sized event (i.e., between 10,000 and 20,000 attendees per day), the American Society of Cataract and Refractive Surgery (ASCRS) symposium on April 19th to 23rd, 2013. For this event, four event shuttle bus routes served the Moscone Center and surrounding hotels.

Event Shuttle Bus Loading Zones. Depending on the number of event registrants, bus loading/unloading operations at the Moscone North and Moscone South can take place at one or both of the two bus loading plazas fronting the south side of Moscone North and the north side of Moscone South on Howard Street. There is a separation of approximately 250 feet between the two lobby door entries. The existing north bus loading plaza is approximately 180 feet in length, three lanes wide, and able to accommodate up to six buses. The existing south bus loading plaza is approximately 275 feet in length, three lanes wide, and also able to accommodate up to six buses. Buses typically park parallel to the sidewalks, stopping in the outside lanes for loading and unloading, and using the center lane as a bypass lane.

Observed Moscone Event Shuttle Bus Operations. The highest level of shuttle bus activity for a Moscone Center event occurs during the morning peak period, when as many as six buses occupy curb space in the Moscone South driveway. During this time, the most frequent bus lines arrive every five minutes. Shuttle buses use a “bump system” in which a waiting bus leaves the driveway when another bus from the same route arrives. Six is the maximum number of bus routes for the Moscone South driveway. Thus, if six buses were already present in the south driveway and eighth seventh were to arrive, a bus of the same route would be forced to exit such that only six buses would be queued. In this way, buses are able to unload at the driveway curb, and the queue is contained within the driveway. Shuttle bus loading is lighter over the rest of the day, with an average maximum of three buses using the Moscone South driveway at any given time. Shuttle bus headways are around 20 minutes throughout most of the day. Buses typically park parallel to the north and south sidewalks, loading and unloading in lanes one and three and using lane two as a bypass lane.

Shuttle bus loading and unloading primarily occurs in the Moscone South driveway along both the north and south curbs, with the majority of buses using the south curb. This requires shuttle bus passengers to walk into the off-street loading roadway to board or alight from a bus, instead of the more conventional practice of boarding from the sidewalk. To avoid conflict during morning peak periods of high shuttle bus activity, Moscone Center attendants are positioned within the off-street loading roadway to greet passengers as they alight from the buses and to direct them to the sidewalk and Moscone Center entrance. Since shuttle bus traffic through the driveway is substantially lower throughout the rest of the day, boarding and alighting shuttle bus passengers are able to navigate to and from the buses with few conflicts.

Moscone Center attendants monitor the driveway entrance to control vehicle and pedestrian flows. Non-shuttle vehicles are generally restricted from accessing the driveway, with the exception of ADA vehicles, which are permitted to park in designated driveway spaces. However, Moscone Center attendants allow taxis and passenger vehicles to enter the driveway during periods of lighter shuttle bus traffic.

To accommodate the increased shuttle bus activity during larger events, Moscone Center uses additional shuttle bus staging areas in the Moscone North driveway and in front of Moscone West. Even during periods of high activity, Moscone Center driveway space allocated for shuttle bus service appears to be sufficient. Event shuttle bus operations were not observed spilling back onto adjacent streets. For the majority of observations, due to the “bump” system and active management, shuttle bus operations fit within the north and south designated off-street loading areas, with all buses loading/unloading in the loading areas and no buses loading/unloading within the Howard Street bicycle lane or southern-most vehicle travel lane. However, at infrequent times, the north and/or south loading bay was observed to fill up with shuttles, and when an approaching shuttle arrived at that time, the shuttle was observed to unload within the bicycle lane or south travel lane.

Moscone Center Taxi Passenger Loading/Unloading Conditions

Designated Moscone Center taxi drop-off and pick-up areas are located on the north and south curbs of Howard Street between the Moscone Center driveways and Third Street. The taxi-only passenger loading/unloading zone on the south side of Howard Street is approximately 180 feet long and has a capacity for about nine waiting vehicles. The taxi-only passenger loading/unloading zone on the north side of Howard Street is approximately 75 feet long and has a capacity for about three to four waiting vehicles.

Taxi drop-off activity is heaviest during the morning and evening peak periods. During the morning peak period, Moscone Center attendants may allow taxis to drop off passengers in the Moscone South driveway, although the taxis must remain clear of shuttle bus loading zones. Based on information from the Moscone Center operations team, on average, about 5 percent of the event attendees arrive at the Moscone Center by taxi.¹² During the evening peak period, taxis wait in the designated taxi zone on the south side of Howard Street to pick up passengers. To

¹² See Table IV.A-8, p. IV.A-49.

avoid taxi idling in the driveway entrance, an attendant regularly monitors the taxi zone and directs taxis to an available curbside space to wait.

During the morning and evening peak periods of larger events, the designated taxi zones on Howard Street are often filled. Taxis instead stop to pick up and drop off passengers at any convenient location along the north and south curbs of Howard Street in front of Moscone Center buildings. This causes taxis or other passenger vehicles to often block the bicycle lane along the north curb of Howard Street. This behavior is especially prevalent when attendants are stationed to prevent non-shuttle vehicles from entering Moscone Center driveways. Although not observed, the Moscone North driveway may also be used for spillover taxi activity during larger events according to a Moscone Center attendant.

During larger events that include programming in Moscone West, vehicles, including taxis, frequently stop throughout the day to drop off and pick up passengers on the north curb of Howard Street between Fourth and Fifth streets.

Moscone Center Vehicle Parking Conditions

The Moscone Center does not have a dedicated public parking facility. Public parking is available at nearby garages, including the Fifth & Mission/Yerba Buena Garage and the Moscone Garage on Third Street across from Moscone South.

The Fifth & Mission/Yerba Buena Garage is located on Mission Street between Fourth and Fifth streets, contains 2,585 parking spaces, and operates 24 hours per day, seven days per week. The garage is typically around 50 percent occupied, but it can reach capacity during large Moscone Center events. Attendants stationed outside of the parking garage entrance on Mission Street prevent drivers from queuing on the street as they wait for a parking space to become available. Sometimes these attendants are not on duty, and the vehicle queue on Mission Street has been observed to reach Fifth Street or even continue around the corner and onto Fifth Street. Queuing onto Fifth Street rarely occurs during Moscone Center events and has been observed only during the San Francisco International Auto Show that is typically held the week of Thanksgiving and which overlaps with the start of the holiday shopping season. Fifth Street queuing can occasionally occur during other times of the year, notably during the holiday shopping season. An electronic GARAGE FULL sign is located on the Fifth & Mission/Yerba Buena Garage on Fifth Street at Minna Street, and electronic signs indicating public garage parking space availability have recently been installed on Fourth Street between Mission and Howard streets to help guide drivers away from the Fifth & Mission/Yerba Buena Garage when at capacity and towards other less utilized garages in the area, including the Hearst Parking Center or the Museum Parc Garage.

Moscone Center Event-related Roadway Closures

Howard Street between Third and Fourth streets is closed to vehicular traffic for about one week (eight days maximum) during two annual events at the Moscone Center, Oracle's Open World and Salesforce's Dreamforce when tents are staged in Howard Street to provide additional event space. These two events have taken place in September/October (Oracle) and August/September/October

(Salesforce).¹³ Although Howard Street is closed to vehicles, the sidewalks remain open for use by pedestrians. Oracle has used Howard Street between Third and Fourth streets for its annual convention since 2006; Salesforce began to do the same for its annual convention in 2012.

During these two large events, Howard Street between Third and Fourth streets is closed to all vehicle and bicycle traffic, and through traffic is rerouted by means of temporary message signs, and traffic control officers. The primary vehicular detour for westbound Howard Street traffic around the event is from Howard Street to Harrison Street via Second Street or via Hawthorne Street; the primary bicycle detour is from Howard Street to Market Street via Second Street. The two left lanes on Howard Street from Hawthorne Street to Third Street are closed for event VIP and emergency vehicle parking, and the remaining three through lanes of traffic are directed north on Third Street at the road closure. The two left lanes on Third Street from Folsom Street to Howard Street are closed for freight loading, reducing the roadway to three through travel lanes. Pedestrian access is maintained throughout the event, so bicyclists may also walk their bicycles through the event along Howard Street. The Bicycle Route 30 detour instructs bicyclists to transition to the left side of Howard Street at Hawthorne Street and walk their bicycles through the road closure using the south sidewalk.

To facilitate the traffic detours, the SFMTA re-times or otherwise modifies nine intersection signals, installs temporary striping at six intersections on two blocks, installs over 30 temporary signs, deploys 13 changeable message signs on city streets as well as various additional Caltrans-operated signs, and deploys 20 San Francisco Police Department officers or SFMTA PCOs at various locations to maintain safety and direct traffic. SFMTA PCOs are posted at the following intersections during event road closures: Market/Fourth, Mission/Third, Mission/Fourth, Howard/Hawthorne, Howard/Third, Howard/Fourth, Folsom/Second, Folsom/Fourth, Harrison/Second, and Harrison/Hawthorne.

The Moscone Center hires PCOs for all major non-closure events as well (events of approximately 20,000 attendees or more). The number of officers and the location of their postings depend on the event size and the building in which the event is held. For the largest events with heavy shuttle bus service levels, Moscone Center covers all of its post positions, including the intersection of Howard/Fourth to direct vehicle traffic and pedestrian crossings, the exit of the north and south driveways to help buses merge into westbound traffic on Howard Street, and both sides of the midblock crosswalk on Howard Street between Third and Fourth streets to ensure safe pedestrian movement between the north and south buildings.

Traffic operations during Oracle's OpenWorld event were observed midday on Tuesday, September 24, 2013. During the observation period, northbound vehicles on Second and Third streets experienced queues from Market Street to as far south as Bryant Street. Southbound traffic flowed without substantial congestion on New Montgomery, Hawthorne, and Fourth streets. Mission Street experienced substantial eastbound congestion from Fourth Street to New Montgomery Street. Howard Street westbound traffic queued for only the one block between

¹³ In 2013, the Oracle's OpenWorld was held between September 22nd and 26th, and Salesforce's Dreamforce was held between November 18th and 22nd.

Third and Hawthorne streets, as detour signs instructed drivers to use Harrison Street instead. Vehicular travel along Harrison and Folsom streets were not substantially changed from non-event conditions. A parking control officer was stationed in the middle of the intersection of Howard/Fourth to manage the large volumes of pedestrians crossing Fourth Street between Moscone North and Moscone South and Moscone West. Southbound traffic on Fourth Street is metered by the traffic signal at Mission Street, so vehicle queues were able to clear before the pedestrian phase began.

Roadway operations in the vicinity of the Moscone Center during all other Moscone Center events were generally similar to conditions during non-event days.

Regulatory Framework

This section provides a summary of the plans and policies of the City and County of San Francisco, and regional, state and federal agencies that have policy and regulatory control over the proposed project site. These plans and policies include the *San Francisco General Plan*, the San Francisco Bicycle Plan, the San Francisco Better Streets Plan, and the Transit First Policy.

Federal, State and Regional Regulations

There are no federal, state or regional transportation regulations applicable to the proposed project.

Local Regulations

San Francisco General Plan

The Transportation Element of the *San Francisco General Plan* is composed of objectives and policies that relate to the eight aspects of the citywide transportation system: General Regional Transportation, Congestion Management, Vehicle Circulation, Transit, Pedestrian, Bicycles, Citywide Parking, and Goods Management. The Transportation Element references San Francisco's "Transit First" Policy in its introduction, and contains objectives and policies that are directly pertinent to consideration of the proposed project, including objectives related to locating development near transit investments, encouraging transit use, and traffic signal timing to emphasize transit, pedestrian, and bicycle traffic as part of a balanced multimodal transportation system. The *San Francisco General Plan* also emphasizes alternative transportation through the positioning of building entrances, making improvements to the pedestrian environment, and providing safe bicycle parking facilities.

San Francisco Bicycle Plan

The *Bicycle Plan* describes a City program to provide the safe and attractive environment needed to promote bicycling as a transportation mode. The *Bicycle Plan* identifies the citywide bicycle route network, and establishes the level of treatment (i.e., Class I, Class II or Class III facility) on each route. The *Bicycle Plan* also identifies near-term improvements as well as policy goals, objectives and actions to support these improvements. It also includes long-term improvements, and minor improvements that would be implemented to facilitate bicycling in San Francisco.

San Francisco Better Streets Plan

The *Better Streets Plan* focuses on creating a positive pedestrian environment through measures such as careful streetscape design and traffic calming measures to increase pedestrian safety. The Better Streets Plan includes guidelines for the pedestrian environment, which it defines as the areas of the street where people walk, sit, shop, play, or interact. Generally speaking, the guidelines are for design of sidewalks and crosswalks; however, in some cases, the *Better Streets Plan* includes guidelines for certain areas of the roadway, particularly at intersections.

Transit First Policy

In 1998, the San Francisco voters amended the City Charter (Charter Article 8A, Section 8A.115) to include a Transit-First Policy, which was first articulated as a City priority policy by the Board of Supervisors in 1973. The Transit-First Policy is a set of principles which underscore the City's commitment that travel by transit, bicycle, and foot be given priority over the private automobile. These principles are embodied in the policies and objectives of the Transportation Element of the *San Francisco General Plan*. All City boards, commissions, and departments are required, by law, to implement transit-first principles in conducting City affairs.

Impacts and Mitigation Measures

Significance Thresholds

The Planning Department's Initial Study Checklist Form provides a framework of issues to be considered in evaluating a project's impacts under CEQA. Implementation of a project could have a potentially significant impact related to transportation and circulation if the project were to:

- 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;
- Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, established by the county congestion management agency for designated roads or highways (unless it is practical to achieve the standard through increased use of alternative transportation modes);
- Result in a change in air traffic patterns, including either an increase in traffic levels, obstructions to flight, or a change in location, that causes substantial safety risks;
- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses;
- Result in inadequate emergency access; or
- Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., conflict with policies promoting bus turnouts, bicycle racks, etc.) regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities, or cause a substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity or alternative travel modes.

Below is a list of significance criteria used by the San Francisco Planning Department to assess whether a proposed project would result in significant transportation impacts. These criteria are organized by mode to facilitate the transportation impact analysis; however, the transportation significance criteria are essentially the same as the ones presented above.

- The operational impact on signalized intersections is considered significant when project-related traffic causes the intersection level of service to deteriorate from LOS D or better to LOS E or LOS F, or from LOS E to LOS F. The operational impacts on unsignalized intersections are considered potentially significant if project-related traffic causes the level of service at the worst approach to deteriorate from LOS D or better to LOS E or LOS F and peak hour signal warrants would be met, or would cause peak hour signal warrants to be met when the worst approach is already operating at LOS E or LOS F. The project may result in significant adverse impacts at intersections that operate at LOS E or LOS F under existing conditions depending upon the magnitude of the project's contribution to the worsening of the average delay per vehicle. In addition, the project would have a significant adverse impact if it would cause major traffic hazards or contribute considerably to cumulative traffic increases that would cause deterioration in levels of service to unacceptable levels.
- The project would have a significant effect on the environment if it would cause a substantial increase in transit demand that could not be accommodated by adjacent transit capacity, resulting in unacceptable levels of transit service; or cause a substantial increase in delays or operating costs such that significant adverse impacts in transit service levels could result. With the Muni and regional transit screenline analyses, the project would have a significant effect on the transit provider if project-related transit trips would cause the capacity utilization standard to be exceeded during the peak hour.
- The project would have a significant effect on the environment if it would result in substantial overcrowding on public sidewalks, create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas.
- The project would have a significant effect on the environment if it would create potentially hazardous conditions for bicyclists or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas.
- A project would have a significant effect on the environment if it would result in a loading demand during the peak hour of loading activities that could not be accommodated within proposed on-site loading facilities or within convenient on-street loading zones, and would create potentially hazardous conditions or significant delays affecting traffic, transit, bicycles, or pedestrians.
- A project would have a significant effect on the environment if it would result in inadequate emergency access.
- Construction-related impacts generally would not be considered significant due to their temporary and limited duration.

The impact of project construction and operations related to the following significance criterion was addressed in the Initial Study, which is attached as **Appendix A** to this EIR.

Result in change in air traffic patterns. Due to the nature and scope of the proposed project, implementation of the proposed project does not have the potential to change air traffic patterns. In addition, the proposed project would not involve the installation of structures that could interfere with air space or result in changes to air traffic patterns. Therefore, as described in the Initial Study, this criterion is not applicable to the proposed project, and is not discussed further.

Approach to Analysis

This section presents the methodology for developing the travel demand associated with the proposed project, as well as the methodology for developing 2040 Cumulative traffic, transit and pedestrian conditions.

Project Travel Demand

Introduction

A convention center is a special trip generator for which travel characteristics (trip generation rates, peak hour factors, etc.) are not available from standard sources used for development projects in San Francisco such as the *SF Guidelines*¹⁴ or the Institute of Transportation Engineers *Trip Generation Manual*.¹⁵ As such, the transportation planning characteristics of the Moscone Center convention center were evaluated on a site-specific basis taking into account the expected attendance and travel data applicable to the Moscone Center area. The number and type of events held at the Moscone Center, number of registered attendees, and size of events, and additional information including location of events within Moscone Center (i.e., Moscone North, Moscone South, and Moscone West), monthly, weekly and daily attendance patterns, number of employees, and existing freight delivery and event bus characteristics for various sized events were used to estimate the travel demand associated with the proposed expansion. The memorandum containing the detailed methodology and information used to calculate the project travel demand is included in **Appendix C**. This section summarizes the information and analysis contained in the travel demand memorandum.¹⁶

As indicated in Chapter 2, the purpose of the proposed project is to plan for the future capacity, configuration and contiguous space needs to ensure San Francisco's position within the meetings, convention, and exhibitions industry. The expansion project would allow Moscone Center to retain its existing convention business, attract new reservations, and more flexibly meet future demands for large, contiguous exhibitions (those with more than 20,000 attendees per day).

The project sponsor has indicated that there would be no increase in the number of very large events such as Oracle's Open World and Salesforce's Dreamforce. The proposed project would create approximately 140,000 square feet of new exhibition area within the lower level of Moscone North and Moscone South, from 440,000 square feet to 580,000 square feet. Although

¹⁴ *Transportation Impact Analysis Guidelines for Environmental Review*, San Francisco Planning Department, October 2002.

¹⁵ *Trip Generation Manual - Ninth Edition*, Institute of Transportation Engineers, 2012.

¹⁶ *Moscone Center Expansion Project – Estimation of Travel Demand*, Adavant Consulting, January 9, 2014. See Appendix C.

the proposed project would increase the maximum size occupied by a large event by approximately 140,000 square feet, and therefore the total number of exhibits and exhibitors, the project sponsor has indicated that it would not be expected to substantially increase the number of attendees (i.e., the same number of attendees would be able to visit a greater number of exhibits). The project sponsor has indicated that the proposed project would not be expected to increase the existing daily attendance, which is based on the number of members who are part of an association or corporation hosting the event, with the exception of the number of exhibitors that would increase with the additional exhibit space that would be provided. Nonetheless, the travel demand analysis is based on the conservative assumption that the number of daily attendees and freight demand associated with the event would also grow proportionately with the amount of additional exhibit space. This proportional increase in attendance represents a worst-case scenario in the event that total attendance increases as a result of the proposed project.

It is anticipated that the proposed project would result in an increase in the total number of events that would take place on a given year at the Moscone Center, as it would allow for those events that have grown too large for the current facilities to return, and new ones to be added, and would therefore result in an increase in the number of attendees on an annual basis. A financial analysis recently conducted for the Moscone Center¹⁷ indicates that 71 groups had tentatively held dates and space at the Moscone Center for the January 2010 to December 2019 period but had subsequently cancelled their reservations due to space constraints (i.e., size too small, non-contiguous space, etc.). This information would suggest that approximately seven additional large events per year were canceled because they were too large to be accommodated at the existing facility but that could take place in the future at the Moscone Center as a result of the proposed project. Of the roughly seven additional large events per year, some would replace existing smaller events and some would be new. Because there are currently about 15 large events per year at the Moscone Center, an additional seven large events would represent a 47 percent annual increase in large events. The proposed project would not be expected to have any effect on the duration of events.

Excluding the San Francisco International Auto Show (a consumer tradeshow), the largest events that currently take place at the Moscone Center (Oracle's Open World and Salesforce's Dreamforce) are convention/tradeshow combinations. Convention/tradeshow events, which would be better served by the proposed increase in exhibit space, represent more than 75 percent of all the existing events at the Moscone Center, a proportion that could increase as a result of the proposed project. Based on information obtained from the Moscone Center operations team, the proposed project would not change the ability of the Moscone Center to accommodate two or more events simultaneously, modify the time currently required to set up or break down events, or have any impact on the existing frequency or duration of road closures of Howard Street.¹⁸

¹⁷ *Moscone Convention Center Expansion - Cost Benefit Phase II Analysis*, pp. 20-22; prepared by Jones Lang Lasalle Hotels for the San Francisco Tourism Improvement District, March 16, 2012.

¹⁸ Dick Shaff, SMG Moscone Center, Vice President/General Manager, 2013.

Total Daily Attendance for Design Event Day

Similar to other land uses, peak attendance days at convention center events are not generally utilized for transportation planning and analysis purposes, as they do not represent the most common circumstance. Instead, for convention center uses, a “design event day” condition associated with the 85th percentile of the total daily attendance is typically used to represent a reasonable worst-case condition that would occur with enough frequency to warrant consideration for analysis. By basing the transportation impact analysis on the 85th percentile of the total daily attendance, the analysis represents the attendance level that has a probability of 15 percent or less of being exceeded during the year.¹⁹

To this end, an average total daily attendance was estimated for those events that have taken place at the Moscone Center during 2010, 2011 and 2012,²⁰ and a profile for a typical design day was developed. Events took place at the Moscone Center during a total of 542 days out of the 1,096 possible days, or 49 percent of the total days, during the 3-year period of analysis. The existing 85th percentile of total daily attendance is 22,000 attendees, which is considered a large event. Total daily attendance above the 85th percentile of 22,000 currently occurs about 26 days a year, approximately 7 percent of all the days in a year.

Total daily attendance differs from the registered event attendance (exhibitors and attendees) since it has to take into account how many attendees would be onsite on a given event day, as well as the possibility of overlapping multiple medium- and small-size events on a single day. Based on analyses of the attendance levels, a series of registered event attendance to total daily attendance factors were developed that take into account the type and duration of an event, and these factors are summarized in **Table IV.A-5**. Table IV.A-5 indicates that the average daily event attendance per 1,000 square feet of exhibition space at the Moscone Center is approximately 30 attendees. This value is lowest for those events taking place at Moscone North plus West (15 daily event attendees per 1,000 square feet), and highest (except for Moscone West, which is not part of the proposed project) for the simultaneous use of all three buildings (42 attendees per 1,000 square feet).

¹⁹ Other transportation planning analyses of convention centers have used the 85th percentile to define the total daily attendance for the design day (for example, the Spokane Convention Center, the San Diego Convention Center Expansion, or the New York Javits Convention Center Expansion). The 85th percentile appears appropriate for the Moscone Center as well, given the observed patterns for the total daily attendance. The existing 85th percentile of total daily attendance is 22,000, considered a large event, in contrast to the average total daily attendance of about 11,900, considered a medium-sized event. About 26 days per year (about 7 percent) would have a total daily attendance above the 85th percentile attendance of 22,000 attendees per day. (Moscone Center Expansion Project – Estimation of Travel Demand, Adavant Consulting, January 9, 2014)

²⁰ Data from the last three years (2010 through 2012) for which detailed daily event attendance information was available from the Moscone Center operator were used to estimate the travel demand for the proposed project. Although the total annual attendance can change from year to year, with some years prior to 2010 having a greater total annual attendance, the total number of events varies as well, resulting in some instances in a lower average attendance per event. For example, the average annual registered attendance per event during FY 2001/02 was the highest experienced at the Moscone Center during last 13 years, in spite of having the lowest total annual attendance during the same period. The design day attendance used in the transportation impact analysis of the Moscone Center without the proposed expansion is 22,000 attendees per day.

**TABLE IV.A-5
MOSCONE CENTER NUMBER OF EVENTS AND ATTENDANCE BY LOCATION –
JANUARY 1, 2010 THROUGH DECEMBER 31, 2012**

Moscone Center Location	Approximate Exhibition Space (sq ft) ¹	Number of Events ²	2010 to 2012 Total Daily Event Attendance ²	Average number of daily attendees per 1,000 sq ft per event
North	181,400	22	104,304	27.4
South	260,600	24	130,364	20.8
West	99,900	68	305,532	45.0
North + South	442,000	33	406,074	27.8
North + West	281,300	2	8,497	15.1
South + West	360,500	1	10,770	29.9
North + South + West	541,900	25	564,408	41.7
Overall Average				29.7

NOTES:

¹ Source: <http://www.moscone.com/press/stats.html>; last consulted May 6, 2013.

² Calculated from the event registered daily attendance data provided by the Moscone Convention Center operator.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Based on the analysis of events and attendance data for the 3-year period of analysis, the 85th percentile of total daily attendance of 22,000 was used as the design day for the impact analysis, and a derived trip generation rate of 29.7 attendees per 1,000 square feet of event space was used in determining the travel demand associated with the additional 140,000 square feet of exhibition space.

Trip Generation

The travel demand associated with the proposed project includes trips generated by the additional attendees, as well as trips generated by the additional employees.

Attendee Trip Generation. Using the average number of daily attendees per 1,000 square feet of 29.7, as shown on Table IV.A-5, the proposed increase of approximately 140,000 square feet of new exhibition space would represent a project-generated increase of about 4,200 attendees per day, resulting in a design day of 26,200 daily event attendees for the proposed project (existing 85th percentile of 22,000 daily attendees plus a project-generated increase of 4,200 daily attendees).²¹ It is estimated that on average each event attendee would generate three one-way trips to and from the Moscone Center; thus the proposed project would generate 12,600 additional attendee person-trips per day.²²

²¹ This is a conservative assumption since 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 visitors during an event day.

²² A person trip is a trip by a person using any mode of transportation. This assumes that half of the attendees would generate two daily trips, one inbound and one outbound, and the other half would generate four daily one-way trips, two inbound and two outbound, as they may leave the Moscone Center during the day to go back to the hotel, a restaurant outside the immediate area, etc., and then return to the Moscone Center. Thus, on average, each event attendee would generate three one-way trips. The Moscone Center operator has indicated that this is a conservative assumption as the majority of attendees remain at the Moscone Center during the day. (Dick Shaff, SMG Moscone Center, Vice President/General Manager, 2013).

Employee Trip Generation. The proposed project would increase the number of employees during an event day by approximately 28 employees, mostly additional exhibitors.²³ The existing full-time management and non-event staff working at the Moscone Center would remain at the current levels. The increase of 28 full time employees would result in a total of approximately 1,000 employees on an event day under the Existing plus Project conditions (i.e., the 971 existing employees on the highest event day plus 28 additional employees). Based on trip generation data presented in the *SF Guidelines*, it is estimated that each employee at the Moscone Center would generate about 2.5 person-trips per day, thus the proposed project would generate 70 additional employee person-trips per day.²⁴

Table IV.A-6 summarizes the daily person trip generation for Existing and Existing plus Project conditions. Overall, the proposed project would result in a net increase in the number of daily person trips of 12,670 trips (12,600 trips associated with the additional attendees, and 70 trips associated with the additional employees).

TABLE IV.A-6
PROPOSED PROJECT DAILY TRIP GENERATION FOR ATTENDEES AND EMPLOYEES

	Number of Employees and Attendees			Daily Person Trips		
	Attendees	Employees	Total	Attendees	Employees	Total
Existing	22,000	971	22,971	66,000	2,428	68,428
Existing plus Project	26,200	999	27,199	78,600	2,498	81,098
Difference	4,200	28	4,228	12,600	70	12,670

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

The number of the additional 12,670 daily person trips that would occur during the p.m. peak hour of analysis was estimated based on the hourly distribution of convention center activity from surveys conducted at the New York Javits Convention Center.^{25,26} Of the 12,670 additional daily person trips, about 3,270 trips would occur between 6 and 11 a.m. (i.e., 26 percent of the daily trips would occur during the five-hour a.m. period), with most trips traveling to the Moscone Center, 4,520 trips would occur between 11 a.m. and 3 p.m. (i.e., 36 percent of daily trips would occur during the four-hour midday period) with trips generally split between trips to and from the Moscone Center, and 4,870 trips (i.e., 38 percent of the daily trips) would occur between

²³ The approximate number of full-time event-related employment fluctuates substantially based on the size of the event, booth size and other factors. The 28 additional employees is an average increase in full-time employment, and there can be more or fewer employees depending on the size and type of event. (Dick Shaff, SMG Moscone Center, Vice President/General Manager, 2013).

²⁴ From the *SF Guidelines* (Table C-1 for Government Office with high public use): 43.3 daily person trips per 1000 square feet x 276 square feet per employee = 12 total daily person trips per employee. Table C-2 indicates that 20% of the daily trips are made by employees, therefore 12 x 0.20 = 2.4 trips per employee.

²⁵ Moscone Center Expansion Project – Estimation of Travel Demand, Adavant Consulting, January 9, 2014.

²⁶ The p.m. peak hour was selected for analysis because the transportation network in downtown San Francisco is generally less congested during the a.m. peak hour than during the p.m. peak hour.

3 and 7 p.m. (i.e., 38 percent of the daily trips would occur during the four-hour p.m. period) with most trips leaving the Moscone Center.

The number of additional person trips that would occur during the p.m. peak hour is 1,394 person trips (i.e., 11 percent of the daily trips, and 29 percent of the trips during the four-hour 3 to 7 p.m. period). This number was used in the impact analysis. The pedestrian impact analysis also includes an analysis of midday peak hour conditions, and for purposes of the pedestrian analysis, the number of additional trips that would occur during the midday peak hour was assumed to be the same as for the p.m. peak hour.²⁷

Trip Distribution

The place of origin of trips to the Moscone Center was derived from data obtained from the Moscone Center operator and the *SF Guidelines*, and is summarized for attendees and employees in **Table IV.A-7**. Note that the trip distributions are based on the place of origin for convention attendees on the day of the event (e.g., hotels²⁸), not on the place of origin of their trip to San Francisco (i.e., out of State). The majority of trips generated by the additional attendees and employees would be from within San Francisco.

TABLE IV.A-7
PROPOSED PROJECT TRIP DISTRIBUTION PATTERNS FOR ATTENDEES AND EMPLOYEES

Place of Origin	Attendees	Employees
San Francisco	70% ¹	50%
Other Bay Area	20%	50%
Out of Region	10%	0%
Total	100%	100%

NOTE:

¹ Approximately 656,000 convention attendees or 72 percent of the total annual attendance at Moscone Center (907,990) stayed at SF hotels in 2011; Source: *Moscone Expansion Project-Fiscal Responsibility & Feasibility Report*, Table II, p. 6, SF Office of Economic and Workforce Development, January 2013.

SOURCE: *Moscone Center Expansion Project Transportation Impact Study*, April 2014.

²⁷ The number of trips generated by the proposed project during the midday peak hour would be slightly less than during the p.m. peak hour – 10 percent of the daily trips during the midday peak hour, as compared to 11 percent of the daily trips during the p.m. peak hour.

²⁸ There are approximately 25,000 hotel rooms within walking distance of the Moscone Convention Center; Source: *Moscone Convention Center Expansion- Cost Benefit Phase II Analysis*, p. 4; prepared by Jones Lang Lasalle Hotels for the San Francisco Tourism Improvement District, March 16, 2012.

Mode Split

Separate mode of travel splits were estimated to forecast project travel by Moscone Center attendees and employees based on data obtained from the Moscone Center Operator and the *SF Guidelines*, and is summarized in **Table IV.A-8**. As indicated in Table IV.A-8, the majority of new trips generated by the attendees would be by event shuttle bus and walking (i.e., 50 percent by event shuttle bus and 30 percent by walking), while the majority of new trips generated by the employees would be by transit (i.e., 60 percent by transit).

TABLE IV.A-8
PROPOSED PROJECT MODE OF TRAVEL FOR ATTENDEES AND EMPLOYEES

Mode of Travel	Attendees	Employees
Auto	10%	30%
Public Transit	5%	60%
Event Shuttle Bus	50%	NA
Walk	30%	8%
Other ¹	5%	2%
Total	100%	100%

NOTE:

¹ Other includes bicycle, motorcycle, and additional modes such as taxis or limousines.

NA = Not Applicable

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Table IV.A-9 presents a summary of the p.m. peak hour person trips by mode of travel for Existing and Existing plus Project conditions. As indicated in Table IV.A-9, during the p.m. peak hour, the proposed project would generate an additional 1,394 person trips, of which about 10 percent would be by auto (141 person trips), 5 percent by public transit (73 person trips), 50 percent by event shuttle bus (693 person trips), 30 percent by walk (417 person trips), and 5 percent by other modes (70 person trips).

An average vehicle occupancy rate for private vehicles, as obtained from the *SF Guidelines* for visitors and employees to the C-3 District where the Moscone Center is located, was applied to the number of auto person-trips to determine the number of additional private vehicle trips generated by the proposed project. **Table IV.A-10** summarizes the p.m. peak hour number of vehicle trips associated with the Moscone Center for Existing conditions and Existing plus Project conditions. During the p.m. peak hour, the 141 net-new auto person trips generated by the proposed project would result in 78 vehicle trips.

Table IV.A-11 summarizes the Existing and Existing plus Project vehicle trips for daily and p.m. peak hour conditions by place of origin. During the p.m. peak hour, the proposed project would generate 78 net-new vehicle trips, of which 54 would be from within San Francisco and 24 would be from outside of San Francisco. Of the 78 net-new vehicle trips, 9 would be inbound to the Moscone

TABLE IV.A-9
PROPOSED PROJECT P.M. PEAK HOUR PERSON-TRIP GENERATION BY MODE OF TRAVEL

Mode of Travel	Existing			Existing plus Project			Difference
	Attendees	Employees	Total	Attendees	Employees	Total	
Auto	726	62	788	865	64	929	141
Public Transit	363	124	487	432	128	560	73
Event Shuttle Bus	3,630	0	3,630	4,323	0	4,323	693
Walk	2,178	17	2,195	2,594	18	2,612	417
Other ¹	363	5	368	432	6	438	70
Total	7,260	208	7,468	8,646	216	8,862	1,394

NOTE:

1 Other includes bicycle, motorcycle, and additional modes such as taxis or limousines

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

TABLE IV.A-10
PROPOSED PROJECT P.M. PEAK HOUR PRIVATE VEHICLE TRIP GENERATION

	Number of Vehicle-Trips (inbound and outbound)		
	Attendees	Employees	Total
Existing	392	42	434
Existing plus Project	468	44	512
Difference	76	2	78

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

TABLE IV.A-11
PROPOSED PROJECT DAILY AND P.M. PEAK HOUR
NUMBER OF PRIVATE VEHICLE TRIPS BY PLACE OF ORIGIN

Place of Origin	Existing		Existing plus Project		Difference	
	Daily	p.m. Peak Hour	Daily	p.m. Peak Hour	Daily	p.m. Peak Hour
San Francisco	2,847	303	3,331	357	404	54
Other Bay Area	812	88	956	104	144	16
Out of Region	407	43	475	51	68	8
Total	4,066	434	4,762	512	696	78
Inbound ¹	2,033	60	2,381	69	348	9
Outbound ¹	2,033	374	2,381	443	348	69

NOTE:

¹ Distribution of inbound and outbound vehicle trips is based on surveys conducted at the New York Jacob K. Javits Convention Center; *Convention Center Expansion Transportation Planning Assumptions Technical Memorandum*, Table 10, PBQ&D, September 2004.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Center area, and 69 would be outbound from the Moscone Center area. Because the Moscone Center does not include a dedicated parking garage, the additional vehicle trips were assigned to nearby public parking garages, specifically to SFMTA's Fifth & Mission/Yerba Buena Garage and the Moscone Garage. Because the additional attendees and employees would need to walk between the nearby public parking garages and the Moscone Center, the additional auto person trips were also distributed to the pedestrian facilities in the vicinity of the project site for inclusion in the pedestrian impact analysis.

