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Initial Study – Community Plan Evaluation

Case No.:	**2016-013312ENV**
Project Address:	**542-550 Howard Street**
Zoning:	C-3-O(SD) – Downtown Office (Special Development) P – Public Transit Center C-3-O(SD) Commercial Special Use District Transbay C-3 Special Use District Transbay Redevelopment Area Zone 2 750-S-2 Height and Bulk District 450-S Height and Bulk District
Block/Lot:	3721/016, 135, 136, 138
Lot Size:	31,980 square feet (0.73 acre)
Plan Area:	Transit Center District Plan (TCDP)
Project Sponsor:	Cameron Falconer, Hines, (415) 982-6200, cameron.falconer@hines.com
Staff Contact:	Alesia Hsiao, (415) 575-9044, alesia.hsiao@sfgov.org

PROJECT DESCRIPTION

The proposed project involves the construction of a 750-foot-tall (800 feet including rooftop mechanical features), 61-story, mixed-use tower approximately 1,089,650 gross square feet (gsf) in size. The proposed building would include approximately 165 dwelling units, 189 hotel rooms, 274,000 gsf of office uses, 59,800 gsf of hotel amenities, 9,900 square feet (sf) of retail space, 22,400 sf of open space, and four below-grade levels that would accommodate up to 183 vehicle parking spaces (a total of approximately 74,600 square feet). The project would also provide 177 *class 1* bicycle parking spaces and 20 *class 2* bicycle parking spaces.[1]

Project Location and Site Characteristics

The project site encompasses four lots on the block bounded by Natoma Street[2] to the north, Howard Street to the south, First Street to the east, and Second Street to the west within the city's Financial District (see Project Location). It is also within the Transit Center District Plan (TCDP) subarea of the San Francisco General Plan's Downtown Plan. Natoma and Howard streets front the project site. The site is currently vacant except for one air vent and a below grade train box associated with the Transbay Transit Center (TTC) located beneath a portion of the site, and has been recently utilized as a staging area for the

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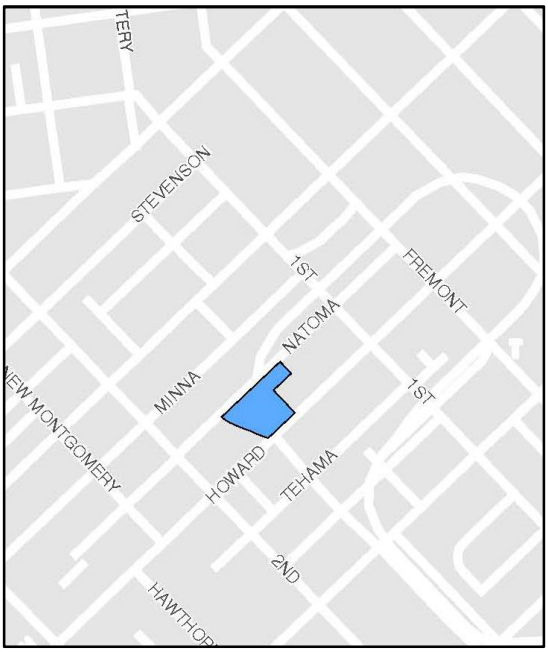
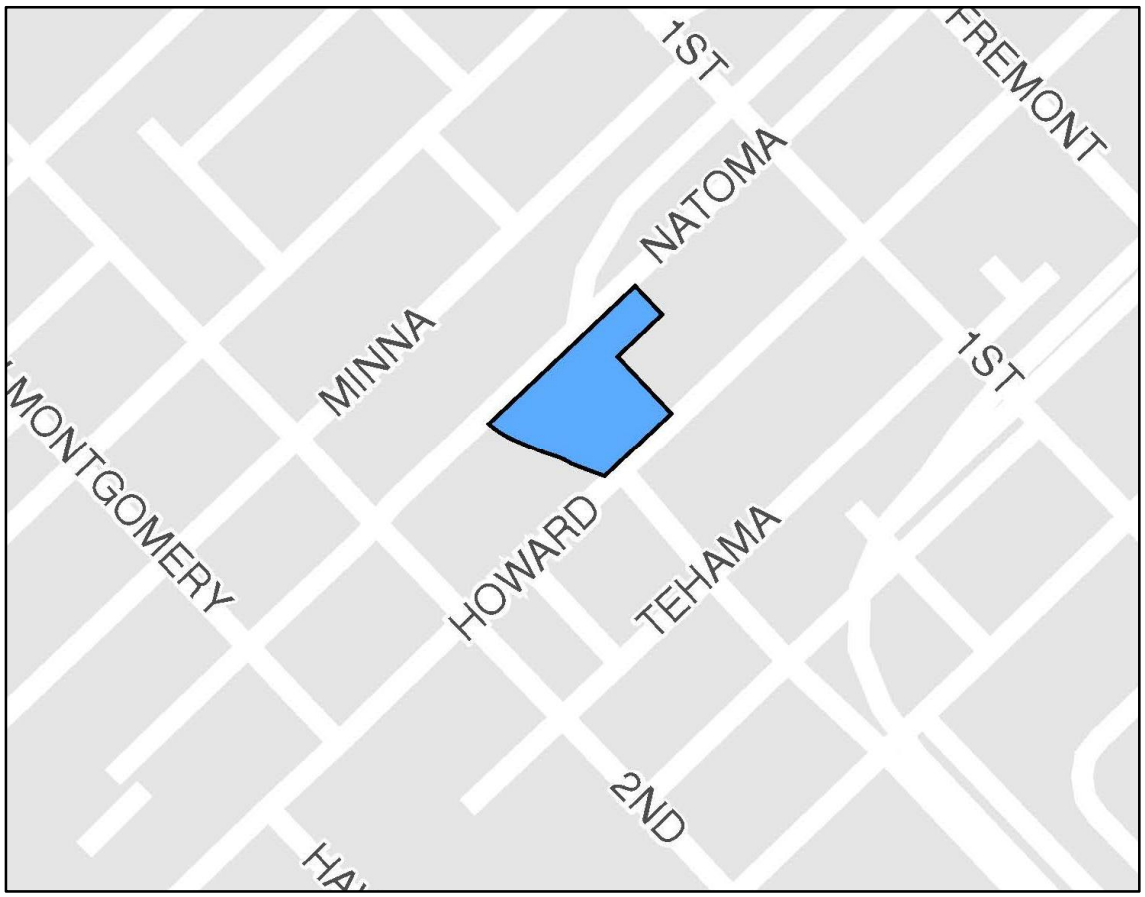
1 *Class 1* bicycle parking includes secured bicycle lockers, bicycle rooms or cages where each bicycle can be individually locked. The most common form of *class 2* bicycle parking are outdoor bicycle racks. (Zoning Administrator Bulletin No. 9, *Bicycle Parking Requirements: Design and Layout,* August 2013.)

2 Natoma Street is an east-west alleyway running discontinuously between First and Lafayette streets. The western portion of Natoma Street between First and Second streets is currently closed due to construction of the Transbay Transit Center and will soon be converted to a primarily pedestrian-only street. The eastern third of this segment of Natoma Street has been converted to two-way operations and will continue to operate as a two-way street after construction of the Transbay Transit Center.

Project Location





construction of the TTC. A bus bridge over Howard Street connecting the Bay Bridge bus-only on- and off-ramp and the TTC is directly west of the site. There are two existing curb cuts along Howard Street.

Project Characteristics

Proposed Land Uses

As noted above, the project sponsor proposes to construct a new 61-story, mixed-use tower. See p. 1 for project description details and Table 1, below, for a summary of project uses and features.

Table 1: Project Characteristics

Proposed Use	Approximate Area (gsf or sf)	Location (Building Level or Street)	Description[1]
Residential	419,100 gsf	Ground Level and Level 5	Residential lobbies
		Levels 34 - 61	165 units (20 studios/one-bedroom units, 145 two-or-more bedroom units)
	15,000 gsf	Level 33	Residential amenities: chef's kitchen and bar, private dining and media areas, café, and resident library
Hotel	178,950 gsf	Ground Level, Levels 2 - 3	Hotel lobbies
		Levels 8 – 16, B1 mezzanine	189 guest rooms, back of house
	59,800 gsf	Levels 2, 3, 6, and 7	Hotel Amenities: meeting/conference/pre-function space, catering kitchen spaces, gym/pool/spa serving hotel guests and residences, and hotel back-of house spaces
Office	274,000 gsf	Ground Level and Level 5	Office lobbies
		Levels 17 - 31	Office space
Retail	9,900 sf	Ground Level and Level 5	Retail space
Public Spaces	5,800 sf	Ground Level	Public passageway from Howard Street to Natoma Street
		Ground Level – Level 5	Public elevator areas
		Level 5	Public circulation area, terrace, and bridge connection
Common Open Spaces	16,600 sf	Levels 2, 6, 7, 33, and roof	Levels 2, 6, and 7: common outdoor terraces for hotel guests. Level 33: common outdoor terraces for office tenant Level 33 and roof: common open space for residents
Vehicle Parking and Loading	47,700	Levels B1 – B4	183 vehicle parking spaces including 3 car share spaces arranged in mechanical stackers
		Along Howard Street	1 passenger loading zone
		Ground Level off Howard Street	1 freight loading dock with 4 off-street freight loading spaces and a truck turntable
Bicycle Parking and Facilities	2,700 sf	Level 4	177 class 1 bicycle spaces, 4 showers, and 24 lockers
		Along Howard and Natoma streets to the west of the public passage way and to the north, adjacent to the car lifts.	20 class 2 bicycle spaces
Mechanical Equipment Space	60,100 sf	Levels B1 – B4, 2, 4, 6, 7, 32, roof, and mechanical mezzanine[2]	Mechanical, electrical and plumbing (MEP) equipment (B1, B2, and 2), water treatment equipment (B2, B3, and B4), fire tanks (B2, B3, and B4), fire pump room, stormwater holding tank (B4), air-handling units (4, 6, 32, mechanical mezzanine), exhaust fans (4, 32, mechanical mezzanine), cooling tower (roof), and emergency diesel generators (B1 and 7)
Total	1,089,650		

Source: Hines, 2018.

Notes: 1. Most levels with residential, hotel, and office uses contain small lobbies; only main lobbies are included in this summary table.
2. The mechanical mezzanine is referred to as level 62 in the noise study (Charles M. Salter Associates, Inc., *Transbay Parcel F (542-550 Howard Street) Environmental Noise Impact Assessment*, October 19, 2018).

The proposed project would be 750 feet in height to the roofline, and 800 feet to the top of the rooftop mechanical features, which would include elevator overruns, mechanical equipment, and cooling towers. As noted above, the project site is located within the C-3-O (SD) Downtown Office Special Development, Public (P), and Transbay C-3 Special Use districts, Zone 2 of the Redevelopment Area, and 750-S-2 and 450-S height and bulk districts. The project sponsor would request a zoning map amendment to amend San Francisco Zoning Maps ZN-01 and HT-01 to swap height and bulk classifications of the two parcels within the project site and to rezone a portion of the site from P to C-3-O(SD). The sponsor would also seek uncodified legislative amendments to permit residential floor plates over 15,000 sf and to permit the project's inclusionary affordable dwelling units to be provided off-site within the Transbay Redevelopment Area.[3] The existing air vent associated with the TTC would be removed and the venting system would be converted to a dry cooling system with the new vent constructed on the Transbay Joint Powers Authority (TJPA) property adjacent to the western edge of the vehicle ramp into the subterranean portion of the TTC (see Exhibit 1, Figures 1 and 2).

The ground level of the proposed project would include the residential, hotel, and office lobbies, and approximately 2,300 sf of retail spaces. Levels 2, 3, 6 and 7 would contain hotel amenities. The hotel amenities would include meeting/conference/pre-function space, catering kitchen spaces, a gym/pool/spa serving hotel guests and residents, exclusively, and hotel back-of-house spaces. Level 4 would contain a *class 1* bicycle storage facility with 177 secured bicycle spaces. Level 5 would contain additional retail spaces (approximately 7,600 sf) and would be connected to the TTC rooftop terrace and park by a 22-foot-wide, 65-foot-long pedestrian bridge over Natoma Street. Levels 8 through 16 would contain hotel rooms and servicing areas. Typical event types that could be held in the proposed hotel meeting and conference spaces and level 2 outdoor terrace include the following: large events could take place approximately 10 times per year with a maximum attendance of approximately 400 persons; medium events such as small conferences or galas, could take place approximately 50 times per year with a maximum attendance of approximately 250 persons; and smaller meetings could take place approximately 90 times per year with a maximum of 200 attendees. The maximum occupancy of the level 2 outdoor terrace is 100 persons. These events are summarized in Table 2, below.

Table 2
Typical Event Types

Type[1]	Maximum Attendance	Spaces Utilized				Frequency (per year)	Typical Time
		Large Event Space	Pre-function[2]	Meeting Rooms	Level 2 Outdoor Terrace		
Large conference event	400	X	X	X	X	10	8:00 a.m. to 4:00 p.m.
Small conference / gala event	250	X	X	X	X	50	8:00 a.m. to 4:00 p.m.: 60%[3] 6:00 p.m. to 10:00 p.m.: 40%[3]
Meeting	200	N/A[4]	X	X	X	90	8:00 a.m. to 4:00 p.m.

Source: Hines, 2018.
Notes:
1. Large conference events and small conference / gala events would typically consist of a plenary session in one of the larger spaces, followed by break-out sessions in individual meeting rooms.
2. The pre-function areas would typically function as a single space, and neither would be occupied or in use independent of the other.
3. % (percentage) of time used during the typical times per frequency per year.
4. N/A: Not Applicable

[3] San Francisco Planning Department, *Legislative Amendment Application,* January 23, 2018. This document (and all other documents cited in this report, unless otherwise noted), is available for review at the San Francisco Planning Department, 1650 Mission Street, Suite 400, as part of Case File Nos. 2016-013312MAP, 2016-013312PCA, and 2016-013312ENV.

Levels 17 through 31 would contain office space, which is intended to be leased to traditional office tenants in the market.

Levels 33 through 61 would contain the residential uses, with 165 residential units. The proposed unit mix includes 20 studio/one-bedroom and 145 two-or-more bedroom units. Level 33 would include residential amenities, including a chef's kitchen and bar, private dining and media space, café, resident library and an approximately 2,500 sf outdoor terrace along the western and eastern portions of the level that would provide common open space to residents. The proposed project would provide affordable housing either on-site or off-site. If provided off-site, approximately 55 affordable housing units would be accommodated on another site within the Transbay Redevelopment Plan Area, potentially located in a future building on Transbay Block 4 on Howard Street between Beale and Main Streets, approximately three blocks east of the project site.