For purposes of the pedestrian analysis, of the additional 1,394 person trips during the p.m. peak hour, a total of 631 trips were distributed to the pedestrian facilities (i.e., crosswalks, sidewalks, and corners) in the vicinity of the project site. The 631 additional trips include 141 trips by auto, 73 trips by public transit, and 417 walk-only trips. The 693 person trips by event shuttle bus and 70 person trips by other modes were assumed to be dropped off and picked up adjacent to or within the project site and therefore, were not distributed to the pedestrian facilities in the vicinity of the project site or included in the pedestrian impact analysis.

As indicated above, the pedestrian analysis also includes an analysis of midday peak hour conditions, and for purposes of the pedestrian analysis, the number of additional trips that would occur during the midday peak hour was assumed to be the same as for the p.m. peak hour (i.e., an additional 1,394 person trips). However, because under existing conditions the event shuttle bus frequencies decrease during the midday period to reflect a decreased demand for event shuttle bus service (i.e., fewer people travel to and from the hotels during the midday, and instead may walk to a restaurant to have lunch), a portion of the additional attendees identified as using event shuttle buses were converted to walk-only trips to reflect this condition. Therefore of the additional 1,394 pedestrian trips during the midday peak hour, a total of 978 were distributed to the pedestrian facilities in the vicinity of the project site. The 978 additional trips include 141 trips by auto, 73 trips by public transit, and 978 walk-only trips. As described above for the p.m. peak hour pedestrian analysis, the 346 trips by event shuttle bus and 70 person trips by other modes were assumed to be dropped off and picked up adjacent to or within the project site and therefore, were not distributed to the pedestrians facilities in the vicinity of the project site or included in the pedestrian impact analysis.

Freight Delivery and Service Vehicle Demand

Freight truck delivery demand was estimated based on data provided by the Moscone Center operator for the 2013 SPIE Photonics West convention (February 5 to 7, 2013), a heavy-freight type event with an estimated attendance of 19,500. For event-related activities, the number of truck trips generated by a truck depends on its type of cargo. Trucks carrying decorating equipment make four truck trips per load (or two truck round trips), while those carrying exhibit materials packaged in crates make eight truck trips per load (or four truck round trips), as shown in **Table IV.A-12**.

**TABLE IV.A-12
PROPOSED PROJECT NUMBER OF TRUCK-TRIPS BY TYPE OF LOAD**

Decorating Equipment	Exhibit Freight
Move-in Event Operations	
<ul style="list-style-type: none"> Loaded Truck arrives to unload equipment Empty truck departs 	<ul style="list-style-type: none"> Loaded truck arrives to unload equipment Empty truck departs Empty truck arrives to pick up empty equipment crates Loaded truck departs with empty equipment crates
Break-down Operations	
<ul style="list-style-type: none"> Empty Truck arrives to load equipment Loaded truck departs 	<ul style="list-style-type: none"> Loaded truck arrives to deliver empty equipment crates Empty truck departs Empty truck arrives to pick up equipment Loaded truck departs
Total: four truck-trips per break-down load	Total: eight truck-trips per breakdown load

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

The proposed project would result in an increase in the number of freight trucks (primarily for the heavy freight-type events) and food and beverage trucks by about 32 percent.²⁹ The Existing and Existing plus Project freight truck demand is shown in **Table IV.A-13**. For events that generate heavy-freight, Moscone Center currently utilizes two loading shifts: the morning shift occurs between 7:30 a.m. and 3:30 p.m., and the afternoon shift occurs between 3:30 p.m. and midnight. The increase in truck trips during each loading shift would range depending on when the truck trip occurs (e.g., move-in day, event-day or break-down day). The greatest increase in the number of truck trips would occur on a break-down day, with a maximum increase of 120 truck trips and an average increase of 82 truck trips during either loading shift.

Event Shuttle Bus Demand

As indicated in Table IV.A-9, during the p.m. peak hour the proposed project would generate an additional 693 attendee person trips traveling by event shuttle bus from designated hotels to the Moscone Center. The 693 additional attendees using the event shuttle bus service during the p.m. peak hour represents 16 additional event shuttle buses per hour arriving and departing the Moscone Center, assuming a vehicle capacity of about 45 seats per bus, or one additional bus every 4 to 6 minutes.

²⁹ An increase of about 140,000 square feet of exhibition space over the existing total of approximately 442,000 square feet of exhibition space at Moscone Center North and South was used to estimate the 32 percent increase in loading demand.

TABLE IV.A-13
PROPOSED PROJECT MAXIMUM AND AVERAGE NUMBER OF TRUCK TRIPS DURING EITHER
MORNING OR AFTERNOON LOADING SHIFTS¹ FOR HEAVY-FREIGHT-TYPE EVENT

Type of Freight	Move-in Day		Event Day		Break-down Day	
	Maximum	Average	Maximum	Average	Maximum	Average
Existing						
Decorating Equipment ²	24	6	12	4	42	28
Exhibit Freight ³	172	52	92	28	320	216
Food & Beverage	52	32	42	40	20	20
Total	248	90	146	72	382	264
Existing plus Project						
Decorating Equipment ²	32	8	16	6	56	36
Exhibit Freight ³	228	68	120	36	420	284
Food & Beverage	68	42	56	52	26	26
Total	328	118	192	94	502	346
Difference	80	28	46	22	120	82

NOTES:

¹ During the morning loading shift (from approximately 7:30 a.m. to 3:30 p.m.) or afternoon loading shift (from approximately 3:30 p.m. to midnight).

² Each decorating equipment truck generates four truck trips.

³ Each exhibit truck generates eight truck trips.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Vehicle Parking Demand

Parking demand associated with the proposed project was determined by applying the average mode split and the vehicle occupancy from the trip generation estimation to the expected additional number of event attendees and employees generated by the additional 140,000 square feet of exhibition space. **Table IV.A-14** summarizes the Existing and Existing plus Project parking demand. The proposed project would generate a net-new demand for about 348 parking spaces on a daily basis.

TABLE IV.A-14
PROPOSED PROJECT PARKING DEMAND

Type	Parking Space Demand		
	Existing	Existing plus Project	Difference
Attendees	1,784	2,125	341
Employees	249	256	7
Total	2,033	2,381	348

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Development of 2040 Cumulative Conditions

Foreseeable Nearby Development Projects

Examples of reasonably foreseeable development projects that were considered in the Transportation and Circulation cumulative analysis include the following:

- Central SoMa Plan (Case No. 2011.1356E)
- Transit Center District Plan (Case No. 2007.0558E)
- 5M Project (Case No. 2011.0409E)
- 706 Mission Street (Case No. 2008.1084E)
- 725 Harrison Street (Case No. 2005.0759E)
- 400 Second Street (Case No. 2012.1384U)
- 250 Fourth Street (Case No. 2011.0038E)
- 900 Folsom Street (Case No. 2007.0689E)
- 260 Fifth Street (Case No. 2007.0690E)
- 206 Fifth Street/909-921 Howard Street (Case No 2012.1047U)
- 923 Folsom Street (Case No. 2012.1333E)
- 942 Mission Street (Case No. 2008.0197E)

Cumulative Transportation Network Changes

The following transportation network changes are also incorporated into the Cumulative analysis, and are described below:

- Central Subway Project
- Central SoMa Plan
- Second Street Improvement Project
- San Francisco Bicycle Plan
- Transit Center District Plan
- Transit Effectiveness Project

Central Subway Project. The Central Subway Project is the second phase of the Third Street light rail line (i.e., T Third), which opened in 2007. Construction is currently underway, and the Central Subway will extend the T Third line northward from its current terminus at Fourth and King streets to a surface station south of Bryant Street and go underground at a portal under U.S. 101. From there it will continue north to stations at Moscone Center (i.e., on the west side of Fourth Street between Folsom and Clementina streets), Union Square—where it will provide passenger connections to the Powell Street Station and BART—and in Chinatown, where the line will terminate at Stockton and Clay streets. Construction associated with utility relocation has been completed. Work is underway on the tunnels contract, which consists of 1.5 miles of twin-bore tunnels underneath Fourth Street and Stockton Street, from I-80 to North Beach. Its major components include construction of the tunnel-boring machine launch box and cross passages; construction of an extraction shaft and portal; and monitoring and protection of existing utilities, buildings, and BART tunnels. Construction of the Central Subway is scheduled to be completed in 2017, and revenue service is scheduled for 2019.

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. This area is located generally between Townsend and Market streets along Fourth Street, between Second and Sixth streets. 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 transportation network in this area. These changes will be 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 environmental review application has been filed for this project.

The Central SoMa Plan includes two different options for the couplet of Howard and Folsom streets. Howard Street would be modified between 11th and Third streets, while Folsom Street would be modified between 11th Street and The Embarcadero. Under the One-way Option, both streets would retain a one-way configuration (except Folsom Street east of Second Street which would retain its existing two-way operation). Under the Two-way Option, both streets would be converted into two-way operation, and some modifications to Harrison Street would also occur.

Howard/Folsom One-way Option: Under the One-way option, Howard Street between 11th and Third streets would be modified to have two westbound travel lanes and a two-way cycle track along the south curb. Parking would be permitted along the north curb during off-peak times, while during peak travel periods, parking would be prohibited to create a third westbound travel lane.

Alongside the cycle track, parking would be permitted at all times; however, at intersection approaches where left-turns are possible, parking would be removed in order to create a left-turn pocket which (along with a left-turn signal) would be necessary in order to separate left-turning vehicles from bicycles. The north sidewalk would be widened to about 15 feet, while the south sidewalk would remain at 12 feet.

Under the One-way option, Folsom Street between 11th and Second streets would be modified to have one eastbound travel lanes and a two-way cycle track along the north curb. East of Sixth Street, parking would be permitted along the south curb during off-peak times, while during peak travel periods, parking would be prohibited to create an eastbound transit-only lane. Alongside the cycle track, parking would be permitted at all times; however, at intersection approaches where left-turns are possible, parking would be removed in order to create a left-turn pocket which (along with a left-turn signal) would be necessary in order to separate left-turning vehicles from bicycles. The south sidewalk would be widened to about 15 feet, while the north sidewalk would remain at 10 feet.

Under the One-way option, Folsom Street between Second Street and The Embarcadero would be modified to have two eastbound and one westbound travel lane and bicycle lanes in both directions. In this segment, parallel parking would be provided on both sides of the street alongside the bicycle lanes at all times. Consistent with the Transit Center District Plan (TCDP), the north sidewalk of Folsom Street would be widened to about 25 feet, and the south sidewalk would be widened to about 15 feet.

Howard/Folsom Two-way Option: Under the Two-way option, Howard Street between 11th and Third streets would be modified to have two westbound and two eastbound travel lanes, left-turn pockets where left turns are permitted, and bicycle lanes in each direction. Between Sixth and Fourth streets, at all times, two westbound and two eastbound travel lanes and one bicycle lane in each direction would be provided, in addition to parallel parking along either the north or south curb. Sidewalks between Fourth and Sixth streets would remain at 12 feet. Between Sixth and 11th streets, during off-peak hours, one travel lane and one bicycle lane would be provided in each direction in addition to parallel parking along the north and south curbs; during peak hours, parking would be prohibited in order to create a second travel lane in each direction. Sidewalks between 11th and Sixth streets would be widened to about 15 feet.

Under the Two-way option, Folsom Street between 11th and Fourth streets would be modified to have one eastbound and one westbound travel lane and one-way buffered or raised cycle tracks in both directions. Parallel parking would be provided on one side of the street at all times, but on block faces without parallel parking where on-street loading would be required, loading bays could be placed within the sidewalk. Right-turn pockets would be provided at intersections which, along with a right-turn signal, would be necessary in order to separate right-turning vehicles from bicycles. Sidewalks would be widened to about 15 to 18 feet.

Under the Two-way option, Folsom Street between Fourth and Second streets would be modified to have one eastbound transit-only lane, one eastbound travel lane, one westbound travel lane, and one-way buffered or raised cycle tracks in both directions. Westbound auto traffic on Folsom Street would be required to turn right onto northbound Third Street during peak periods (vehicle access to the north curb of Folsom between Third and Fourth would be accommodated by turning left onto westbound Folsom Street from northbound Third Street). Eastbound vehicle traffic on Folsom Street would be required to turn right onto southbound Fourth Street during peak periods (vehicle access to the south curb of Folsom Street between Fourth and Third streets would be accommodated by turning left onto eastbound Folsom Street from southbound Fourth Street). Parallel parking would be provided adjacent to the eastbound cycle track.

Under the Two-way option, Folsom Street between Second Street and The Embarcadero, would be modified to have one eastbound and one westbound travel lane and one-way buffered cycle tracks in both directions. Parallel parking would be provided on both sides of the street alongside the cycle tracks at all times. Right-turn pockets would be provided at intersections which (along with a right-turn signal) would be necessary in order to separate right-turning vehicles from bicycles. Consistent with the TCDP, the north sidewalk of Folsom Street would be widened to about 25 feet, and the south sidewalk would be widened to about 15 feet.

The principal design for the proposed project assumes that Howard Street operates as a one-way roadway under 2040 Cumulative conditions. However, the project would allow for the conversion of Howard Street to a two-way roadway as proposed in the Central SoMa Plan currently under review. To accommodate four vehicle through lanes (two eastbound, two westbound) and a bicycle lane in each direction, as proposed in the Central SoMa Plan two-way Howard Street scenario, the Moscone Center would remove the bus bypass lane and retain only one bus lane on the south side

of Howard Street. Building set-backs would remain the same, but the sidewalk on the south side of Howard Street would be increased by 3.5 feet and the roadway decreased by 3.5 feet.

Second Street Improvement Project. DPW, SFMTA, and the Planning Department have been working with community members on design improvements on Second Street between Market and King streets. Bicycle Route 11 runs on Second Street, and in accordance with the *San Francisco Bicycle Plan*, the project would provide separated bicycle lanes along the entire length of Second Street, as well as a pedestrian refuge space at a number of locations. The project also includes roadway resurfacing, concrete curb reconstruction, the installation of ADA-compliant curb ramps, and upgrades to the traffic signal system. The preferred concept would reduce the number of travel lanes from two to one travel lane in each direction, limit general parking, and relocate some commercial loading spaces and passenger loading/unloading zones. DPW estimates that construction on this project would begin by 2016.

San Francisco Bicycle Plan. The *San Francisco Bicycle Plan* includes planned short-term improvements to Bicycle Route 19 on Fifth Street. Fifth Street improvements include the construction of Class II bicycle lanes and Class III bicycle routes in both directions between Market and Townsend streets. Similar to the ongoing Second Street Improvement Project described above, Bicycle Plan improvements on Fifth Street would reduce the number of travel lanes and prohibit northbound and southbound left turns, as well as implement other minor changes to lane geometry and on-street parking.

Transit Center District Plan. Adopted in summer 2012, the TCDP builds on the City's 1985 Downtown Plan to create new land use, urban form, building design, and public realm improvements in and around the new Transbay Transit Center that is currently under construction. The TCDP increases the zoned capacity of the area, roughly bounded by Steuart Street to the east, Folsom Street to the south, Annie Street/Kaplan Lane (just east of Third Street) to the west, and Market Street to the north. In addition to the rezoning, the TCDP includes changes to the transportation network, including conversions of one-way streets to two-way traffic (i.e., Howard and Folsom streets), reductions in travel lanes, provision of new transit-only lanes, sidewalk widening, bulb-out installations, creation of new multi-use paths, and other improvements.

The TCDP plan area overlaps with the northeastern corner of the Central SoMa Area Plan. The area of overlap is in the C-3 (downtown) zoning district and comprises the southeastern corner of the Financial District. The Central SoMa Area Plan would build on the policy foundation of sustainability within the Plan area that was established in the TCDP, augmenting policies on building performance, district water, and district energy. The Central SoMa Area Plan does not propose to change the adopted land use or development controls of the TCDP, but would modify the street network proposal for Folsom Street between The Embarcadero and Second Street as identified in the TCDP to be consistent with the Central SoMa Area Plan's proposed street network changes.

Transit Effectiveness Project. The Transit Effectiveness Project (TEP) anticipates changes to routes in the vicinity of the proposed project. Year 2040 Cumulative analysis assumes changes to

the capacity of the lines as identified by route changes and headway changes indicated within the recommended TEP.

The TEP presents a thorough review of San Francisco's public transit system, initiated by SFMTA in collaboration with the City Controller's Office. The TEP is aimed at improving reliability, reducing travel times, providing more frequent service and updating Muni bus routes and rail lines to better match current travel patterns. The Planning Department published a Draft EIR on July 12, 2013 and the Final EIR was certified by the San Francisco Planning Commission on March 27, 2014. The SFMTA approved the TEP on March 28, 2014. The TEP components will be implemented based on funding and resource availability, and it is anticipated that the first group of service improvements would be implemented in Fiscal Year 2015 and the second group in a subsequent phase.³⁰ Transit Effectiveness Project recommendations include new routes and route realignments, more service on busy routes, and elimination or consolidation of certain routes or route segments with low ridership. The following changes are proposed by the TEP for routes in the study area.

- Minor frequency changes on the F Market & Wharves, J Church, K Ingleside, L Taraval, M Ocean View, and N Judah.
- The 8AX/BX Bayshore Express's frequencies will increase during the peak periods.
- The 10 Townsend route will be rerouted, with a new alignment through Mission Bay and Potrero Hill. The 10 Townsend will be renamed to the 10 Sansome.
- A new 11 Downtown Connector would serve SoMa and North Beach, and would run on Harrison and Folsom streets in the project vicinity.
- The 12 Folsom-Pacific will be discontinued (and its route replaced in the project vicinity by the new 11 Downtown Connector).
- The 14X Mission Express will have increased service frequency during the peak periods.
- The downtown terminus of the 16X Noriega Express will be extended from Fourth Street to Market and Spear streets.
- The 30 Stockton will provide service with articulated buses to reduce crowding and improve reliability. The 30X Stockton Express will have increased frequencies.

In the vicinity of the project site, the TEP also includes two alternatives for a Travel Time Reduction Proposal (TTRP) along Mission Street. If implemented, the TTRP.14 Moderate Alternative will extend the existing transit-only lane hours of 4 to 6 p.m. in both directions and 7 to 9 a.m. in the inbound direction to full-time for the segment of Mission Street between Fourth and 11th streets. In addition, the existing 7 a.m. to 6 p.m. hours of the Mission Street transit-only lanes between Fourth and Main streets in the outbound direction and between Fourth and Beale streets in the inbound direction would be extended to full-time. If the TEP TTRP.14 Expanded Alternative is implemented instead of the TTRP.14 Moderate Alternative, it will relocate the

³⁰ San Francisco Planning Department, Transit Effectiveness Project Draft EIR, July 10, 2013, Case No. 2011.0558E.

existing side-running transit-only lanes between Fifth and First streets in the outbound direction and between Sixth and First streets in the inbound direction, so that they become center-running transit-only lanes, and transition the outbound transit-only lane back to its existing curbside configuration and rescind the inbound transit-only lane from Seventh to Sixth streets.

Cumulative Traffic, Transit and Pedestrian Demand

Traffic. Future 2040 Cumulative traffic volumes were estimated based on cumulative development and growth identified by the San Francisco County Transportation Authority travel demand model (SF-CHAMP), using model output that represents Existing conditions and model output for 2040 Cumulative conditions. The 2040 Cumulative traffic volumes take into account cumulative development projects in the project vicinity, such as the 5M Project, the 706 Mission Street project, and the 250 Fourth Street project and others listed above, as well as the additional vehicle-trips generated by the proposed project. The 2040 Cumulative traffic impact analysis takes into consideration implementation of the Central SoMa Howard/Folsom One-way Option circulation changes, which would remove mixed-flow travel lanes on Howard and Folsom streets.

The 2040 Cumulative conditions assume implementation of the Howard/Folsom One-way Option, where both streets would retain a one-way configuration (except Folsom Street east of Second Street which would retain its existing two-way operation). Currently, this section of Howard Street has four westbound travel lanes (three west of Sixth Street), a westbound bicycle lane, parallel parking along the north and south curbs, and 12-foot wide sidewalks. West of Second Street, Folsom Street has four eastbound travel lanes, an eastbound bicycle lane, parallel parking along the north and south curbs, and 10-foot wide sidewalks. Folsom Street east of Second Street is currently temporarily configured with a westbound transit lane to accommodate regional transit between the Temporary Transbay Terminal and the Bay Bridge. The current configuration changes block to block, but generally has two eastbound travel lanes and one transit-only westbound travel lane. With implementation of the Central SoMa roadway network changes, some drivers would be expected to change routes, or divert, from Howard and Folsom streets to parallel streets due to the reduction in overall travel lane capacity, as well as the reduction of left-turn opportunities from these streets. **Table IV.A-15** presents the Existing, Existing plus Project, and 2040 Cumulative intersection LOS conditions for the weekday p.m. peak hour.

Transit. The 2040 Cumulative transit screenline analysis accounts for ridership and/or capacity changes associated with the TEP, the Central Subway Project (which is scheduled to open in 2019), the new Transbay Transit Center, the electrification of Caltrain, and expanded Water Emergency Transportation Authority ferry service. Existing and 2040 Cumulative conditions for the weekday p.m. peak hour for the Muni screenlines are presented in **Table IV.A-16**, and for the regional screenlines are presented in **Table IV.A-17**. The 2040 Cumulative transit analysis was developed by SFMTA based on the SFCTA SF-CHAMP travel demand model analysis conducted as part of the ongoing Central SoMa Plan EIR. Forecasted future hourly ridership demand was then compared to expected hourly capacity, as determined by the likely route and headway changes identified in the TEP to estimate capacity utilization under 2040 Cumulative conditions. As noted above, the year 2040 Cumulative analysis assumes changes to the capacity of the lines as identified by route changes and headway changes indicated within the recommended TEP.

TABLE IV.A-15
INTERSECTION LEVEL OF SERVICE – WEEKDAY P.M. PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection	Existing ¹		Existing plus Project		2040 Cumulative	
	Average Delay ²	LOS ³	Average Delay ²	LOS ³	Average Delay ²	LOS ³
1. Market St/N. Montgomery St	66.8	E	66.8	E	> 80 (1.09)	F
2. Market St/Third St	44.1	D	46.2	D	> 80 (0.88)	F
3. Market St/Fourth St	57.7	E	58.0	E	> 80 (0.92)	F
4. Market St/Fifth St	59.3	E	60.0	E	> 80 (0.89)	F
5. Mission St/N. Montgomery St	70.7	E	70.9	E	> 80 (1.78)	F
6. Mission St/Third St	71.9	E	74.9	E	> 80 (> 2)	F
7. Mission St/Fourth St	32.6	C	34.4	C	> 80 (1.39)	F
8. Mission St/Fifth St	15.4	B	15.5	B	30.6	C
9. Howard St/N. Montgomery St	47.5	D	47.5	D	58.6	E
10. Howard St/Hawthorne St	21.2	C	21.2	C	38.2	D
11. Howard St/Third St	>80 (1.29)	F	>80 (1.31)	F	> 80 (1.89)	F
12. Howard St/Fourth St	65.7	E	69.5	E	> 80 (>2)	F
13. Howard St/Fifth St	15.6	B	15.8	B	> 80 (1.59)	F
14. Folsom St/ Hawthorne St	78.4	E	79.2	E	> 80 (> 2)	F
15. Folsom St/Third St	>80 (1.22)	F	>80 (1.22)	F	> 80 (> 2)	F
16. Folsom St/Fourth St	>80 (1.11)	F	>80 (1.12)	F	> 80 (> 2)	F
17. Folsom St/Fifth St	28.6	C	28.8	C	> 80 (1.78)	F
18. Harrison St/Hawthorne St	48.2	D	48.2	D	> 80 (1.49)	F
19. Harrison St/Third St	28.5	C	28.5	C	> 80 (> 2)	F
20. Harrison St/Fourth St	42.0	D	43.1	D	> 80 (1.76)	F
21. Harrison St/Fifth St	60.4	E	60.7	E	>80 (1.37)	F
22. Bryant St/Third St	52.0	D	52.1	D	> 80 (> 2)	F
23. Bryant St/Fourth St	27.7	C	27.7	C	> 80 (0.76)	F
24. Bryant St/Fifth St	>80 (1.26)	F	>80 (1.26)	F	> 80 (1.76)	F

NOTES:

¹ Existing conditions reflect an 85th percentile Moscone event design day of 22,000 attendees per day.

² Average delay reported as seconds per vehicle.

³ Intersections operating at LOS E or LOS F conditions are highlighted in **bold**. The volume-to-capacity (v/c) ratio provided in parentheses for intersections operating at LOS F conditions.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

TABLE IV.A-16
MUNI SCREENLINES – WEEKDAY P.M. PEAK HOUR
EXISTING AND 2040 CUMULATIVE CONDITIONS

Outbound Screenline	Existing		2040 Cumulative ¹	
	Ridership	Capacity Utilization	Ridership	Capacity Utilization
<i>Northeast</i>				
Kearny/Stockton	2,158	65.6%	6,295	75.6%
Other Lines	570	52.8%	1,229	59.5%
Subtotal	2,727	62.4%	7,524	72.4%
<i>Northwest</i>				
Geary	1,814	71.7%	2,996	82.7%
California	1,366	81.0%	1,766	87.4%
Sutter/Clement	470	74.6%	749	99.1%
Fulton/Hayes	965	82.0%	1,762	93.8%
Balboa	637	68.6%	776	79.7%
Subtotal	5,252	75.6%	8,049	87.0%
<i>Southeast</i>				
Third	550	77.0%	2,300	40.3%
Mission	1,529	54.8%	2,673	88.9%
San Bruno/Bayshore	1,320	61.8%	1,817	85.1%
Other Lines	1,034	60.4%	1,582	82.1%
Subtotal	4,433	60.3%	8,372	65.5%
<i>Southwest</i>				
Subway Lines	4,747	73.1%	5,692	83.7%
Haight/Noriega	1,105	66.9%	1,265	79.3%
Other Lines	276	39.4%	380	45.2%
Subtotal	6,128	70.9%	7,337	79.4%
Total All Screenlines	18,540	67.9%	31,282	75.4%

NOTE:

¹ Screenlines and corridors operating at greater than 85 percent capacity utilization highlighted in **bold**.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Pedestrians. Future 2040 Cumulative pedestrian volumes were estimated based on cumulative development and growth identified by the SFCTA SF-CHAMP travel demand model, using model output that represents Existing conditions and model output for 2040 Cumulative conditions. The 2040 Cumulative pedestrian volumes include the additional pedestrian trips generated by the proposed project as well as other anticipated development in the area. As a conservative assumption, the 2040 Cumulative pedestrian impact analysis does not include the proposed sidewalk and crosswalk widening proposals included as part of the Central SoMa Plan.

**TABLE IV.A-17
REGIONAL SCREENLINES – WEEKDAY P.M. PEAK HOUR
EXISTING AND 2040 CUMULATIVE CONDITIONS**

Outbound Screenline	Existing		2040 Cumulative	
	Ridership	Capacity Utilization ¹	Ridership	Capacity Utilization ¹
<i>East Bay</i>				
BART	19,716	89.4%	30,383	91.6%
AC Transit	2,256	57.5%	7,000	58.3%
Ferry	805	49.8%	5,319	89.5%
Subtotal	22,777	82.6%	42,702	83.5%
<i>North Bay</i>				
GGT Buses	1,384	49.1%	2,070	73.5%
Ferry	968	49.4%	1,619	82.6%
Subtotal	2,352	49.2%	3,689	77.2%
<i>South Bay</i>				
BART	10,682	71.6%	13,971	57.8%
Caltrain	2,377	76.7%	2,529	70.3%
SamTrans	141	44.1%	150	46.9%
Ferries	-	-	59	29.5%
Subtotal	13,200	72.0%	16,709	59.0%
Total All Screenlines	38,329	75.6%	63,100	75.0%

NOTE:

¹ The capacity utilization threshold for all regional transit service providers is 100 percent.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Impact Evaluation

Traffic Impacts

Impact TR-1: The proposed project would have less than significant impacts at the 24 study intersections under Existing plus Project conditions. (Less than Significant)

During the weekday p.m. peak hour, the proposed project would generate 78 net-new vehicle trips (9 inbound and 69 outbound). All project-generated vehicle trips were assigned to and from the Fifth & Mission/Yerba Buena Garage and the Moscone Garage. The proposed street-level changes, including extending the Moscone North and South lobbies toward Howard Street, and reconfiguration of the bus loading plazas on both sides of Howard Street would not affect the adjacent travel lanes, and the lane configuration at the adjacent intersections would remain the same as under existing conditions.

Table IV.A-15 presents the Existing and Existing plus Project average vehicle delay and LOS for weekday p.m. peak hour conditions. The addition of project-generated traffic would result in

small increases in the average delay per vehicle at the study intersections. Under Existing plus Project conditions, all study intersections would continue to operate at the same LOS as under Existing conditions.

With implementation of the proposed project, the following 12 intersections would operate at LOS D or better during the p.m. peak hour, and therefore, proposed project traffic impacts at these locations would be less than significant.

- Market/Third
- Mission/Fourth
- Mission/Fifth
- Howard/New Montgomery
- Howard/Hawthorne
- Howard/Fifth
- Folsom/Fifth
- Harrison/Hawthorne
- Harrison/Third
- Harrison/Fourth
- Bryant/Third
- Bryant/Fourth

At the 12 intersections operating at LOS E or LOS F under Existing and Existing plus Project conditions, the proposed project's vehicle trips were reviewed to determine whether the project's contribution to the intersection's overall LOS E or LOS F operating conditions would be considerable. Detailed calculations and percent contributions to critical movements operating at LOS E or LOS F conditions are included in the project's Transportation Impact Study. The project's contributions to the poorly operating critical movements³¹ would be less than five percent at the 12 study intersections, and therefore, the contribution of the proposed project to the overall intersection LOS E or LOS F conditions at these 12 study intersections would not be considered significant. Therefore, the proposed project traffic impacts at the following 12 intersections would be less than significant.

- Market/New Montgomery
- Market/Fourth
- Market/Fifth
- Mission/New Montgomery
- Mission/Third
- Howard/Third
- Howard/Fourth
- Folsom/Hawthorne
- Folsom/Third
- Folsom/Fourth
- Harrison/Fifth
- Bryant/Fifth

As indicated in the Setting section above, Howard Street between Third and Fourth streets is closed to vehicular traffic for about one week (eight days maximum) during two annual events at

³¹ The critical movement, with respect to an intersection analysis, is the movement or lane for a given signal phase (for example, northbound/southbound versus eastbound/westbound) that requires the most green time, and is determined for each phase based on flow ratios calculated using the HCM2000 intersection operations methodology. The movement or lane with the highest flow ratio for each phase is the critical movement. The critical movements are determined in the quantitative calculations conducted for the study intersections, taking into consideration the available geometric conditions (for example, number of lanes), signalization conditions (for example, cycle length, green times), and traffic conditions (for example, traffic volumes, pedestrian flows, heavy vehicle percentages). The critical movements, using the HCM2000 methodology, were identified by the Synchro intersection analysis software/traffic model developed for the analysis. Poorly operating critical movements are those operating at LOS E or LOS F conditions.

the Moscone Center (Oracle's Open World and Salesforce's Dreamforce) for the installation of tents that provide additional event space. The number of days that Howard Street is closed between Third and Fourth streets is not expected to change from Existing conditions as a result of the proposed project.

The proposed project would result in an increase in the number of large events (i.e., those with a registered attendance of over 20,000 attendees) from about 15 to 22 large events per year. This would result in about 26 additional days with intersection operating conditions similar to those identified above for Existing plus Project conditions.³² Therefore, with the proposed project, large events would occur more frequently at the Moscone Center, resulting in more frequent increases in delays at the study intersections. However, as noted above for Existing plus Project conditions, these delays would not result in significant traffic impacts.

For the reasons discussed above, the increased number of event attendees and increased frequency of events would have less-than-significant traffic impacts. Therefore, the proposed project's traffic impacts would be *less than significant*.

While the proposed project's traffic impacts would be less than significant, the following improvement measures may be recommended for consideration by City decision makers to encourage use of alternate modes, and reduce vehicle queuing on Fifth and Mission streets.

Improvement Measure IM-TR-1A: Transportation Demand Management

As an improvement measure to encourage use of alternate modes and reduce the unmet parking demand, the proposed project could develop and implement a Transportation Demand Management (TDM) Plan designed to reduce use of single-occupant vehicles and to increase the use of rideshare, transit, bicycle, and walk modes for trips to and from the proposed project. The TDM plan could include such measures as the following to reduce single occupancy vehicles and encourage alternate modes of travel:

- Ensure that bicycle safety strategies are developed along the Howard Street side of the property (e.g., avoiding conflicts with event shuttle buses and taxis accessing the on-site passenger loading/unloading zone).
- Bikeshare tickets for attendees.
- Facilitate access to the Howard Street bicycle route through on-site signage.
- Points of access to Class 1 bicycle parking could include signage indicating the location of these facilities.
- Class 2 bicycle parking for event attendees could be provided.
- Bicycle rental/loaner for event attendees for local travel could be provided.

³² The 26 additional days based on seven additional events with an average duration of 3.7 event days. This does not include the 4 to 6 days for move-in and 2 breakdown days. Large events typically do not overlap with other Moscone events.

- A TDM contact person that could be designated to be responsible for conducting employee surveys, coordinating carpool/ridematch services, and conducting annual TDM events.
- Provide information to employees and visitors on transit options and locations where transit passes can be purchased.
- Transit pass subsidies for employees purchasing transit passes could be provided.
- Moscone Center could require event organizers to provide an option for attendees registering online to purchase a one, three, or seven day Muni Passport or pre-loaded Clipper Card.
- Moscone Center could have Muni Passports and pre-loaded Clipper Cards available for purchase.
- Moscone Center could provide information on the facility website about how to access the convention center and nearby hotels and attractions via transit, walking, and bicycling.

Implementation of **Improvement Measure IM-TR-1A** would further reduce the proposed project's less-than-significant traffic impacts, and would not result in any secondary transportation-related impacts.

Improvement Measure IM-TR-1B: Improved Fifth & Mission/Yerba Buena Center Garage Signage

As an improvement measure to reduce queuing on Fifth and Mission streets associated with access to the Fifth & Mission/Yerba Buena Center Garage during very large events such as the San Francisco International Auto Show, the project sponsor could fund new and more visible "GARAGE FULL" signs at the Fifth & Mission/Yerba Buena Center Garage.

Implementation of **Improvement Measure IM-TR-1B** would further reduce the proposed project's less-than-significant traffic impacts, and would not result in any secondary transportation-related impacts.

Transit Impacts

Impact TR-2: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by adjacent Muni transit capacity; nor would it cause a substantial increase in delays or costs such that significant adverse impacts to Muni transit service could occur. (Less than Significant)

The proposed project would generate about 73 net-new transit trips (9 inbound and 64 outbound) during the weekday p.m. peak hour. Because it is projected that most attendees would be traveling to and from downtown locations, only a limited number of the net-new transit trips are anticipated to cross the Muni screenlines. The Muni screenlines currently operate at less than the 85 percent capacity utilization standard, and transit routes have capacity to accommodate

additional passengers (see Table IV.A-16). Under Existing plus Project conditions, the addition of the project-generated transit trips during the p.m. peak hour to the Muni screenlines would not substantially affect transit capacity utilization.

There are no Muni routes running on Howard Street adjacent to the project site. The 8X/8AX/BX Bayshore Expresses, 30 Stockton, and 45 Union-Stockton Muni routes run northbound on Third Street within the bus-only lane that is located along the east curb of Third Street. The relocation of the existing Third Street truck ramp into Moscone South about 186 feet further south from its existing location would not affect the mixed-flow travel lanes or the bus-only lane that runs along the east curb on Third Street, and therefore would not affect existing Muni operations on Third Street.

In addition, with the proposed project, large events would occur more frequently at the Moscone Center, resulting in more frequent increases in transit trips generated by the Moscone Center. However, the increase would not affect transit capacity utilization, and the increases in large events, combined with the proposed street level changes would not affect transit operations on the adjacent streets. For the reasons noted above, the proposed project would not substantially affect the capacity utilization of the local transit lines, and would not affect the operations of the nearby Muni bus routes, and therefore, the proposed project's impacts on Muni transit service would be *less than significant*.

Impact TR-3: The proposed project would not result in a substantial increase in transit demand that could not be accommodated by regional transit capacity; nor would it cause a substantial increase in delays or costs such that significant adverse impacts to regional transit service could occur. (Less than Significant)

Because it is projected that most attendees would be traveling to and from downtown San Francisco locations, only a limited number of the 73 net-new transit trips are anticipated to cross the regional screenlines. The regional screenlines currently operate at less than the 100 percent capacity utilization standard, and transit routes have capacity to accommodate the projected additional passengers (see Table IV.A-17). Therefore, under Existing plus Project conditions, the addition of the project-generated transit trips during the p.m. peak hour to the regional screenlines would not substantially affect transit capacity utilization.

Golden Gate Transit runs outbound service on Howard Street, and there is a Golden Gate Transit stop at the Howard Street approach to Fourth Street. The proposed street-level changes included as part of the proposed project, including extending the Moscone North and South lobbies toward Howard Street and reconfiguring the bus loading plazas on both sides of Howard Street, would not affect the adjacent travel lanes and therefore would not affect Muni or Golden Gate Transit bus operations.

In addition, with the proposed project, large events would occur more frequently at the Moscone Center, resulting in more frequent increases in transit trips generated by the Moscone Center. However, as noted above for Existing plus Project conditions, the increase would not affect transit capacity utilization, and the increases in large events, combined with the proposed street-level changes would not affect transit operations on the adjacent streets. For the reasons noted above, the proposed project would not substantially affect the capacity utilization of regional transit lines, and would not affect the operations of the nearby Golden Gate Transit bus routes, and therefore, the proposed project's impacts on regional transit service would be *less than significant*.

Pedestrian Impacts

Impact TR-4: The proposed project would not result in a substantial overcrowding on public sidewalks, nor create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas. (Less than Significant)

Proposed Improvements: As part of the proposed project's creation of a "pedestrian-friendly zone" between the entry lobbies of Moscone North and Moscone South, the proposed project would enhance the existing signalized midblock pedestrian crossing at Howard Street between Third and Fourth streets. The proposed project would create a larger 60-foot wide crosswalk (widened from 28 to 60 feet), and at each side the surface of Howard Street would be raised to create a curbless transition from sidewalk to street, reinforcing the pedestrian orientation of this segment of Howard Street. Pedestrian safety features, such as tactile paving and bollards, would be installed at the edges of Howard Street. The proposed project would also widen frontage sidewalks on Howard Street, which would vary between 15 and 41 feet in front of Moscone North and between 16.5 feet and 25.5 feet in front of Moscone South. The proposed widening would meet the Planning Department's minimum standards for sidewalks per the *Better Streets Plan*.

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. Additional pedestrian amenities included as part of the proposed project include midblock pedestrian passages within the Moscone Center property to provide pedestrian connections to existing open spaces on the Moscone South block. This would include an at-grade midblock 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.

Demand: Pedestrian trips generated by the proposed project would include walk trips to and from nearby hotels, commercial uses, and residences, as well as walk trips to and from local and regional transit stops and nearby parking facilities. Overall, during the midday peak hour the proposed project would add about 978 net-new pedestrian trips to the surrounding streets (which includes 141 person trips to and from nearby parking facilities, 73 person trips to and

from nearby bus stops and rail stations, and 764 walk-only person trips). During the p.m. peak hour the proposed project would add about 631 net-new pedestrian trips to the surrounding streets (which includes 141 person trips to and from nearby parking facilities, 73 person trips to and from nearby bus stops and rail stations, and 417 walk-only person trips).

The net-new midday and p.m. peak hour pedestrian trips were distributed to the pedestrian facilities in the vicinity of the project site and were added to the existing crosswalk, sidewalk and corner volumes to estimate the Existing plus Project pedestrian volumes at the study locations. It should be noted that some of the net-new pedestrian trips assigned to the crosswalk, sidewalk and corner analysis locations would instead use the two proposed pedestrian bridges that would connect Moscone North and Moscone South at the second level above grade. However, as a conservative analysis, all net-new pedestrian trips were assigned to the street network.

Tables IV.A-18A and IV.A-18B present the pedestrian volumes and LOS conditions for the Existing plus Project conditions at the crosswalk locations for the weekday midday and p.m. peak hours, respectively. With the addition of the net-new pedestrian trips, nearly all crosswalk locations would continue to operate at LOS D or better during the midday and p.m. peak hours. The only exception would be the midblock crosswalk on Mission Street at Yerba Buena Lane, which would continue to operate at LOS E during the midday peak hours, similar to Existing conditions. At three crosswalks, with the addition of the net-new pedestrian trips, the LOS would worsen from Existing conditions, however, it would remain at LOS D or better:

- At the intersection of Mission/Fourth the LOS at the west crosswalk (i.e., crossing Mission Street) would change from LOS C to LOS D during the p.m. peak hour (it would remain at LOS C during the midday peak hour).
- At the intersection of Mission/Fourth the LOS at the east crosswalk (i.e., crossing Mission Street) would change from LOS C to LOS D during the midday peak hour (it would remain at LOS D during the p.m. peak hour).
- At the intersection of Howard/Fourth the north crosswalk (i.e., crossing Fourth Street) would change from LOS A to LOS B during the midday peak hour (it would remain at LOS A during the p.m. peak hour).
- At the intersection of Mission/Third the LOS at the west crosswalk (i.e., crossing Mission Street) would change from LOS B to LOS C during the midday peak hour (it would remain at LOS C during the p.m. peak hour).
- At the intersection of Howard/Third the south crosswalk (i.e., crossing Third Street) would change from LOS A to LOS B during the midday peak hour (it would remain at LOS A during the p.m. peak hour).

Because the proposed project includes widening of the existing midblock crosswalk on Howard Street from 28 to 60 feet in width, the crosswalk LOS conditions at this location would improve from LOS C to LOS B during the midday peak hour, and from LOS C to LOS A during the p.m. peak hour.

TABLE IV.A-18A
PEDESTRIAN CROSSWALK LEVEL OF SERVICE – WEEKDAY MIDDAY PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians	sf/ped ¹	LOS ²	Pedes- trians	sf/ped ¹	LOS ²	Pedes- trians	sf/ped ¹	LOS ²
<i>Mission/Third</i>									
North	971	28	C	976	28	C	2,068	12	E
South	1,068	23	D	1,127	22	D	2,333	9	E
East	1,121	30	C	1,177	28	C	2,443	12	E
West	921	42	B	1,033	38	C	2,073	17	D
<i>Howard/Third</i>									
North	653	49	B	721	45	B	1,459	21	D
South	716	61	A	841	54	B	1,650	26	C
East	727	42	B	740	42	B	1,561	18	D
West	686	49	B	699	49	B	1,474	21	D
<i>Mission/Fourth</i>									
North	1,171	25	C	1,176	25	C	2,494	11	E
South	1,391	21	D	1,396	21	D	2,993	8	E
East	1,792	27	C	2,015	23	D	4,010	10	E
West	1,645	29	C	1,757	27	C	3,645	12	E
<i>Howard/Fourth</i>									
North	669	70	A	910	53	B	1,686	26	C
South	580	21	D	647	19	D	1,282	8	E
East	1,070	49	B	1,135	46	B	2,364	20	D
West	619	22	D	644	21	D	1,344	9	E
Mission Street at Yerba Buena Lane	1,778	14	E	1,862	14	E	3,871	6	F
Howard Street btw Third and Fourth³	1,100	29	C	1,809	46	B	3,052	24	C
Third Street btw Mission and Howard	462	65	A	467	65	A	984	29	C

NOTES:

¹ Square feet per pedestrian.² Crosswalks operating at LOS E or LOS F conditions highlighted in **bold**.³ As part of the proposed project, the midblock crosswalk would be widened from 28 to 60 feet.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

TABLE IV.A-18B
PEDESTRIAN CROSSWALK LEVEL OF SERVICE – WEEKDAY P.M. PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Crosswalk Locations	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians	sf/ped ¹	LOS	Pedes- trians	sf/ped ¹	LOS	Pedes- trians	sf/ped ¹	LOS ²
<i>Mission/Third</i>									
North	1,044	34	C	1,049	34	C	2,224	14	E
South	655	48	B	689	46	B	1,429	20	D
East	1,094	29	C	1,127	28	C	2,363	12	E
West	882	35	C	947	33	C	1,944	15	E
<i>Howard/Third</i>									
North	472	69	A	512	65	A	1,045	30	C
South	529	90	A	631	78	A	1,229	38	C
East	853	40	C	860	39	C	1,824	17	D
West	752	54	B	759	54	B	1,609	24	D
<i>Mission/Fourth</i>									
North	1,124	27	C	1,129	27	C	2,394	11	E
South	1,450	20	D	1,455	20	D	3,089	8	E
East	2,374	18	D	2,505	17	D	5,187	7	F
West	1,927	24	C	1,992	23	D	4,170	10	E
<i>Howard/Fourth</i>									
North	595	108	A	765	82	A	1,437	41	B
South	437	38	C	476	35	C	970	16	D
East	1,261	43	B	1,313	42	B	2,738	18	D
West	603	25	C	618	25	C	1,299	10	E
Mission Street at Yerba Buena Lane	1,381	20	D	1,430	19	D	2,991	8	F
Howard Street btw Third and Fourth³	867	38	C	1,297	64	A	2,276	33	C
Third Street btw Mission and Howard	353	111	A	358	111	A	752	50	B

NOTES:

¹ Square feet per pedestrian.² Crosswalks operating at LOS E or LOS F conditions highlighted in **bold**.³ As part of the proposed project, the midblock crosswalk would be widened from 28 to 60 feet.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Tables IV.A-19A and IV.A-19B present the pedestrian volumes and LOS conditions for the Existing plus Project conditions at the sidewalk locations for the weekday midday and p.m. peak hours, respectively. With the addition of the net-new pedestrian trips to the sidewalk locations, pedestrian LOS conditions would remain similar to Existing conditions and would be LOS D or better. At a few analysis locations, the sidewalk LOS would change from LOS B to LOS C during both the midday and p.m. peak hours. The proposed reconfiguration of the passenger loading/unloading zone and pedestrian arrival zone was assumed in the analysis of the sidewalk locations on Howard Street between Third and Fourth streets.

TABLE IV.A-19A
PEDESTRIAN SIDEWALK LEVEL OF SERVICE – WEEKDAY MIDDAY PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians	ped/ min/ft ¹	LOS	Pedes- trians	ped/ min/ft ¹	LOS	Pedes- trians	ped/ min/ft ¹	LOS ²
<i>Third Street between Market and Mission</i>									
East	411	0.7	B	473	0.8	B	938	1.5	B
West	1,078	2.8	B	1,201	3.1	C	2,419	6.2	D
<i>Third Street between Mission and Howard</i>									
East	853	2.2	B	914	2.3	B	1,877	4.8	C
West	756	2.3	B	943	2.9	B	1,797	5.4	C
<i>Fourth Street between Market and Mission</i>									
East	1,549	2.7	B	1,794	3.1	C	3,544	6.2	D
West	1,835	5.1	C	1,957	5.4	C	4,031	11.2	E
<i>Fourth Street between Mission and Howard</i>									
East	2,472	8.2	D	2,717	9.1	D	5,510	18.4	E
West	734	1.2	B	998	1.7	B	1,827	3.0	C
<i>Howard Street between Third and Moscone Entrance</i>									
North ³	1,162	1.8	B	1,410	3.1	C	2,723	6.1	D
South ³	733	1.0	B	884	1.8	B	1,713	3.5	C
<i>Howard Street between Fourth and Moscone Entrance</i>									
North ³	1,205	2.9	B	1,644	3.7	C	3,076	6.8	D
South ³	1,174	2.4	B	1,318	2.7	B	2,574	5.2	C

NOTES:

¹ Pedestrian flow rate expressed as pedestrians per minute per foot (ped/min/ft).

² Sidewalk locations operating at LOS E or LOS F conditions highlighted in **bold**.

³ Analysis conducted at narrowest sidewalk location - 15 feet adjacent to Moscone North, and 16.5 feet adjacent to Moscone South.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

TABLE IV.A-19B
PEDESTRIAN SIDEWALK LEVEL OF SERVICE – WEEKDAY P.M. PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Sidewalk Location	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians	ped/ min/ft ¹	LOS	Pedes- trians	ped/ min/ft ¹	LOS	Pedes- trians	ped/ min/ft ¹	LOS ²
<i>Third Street between Market and Mission</i>									
East	932	1.5	B	968	1.5	B	2,020	3.2	C
West	1,455	3.7	C	1,527	3.9	C	3,172	8.1	D
<i>Third Street between Mission and Howard</i>									
East	1,087	2.8	B	1,123	2.9	B	2,351	6.0	D
West	881	2.7	B	991	3.0	C	1,986	6.0	D
<i>Fourth Street between Market and Mission</i>									
East	2,254	4.0	C	2,398	4.2	C	4,945	8.7	D
West	2,032	5.6	C	2,104	5.8	C	4,399	12.2	E
<i>Fourth Street between Mission and Howard</i>									
East	2,119	7.1	D	2,262	7.5	D	4,656	15.5	E
West	824	1.4	B	1,011	1.7	B	1,942	3.2	C
<i>Howard Street / Third and Moscone Entrance</i>									
North ³	878	1.3	B	1,023	2.3	B	2,015	4.5	C
South ³	554	0.8	B	675	1.4	B	1,301	2.6	B
<i>Howard Street between Fourth and Moscone Entrance</i>									
North ³	1,210	2.9	B	1,483	3.3	C	2,908	6.5	D
South ³	1,080	2.3	B	1,181	2.4	B	2,344	4.7	C

NOTES:

¹ Pedestrian flow rate expressed as pedestrians per minute per foot (ped/min/ft).² Sidewalk locations operating at LOS E or LOS F conditions highlighted in **bold**.³ Analysis conducted at narrowest sidewalk location - 15 feet adjacent to Moscone North, and 16.5 feet adjacent to Moscone South.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

Tables IV.A-20A and IV.A-20B present the pedestrian volumes and LOS conditions for the Existing plus Project conditions at the corner locations for the midday and p.m. peak hours, respectively. With the addition of the net-new pedestrian trips to the corner locations, pedestrian LOS conditions would remain similar to Existing conditions and would be LOS D or better. During the midday peak hour, the pedestrian LOS conditions on the southeast corner of the intersection of Howard/Fourth would worsen from LOS A under Existing conditions to LOS B under Existing plus Project conditions, the LOS on the southwest corner of the intersection of Mission/Third would worsen from LOS C to LOS D conditions, and the LOS on the southeast corner of Howard/Third would worsen from LOS B to LOS C conditions.

TABLE IV.A-20A
PEDESTRIAN CORNER LEVEL OF SERVICE – EXISTING WEEKDAY MIDDAY PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Corner Location	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians ¹	sf/ped ²	LOS	Pedes- trians ¹	sf/ped ²	LOS	Pedes- trians ¹	sf/ped ²	LOS ³
<i>Mission/Third</i>									
Northwest	2,081	7	C	2,193	6	C	4,556	<1	F
Northeast	2,301	11	B	2,357	11	B	4,963	2	E
Southwest	2,188	7	C	2,358	6	D	4,847	<1	F
Southeast	2,408	5	D	2,522	5	D	5,255	<1	F
<i>Howard/Third</i>									
Northwest	1,473	83	A	1,696	72	A	3,226	35	A
Northeast	1,518	89	A	1,599	84	A	3,322	37	A
Southwest	1,542	51	A	1,680	47	A	3,436	20	A
Southeast	1,587	10	B	1,725	9	C	3,532	1	F
<i>Mission/Fourth</i>									
Northwest	3,098	25	A	3,209	24	A	6,721	8	C
Northeast	3,259	51	A	3,482	47	A	7,188	19	A
Southwest	3,340	42	A	3,580	39	A	7,236	16	A
Southeast	3,501	10	C	3,724	9	C	7,703	1	F
<i>Howard/Fourth</i>									
Northwest	1,417	175	A	1,682	145	A	3,310	69	A
Northeast	1,913	45	A	2,385	34	A	4,410	15	A
Southwest	1,319	60	A	1,411	55	A	2,910	19	A
Southeast	1,815	15	A	1,946	13	B	4,011	<1	F

NOTES:

¹ Includes inbound and outbound crosswalk movements and around-the-corner sidewalk movements.² Square feet per pedestrian.³ Corner locations operating at LOS E or LOS F conditions highlighted in **bold**.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

With the proposed project, large events would also occur more frequently at the Moscone Center, resulting in more frequent increases in pedestrian trips generated by the Moscone Center. However, as noted above for Existing plus Project conditions, the increase would not result in unacceptable pedestrian conditions at nearby crosswalk, sidewalk, and corner locations.

The existing freedom of speech zones on the pedestrian islands in front of the Moscone South and Moscone North entrances would be relocated to avoid blockage of the Moscone driveways under the proposed project's revised driveway configuration. This action is allowed per a City decision on the public right to engage in First Amendment activity in the Moscone Center driveway (July 21, 2003), which allowed the Moscone Center to restrict First Amendment activity within its

TABLE IV.A-20B
PEDESTRIAN CORNER LEVEL OF SERVICE – EXISTING WEEKDAY P.M. PEAK HOUR
EXISTING, EXISTING PLUS PROJECT, AND 2040 CUMULATIVE CONDITIONS

Intersection and Corner Location	Existing			Existing plus Project			2040 Cumulative		
	Pedes- trians ¹	sf/ped ²	LOS	Pedes- trians ¹	sf/ped ²	LOS	Pedes- trians ¹	sf/ped ²	LOS ³
<i>Mission/Third</i>									
Northwest	2,119	8	C	2,184	7	C	4,584	1	F
Northeast	2,352	12	B	2,384	12	B	5,045	3	D
Southwest	1,691	9	C	1,790	8	C	3,711	<1	F
Southeast	1,924	7	C	1,991	6	C	4,172	<1	F
<i>Howard/Third</i>									
Northwest	1,346	130	A	1,477	119	A	2,920	58	A
Northeast	1,458	130	A	1,505	126	A	3,157	58	A
Southwest	1,409	86	A	1,519	80	A	3,122	35	A
Southeast	1,520	8	C	1,630	7	C	3,359	<1	F
<i>Mission/Fourth</i>									
Northwest	3,356	25	A	3,421	24	A	7,220	9	C
Northeast	3,848	44	A	3,978	42	A	8,340	18	A
Southwest	3,715	36	A	3,885	34	A	7,984	12	B
Southeast	4,206	5	D	4,337	5	D	9,103	<1	F
<i>Howard/Fourth</i>									
Northwest	1,318	190	A	1,503	165	A	3,010	78	A
Northeast	2,042	43	A	2,362	36	A	4,593	16	A
Southwest	1,144	68	A	1,198	64	A	2,496	21	A
Southeast	1,868	9	C	1,959	8	C	4,079	<1	F

NOTES:

- ¹ Includes inbound and outbound crosswalk movements and around-the-corner sidewalk movements.
- ² Square feet per pedestrian.
- ³ Corner locations operating at LOS E or LOS F conditions highlighted in **bold**.

SOURCE: Moscone Center Expansion Project Transportation Impact Study, April 2014.

driveways to ensure that the driveways function for their intended purpose. The Moscone Center is currently in dialogue with San Francisco Planning Department, Department of Public Works, and City Attorney's staff to identify a new freedom of speech zone to accommodate First Amendment activities.

As indicated in Environmental Setting above, in the vicinity of Moscone Center there are senior pedestrian and pedestrians with disabilities with special safety considerations that affect their walking experience including reduction in vision, agility, balance, speed, concentration and strength, difficulties hearing vehicles approaching from behind, and reduced ability under low light/night conditions. The proposed project would improve pedestrian circulation adjacent to the project site which would improve pedestrian conditions for those pedestrians walking

adjacent to the project site, including for seniors and persons with disabilities, by facilitating safe pedestrian circulation and crossings, by providing safe spaces for pedestrians, and by increasing pedestrian visibility to drivers (examples of project-related pedestrian improvements include reconfiguring the Howard Street sidewalk adjacent to Moscone North and Moscone South, providing special tactile paving, bollards, and streetscape elements along Howard Street, widening the midblock crosswalk across Howard Street, and widening the sidewalk on Third Street adjacent to Moscone South between Third Street and the truck entry ramp). However, because the number of pedestrians in the area would increase with the proposed project, particularly during large events (i.e., with more than 20,000 attendees per day), senior pedestrians and pedestrians with disabilities may be further challenged as they travel on the crosswalks, sidewalks and corners adjacent to the project site and on nearby streets.

Overall, for the reasons noted above, while the addition of the project-generated pedestrian trips would increase pedestrian volumes on the crosswalks, sidewalks and corners adjacent to the project site and on nearby streets, the additional trips would not substantially affect pedestrian flows, create potentially hazardous conditions for pedestrians or otherwise interfere with pedestrian accessibility to the site and adjoining areas. Therefore, the proposed project's Existing plus Project impact on pedestrians would be *less than significant*. (A cumulative pedestrian analysis is provided on page IV.A-84 under Impact C-TR-4.)

While the proposed project's impact on pedestrian activities would be less than significant, the following improvement measures may be recommended for consideration by City decision makers to further reduce the proposed project's less-than-significant impacts related to pedestrians.

Improvement Measure IM-TR-4A: Fund the Design and Construction of Sidewalk Widening along Sidewalks Adjacent to Moscone Center

Consistent with the requirements of the *Better Streets Plan* and *Planning Code* Section 138.1, the project sponsor could fund the widening of the following sidewalk segments adjacent to the Moscone Center, consistent with ongoing planning efforts. Once the relevant planning effort has concluded and the relevant EIR has been certified and the project is approved, the project sponsor could fund the design and implementation of the sidewalk widening projects listed below, if approved, totaling three block faces:

- Fourth Street east sidewalk between Mission and Howard streets to 15 feet (upon certification of the Central SoMa Plan EIR and if the Plan is approved): one block face.
- Third Street west sidewalk between Mission and Howard streets to 15 feet (upon certification of the Central SoMa Plan EIR and if the Plan is approved): one block face.
- Mission Street south sidewalk between Third and Fourth streets to 15 feet (upon certification of the Better Market Street EIR and if the project is approved): one block face.

It should be noted that the widening of the east sidewalk of Fourth Street between Howard and Folsom streets is not feasible due to the existing truck ramp, which is not proposed for reconfiguration. The widening of the west sidewalk of Third Street between the relocated north truck entry ramp and Folsom Street is not feasible due to the existing south truck ramp, which is not proposed for reconfiguration (the sidewalk between Howard Street and the north entry ramp would be widened as part of the proposed project). Additionally, the widening of the north sidewalk of Folsom Street between Fourth and Third streets is not feasible, because that would conflict with the proposed reconfiguration options for Folsom Street in the Central SoMa Plan. It should also be noted that both the north and south sidewalks of Howard Street between Third and Fourth streets are already planned for widening as part of the proposed project.

Improvement Measure IM-TR-4A would further reduce the proposed project's less-than-significant impacts related to pedestrians, and would not result in any secondary transportation-related impacts.

Improvement Measure IM-TR-4B: Fund the Design and Implementation of Upgraded Crosswalks at Intersections Adjacent to Moscone Center

Crosswalks could be widened and should be restriped to the Continental design, consistent with the *Better Streets Plan*. The project sponsor could reimburse SFMTA for costs associated with the design and implementation of upgrading all crosswalks at the following intersections:

- | | |
|------------------|----------------------------|
| • Fourth/Mission | • Fourth/Folsom |
| • Third/Mission | • Third/Folsom |
| • Fourth/Howard | • Fourth/Minna |
| • Third/Howard | • Yerba Buena Lane/Mission |

It should be noted that the project already includes an enhanced midblock crosswalk across Howard Street between Fourth and Third streets.

Improvement Measure IM-TR-4B would further reduce the proposed project's less-than-significant impacts related to pedestrians, and would not result in any secondary transportation-related impacts.

Bicycle Impacts

Impact TR-5: The proposed project would not result in potentially hazardous conditions for bicyclists, or otherwise substantially interfere with bicycle accessibility to the site and adjoining areas. (Less than Significant)

The Moscone Center currently has one on-street bicycle rack (i.e., Class 2 bicycle parking) that can accommodate five bicycles on the south sidewalk of Howard Street just east of the Moscone South entrance. The project sponsor has indicated that some employees who currently bicycle to

work bring their bicycles into the building to their work spaces. The Moscone Center currently provides no bicycle storage and no changing room with showers and lockers.

The proposed project would provide 18 Class 1 bicycle parking spaces within the Moscone Center, which would be available to Moscone Center staff and contractors; these spaces would not be available to event attendees or the general public. The Class 1 bicycle parking spaces would be located in a secure bicycle storage room at the southeast corner of the Moscone South building, accessible from the proposed public paseo that would connect to Third Street. The proposed project would also provide 10 Class 2 bicycle parking spaces in two bicycle racks that would be located on the south side of Howard Street within the west plaza between Moscone South and the Children's Creativity Museum. In addition, two changing rooms (one male, one female) with two showers and 12 lockers each would be provided on the ground floor of the Moscone South building. Bicyclists would be required to go through an interior door in the bicycle storage room, down a corridor, and into the changing rooms near the ground floor elevator lobby.

Per *Planning Code* Section 155.4 for a Public Use with an occupied floor area exceeding 50,000 square feet, the proposed project would be required to provide changing room facilities with four showers and 24 clothes lockers, 17 Class 1 bicycle parking spaces, and 1,421 Class 2 bicycle parking spaces some of which must be provided through an attended facility. The proposed project would meet the *Planning Code* requirement for Class 1 bicycle parking spaces and for the shower and locker facilities. The Planning Department has determined that compliance with the *Planning Code* requirement to provide for the large quantity of Class 2 spaces (i.e., 1,421 bicycle parking spaces in racks on sidewalks or other publicly accessible locations) is infeasible, and the Moscone Center would seek to obtain agreement from the Planning Department on the appropriate number of Class 2 bicycle parking spaces. The project sponsor may be required to seek a variance from the *Planning Code*.

The proposed project would slightly increase bicycle demand in the area, including up to 70 net-new trips during the p.m. peak hour (as included in "other" modes in Table IV.A-9). The area around the proposed project has a number of streets with bicycle lanes and streets designated as bicycle routes, including Howard, Folsom, Second, Fifth and Market streets, that would continue to be used by bicyclists traveling to and from the Moscone Center. The project site is within convenient bicycling distance of residential, hotel, office and retail buildings in SoMa and the Financial District.

The proposed street-level changes, including extending the Moscone North and South lobbies toward Howard Street, and reconfiguration of the bus loading plazas on both sides of Howard Street would not substantially affect the bicycle lane on the north side of Howard Street on most event days. The proposed project would remove the passenger loading/unloading zone on the north side of Howard Street directly west of Third Street that is adjacent to the bicycle lane, which would decrease existing vehicle-bicycle conflicts. The proposed project would increase the number of events at the Moscone Center, resulting in more frequent days when taxi and event shuttle bus loading/unloading activities occur within the on-site passenger zone, which may result in a minor increase in vehicle-bicycle conflicts. However, access to the on-site passenger

zone would continue to be managed, and the passenger loading/unloading zone would be located on Third Street and not adjacent to an existing bicycle lane, and therefore conditions would remain similar to Existing conditions and would not result in hazardous conditions or delays affecting bicyclists.

The proposed project would not increase bicycle or vehicle traffic to a level that adversely affects bicycle facilities in the area, nor would the proposed project create a new hazard or substantial conflict to bicycling, or affect the existing Class II bicycle lane on the north side of Howard Street. The proposed project would maintain the existing Howard Street bicycle lane and would not affect bicycle accessibility to the project site or adjoining areas. Thus, the proposed project's impact to bicycle facilities and circulation would be considered *less than significant*.

Loading Impacts

Impact TR-6: The proposed project's loading demand would not be accommodated within the proposed on-site freight and passenger loading facilities, and would create potentially hazardous conditions or significant delays for traffic, transit, bicyclists or pedestrians. (Less than Significant with Mitigation)

Truck Loading Space Supply: The Moscone Center currently has 18 functional loading spaces within the lower level of the project site – three are on the east side of Moscone South (blue dock), five are on the west side of Moscone South (green dock) and ten are on the north side of Moscone North (red dock). All of the existing general-purpose loading docks are sized to accommodate a semi-trailer truck up to 53 feet in length. Trucks enter the project site via a one-way ramp located on Third Street midblock between Howard and Folsom streets and exit the project site via a one-way ramp located on Fourth Street midblock between Howard and Folsom streets.

The proposed project would not affect the existing supply of on-site loading facilities within Moscone Center. However, the entrance and base of the existing Third Street truck ramp would be relocated 186 feet south to accommodate the proposed esplanade expansion. As shown on Figure II-13, the relocated truck access ramp would provide approximately 180 feet of queuing space, allowing for two trucks to queue on the ramp (truck marshaling on the existing ramp is not currently possible due to the short length of the level portion of the ramp).

The underground truck ramp would remain 25 feet 6 inches wide, which would continue to allow for two lanes of truck operation (one lane for stopped trucks and one bypass truck lane). Improvements to truck operations under the proposed project, including allowing trucks to queue underground on the ramp, would help relieve the occasional truck queue overflow on Third and Folsom streets that occurs under Existing conditions. The proposed project would also add a large drive-in door to improve truck access onto the exhibit hall floor for loading/unloading operations, thereby relieving some of the demand for loading space. In addition, truck move-in hours would be expanded when truck demand is high in order to spread out the loading demand such that truck queues can be contained on-site.

Per *Planning Code* Section 152.1 for “Hotels, apartments, live/work units not included above, and all other uses not included above”, the proposed project would be required to provide a total of seven on-site truck loading spaces. Because the Moscone Center currently includes 18 on-site truck loading spaces, which would remain, the proposed project would meet the *Planning Code* requirements.

Demand: The proposed project would result in an increase in the number of freight trucks and food and beverage vehicles of up to 120 truck trips (i.e., inbound and outbound) during a large event during a truck-loading shift. This is a conservative estimate of the loading demand increase, which assumes that the additional 140,000 square feet of exhibition space would require additional truck trips to service the event, rather than the increased demand accommodated within the existing trucks serving the events (i.e., trucks arriving and departing with a fuller load). As under Existing conditions at the Moscone Center, truck arrivals for move-in and break-down operations would continue to be managed, plus the enhanced ability of trucks to drive directly onto the exhibit hall floor (the proposed project would add a large drive-in door to improve truck access onto the exhibit hall floor) would accommodate the increase in freight and food and beverage demand. In addition, the proposed project would relocate 186 feet south the entrance and base of the existing Third Street truck entrance to accommodate the proposed expansion. The relocation of the truck ramp would provide for an area below-grade that would accommodate queuing of up to two trucks as well as a below-grade truck passing lane to minimize truck queue spillback. However, because the increased demand during large events would likely increase the number of times that all loading docks are full, the proposed project would also result in an increase in the frequency of inbound trucks queuing along the west curb of Third Street while waiting for an available loading dock. Therefore, the proposed project’s impact related to freight loading would be *significant*.

Passenger Loading/Unloading Supply: The proposed project would reconfigure the existing Howard Street event shuttle bus pick-up and drop-off facilities by reducing the width and extending the length of the bus pullout lanes. See Figure II-13. On the north side, there would be a new lane for five buses north of the existing bicycle 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 to provide a bus passenger loading lane on the right and a bypass lane on the left; the loading lane would accommodate up to seven buses without obstructing the bypass lane, midblock crosswalk, entrance or exit lane. Overall, the reconfiguration would provide up to 12 bus loading spaces, the same bus count as the existing configuration.

Demand: The proposed project would add about 693 attendee person-trips by shuttle bus during the p.m. peak hour, which represents approximately 16 additional buses per hour arriving and departing the Moscone Center, or one additional bus every 4 to 6 minutes. Because the existing event shuttle bus service is provided at different levels based on the event size (see Table IV.A-4), the event shuttle bus service would be adjusted (i.e., increased) to accommodate the additional attendees. Increased bus service would result in a greater number of buses arriving and departing through the bus pick-up and drop-off zone at shorter headways between buses, and the duration of time that the event shuttle buses would wait at the curb for passengers would decrease (with the

additional passenger demand, the buses would fill up faster). Increased service may also result in increased frequency with which the Moscone North bus zone is used. As under Existing conditions, a bus bypass lane would be provided for the south side of Howard Street; a bypass lane would no longer be required on the north side. The “bump system” would continue to be employed to ensure that when one bus arrives a waiting bus departs, and the event shuttle buses would not queue into the adjacent travel lanes. Bus operations in the south driveway would be controlled by an attendant to facilitate bus entry/exit and minimize conflict in the crosswalks. Additionally, the new pedestrian bridge would allow Moscone Center event attendees to cross over Howard Street and avoid the driveway crosswalk.