Mechanical equipment, such as air handlers, exhaust fans, water treatment equipment, fire tanks, fire pumps, and a stormwater holding tank would be located on levels B1 through B4, 2, 4, 6, 7, 32, and mechanical mezzanine. Two diesel emergency generators (a base building emergency generator and a potential tenant emergency generator) would be installed on levels B1 and 7. A detailed description of project features is provided in the subsections below. In addition, see Exhibit 1 for a complete set of project plans (site plan, floor plans, sections, and elevations).

Streetscape Improvements

Pedestrian access into the building would be provided at multiple locations along the perimeter of the building. The hotel and residential shared lobby would be accessible from a pedestrian entrance on the Natoma Street frontage, whereas the office and residential lobbies would be accessible from separate pedestrian entrances along the Howard Street frontage. A nine-foot-wide public passageway on the far western side of the site adjacent to the TTC bus bridge would provide through access between Natoma and Howard streets for pedestrians and bicyclists. A glass-enclosed public elevator fronting Natoma Street would provide access to the proposed retail space and 22-foot-wide pedestrian bridge to Salesforce Park located on level 5. The pedestrian bridge, which would have 6-foot-tall solid glass parapet railings and would be constructed 65 feet over Natoma Street, would provide public access and a direct connection to the recently constructed TTC Salesforce Park. Approximately 108 linear feet of public right of way on Howard Street would be converted to a passenger loading zone.

The project proposes to eliminate the existing approximately 38-foot-wide curb cut located generally in the center of the project site's Howard Street frontage and the existing approximately 12-foot-wide curb cut adjacent to 540 Howard Street at the eastern edge of the project site's Howard Street frontage, and would add a new approximately 38-foot-wide curb cut adjacent to the bus bridge at the western edge of the project's Howard Street frontage. Approximately 108 linear feet on Howard Street would be converted to a passenger loading zone (see Exhibit 1, Figure 3). The proposed project would add approximately two street trees along the project's Howard Street frontage and four street trees to the project's Natoma Street frontage, subject to coordination with and approval by San Francisco Public Works.

Circulation, Parking and Loading

The proposed project would construct a new vehicular roadway and cul-de-sac (see Exhibit 1, Figure 4). The new roadway would provide vehicular access into the western two-thirds of Natoma Street between First and Second streets by constructing an additional 85.5 feet within the Natoma Street right-of-way. The project would also construct a new cul-de-sac, which would extend an additional 64.5 feet for a combined 150-foot vehicular roadway extension. The 64.5-foot-wide cul-de-sac would have a curb cut providing vehicular access to three car elevators and the below-grade garage. The garage would be valet operated with vehicular drop-off and pick-up from the cul-de-sac. The westernmost edge of the cul-de-sac would contain security bollards to prevent vehicles from traveling west on Natoma Street beyond the cul-de-sac to create a pedestrian only zone.[4] Some of the bollards would be removable to allow for emergency vehicle access into the pedestrian zone, as needed (see Exhibit 1, Figure 4).

The proposed four below-grade subterranean garage levels would accommodate 183 vehicle parking spaces (12 hotel, 83 residential, 88 office, and three car share spaces) arranged in mechanical stackers (see Exhibit 1, Figure 5).

Electric vehicle charging stations and preferred parking spaces for clean air/van pool/electric vehicles would be provided within the proposed garage. As noted above, the garage would be valet operated and accessible from Natoma Street via three car elevators at grade within the cul-de-sac drop-off area along the northeastern portion of the project site (see Exhibit 1, Figure 4). The drop-off area would allow for vehicle queuing and passenger loading for hotel guests, office employees and guests, and residents arriving and departing by motor vehicles. The project would include a *class 1* bicycle storage facility with 177 secured bicycle spaces on level 4 and would be accessed using the public elevator located near the hotel lobby on Natoma Street. *Class 2* bicycle spaces for 20 bicycles would be provided in racks on sidewalks along Howard and Natoma streets (see Figure 6). Four showers and 24 lockers for use by tenants and employees of the proposed project would also be located on level 4 of the building.

As noted above, all off-street vehicle parking within the building would be operated by valet. Hotel guests, office employees and visitors, retail patrons, and residents would drop-off and pick-up their vehicles at the valet station along Natoma Street, from where attendants would take the vehicles to the car elevator and into the parking garage. At vehicle pick-up time, garage attendants would call for the car elevator and retrieve the vehicle from the garage. Three spaces in the garage would be designated to accommodate the car share vehicles. Car share program members wishing to access the vehicles would notify the valet attendant, who would retrieve the car share vehicle from the garage.

The project sponsor would seek approval from SFMTA for a 108-foot-long white curb passenger loading zone along Howard Street that could also accommodate tour bus loading for the hotel on an as-needed basis (see Exhibit 1, Figure 3). The white curb passenger loading zone would help to accommodate general passenger loading/unloading activity (i.e., proposed project-related loading activity, as well as other activity in the surrounding area).

For freight loading, the building would feature an off-street loading dock along the western portion of the project site with four off-street freight loading spaces (measuring 10 feet wide by 30 feet long in total with

[4] At the time of this environmental analysis, Natoma Street west of the proposed cul-de-sac to Second Street is planned to be a pedestrian only zone.

at least 14 feet vertical clearance) and a truck turntable to allow trucks to head in and out of the loading area from Howard Street without needing to back up. The loading dock would be accessible from an approximately 38-foot-wide curb cut proposed along Howard Street to accommodate truck turns into/out of the driveway (see Exhibit 1, Figure 3). The current approximately 38-foot-wide and approximately 12-feet-wide curb cuts along Howard Street would be removed.

In addition, the proposed project would include transportation demand management measures such as providing tailored transportation marketing services,[5] bicycle repair station, and bicycle repair services. These are intended to target a reduction in single occupancy vehicle trips by encouraging users to select alternative modes of transportation, such as walking, bicycling, public or private transit, car share, carpooling and/or other alternative modes.

Public Open Spaces

The proposed project would include a total of 5,800 sf of publicly accessible open space including 1,950 sf of open space for the public passageway from Howard Street through the project site to Natoma Street, 670 sf of open space adjacent to the public elevator, 830 sf for the public elevator at level 5, and 2,350 sf of publicly accessible open space at the pedestrian bridge and terrace at level 5.[6]

Private Common Open Spaces

The proposed project would include a total of 16,600 of residential, hotel, and office common open spaces. The proposed project would include 9,500 sf of residential common open space with 7,500 sf on the roof top and 2,000 sf on level 33. In addition, the project would include 7,200 square feet of common outdoor terraces available for the hotel and office tenants. The project would include 3,800 square feet of common outdoor spaces on level 2 (the northeast portion above the ground floor retail on Natoma Street), 900 square feet of common open space on level 6 (along the Howard Street frontage), and 1,600 square feet of common open space on level 7 (along the eastern side of the building) for hotel guests. The project would include 900 square feet of common outdoor open space on level 31 (along both the eastern and western perimeters of the building) for the office tenant.

Construction

Construction of the proposed project would occur in a single phase lasting approximately 45 months. Excavation is expected to be conducted to a maximum depth of approximately 70 feet below the ground surface for construction of the four below-grade parking levels, which would result in the removal of approximately 51,180 cubic yards of soil.

The proposed podium would use vertical ground anchors such as tiedowns or micro piles to provide uplift resistance. The proposed tower structure would be supported on a mat with deep foundations to bedrock, ranging from 130 to 185 feet below existing grades. The mat may be up to 13 feet thick beneath the tower core, and 5 feet thick beneath the podium. Deep foundation types such as large diameter drilled cast-in-place piers (also known as drilled shafts) or rectangular-section load bearing elements (also

[5] The proposed project would develop and deploy promotions to encourage new homeowners and residents to use sustainable transportation modes through email communications, physical mail, and/or building applications/technology. Promotions could include contests, incentive programs with prizes, and discount offers on public transit. The proposed project would also provide new residents with welcome packets and one-on-one consultation opportunities to learn more about local sustainable transportation options, public transit, bike share, and carpooling programs.

[6] The proposed project provides public open space elements that meet the criteria per Planning Code section 138, Privately-owned public open space requirements in C-3 districts.

known as barrettes) would extend to bedrock. The bottom of the tower core mat may extend eight feet below the bottom of the adjacent Transit Center train box[7] foundation, but the podium foundation would not extend below the bottom of the adjacent Transit Center train box foundation. The portion of the tower and podium mat over the Transit Center train box would be designed to cantilever over the train box. Impact pile driving is not proposed or required.

Construction staging would occur primarily within the confines of the project site, but would occasionally occur on portions of the public right-of-way along both Howard and Natoma streets. Parking lane and sidewalk closures would be required throughout the approximately 45-month construction period on Howard and Natoma streets and the sidewalk would be rerouted to the perimeter of the parking lane. On Natoma Street, the southern portion of the promenade and street adjacent to the site would be closed; instead, pedestrian access would be provided on Natoma Street on the northern half of the street. Signage and pedestrian protection would be erected, as appropriate, for all sidewalk and travel lane closures.

PROJECT SETTING

As noted above, the project site is within the TCDP area, which is centered on the new TTC site. The TCDP is a comprehensive plan for a portion of the southern downtown financial district and contains the overarching premise that to accommodate projected office-related job growth in the city, additional office development capacity must be provided in proximity to the city's greatest concentration of public transit service. The TCDP, which was adopted and became effective in September 2012, includes a comprehensive program of zoning changes, including elimination of the floor area ratio (FAR) maximums and increased height limits on certain parcels, including the project site. The TCDP's policies and land use controls allow for increased development and improved public amenities in the project area, with the intention of creating a dense transit-oriented district.

The project site is within Zone 2 of the adopted Transbay Redevelopment Area. At the time of redevelopment plan adoption, the San Francisco Redevelopment Agency implemented a Delegation Agreement with the planning department to generally assign responsibility and jurisdiction for planning, zoning, and project entitlements in Zone 2 of the redevelopment area to the planning department and planning commission. As such, the planning department retains land use authority within Zone 2 and this zone is governed by the planning code, as administered by the planning department and planning commission. Although California dissolved all California Redevelopment Agencies, effective February 1, 2012, this act did not result in changes to land use controls or project approval processes for projects proposed within Zone 2. The Office of Community Investment and Infrastructure (OCII) is serving as the successor agency to the former San Francisco Redevelopment Agency.

As noted above, the project site is within the C-3-O (SD) Downtown Office Special Development District, and is also within the Transit Center Commercial Special Use District (SUD), identified in the TCDP, in which limits on non-commercial space apply (Planning Code section 248). The project site is also located within the Transbay C-3 SUD as well as Zone 2 of the Redevelopment Area, which contains additional

[7] The train box is the subterranean portion of the Transit Center that will house the Caltrain and high-speed rail (HSR) tracks leading into the station. (U.S. Department of Transportation Federal Transit Administration and the Transbay Joint Power Authority, *Draft Supplemental Environmental Impact Statement/Environmental Impact Report for the Transbay Transit Center Program*, December 2015).

land use controls to implement the Transbay Redevelopment Plan and its companion documents (Planning Code section 249.28). In general, these controls require proposed development within the SUD to undertake streetscape improvements, deposit fees into the Downtown Open Space Fund, pay other fees into the Citywide Affordable Housing Fund, construct affordable housing on-site, and, for any parcels adjacent or facing the new Transit Center and its ramp structures, provide active ground floor uses and direct pedestrian access from these areas to the ramps around the future Transit Center. Of note and as described in the Transbay Redevelopment Plan section 4.9.3, the city's standard Inclusionary Housing Ordinance (Planning Code section 415) does apply to the project site. The proposed project would comply with section 415 requirements by including affordable housing either on-site or off-site. As noted above, if the affordable housing component is provided off-site, approximately 55 affordable housing units would have to be accommodated on a site within the Transbay Redevelopment Area, potentially within a proposed building on Transbay Block 4 or on another site. Block 4 was previously analyzed to include residential units per the Transbay Redevelopment Plan and Transbay Terminal EIS/EIR.[8] The development on Block 4 is analyzed as part of the cumulative scenario.

In addition, the TCDP establishes new development impact fees to be collected from almost all development projects within the C-3-O (SD) District. These include the Transit Center District Open Space Impact Fee and Fund, Transit Center District Transportation and Street Improvement Impact Fee and Fund, and the Transit Center District Mello-Roos Community Facilities District Program. The TTC building site is located north of the project site and extends from Beale Street westward almost to Second Street. Completed in 2018, the five-story (three above ground) TTC provides a one-million-square-foot regional bus and rail station with a five-acre public park atop the building (the bus terminal and Salesforce Park are currently open).

Development in the project vicinity consists primarily of high-density residential and office uses with ground floor retail and restaurant uses. The block on which the project site is located contains several low to mid-rise office buildings and construction staging for planned developments. The aforementioned 5-story TTC and the Salesforce Park are located to the north of the project site, 2- to 3-story buildings at 547, 555, and 557 Howard streets are located to the south of the project site, and a 3-story building at 540 Howard Street, a 4 story building at 530 Howard Street, and a parking lot at 524 Howard Street are located east of the project site. The 2- to 3-story buildings at 547, 555, and 557 Howard streets are planned to be replaced with an approximately 385 foot-tall, 36-story mixed use residential and hotel development project (555 Howard Street project).[9] The parking lot at 524 Howard Street is planned to be replaced with an approximately 495-foot-tall, 48-story mixed use residential and hotel development (524 Howard Street project).[10] Several high-rise buildings are planned, under construction, or have recently completed construction in the surrounding area, including a newly completed office-residential tower at 181 Fremont Street.[11]

The nearest open spaces to the project site include Embarcadero Plaza (Justin Herman Plaza) on the Embarcadero to the north and south of Market Streets located 0.48 miles northeast of the project site, Guy

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8 U.S. Department of Transportation Federal Transit Administration, City and County of San Francisco, Peninsula Corridor Joint Powers Board, and San Francisco Redevelopment Agency, *Transbay Terminal / Caltrain Downtown Extension / Redevelopment Project Final Environmental Impact Statement / Environmental Impact Report and section 4(f) Evaluation,* March 2004.

9 San Francisco Planning Department, *Planning Department Case No. 2015-008058ENV 555 Howard Street,* February 16, 2017.

10 San Francisco Planning Department, *Planning Department Case No. 2013.0882ENV 524 Howard Street,* October 14, 2016.

11 San Francisco Planning Department, *Planning Department Case No. 2007.0456E, 181 Fremont Street,* November 16, 2012.

Place at First Street located 0.17 miles southeast of the project site, Sue Bierman Park located 0.55 miles northeast of the project site, Union Square Plaza located 0.47 miles west of the project site, Rincon Park along the Embarcadero located 0.48 miles northeast of the project site, and Salesforce Park (referenced as City Park in the TCDP PEIR) on the rooftop of the Transbay Transit Center, which would be accessible from the proposed project via a pedestrian bridge. The former four open spaces are Recreation and Park Department properties, while the latter two are under the jurisdiction of the Port of San Francisco and the Transbay Joint Powers Authority respectively. In addition, there are numerous privately owned, publicly accessible plazas, gardens and open spaces nearby.