The proposed project would remove the designated taxi stand on the south curb and the taxi/passenger vehicle drop-off and pick-up area on the north curb of Howard Street just west of Third Street. For events that do not require shuttle buses (currently more than half of all Moscone Center events), taxis and passenger vehicles would load/unload within the north or south loading/unloading area, depending on where the event is located. For medium-sized events that utilize light or medium shuttle bus service, buses would load in the loading/unloading area where the event is held, while taxis and passenger vehicles would be directed to the loading/unloading area on the opposite side. For example, if an event is held at Moscone South, taxis and passenger vehicles would be directed to the passenger loading bay adjacent to Moscone North, while shuttle buses would utilize the Moscone South loading area. The proposed loading/unloading configuration also includes multi-use spaces along the north and south sides of the street, west of the midblock crosswalk, that could be used as taxi stands or passenger vehicle loading/unloading zones when the spaces are not required for shuttle bus use. When not in use by shuttle buses, the north loading area could accommodate up to four taxis/passenger vehicles, and the south loading area could accommodate up to six taxis/passenger vehicles.

During very large events that maximize shuttle bus service and occupy all bus bays, taxis would be allowed to pick up and drop off passengers in the bus bypass lane, but taxis would not be permitted to stop for a prolonged period or use the bus bypass lane as a taxi stand due to the need to move buses through. The “bus bump” system, requiring an in-driveway attendant to manage bus flow, would ensure that the bypass lane is available for brief taxi use. The proposed project would provide a new on-street taxi stand and short-term passenger loading/unloading zone 200 feet in length (accommodating about eight to ten vehicles) on the west side of Third Street south of Howard Street at the paseo that connects to the Moscone South lobby for use during peak periods of passenger loading activity. Very large events that maximize bus bay use currently occur only three or four times per year, but they would presumably occur more frequently with the facility expansion planned under the proposed project.

The proposed project would increase the number of events at the Moscone Center, resulting in more frequent days when taxi and event shuttle bus loading/unloading activities occur within the on-site passenger zone or on-street passenger loading/unloading zones. Moreover, the reconfiguration of Howard Street would reduce the amount of curb area available for taxi pick-up and drop-off activities immediately in front of the Moscone Center entrances. Lastly, the expansion project has been assumed to increase the frequency of event shuttle bus service. During large events, when all available curbside space would be reserved for shuttle buses, some

taxi and private vehicles may pick-up and drop-off passengers in the Howard Street travel lanes and bicycle lane instead of at the proposed taxi stand and short-term passenger loading/unloading zone on Third Street south of Howard Street. Therefore, the proposed project's impact on passenger loading/unloading activities would be *significant*. In addition, during large events the impact on loading activities would likely result in vehicles stopping within the travel lanes and bicycle lanes on Howard Street, resulting in secondary impacts to bicyclists and traffic.

To reduce the proposed project's significant impacts related to freight loading and passenger loading/unloading activities, and secondary impacts to bicyclists and motor vehicle traffic, Mitigation Measure M-TR-6a would require the implementation of a Moscone Center Transportation Operations Master Plan, and Mitigation Measure M-TR-6b would require that the project sponsor fund the deployment of additional parking control officers.

Mitigation Measure M-TR-6a: Moscone Center Transportation Operations Master Plan

The project sponsor shall develop and implement a Moscone Center Transportation Operations Master Plan (Master Plan), which shall require that each Moscone Center event have its own unique Transportation Operations Event Plan (TOEP), tailored to the size, duration and characteristics of the individual event. Each TOEP shall adhere to a set of guidelines related to the following fundamental transportation elements:

1. Plan development and approval
2. Passenger loading/unloading zone attendants
3. Shuttle bus operations
4. Taxi, rideshare, and private vehicle passenger loading/unloading operations
5. Truck operations
6. Parking control office (PCO) operations
7. Pedestrian operations
8. Bicycle operations
9. Emergency vehicle operations
10. Large events that include changes to traffic operations
11. Adherence
12. Revisions to Master Plan

The Moscone Center Transportation Operations Master Plan is included in **Appendix C**.

The requirements specific to truck operations described in the Master Plan will ensure that a significant impact related to freight loading does not occur. Specifically, the Master Plan will ensure that inbound trucks do not queue along the west curb of Third Street while waiting for an available loading dock.

The requirements specific to passenger loading/unloading described in the Master Plan will ensure that a significant impact related to passenger loading/unloading, with associated secondary impacts to bicyclists and traffic, does not occur. Specifically, the Master Plan will ensure that no vehicles stop to pick-up or drop-off passengers in the Howard Street travel lanes or bicycle lane.

The Master Plan will be a living document maintained by the Planning Department. The Master Plan will be revised as necessary to reflect changes in generally accepted technology or operation protocols, or changes in conditions. All revisions will be reviewed and approved by the ERO of the Planning Department to ensure that the Master Plan adheres to this mitigation measure.

Mitigation Measure M-TR-6a would reduce the proposed project's impacts related to freight loading and event shuttle bus and taxi access to the project site. Implementation of this mitigation measure would not result in any secondary transportation-related impacts.

Mitigation Measure M-TR-6b: Fund Additional Parking Control Officers

Working with the SFMTA, the project sponsor shall fund one or more additional Parking Control Officer (PCO) beat(s) during Moscone Center events with 20,000 or more attendees. The additional PCOs shall supplement the existing PCOs, except the additional PCOs shall perform an active patrol of on-street loading conditions around the Moscone area (rather than be stationary at an intersection or crosswalk). The number of officers required to staff the additional beat(s) and the hours that the beat(s) would be staffed shall be determined by SFMTA based on the size and hours of the event, and could include events with fewer than 20,000 daily attendees.

The additional PCO beat(s) shall focus enforcement on the following loading issues:

- Ensuring that stopped vehicles, especially shuttle buses and trucks, do not idle their engine while stopped, per San Francisco Transportation Code §7.2.86. Drivers that idle their engines longer than is necessary would be subject to citation. Legible and visible signs could be posted in multiple languages (i.e., English, Spanish, Chinese) in designated queuing areas to remind operators of the two-minute idling limit.
- Ensuring that vehicles do not load or unload passengers while stopped in any crosswalk, bicycle lane or travel lane on Howard and Folsom streets, per California Vehicle Code §22500 and San Francisco Transportation Code §7.2.70. This enforcement shall be focused on all vehicles, including shuttle buses, taxis, trucks, and private vehicles. Drivers of vehicles stopped along the north curb of Howard Street or the south curb of Folsom Street would be required to ensure that their vehicle is not obstructing the bicycle lane. Consistent with existing SFMTA policy, the only vehicles that would be permitted to stop within a bicycle lane would be vehicles actively loading or unloading a disabled passenger. Vehicles that stop within a bicycle lane to load or unload a passenger that is not disabled would be subject to citation.

Mitigation Measure M-TR-6b would reduce the proposed project's impacts related to event shuttle bus and taxi access to the project site, and would not result in any secondary transportation-related impacts. Implementation of both Mitigation Measure M-TR-6a and Mitigation Measure M-TR-6b would reduce the proposed project's impacts to less-than-significant.

Emergency Vehicle Access Impacts

Impact TR-7: The proposed project would not result in significant impacts on emergency vehicle access. (Less than Significant)

Emergency vehicle access would remain unchanged from Existing conditions. Emergency vehicles would continue to access the site from arterial roadways through the study area, including Third, Fourth, Howard and Folsom streets. The proposed street level changes, including extending the Moscone North and South lobbies toward Howard Street, and reconfiguration of the bus loading plazas on both sides of Howard Street, and relocation of the truck access ramp on Third Street would not affect the travel lanes on Howard or Third streets, and therefore would not affect emergency vehicle access.

The proposed project would not increase the number of events or days that Howard Street between Third and Fourth streets would be closed to vehicular traffic. Street closures are subject to a separate City permitting process (i.e., a Temporary Occupancy Permit through DPW), which ensures that emergency vehicle access is maintained throughout the duration of the street closure.

While the proposed project would increase the number of pedestrians and vehicles in the vicinity of the Moscone Center and the number of days during the year that this increase occurs, emergency access to the site and in the vicinity would remain similar to Existing conditions. Therefore, aside from the minor increase in vehicle traffic that would result from the proposed expansion, the proposed project would not inhibit emergency access to the project site and nearby vicinity; therefore, the proposed project's impacts related to emergency vehicle access would be *less than significant*.

Construction Impacts

Impact TR-8: The proposed project would not result in construction-related transportation impacts because of their temporary and limited duration. (Less than Significant)

The construction impact assessment is based on currently available information from the project sponsor, and professional knowledge of typical construction practices citywide. Prior to construction, as part of the construction application phase, the project sponsor and construction contractor(s) would be required to meet with the DPW and SFMTA staff to develop and review truck routing plans for demolition, disposal of excavated materials, materials delivery and storage, as well as staging for construction vehicles. The construction contractor would be required to meet the *City of San Francisco's Regulations for Working in San Francisco Streets*, (the Blue Book), including those regulations regarding sidewalk and lane closures, and would meet with SFMTA staff to determine if any special traffic permits would be required.³³ Prior to

³³ The SFMTA Blue Book, 7th Edition, is available online through SFMTA (www.sfmta.com)

construction, the project contractor would coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations. In addition to the regulations in the Blue Book, the contractor would be responsible for complying with all city, state and federal codes, rules and regulations.

Construction of the proposed project would occur using a coordinated, phased construction schedule that would preserve the Moscone Center's event operations during the construction period. The construction of the proposed project is assumed to begin in November 2014 and would be completed in approximately 44 months. In order to achieve maximum contiguous exhibition space within the existing Moscone below-grade footprint, the project would include a three-phased construction schedule coordinated with the present Moscone Center event calendar.

Phase 1 would involve the preparation of the site and last 13 months. The excavation under Howard Street during this phase would require 1,500 truck trips and the temporary closure of Howard Street between Third and Fourth streets for 15 to 20 days. Phase 2, the renovation of the Esplanade Building, would last 15 months. Demolition and construction would require 2,566 and 2,250 truck trips, respectively. The renovation of the South Lobby, North Lobby and Bridges would occur during Phase 3 and last 16 months. Demolition and construction would require 2,000 and 2,221 truck trips, respectively.

Construction related activities would generally occur Monday through Saturday, between 7:00 a.m. and 8:00 p.m., and the typical work shift for most construction workers would be from 7:00 a.m. to about 3:30 p.m. Construction is not anticipated to occur on Sundays or major legal holidays, but may occur on an as-needed basis. The hours of construction would be stipulated by the Department of Building Inspection.

It is anticipated that the addition of the worker-related vehicle- or transit-trips would not substantially affect transportation conditions, as impacts on local intersections or the transit network would be temporary in nature. Construction workers who drive to the site and potential temporary parking restrictions along the building frontage would cause a temporary increase in parking demand. Construction workers would park within nearby off-street parking facilities that currently have availability during the day (e.g., the Fifth & Mission/Yerba Buena Garage).

Lane and sidewalk closures or diversions are subject to review and approval by the City's Transportation Advisory Staff Committee (TASC), which consists of representatives from the Fire Department, Police Department, SFMTA Traffic Engineering Division, and DPW. Conflicts with transit operations are not anticipated, since no Muni lines operate along Howard Street, but the proposed project's contractor would be required to coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit operations.

It is anticipated that construction activity of the proposed project may overlap with the construction activity of other proposed and/or planned projects in the area, notably the proposed expansion of the SFMOMA on Third Street between Howard and Mission streets, the 706 Mission Street building on Third Street between Mission and Market streets, the 250 Fourth Street

building on Fourth Street between Howard and Folsom streets, the ongoing construction of the Central Subway on Fourth Street (which is anticipated to continue through 2017) and the construction of the Central Subway Moscone Station on Fourth Street between Clementina Street and Folsom Street (anticipated to occur between 2013 and 2017).³⁴ The construction activities associated with these nearby projects would affect access, traffic operations and pedestrian movements. It is anticipated that the construction manager for each project would be required to work with the various departments of the City to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control and pedestrian movement adjacent to the construction area for the duration of the overlap in construction activity. However, the proposed project would not impact Central Subway construction along Fourth Street, since the work for the Moscone Center Expansion Project would be limited to Howard Street between Third and Fourth streets, and to Third Street between Folsom and Howard streets. Conversely, Central Subway construction along Fourth Street would not impact the construction activities associated with the proposed project. Overall, because construction activities would be temporary and limited in duration and are required to be conducted in accordance with City requirements, construction-related transportation impacts of the proposed project would be *less than significant*.

While the proposed project's construction-related transportation impacts would be less than significant, **Improvement Measure IM-TR-8: Construction Measures** may be recommended for consideration by City decision makers to further reduce the proposed project's less-than-significant impacts related to potential conflicts between construction activities and pedestrians, transit, and autos.

Improvement Measure IM-TR-8: Construction Measures

Traffic Control Plan for Construction. As an improvement measure to reduce potential conflicts between construction activities and pedestrians, transit and autos at the Project site, the contractor could prepare a traffic control plan for Project construction. The Project Sponsor and construction contractor(s) could meet with DPW, SFMTA, the Fire Department, Muni Operations and other City agencies to coordinate feasible measures to reduce traffic congestion, including temporary transit stop relocations (not anticipated, but if determined necessary) and other measures to reduce potential traffic and transit disruption and pedestrian circulation effects during construction of the proposed project. The contractor would be required to comply with the City of San Francisco's Regulations for Working in San Francisco Streets, which establish rules and permit requirements so that construction activities can be done safely and with the least possible interference with pedestrians, bicyclists, transit, and vehicular traffic. In addition, to minimize the construction-related disruption of the general traffic flow on adjacent streets during the a.m. and p.m. peak periods, truck movements and deliveries should be limited during

³⁴ Tunneling, via a Tunnel Boring Machine (TBM), is being used for the majority of Central Subway construction on Fourth Street. The only visible tunneling activity will occur at the portal construction location on Fourth Street between Bryant and Harrison streets and at the excavation site on Columbus Avenue at Union Street. Construction of the Central Subway along Fourth Street therefore does not involve substantial closure of travel lanes, or significant reroutes of traffic. Increased truck activity to remove excavated materials will continue to occur at the portal construction location on Fourth Street between Bryant and Harrison streets.

peak hours (generally 7 to 9 a.m. and 4 to 6 p.m., or other times, as determined by SFMTA and its TASC). The proposed project's traffic control plan for construction should be reviewed by SFMTA's Street Operations and Special Events Office to minimize impacts to Third Street and its Muni transit service during Phase I of the Moscone construction effort.

Carpool and Transit Access for Construction Workers. As an improvement measure to minimize parking demand and vehicle trips associated with construction workers, the construction contractor should include methods to encourage carpooling and transit access to the Project site by construction workers in the Construction Management Plan.

Project Construction Updates for Adjacent Businesses and Residents. As an improvement measure to minimize construction impacts on access for nearby institutions and businesses, the DPW could require the project sponsor to provide nearby residences and adjacent businesses with regularly-updated information regarding project construction, including construction activities, peak construction vehicle activities (e.g., concrete pours), travel lane closures, and lane closures.

The Project Sponsor and construction contractor(s) could meet with DPW, the Traffic Engineering Division and Muni Division of the SFMTA, the Fire Department, the Planning Department and other City agencies to determine feasible measures to reduce traffic congestion. Prior to construction, the Project contractor could coordinate with Muni's Street Operations and Special Events Office to coordinate construction activities and reduce any impacts to transit vehicles.

Improvement Measure IM-TR-8 would further reduce the proposed project's less-than-significant impacts related to construction-related transportation impacts. Implementation of this improvement measure would further reduce the magnitude of the proposed project's less-than-significant construction-related transportation impacts, and would not result in any secondary transportation-related impacts.

Parking Conditions

As discussed in the Initial Study prepared for the proposed project (see **Appendix A**) and in the section entitled "Senate Bill 743/Public Resources Code 21099" beginning on page IV-4, 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."³⁵ Section 21099(d) provides that, "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." The proposed project meets each of the above three criteria: it is in a transit priority area because of its location within one-half mile of a major transit stop; it is an infill site because it is located on a previously developed site in an urban area; and it is an employment center because it would be an expansion of existing

³⁵ See Public Resources Code Section 21099(d).

commercial support uses, located in a transit priority area on a site already developed and zoned for commercial uses. Thus, this EIR does not consider adequacy of parking in determining the significance of project impacts under CEQA. However, the Planning Department acknowledges that parking conditions may be of interest to the public and the decision makers. Therefore, a parking demand analysis is presented for informational purposes and considers 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.

The Moscone Center does not currently include any accessory public parking, and no vehicle parking would be added under the proposed project. The proposed expansion would result in a total vehicle parking demand during a large event of around 2,380 parking spaces, an increase of around 350 spaces over existing conditions. Because the Moscone Center does not currently include any accessory public parking supply, and vehicle parking would not be added as part of the proposed project, the proposed project would result in a parking shortfall of up to 350 parking spaces.

Visitors and employees would continue to park at nearby public parking garages. In the downtown area, there are a number of large public parking garages that have capacity to accommodate demand, depending on time of day, as well as numerous garages associated with office buildings that are open to the general public. For example, the nearby Fifth & Mission/Yerba Buena Garage, centrally located on this segment of the corridor, contains 2,585 parking spaces, and is about 52 percent occupied during weekday midday.³⁶ Other public garages in the area include the Moscone Garage (732 parking spaces and about 70 percent occupied during the midday), the SFMOMA Garage (410 parking spaces and about 80 percent occupied during the midday), the Hearst Garage (796 parking spaces and about 95 percent occupied during the midday), and the Jessie Square Garage (372 parking spaces and about 75 percent occupied during the midday).³⁷ As noted in Table IV.A-3, these public parking garages currently have availability throughout the day.

Other larger off-street parking garages further from the Mission Street corridor are located north of Market Street in the Union Square area, and include the Ellis O'Farrell Garage (800 parking spaces), the Union Square Garage (800 parking spaces), and the Sutter-Stockton Garage (1,650 parking spaces). On-street parking is available east of Fifth Street as well. On-street parking generally consists of one-hour standard metered spaces and 30-minute commercial vehicle metered spaces. On most streets, the commercial vehicle meters are in effect from 9 a.m. to 3 p.m. Overall, the on-street parking spaces are well utilized throughout the day, with availability during the overnight hours at the commercial loading spaces. Considering the location in the downtown area with multiple alternative parking and travel modes available, the additional parking demand associated with the proposed project would be accommodated within the available off-street supply.

³⁶ SFMTA, SFpark Parking Garage Data, LCW Consulting, March and June 2013.

³⁷ Ibid.

With the proposed project, large events would also occur more frequently at the Moscone Center, resulting in more frequent increases in parking demand generated by the Moscone Center. The increase of 350 parking spaces would be accommodated within the nearby garages that currently operate with available capacity. Queuing onto Fifth Street rarely occurs during Moscone Center events and has been observed only during the San Francisco International Auto Show that is typically held the week of Thanksgiving and which overlaps with the start of the holiday shopping season. An electronic GARAGE FULL sign is located on the Fifth & Mission/Yerba Buena Garage on Fifth Street at Minna Street, and electronic signs indicating public garage parking space availability have recently been installed on Fourth Street between Mission and Howard streets to help guide drivers away from the Fifth & Mission/Yerba Buena Garage when at capacity and towards other less utilized garages in the area, including the Hearst Parking Center or the Museum Parc Garage.

Cumulative Impacts

The geographic context for the analysis of cumulative transportation impacts includes the sidewalks and roadways adjacent to the project site, and the local roadway and transit network in the vicinity of the project site. The discussion of cumulative transportation impacts assesses the degree to which the proposed project would affect the transportation network in conjunction with other reasonably foreseeable projects. Detailed calculations and a discussion of the proposed project's contribution to specific intersections and pedestrian analysis locations are included in the project's TIS.

Cumulative Traffic Impacts

Impact C-TR-1: The proposed project would not result in a considerable contribution to significant cumulative traffic impacts at 22 study intersections that would operate at LOS E or LOS F under 2040 Cumulative conditions, and would result in less-than-significant cumulative impacts at two study intersections that would operate at LOS D or better under 2040 Cumulative conditions. (Less than Significant)

Table IV.A-15 presents the 2040 Cumulative intersection operating conditions for the weekday p.m. peak hour. Under 2040 Cumulative conditions 22 of the 24 study intersections are projected to operate at LOS E or LOS F conditions (as compared to 12 of the 24 study intersections operating at LOS E or LOS F under Existing conditions). The study intersections of Mission/Fifth and Howard/Hawthorne are projected to operate at LOS D or better under 2040 Cumulative conditions.

The proposed project contributions to the cumulative traffic volumes at the critical movements operating poorly (i.e., at LOS E or LOS F) for the 22 study intersections that are projected to operate at LOS E or LOS F under 2040 Cumulative conditions were reviewed to determine whether the proposed project contributions to the LOS E or LOS F operating conditions under 2040 Cumulative conditions would be considerable. Detailed calculations and percent contributions to critical movements operating at LOS E or LOS F conditions are included in the project's TIS. At all of the intersections operating at LOS E or LOS F, the proposed project's contributions to the critical

movements operating at LOS E or LOS F would be less than 5 percent, which would not be a considerable contribution. Therefore, the proposed project would not contribute considerably to the significant cumulative traffic impacts at 22 study intersections, and would result in less-than-significant cumulative traffic impacts at two study intersections that would operate at LOS D or better under 2040 Cumulative conditions.

Cumulative Transit Impacts

Impact C-TR-2: The proposed project would not result in a considerable contribution to significant 2040 Cumulative transit impacts at Muni screenlines. (Less than Significant)

As indicated in Table IV.A-16 on page IV.A-55, for 2040 Cumulative conditions during the p.m. p.m. peak hour, the capacity utilization of the Northeast and Southwest screenlines and corridors within the screenlines would be less than Muni's 85 percent capacity utilization standard. However, under 2040 Cumulative conditions, the capacity utilization on the California, Sutter/Clement and Fulton/Hayes corridors within the Northwest screenline, and on the Mission and San Bruno/Bayshore corridors within the Southeast screenline, would increase and exceed the 85 percent capacity utilization standard during the p.m. peak hour. These exceedances of the capacity utilization standard for the three corridors of the Northwest screenline and for the two corridors of the Southeast screenline under 2040 Cumulative conditions would be considered a significant cumulative impact.

The proposed project would generate very few transit trips and would therefore result in less-than-significant contributions to screenlines and corridors operating at greater than the 85 percent capacity utilization standard. The proposed project's contribution to cumulative transit impacts on the Northwest and Southeast screenlines under 2040 Cumulative conditions would not be considerable. For the above reasons, the proposed project would not contribute considerably to the significant cumulative Muni transit impacts.

Impact C-TR-3: The proposed project would result in less-than-significant regional transit impacts on AC Transit, Caltrain, Golden Gate Transit, SamTrans and other regional ferry service under 2040 Cumulative conditions. (Less than Significant)

As indicated in Table IV.A-17 on page IV.A-56, for 2040 Cumulative conditions during the p.m. peak hour, all regional transit service providers are projected to operate under the capacity utilization standard of 100 percent. The proposed project would add a limited number of new transit trips to regional transit providers. No regional transit providers are expected to exceed their established capacity utilization thresholds (i.e., 100 percent). Therefore, the cumulative impacts to regional transit would be less than significant. For the above reasons, the proposed project would result in less-than-significant cumulative regional transit impacts.

Cumulative Pedestrian Impacts

Impact C-TR-4: The proposed project would not result in a considerable contribution to significant 2040 Cumulative pedestrian impacts. (Less than Significant)

Pedestrian circulation impacts by their nature are largely site-specific and generally do not contribute to impacts from other, more distant development projects. As described in Impact TR-4, the proposed project would not result in overcrowding of crosswalks, sidewalks or corners or create new potentially hazardous conditions for pedestrians. The proposed project would improve pedestrian circulation adjacent to the project site by creating a “pedestrian-friendly zone” between the entry lobbies of Moscone North and Moscone South. The proposed project would enhance the existing signalized midblock pedestrian crossing at Howard Street between Third and Fourth streets by widening the crosswalk from 28 to 60 feet, and at each side the surface of Howard Street would be raised to create a curbless transition from sidewalk to street, reinforcing the pedestrian orientation of this segment of Howard Street. Pedestrian safety features, such as tactile paving and bollards, would be installed at the edges of Howard Street. The proposed project would also reconfigure the Moscone Center’s passenger loading/unloading zones, thereby widening the frontage sidewalks on Howard Street. These elements would improve pedestrian conditions by facilitating safe pedestrian circulation and crossings, by providing safe spaces for pedestrians, and by increasing pedestrian visibility to drivers.

The Central Subway Project is currently under construction, and the Moscone station would be located on the west side of Fourth Street between Folsom and Clementina streets (across Fourth Street from Moscone North and South). Pedestrians using this station would cross at the north crosswalk at the intersection of Fourth/Folsom and walk on the sidewalk adjacent to the south or west sides of Moscone Center, or walk along the west side of Fourth Street between Howard and Folsom streets and cross at the south crosswalk at the intersection of Fourth/Howard streets.

Between Existing and 2040 Cumulative conditions, the number of pedestrians on the study area crosswalks, sidewalks and corners are anticipated to increase substantially, primarily due to implementation of the Central SoMa Plan. The Central SoMa Plan proposes to upgrade sidewalks to meet the standards in the *Better Streets Plan*, provide corner sidewalk extensions, provide additional crosswalks across major streets, and widen and upgrade crosswalks. However, as a conservative assumption, the 2040 Cumulative pedestrian analysis presented below assumes existing street widths, crosswalk widths, and pedestrian signal timings, with the exception of the proposed project-related changes discussed above.

Crosswalk Analysis. Tables IV.A-18A and IV.A-18B present the pedestrian volumes and LOS conditions for the 2040 Cumulative conditions at the crosswalk analysis locations for the weekday midday and p.m. peak hours, respectively. Under 2040 Cumulative conditions, multiple crosswalks at the study intersections of Mission/Third (four crosswalks), Mission/Fourth (four crosswalks) and Howard/Fourth (two crosswalks) would experience LOS E or LOS F conditions during the midday and/or the p.m. peak hours, as would the midblock crosswalk on Mission Street at Yerba Buena Lane during both the midday and p.m. peak hours. The LOS E and LOS F conditions at these 11 crosswalks would be considered significant cumulative pedestrian impacts.

The proposed project contributions to the 2040 Cumulative pedestrian volumes at the 11 crosswalks operating at LOS E or LOS F during the midday and/or p.m. peak hours were reviewed to determine whether the proposed project contributions to the LOS E or LOS F conditions under 2040 Cumulative conditions would be considerable. Detailed calculations and percent contributions at pedestrian analysis locations projected to operate at LOS E or LOS F are included in the proposed project's TIS. The proposed project's contribution to the crosswalks projected to operate at LOS E or LOS F would be less than 5 percent at all crosswalk locations projected to operate at LOS E or LOS F, and therefore, the proposed project would not contribute considerably to the significant cumulative pedestrian impacts at the crosswalk analysis locations.

Sidewalk Analysis. Tables IV.A-19A and IV.A-19B on pages IV.A-65 and IV.A-66 present the pedestrian volumes and LOS conditions for the 2040 Cumulative conditions at the sidewalk analysis locations for the weekday midday and p.m. peak hours, respectively. As shown in Tables IV.A-19A and IV.A-19B, under 2040 Cumulative conditions the west sidewalk on Fourth Street between Market and Mission streets and the east sidewalk on Fourth Street between Mission and Howard streets would operate at LOS E conditions during both the weekday midday and p.m. peak hours. The LOS E conditions at these two sidewalk locations would be considered significant cumulative pedestrian impacts. The proposed project's contribution to the two sidewalk locations projected to operate at LOS E under 2040 Cumulative conditions would be less than 5 percent. Therefore, the proposed project would not contribute considerably to the significant cumulative pedestrian impacts at the sidewalk analysis locations.

Corner Analysis. Tables IV.A-20A and IV.A-20B present the pedestrian volumes and LOS conditions for the 2040 Cumulative conditions at the corner analysis locations at the four intersections adjacent to the project site for the weekday midday and p.m. peak hours, respectively. Under 2040 Cumulative conditions, during both midday and p. m peak hour the southeast corner of the intersection of Mission/Fourth, the southeast corner of Howard/Fourth, all four corners (except the northeast corner during the p.m. peak hour) at the intersection of Mission/Third, and the southeast corner of Howard/Third would operate at LOS E or LOS F conditions. The LOS E or LOS F conditions at these seven corner locations would be considered significant cumulative pedestrian impacts. The proposed project's contribution to the seven corner locations projected to operate at LOS E or LOS F conditions under 2040 Cumulative conditions would be less than 5 percent. Therefore, the proposed project would not contribute considerably to the significant cumulative pedestrian impacts at the corner analysis locations.

In addition, there is a projected increase in background vehicle traffic between Existing plus Project and 2040 Cumulative conditions, as shown in the cumulative traffic forecasts. This would result in an increase in the potential for vehicle-pedestrian conflicts at intersections in the study area. While there would be a general increase in vehicle traffic that is expected through the future 2040 Cumulative conditions, the proposed project would not create potentially hazardous conditions for pedestrians, or otherwise interfere with pedestrian accessibility to the site and adjoining areas. For the above reasons, the proposed project would not contribute considerably to the significant cumulative pedestrian impacts.

Cumulative Bicycle Impacts

Impact C-TR-5: The proposed project would result in less-than-significant cumulative bicycle impacts. (Less than Significant)

The proposed project would not contribute considerably to cumulative bicycle circulation or conditions in the area. A majority of the project-generated trips to the project site were assumed to be walk trips to and from nearby hotels, although the proposed project would result in a slight increase in bicycle trips. Bicycling trips in the area may increase between the completion of the project and the cumulative scenario due to general growth in the area. As noted above, under 2040 Cumulative conditions, there is a projected increase in vehicles at intersections in the vicinity of the proposed project, which may result in an increase in vehicle-bicycle conflicts at intersections in the study area. While there would be a general increase in vehicle traffic that is expected through the future 2040 Cumulative conditions, the proposed project would not create potentially hazardous conditions for bicycles, or otherwise interfere with bicycle accessibility to the site and adjoining areas, or substantially affect the existing Class II bicycle lane on Howard Street, proposed Class II bicycle lanes in each direction on Howard Street under the Central SoMa Plan Howard/Folsom Two-way Option, or the proposed two-way cycle track under the Central SoMa Plan Howard/Folsom One-way Option. Project elements include identification of the points of access to bicycle parking, including signage indicating the location of these facilities, avoiding conflicts with private cars and loading vehicles accessing the garage, and facilitating access to bicycle routes through on-site signage.

The proposed project would provide a new on-street taxi stand and short-term passenger loading/unloading zone 200 feet in length (accommodating eight to ten vehicles) on the west side of Third Street south of Howard Street for use during peak periods of passenger loading activity. With implementation of the Central SoMa Plan, the taxi stand/passenger loading/unloading zone would be reconfigured to accommodate the cycle track that is proposed under the Central SoMa Plan on Third Street. The first option would locate the cycle track adjacent to (i.e., directly to the east of) the taxi stand/passenger loading/unloading zone. The second option would locate the cycle track adjacent to the curb, and the taxi stand/passenger loading/unloading zone would be to the east of the cycle track within an island (i.e., the cycle track would be located between the sidewalk and the taxi stand/passenger loading/unloading island). During times when the taxi stand/passenger loading/unloading zone is actively being used, the first option would result in conflicts at the southern end, where vehicles accessing the zone would travel across the cycle track, resulting in potential bicycle-vehicle conflicts. The second option, which would place the cycle track between the sidewalk and the taxi stand/passenger loading/unloading island, would require passengers to cross the cycle track at a designated marked crosswalk at the northern end of the island, resulting in potential pedestrian-bicycle conflicts. While both options would result in a conflict point between bicyclists and other roadway users, the effect of any potential conflicts would be minimized by the presence of Loading Zone Attendants who would be required to be present when the Third Street taxi stand is in operation, in accordance with the event-specific Transportation Operations Event Plan that would be prepared pursuant to **Mitigation Measure M-TR-6a**. Therefore, neither would result in a potentially hazardous condition for bicyclists, interfere with bicycle accessibility to the site and adjoining areas, or significantly

impact bicycle operations. For the above reasons, the proposed project would result in less-than-significant cumulative impacts on bicyclists.

Cumulative Loading Impacts

Impact C-TR-6: The proposed project would result in less-than-significant cumulative loading impacts. (Less than Significant)

Loading impacts are by their nature localized and site-specific, and would not contribute to impacts from other development projects near the project site. The proposed project impacts related to freight loading and passenger loading/unloading activities would be significant, and the proposed project's significant impacts would be mitigated to a less-than-significant level with implementation of **Mitigation Measure M-TR-6a** and **Mitigation Measure M-TR-6b**. Therefore, the proposed project would result in less-than-significant cumulative loading impacts, with mitigation for the project-specific freight and passenger loading impacts.

Cumulative Emergency Vehicle Access Impacts

Impact C-TR-7: The proposed project would result in less-than-significant cumulative emergency vehicle access impacts. (Less than Significant)

The proposed project would not considerably contribute to cumulative emergency vehicle access conditions in the area. With implementation of the proposed project, emergency vehicle access to the project site would remain unchanged from existing conditions. If implemented, the TEP TTRP.14 Moderate Alternative on Mission Street will extend the existing transit-only lane hours of 4 to 6 p.m. in both directions and 7 to 9 a.m. in the inbound direction to full-time for the segment of Mission Street between Fourth and 11th streets. In addition, the existing 7 a.m. to 6 p.m. hours of the Mission Street transit-only lanes between Fourth and Main streets in the outbound direction and between Fourth and Beale streets in the inbound direction will be extended to full-time. If the TTRP.14 Expanded Alternative is implemented instead of the TTRP.14 Moderate Alternative, it will relocate the existing side-running transit-only lanes on Mission Street between Fifth and First streets in the outbound direction and between Sixth and First streets in the inbound direction, so that they become center-running transit-only lanes, and transition the outbound transit-only lane back to its existing curbside configuration and rescind the inbound transit-only lane between Seventh and Sixth streets.

With implementation of the Central SoMa Plan, the existing transit-only lane along the east curb of Third Street between King and Market streets would remain, and a transit-only lane along the west curb of Fourth Street between Market and Harrison streets would be provided. Under the Howard/Folsom One-way Option, Folsom Street between 11th and Second streets would be modified to have two eastbound travel lanes and a two-way cycle track along the north curb. East of Sixth Street, parking would be permitted along the south curb during off-peak times, while

during peak travel periods, parking would be prohibited to create an eastbound transit-only lane. Under the Howard/Folsom Two-way Option, Folsom Street between 11th and Fourth streets would be modified to have one eastbound and one westbound travel lane, while between Fourth and Second streets, Folsom Street would be modified to have one eastbound transit-only lane, one eastbound travel lane, and one westbound travel lane. With implementation of transit-only lanes and changes to the number and direction of travel lanes on streets in the vicinity of the proposed project, emergency vehicle providers may adjust travel routes to respond to incidents; however, emergency vehicle access in the area would not be substantially affected. Emergency vehicles would be permitted full use of transit-only lanes and would not be subject to any turn restrictions. Therefore, for the above reasons, the proposed project would result in less-than-significant cumulative emergency vehicle access impacts.

Cumulative Construction Impacts

Impact C-TR-8: The proposed project would result in less-than-significant cumulative construction-related transportation impacts. (Less than Significant)

The construction of the proposed project may overlap with the construction of other projects, including the 706 Mission Street, 400 Second Street, 250 Fourth Street, 942 Mission Street projects for which building permits have already been approved, and the 5M Project and the Central SoMa Plan which are currently proposed, although the timing of construction is not currently known. The SFMOMA expansion project is currently under construction, and construction is anticipated to be completed by early 2016. The Central Subway project is currently under construction, and construction is anticipated to be completed by 2017 (and revenue service initiated in 2019). In addition, proposed streetscape improvements on Howard, Third, and Fourth streets included within the Central SoMa Plan may be implemented during the proposed project's 44-month construction period.

Overall, localized cumulative construction-related transportation effects could occur as a result of cumulative projects that generate increased traffic at the same time and on the same roads as the proposed project. The construction manager for each project would work with the various departments of the City to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control, and pedestrian movement adjacent to the construction area for the duration of any overlap in construction activity. **Improvement Measure IM-TR-8** would further reduce the proposed project's less-than-significant impacts related to potential conflicts between construction activities and pedestrians, transit, and autos, including construction truck traffic management, project construction updates for adjacent businesses and residents, and carpool and transit access for construction workers.

The cumulative impacts of multiple nearby construction projects would not be cumulatively considerable, as the construction would be of temporary duration, and the project sponsor would coordinate with various City departments such as SFMTA and DPW through the TASC to develop coordinated plans that would address construction-related vehicle routing and

pedestrian movements adjacent to the construction area for the duration of construction overlap. Therefore, for the above reasons, the proposed project would result in less-than-significant cumulative construction-related transportation impacts.

Cumulative Parking Conditions

As discussed above, an analysis of parking demand is presented for informational purposes. Considering cumulative parking conditions, over time, due to the land use development and increased density anticipated within the City, parking demand and competition for on- and off-street parking is likely to increase. Consistent with the City's Transit First Policy, the City's Better Streets program and related projects, the proposed project would not provide on-site parking. The parking shortfall associated with proposed project's parking demand would need to be accommodated in nearby public parking facilities, and, as a result, the midday parking occupancy in the study area would increase. Furthermore, the proposed project would encourage transit, walking and bicycling modes through implementation of **Improvement Measure IM-TR-1**, which may further lead to a mode shift from private passenger vehicles to transit or other modes of travel.

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IV.B Shadow

This section analyzes potential shadow impacts that could occur as a result of the proposed Moscone Center Expansion project and assesses the potential for project implementation to adversely affect existing shadow patterns.

Environmental Setting

This section describes existing, planned, and approved public open spaces in the project site vicinity that would be affected by the proposed project. Public open spaces are classified into one of three categories: parks subject to Planning Code Section 295; other open spaces under public jurisdiction; and privately owned, publicly accessible open spaces (POPOS).

Parks Subject to Section 295

Planning Code Section 295 (discussed further under Regulatory Framework, p. IV.B-4, below) limits new shadow on Recreation and Park Department properties. There are no parks subject to Section 295 in the immediate project vicinity; the nearest such parks are Union Square, South Park, and the Gene Friend (South of Market) Recreation Center, each more than one-fourth mile away.

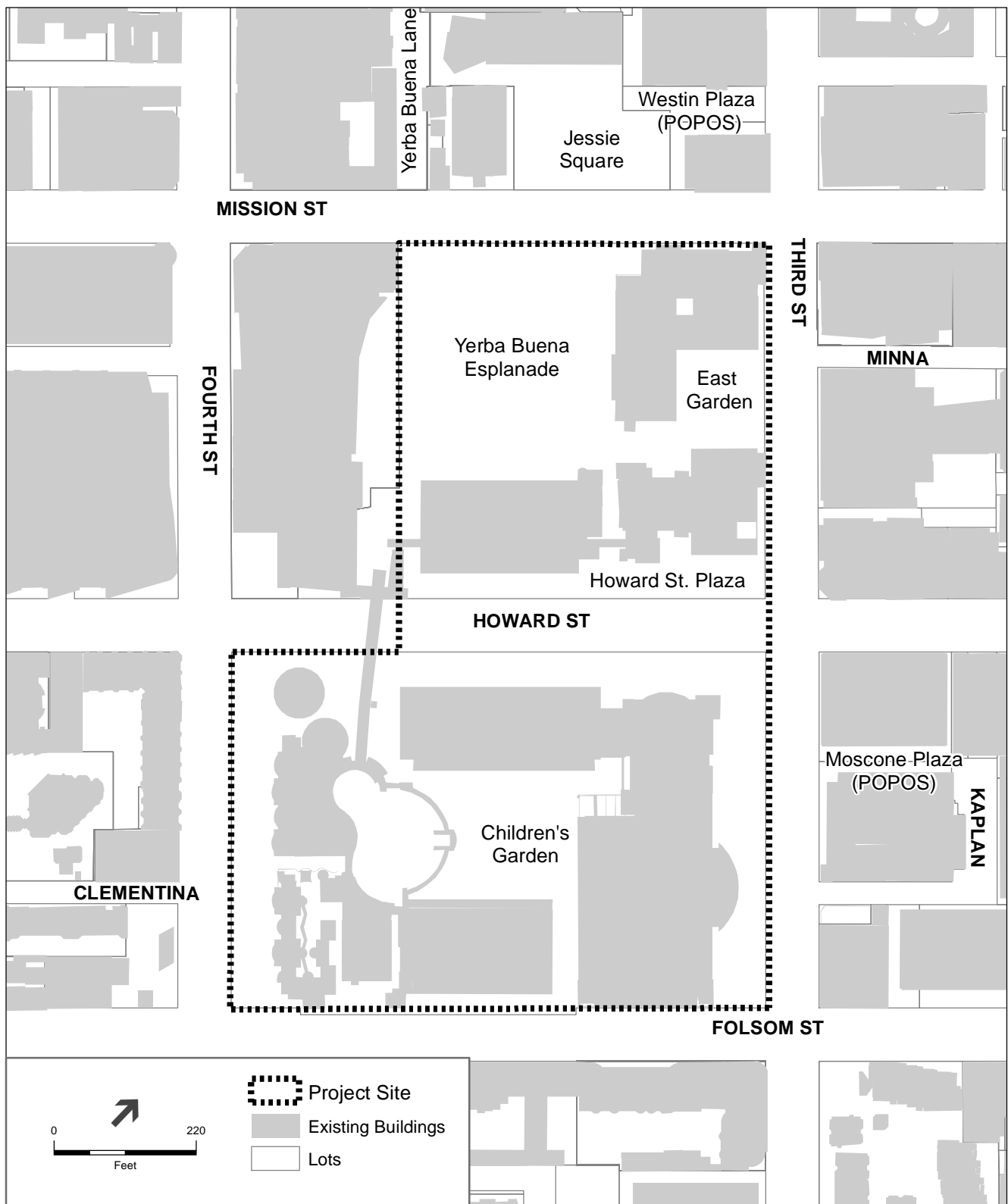
Other Open Spaces under Public Jurisdiction

Yerba Buena Gardens, developed in the 1990s as part of the Yerba Buena Redevelopment Project, sits atop the Moscone Center Expansion project site, over both project blocks. During spring, summer, and autumn months, the Gardens host musical, dance, poetry, acrobatic, and other performance events.¹

For purposes of this analysis, the Gardens comprise four distinct areas, described below and depicted in **Figure IV.B-1**. These open spaces at the project site are not under the jurisdiction of the Recreation and Park Department, and are therefore not subject to Section 295 of the Planning Code, but the Gardens are subject to Planning Code Section 147 (see Regulatory Framework, p. IV.B-4, below) and the shadow impacts on the Gardens will be analyzed here.

- The primary portion of the Yerba Buena Esplanade comprises the majority of the open space on the project site's northern block. The approximately 189,000-square-foot Esplanade is bordered to the north by Mission Street, to the east by two-story buildings housing the Yerba Buena Center for the Arts gallery and theater space, to the south by Howard Street and the restaurants atop the Moscone North lobby, and to the west by the Metreon, which is a four-story, 115-foot-tall building containing approximately 350,000 square feet of entertainment and retail space, including a Target store, a 16-screen movie theater, and a food court. The Esplanade includes benches, berms/terraces, the Martin Luther King, Jr. Memorial Fountain and Waterfall, pedestrian walkways, and public art. The center of the Esplanade comprises a large grassy area surrounded by a network of smaller gardens.

¹ Yerba Buena Gardens Festival web site: <http://www.ybgfestival.org/calendar/>, accessed January 17, 2013.



SOURCE: ESA, 2013

Moscone Center Expansion Project 2013.0154E

Figure IV.B-1
Open Spaces in the Project Site Vicinity

- The East Garden is a 22,500-square-foot paved plaza located along Third Street, directly across from the San Francisco Museum of Modern Art. The East Garden includes seating areas, a sculpture, landscaped vegetation, and a water feature.
- The northern project block also includes a separate 8,200-square foot paved plaza along Howard Street (Howard Street Plaza). This plaza serves as the southern entrance to the Yerba Buena Center for the Arts Novellus Theater. It includes a staircase, pedestrian ramp, landscaped open space and planter boxes. A bike-sharing station and benches are located at the plaza's southeastern corner.
- The Children's Garden sits atop the southern block of the Moscone Convention Center. The irregularly shaped area is bordered to the north by Howard Street and the Moscone South lobby building; to the east by the Esplanade Building; to the south by an indoor ice rink; and to the west by the Children's Creativity Museum, the Bowling Center, the Child Development Center, and Fourth Street. The open space includes a Learning Garden, a maze, a circular lawn, a play circle with playground, a nature walk/allée of plum trees, and an amphitheater. It also includes the historic carousel near the corner of Fourth and Howard streets. The play circle is open from 7:00 a.m. to 7:00 p.m. daily. As indicated in Chapter 2, Project Description, under the proposed project the total square footage of public open space on the southern block would increase by approximately 10,000 square feet. Moreover, under the proposed project the portion of the Children's Garden specifically dedicated to children's recreation (as opposed to circulation or adult passive recreation) would be maintained.²

Two other open spaces under public jurisdiction are located in proximity to the project site:

- Jessie Square, north of the project site across Mission Street, is an approximately 0.78-acre plaza that was constructed in 2008, also as part of the Yerba Buena Redevelopment Plan; it sits atop the subsurface Jessie Square Garage. The open space is bordered by St. Patrick's Church to the west, the Contemporary Jewish Museum to the north, the Aronson Building (a historic commercial building that is also the 706 Mission project site) to the east, and Mission Street to the south. There is a water feature with uncovered seating areas in the plaza's center and uncovered seating with sun shades in the northeastern corner. There is also uncovered seating near the southern perimeter of the square. The square is mostly paved, with grass landscaping in the southern portion and around the water feature.
- Yerba Buena Lane, north of the project site across Mission Street, is a one-block-long public pedestrian passage connecting Market Street with Mission Street. The San Francisco Marriott Hotel is on the west side, and the Four Seasons hotel and condominiums, the Contemporary Jewish Museum, Jessie Square, and St. Patrick's Church are on the east side. Retailers, restaurants, and a museum occupy the storefronts along the passage, which includes benches, stairs, a pedestrian ramp and seating areas.

² For the purpose of presenting a conservative shadow analysis, the calculations of the net increase in shadow are presented based on the existing square footage of the Children's Garden, as opposed to the larger Children's Garden that would result from the proposed project. The proposed garden improvements would include a tot lot with play equipment, relocation and expansion of the Learning Garden, replacement of the nature walk, an elevated seating area, and reconfiguration of features along the Esplanade Building. Specific design details and locations of these features have not yet been determined; however, the areas affected by shadow would be somewhat changed due to the relocation of these features. Given that a detailed design has not been finalized, this analysis presents shadow impacts to the existing features and notes where shadow could fall on relocated features, as applicable

Private Publicly Accessible Open Spaces

Other open spaces in the project site vicinity are POPOS, as shown in Figure IV.B-1. These open spaces are not subject to Planning Code Section 295 controls, and they are not operated or managed by public agencies but are subject to Planning Code Section 147. These POPOS are located between densely developed high-rise buildings, and many of these POPOS are already shaded by existing buildings for much of the day throughout the year.

- Westin Plaza connects Jessie Street Plaza to Third Street. It contains a landscaped area, paving, and seating for a nearby restaurant. The plaza is shaded most of the day for most of the year by the buildings directly to the south, as well as the high-rises east across Third Street.
- Moscone Plaza is an approximately 7,500-square-foot pedestrian alley running along Tehama Street, from Third Street to Kaplan Lane, to the east of the Moscone Convention Center's southern block. The paved plaza is bordered on the north side by landscaped planter boxes for the adjacent development.

Regulatory Framework

Sunlight Ordinance/Planning Code Section 295

Section 295 of the Planning Code, the Sunlight Ordinance, regulates the issuance of building permits for structures or additions to structures greater than 40 feet in height that would create new shadow on property under the jurisdiction of, or designated to be acquired by, the Recreation and Park Commission, during the period from one hour after sunrise to one hour before sunset. Section 295(b) states that the Planning Commission, following a public hearing, "shall disapprove" any project governed by this section that would have an "adverse effect on the use of the property" due to shading of a park subject to Section 295, "unless it is determined that the impact would be insignificant." The Planning Commission's decision under Section 295 cannot be made "until the general manager of the Recreation and Park Department in consultation with the Recreation and Park Commission has had an opportunity to review and comment to the City Planning Commission upon the proposed project." Under the criteria adopted by the Planning and Recreation and Park Commissions in 1989, 14 downtown parks were assigned Absolute Cumulative Limits, which represent the maximum percentage of new shadow, expressed as a percentage of theoretical annual available sunlight,³ allowable beyond existing conditions. For projects that would affect parks for which a quantitative limit was established, shadow impacts have typically been judged less than significant if the project would not exceed the Absolute Cumulative Limit.

³ The theoretical annual available sunlight is the amount of sunlight, measured in square foot hours, that would fall on a given park during the hours covered by Section 295. It is computed by multiplying the area of the park by 3,721.4, which is the number of hours in the year subject to Section 295. Thus, this quantity is not affected by shadow cast by existing buildings, but instead represents the amount of sunlight that would be available with no buildings in place. Theoretical annual available sunlight calculations for each downtown park were used by the Planning and Recreation and Park Commissions in establishing the allowable Absolute Cumulative Limit for downtown parks in 1989.

A project that adds new shadow to sidewalks or a public open space, or exceeds the Absolute Cumulative Limit on a Section 295 park, does not necessarily result in a significant impact under CEQA. The City's significance criteria for purposes of CEQA review are listed below.

Other Planning Code Regulations

Planning Code Section 146(a), applicable to certain streets in the C-3 zoning districts, requires that buildings and additions fit within an envelope defined by a plane sloping away from the street at a prescribed angle above a prescribed height "in order to maintain direct sunlight on public sidewalks in certain downtown areas during critical periods of use." Section 146(a) is specific to certain streets in the C-3 district, but Mission, Howard, Folsom, Third, and Fourth Streets are not among them. Therefore Section 146(a) does not apply to the project site and is not further discussed in this analysis.

Planning Code Section 146(c) states that new buildings and building additions shall be shaped "so as to reduce substantial shadow impacts on public sidewalks in the C-3 Districts," other than sidewalks specified in Section 146(a), if this can be accomplished "without creating an unattractive design and without unduly restricting the development potential of the site in question."

Planning Code Section 147 is applicable to public plazas or other publicly accessible open spaces other than those protected by Section 295. It regulates new development, taller than 50 feet, and in the C-3 use district where height limits are greater than 40 feet. Section 147 requires new development to be shaped to minimize shadow, "consistent with the dictates of good design and without unduly restricting the development potential of the property."

Impacts and Mitigation Measures

Significance Thresholds

The proposed project would have a significant shadow impact if it were to create new shadow in a manner that would:

- Have an adverse effect on the use of any park or open space under the jurisdiction of the Recreation and Park Department; or
- Substantially affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas.

Approach to Analysis

To evaluate the shadow effects of the proposed project, a project-specific shadow analysis for the Moscone Center Expansion project was performed using a detailed three-dimensional (3-D) model of the proposed project.⁴ This model incorporates the massing of the proposed building

⁴ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

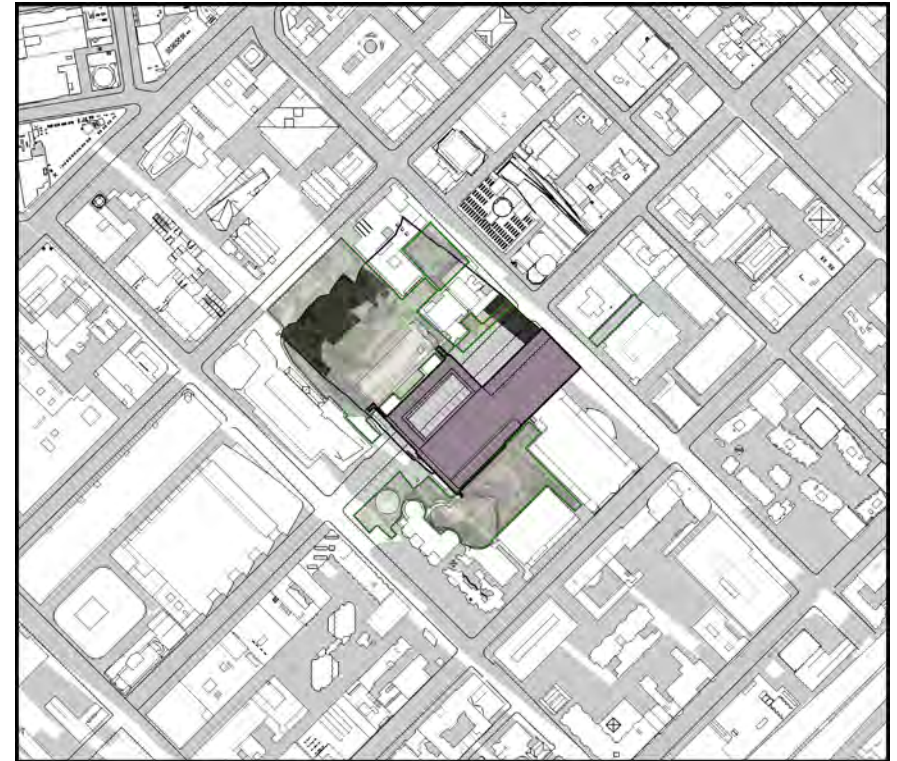
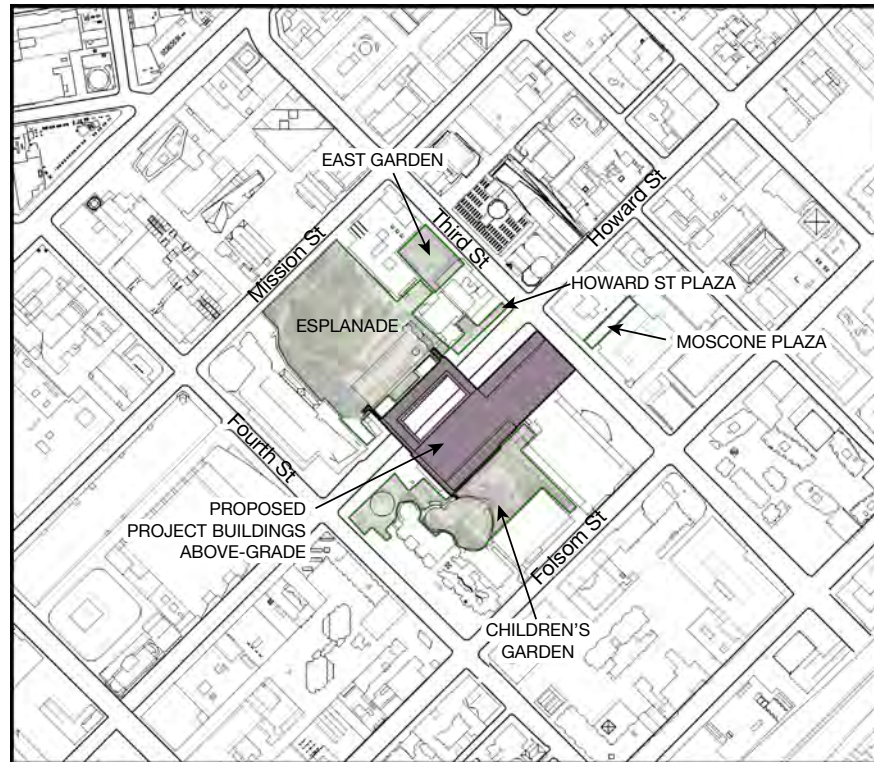
based on the design details. The proposed project would include extensions of the Moscone North and South building facades toward Howard Street, as well as vertical extensions of all three building components (North, South and the Esplanade). The Moscone North expansion would add one level above a renovated and 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 be constructed above the renovated and expanded lobby along Howard Street, for a total height of approximately 95 feet, or about 68 feet taller than the existing lobby building. The top level of the Moscone South expansion would be set back approximately 35 feet from its southern edge for a roof terrace. The Esplanade expansion would also result in a building approximately 95 feet high. 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. At project completion, the Moscone South expansion and Esplanade expansion would function and appear as one building. In addition, at project completion, the second stories of both the Moscone North and Moscone South facades along Howard Street would extend over the ground level lobbies by approximately 15 feet in the Moscone North building and 15 feet in the Moscone South building, creating overhangs above the pedestrian space below.

To evaluate the year-round impact from the Moscone Center Expansion project on public open spaces and nearby POPOS, a quantitative analysis of sunlight and shade was conducted for net new shadow using the 3-D project model. Although the applicable open spaces are not protected under Section 295 of the Planning Code, the approach used was consistent with the approach used by the Planning Department for Section 295 compliance, which is the standard approach for quantification of shadow impacts in San Francisco. The analysis consisted of calculating the amount of shadow coverage resulting from existing buildings at 15-minute intervals on one day per week, for six months of the year. The shadow coverage at the 15-minute intervals was averaged to calculate hourly shadow coverage (in shadow foot hours, or square foot hours of shadow; each shadow foot hour represents the equivalent of one square foot of shadow for a duration of one hour). The hourly figures for each day were added and resulting numbers extrapolated to weekly figures through averaging with the preceding week's total. Because the sun's path from January through June essentially mirrors its path from July through December, the six months' shadow foot hour totals were doubled to return a yearly figure.⁵

The shadow analysis prepared for the project includes images graphically representing the project-specific shadow from the Moscone Center Expansion project for every hour for June 21st and December 21st (the summer and winter solstices, respectively), and for September 21st, the fall equinox. (Conditions for March 21st, the spring equinox, are the same as those on September 21st and are therefore not separately shown.) The analysis also provides qualitative visuals of existing and new project shadow cast around the project site for three representative dates and times (see **Figures IV.B-2 through IV.B-4**). In each figure, the outline of the public

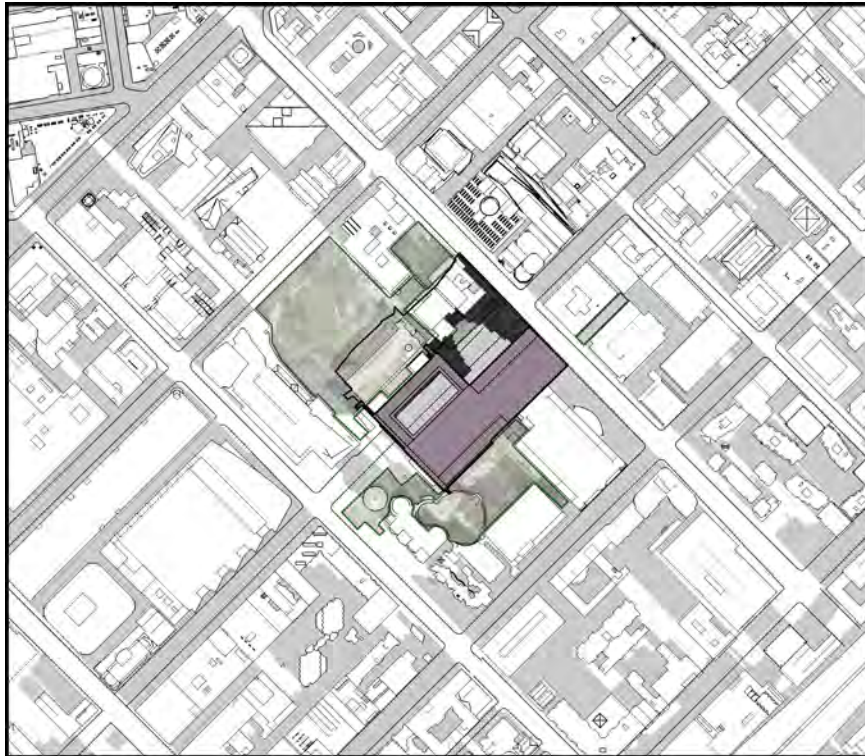
⁵ This is the same methodology used by the Planning Department to calculate shadow and establish the Section 295 (Proposition K) baseline shadow coverage for other San Francisco parks.



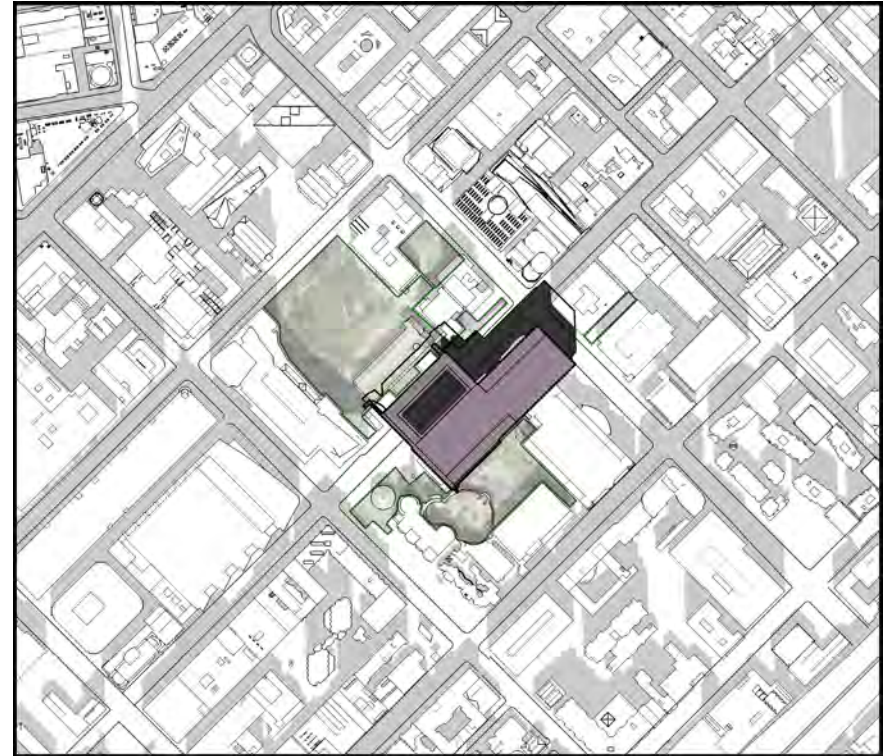
SOURCE: CADP

Moscone Center Expansion Project 2013.0154E

Figure IV.B-2a
December 20th: Sunrise +1 Hour



9:00am



Noon

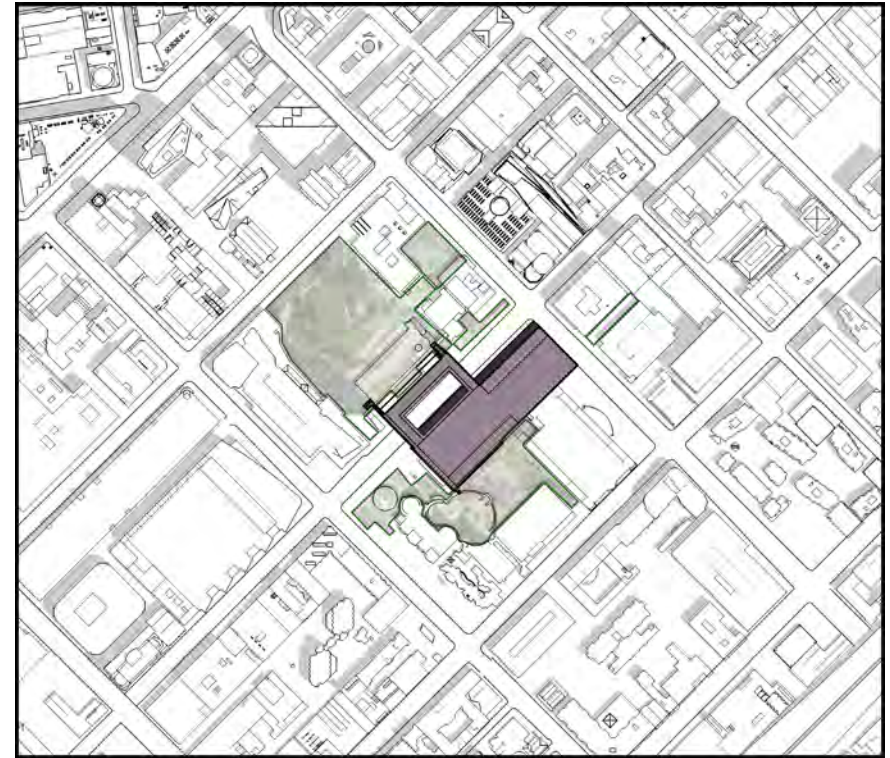
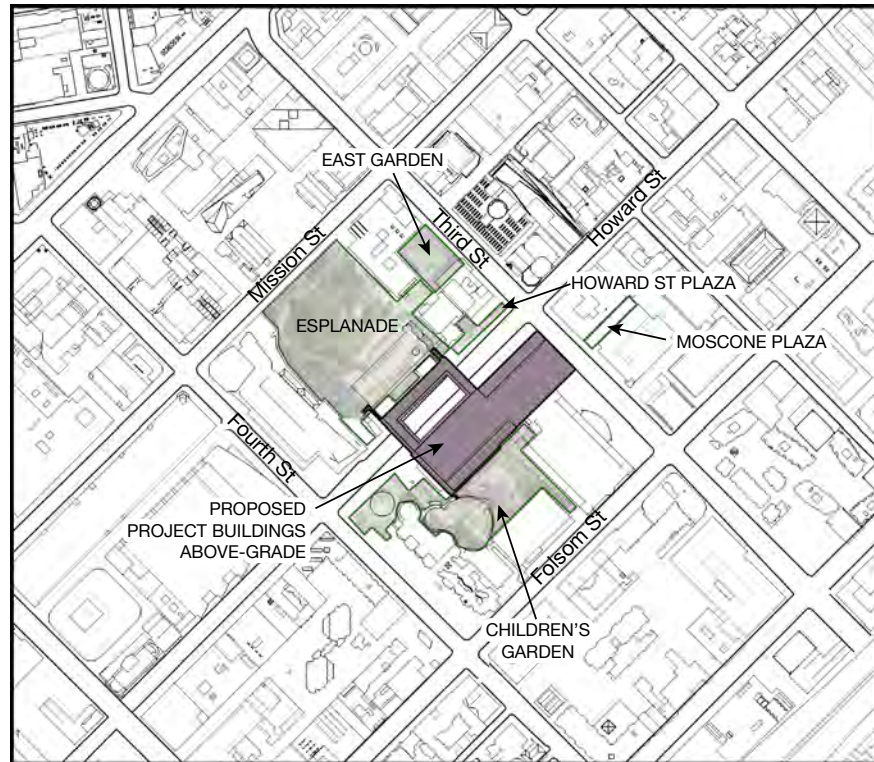
- Open Space Perimeter
- Extent of Project-Generated Shadow
- Existing Shadow
- Net New Project Shadow



SOURCE: CADD

Moscone Center Expansion Project 2013.0154E

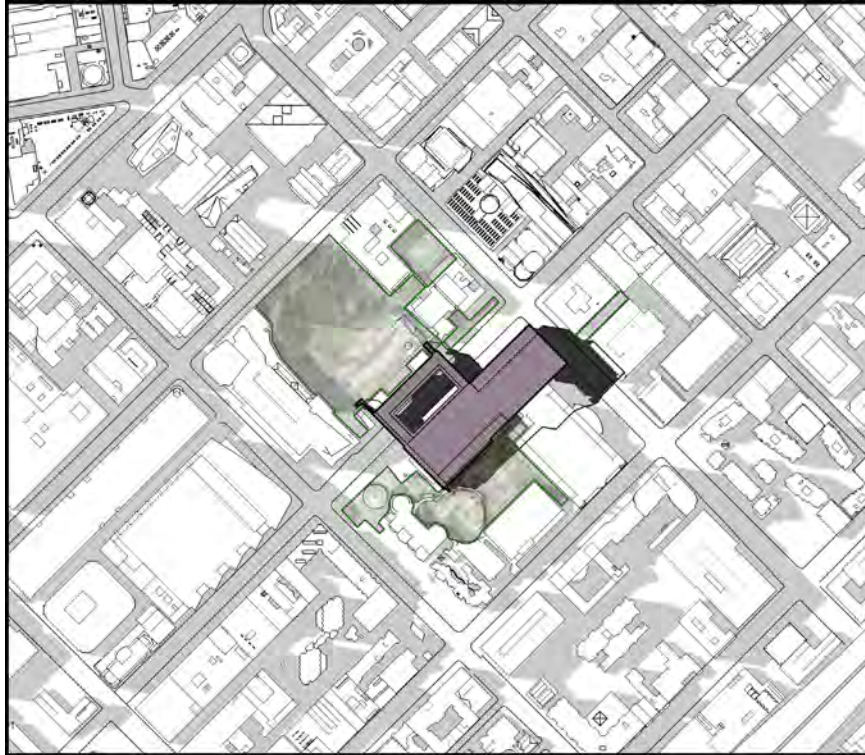
Figure IV.B-2b
December 20th: 9:00am and Noon