PROJECT APPROVALS

The proposed project would require the following approvals:

San Francisco Planning Commission

- Downtown Project Authorization, pursuant to Planning Code section 309, with exceptions to the requirements for "Streetwall Base" and "Tower Separation" pursuant to section 132.1; "Rear Yard" pursuant to section 134; "Reduction of Ground-Level Wind Currents" in C-3 Districts pursuant to section 148; "Off-Street Freight Loading" per sections 152.1 and 161; "Loading Driveway Access from Bicycle Route Street" per section 155 (r)(4); "Off-street Tour Bus Loading" per section 162; "Upper Tower Extensions" per section 263.7; "Bulk Controls" per section 270 and 272; and "Dwelling Unit Exposure" per section 140.
- Conditional Use Authorization to establish Hotel Use per sections 210.2 and 303.
- Zoning Administrator consideration of Variance for Parking and Loading Entrance Width per section 145, Active Street Frontages per section 145.1, and Vehicular Ingress and Egress on Natoma Street per section 155.
- Office Allocation per section 321.
- General Plan Amendment to amend Maps 1 and 5 of the Downtown Plan and Figure 1 of the Transit Center District Plan.
- Legislative Amendment to amend San Francisco Zoning Maps ZN-01 and HT-01 for height and bulk classification and zoning designation; Uncodified Legislative Amendments for: the residential floor plate requirement per section 248; and authorization of off-site inclusionary affordable dwelling units per section 249.28 (recommendation to Board of Supervisors).
- Findings, upon the recommendation of the Recreation and Park Director and/or Commission, that shadow would not adversely affect public open spaces under Recreation and Park Commission jurisdiction (section 295).

Office of Community Investment and Infrastructure

- Variation from Transbay Redevelopment Plan for off-site inclusionary affordable housing (section 4.9.3 of Redevelopment Plan; Planning Code section 249.28).

San Francisco Board of Supervisors

- General Plan Amendment to amend Maps 1 and 5 of the Downtown Plan and Figure 1 of the Transit Center District Plan.
- Legislative Amendment to amend San Francisco Zoning Maps ZN-01 and HT-01 for height and bulk classification and zoning designation; Uncodified Legislative Amendments for the residential floor plate requirement per section 248 and authorization of off-site inclusionary affordable dwelling units per section 249.28.
- Consent to Variation from Transbay Redevelopment Plan for off-site inclusionary affordable

housing (section 4.9.3 of Redevelopment Plan).

San Francisco Municipal Transportation Agency

- Approval of a white curb passenger loading zone along Howard Street to accommodate passenger and tour bus loading.
- Approval of any necessary construction permits for work within roadways, if required.

San Francisco Department of Building Inspection

- Review and approval of building and demolition permits.

San Francisco Public Utilities Commission

- Review and approval of the stormwater management system to meet the Stormwater Design Guidelines.
- Review and approval of an Erosion and Sediment Control Plan in accordance with Article 4.1 of the San Francisco Public Works Code for construction activities.

San Francisco Department of Public Works

- Approval of any changes in the public right-of-way and any necessary construction permits for work within roadways.

Bay Area Air Quality Management District

- Approval of a permit to operate the proposed backup emergency generators.

The proposed project is subject to Downtown Project Authorization from the Planning Commission, which is the Approval Action for the project. The Approval Action date establishes the start of the 30-day appeal period for this CEQA exemption determination pursuant to section 31.04(h) of the San Francisco Administrative Code.

SUMMARY OF ENVIRONMENTAL EFFECTS

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

☐	Land Use and Planning	☐	Greenhouse Gas Emissions	☐	Geology and Soils
☐	Population and Housing	☐	Wind	☐	Hydrology and Water Quality
☒	Cultural Resources	☐	Shadow	☐	Hazards & Hazardous Materials
☐	Tribal Cultural Resources	☐	Recreation	☐	Mineral Resources
☒	Transportation and Circulation	☐	Utilities and Service Systems	☐	Energy
☒	Noise	☐	Public Services	☐	Agriculture and Forestry Resources
☒	Air Quality	☐	Biological Resources	☐	Wildfire

EVALUATION OF ENVIRONMENTAL EFFECTS

This initial study evaluates whether the environmental impacts of the proposed project are addressed in the programmatic environmental impact report for the Transit Center District Plan (TCDP PEIR).[12] The initial study considers whether the proposed project would result in significant impacts that: (1) are peculiar to the proposed project or project site; (2) were not identified as significant project-level, cumulative, or off-site effects in the PEIR; or (3) are previously identified significant effects, which as a result of substantial new information that was not known at the time that the TCDP PEIR was certified, are determined to have a more severe adverse impact than discussed in the PEIR.[13] Such impacts, if any, will be evaluated in a project-specific, focused mitigated negative declaration or environmental impact report. If no such impacts are identified, no additional environmental review shall be required for the project beyond that provided in the TCDP PEIR and this project-specific initial study in accordance with CEQA section 21083.3 and CEQA Guidelines section 15183.

Mitigation measures identified in the PEIR are discussed under each topic area, and measures that are applicable to the proposed project are provided in the Mitigation Measures section at the end of this checklist.

The TCDP PEIR identified significant impacts related to aesthetics, cultural resources, transportation, noise and vibration, air quality, shadow, wind, biological resources, and hazardous materials. Additionally, the PEIR identified significant cumulative impacts related to aesthetics, cultural resources, noise, air quality, shadow, and wind. Mitigation measures were identified for the above impacts and reduced all impacts; however, certain impacts related to aesthetics, cultural resources, transportation, noise, air quality, and shadow remained significant and unavoidable.

The proposed project would involve the construction of a mixed-use tower with approximately 165 dwelling units, 189 hotel guest rooms, 59,800 gsf of hotel amenities, 274,000 gsf of office uses, , 9,900 sf of retail space, and 22,400 sf of open space. As discussed below in this initial study, the proposed project would not result in any new, significant environmental effects or effects of greater severity, otherwise acknowledged as "peculiar effects," than were not already analyzed and disclosed in the TCDP PEIR.

CHANGES IN THE REGULATORY ENVIRONMENT

Since the certification of the TCDP PEIR in 2012, several new policies, regulations, statutes, and funding measures have been adopted, passed, or are underway that affect the physical environment and/or environmental review methodology for projects in the TCDP plan area. As discussed in each topic area referenced below, these policies, regulations, statutes, and funding measures have or will implement mitigation measures or further reduce less-than-significant impacts identified in the PEIR. These include:

- State legislation amending CEQA to eliminate consideration of aesthetics and parking impacts for infill projects in transit priority areas, effective January 2014.

[12] San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final Environmental Impact Report, Planning Department Case Nos. 2007.0558E and 2008.0789E, State Clearinghouse No. 2008072073,* certified May 24, 2012. Available online at: http://sf-planning.org/area-plan-eirs, accessed September 6, 2018.

[13] Significant refers to "significant effect on the environment," defined as "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance," by the California Environmental Quality Act section 15382.

- State legislation amending CEQA and San Francisco Planning Commission resolution replacing level of service (LOS) analysis of automobile delay with vehicle miles traveled (VMT) analysis, effective March 2016 (see "CEQA section 21099" heading below).
- Transit Effectiveness Project (aka "Muni Forward") adoption in March 2014, Vision Zero adoption by various City agencies in 2014, Proposition A and B passage in November 2014, and the Transportation Sustainability Program process, and state statute and Planning Commission resolution regarding automobile delay, and VMT effective March 2016 (see initial study Transportation section).
- San Francisco ordinance establishing Noise Regulations Related to Residential Uses near Places of Entertainment effective June 2015 (see initial study Noise section).
- San Francisco ordinance establishing Enhanced Ventilation Required for Urban Infill Sensitive Use Developments, effective December 2014 (see initial study Air Quality section).
- San Francisco Clean and Safe Parks Bond passage in November 2012 and San Francisco Recreation and Open Space Element of the General Plan adoption in April 2014 (see initial study Recreation section).
- Urban Water Management Plan adoption in 2016 and Sewer System Improvement Program process (see Utilities and Service System section below).
- Article 22A of the Health Code amendments effective August 2013 (see initial study Hazardous Materials section).

Aesthetics and Parking

In accordance with CEQA section 21099 – Modernization of Transportation Analysis for Transit Oriented Projects – aesthetics and parking shall not be considered in determining if a project has the potential to result in significant environmental effects, provided the project meets all of the following three criteria:

a) The project is in a transit priority area;

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 and thus, this initial study does not consider aesthetics or parking in determining the significance of project impacts under CEQA.[14] Project elevations are included in the project description.

Automobile Delay and Vehicle Miles Traveled

In addition, CEQA section 21099(b)(1) requires that the State Office of Planning and Research (OPR) develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects that "promote the reduction of greenhouse gas emissions, the

[14] San Francisco Planning Department. Eligibility Checklist: CEQA section 21099 – Modernization of Transportation Analysis for 542-550 Howard Street, August 14, 2018. This document (and all documents cited in this Community Plan Evaluation unless otherwise noted) is available for review on the San Francisco Property Information Map, which can be accessed at https://sfplanninggis.org/PIM/?. Individual files can be viewed by clicking on the Planning Applications link, clicking on the "More Details" link under the project's environmental case number (2016-013312ENV), and clicking on the "Related Documents" link.

development of multimodal transportation networks, and a diversity of land uses." CEQA section 21099(b)(2) states that upon certification of the revised guidelines for determining transportation impacts pursuant to section 21099(b)(1), automobile delay, as described solely by level of service or similar measures of vehicular capacity or traffic congestion shall not be considered a significant impact on the environment under CEQA.

In January 2016, OPR published for public review and comment a *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA*[15] recommending that transportation impacts for projects be measured using a vehicle miles traveled (VMT) metric. On March 3, 2016, in anticipation of the future certification of the revised CEQA Guidelines, the San Francisco Planning Commission adopted OPR's recommendation to use the VMT metric instead of automobile delay to evaluate the transportation impacts of projects (Resolution 19579). (Note: the VMT metric does not apply to the analysis of project impacts on non-automobile modes of travel such as transit, walking, and bicycling.) Therefore, impacts and mitigation measures from the TCDP PEIR associated with automobile delay are not discussed in this initial study, including PEIR Mitigation Measures M-TR-1a through M-TR-1m. Instead, a VMT and induced automobile travel impact analysis is provided in the Transportation and Circulation section of this initial study.

[15] This document is available online at: https://www.opr.ca.gov/s_sb743.php.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
1. LAND USE AND LAND USE PLANNING—Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant physical environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☐	☒

The TCDP PEIR analyzed the land use changes anticipated under the TCDP and determined that significant adverse impacts related to the division of an established community would not occur; the TCDP would not conflict with an applicable land use plan (including the General Plan); and the TCDP would not have a substantial impact on the existing character of the vicinity.

The project would add residential, hotel, office, and retail uses to the project site, all of which are uses that are anticipated under the TCDP for the project site and surrounding area. Because the potential future land uses at the project site would be the same as those evaluated for the area in the PEIR, there would be no new or previously unconsidered significant land use impacts related to the proposed project.

The Citywide Planning and Current Planning divisions of the planning department have determined that the proposed project is permitted in the C-3-O (SD), Downtown-Office (Special Development) Zoning Districts, and the 750-S-2 and 450-S Height and Bulk Districts. A small portion of the western edge of the site is currently zoned P (Public) because at the time the TCDP was enacted, the final location of the TTC bus bridge was not determined. With completion of the bus bridge slightly to the west, the small portion of the project site zoned P is no longer necessary for the bus bridge and is proposed to be rezoned to the C-3-O (SD) district as an element of the proposed project approvals. The C-3-O (SD) Zoning District permits a base nonresidential development at a floor area ratio of 6.0:1, and permits a nonresidential development up to 9.0:1 with the purchase of transfer of development rights (TDR). The use of TDR to exceed a floor area ratio of 9.0:1 shall not be allowed in the C-3-O (SD) District. In order to exceed a floor area ratio of 9.0:1, all projects must participate in the Transit Center District Mello-Roos Community Facilities District as described in section 424.8. The proposed office use is permitted within the C-3-O (SD) Zoning District through the approval of an Office Development Authorization by the Planning Commission. Since the project proposes 274,000 gsf of new office space, (large cap) office allocation is required. The proposed 1,089,650 gsf of total floor area for the project is over the base floor area ratio of 6.0:1; however, with the purchase of TDR and participation in the Transit Center District Mello-Roos Community Facilities District, the project could be permitted. The proposed project is consistent with the development density, bulk, and land uses as envisioned in the Transit Center District Plan and established by the planning code and therefore, qualifies for a CPE pursuant to section 15183 of the CEQA Guidelines.[16,17]

[16] San Francisco Planning Department, *Community Plan Evaluation Eligibility Determination, Citywide Planning and Policy Analysis, 542-550 Howard Street*, October 26, 2017.

Thus, the project would not physically divide an established community, as it is consistent with the city's long-range development plans for the site. The project would be compatible with existing surrounding uses, which includes residential, hotel, office, and retail uses.

Cumulative Analysis

The proposed project would have no impact with respect to physically dividing a community or conflicting with an applicable land use plan adopted for the purpose of avoiding or mitigating an environmental effect and therefore would not have the potential to contribute to a significant cumulative impact related to land use and planning.

Conclusion

Because the proposed project is consistent with the development density and land uses established in the TCDP, implementation of the proposed project would not result in significant impacts that were not identified in the TCDP PEIR related to land use and land use planning, and no mitigation measures are necessary.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
2. POPULATION AND HOUSING—Would the project:				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing units or create demand for additional housing, necessitating the construction of replacement housing?	☐	☐	☐	☒

The key goal of the TCDP was to concentrate future employment growth where it is best served by public transit, through rezoning to allow increased density in the plan area. The TCDP PEIR found that with implementation of the TCDP there would be more than 9,470 new residents (in about 6,100 households) and more than 29,300 new employees in the TCDP plan area by 2030. As stated in the PEIR, the planning department forecasts that San Francisco's total household population[18] would reach approximately 912,000 by 2030, an increase of some 132,500 residents from the 2005 total of 779,500.[19,20] Employment in

[17] San Francisco Planning Department, *Community Plan Evaluation Eligibility Determination, Current Planning Analysis, 542-550 Howard Street*, March 2, 2018.