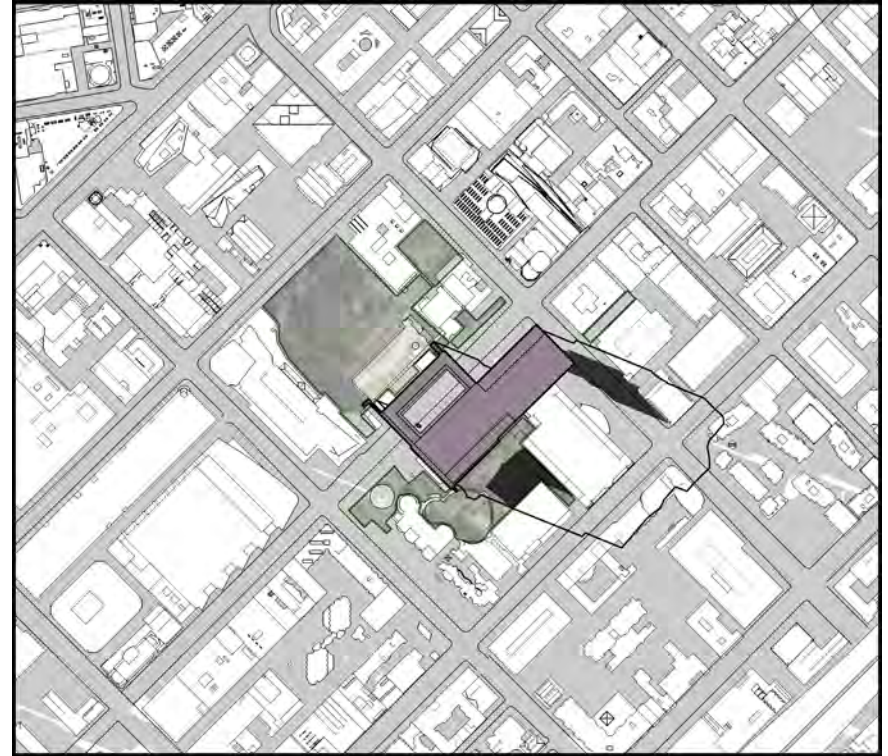
SOURCE: CADP

Moscone Center Expansion Project 2013.0154E

Figure IV.B-3a
June 21st: Noon



6:00pm



Sunset -1 hour

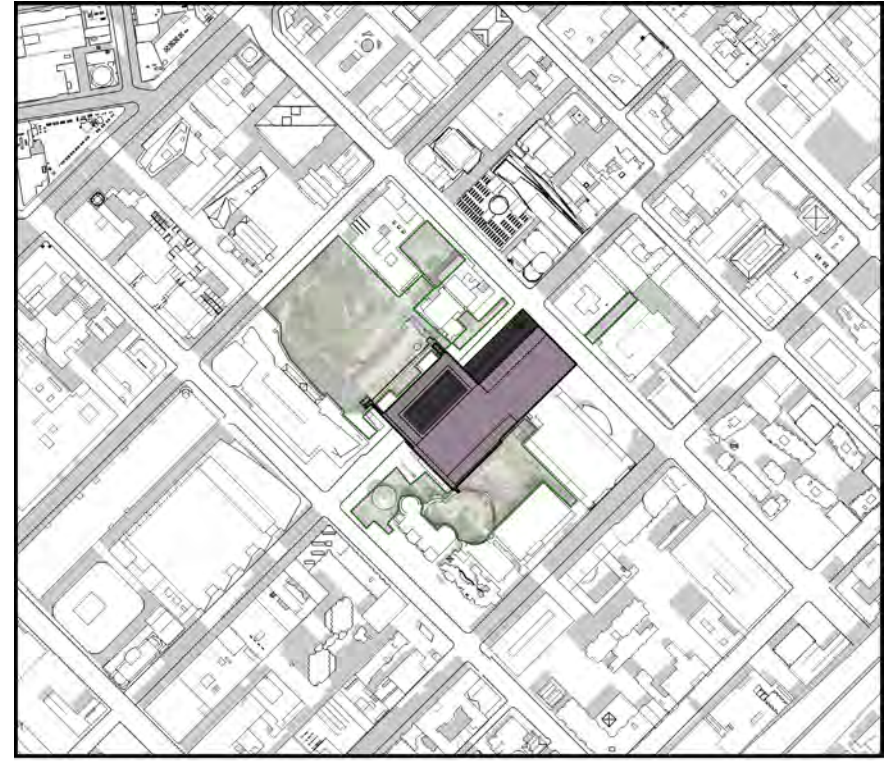
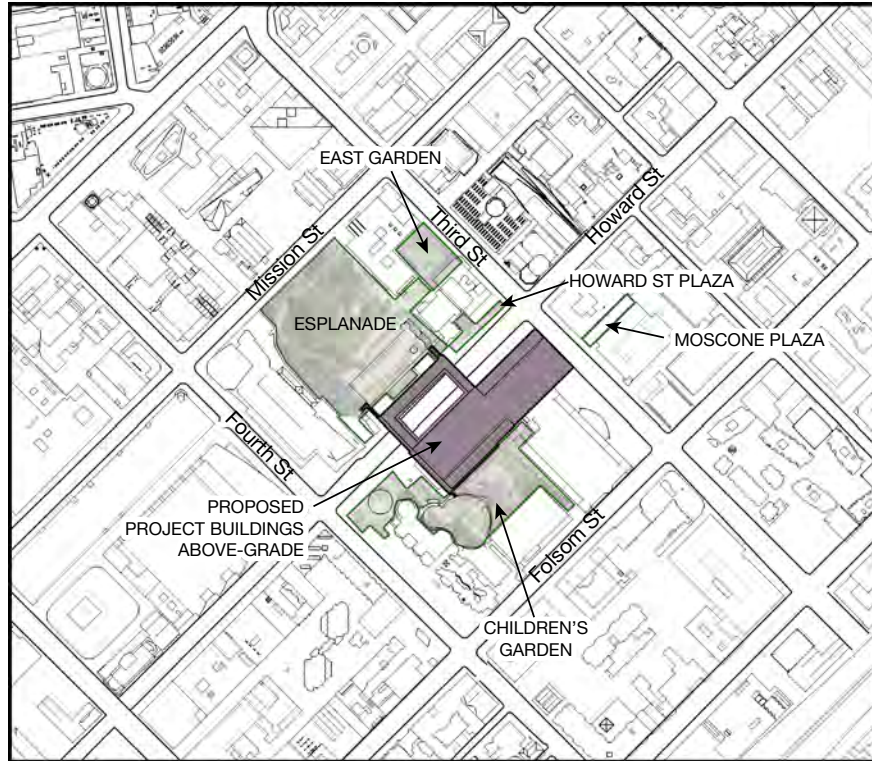
- Open Space Perimeter
- Extent of Project-Generated Shadow
- Existing Shadow
- Net New Project Shadow



SOURCE: CADP

Moscone Center Expansion Project 2013.0154E

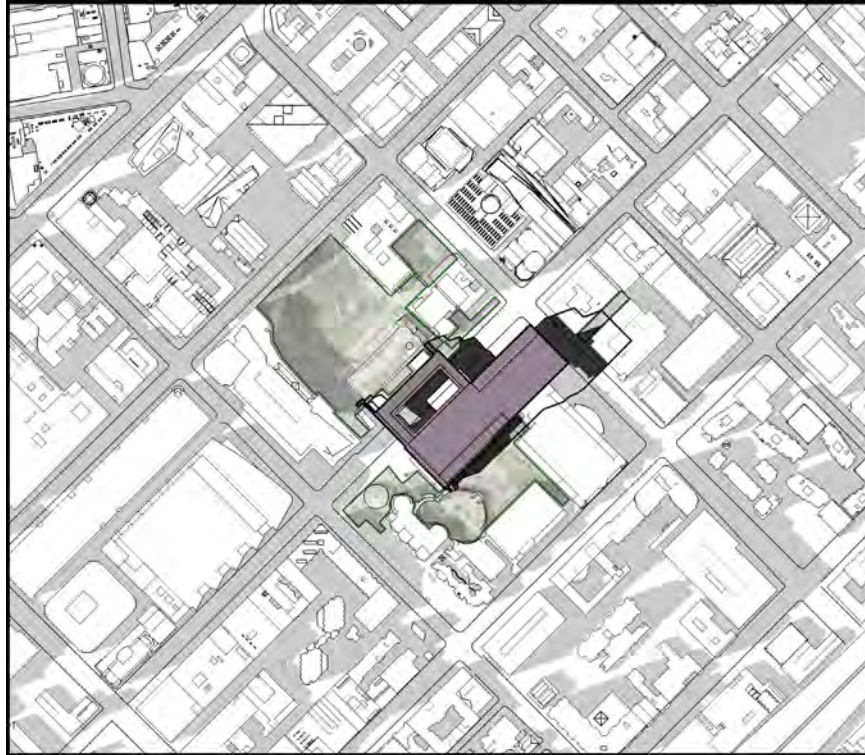
Figure IV.B-3b
June 21st: 6 pm and Sunset -1 Hour



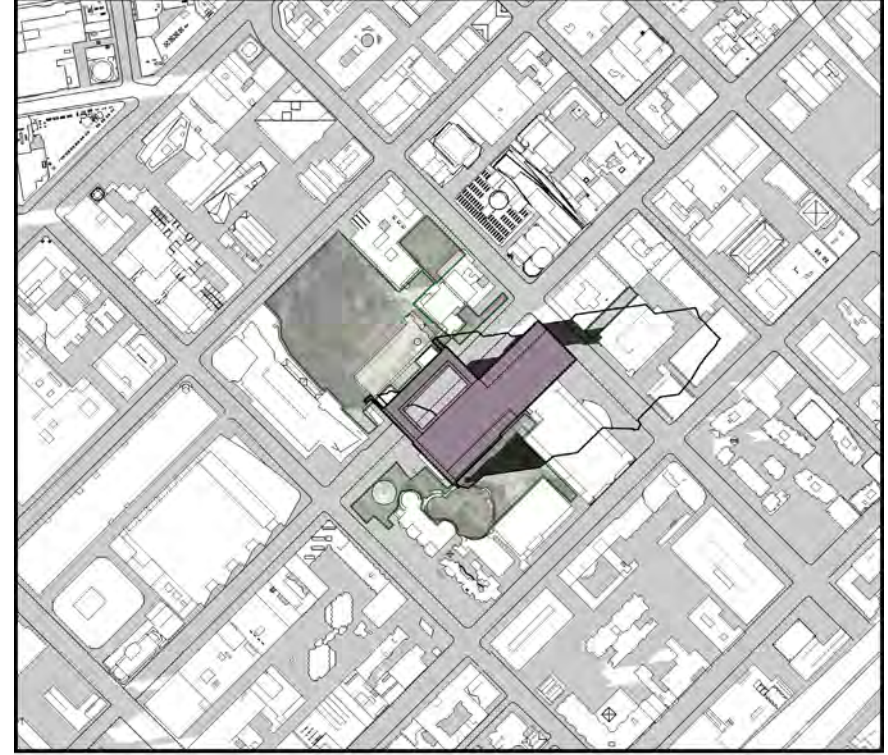
SOURCE: CADP

Moscone Center Expansion Project 2013.0154E

Figure IV.B-4a
March/September 20th: Noon



5:00pm



Sunset -1 hour

- Open Space Perimeter
- Extent of Project-Generated Shadow
- Existing Shadow
- Net New Project Shadow



SOURCE: CADP

Moscone Center Expansion Project 2013.0154E

Figure IV.B-4b
March/September 20th: 5 pm and Sunset -1 Hour

open spaces is shown in green. Existing shadow on public open spaces is depicted in a light-gray color. The outline of project generated-shadow is shown with a black line. Net new shadow generated by the project—that is, new shadow that does not overlap existing shadow—is depicted in a dark-gray color. The complete set of shadow projection images is included in **Appendix B**.

The analysis below recognizes that POPOS are developed in conjunction with and adjacent to mid- and high-rise development. POPOS are anticipated to have shadow and sunlight conditions that are generally similar to nearby pedestrian areas, in that they are shadowed daily by related or other nearby high-rise buildings.

Impact Evaluation

Impacts are numbered following the sequence from the Initial Study (Appendix A), which addressed the project's less-than-significant wind impacts under Impact WS-1.

Impact WS-2: The proposed project would not create new shadow in a manner that would affect the use of any park or open space under the jurisdiction of, or designated for acquisition by, the Recreation and Park Department. (No Impact)

A shadow fan analysis was conducted by the Planning Department. This analysis determined that the Moscone Center Expansion project would not cast new shadow on any park subject to Section 295 of the Planning Code.^{6,7} The project would have *no impact* on any park or open space under the jurisdiction of the Recreation and Park Department.

Mitigation: None required.

Impact WS-3: The proposed project would create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas. (Significant and Unavoidable)

Project Effects on Other Open Spaces under Public Jurisdiction

Net new project shadow would not reach Yerba Buena Lane and Jessie Square, and therefore these open space areas are not discussed further in this document.⁸

The quantitative analysis of net new project shadow on each of the four open spaces in Yerba Buena Gardens is presented below.⁹ Observations of the use of these open spaces were made in the morning and afternoon on Thursday, January 16, 2014; in the afternoon on Tuesday,

⁶ San Francisco Planning Department, Letter from Elizabeth Watty, Planner to Adam Van de Water, Office of Economic and Workforce Development, Case No. 2013.0154E, Moscone Convention Center, July 5, 2013.

⁷ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

⁸ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

⁹ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

February 11, 2014; and in the late afternoon and early evening on Saturday, February 22, 2014. These observations were made during the winter months, when the days are shortest. Therefore, the shadow analysis below conservatively assumes that the open space areas could be more heavily used, or used for more hours of the day, during the spring, summer, and fall months when there are more daylight hours and more moderate outdoor temperatures.

Yerba Buena Esplanade

The Esplanade has 52,116,661.63 square foot hours of Theoretically Available Annual Sunlight (“TAAS”), which is the amount of sunlight theoretically available on the open space, annually, if there were no shadows from existing or proposed buildings, structures, or vegetation. Under existing conditions, the Esplanade is sunny during the day throughout the year, with shade present mainly in the early morning and in the late afternoon. The existing shadow on the Esplanade comprises 17,873,421.40 square foot hours annually, or 34.30 percent of TAAS.

The proposed project would add 791,421.23 square foot hours of shadow to the open space, which would be a 1.52 percent increase in shadow as a percentage of TAAS, to 35.8 percent. This would represent a 4.43 percent increase in shadow as compared to existing conditions. New shadow would have the potential to affect the open space primarily during the early morning hours and then decrease throughout the day. By mid- to late-afternoon, the project would cast nominal net new shadow on the open space. Net new shadow would be most prevalent from one hour after sunrise (sunrise +1 hour) to about 9:00 a.m., in the late fall and early winter months, when the shadow would fall on the central, grassy portion of the Esplanade, effectively leaving only the portion of the Esplanade adjacent to Mission Street unshaded (see Figure IV.B-2).¹⁰

The “worst day,” with the maximum net new shadow in terms of shadow foot hours, would occur on December 13th/December 28th.¹¹ On December 13th/December 28th, the proposed project would cast new shadow on the Esplanade from sunrise +1 hour, lasting until about 3:00 p.m., and new shadow extent would decrease throughout the day.¹² The new shadow load on the Esplanade would be 36,676.95 square foot hours, and the net new shadow area at its maximum would be 44,493.33 square feet, which would be a 40.88 percent increase in shadow at that date and time. The largest new shadow by area would occur on the winter solstice at 8:20 a.m., when the new shadow cast by the proposed project would cover 44,513.59 square feet.¹³ This new shadow area drops substantially over the next 30 minutes, falling to 5,863 square feet by 9:00 a.m., and further decreasing throughout the remainder of the morning and afternoon.

¹⁰ Although the period between one hour after sunrise (sunrise +1 hour) and one hour before sunset (sunset -1 hour) is specific to Planning Code Section 295, the analysis of other publicly accessible open spaces also covers this period. At earlier and later times, shading of downtown open spaces and sidewalks is nearly complete, and discernible shadows that exist are fast moving and, therefore, fleeting.

¹¹ As stated in the Approach to Analysis, the sun’s path from January through June essentially mirrors its path from July through December. December 13th and December 28th are the same length of time from the winter solstice, and therefore they have essentially the same shadow conditions.

¹² At 3:00 p.m., the project would cast approximately 10 net new square foot hours of shadow on the Esplanade, which is not perceptible on the figures.

¹³ In some cases, such as with the Esplanade, the “worst day” for maximum net new shadow in terms of shadow foot hours is not the same day that the largest new shadow by area would occur. In this case, the worst day for new shadow in terms of shadow foot hours is December 13th/28th, and the day with the maximum net new shadow by area is the winter solstice.

Based on observations of the Esplanade, the open space is generally not heavily used in the early morning hours during the early winter months, when the project would cast the most net new shadow. Pedestrians sporadically traverse the Esplanade as a shortcut through the block, but recreational users are limited at this time. The heaviest observed use at this hour was by the open space maintenance crew, which performed cleaning and repairs. The additional shadow cast by the project would not substantially affect use of the open space, given that the square footage extent of new shadow would substantially decrease over the first half-hour of the day, and it would be cast at a time of day when the open space is primarily unused. In the spring, summer, and early fall months, net new shadow in the morning hours would be minimal, ranging from about 1,500 square feet to about 7,000 square feet, and decreasing throughout the morning. This incremental increase in shadow would not be expected to affect use of the open space.

East Garden

The East Garden has 6,204,489.57 square foot hours of TAAS. The open space is generally partially sunny during the day throughout the year under existing conditions. Shade from surrounding buildings is present until mid-morning and returns in mid-afternoon. During the late fall and early winter months, about half of the plaza is always shaded during daytime hours. The existing shadow on the East Garden comprises 2,910,103.24 square foot hours annually, or 46.90 percent of TAAS.

The proposed project would add 1,457.39 square foot hours of shadow to the open space, which would be a 0.02 percent increase (2 hundredths of 1 percent) in shadow as a percentage of TAAS.¹⁴ This would represent a 0.05 percent increase in shadow as compared to existing conditions. This incremental net new shadow would fall on the East Garden in the late fall and early winter months, approximately from early November through early February, from sunrise +1 hour to up to one hour thereafter. Given that almost the entirety of the East Garden is already shaded during these hours, the net new shadow would not be noticeable and would not affect the use of this open space.

The “worst day” with maximum net new shadow would occur on the winter solstice (December 21st). On the winter solstice, the proposed project would cast new shadow on the East Garden from sunrise +1 hour (8:19 a.m.) to 40 minutes thereafter (9:00 a.m.). The new shadow load on the garden would be 371.87 square foot hours and the new shadow area at its maximum would be 735.84 square feet, which would be 3.69 percent increase in shadow at that date and time. This is also when the project would cast the largest new shadow by area during the entire year, at approximately 8:30 a.m.

Observation of the East Garden indicates that the open space is lightly used in the early morning hours during these months. Commuters and other pedestrians traverse the open space. On the days of observation, none of the seating areas were being used. The incremental net new shadow from the proposed project would not substantially affect the use of this open space.

¹⁴ Note that the net new shadow would be of such a small amount that it is not perceptible in Figures IV.B-2 through IV.B-4.

Howard Street Plaza

Howard Street Plaza has 2,255,958.74 square foot hours of TAAS. Under existing conditions, this plaza is sunny during the day throughout the year, and often totally unshaded during the midday hours. Shade is present mainly in the early morning and in the late afternoon. The existing shadow on the plaza comprises 643,751.94 square foot hours annually, or 28.54 percent of TAAS.

The proposed project would add 303,933.95 square foot hours of shadow to the open space, which would be a 13.47 percent increase in shadow as a percentage of TAAS. This would represent a 47.21 percent increase in shadow as compared to existing conditions. In the late spring and early summer months, incremental net new shadow would fall on the plaza in the mid- to late-afternoon hours, from about 3:30 to one hour before sunset (sunset -1 hour), cast eastward from the Moscone North expansion onto the westernmost portion of the plaza, which could affect the use of this area at that time. The extent of shadow is small (4 square feet at 3:30 on the summer solstice), but the square footage is more extensive before and after the solstice. This shadow would occur earlier in the day and cover a larger area in the spring and late summer/early fall months (see Figure IV.B-4). In addition, net new shadow would be cast in the early morning hours, from sunrise +1 hour to approximately 9:45 a.m., on the fall and spring equinox. This new shadow would be cast by the Moscone South/Esplanade expansion, shading the steps, pedestrian ramp, and wide sidewalk, potentially affecting their use during these times.

In the late fall and early winter months, the project would continually shade at least a portion of the plaza, with the greater extent of new shadow cast by the Moscone South/Esplanade expansion prior to mid-morning (10:30 a.m.) and by the Moscone North expansion in the early- to mid-afternoon hours (1:00 p.m. to 3:00 p.m.) (see Figure IV.B-2). Net new shadow would fall on the western portion of the plaza throughout the day, and on the eastern portion of the plaza in the early morning and mid-afternoon hours.

The “worst day” with maximum net new shadow would occur on December 13th/December 28th. On December 13th/December 28th, the proposed project would cast new shadow on the plaza from sunrise +1 hour to sunset -1 hour. The new shadow load on the plaza would be 28,402.85 square foot hours and the new shadow area at its maximum would be 8,168.89 square feet. The largest new shadow by area would occur in the mid-fall (approximately all of November) to mid-winter (about January 10th through February 8th) months, between about 8:30 and 9:15 a.m., when net new shadow cast by the project would be 8,184.74 square feet, shading the entire plaza.

On the dates of observation, the Howard Street Plaza was unused during the afternoon hours, when net new shadow would fall on the plaza. In addition, observation indicates that the plaza is not heavily used during the morning hours. On the date of observation, trucks and cars parked adjacent to the open space along Howard Street, with minimal loading and unloading activity at the Moscone North lobby. No recreational users or pedestrians occupied the plaza. As discussed above, this plaza primarily serves as the southern entrance to the Yerba Buena Center for the Arts Novellus Theater. While there are some benches located at the plaza’s southeastern corner that

could be used for prolonged periods of passive recreation, it is not expected that increased shadow on this plaza would substantially affect use of the space.

Children's Garden

The Children's Garden has 27,955,192.43 square foot hours of TAAS. Although adjacent buildings cast shadow around the perimeter of the garden, it is generally sunny during the day throughout the year, with shade present mainly in the early morning and in the late afternoon. During the late fall and early winter months, under existing conditions about half of the Children's Garden is always shaded during daytime hours due to shadow cast by surrounding buildings. The existing shadow on the gardens comprises 10,473,925.40 square foot hours annually, or 37.47 percent of TAAS.

The proposed project would add 875,468.24 square foot hours of shadow to the open space, which would be a 3.13 percent increase in shadow as a percentage of TAAS.¹⁵ This would represent an 8.36 percent increase in shadow as compared to existing conditions. New shadow would fall on the Children's Garden throughout the year and throughout the day, although to only a minimal extent until mid-afternoon hours. In late spring and early summer months, shadow would have the greatest potential effect, given that it would fall on the open space from the mid-afternoon (about 3:00 p.m.) through evening hours (sunset -1 hour). At those times, net new shadow would be cast eastward and southeastward from the expanded Moscone South building to the portion of the Children's Garden east of the amphitheater (see Figure IV.B-3).

These shadows would shorten moving into the autumn months, and lengthen again after the winter solstice (see Figure IV.B-4 and IV.B-2, respectively). As discussed in the Project Description, some features of the Children's Garden would be relocated or modified under the proposed project, and the overall area of the Children's Garden dedicated to children's recreation would be maintained. As such, the net new shadow could fall on new or relocated features, as opposed to the existing features. The area where net new shadow would fall currently includes a Learning Garden, a maze, and a circular lawn adjacent to the Esplanade Ballroom, a nature walk/allée of plum trees adjacent to the Moscone South building, a landscaped area adjacent to the ice rink building, and a play circle with playground in the center of the block. As indicated in the Project Description, under the proposed project, the Children's Garden would include a tot lot with play equipment for children under age 5, relocation and expansion of the existing learning garden, replacement of the nature walk/allée of plum trees, an elevated social seating area providing views throughout the gardens, reconfiguration of the existing lawn, restrooms, gardens storage, and a public plaza alongside the Esplanade Ballroom. The play circle (the primary active element of the playground) would not be modified, although the existing sundial garden would be removed (see Figure II-10a).

¹⁵ As discussed in the Setting section, the Children's Garden would be modified under the proposed project, with a larger total square footage and relocation or modification of some playground features. Given that a detailed design has not been finalized, this analysis presents shadow impacts to the existing features and notes where shadow could fall on relocated features, as applicable.

The “worst day” with maximum net new shadow would occur on the summer solstice (June 21st). On the summer solstice, the proposed project would cast new shadow on the gardens from sunrise +1 hour to sunset -1 hour. In the morning hours, shadow would be cast from the Moscone South expansion westward into the area around the historic carousel. Net new shadow would be minimal in the early/mid-afternoon hours. In the late afternoon and evening hours shadow would be cast southeastward into the play area. The new shadow load on the garden would be 74,798.00 square foot hours, and the new shadow area at its maximum would be 30,629.50 square feet at approximately 7:00 p.m., which would be a 60.99 percent increase in shadow at that date and time. The maximum extent of new shadow annually would occur at the same time.

Observation of the Children’s Garden indicates that the open space is lightly used on weekdays in the late afternoon hours. Pedestrians and commuters traverse the area, but use of the children’s play area is limited to a few families. Children generally use the features in the play circle—the sandbox, monkey bars, and slides. Parents either directly play with their children or watch from the surrounding benches.¹⁶

Observation on a weekend day indicates that the open space is heavily used in the late afternoon and early evening hours. Children and families congregate on the play area in the center of the open space. Children use the slides, monkey bars, sandbox, and other features in, or immediately adjacent to, the play circle. Parents and guardians either supervise their children on the features or watch their children from the surrounding benches. The sundial, maze, Learning Garden, amphitheater, and lawn circle are not heavily used during these hours, although some families do use these features for passive and active recreation. Families generally leave the Children’s Garden beginning approximately 1 hour prior to sunset, although some families remained until after the playground was completely shaded.

The increased shadow that would be cast by the Moscone South expansion could be noticeable during the late afternoon and early evening hours. As shown in Figure IV.B-3, at 6:00 p.m., during the late spring/early summer months of the year when there would be the greatest extent of net new shadow, the new shadow would be cast directly adjacent to the Moscone South building, on an area encompassing the nature walk, sundial, Learning Garden,¹⁷ sand box, and monkey bars. The remainder of the features of the Children’s Garden—including the play circle, circular lawn, slides, water feature, amphitheater, carousel and surrounding area, and most of the maze would remain unshaded at this hour. As indicated above, the shadow would be cast on relocated features under the proposed project, including components intended for both active and passive recreation (see Figure II-10a). The new shadow would fall on the nature walk/allée, paseo, plaza, and flexible lawn in the late afternoon.

As shown in Figure IV.B-3, at sunset -1 hour in late spring/early summer, almost the entirety of the Children’s Garden is already shaded under existing conditions, which is typical of public open spaces at this hour throughout the year. The Esplanade, East Garden, Howard Street Plaza,

¹⁶ Observation of the open space was made on two weekdays in January, as well as on a Saturday in February. It is possible that the open space is more heavily used during the spring, summer, and fall months.

¹⁷ The Learning Garden is typically locked at this time of day.

Moscone Plaza, Jessie Square, Yerba Buena Lane, Westin Plaza, and sidewalks in the project site vicinity are all almost completely shaded at this time of day, when the sun is low in the sky and shadows are near their longest. The project would result in net new shadow on the portion of the Children's Garden encompassing the play circle, slides, maze, and circular lawn. With relocation of playground features under the proposed project, the shadow would extend onto the play circle, social seating, and learning garden.

As stated above, observations made on a Saturday during the winter months indicate that the play circle is heavily used in the two hour hours prior to sunset. Children and parents/guardians generally congregated on the play circle and associated features (slides, monkey bars, and sandbox), and some families use the other features in the Children's Garden. The play circle and associated features are officially open from 7:00 a.m. to 7:00 p.m., so it is possible that the area would not be heavily used at sunset -1 hour (after 7:00 p.m.) during the late spring and early summer months, when sunset is later in the day. Regardless, the net new shadow cast by the proposed project could substantially affect use of the play circle and surrounding features.

Sidewalks

As noted above, Planning Code Section 146(c) is geared toward limiting, where practicable, new shadow on sidewalks in the C-3 District. The project would add new shadow to sidewalks on Howard Street, Third Street, Fourth Street, and Kaplan Lane (at the eastern end of Moscone Plaza). This shadow would be in an area of the City that is zoned for mid- and high-rise development. Shadow would be typical for Downtown San Francisco, and it would not be expected to affect the use of these sidewalks.

Project Effects on Private Publicly Accessible Open Spaces

Net new project shadow would not reach Westin Plaza, and therefore this area is not discussed further in this document.

The quantitative analysis of net new project shadow on Moscone Plaza is presented below.¹⁸ Observation of the use of this open space was made in the afternoon on January 16, 2014.

Under existing conditions, Moscone Plaza has 2,073,471.66 square foot hours of TAAS. Due to the proximity and height of existing buildings, the open space is generally shaded during the day throughout the year, except during the early afternoon hours (approximately 12:00 p.m. to 3:30 p.m.), when it is partially shaded. The existing shadow on the plaza comprises 1,504,302.23 square foot hours annually, or 72.55 percent of TAAS.

The proposed project would add 133,136.97 square foot hours of shadow to the open space, which would be a 6.42 percent increase in shadow as a percentage of TAAS. This would represent an 8.85 percent increase in shadow as compared to existing conditions. During the late spring and early summer months, incremental new shadow would fall on the plaza in the late afternoon and early evening hours (from about 5:00 p.m. to sunset -1 hour) (see Figure IV.B-3).

¹⁸ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

This net new shadow would increase in duration and extent during the late summer and mid-spring months. At the fall and spring equinoxes, the project would cast net new shadow from about 2:00 p.m. to sunset -1 hour (see Figure IV.B-4). In the late fall/early winter months, the project would cast net new shadow from about 1:15 p.m. to sunset -1 hour, with the greatest extent of net new shadow occurring in mid-afternoon (around 3:00) (see Figure IV.B-2). Net new shadow would fall on the eastern portion of the plaza, closest to Third Street.

The “worst day” with maximum net new shadow would occur on November 15th/January 25th. On November 15th/January 25th, the proposed project would cast new shadow on the plaza from about 1:00 p.m. to sunset -1 hour. The new shadow load on the plaza would be 9,406.09 square foot hours and the shadow area at its maximum would be 7,408.21 square feet. The largest new shadow by area would occur on November 22nd/January 18th at about 3:00 p.m., when net new shadow cast by the project would be 7,522.66 square feet.

On the date of observation, Moscone Plaza was lightly used in the mid-afternoon hours, with the only observed user being a worker taking a break. Given the lack of seating, it is likely that it is mainly used by pedestrians traversing the open space to reach Kaplan Lane or Third Street. The increased shadow would not substantially affect use of the space, given that the POPOS is already extensively shaded and the area of net new shadow would not cover areas with seating or other recreational amenities.

Conclusion

As established in the analysis above, the project shadow analysis found that the Moscone Center Expansion project would shade the four distinct areas of Yerba Buena Gardens. For each of these open spaces (except for the Children’s Garden), the project shadow would be limited in amount and/or duration, would typically fall on the open spaces at times of relatively limited use, or new shadow would not be expected to substantially affect the use of that space. With respect to the Esplanade, net new shadow would be evident primarily in the early morning, when the space has been observed to be less heavily used than during the midday period. However, net new shadow would fall on the Children’s Garden in the late afternoon and early evening hours in the late spring and early summer months, when the play circle is likely heavily used. Net new shadow on the Children’s Garden could substantially affect its use at that time.

This net new shadow would be cast by the 95-foot-tall Moscone South and Esplanade Building, which would be 68 feet taller than the existing building. The building would be located directly adjacent to the Children’s Garden, a location that would result in the greatest increase in net shadow because there are no existing intervening structures that cast shadow under existing conditions. Therefore, minor design changes or setbacks to the proposed project would result in only marginal improvement in project shadow conditions. Mitigation of this net new shadow would require redesign of the proposed project to remove or downsize the new building. Please see Chapter VI for an analysis of a Modified Massing Alternative that would incorporate more substantial design changes to reduce this impact.

Net new shadow on the East Garden and on Howard Street Plaza would not be expected to substantially affect their use. Also, although net new shadow would be cast on sidewalks in the project site vicinity, it would not be anticipated to substantially affect their use.

The POPOS have been developed in an area with tall height limits, where nearby mid- and high-rise development already does (and may in the future) cast shadow on those spaces. At the times of greatest existing and new shadow, these open spaces are primarily traversed by pedestrians or used by workers. Given the limited shadow that would be cast by the proposed project buildings, as well as the nature of these open spaces already surrounded and partly shaded by existing buildings, it is reasonable to conclude that project shadow would not adversely affect the use of POPOS.

In conclusion, the net new shadow could substantially affect the use of the Children's Garden. There is no available mitigation for shadow impacts other than substantial redesign of the proposed project (see Chapter VI, Alternatives). No feasible mitigation measures have been identified. Therefore, the impact would be *significant and unavoidable*.

Mitigation: None available.

Cumulative Impacts

Impact C-WS-2: The proposed project, in combination with past, present, or reasonably foreseeable future projects, would not create new shadow in a manner that would affect the use of any park or open space under the jurisdiction of the Recreation and Park Department, but it would create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas. (Significant and Unavoidable)

Cumulative Impacts to Section 295 Parks

As stated above, the project would not result in net new shadow on any park subject to Planning Code Section 295. Therefore, the project would not contribute to cumulative shadow impacts on parks subject to Section 295.

Cumulative Impacts to Other Open Spaces under Public Jurisdiction

Esplanade, East Garden, Howard Street Plaza, and Children's Garden

The project would shade the Esplanade, East Garden, and Howard Street Plaza, at various times during the day throughout the year. In the case of the Esplanade, East Garden, and Howard Street Plaza, the majority of the people who use these open spaces during the periods of greatest net new shadow are commuters and workers passing through the park. Given the height of the proposed project buildings, as well as the nature of some of these open spaces, which are already primarily partly shaded by existing buildings, cumulative development projects would not

combine with the proposed project to result in cumulative shadow impacts on these spaces. There would not be a substantial impact on the use or enjoyment of these open spaces under public jurisdiction.

Regarding the Children's Garden, as stated above, the proposed project would result in a project-level significant and unavoidable shadow impact on the Children's Garden. As indicated above, the shadow would be cast on relocated features under the proposed project, including the nature walk/allée, paseo, plaza, and flexible lawn. Another nearby project that would result in increased shadow on the Children's Garden is the 250 Fourth Street hotel project. This project includes the demolition of a three-story education and office building and construction of an 11-story, 119-foot-tall hotel. The 250 Fourth Street project is located on the northwest corner of Fourth and Clementina Streets, west of the project site, and would also cast shadow on the Children's Garden, although the maximum extent would be during the afternoon hours during the late fall and winter months.¹⁹ The project shadow, combined with the shadow from the 250 Fourth Street project, would result in a cumulative impact on the Children's Garden, and the project would result in a considerable contribution to that cumulative impact.

The proposed project would not cast new shadow on public open spaces and sidewalks in the larger Central South of Market (SoMa) area, which encompasses an area bounded by Brannan Street, Third Street, Market Street, and Sixth Street.^{20,21} Other projects in this vicinity include 706 Mission, Harrison Gardens, 900 Folsom Street/260 Fifth Street, the San Francisco Museum of Modern Art Expansion, and other projects. These new developments would cast net new shadow that could affect other outdoor recreational facilities in the larger Central SoMa area, but shadow from the proposed project would be limited to the streets and blocks immediately adjacent to the project site, and it would not combine with shadow from those projects to result in a cumulative shadow impact. These other projects would not add shadow to the Esplanade, East Garden, Howard Street Plaza, and the Children's Garden in a manner that would combine with shadow from the proposed project to substantially affect the use of these facilities.

Given the relatively limited extent of shadow that would be cast by the proposed project as compared to the shadow cast by existing and proposed high-rise buildings in the project site vicinity, the project's contribution to cumulative shadow impacts in the larger Central SoMa neighborhood would not be considerable.

Cumulative Impacts to Private Publicly Accessible Open Spaces

Moscone Plaza

Moscone Plaza would not be substantially shaded by other development projects in the project vicinity due to its location, surrounded by existing development. Therefore, cumulative development would not result in adverse effects on this POPOS.