[18] Household population excludes about 2.5 percent of the city's total population that lives in what the U.S. Census calls "group quarters," including institutions (jails, nursing homes, etc.), college dormitories, group homes, religious quarters, and the like.

[19] Consistent with recent trends, this incremental growth is anticipated to occur in relatively smaller households; that is, growth would occur in households that would be smaller than the average household size in 2010 of 2.3 persons per household.

[20] Because of the economic effects of the Great Recession, the Transit Center District Plan's employment growth forecast is conservative, when compared to more recent projections. The projections for household growth remain generally accurate.

2005 totaled approximately 552,000. The Department forecasts employment growth of 241,300 additional jobs by 2030, for a total of 793,300. The TCDP PEIR found that the increased employment and household population generated by the TCDP would be in line with regionally forecasted growth for the city, and that the TCDP would not create substantial new demand for housing or reduce the existing supply to the extent that would result in a significant impact.

The PEIR stated that the population and employment growth attributable to the plan would result in secondary physical changes related to transportation, air quality, greenhouse gases, noise, and public services and utilities; in addition, physical changes related to aesthetics, cultural resources, wind, and shadow. These physical impacts of the Transit Center District Plan are analyzed throughout the PEIR, and discussed within this CPE. The PEIR determined that implementation of the Transit Center District Plan would not lead to substantial growth in population or employment, displacement of a large number of people, a significant increase in demand for additional housing, or a reduction in housing supply; therefore, impacts to population and housing, business activity, and employment were considered less than significant and no mitigation measures were necessary. In addition, the PEIR determined that the Plan would not contribute considerably to substantial growth in population or employment, displacement of a large number of people, an increase in demand for additional housing, or a reduction in housing supply; therefore, implementation of the Plan would not have any significant cumulative impacts.

The proposed project would involve the development of approximately 165 market-rate housing units. Assuming 2.33 persons per household, the proposed project would accommodate approximately 385 people. By 2030, this population increase would amount to approximately 0.3 percent of the anticipated citywide population growth and 4.1 percent of the growth anticipated under the TCDP. The proposed project would also develop approximately 189 hotel rooms and hotel amenities (238,750 gross square feet [gsf] of hotel uses), 274,000 gsf of office uses, and 9,900 square feet of retail space, which would generate approximately 1,187 total employees at full occupancy.[21] In 2017, approximately 48.1 percent of people worked in the city also lived in the city.[22,23,24] The remaining working population commuted from other cities in the region or worked from home. As such, project related employment (571 employees) would be equivalent to 0.24 percent of the anticipated citywide growth by the year 2030. Project-related employment growth would amount to approximately 1.95 percent of the employment growth anticipated in the TCDP. This employment increase would result in a demand for 461 new housing units in the city.[25] These direct effects of the project on population and housing are within the scope of the population growth anticipated under the TCDP and evaluated in the TCDP PEIR.

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21 Employment calculations in this section are based on the 2002 City of San Francisco Transportation Impact Analysis Guidelines, which estimate an average density of 276 square feet per employee assigned to office uses (274,000 gross square feet), 350 square feet per employee assigned to retail space (9,900 square feet), and 0.9 employees per hotel room (189 rooms).

22 The 405,031 employees who both live and work in the city minus the 37,465 employees who work from home = 367,566 city residents who both live and work in the city. The 367,566 residents who both live and work in the city/764,331 employees in the city = 48.1 percent of city residents who also work in the city.

23 U.S. Census Bureau. 2017. *American Fact Finder, American Community Survey. One-year Estimates. Sex of Workers by Means of Transportation to Work for Workplace Geography. San Francisco city, California. ID B08406.* Available: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed October 22, 2018.

24 U.S. Census Bureau. 2017. *American Fact Finder, American Community Survey. One-year Estimates. Sex of Workers by Place of Work—Place Level. San Francisco city, California. ID B08008.* Available: https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml. Accessed October 22, 2018.

25 Based on 48.1 percent of city residents who also work in the city and an assumed 7.3 percent vacancy factor, from 2017 Census data, and 1.33 workers per household from 2016 Census.

As discussed above, the project would include approximately 165 residential units. In addition, the proposed project would provide affordable housing either on-site, as defined and required by the Transbay Redevelopment Plan, or off-site. If provided off-site, approximately 55 affordable housing units site would be accommodated within the Transbay Redevelopment Plan Area, potentially located in a new building on Transbay Block 4 on Howard Street between Beale and Main Streets, approximately three blocks east of the project site or on another site. This would satisfy the city's regulatory requirements to mitigate the impact of market-rate housing on the demand for affordable housing in San Francisco. Based on this above, impacts related to population growth would be less than significant.

The project site is currently vacant except for one air vent and a below grade train box associated with TTC located beneath a portion of the site. There are no housing units on the project site; therefore, the proposed project would not displace any existing housing units, and thus would not necessitate the construction of replacement housing elsewhere. Therefore, no new impact would occur related to the displacement of people.

Cumulative Analysis

The cumulative context for the population and housing topic is the City and County of San Francisco. The proposed project would provide housing units and hotel, office, and commercial spaces that would result in increases in population (households and jobs). San Francisco is anticipated to grow by 137,800 households and 295,700 jobs between 2010 and 2040. Between 2010[26] and 2018,[27] San Francisco's population grew by 51,739 households and 183,287 jobs, leaving approximately 86,061 households and 112,413 jobs projected for San Francisco through 2040. As of the first quarter of 2019, approximately 72,865 net new housing units are in the pipeline, i.e., are either under construction, have building permits approved or filed, or applications filed, including remaining phases of major multi-phased projects.[28] Conservatively assuming that every housing unit in the pipeline is developed and at 100 percent occupancy (no vacancies), the pipeline would accommodate an additional 72,865 households. The pipeline also includes projects with land uses that would result in an estimated 94,179 new employees and includes the proposed project.[29,30] As such, cumulative household and employment growth is below the ABAG projections for planned growth in San Francisco. Therefore, the proposed project in combination with citywide development would not result in significant cumulative environmental effects associated with inducing unplanned population growth or displacing substantial numbers of people or housing, necessitating the construction of replacement housing elsewhere.

Conclusion

The proposed project would also increase the amount of housing available, thereby reducing the demand for housing elsewhere. The proposed project would not result in significant impacts on population and housing that were not identified in the PEIR, nor would the proposed project have more severe impacts

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26 Bay Area Census. Available: http://www.bayareacensus.ca.gov/counties/SanFranciscoCounty.htm. Accessed July 31, 2019.

27 United States Census Bureau. *QuickFacts San Francisco County, California*. Available: https://www.census.gov/quickfacts/fact/table/sanfranciscocountycalifornia#. Accessed July 31, 2019.

28 San Francisco Planning Department, 2019 Q1. Housing Development Pipeline. Available online at: *https://sfplanning.org/project/pipeline-report*.Accessed August 22, 2019.

29 Ibid.

30 San Francisco Planning Department, Citywide Division, Information and Analysis Group, Scott Edmundson, March 19, 2019.

than those identified in the PEIR. The proposed project would have a less than significant impact, and no other mitigation measures would be required.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
3. CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5, including those resources listed in article 10 or article 11 of the San Francisco *Planning Code*?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Historic Architectural Resources

Direct Impacts

Pursuant to CEQA Guidelines sections 15064.5(a)(1) and 15064.5(a)(2), historical resources are buildings, structures, or sites that are listed, or are eligible for listing, in the California Register of Historical Resources, are identified in a local register of historical resources, such as Articles 10 and 11 of the San Francisco Planning Code, or are otherwise determined by a lead agency to be "historically significant." The TCDP PEIR determined that future development facilitated through the changes in use districts and height limits under the TCDP could have substantial adverse changes on the significance of historic architectural resources and on historical districts within the TCDP plan area. Although the precise nature of this impact could not be determined at the time, the PEIR determined that such an impact would be significant and unavoidable. To partially mitigate the impact, the PEIR identified PEIR Mitigation Measures M-CP-3a: Historic American Buildings Survey (HABS)/Historic American Engineering Record (HAER) Documentation, M-CP-3b: Public Interpretative Displays, M-CP-3c: Relocation of Historical Resources, and M-CP-3d: Salvage of Historical Resources. These measures would reduce impacts to historic resources, but not to a level of less than significant.

The proposed project is currently vacant except for one air vent and a below grade train box associated with TTC located beneath a portion of the site. The project would not entail demolition of existing structures. However, the air vent would be removed and converted into a dry cooling system relocated onto the western edge of the vehicle ramp into the subterranean portion of the TTC (see Exhibit 1, Figure 2). The air vent is not considered a historic structure and as such, does not necessitate a historic resources evaluation prior to its removal. Thus, the proposed project would not result in significant direct impacts on cultural resources that were not identified in the TCDP PEIR, nor substantially more severe impacts than previously identified in the PEIR. Furthermore, the mitigation measures identified above with

respect to direct impacts to historic structures would not apply to the proposed project. The project site is not within a historic district.

Indirect Impacts

The PEIR found that changes in height and bulk controls in the TCDP plan area could result in indirect impacts to historic architectural resources. Larger buildings of such a different scale compared to existing historic buildings in the project area could result in an adverse effect on the setting of those resources, particularly in or adjacent to historic districts. However, the PEIR determined that the impacts would be less than significant when considered in conjunction with other policies, including recognition and protection of historic resources, retention, and rehabilitation of significant resources, and the design review program and other processes implemented through Article 11 of the planning code.

As noted above, the proposed project would not include the demolition of historic structures at the project site. The existing building at 580 Howard Street (block 3721/lots 092-106),[31] which is located to the west of the bus bridge that abuts the project site to the southwest and was constructed in 1906, is within the boundaries of the Second and Howard Streets Historic District and is considered to be an individual historic resource and a contributing building to the district.[32,33] The existing building at 540 Howard Street, which abuts the project site to the east, is not a historical resource. Moreover, the project site and 540 Howard Street are not located within the adjacent Second and Howard Streets Historic District or the nearby New Montgomery Mission Second Street Conservation District (which has an eastern boundary that terminates at 191 Second Street [block 3721/lot 022], just west of 580 Howard Street). The project would not materially alter the physical characteristics of 580 Howard Street or other nearby historic resources such that their historical significance and/or potential consideration for inclusion in the California Register of Historic Resources would be affected. Moreover, the proposed project would not affect the integrity of the Second and Howard Streets Historic District and the New Montgomery Mission Second Street Conservation District as it is not located within these districts. Therefore, the project would result in less-than-significant indirect impacts.

Construction Impacts

Construction activity can generate vibration that can cause structural damage to nearby buildings. As described in the TCDP PEIR, construction activity would result in a potentially significant impact on historic and potentially historic buildings, such as the 580 Howard Street building. PEIR Mitigation Measures M-CP-5a: Construction Best Practices for Historical Resources and M-CP-5b: Construction Monitoring Program for Historical Resources were identified to reduce impacts to a less-than-significant level by requiring contractors to implement best-management practices during construction, as well as perform pre-construction surveys of historical resources within 125 feet of a project site.

The proposed project would require on-site excavation up to approximately 70 feet below grade. The use of heavy construction equipment would result in a temporary increase in localized vibration, which could result in structural damage to nearby potentially historic buildings, such as 580 Howard Street. If

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31 The TCDP PEIR states that 580 Howard is proposed to be demolished when construction of the Downtown Extension train tunnel commences.

32 San Francisco Property Information Map, *580 Howard Street.* Available at http://propertymap.sfplanning.org/, accessed September 6, 2018.

33 San Francisco Planning Department, *Transit Center District Plan and Transit Tower Final Environmental Impact Report Figure 7 Historic Resources pg. 33,* May 24, 2012.

structural damage were to occur, these activities would result in a potentially significant impact on historic buildings near the project site, including the 580 Howard Street building, which is located immediately to the west of the project site.[34] Therefore, the proposed project would apply PEIR Mitigation Measure M-CP-5a as **Project Mitigation Measure 1: Construction Best Practices for Historic Resources**, which would require the project sponsor to use all feasible means to avoid damage to adjacent and nearby historic buildings including staging of equipment and materials away from historic buildings, using techniques in demolition and construction activities that create minimum vibration, maintaining a buffer zone between heavy construction equipment and historical resource(s), and other construction best practices. The proposed project would also apply PEIR Mitigation Measures M-CP-5b as **Project Mitigation Measure 2: Construction Monitoring Program for Historic Resources**, which would require the project sponsor, working with a historic architect or qualified historic preservation professional, to develop a construction monitoring program, including preconstruction surveys of historic resource(s), monitoring of on-site vibration levels, conducting regular periodic inspections, and other measures to limit effects of construction vibration, and restoration of any changes to historic structures as a result of project construction. In combination, Project Mitigation Measures 1 and 2, which are provided in full starting on page 99, would reduce the potential for adverse impacts to nearby historic structures.

In conclusion, the proposed project would not result in significant impacts on historic architectural resources that were not identified in the TCDP PEIR, nor would it result in substantially more severe impacts than previously identified in the PEIR. Moreover, the proposed project would not contribute to any cumulative impacts on historic architectural resources.

Archeological Resources

The TCDP PEIR found that development under the TCDP could cause a substantial adverse change to the significance of archeological resources because the entire plan area could be considered generally sensitive for both prehistoric and historic-era archeological resources. The TCDP Archeological Resource Design and Treatment Plan (resource design and treatment plan) presented sensitivity assessments of five sites in the TCDP plan area, including the project site.[35] No prehistoric archaeological sites have been documented within the 524-550 Howard Street site, although two prehistoric sites (SFR-112 and SFR-135) and one historic-era site (SFR-119H) are located within the general vicinity of the project site. Due to development that has occurred at the project site, historic archeological potential is considered to be low.

PEIR Mitigation Measure M-CP-1: Subsequent Archaeological Testing Program was identified to ensure that projects developed within the TCDP area are subject to preliminary archeological review by planning department archaeologists. Based on the resource design and treatment plan, the in-house review would identify any data gaps and require additional investigations to make an archeological sensitivity assessment. Planning department archeologists completed an in-house review of the proposed project on June 15, 2017, and determined that it would be subject to requirements for an Archeological Testing Program (testing program). Consistent with PEIR Mitigation Measure M-CP-1, projects found to have

[34] There are three additional historical resources southeast of the project site across Howard Street, located at 543 Howard Street, 531 Howard Street and 527 Howard Street. These buildings are located within 125 feet of the project site. The New Montgomery, Mission & Second Historic District survey evaluation that considers these buildings are located at: http://sf-planning.org/sites/default/files/FileCenter/Documents/3861-DISTRICT_DPR_Transit_Center.pdf. Accessed September 6, 2018.