¹⁹ San Francisco Planning Department, *Mitigated Negative Declaration: 250 Fourth Street Project*, Case No. 2011.0038E, December 12, 2012, amended January 4, 2013.

²⁰ San Francisco Planning Department, Letter from Elizabeth Watty, Planner to Adam Van de Water, Office of Economic and Workforce Development, Case No. 2013.0154E, Moscone Convention Center, July 5, 2013.

²¹ CADP, *Moscone Center Expansion Shadow Analysis*, January 15, 2014.

Conclusion

The proposed project would not contribute to cumulative shadow impacts on Section 295 parks or POPOS, but it would make a considerable contribution to cumulative shadow impacts on other open spaces under public jurisdiction (the Children's Garden). As discussed above, there is no available mitigation for shadow impacts other than substantial redesign of the proposed project. Thus, no feasible mitigation measures have been identified. Therefore, cumulative impacts on the use of existing publicly accessible open space or outdoor recreation facilities or other public areas would be *significant and unavoidable*.

Mitigation: None available.

CHAPTER V

Other CEQA Considerations

A. Growth Inducement

Growth inducement analysis under California Environmental Quality Act (CEQA) considers the ways in which proposed and foreseeable project activities could encourage and facilitate other activities that would induce economic or population growth in the surrounding environment, either directly or indirectly. The Initial Study concluded that the proposed project would not induce substantial population growth, either directly (e.g., by proposing new homes and businesses) or indirectly (e.g., through extension of roads or other infrastructure), or displace a large number of people, or create a substantial demand for additional housing.

The proposed project is an expansion of San Francisco's primary convention, exhibition, and meeting facility. It would be located in an area already designated for such uses and would not substantially alter the existing development patterns within the area, or in San Francisco as a whole, so as to induce population growth. The project would also not necessitate or induce the extension of municipal infrastructure because it would be served by existing utilities.

As stated in Chapter II, Project Description, the implementation of 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 proposed Moscone Center Expansion project would be located in a fully developed urban area served by existing roads and utilities. The proposed project would increase employment during events at the project site by 28 full-time equivalent employees, and it could increase total daily event attendance by up to 4,200.¹ 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.² Therefore, project-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.³ Indirect growth in employment, such as growth in the service/hospitality industry, would be within the

¹ Adavant Consulting, Memorandum RE: Moscone Center Expansion Project – Estimation of Travel Demand, Final Document, January 9, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

² San Francisco Planning Department, *San Francisco Land Use Allocation, Central SoMa (July 2013)*, January 6, 2014. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

³ Ibid.

employment projections anticipated for San Francisco and any increase in employment would be minimal compared to the total employment expected in San Francisco and the greater San Francisco Bay area.

While an increase in the use of the Moscone Center could be noticeable to persons in the immediately adjacent areas, an increase in visitors would not result in a substantial impact on the residential or employee populations in San Francisco, and the proposed project would not result in a substantial population increase or induce a substantial amount of growth.

B. Significant Unavoidable Impacts

In accordance with Section 21067 of the California Public Resources Code, and with Sections 15040, 15081, and 15082 of the CEQA Guidelines, an environmental impact report (EIR) must identify potential impacts that could not be eliminated or reduced to an insignificant level. As explained in Section IV.B, the project would result in the following significant and unavoidable impacts:

- Create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas.
- In combination with past, present, or reasonably foreseeable future projects, create new shadow in a manner that could affect the use of other existing publicly accessible open space or outdoor recreation facilities or other public areas.

C. Effects Found Not to Be Significant

The NOP distributed for the proposed project included an Initial Study that analyzed resource topics that were determined not to apply to the proposed project and resource topics where the project would have no impact or a less-than-significant impact, with or without mitigation. These topics are not analyzed in this EIR:

- **Land Use and Land Use Planning**—physically divide an established community; conflict with land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect; or have impacts on the existing character of the vicinity.
- **Population and Housing**—induce substantial population growth; displace a substantial amount of existing housing or create demand for additional housing; or displace substantial numbers of people, necessitating replacement housing elsewhere.
- **Cultural and Paleontological Resources**—cause an adverse change to historic architectural resources; destruction of paleontological resources; or disturbance of remains.
- **Transportation and Circulation**—cause a change in air traffic patterns, resulting in a safety risk.
- **Noise**—generate or expose persons to noise levels in excess of standards; create vibration impacts; increase ambient noise; expose people to excessive noise levels in airport or airstrip areas; or produce other effects caused by substantial noise levels.

- **Air Quality**—conflict with or obstruct implementation of the applicable air quality plan or violate any air quality standards; cause a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment; expose sensitive receptors to substantial pollutant concentrations; or create objectionable odors.
- **Greenhouse Gas Emissions**—generate greenhouse gas emissions, resulting in a significant impact on the environment; or conflict with plans or policies adopted for the purpose of reducing emissions of greenhouse gases.
- **Utilities and Service Systems**—exceed wastewater treatment requirements or capacity; require the construction of new water, wastewater, or stormwater facilities; affect the availability of water supply; exceed landfill capacity; or fail to comply with solid waste regulations.
- **Wind**—alter wind in a manner that substantially affects public areas.
- **Recreation**—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; include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment; physically degrade existing recreational resources.
- **Public Services**—create impacts associated with the need for new or altered public services.
- **Biological Resources**—cause effects on special-status species, riparian habitat, wetlands, migratory wildlife corridors or sites, or conflict with plans or policies protecting resources, including habitat conservation plans.
- **Geology and Soils**—expose people or structures to geologic hazards; cause soil erosion or loss of topsoil; be affected by the presence of unstable soils or geologic units; be affected by the presence of expansive soils or soils incapable of adequately supporting wastewater disposal systems; or cause a substantial change of topography.
- **Hydrology and Water Quality**—deplete groundwater supplies; alter drainage patterns, resulting in erosion; place housing and/or structures within a 100-year flood zone; expose people and structures to hazards associated with flooding, failure of a levee or dam, seiche, tsunami, or mudflow; or cause construction-related water quality impacts.
- **Hazards and Hazardous Materials**—be at risk of upset and accident conditions involving release of hazardous materials; emit hazardous materials within 0.25 mile of a school; be located on a site listed on a hazardous materials database; be located on airport or air strip land use areas; impair implementation of emergency response or evacuation plan; expose people or structures to fire risk; or create construction-related hazards and hazardous materials impacts.
- **Mineral and Energy Resources**—cause the loss of known valuable mineral resources of the state or locally important resources; encourage activities that result in wasteful use of energy resources.
- **Agriculture and Forest Resources**—convert resources identified by the Farmland Mapping and Monitoring Program to nonagricultural use; conflict with existing zoning for

agricultural use or Williamson Act contract; or involve changes that could result in Farmland of Statewide Importance to nonagricultural use.

Subsequent to publication of the Initial Study, the project sponsor team modified the project description by incorporating enhancements to the Children's Garden recreational area, as discussed in Chapter 2, Project Description. These changes would have no effect on the following topics addressed in the Initial Study: Land Use and Land Use Planning, Population and Housing, Cultural and Paleontological Resources, Noise, Greenhouse Gas Emissions, Wind, Utilities and Service Systems, Public Services, Biological Resources, Geology and Soils, Hydrology and Water Quality, Hazards and Hazardous Materials, Minerals and Energy Resources, and Agriculture and Forest Resources.

For other topics covered in the Initial Study, the following discussion is provided below.

- **Air Quality**—The proposed modifications to the Children's Garden would increase the amount of required construction activities, including demolition, excavation, grading, and other construction activities that may slightly increase wind-blown dust that could contribute particulate matter into the local atmosphere, as well toxic air contaminants; however, implementation of Mitigation Measure M-AQ-1 would be required and would reduce project impacts to a less than significant level.
- **Recreation**—Impact RE-2 of the Initial Study considered whether the project would require the construction or expansion of recreational facilities that would have a significant effect on the environment and indicated that the project would not include construction or expansion of recreation facilities. As noted above, the project has been revised to include construction and improvement of recreation facilities at the Children's Garden. The primary purpose of this EIR is to evaluate the potential impacts of implementing the project and its construction would cause significant effects as identified in the Initial Study and EIR. Refer to the impact discussions for more information regarding construction effects, including those that would occur as a result of construction activities at the Children's Garden.

Implementation of improvements to the Children's Garden would enhance recreation opportunities available in the Moscone Center vicinity and therefore, use of the Children's Garden could increase as a result of the proposed project as users may be attracted to the enhanced facility. However, any increased use would likely be minimal and would not cause a substantial physical deterioration to recreation facilities.

D. Areas of Known Controversy and Issues to Be Resolved

On January 22, 2014, the San Francisco Planning Department issued a notice of preparation (NOP) of an EIR (see Appendix A, Notice of Preparation). Individuals, groups, and agencies that received these notices included owners of properties within 300 feet of the project site and other potentially interested parties, including various regional, State, and local agencies.

A summarized list of concerns that were noted in the public comments on the NOP is provided in Chapter I, Introduction. Based on the number of comments received on each of the topics listed, the most controversial environmental issues for the proposed project, as expressed by community members, are the following:

- The project's impact on recreational facilities located on both the Moscone North and South blocks,
- Impacts on pedestrian circulation at sidewalks and intersections surrounding the project site, as well as mitigation measures that would reduce such impacts, and
- Shadows impacts on existing recreational areas on both project blocks, as well as a potential alternative that redistributes project massing to reduce such impacts.

An additional area of controversy may emerge regarding the provisions of Senate Bill (SB) 743 as they relate to the proposed project and this EIR. SB 743, which amended the Public Resources Code to add section 21099, was signed by Governor Brown on September 27, 2013. Section 21099(d) directs that the aesthetic and parking impacts of mixed-use residential, residential, or employment center infill projects located in transit priority areas are not considered impacts on the environment under CEQA.⁴ The proposed project meets the definition of an employment center infill project in a transit priority area.⁵ Accordingly, this EIR does not contain a separate discussion of the topic of aesthetics. The EIR nonetheless provides visual simulations for informational purposes as part of Chapter II, Project Description. Similarly, parking is discussed for informational purposes in Section IV.A.

⁴ San Francisco Planning Department, Memorandum RE: CEQA Update: Senate Bill 743 Summary – Aesthetics, Parking and Traffic, November 12, 2013. This document is available for review at the Planning Department, 1650 Mission Street, Suite 400, in Case File No. 2013.0154E.

⁵ 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.

CHAPTER VI

Alternatives

A. Introduction

The California Environmental Quality Act (CEQA) Guidelines Section 15126.6(a) states that an environmental impact report (EIR) must describe and evaluate a reasonable range of alternatives to the proposed project that would feasibly attain most of the project's basic objectives, and would avoid or substantially lessen any identified significant adverse environmental effects of the project. An EIR is not required to consider every conceivable alternative to a proposed project. Rather, it must consider a reasonable range of potentially feasible alternatives that will foster informed decision-making and public participation.

CEQA Guidelines Section 15126.6(e)(1) states, "The specific alternative of 'no project' shall also be evaluated along with its impact." The EIR must evaluate the comparative merits of the alternatives and include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed project. Specifically, the CEQA Guidelines set forth the following criteria for selecting and evaluating alternatives:

- [T]he discussion of alternatives shall focus on alternatives to the project or its location which are capable of avoiding or substantially lessening any significant effects of the project, even if these alternatives would impede to some degree the attainment of the project objectives, or would be more costly. (Section 15126.6[b])
- The range of potential alternatives shall include those that could feasibly accomplish most of the basic objectives of the project and could avoid or substantially lessen one or more of the significant effects. (Section 15126.6[c])
- The alternatives shall be limited to ones that would avoid or substantially lessen any of the significant effects of the project. Of those alternatives, the EIR need examine in detail only the ones that the Lead Agency determines could feasibly attain most of the basic objectives of the project. The range of feasible alternatives shall be selected and discussed in a manner to foster meaningful public participation and informed decision-making. (Section 15126.6[f])

This chapter presents the CEQA alternatives analysis for the Moscone Center Expansion project (proposed project). It presents the project objectives and impacts, discusses the methodology used to identify and screen alternatives, and presents a detailed analysis and comparison of selected alternatives. The project alternatives identified in this chapter include the potentially feasible alternatives that were selected for detailed analysis as well as those that were considered but rejected from further analysis. For the selected alternatives, this analysis evaluates the

alternatives' impacts against existing environmental conditions and compares the potential impacts of the alternatives against those of the proposed project. This chapter also identifies the environmentally superior alternative.

City decision-makers could adopt an alternative instead of approving the proposed project if that alternative would substantially reduce or eliminate significant environmental impacts identified for the proposed project, the alternative is determined feasible, and the alternative would achieve most of the project objectives. The determination of feasibility would be made by City decision-makers based on substantial evidence in the record, which must include, but would not be limited to, information presented in the Draft EIR and comments received on it.

Subsection B presents the approach and methodology of the project alternatives analysis as well as a detailed evaluation of the selected alternatives, and Subsection C identifies the environmentally superior alternative. Subsection D discusses specific alternatives that were considered but rejected from further evaluation.

B. Moscone Center Expansion Project Alternatives Analysis

In accordance with the CEQA Guidelines, an alternatives analysis must address alternatives that meet the following three criteria: (1) the alternative would attain *most* of a project's basic objectives; (2) the alternative would *avoid or substantially lessen* one or more of the significant environmental impacts of the proposed project; and (3) the alternative must be potentially *feasible*. An EIR need not consider an alternative whose impact cannot be reasonably ascertained and whose implementation is remote and speculative. Furthermore, an EIR need not consider every conceivable alternative, but must consider a reasonable range of alternatives that will foster informed decision-making and public participation.

In an effort to develop a reasonable range of alternatives, this section first presents the project objectives (from Chapter II, Project Description) and then summarizes the significant environmental impacts of the proposed project that were identified in Chapter IV, Environmental Setting and Impacts. The alternative approaches and strategies that would substantially lessen or avoid significant impacts are described, and then the feasibility of an alternative and its ability to meet project objectives are discussed.

Project Sponsor's Objectives

The objectives of the proposed project include the following:

- Maximizing the economic value of Moscone Center by attracting new clients and maintaining 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 Center’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.

Significant Environmental Impacts

As stated in the CEQA Guidelines, alternatives to a project must substantially lessen or avoid any of the significant environmental impacts associated with the project. The following section summarizes the significant impacts of the proposed project. These significant project impacts provided the basis for the development of alternatives to the proposed project. There are two groups of significant impacts: (1) significant and unavoidable [SU] impacts and (2) significant impacts that can be mitigated to less-than-significant [LSM].

Significant and Unavoidable Impacts

Shadow. As stated in Section IV.B, under **Impact WS-3** and **Impact C-WS-2**, the project would result in significant and unavoidable project- and cumulative-level shadow impacts. The Moscone South Expansion would result in a net increase in shadow on the Children’s Garden during the late afternoon / early evening hours in the late spring and early summer months, which could substantially affect the use of the open space.

Significant Impacts that Can Be Mitigated to Less than Significant

Archeological Resources. As discussed in Appendix A, Section E.3, construction of the proposed project could cause a substantial adverse change in the significance of a unique archeological resource pursuant to the CEQA Guidelines (Impact CP-2). This includes a known resource in the project vicinity, as well as previously undiscovered resources that could be present in the project vicinity. Implementation of Mitigation Measure M-CP-2a requires the development of presence or absence investigation for archeological resources and evaluation. Implementation of Mitigation Measure M-CP-2b requires a qualified archeological consultant to prepare and submit

a plan for post-recovery interpretation of resources, and would reduce potential impacts to archeological resources to a less-than-significant level.

As discussed in Appendix A, Section E.3, construction of the proposed project could disturb human remains, if any are present in the project area. In the event that human remains are uncovered during ground-disturbing activity, implementation of Mitigation Measure M-CP-2a would reduce potential impacts to a less-than-significant level.

Appendix A, Section E.3 also discusses the project's potential to result in cumulatively significant impacts to archeological resources and human remains. Impact C-CP identifies a significant cumulative impact to these resource topics as a result of the proposed project's impact in combination with other past, present and reasonably foreseeable future projects. Mitigation Measures M-CP-2a and M-CP-2b would reduce the project's contribution to this impact to less than cumulatively considerable.

Transportation and Circulation. As discussed in Section IV.A, the proposed project would result in a significant project-level (Impact TR-6) impact on passenger and truck loading/unloading activities. In addition, the impact on loading activities would likely result in vehicles stopping within travel lanes and bicycle lanes on Howard Street, resulting in secondary impacts to bicyclists and traffic. Mitigation Measure M-TR-6a requires the implementation of the Moscone Center Transportation Operations Master Plan, and Mitigation Measure M-CP-2b requires the funding of additional parking control officers. Implementation of these measures would reduce these impacts to a less-than-significant level.

Air Quality. As discussed in Appendix A, Section E.6, implementation of the proposed project would result in significant air quality impacts related to emissions of criteria air pollutants and toxic air contaminants during construction activities (Impact AQ-1). 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. Implementation of Mitigation Measure M-AQ-1, requiring the use of Tier 3 diesel engines equipped with a level 3 verified diesel emission control strategy (VDEC) for construction equipment, would reduce potential impacts resulting from the emission of criteria air pollutants and toxic air contaminants to a less-than-significant level.

As discussed in Appendix A, Section E.6, because the proposed project's construction emissions would exceed the project-level thresholds for criteria air pollutants, the proposed project would result in a cumulatively considerable contribution to regional air quality impacts during construction (Impact C-AQ-1). Additionally, construction activities would add new sources of toxic air contaminants to areas of the City that are already adversely affected by poor air quality (Impact AQ-2). Compliance with Mitigation Measure M-AQ-1 would ensure that the proposed project would not result in a considerable contribution to cumulative air quality impacts and cumulative air quality impacts would be reduced to a less-than-significant level.

Hazards and Hazardous Materials. As discussed in Appendix A, Section E.15, demolition and renovation of the exhibition halls could 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 (Impact HZ-3). Implementation of a pre-construction survey and removing any hazardous building materials found in the facility in accordance with applicable laws and regulations (Mitigation Measure M-HZ-3) would reduce this impact to a less-than-significant level.

Selected CEQA Alternatives

This section describes the project-specific alternatives that were selected and analyzed in detail. The first alternative, the No Project Alternative, is required under the CEQA Guidelines. Two additional alternatives were developed following identification of significant impacts associated with the proposed project, as well as through input provided by the public and other agencies during the EIR scoping process. The alternatives selected for detailed analysis in this EIR are as follows:

- Alternative 1: No Project Alternative (required by CEQA)
- Alternative 2: Reduced Project Alternative
- Alternative 3: Modified Massing Alternative

Table VI-1 presents a comparative summary of the impacts associated with the alternatives.

No Project Alternative

As required by CEQA Guidelines Section 15126.6(e), the No Project Alternative must be evaluated along with its impacts to allow decision-makers to compare the impacts of approving the proposed project with the impacts of not approving it. The No Project Alternative represents what would be reasonably expected to occur in the foreseeable future if the project were not approved.

Description of the No Project Alternative

In the event the proposed project is not approved, the gross square footage of the Moscone Center facility would not be increased. The Moscone North and South and Esplanade buildings would not be renovated. Additional space would not be created by excavating under Howard Street to expand the existing below-grade exhibition halls and the Moscone North and South buildings would continue to have limited connection below ground. The existing adjacent bus pick-up and drop-off facilities would not be reconfigured and the existing pedestrian bridge would remain.

Moscone Center would continue to host about 90 to 100 events during a typical year. Most events would continue to 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 up to approximately 113,000 and 60,000 attendees, respectively; the largest consumer show is the San Francisco International Auto Show, with up to 285,000 attendees. These events typically occur in October and November.

TABLE VI-1
COMPARISON OF THE SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Category of Significant Environmental Impact	Proposed Project	No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Modified Massing Alternative
Cultural and Paleontological Resources	Less than significant project-level and cumulative impact with mitigation: construction of the project could cause a substantial adverse change in the significance of a unique archeological resource and could disturb human remains. In addition to the proposed project, other past, present and reasonably foreseeable projects could result in cumulatively significant impacts to archeological resources or human remains.	No Impact Because there would be no construction under Alternative 1, there would be no potential to encounter previously unrecorded and buried (or otherwise obscured) archeological resources or human remains.	Decreased Because excavation under Alternative 2 would not include the archeologically sensitive area beneath Howard Street, construction activities would substantially avoid areas of known archeological resources. However, the potential to affect previously unrecorded archeological resources or human remains would remain, similar to the proposed project, and mitigation would be required.	Unchanged Because excavation under Alternative 3 would include the same archeologically sensitive area beneath Howard Street, construction of this Alternative could cause a substantial adverse change in the significance of a unique archeological resource and could disturb human remains.
Transportation and Circulation	Less than significant impact with mitigation: The project would result in a significant impact on truck and passenger loading/unloading activities.	No Impact Because there would be no increase in the number of events, increase in number of event attendees, or changes to Howard Street under Alternative 1, there would be no impacts on loading/unloading activities.	Decreased Because Alternative 2 includes less exhibition space than the proposed project, Alternative 2 would not be able to accommodate the same number of exhibits and annual attendance as the proposed project. Therefore, the resulting pedestrian and truck loading/unloading impacts would be reduced compared to the proposed project. However, some potential impact could occur, requiring mitigation similar to the proposed project.	Unchanged Because Alternative 3 would include the same amount of exhibition space as the proposed project, it is possible that it could accommodate the same number of exhibits and annual attendance as the proposed project. Moreover, it would include the changes to the circulation geometries on Howard Street. Therefore, impacts related to pedestrian and truck loading/unloading would be the same as the proposed project and require the same mitigation as the proposed project.
Air Quality	Less than significant with mitigation impact: Construction activities would result in the emission of fugitive dust, criteria air pollutants and toxic air contaminants; emissions would exceed project-level thresholds for criteria air pollutants and would result in a cumulatively considerable contribution to regional air quality impacts.	No Impact Because there would be no construction under Alternative 1, there would be no potential to generate fugitive dust, criteria air pollutants, or toxic air contaminants.	Decreased Excavation under Alternative 2 would be less substantial than with the proposed project, somewhat reducing the overall amount of construction required. However, given that the alternative would include buildout of the Moscone North, Moscone South, and Esplanade expansions emissions of criteria air pollutants and toxic air contaminants would remain substantial and require mitigation, similar to the proposed project.	Similar Excavation under Alternative 3 would be the same as under the proposed project. Moreover, buildout of the Moscone North, Moscone South, and Esplanade expansions would occur, although in a modified massing. Therefore, it is likely that emissions of fugitive dust, criteria air pollutants, and toxic air contaminants would remain substantial and require mitigation, similar to the proposed project.

TABLE VI-1 (Continued)
COMPARISON OF THE SIGNIFICANT ENVIRONMENTAL IMPACTS OF THE CEQA ALTERNATIVES

Category of Significant Environmental Impact	Proposed Project	No Project Alternative	Alternative 2: Reduced Project Alternative	Alternative 3: Modified Massing Alternative
Shadow	<p>Significant and unavoidable impact: The project would create new shadow in a manner that could affect the use of the Children's Garden.</p> <p>Also, the project, combined with past, present, and reasonably foreseeable future development, would create new shadow in a manner that could affect the use of the Children's Garden. The project would considerably contribute to this impact.</p>	<p>No Impact</p> <p>Because there would be no new above-ground structures under Alternative 1, there would be no potential to increase shadow.</p>	<p>Unchanged</p> <p>Because Alternative 2 would result in the same above-ground Moscone South and Esplanade Expansion as the proposed project, it would cast net new shadow of the same duration and geographic extent on the Children's Garden.</p>	<p>Decreased</p> <p>Because the massing of new above-ground structures would be concentrated at the southwest corner of Third Street and Howard Street, net new shadow would be cast on the Children's Garden to a lesser extent and duration than under the proposed project.</p> <p>The increased building height at the corner of Third Mission would incrementally increase the extent and duration of shadow cast on Yerba Buena Gardens and other public open spaces.</p>
Hazards and Hazardous Materials	<p>Less than significant impact with mitigation: Construction and demolition activities would expose workers and the public to hazardous building materials.</p>	<p>No Impact</p> <p>Because there would be no construction under Alternative 1, there would be no potential to expose workers and the public to hazardous building materials.</p>	<p>Similar</p> <p>Because the area of below ground exhibition space would not be expanded to include additional areas below Howard Street, overall demolition activities may be slightly less than the proposed project. However, it is likely that potential exposure to hazardous building materials would remain substantial since most of the demolition activities proposed under the project would also occur under this Alternative.</p>	<p>Unchanged</p> <p>Because underground demolition and renovation would occur under Alternative 3, workers and the public could be exposed to hazardous building materials.</p>

Ability of the No Project Alternative to Meet Project Objectives

The No Project Alternative would meet one of the project objectives. The No Project Alternative would allow for continuous operations and revenue because improvement and expansion would not occur. However, the No Project Alternative would not create or increase contiguous exhibition space or increase the quantity of flexible meeting and ballroom spaces, nor would it increase the efficiency of existing facilities. It would not improve the economic value of Moscone Center and would not attract new clients. Finally, the No Project Alternative would not improve the connection and relationship of Moscone Center to the city because it would not include an iconic and architecturally significant arrival experience, enhance pedestrian circulation and interest, relocate vehicular and service functions to create uninterrupted pedestrian-favored sidewalks, or reinforce and improve connections among existing open spaces.

Impacts of the No Project Alternative Compared to Those of the Proposed Project

The No Project Alternative would eliminate the need for construction activities in the project area, thereby avoiding all of the construction impacts identified for the proposed project, including the significant impacts associated with archeological resources and human remains, air pollutant emissions, and hazardous building materials. Other proposed future projects in the site vicinity may still be implemented and thus cumulative construction impacts could still occur, but there would be no contribution to these impacts from the No Project Alternative.

Under the No Project Alternative, use of the Moscone Center would continue, without creation of or increase in exhibition, meeting, or ballroom space or improvement to pedestrian circulation and connectivity with existing open spaces. Because operation of the Moscone Center would continue as under existing conditions, there would be no project-related increase in event attendees, increase in the number of events, or changes in the circulation of vehicles, bicyclists, and pedestrians on Howard Street. Therefore, the impacts to transportation passenger and truck loading/unloading would not occur. The No Project Alternative would not construct any new above-grade buildings; thus, shadow impacts would not occur. Additionally, in comparison to the proposed project, the No Project Alternative would have no impact on other resource topics addressed in the Initial Study (Appendix A), for which the proposed project's impact would be less than significant (i.e., land use, population and housing, noise, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, and mineral and energy resources).

No Project Alternative – Conclusions

The No Project Alternative would fail to meet most of the project objectives, as this alternative would not create or increase contiguous exhibition space, increase the quantity of flexible meeting and ballroom spaces, increase the efficiency of existing facilities, attract more clients and increase the economic value of Moscone Center, or improve the connection and relationship of Moscone Center to the city. The No Project Alternative would avoid all impacts that would occur under the proposed project.

Alternative 2: Reduced Project Alternative

Description of Alternative 2

Under the Reduced Project Alternative, similar renovations to the Moscone Center would be implemented as compared to the proposed project. However, the Reduced Project Alternative would not create additional space by excavating areas under Howard Street to expand the existing below-grade area that connects the Moscone North and South buildings (see Figure II-4, indicating the below-ground expansion area proposed under the project). This would reduce excavation activities proposed by approximately 14,400 cubic yards; however, excavation required to construct building footings and foundations, and for stormwater and groundwater storage tanks, would be required as under the proposed project (approximately 16,300 cubic yards). This alternative was expressly set forth to avoid excavation beneath Howard Street, in an area that the EIR Initial Study prepared for this project (see Appendix A) identifies as particularly sensitive for archeological resources.

At project completion, the Reduced Project Alternative would be able to accommodate a greater number of exhibits, and greater annual attendance is anticipated due to the increased event capacity. The aboveground changes proposed by the project would be implemented and existing underground areas would be reconfigured and repurposed similar to the proposed project. However, because underground areas would not be expanded beneath Howard Street, these areas would continue to serve only as passageways between the Moscone North and South buildings, and the available exhibition space would be reduced by up to approximately 49,000 square feet compared to the proposed project. In addition, exhibition space would be less contiguous than with the proposed project. Therefore, the increase in daily event attendance and need for additional employment would be less than that of the proposed project.

Ability of Alternative 2 to Meet Project Objectives

The Reduced Project Alternative would meet or partially meet most of the project objectives. The Reduced Project Alternative includes construction staging that is similar to the proposed project, allowing construction activities to be staged such that the facility could maintain continuous operation and revenue generation during improvement and expansion. The Reduced Project Alternative would create an iconic and architecturally significant arrival experience, enhance pedestrian circulation and interest, relocate vehicular and service functions to create uninterrupted pedestrian-favored sidewalks, and reinforce and improve connections among existing open spaces.

The Reduced Project Alternative would increase the economic value and opportunity of Moscone Center by attracting new clients and maintaining existing clients, by creating additional exhibition space, and increasing the quantity of flexible and functional meeting and ballroom space. However, the additional below-ground exhibition space would be limited to reconfiguring and repurposing existing below-ground areas, and would not be contiguous between the Moscone North and South buildings. Therefore, the first two objectives would not be fully met under the Reduced Project Alternative.

Impacts of Alternative 2 Compared to Those of the Proposed Project

Because the Reduced Project Alternative would include many of the same components as the proposed project, this alternative would result in similar types of impacts as compared to those of the proposed project. However, because the expansion area would be less than under the proposed project, the intensity of impacts would be reduced. In particular, significant impacts to archeological resources would be reduced in severity. As described above, the Reduced Project Alternative would not create additional space by excavating areas under Howard Street to expand the existing below-grade passage that connects the Moscone North and South buildings. As described in Appendix A, Section E.3, the area of proposed excavation beneath Howard Street is an area of high sensitivity for prehistoric cultural resources. This includes both a southern extension of a known resource, CA-SFR-114, and a much earlier potential archeological deposit. Because this area would be avoided, impacts to known archeological resources would be avoided. While the total excavation area would be substantially less than under the proposed project, the potential remains that previously undiscovered archeological resources or human remains could be encountered during construction of the Reduced Project Alternative. As with the proposed project, implementation of Mitigation Measures M-CP-2a and M-CP-2b would reduce potential impacts to a less-than-significant level.

Elimination of excavation activities beneath Howard Street, and of subsequent construction of exhibition space in this area, would also reduce the amount of fugitive dust generated, and emissions of criteria air pollutants and toxic air contaminants during construction activities. The contribution of construction activities to cumulative air quality effects would also be reduced. Because the area of below ground exhibition space would not be expanded to include additional areas below Howard Street, overall demolition and excavation activities may be slightly less than with the proposed project. Construction-related criteria air pollutant emissions resulting from the proposed project exceed applicable thresholds during Phases 2 and 3 (construction of the Esplanade Building and South Lobby, North Lobby and Bridges). Therefore, while the Reduced Project Alternative would reduce the amount of demolition and excavation required during Phase 1 (Site Preparation, including excavation below Howard Street) and would reduce criteria air pollutant emissions associated with this phase of construction, it would not reduce criteria air pollutant emissions during construction of Phases 2 and 3, and the Reduced Project Alternative would result in significant criteria air pollutant and toxic air contaminant emissions. Similarly, it is likely that potential exposure to hazardous building materials would remain substantial since most of the demolition activities proposed under the project would be required. The Reduced Project Alternative would require substantial construction efforts; air quality and hazardous materials impacts would be significant and would require implementation of Mitigation Measures M-AQ-1 and M-HZ-3 to reduce impacts to less-than-significant levels.

As described above, the available exhibition space would be reduced by up to approximately 49,000 square feet compared to the proposed project. In addition, exhibition space would be less contiguous than with the proposed project, and therefore the increase in event attendance and number of events would be less than the proposed project, which would reduce impacts to passenger and truck loading/unloading. However, passenger and truck loading/unloading impacts would remain significant and Mitigation Measures M-TR-6a and M-TR-6b would still be required.

Alternative 2 would result in the same above-ground Moscone South and Esplanade Expansion as the proposed project, with the same building massing. Therefore, it would cast net new shadow of the same duration and geographic extent on open spaces, including the Children's Garden, as the new shadow cast under the proposed project. Significant and unavoidable shadow impacts on the Children's Garden at the project and cumulative level would result.

In comparison to the proposed project, other topics that were addressed in the Initial Study (Appendix A) and found to have no impacts or less-than-significant impacts including land use, population and housing, historic architectural resources, noise, greenhouse gas emissions, wind, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, mineral and energy resources, and agricultural and forest resources, would also have no impacts or similar less-than-significant impacts for the Reduced Project Alternative.

Alternative 2 – Conclusions

The Reduced Project Alternative would meet or partially meet most of the project objectives. However, the additional below-ground exhibition space would be limited to reconfiguring and repurposing existing below-ground areas, and would not be contiguous between the Moscone North and South buildings. Therefore, the first two objectives would not be fully met under the Reduced Project Alternative. This alternative would avoid or substantially reduce impacts to known archeological resources and human remains, and would reduce impacts associated with air quality and removal of hazardous building materials. All of the same mitigation measures applicable to the proposed project's construction activities would be applicable for this alternative's construction activities. The alternative would reduce total daily attendance and number of events, and therefore operational transportation impacts related to passenger and truck loading/unloading would be reduced, but not eliminated. The alternative would not reduce, relocate, or eliminate building massing; therefore, it would result in the same significant and unavoidable shadow impacts at the project and cumulative levels as the Proposed Project.

Alternative 3: Modified Massing Alternative

Description of Alternative 3

Under the Modified Massing Alternative, renovations to the Moscone Center would be similar to the proposed project. Identical the proposed project, the alternative would create additional space by excavating areas under Howard Street to expand the existing below-grade area that connects the Moscone North and South buildings (see Figure II-4, indicating the below-ground expansion area proposed under the project), resulting in excavation of 14,400 cubic yards. Also, excavation required for stormwater and groundwater storage tanks would be required as under the proposed project (approximately 16,300 cubic yards).

However, under this alternative the massing of the Moscone South and Esplanade expansions would be different from that of the proposed project. The proposed above-grade Moscone South expansion would rise approximately 74 feet above Howard Street, and the above-grade Moscone

Esplanade expansion would be approximately 119 feet above Howard Street. This new expansion would replace the existing 63-foot tall Esplanade Ballroom support building (which currently houses its lobby, office, and support functions) at the southwest corner of Howard and Third streets. The alternative would add approximately 266,000 gross square feet to the existing 1.2-million-gross-square-foot facility, and functional space for exhibitions, meetings, conventions, and trade shows would increase by about 40 percent, from 625,600 square feet to about 872,300 square feet. **Table VI-2**, below, lists the functional space characteristics under this Modified Massing Alternative as compared to the proposed project. **Figures VI-1** and **VI-2** provide a general massing and section of the Modified Massing Alternative.