[35] San Francisco Planning Department, *Archaeological Research Design and Treatment Plan for the Transit Center District Plan Area, San Francisco, California*, prepared by Far Western Anthropological Research Group, Inc.; Past Forward, Inc.; and JRP Historical Consulting, LLC; February 2010.

archeological sensitivity are required to prepare and implement a testing program, and projects found to require data recovery necessitate preparation of an Archeological Data Recovery Plan (data recovery plan). An Archeological Monitoring Plan may also be required based on the outcome of the testing program and/or data recovery plan. The mitigation measure also states that any accidental discovery of human remains or potential associated funerary objects during soils-disturbing activity shall comply with all applicable laws.

As noted above, no prehistoric archeological sites have been documented within the project site. Given the project site's close proximity to two prehistoric sites and one historic-era site, PEIR Mitigation Measure M-CP-1 would apply to the proposed project as **Project Mitigation Measure 3: Subsequent Archeological Testing Program** (full text provided in the Mitigation Measures section below on page 100) which would require the project sponsor to retain the services of an archeological consultant from the Department Qualified Archeological Consultants List to develop and implement an archeological testing program and if required, be available to conduct an archeological monitoring and/or data recovery program. With its implementation, the impact associated with archeological resources would be reduced to a less-than-significant level. Thus, the proposed project would not result in significant impacts on archeological resources that were not identified in the TCDP PEIR, nor would it result in more severe impacts than previously identified in the PEIR.

Cumulative Analysis

As discussed above, the proposed project is not an individual historic resource and is not within a historic district. With respect to construction, the project-related construction activities have the potential to damage a nearby historic resource at 580 Howard Street. As discussed above, Project Mitigation Measure 1, Construction Best Practices for Historic Resources (implementing TCDP PEIR Mitigation Measure M-CP-5a) and Project Mitigation Measure 2, Construction Monitoring Program for Historic Resources (implementing TCDP PEIR Mitigation Measure M-CP-5b) would be implemented to reduce significant impacts on historic architectural resources to less than significant with mitigation. There are no other construction projects in proximity to these historic resources such that there would be a significant cumulative construction impact in combination with the project's construction. Therefore, the project would not contribute considerably to any cumulative historic resources impact.

The cumulative context for archeological resources and human remains is site specific and generally limited to the immediate construction area. For these reasons, the proposed project, in combination with cumulative projects, would not result in a cumulative impact on archeological resources or human remains.

Conclusion

Impacts to historic and archeological resources would be mitigated to less than significant levels with implementation of mitigation measures identified in the TCDP PEIR. The project sponsor has agreed to implement Project Mitigation Measures 1, 2, and 3. Therefore, the proposed project would not result in significant impacts on cultural resources that were not identified in the TCDP PEIR.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
4. TRIBAL CULTURAL RESOURCES—Would the project:				
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, or cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

For projects in San Francisco, based on the results of consultation between the City and County of San Francisco and Ohlone tribal groups, all archaeological resources of Native American origin are assumed to be potential tribal cultural resources. The preferred mitigation of impacts to such resources developed in consultation with Ohlone tribal groups is preservation in place or, where preservation is not feasible, development and implementation of archaeological and public interpretation plans for the resource, in consultation with local Native American tribes. As discussed in the Cultural Resources topic, the project is in close proximity to two prehistoric sites and one historic-era site, which may contain tribal cultural resources. Therefore, the project's proposed excavation to 70 feet below ground surface would result in a significant impact, should tribal cultural resources be encountered.

Identification of potential tribal cultural resources that would be affected by a project, followed by preservation and/or archaeological treatment and public interpretation, are within the scope of TCDP PEIR Mitigation Measure M-CP-1. Consistent with this measure, when a potential tribal cultural resource is found or suspected to be present on a project site, and where preservation is not feasible, archaeological treatment and interpretive plans would be developed and implemented in consultation with an Ohlone representative. With implementation of Project Mitigation Measure 3, Subsequent Archeological Testing Program, the proposed project would have a less-than-significant impact on tribal cultural resources.

Cumulative Analysis

The cumulative context for tribal cultural resources is site-specific and generally limited to the immediate construction area. For this reason, the proposed project, in combination with other cumulative projects, would not result in cumulative impacts to tribal cultural resources.

Conclusion

The proposed project's impact to tribal cultural resources would be mitigated to less-than-significant levels with the implementation Project Mitigation Measure 3, Archaeological Testing Program (implementing TCDP PEIR Mitigation Measure M-CP-1). Therefore, the proposed project would not result in significant impacts to tribal cultural resources that were not identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
5. TRANSPORTATION AND CIRCULATION—Would the project:				
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities?	☐	☐	☐	☒
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

The TCDP PEIR anticipated that growth associated with the zoning changes could result in significant impacts on transportation and circulation. The PEIR identified 23 transportation mitigation measures, including implementation of traffic management strategies, and traffic and transit improvements. Even with mitigation, however, the PEIR concluded that the significant adverse impacts on certain local intersections and transit, pedestrian, loading, and construction impacts would not be fully mitigated, and these impacts were identified as significant and unavoidable. Effects on emergency access were determined to be less than significant. A transportation impact study (TIS) was prepared for the proposed project to evaluate potential project-specific effects, and is summarized herein.[36]

It is noted that the PEIR, and transportation study prepared in support of the PEIR, presented traffic impact analysis based on intersection level of service (LOS) as defined by automobile delay, which at the time was San Francisco's approach for analysis of traffic impacts. However, on March 3, 2016, the Planning Commission adopted a new metric for evaluation of traffic impacts, vehicle miles traveled (VMT). The analysis of traffic impacts based on VMT, rather than LOS, is consistent with the direction in Senate Bill (SB) 743, approved in 2013. SB 743 requires the Governor's Office of Planning and Research to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts for

[36] Kittleson & Associates, Inc., *542-550 Howard Street (Transbay Parcel F) Transportation Impact Study*, September 6, 2018.

projects within transit priority areas.[37] The alternative criteria to be promulgated must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses" (CEQA section 21099(b)(1)); added by SB 743). OPR is in the process of revising the CEQA Guidelines to accommodate SB 743 (a draft for adoption by the California Natural Resources Agency was released in November 2017), and the city has elected to adopt the state's proposed approach.

Because the PEIR analysis was based on LOS, and given that LOS has subsequently been replaced by VMT as the city's traffic impact metric, this document presents an analysis of CEQA impacts based upon the new VMT standard, but also presents a LOS analysis for informational purposes. Mitigation measures in the PEIR that identified improvements intended to improve LOS are no longer considered applicable.

PEIR Findings

The PEIR found that traffic growth resulting from Plan implementation, including proposed changes to the street system, would adversely affect local intersection operation and have a significant and unavoidable impact on the circulation system. The PEIR identified 13 mitigation measures (M-TR-1a through M-TR-1m involving network management by SFMTA) that would reduce specific impacts to the circulation system; however, the impact remained significant and unavoidable. The mitigation measures that would otherwise be applicable to the proposed project are described below; however, as noted above, these measures are no longer applicable under the new VMT standard.

The PEIR determined that implementation of the Plan would also result in a considerable contribution to the congested operations of the Fourth/Harrison Streets and First/Harrison Streets freeway on-ramps, resulting in a significant and unavoidable impact on freeway ramp operations. No feasible mitigation measures were identified that could reduce this impact.

The TCDP PEIR found that growth associated with implementation of the TCDP would generate a substantial increase in transit demand that would result in significant and unavoidable impacts to the transit system due to lack of capacity to accommodate the increased demand, resulting in unacceptable levels of transit service and a substantial increase in delays or operating costs. The TCDP PEIR identified five mitigation measures (M-TR-3a through M-TR-3e) to reduce these impacts, including installation and operation of transit-only and queue-jump lanes, exclusive San Francisco Municipal Railway (Muni) use of Mission Street boarding islands, transit improvements on streets within the plan area, and two measures to provide increased transit funding. However, PEIR Mitigation Measures M-TR-3a through M-TR-3e were identified as being of uncertain feasibility and/or effectiveness or would not fully mitigate impacts; accordingly, effects on transit were determined to be significant and unavoidable. These measures are not applicable to the proposed project, as they are Plan-level mitigations to be implemented by city and County agencies. The San Francisco Municipal Transportation Authority (SFMTA) is implementing the Transit Effectiveness Project (TEP), which was approved by the SFMTA Board of Directors in March 2014. The TEP (now called Muni Forward) includes system-wide review, evaluation, and recommendations to improve service and increase transportation efficiency.

[37] Transit priority areas are defined in CEQA section 21064.3 as areas within one-half mile of a major transit stop, which is a rail transit station, a ferry terminal served by bus or rail transit, or the intersection of two or more bus routes with a peak-period service frequencies 15 minutes or less. Virtually the entire City of San Francisco is within a transit priority area, save Twin Peaks, Diamond Heights and its southwest slope, most of the Presidio, and small areas of the Sunset, Parkside, Excelsior, and Hunters Point.

The PEIR concluded that the increased pedestrian activity that would result from TCDP implementation would degrade the level of service at sidewalks, street corners, and crosswalks within the TCDP plan area and would result in a significant and unavoidable impact. PEIR Mitigation Measure M-TR-4: Widen Crosswalks was identified, whereby San Francisco Municipal Transportation Agency (SFMTA) would widen crosswalks in the plan area; however, the impact remained significant and unavoidable. In addition, the TCDP PEIR concluded that the development of the large projects proposed in the plan area, as well as lack of capacity to accommodate loading demands, would create potentially hazardous conditions for pedestrians, bicycles, traffic, and transit, resulting in significant and unavoidable impacts. PEIR Mitigation Measures M-TR-5 Garage/Loading Dock Attendant, M-TR-7a Garage/Loading Dock Attendant, and M-TR-7b Augmentation of On-Street Loading Space Supply were identified to reduce impacts by requiring some projects to employ a parking garage and/or loading dock attendant, requiring some projects to develop a loading dock management plan, and encouraging SFMTA to increase the supply of on-street loading spaces; however, these impacts remained significant and unavoidable.[38]

Finally, the PEIR determined that construction of individual projects within the TCDP plan area, with ongoing construction of the Transit Center, could disrupt nearby streets, transit services, and pedestrian and bicycle circulation. Mitigation Measure M-TR-9 was identified to reduce impacts by requiring individual development projects within the plan area to develop a construction management plan that would: restrict construction truck movements to times outside of weekday a.m. and p.m. peak periods; optimize truck routes; encourage construction employees to take transit; and require the project sponsor to coordinate construction activities with surrounding projects through creation of a construction phasing and operations plan. Even with implementation of PEIR Mitigation Measure M-TR-9, the impact was considered significant and unavoidable.

The TCDP plan area, including the project site, is not located within an airport land use plan area, or in the vicinity of a private airstrip. Therefore, the Community Plan Exemption Checklist topic 4c is not applicable.

Vehicle Miles Traveled (VMT) Analysis

Many factors affect travel behavior. These factors include density, diversity of land uses, design of the transportation network, access to regional destinations, distance to high-quality transit, development scale, demographics, and transportation demand management. Typically, low-density development at great distance from other land uses, located in areas with poor access to non-private vehicular modes of travel, generate more automobile travel compared to development located in urban areas, where a higher density, mix of land uses, and travel options other than private vehicles are available.

Given these travel behavior factors, San Francisco has a lower VMT ratio than the nine-county San Francisco Bay Area region. In addition, some areas of the city have lower VMT ratios than other areas of the city. These areas of the city can be expressed geographically through transportation analysis zones. Transportation analysis zones are used in transportation planning models for transportation analysis and other planning purposes. The zones vary in size from single city blocks in the downtown core, multiple blocks in outer neighborhoods, to even larger zones in historically industrial areas like the Hunters Point Shipyard.

[38] PEIR Mitigation Measures M-TR-4 and TR-7b are not applicable to the proposed project since they are Plan-level mitigation that could be implemented by SFMTA.

The San Francisco County Transportation Authority (Transportation Authority) uses the San Francisco Chained Activity Model Process (SF-CHAMP) to estimate VMT by private automobiles and taxis for different land use types. Travel behavior in SF-CHAMP is calibrated based on observed behavior from the California Household Travel Survey 2010-2012, Census data regarding automobile ownership rates and county-to-county worker flows, and observed vehicle counts and transit boardings. SF-CHAMP uses a synthetic population, which is a set of individual actors that represents the Bay Area's actual population, who make simulated travel decisions for a complete day. The Transportation Authority uses tour-based analysis for office and residential uses, which examines the entire chain of trips over the course of a day, not just trips to and from the project. For retail uses, the Transportation Authority uses trip-based analysis, which counts VMT from individual trips to and from the project (as opposed to entire chain of trips). A trip-based approach, as opposed to a tour-based approach, is necessary for retail projects because a tour is likely to consist of trips stopping in multiple locations, and the summarizing of tour VMT to each location would over-estimate VMT. [39,40]

A project would have a significant effect on the environment if it would cause substantial additional VMT. The State Office of Planning and Research's (OPR) Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA ("Proposed Transportation Impact Guidelines") recommends screening criteria to identify types, characteristics, or locations of projects that would not result in significant impacts to VMT. If a project meets screening criteria, then it is presumed that VMT impacts would be less than significant for the project and a detailed VMT analysis is not required.

The proposed project includes residential, hotel, office, and retail uses, and special events would be held in the hotel facilities.[41] For residential development, the existing regional average daily VMT per capita is 17.2.[42] For office development, regional average daily work-related VMT per employee is 19.1. For retail development, regional average daily retail VMT per employee is 14.9.[43] As trips for tourist hotels typically function similarly to residential, tourist hotels are generally treated as a "residential" use for the purpose of this VMT analysis. Average daily VMT for all three land uses is projected to decrease in future 2040 cumulative conditions. Refer to Table 3: Daily Vehicle Miles Traveled, below, which includes the transportation analysis zone (TAZ) in which the project site is located, TAZ 741.

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39 To state another way: a tour-based assessment of VMT at a retail site would consider the VMT for all trips in the tour, for any tour with a stop at the retail site. If a single tour stops at two retail locations, for example, a coffee shop on the way to work and a restaurant on the way back home, then both retail locations would be allotted the total tour VMT. A trip-based approach allows us to apportion all retail-related VMT to retail sites without double-counting.

40 San Francisco Planning Department, *Executive Summary: Resolution Modifying Transportation Impact Analysis, Appendix F, Attachment A*, March 3, 2016.

41 The proposed project could include 10 large conference events, 50 small conference / gala events, and 90 meetings (Kittleson & Associates, Inc., *542-550 Howard Street (Transbay Parcel F) Transportation Impact Study*, September 6, 2018).

42 Includes the VMT generated by the households in the development and averaged across the household population to determine VMT per capita.

43 Retail travel is not explicitly captured in SF-CHAMP, rather, there is a generic "Other" purpose which includes retail shopping, medical appointments, visiting friends or family, and all other non-work, non-school tours. The retail efficiency metric captures all of the "Other" purpose travel generated by Bay Area households. The denominator of employment (including retail; cultural, institutional, and educational; and medical employment; school enrollment, and number of households) represents the size, or attraction, of the zone for this type of "Other" purpose travel.

Table 3: Daily Vehicle Miles Traveled

Land Use	Existing			Cumulative 2040		
	Bay Area Regional Average	Bay Area Regional Average minus 15%	TAZ 741	Bay Area Regional Average	Bay Area Regional Average minus 15%	TAZ 741
Households (Residential)	17.2	14.6	2.8	16.1	13.7	2.1
Employment (Office)	19.1	16.2	7.9	17.0	14.5	6.2
Employment (Retail)	14.9	12.6	9.2	14.6	12.4	8.3

The projected 2040 residential and job growth estimates are prepared by Association and Bay Area Governments and adjusted by the San Francisco Planning Department. The land use scenario uses projections from the Sustainable Communities Strategy: Jobs-Housing Connections from Plan Bay Area.[44]

A project would have a significant effect on the environment if it would cause substantial additional VMT. The State Office of Planning and Research's (OPR) *Revised Proposal on Updates to the CEQA Guidelines on Evaluating Transportation Impacts in CEQA* ("proposed transportation impact guidelines") recommends screening criteria to identify types, characteristics, or locations of projects that would not result in significant impacts to VMT. If a project meets one of the three screening criteria provided (Map-Based Screening, Small Projects, and Proximity to Transit Stations), then it is presumed that VMT impacts would be less than significant for the project and a detailed VMT analysis is not required. Map-Based Screening is used to determine if a project site is located within a transportation analysis zone that exhibits low levels of VMT; Small Projects are projects that would generate fewer than 100 vehicle trips per day; and the Proximity to Transit Stations criterion includes projects that are within a half mile of an existing major transit stop, have a floor area ratio of greater than or equal to 0.75, vehicle parking that is less than or equal to that required or allowed by the planning code without conditional use authorization, and are consistent with the applicable Sustainable Communities Strategy.

As mentioned above, existing average daily VMT per capita for residential uses is 2.8 for the transportation analysis zone the project site is located in, 741. This is 84 percent below the existing regional average daily VMT per capita of 17.2. Also, as shown in Table 3 above, existing average daily VMT per employee for office uses in TAZ 741 is 7.9 and, for retail uses, is 9.2. These employee-based VMT numbers are 59 percent and 38 percent, respectively, below the existing regional averages of 19.1 and 14.9. Given the project site is located in an area where existing VMT is more than 15 percent below the existing regional average, the proposed project's residential, hotel, office, and retail uses would not

[44] Manoj Madhavan and Chris Espiritu, *San Francisco Planning Department, Memo to Transportation Team, "CEQA – 2040 SF-CHAMP Modeling Methodology Assumptions"*, April 25, 2016.

result in substantial additional VMT and impacts would be less-than-significant.[45] Furthermore, the project site meets the Proximity to Transit Stations screening criterion, which also indicates the proposed project's residential uses would not cause substantial additional VMT.[46]

San Francisco 2040 cumulative conditions were projected using a SF-CHAMP model run, using the same methodology as outlined for existing conditions, but includes residential and job growth estimates and reasonably foreseeable transportation investments through 2040. Projected 2040 average daily VMT per capita for residential uses in TAZ 741 is 2.1. This is 87 percent below the projected 2040 regional average daily VMT per capita of 16.1. Projected 2040 average daily VMT numbers per employee for office and retail uses in TAZ 741 are 6.2 and 8.3, respectively. These figures are 64 percent and 43 percent, respectively, below the projected 2040 regional average daily VMT per employee of 17.0 and 14.6, respectively. Given the project site is located in an area where VMT would be greater than 15 percent below the projected 2040 regional average, the proposed project's residential, hotel, office, and retail uses would not result in substantial additional VMT. Therefore, the proposed project's residential, hotel, office, and retail uses would not contribute considerably to any substantial cumulative increase in VMT.

Trip Generation

The proposed project involves the construction of a new mixed use tower with approximately 165 residential units, 189 hotel rooms, 274,000 gsf of office uses, and 8,200 sf of retail space. Localized trip generation of the proposed project was calculated using a trip-based analysis and information in the *2002 Transportation Impacts Analysis Guidelines for Environmental Review* (SF Guidelines) developed by the San Francisco Planning Department.[47] The proposed project would generate an estimated 14,596 person trips (inbound and outbound) on a weekday daily basis, consisting of 4,590 person trips by auto, 4,445 transit trips, 4,450 walk trips and 1,111 trips by other modes. During the p.m. peak hour, the proposed project would generate an estimated 1,733 person trips, consisting of 537 person trips by auto, 548 transit trips, 521 walk trips and 127 trips by other modes. The project would generate an estimated 2,699 daily vehicle trips and 341 p.m. peak hour vehicle trips.

Transit

The project site is located within a quarter mile of many local transit lines including Muni lines 2, 3, 5, 5R, 6, 7, 76X, 7R, 7X, 8, 8AX, 8BX, 9, 9R, 10, 12, 14, 14R, 14X, 21, 25, 30, 30X, 31, 38, 38R, 41, 45, 81X, 82X, F, J, KT, L, M, N, and NX. The proposed project would generate 548 daily transit trips, including 135 inbound and 413 outbound during the p.m. peak hour. Transit trips to and from the site would use the nearby Muni bus and light rail lines for local trips, and the regional lines (potentially with transfers to/from Muni) for trips outside San Francisco. Based on the transit trip distribution, it was estimated that of the 413 outbound trips (outbound from the project site and downtown) during the weekday p.m. peak hour, approximately 235 trips would be local trips, 178 would be regional trips, and about 55 of the regional trips would transfer from Muni local service to a regional provider. Transit trips to and from the project site would likely use the nearby Muni bus and light rail lines for local trips, and BART, AC Transit, Golden Gate Transit, Caltrain, and SamTrans for trips outside San Francisco. The project would increase

[45] Hotel uses are evaluated as residential uses in the VMT screening analysis, since hotel trips typically function similarly to residential trips.

[46] San Francisco Planning Department. *Eligibility Checklist: CEQA section 21099 – Modernization of Transportation Analysis for 542-550 Howard Street*, August 14, 2018.

[47] Kittleson & Associates, Inc., *542-550 Howard Street (Transbay Parcel F) Transportation Impact Study*, September 6, 2018.

ridership on the Muni screenlines and would directly cause the Sutter/Clement corridor and Fulton/Hayes (Northwest screenline) to exceed the 85 percent capacity utilization threshold. All other screenlines and corridors would continue to operate under the threshold. The project would add 14 riders and 41 riders, respectively, of overall ridership on the Sutter/Clement and Fulton/Hayes corridors. The increase in transit ridership generated by the project represents less than five percent of the overall ridership on corridors that currently operate over the 85 percent capacity utilization threshold under existing conditions and would continue to do so under existing plus project conditions. As a result, the project would result in less-than-significant impacts to capacity utilization on Muni's Downtown screenlines during the weekday p.m. peak hour. With respect to regional transit, all screenlines and operators would continue to operate under the 100 percent capacity utilization threshold during the weekday PM peak hour, except the BART East Bay service and the East Bay screenline. However, the increase in project ridership would represent less than 1 percent of the overall ridership on the screenline and would result in less-than-significant impacts to ridership and capacity utilization for regional transit operators during the weekday p.m. peak hour.

Bicycles

The project site is served by multiple bikeway facilities, including the bike lane on Howard Street.[48] The project would result in approximately 127 "other" person-trips during the weekday p.m. peak hour, which all would be assumed to be bicycle trips. The project would provide a total of 177 Class 1 bicycle parking spaces in a bicycle storage facility on level 4 of the building, 16 Class 2 bicycle parking spaces would be located near the Natoma Street pedestrian entrances to the building, and 4 Class 2 bicycle parking spaces in front of the Howard Street office lobby. While the project would increase the amount of bicycle traffic along streets in the vicinity of the project site, the addition of 127 p.m. peak hour bicycle trips would not be substantial enough to affect overall bicycle circulation or the operations of bikeway facilities. There would be sufficient capacity on existing bikeways to handle the incremental increase in bicyclists generated by the proposed development. As a result, the project would result in less-than-significant impacts to general bicycle conditions as a result of increased bicycle traffic.

Motorists accessing the proposed garage would enter and exit from First Street/Natoma Street, both of which do not have bicycle facilities. However, the project proposes a passenger loading zone and driveway to the freight loading dock on Howard Street, which does have dedicated bicycle lanes on the north side of the street, along the project's frontage. Given that there is a dedicated bicycle lane on Howard Street, the presence of a passenger loading zone and loading dock driveway would increase potential for conflicts as a result of project-related vehicles crossing the bike lane. Although the proposed project would increase the number of vehicles crossing the bike lane, it would not create hazardous conditions for bicyclists (e.g., trucks blocking the bike lane) or interfere with accessibility to the site and adjoining areas because of low approaching driver speed,[49] and adequate sight distance and turning movements. While there would be less-than-significant effects with respect to project-related vehicle-bicycle conflicts, **Project Improvement Measure 1: Install Conflict Striping** has been developed for the proposed project to increase visibility of the driveway crossing and passenger loading zone. Implementation of Project Improvement Measure 1 would help raise awareness for both bicyclists and motorists to potential conflict areas and further minimize any less than significant effects as a result of

[48] The bike lane is located on the lane farthest away from the project site.

[49] The speed limit on Howard Street is 25 mile per hour.

vehicles accessing the passenger loading zone and loading dock driveway on Howard Street. The full text of Project Improvement Measure 1 is provided beginning on page 109.

Pedestrians

The project would generate approximately 1,069 daily pedestrian trips, which includes 521 walk-only person-trips and 548 transit person-trips. The proposed project would include a 9 foot wide pedestrian and bicycle path on the western side of the project side and includes an elevated 22-foot-wide pedestrian bridge to the Transbay Transit Center on level 5. The pedestrian bridge would be located on level 5 of the building and would be accessible from a public elevator located within the shared public lobby on the Natoma Street frontage. The project does not propose any sidewalk widening, which would continue to feature sidewalk widths measuring approximately 5 feet on Natoma Street and 12 feet on Howard Street. The project would generate pedestrian activity along both Howard and Natoma streets and First and Second streets to access the project site. Pedestrians may also travel through the TTC and utilize the Shaw Alley pedestrian-only connection to/from destinations in the north. Pedestrian trips would be distributed across multiple ground-floor entrances/exits to the building as well as the pedestrian path and proposed pedestrian bridge to the TTC located on level 5. Despite the overall reduction in pedestrian space related to the proposed project's roadway extension and cul-de-sac on Natoma Street, given the distribution of project-generated pedestrian trips across the network, and ADA compliance, the incremental increase in pedestrians generated by the proposed project would not result in overcrowding on individual routes of travel for people walking.

Motorists accessing the proposed garage would enter and exit from First Street and would need to cross the west crosswalk at the intersection of First Street/Natoma Street, which has high pedestrian volumes during the peak periods. For both inbound and outbound movements, vehicles would need to wait for a gap in pedestrian traffic. If few or only short gaps were available, there would be a potential issue with drivers forcing their way through the pedestrian traffic in order to make the right-turn movements. Given the currently low volume of vehicles making this right-turn movement (25 right turns during the weekday PM peak hour), the addition of project-related vehicle trips (212 right turns) would not create substantial hazardous conditions or reductions in pedestrian accessibility.

As discussed in more detail in the project description, the proposed project's parking garage and valet drop-off and pick-up zone would be located at the porte cochère and cul-de-sac on Natoma Street. There would be capacity for up to five cars to queue in the porte cochère and cul-de-sac and the use of valet service would help manage vehicle parking and passenger loading activities on Natoma Street. Natoma Street has a curb-to-curb width of 36 feet and would have sufficient width to allow vehicle traffic to bypass any temporary queuing in the curbside lane. However, the frequent flow of vehicles between Natoma Street and the car elevator would disrupt the flow of people walking and biking along the Natoma Street south sidewalk. As such, valet operations on Natoma Street would create safety hazards and accessibility issues for people walking and biking. The proposed project would result in a significant pedestrian impact related to hazards and accessibility from vehicles accessing the garage on Natoma Street. Implementation of **Project Mitigation Measure 4: Garage/Loading Dock Attendant**, which implements PEIR Mitigation Measure M-TR-5, would reduce this impact related to valet operations and passenger loading on Natoma Street to less-than-significant levels by minimizing or eliminating conflicts between vehicles entering and exiting the porte cochère and car elevator and pedestrians traveling along Natoma Street. To further minimize effects on pedestrian conditions, **Project Improvement Measure 2: Queue Abatement** would be implemented to lessen the effects on pedestrians by reducing the potential

for queues to develop and block path of travel for people walking along Natoma Street. This improvement measure is provided in full beginning on page 109.

Loading

Freight Loading

The proposed project would provide four off-street freight loading spaces (approximately 30 feet long, 10 feet wide, with at least 14 feet vertical clearance) off Howard Street. The proposed project would generate about 125 daily service/delivery vehicle trips, resulting in demand for six loading spaces during the average hour and eight loading spaces during the peak hour of loading activities. The supply of loading spaces proposed by the project would fall short of the Planning Code section 152 requirement and the estimated average and peak hour loading demand.

Given the nature of freight loading activities typically associated with these types of uses proposed onsite, it is expected that most demand would consist of smaller vehicles. These activities would take place on a regular basis and would likely not require extended occupancy of the dock, allowing for relatively easy scheduling and coordination. Given these activities would be conducted using smaller delivery vehicles, they would also be flexible and capable of utilizing nearby on-street loading spaces along Howard Street[50] in the event that the loading dock is occupied.

Only one truck can utilize the turn table at one time. While there is sufficient space for up to one truck to queue in the loading dock driveway, if multiple trucks arrived simultaneously there is potential for queues to spill back across the Howard Street sidewalk and bicycle lane. Additionally, if the truck turntable malfunctions, trucks would not be able to access the loading dock. Without access to the four freight spaces in the loading dock, there is potential for loading demand to exceed supply and truck drivers may choose to double park in the travel lane, on-street passenger loading zone, bicycle facility or queue onto the sidewalk along the Howard Street frontage. Loading dock operations along Howard Street under these conditions would not be met resulting in potential hazards for pedestrians who would cross the sidewalk and for bicyclists traveling in the bike lane. Therefore, the proposed project would result in a significant loading impact due to the creation of hazardous conditions to pedestrians and bicyclists. Implementation of **Project Mitigation Measure 4: Garage/Loading Dock Attendant**, which implements PEIR Mitigation Measure M-TR-5 that ensures building management employs attendant(s) for the project building's garage to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk, and **Project Mitigation Measure 5: Loading Dock Management**, which implements PEIR Mitigation Measure M-TR-7a, which ensures there is a plan for active management and maintenance of the project building's loading dock and truck turntable, would reduce this impact related to freight loading to less-than-significant levels by minimizing or eliminating any conflicts between trucks entering and exiting the loading dock and pedestrians and bicyclists traveling along Howard Street.