TABLE VI-2
FUNCTIONAL SPACE PROPOSED PROJECT VS. MODIFIED MASSING ALTERNATIVE

Functional Space	Proposed Project	Alternative 3	Net Difference
Exhibition	580,000	580,000	-
Lobbies/Circulation/Prefunction	118,500	132,500	+ 14,000
Meeting Rooms/Ballroom	178,300	132,000	- 46,300
Terrace	11,500	28,380	+ 16,916
Total	888,284	872,880	- 15,384

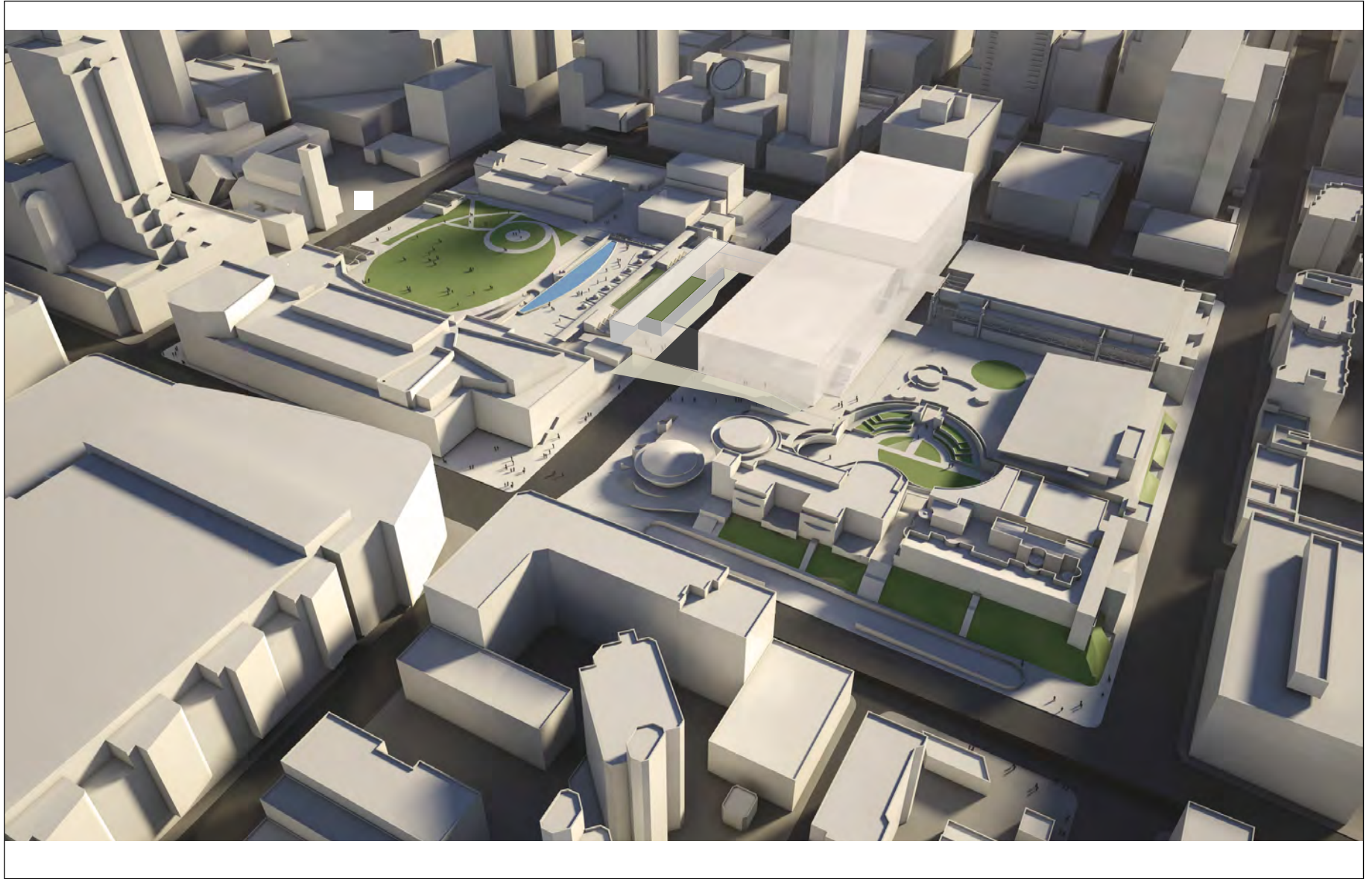
SOURCE: SOM, 2013; 2014

The Modified Massing Alternative would be able to accommodate a greater number of exhibits at project completion, and greater annual attendance is anticipated due to the increased event capacity. The increase in daily event attendance and need for additional employment would be similar to that of the proposed project. Also, the changes to the Children's Garden features would be consistent with those of the proposed project.

Ability of Alternative 3 to Meet Project Objectives

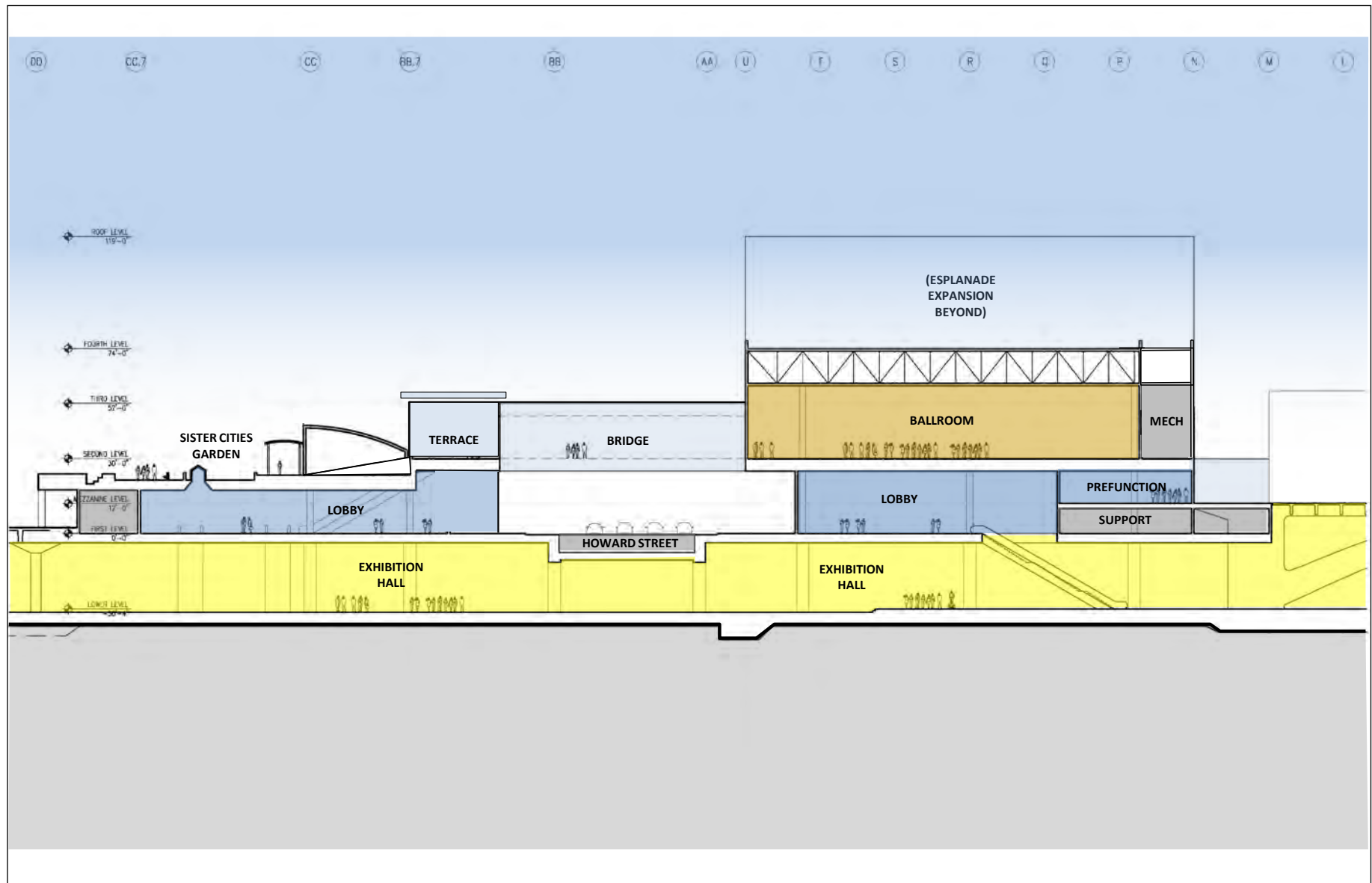
The Modified Massing Alternative would meet or partially meet some of the project objectives. The alternative includes construction staging that is similar to the proposed project, allowing construction activities to be staged such that the facility could maintain continuous operation and revenue generation during improvement and expansion.

The Modified Massing Alternative would increase the economic value and opportunity of Moscone Center by attracting some new clients and maintaining existing clients by creating contiguous exhibition space of up to approximately 580,000 square feet. The alternative would also increase the quantity of flexible meeting and ballroom spaces. However, these spaces would be less functional than those under the proposed project because the ballroom space and meeting rooms would be divided among separate building levels, which would reduce efficiency making the facility less attractive to potential new clients when compared with the proposed project.



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E
Figure VI-1
 Modified Massing Alternative Conceptual Massing



SOURCE: Skidmore, Owings & Merrill, LLP / Mark Cavagnero Associates Architects, 2014

Moscone Center Expansion Project 2013.0154E
Figure VI-2
 Modified Massing Alternative Cross-Section

The Modified Massing Alternative would create an iconic and architecturally significant arrival experience, relocate vehicular and service functions to create uninterrupted pedestrian-favored sidewalks, and reinforce and improve connections among existing open spaces. It would also enhance pedestrian circulation and interest, although some interior circulation areas would be less efficient than under the proposed project.

Impacts of Alternative 3 Compared to Those of the Proposed Project

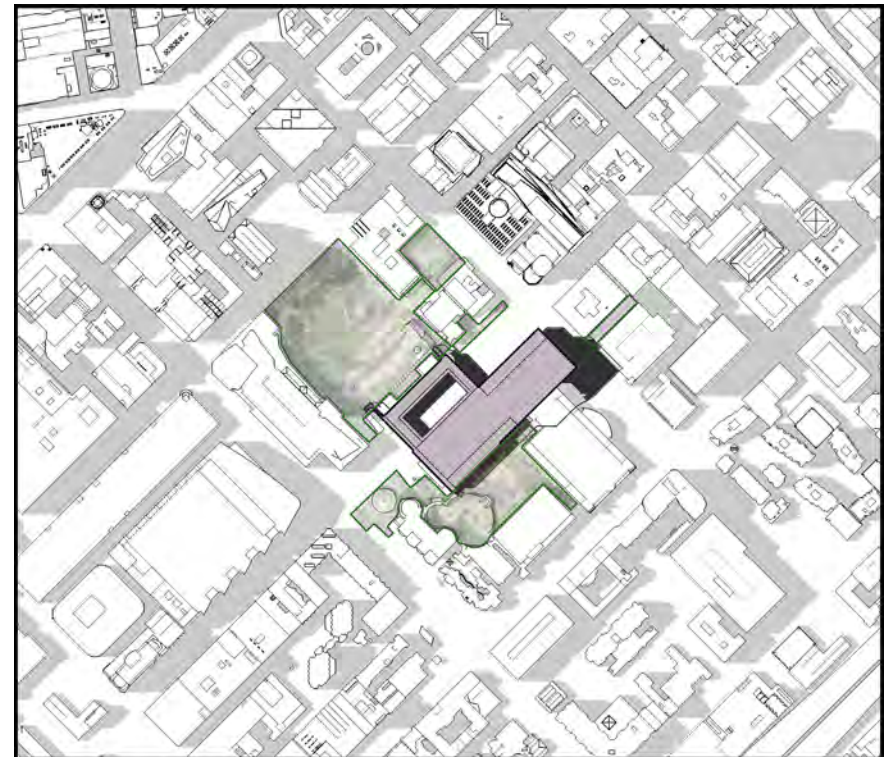
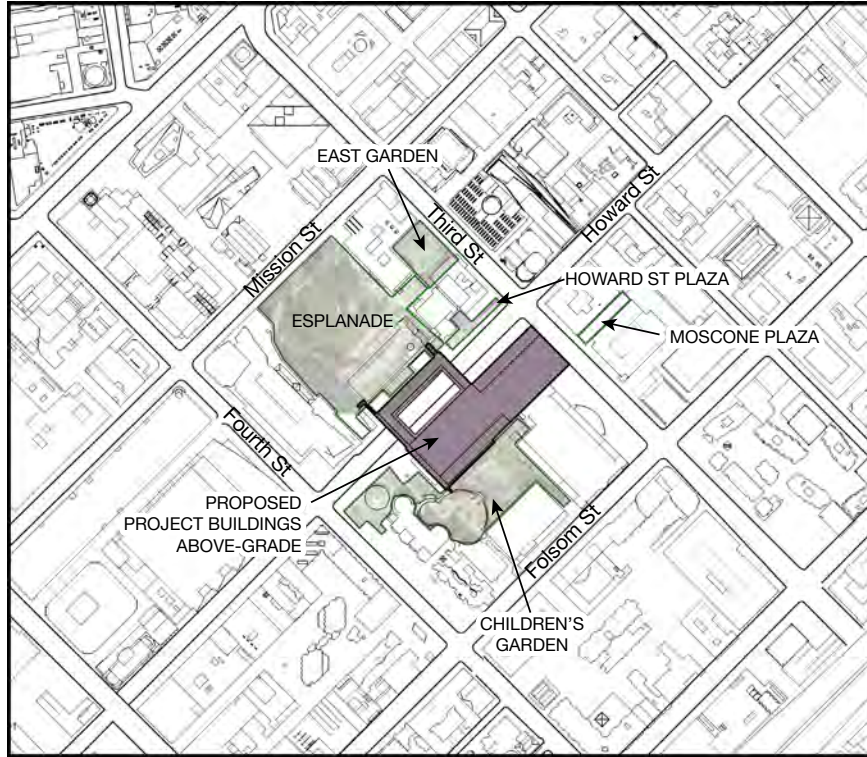
Because the Modified Massing Alternative would include most of the same components as the proposed project, this alternative would result in impacts similar to those of the proposed project. However, because the alternative would concentrate new above-grade building mass at the southwest corner of Third Street and Howard Street, shadow impacts would be reduced.

Identical to the proposed project, the Modified Massing Alternative would create additional exhibition space by excavating an area under Howard Street to expand the existing below-grade passage that connects the Moscone North and South buildings. As described in Appendix A, Section E.3, the area of proposed excavation beneath Howard Street is an area of high sensitivity for prehistoric cultural resources. This includes both a southern extension of a known resource, CA-SFR-114, and a much earlier potential archeological deposit. Impacts to known archeological resources would be significant. As with the proposed project, implementation of Mitigation Measures M-CP-2a and M-CP-2b would reduce potential impacts to a less-than-significant level.

Excavation activities beneath Howard Street, and subsequent construction of below-grade exhibition space and above-grade structures, would generate fugitive dust, criteria air pollutants, and toxic air contaminants. Potential exposure to hazardous building materials would remain substantial since most of the demolition activities proposed under the project would be required. The Modified Massing Alternative would require substantial construction efforts and air quality and hazardous materials impacts would be significant, requiring implementation of Mitigation Measures M-AQ-1 and M-HZ-3 to reduce impacts to less-than-significant levels.

As described above, the available contiguous exhibition space would be the same as the proposed project, up to 580,000 square feet. The increase in daily event attendance and need for additional employment would be similar to the proposed project. Therefore, transportation impacts under the alternative would be the same as under the proposed project, and significant impacts to passenger and truck loading/unloading would require implementation of Mitigation Measures M-TR-6a and M-TR-6b to reduce these impacts to a less-than-significant level.

This alternative was expressly set forth to avoid increased building heights and configuration that could cast net new shadow on public open spaces (see Section IV.B). **Figure VI-3** presents projections of the shadow that would be cast by the Modified Massing Alternative on the Children's Garden during the late afternoon and early evening hours of the summer solstice, which is representative of the alternative's shadow during the late spring and early summer months. During these months of the year, shadow from the 74-foot-tall Moscone South building would be cast southeastward, onto the Children's Garden. At about 5:00 p.m., net new shadow would be limited to the plum tree walkway, sundial garden, and Learning Garden immediately

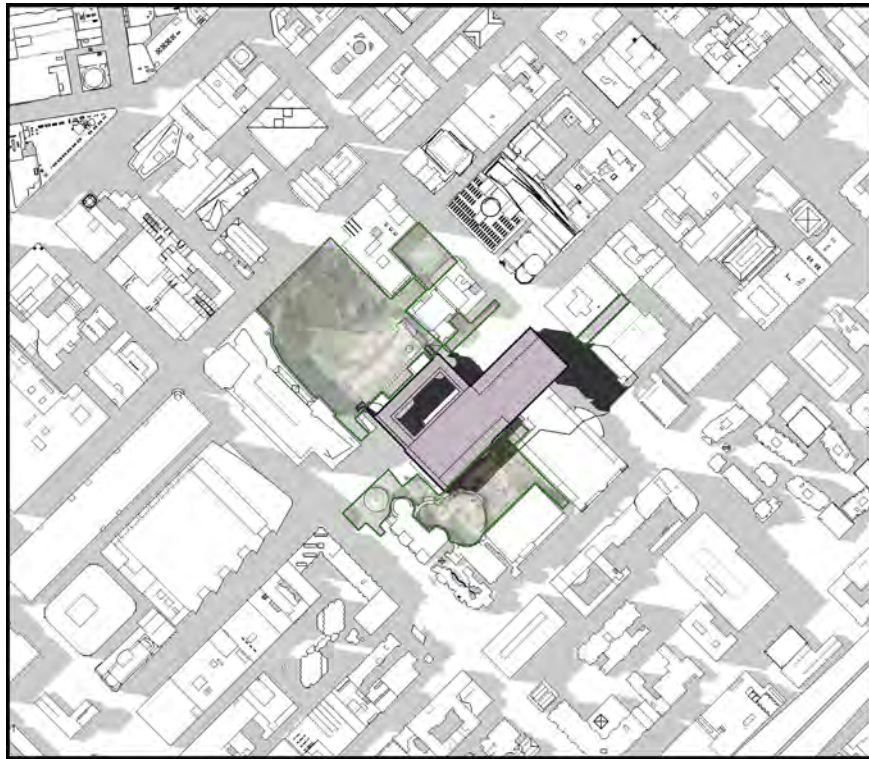


- Open Space Perimeter
- Extent of Project-Generated Shadow
- Existing Shadow
- Net New Project Shadow

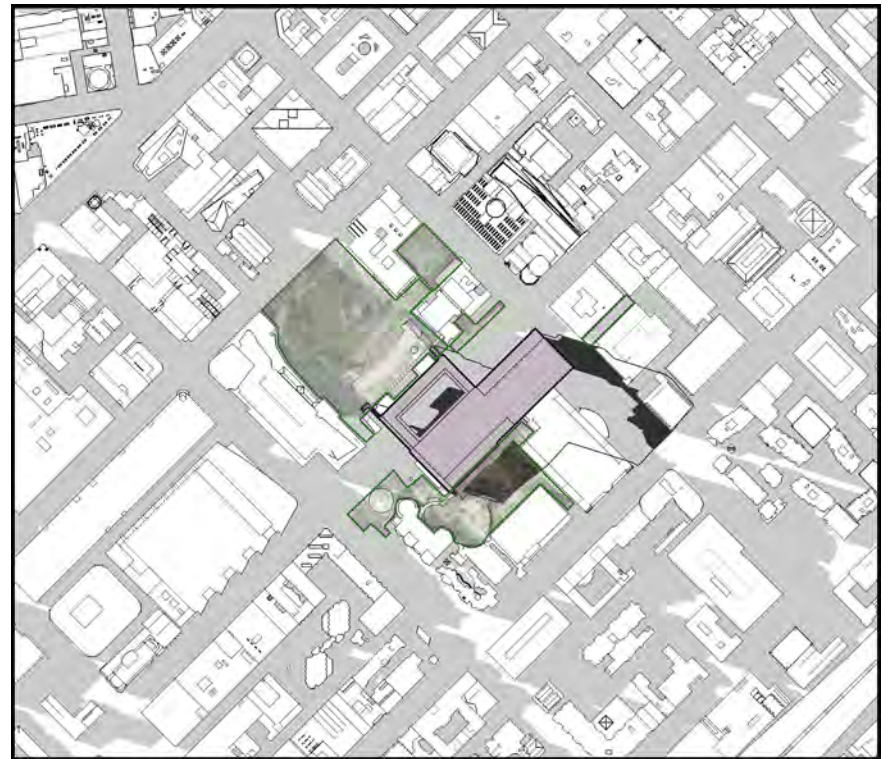


SOURCE: CADP, 2014

Moscone Center Expansion Project 2013.0154E
Figure VI-3a
 Modified Massing Alternative Shadow June 21st:
 5pm



6:00pm



7:00pm

- Open Space Perimeter
- Extent of Project-Generated Shadow
- Existing Shadow
- Net New Project Shadow



SOURCE: CADP, 2014

Moscone Center Expansion Project 2013.0154E

Figure VI-3b
Modified Massing Alternative Shadow June 21st:
6pm and 7pm

south of the proposed building, and the majority of the eastern portion of the Children's Garden would remain unshaded. By 6:00 p.m., shadow would extend farther southeastward, into the play circle and encompassing the monkey bars, sand box, and a portion of the maze, leaving the remainder of the play circle unshaded. By 7:00, when the play circle closes, the net new shadow would encompass almost the entirety of the play circle, as well as most of the circular lawn.

Under this alternative, the Children's Garden would include a tot lot with play equipment for children under age 5, relocation and expansion of the existing learning garden, replacement of the nature walk/allée of plum trees, an elevated social seating area providing views throughout the gardens, reconfiguration of the existing lawn, restrooms, garden storage, and a public plaza alongside the Esplanade Ballroom. The play circle (the primary active element of the playground) would not be modified, although the existing sundial garden would be removed. Around 5:00 p.m. during the late spring and early summer months, new shadow would fall on the replaced nature walk/allée of trees and paseo. As the evening progresses, shadow would extend southward onto the tot lot and flexible lawn space by 6:00 p.m. By 7:00 p.m., shadow would extend over the social seating, play circle, and a portion of the relocated learning garden, as well as onto the plaza adjacent to the Esplanade Ballroom. Although this shadow would represent a net increase compared to existing conditions, the majority of the features of the Children's Garden would remain unshaded until approximately 7:00. This net new shadow could affect use of the garden, but not to a significant extent.

The 119-foot building at the southwestern corner of Third Street and Howard Street would result in more shadow cast northward compared to the proposed project. This new shadow would be cast across Howard Street, toward the East Garden and Howard Street Plaza. This new shadow would be most prevalent in the early morning hours in the late fall and early winter months. However, as shown in Figure IV.B-2, these areas are almost entirely shaded under existing conditions at these times. The net new shadow from the 119-foot-tall building could increase compared to existing conditions, as well as compared to the proposed project. As stated in Section IV.B, these open spaces are not heavily used during the early morning hours. The net new shadow from the Modified Massing Alternative would not be expected to substantially affect their use. The 119-foot-tall building would not cast substantial new shadow on the Esplanade or Howard Street Plaza.

Because the massing of new above-ground structures would be concentrated at the southwest corner of Third Street and Howard Street, net new shadow would be cast on the Children's Garden to a lesser extent and duration than under the proposed project, resulting in a less-than-significant shadow impact.

The Modified Massing Alternative could incrementally increase shadow on other nearby open spaces north of the proposed buildings, namely the Yerba Buena Esplanade and the East Garden, especially in the late fall and early winter months. This shadow would be of limited extent and duration (early morning hours) when the Esplanade and East Garden are lightly used. Therefore, the Modified Massing Alternative would result in less-than-significant project- and cumulative-level shadow impacts.

The Modified Massing Alternative would increase the height of the Moscone Esplanade expansion to 119 feet, approximately 24 feet taller than the proposed Moscone Esplanade expansion. Increased heights could affect ground-level wind currents in the vicinity. Wind levels near the 119-foot portion of the building, along Third Street and Howard Street, as well as in the eastern portion of the Children's Garden, could be increased compared to existing conditions. Some pedestrian test points in this location may exceed the pedestrian comfort criteria. Conversely, wind speeds adjacent to the 74-foot portion of the building, along Howard Street and in the western portion of the Children's Garden, could be decreased as compared to existing conditions, possibly removing some existing exceedances of the pedestrian comfort criterion. It is not anticipated that new hazardous wind conditions would result. The Modified Massing Alternative's wind impacts would be less than significant.

For other topics that were addressed in the Initial Study (Appendix A) and for which that analysis concluded the proposed project would have no impact or a less-than-significant impact, including land use, population and housing, historic architectural resources, noise, greenhouse gas emissions, recreation, utilities and service systems, public services, biological resources, geology and soils, hydrology and water quality, mineral and energy resources, and agricultural and forest resources, the Modified Massing Alternative would also have no impact or similar less-than-significant impacts.

Alternative 3 – Conclusions

The Modified Massing Alternative would meet or partially meet most of the project objectives. However, the alternative would result in less efficient meeting and ballroom space than the proposed project. The alternative would create an iconic and architecturally significant arrival experience, relocate vehicular and service functions to create uninterrupted pedestrian-favored sidewalks, and reinforce and improve connections among existing open spaces, but it would result in a less efficient building than would the proposed project. All of the same mitigation measures applicable to the proposed project's construction activities (Mitigation Measures CP-2a, CP-2b, AQ-1, and HZ-3) would be applicable for this alternative's construction activities. Impacts to passenger and truck loading/unloading would be the same as the proposed project, requiring implementation of Mitigation Measures M-TR-6a and M-TR-6b to reduce loading impacts to a less-than-significant level. Shadow impacts would be reduced to a less-than-significant level.

C. Environmentally Superior Alternative

The CEQA Guidelines require the identification of an environmentally superior alternative (Section 15126.6[e]). If it is determined that the "no project" alternative would be the environmentally superior alternative, then the EIR shall also identify an environmentally superior alternative among the other project alternatives (Section 15126.6[3]).

The No Project Alternative would be the environmentally superior alternative because the significant impacts associated with implementation of the proposed project would not occur.

The Modified Massing Alternative (Alternative 3) would qualify as the environmentally superior alternative among the development alternatives. The Modified Massing Alternative would avoid the significant and unavoidable shadow impact on the Children's Garden. While this alternative would not reduce impacts to archeological resources, human remains, air quality, hazardous building materials, or transportation impacts, with incorporation of mitigation measures identified for the proposed project, impacts to these resource topics would be reduced to a less-than-significant level. Therefore, with implementation of mitigation measures, the Modified Massing Alternative would not result in any significant and unavoidable impacts and impacts to all resource topics would be reduced to a less-than-significant level.

The Reduced Project Alternative (Alternative 2) would not qualify as the environmentally superior alternative. Although the Reduced Project Alternative would reduce impacts on archeological resources, human remains, air quality, hazardous materials, and loading/unloading, when compared to the proposed project, this alternative would still require incorporation of identified mitigation measures to reduce these impacts to a less-than-significant level. Furthermore, Alternative 2 would not avoid the significant-and-unavoidable shadow impact. Therefore, Alternative 2 would have greater environmental impacts than those of the Modified Massing Alternative.

D. Alternatives Considered but Rejected from Further Analysis

Several options to the Moscone Center Expansion project were considered by the project sponsor team during project development. For the purposes of CEQA, these options were evaluated to determine whether they would meet most of the project objectives and avoid the significant impacts that would occur under the proposed project. The options considered include:

- Greater expansion along the entire Third Street frontage at Moscone South
- Greater expansion of aboveground areas at Moscone North

Expansion along Third Street Frontage

Under this alternative, the below-grade renovation would occur, similar to the proposed project, resulting in a net increase in exhibition space. Above ground, on the project's southern block, the Esplanade Ballroom building and Esplanade Support building would be substantially renovated and expanded to incorporate new meeting rooms, ballrooms, and pre-function and circulation spaces, with a total square footage similar to that of the proposed project. To create this additional building area, the expansion could be built to the lot lines on Third Street and Howard Street, and additional floors would be added to the existing buildings.

Inclusion of this option would not meet some of the project objectives. Although this option would include the same underground modifications as under the proposed project, which would create the desired amount of exhibition space and more functional meeting space, this option

would require extensive foundation and structural work to support the added floors above the existing Esplanade building, which would necessitate a 2-year closure of the Esplanade ballroom and North halls, thereby limiting convention center operations and causing a loss of revenue and a substantial increase in the cost of the proposed expansion. It would locate the majority of new building functions farther away from the convention center's primary entrances on Howard Street, which could result in inefficient operations. Also, this option would not re-introduce the mid-block passageway connection from the Children's Garden to Third Street.

Expansion along Third Street would not substantially reduce potential impacts compared to the proposed project and could introduce additional significant impacts that would not occur under the proposed project. Construction below Howard Street would occur, and thus this option would not avoid impacts to known archeological resources. It would require a similar or greater amount of construction activities as the proposed project. Therefore, impacts related to previously undiscovered archeological resources, human remains, air quality, and hazardous materials would be similar to those of the proposed project, or greater than those of the proposed project should construction requirements be more than that expected under the proposed project. The level of operational activity accommodated would be similar to the proposed project, or greater, and therefore, impacts associated with project operations (passenger and truck loading/unloading) would be similar or greater than the proposed project. Larger aboveground structures to the east of the existing Children's Garden could introduce net new shadow at the Children's Garden during the late winter/early spring months and late summer/early fall months, when shadows are cast northwestward during the morning hours (from sunrise to approximately 11:00 a.m.). Under existing conditions, the Children's Garden is only partially shaded during these times.

This option would not reduce any of the significant impacts of the proposed project and could result in additional significant impacts. Therefore, it was eliminated from further consideration in this EIR as a potential alternative to the proposed project.

Aboveground Expansion at Moscone North

Under this alternative, the below-grade renovation and expansion of exhibition space would occur. Above-ground new structures would be primarily limited to the northern project block, in the location of the Sister Cities Garden. The building would be expanded upward to include additional levels of meeting, ballroom, and pre-function space.

Inclusion of this option would meet the project objectives. It would create the desired amount of contiguous exhibition space, as well as create more efficient and functional meeting space. Operations could be maintained during the improvements, and an enhanced facility would result.

However, this option would not reduce potential impacts compared to the proposed project and could introduce additional significant impacts that would not occur under the proposed project. Expansion at Moscone North would include construction below Howard Street and thus would not avoid impacts to known archeological resources. It would require a similar or greater amount of

construction activities as the proposed project and therefore, impacts related to previously undiscovered archeological resources, human remains, air quality, and hazardous materials would be similar to those of the proposed project, or greater than those of the proposed project should construction requirements be more than that expected under the proposed project. The level of operational activity accommodated would be similar to the proposed project, or greater, and therefore, impacts associated with project operations (passenger and truck loading/unloading) would be similar or greater than the proposed project. Because this option would include a larger amount of aboveground structures at Moscone North, it could introduce substantial shadow effects at Yerba Buena Esplanade and the Howard Street Plaza. The new shadow would fall on the Esplanade during the morning hours all year long, but particularly during the late fall/early winter months, when shadows are at their longest. Under existing conditions, the Esplanade is primarily unshaded by 10:00 a.m., and the expansion would add substantial new shadow. In the afternoon hours, net new shadow would fall on Howard Street Plaza to a greater extent than under the proposed project.

Because this option would not reduce any of the significant impacts of the proposed project and could result in additional significant impacts, it was eliminated from further analysis in this EIR as a potential alternative to the proposed project.

Other Considered but Rejected Alternatives

In addition to the above alternatives, a number of comments received on the Notice of Preparation of an EIR, published on January 22, 2014, suggest inclusion of other project alternatives. These alternatives have either been incorporated into the Alternatives described above or were not included because they would not meet the basic project objectives or would not substantially lessen or avoid the significant impacts of the proposed project, as described below.

- ***Off-site location Alternative.*** Commenters suggested accommodating the project near the Civic Center and/or at Brooks Hall (located underneath the Civic Center Plaza) or at the Caltrain Station at Fourth and King Streets. This alternative was not selected for detailed analysis because it would not meet the project sponsor's objectives and it would not likely reduce the significant effects of the project. Specifically, an off-site alternative would not capitalize on the existing convention center's unique location or increase efficiency by providing contiguous exhibition space. Additionally, any off-site alternative location would not reduce significant-but-mitigable impacts to air quality and hazardous materials, and may not reduce significant-but-mitigable impacts to transportation and buried archeological resources.
- ***Repurposed/renovated building Alternative.*** Commenters suggested an alternative that allows for 60,000 square feet of net new functional space below ground and construction of a new above-ground building at Howard and Third Streets with an additional 110,000 square feet of new construction to accommodate additional meeting rooms. Under this alternative, the North and South lobbies would remain mostly unchanged, but the interior spaces would be repurposed and renovated. This alternative was not analyzed in detail because it would not result in the desired increase in contiguous exhibition space (up to 580,000 square feet) or result in the desired amount of efficient meeting and ballroom

space, and it would not maintain continuous operations during construction. Impacts to transportation, cultural resources, hazardous materials, and air quality would not be reduced, although shadow impacts may be reduced.

- ***Corner massing Alternative.*** Commenters suggested an alternative that allows for a two-story South Lobby vertical expansion with a taller building at the corner of Howard and Third Streets to avoid impacts to the Children's Garden. The Modified Massing Alternative, described above, has been incorporated into this EIR specifically to avoid the significant shadow impacts of the proposed project on the Children's Garden.

CHAPTER VII

EIR Preparers and Persons and Organizations Consulted

A. EIR Authors

San Francisco Planning Department
Major Environmental Analysis
1650 Mission Street, Suite 400
San Francisco, California 94103

- Environmental Review Officer: Sarah B. Jones
- Deputy Environmental Review Officer: Viktoriya Wise
- EIR Senior Environmental Planner: Jessica Range
- EIR Coordinator: Elizabeth Purl
- Transportation Planner: Greg Riessen
- Senior Transportation Planner: Bill Wycko
- Environmental Planner (Archeology): Randall Dean
- Environmental Planner: Erik Jaszewski

B. City Counsel

Office of the City Attorney
City Hall Room 234
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

- Kate Herrmann Stacy
- Victoria Wong

C. EIR Consultants

Environmental Science Associates
550 Kearny Street, Suite 800
San Francisco, CA 94104

Geier & Geier
P.O. Box 5054
Berkeley, CA 94705

Adavant Consulting
200 Francisco Street, Second Floor
San Francisco, CA 94133

CADP
34 Corte Madera Avenue
Mill Valley, CA 94941

Fehr & Peers

332 Pine Street, Fourth Floor
San Francisco, CA 94104

LCW Consulting

3990 20th Street
San Francisco, CA 94114

Square One Productions

1736 Stockton Street, Studio 7
San Francisco, CA 94133

D. Project Sponsors and Consultants

**San Francisco Mayor's Office of Economic and
Workforce Development**

Adam Van de Water
City Hall, Room 448
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102

**San Francisco Department of Public
Works**

Brook Mebrahtu
30 Van Ness Avenue, Suite 4100
San Francisco, CA 94102

Skidmore, Owings & Merrill LLP

Decker Flynn, Kotting Luo
One Front Street
San Francisco, CA 94111

PLACE
POSTAGE
HERE

Elizabeth Purl, Environmental Coordinator
San Francisco Planning Department
Environmental Planning
1650 Mission Street, Suite 400
San Francisco, California 94103

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Signed: _____

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