Tour Bus Loading

The proposed project would provide 108 feet of white curb space along the project's Howard Street frontage. This white curb space could be used to accommodate up to two 40- or 45-foot tour bus loading

[50] There are currently six commercial loading spaces provided on Howard Street between First Street and Second Street including two metered spaces at 580 Howard Street, 1 metered space at 540 Howard Street, 1 metered space at 591 Howard Street, and 2 metered spaces at 527 Howard Street.

for the hotel on an as-needed basis. Given the size and nature of the proposed hotel, the demand for tour bus loading spaces is not expected to exceed more than one space on a regular basis.

As noted earlier in this section, in recognition of the fact that site constraints in C-3 Districts may make provision of required off-street freight and tour bus loading spaces impractical or undesirable, a reduction in or waiver of the provision of freight loading and service vehicle spaces for uses in C-3-0(SD) district may be permitted in accordance with the provisions of San Francisco Planning Code section 309. The proposed project would need to seek a reduction in or waiver from planning code requirements. Tour bus loading activities could be accommodated within proposed on-street loading facilities. However, there is no designated tour bus loading space near the project site. Therefore, the proposed project would result in a significant impact related to tour bus loading. As such, **Project Mitigation Measure 4: Garage/Loading Dock Attendant**, which implements PEIR Mitigation Measure M-TR-5 that ensures building management employs attendant(s) for the project building's garage to direct tour buses entering and exiting the loading zone and avoid any safety-related conflicts with pedestrians and bicyclists along Howard Street and **Project Mitigation Measure 5: Loading Dock Management**, which implements PEIR Mitigation Measure TR-7a, that ensures there is a plan for active management and maintenance of the project building's loading dock and truck turntable, would be applicable to the proposed project (full text provided in the "Mitigation Measures" section below, beginning on page 103). Implementation of Project Mitigation Measures 4 and 5 would reduce this impact related to tour bus loading to less-than-significant levels by managing tour bus activity and minimizing or eliminating any conflicts between tour buses entering and exiting the loading zone and passenger and freight vehicles and people walking and bicycling along Howard Street. With implementation of these mitigation measures, the impact related to tour bus loading would be reduced to a less-than-significant impact level.

Passenger Loading

The project proposes to convert 108 linear feet of curb on the Howard Street frontage to provide a new white curb passenger loading zone associated with all uses. Residential move-in/move-out activities could occur on on-street parking spaces as permitted by SFMTA. The passenger loading zone would be created through the reduction and reconstruction of the existing curb cut and restriping of existing curb. The project would also allow passenger drop-off and pick-up along Natoma Street. The elimination of existing curb cuts, construction of new curb cuts, and conversion of curb space to color curb, would be subject to the review and approval of SFMTA.

There would be capacity for up to five cars to queue in the proposed porte cochère on Natoma Street and the use of valet service would help manage vehicle parking and passenger loading activities and reduce potential for vehicle conflicts. Vehicles can maneuver around the cul-de-sac and into/out of the car elevator within the right-of-way and without encroaching onto sidewalks or opposing travel lanes. The proposed project would generate a peak hour passenger loading demand of about five vehicles. The proposed on-street loading zones on Howard Street and the proposed porte cochère on Natoma Street could accommodate the passenger loading demand generated by the project. However, given that the proposed project's supply of off-street freight loading spaces would fall short of demand, smaller delivery vehicles may utilize the on-street white loading zone if the loading dock is occupied and tour bus loading may also utilize the on-street passenger loading zone on Howard Street. Therefore, the on-street loading zone may be fully occupied and people attempting to access the loading zone could double-park, temporarily blocking the bicycle lane or travel lane creating hazardous loading conditions for bicyclists and vehicles. As described in the Project Description, the proposed project would host a

number of events of varying attendance levels throughout the year. Passenger loading demand is expected to increase on event days as some attendees would be anticipated to stay off-site and travel to and from the hotel on event days.

While the proposed loading zones would generally accommodate project-generated passenger loading activity, there is potential for the combination of spillover of freight loading demand and tour bus demand to exceed supply, which would result in a significant impact related to passenger loading. Therefore, TCDP PEIR Mitigation Measure TR-5: Garage/Loading Dock Attendant that ensures building management employs attendant(s) for the project building's garage to direct vehicles entering and exiting the project building's garage and actively manage vehicle traffic in the passenger loading zone, and avoid any safety-related conflicts with pedestrians and bicyclists along Howard Street and TCDP PEIR Mitigation Measure TR-7a: Loading Dock Management that ensures there is a plan for active management and maintenance of the project building's loading dock and truck turntable would be applicable. These mitigation measures would be applied as Project Mitigation Measure 4 and Project Mitigation Measure 5 and would reduce this impact to less-than-significant levels by managing passenger loading supply and minimizing or eliminating the number of loading vehicles interfering with pedestrian accessibility on Natoma Street or blocking or double-parking the Howard Street bike lane.

Emergency Vehicles

Emergency vehicle access to the project site would be provided from Natoma and Howard streets. Emergency vehicles would also be allowed to pass through the pedestrian plaza on Natoma Street to access the project site from Second Street, which includes removable bollards.[51] The nearest SFFD fire station, Station 1, is located at 935 Folsom Street between Fifth and Sixth streets, approximately 0.9 miles west of the project site. The next nearest SFFD fire station, Station 8 is located at 36 Bluxome Street, on the east corner of Folsom Street/Falmouth Street, approximately 1.1 miles southwest of the project site. All streets that comprise the route from the fire stations to the project site are sufficiently wide enough to provide adequate emergency vehicle access to the site. Some emergency vehicles such as ladder trucks may experience some challenges negotiating the cul-de-sac on Natoma Street. A ladder truck could complete the turnaround maneuver with a three-point turn. Alternatively, with the removal of three bollards, SFFD ladder trucks could continue through on Natoma Street to and from Second Street. As such, these larger vehicles would be provided adequate emergency access. Therefore, the proposed project would have a less-than-significant impact to emergency vehicle access.

Construction

Detailed plans for construction of the proposed project have not been finalized. However, it is anticipated that construction would take about 45 months to complete and would occur Monday through Friday from 7:00 a.m. to 8:00 p.m. Saturday work would occur from 8:00 a.m. to 4:00 p.m. on an as-needed basis, in compliance with the San Francisco Noise Ordinance and permit conditions. (Any nighttime work, such as for a multi-hour continuous concrete foundation pour, would require advance approval from the Department of Public Works.)

Construction staging would occur primarily within the confines of the project site and using portions of the frontage along both Howard and Natoma streets. Parking lane and sidewalk closure would be needed

[51] The pneumatic automatic retractable bollards would be integrated with an access control option, such as a key system, guard operated, proximity card, or other system/software.

on Howard Street for the duration of construction. The sidewalk and bicycle lane would be rerouted to the perimeter of the parking lane. On Natoma Street, the southern portion of the promenade and street adjacent to the site would be closed with pedestrian access through Natoma Street to remain open on the northern half of the street. For sidewalks along these closed frontage portions, signage and pedestrian protection would be erected, as appropriate. Closures would be coordinated with the city in order to minimize the impacts on local traffic. The construction logistics plan, to be prepared by the contractor, would be reviewed by the SFMTA and would address issues of circulation (traffic, pedestrians, and bicycle), safety, parking and other project construction in the area. Based on review of the construction logistics plan, the project may be required to consult with SFMTA Muni Operations prior to construction to review potential effects to nearby transit operations.

Based on information available from projects of a similar size, it is anticipated that 30 to 40 daily round-trip truck trips and 30 to 40 daily round-trip construction worker vehicle trips would be generated during any single phase of the construction period. Throughout the construction period, there would be a flow of construction-related traffic into and out of the site. Construction trucks would be required to use designated freight traffic routes to access the construction site. The *San Francisco General Plan* identifies several freight traffic routes in the vicinity of the construction site, including I-80 and major arterials (Howard Street, Folsom Street, Fremont Street, First Street, and Third Street).

The impact of construction truck traffic would be a temporary lessening of the capacities on surrounding roadways and truck routes, as well as connecting local streets, due to the slower movement and larger turning radii of trucks. Construction truck traffic could result in minor congestion and conflicts with vehicles, transit, pedestrians and bicyclists. While construction duration could last approximately 45 months, potential impacts would be considered less than significant due to their temporary and intermittent nature and due to the fact that the majority of construction activity would occur during off-peak hours when traffic volumes are minimal and potential for conflicts is low.

Parking demand generated by construction workers' personal vehicles could be accommodated by existing on-street and off-street public parking facilities in the area. Additionally, given the project's location in close proximity to high-quality local and regional transit services, a portion of construction workers would be expected to arrive via public transit. Construction workers would be encouraged to commute via sustainable means of transportation, including public transit, ridesharing, bicycling, and walking.

Cumulative Analysis

Transit

Under cumulative conditions, a number of Muni corridors and screenlines would have ridership in excess of Muni's standard and, as was identified in the PEIR, this would be a significant impact. Under cumulative conditions, the California, Sutter/Clement, Fulton/Hayes, Mission, and San Bruno/Bayshore corridors would operate over the 85 percent capacity threshold. The proposed project would add zero riders to the California corridor, 14 riders to the Sutter/Clement corridor, 41 riders to the Fulton/Hayes corridor, 15 riders to the Mission corridor, and 10 riders to the San Bruno/Bayshore corridor. Transit riders generated by the proposed project would represent less than three percent of overall ridership on these corridors. Because the proposed project would not cause any of the screenlines to exceed the 85 percent capacity threshold or cause more than a 5 percent capacity utilization increase on a screenline that would exceed the 85 percent capacity utilization under cumulative conditions, project contribution to cumulative local transit impacts would be less than significant. With respect to regional transit, the transit

riders generated by the project would account for a relatively small portion of the overall cumulative ridership totals including less than one percent of the overall ridership on BART's East Bay service. Thus, the project would not be cumulatively considerable with respect to cumulative impacts on regional transit ridership and capacity utilization during the weekday p.m. peak hour.

The project would not result in relocation or removal of any existing bus stops or other changes that would alter transit service. Additionally, while the project would add traffic to the surrounding roadways, project-generated vehicle, bicycle, and pedestrian trips would not substantially affect transit operations on nearby routes. The proposed project would also not contribute considerably to cumulative transit conditions and thus, would not result in any significant cumulative transit impacts.

Bicycles

The proposed project would not contribute considerably to cumulative bicycle conditions and therefore, would not result in any significant cumulative bicycle impacts.

Pedestrians

As discussed above, Project Mitigation Measure 4, Garage/Loading Dock Attendant (implementing TCDP PEIR Mitigation Measure M-TR-5) would reduce a significant pedestrian impact related to hazards and accessibility from vehicles accessing the garage on Natoma Street to less than significant with mitigation. Additionally, Project Improvement Measure 2, Queue Abatement, would be implemented to lessen the effects on pedestrians along Natoma Street. The proposed project would not contribute considerably to cumulative pedestrian conditions and therefore, would not result in any significant cumulative pedestrian impacts.

Loading

There would be a general increase in vehicle traffic and freight loading demand associated with planned and reasonably foreseeable development in the project area. As discussed in the TCDP EIR, failure to provide an adequate supply of off-street freight loading spaces, combined with the net loss of on-street commercial loading spaces in the plan area, could result in illegal parking by delivery/service vehicles and potential hazards for pedestrians traveling along the sidewalk, bicyclists traveling in the bike lane, and transit. Under cumulative conditions, the proposed project's supply of off-street freight loading spaces would fall short of demand and as a result, the proposed project, in combination with planned and reasonably foreseeable development, would result in significant impacts to commercial loading activities. Implementation of Project Mitigation Measure 5, Loading Dock Management, would reduce cumulative impact related to freight loading to a less-than-significant level by minimizing or eliminating any conflicts between trucks entering and exiting the loading dock and pedestrians and bicyclists traveling along Howard Street.

There would be a general increase in tour bus loading demand associated with planned and reasonably foreseeable developments in the area. Given the size and nature of the proposed project and other buildings in the area, the demand for tour bus loading spaces would exceed supply. The proposed project would provide 108 feet of white curb space along the project's Howard Street frontage, which would be used for both tour bus loading and passenger loading. This white curb space could be used to accommodate up to two 40- or 45-foot tour buses loading for the hotel on an as-needed basis. The proposed project's supply of tour bus loading spaces would fall short of supply and as a result, the proposed project, in combination with demand from planned and reasonably foreseeable development would result in significant impacts to tour bus loading activities under cumulative conditions. With

implementation of Project Mitigation Measures 4, Garage/Loading Attendant, and 5, Loading Dock Management, discussed above, the impact related to tour bus loading would be reduced to a less-than-significant impact level.

There would be a general increase in passenger loading demand associated with planned and reasonably foreseeable developments in the area. As discussed in the TCDP EIR, failure to provide an adequate supply of off-street loading spaces, combined with the net loss of on-street loading spaces under the Public Realm Plan, (e.g., Folsom/Howard Streetscape changes), could result in illegal parking by delivery/service vehicles and potential hazards. As demand increases, there would also be an increased potential for double-parking or stopping in travel lanes, bike lanes, or sidewalks. Therefore, while the passenger loading zones proposed by the project would accommodate project-generated passenger loading activity, there is potential for the combination of spillover freight loading demand and tour bus loading demand to exceed supply, the proposed project, in combination with planned and reasonably foreseeable development would result in significant impacts related to passenger loading activities under cumulative conditions. Implementation of Project Mitigation Measures 4 and 5, discussed above, would reduce cumulative passenger loading impacts to less-than-significant levels.

Emergency Vehicles

There would be a general increase in vehicle traffic on the surrounding roadways associated with planned and reasonably foreseeable development in the project vicinity. As stated previously, all streets that comprise the route from the fire stations to the project site are sufficiently able to provide adequate emergency vehicle access to the site. Furthermore, there are transit-only lanes on Mission and Third streets in the vicinity of the proposed project, which emergency vehicle providers may use to respond to incidents. The proposed project, in combination with planned and reasonably foreseeable development, would not create potentially hazardous conditions for emergency vehicles, or otherwise interfere with emergency vehicle accessibility to the project site and adjoining areas. Cumulative impacts to emergency access are less than significant.

Construction

The construction of the proposed project may overlap with the construction of other projects in the plan area. As a result, construction activities associated with these projects would affect traffic, transit, pedestrians, and bicycles on streets used as access routes to and from the project site (e.g., Howard Street, First Street). Overall, localized cumulative construction-related transportation impacts could occur as a result of cumulative projects that generate increased traffic at the same time and on the same roads as the project. The construction manager for each individual project would work with the city to develop a detailed and coordinated plan that would address construction vehicle routing, traffic control, and pedestrian and bicycle accommodation in the work zone for the duration of any overlap in construction activity. Construction activities associated with the proposed project, along with planned and reasonably foreseeable development, could result in a significant impact to traffic, transit, pedestrian, and bicycle circulation, especially if they take place concurrently with the construction of other developments in the vicinity of the project site. Therefore, **Project Mitigation Measure 6: Construction Coordination**, which would implement PEIR Mitigation Measure M-TR-9, is applicable to the proposed project (full text provided in the "Mitigation Measures" section below on page 104). Implementation of Mitigation Measure TR-9 would reduce the potential transportation impact from construction activities to a less-than-significant level by developing construction phasing and operations plans that would result in the

least amount of disruption that is feasible to transit operations, pedestrian and bicycle activity, and vehicular traffic.

Conclusion

Implementation of the proposed project would not result in significant project-level or cumulative impacts related to transportation and circulation. The project sponsor has agreed to implement Project Mitigation Measures 4, 5, and 6 and Project Improvement Measures 1 and 2. Therefore, the proposed project would not result in significant transportation and circulation impacts that were not identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
6. NOISE—Would the project:				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☐	☒
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☐	☒
c) For a project located within the vicinity of a private airstrip or an airport land use plan area, or, where such a plan has not been adopted, in an area within two miles of a public airport or public use airport, would the project expose people residing or working in the area to excessive noise levels?	☐	☐	☐	☒

The PEIR determined that implementation of the Plan would not result in a substantial permanent increase in ambient noise or vibration levels. However, as discussed in the PEIR, implementation of the Plan could result in significant and unavoidable impacts due to the potential for exposure of persons to noise levels in excess of standards in the San Francisco General Plan, and the introduction of new sensitive uses to the plan area that would be affected by existing noise levels (PEIR p. 353). The PEIR identified several mitigation measures to reduce these impacts at the project-level, by requiring: noise surveys for residential uses (PEIR Mitigation Measure M-NO-1a), the inclusion of certain noise minimization measures to meet residential and nonresidential noise standards (PEIR Mitigation Measure M-NO-1b and M-NO-1c), and noise minimization measures to meet mechanical equipment noise standards (PEIR Mitigation Measure M-NO-1d and M-NO-1e). Mitigation Measure M-NO-1c is specific to sensitive nonresidential uses such as child care centers, schools, libraries, and the like; as none of these uses is proposed as part of the project, Mitigation Measure M-NO-1c is not applicable to the proposed project. The PEIR concluded that impacts from exposure of persons and sensitive uses to excessive noise levels would remain significant and unavoidable at the program-level; however, the PEIR acknowledged

that projects that are able to meet the applicable thresholds of significance, and implement the above mentioned mitigation measures, may have less than significant impacts from exposure to persons and sensitive uses in the area.

With respect to construction noise, the PEIR determined that construction activities in the Plan area could expose persons to temporary increases in noise levels substantially in excess of ambient levels, but that these impacts could be mitigated to less than significant levels with implementation of certain noise control measures during pile driving (PEIR Mitigation Measure M-NO-2a) and other general construction noise control measures (PEIR Mitigation Measure M-NO-2b). The PEIR determined that construction activities could expose people to temporary increases in vibration levels that would be substantially in excess of ambient levels, which would result in significant and unavoidable vibration impacts. The PEIR acknowledged that specific projects may reduce vibration impacts to less than significant through adoption of PEIR Mitigation Measures M-NO-2a, M-CP-5a, and M-CP-5b (the latter two measures are discussed above, in Cultural Resources section); however, the PEIR determined that program-level impacts related to vibration would remain significant and unavoidable.

Finally, the PEIR determined that implementation of the Plan would result in significant and unavoidable cumulative impacts from construction noise, at the program level, but those project-specific impacts may potentially be reduced to less-than-significant levels with mitigation for individual projects.

As discussed above, the PEIR determined that significant impacts would occur due to the introduction of new sensitive uses (i.e., hospitals, skilled nursing/convalescent care facilities, schools, churches, libraries, and residences) into the plan area that would be affected by existing noise levels, as well as the exposure of persons to noise levels in excess of the *General Plan* noise compatibility guidelines. The PEIR noted that because noise levels adjacent to all major streets in the plan area, from Main Street to the west, exceeded 70 decibels (dBA) Ldn, project-specific noise studies should be completed for any new residential construction, consistent with the *General Plan* noise compatibility guidelines. Such studies should include a detailed analysis of the noise environment and incorporate certain noise reduction requirements to reduce interior noise levels to acceptable conditions. [43,44]

As required by PEIR Mitigation Measure M-NO-1a (Noise Survey and Measurements for Residential Uses) and PEIR Mitigation Measure M-NO-1d (Mechanical Equipment Noise Standard), an environmental noise study was completed for the proposed project.[52] The study measured the existing ambient noise environment and expected future project noise sources, and made recommendations regarding how the project could comply with the Noise Ordinance (Article 29 of the San Francisco Police Code).

To quantify the existing noise environment, one continuous long-term noise measurement and three short-term measurements were conducted. The long-term measurement was conducted on the roof of the nearby 33 Tehama Street building, located approximately 290 feet south of the project site.[53] The short-term measurements were conducted at the following three locations: on the southeastern corner of the project site, approximately 110 feet west of the project site, and approximately 230 feet north of the project site. See Exhibit 2, Figure 1 for the noise measurement locations and associated noise measurement

[52] Charles M. Salter Associates, Inc., *Transbay Parcel F (542-550 Howard Street) Environmental Noise Impact Assessment,* October 19, 2018.

[53] The long-term measurement was conducted on the roof of the nearby 33 Tehama Street building since it is representative of the ambient noise levels that would be expected at higher elevations.

results. The minimum L_{eq} (15-min) on the roof ranged from 53 dBA to 61 dBA. Primary noise sources in the project area included automobile traffic on nearby roadways (Essex Street, Tehama Street, Howard Street, First Street, Minna Street, etc.) and secondary noise sources included pedestrians, airplane flyovers, and construction activity. The closest noise-sensitive use to the project site would be the future residential tower at 524 Howard Street,[54] approximately 130 feet northeast of the site.

Building Operation

Mechanical Equipment

The proposed project would include several types of fixed noise-generating mechanical equipment. Mechanical equipment would include two emergency diesel generators on Levels B1 and 7, three large air-handling units (AHU) and three small AHUs on Level 4, one exhaust fan on Level 6, one large AHU and three exhaust fans on Level 32, one large AHU and five exhaust fans on the mechanical mezzanine,[55] and three cooling towers on the roof.

The project's emergency generators are expected to run for one hour per month for testing during daytime hours. Routine testing would be limited to the hours of 7:00 a.m. to 8:00 p.m. (unless granted a variance by the Director of the Department of Public Health or his/her designee), and the noise level when testing must be no greater than 75 dBA at all property lines upon which the equipment is located.[56] According to the noise study, the anticipated noise levels of the project's emergency generators on Levels B1 and 7 would be 92 dBA and 89 dBA respectively, and would exceed the 75 dBA threshold. Implementation of **Project Mitigation Measure 7: Reduce Mechanical Equipment Noise**, which implements TCDP PEIR Mitigation Measure M-NO-1e: Interior Mechanical Equipment, would reduce this noise impact by requiring sound attenuators within the emergency generators sufficient to not exceed 75 dBA at the project's property plane (full text is provided in the Mitigation Measures section below, beginning on p. 104). Project Mitigation Measure 7 would be implemented to ensure that the proposed emergency generators meets the noise ordinance requirements.

The project's other mechanical equipment (i.e., AHUs and exhaust fans) would be subject to section 2909(b) of the City's Noise Control Ordinance, which limits noise levels from stationary-source equipment at the respective property line to no more than 8 dBA above ambient noise levels. According to the noise study, ambient noise level in the project vicinity is 53 dBA, and therefore the applicable threshold is 61 dBA (8 dBA above 53 dBA). Table 4, below, shows the modeled noise levels of the mechanical equipment at the nearest project property planes without generators running. All the noise levels from individual pieces of equipment, with the exception of the roof's cooling towers, would exceed the criterion of 61 dBA (and are shown in bold text in Table 4). As such, the combined noise level[57] with all pieces of equipment operating at the same time would be 75 dBA, also in exceedance of the criterion. Therefore, **Project Mitigation Measure 7: Reduce Mechanical Equipment Noise**, which would require the project sponsor to provide sound attenuation of up to 13 dBA for these pieces of equipment, would

[54] San Francisco Planning Department, *Planning Department Case No. 2013.0882ENV 524 Howard Street*, October 14, 2016. No building permit application has been submitted for this project. If the approved project is ultimately constructed, it would be the closest noise-sensitive use to the project site.

[55] The mechanical mezzanine is referred to as level 62 in the noise study.

[56] Jonathan Piakis, Noise Control Officer, San Francisco Department of Public Health, e-mail to Alesia Hsiao, Senior Planner, San Francisco Planning Department, August 15, 2018.

[57] The All Equipment Combined noise levels are for the worst-case condition (i.e., at the level with the loudest equipment, but accounting for the additional distance from equipment on other levels).

reduce the combined mechanical equipment noise to meet the Police Code 2909(b) outdoor noise requirement.

Table 4: Noise Levels at Project Property Plane (Without Generators)

Equipment Location and Equipment Type	Noise Level without Noise Attenuation	Criterion	Noise Level With Noise Attenuation
Level 4: three large AHUs and three small AHUs)	**65** dBA	61 dBA	57 dBA
Level 6: one exhaust fan	**74 dBA**	**61 dBA**	**58 dBA**
Level 32: one large AHU and three exhaust fans	**64 dBA**	**61 dBA**	**61 dBA**
Mechanical mezzanine: one large AHU and five exhaust fans	**64** dBA	61 dBA	56 dBA
Roof: cooling towers	59 dBA	61 dBA	59 dBA
All Equipment Combined	**75** dBA	61 dBA	61 dBA

Source: Charles M. Salter Associates, Inc., *Transbay Parcel F (542-550 Howard Street) Environmental Noise Impact Assessment* October 19, 2018.

Amplified Noise

The project's common outdoor use space would include amplified music in the Level 2 terrace. Events at the Level 2 terrace would include conferences, galas, meetings, and weddings. All events would typically occur between 8:00 a.m. and 4:00 p.m. In addition to these daytime hours, gala events and weddings could occur between 6:00 p.m. and 10:00 p.m. in the evening. Maximum event attendance is expected to be 200 for meetings, 250 for small conferences and galas, and 400 for large conferences, although the maximum capacity of the outdoor terrace is 100 persons. Noise from amplified music could vary widely and therefore could result in a significant noise impact.

Music and other amplified noise at common outdoor uses would be subject to section 2909(b) of the City's Noise Control Ordinance, which limits noise levels from amplified noise at the property plane to no more than 8 dBA above ambient noise levels. **Project Mitigation Measure 8: Control Exterior Amplified Noise**, which implements TCDP PEIR Mitigation Measure M-NO-1e: Interior Mechanical Equipment, would reduce this noise impact to less than significant levels by controlling amplified music onsite and away from sensitive receivers and monitoring on-site noise levels (full text provided in the Mitigation Measures section below, beginning on p. 105). With implementation of Project Mitigation Measure 8, the impact related to amplified music noise would be reduced to a less-than-significant level.

As reported in the noise study, based on the ambient noise level in the project vicinity being 61 dBA, the exterior noise level at 524 Howard Street is anticipated to be 44 dBA. This 17 dBA noise reduction is due to the distance from the project's property plane to 524 Howard Street (approximately 130 feet). This would be within the noise ordinance interior limit as defined in Police Code section 2909(d), which is 45 dBA between 10:00 p.m. and 7:00 a.m. Moreover, the 524 Howard Street building facade would provide an additional (at least) 15 dBA of noise attenuation (with open windows), resulting in interior noise levels within the 524 Howard Street building of well below 44 dBA. Thus, the project would be in compliance with section 2909(d).

Traffic Noise

The proposed project would generate new daily vehicle trips within the TCDP plan area. As such, the proposed project would contribute to the significant noise impact, identified in the TCDP PEIR, related to the exposure of persons to noise levels in excess of standards in the *General Plan*. Project-related traffic was calculated to increase the existing traffic noise environment by 1 dBA along nearby segments of Howard Street (First Street to Second Street) and First Street (Mission Street to Howard Street).[58] Other streets would have an increase in traffic noise levels of less than 1 dBA, which is typically not perceptible.[59] As traffic noise increase of 1 dBA would not substantially contribute to ambient noise levels near the project site,[60] the proposed project's contribution to this noise impact would not be significant.

Construction

Construction activities under the proposed project would last for approximately 45 months and would include several noise and vibration-creating phases, including excavation and building construction. While the proposed project would utilize drilled piers, no pile-driving is proposed, therefore TCDP PEIR Mitigation Measure M-NO-2a, which is related to pile-driving, is not applicable. Since heavy equipment would be used during excavation and construction of the proposed project, TCDP PEIR Mitigation Measure M-NO-2b: General Construction Noise Control Measures (**Project Mitigation Measure 9**) is applicable to the proposed project (full text provided in the Mitigation Measures section below, beginning on p. 105). Project Mitigation Measure 9 would require general construction noise control measures. The PEIR concluded that cumulative construction noise impacts could occur if multiple projects, located adjacent to the Transbay Transit Center, were under construction at the same time. To address these impacts, TCDP PEIR identified Mitigation Measure M-C-NO: Cumulative Construction Noise Control Measures, which would require a project sponsor of a development project in the plan area to cooperate with and participate in any city-sponsored construction noise control program for the TCDP or other city-sponsored area-wide program. At this time there is no existing City-sponsored construction noise control program for the TCDP area or other area-wide program developed to reduce the potential effects of construction noise in the project vicinity. Therefore, the Mitigation Measure M-C-NO is not applicable to the proposed project.

With implementation of Project Mitigation Measure 9, cumulative construction noise impacts would be reduced, but depending on the timing and location of the construction of various projects, the impact could still be significant. Therefore, the proposed project, even with Project Mitigation Measure 9 incorporated, may still contribute substantially to a significant and unavoidable cumulative impact given the amount of construction occurring in the surrounding area. As noted above, this impact was identified as significant and unavoidable in the TCDP PEIR and thus, the proposed project would not result in new or more severe impacts than the significant and unavoidable cumulative impact identified in the PEIR.

The operation of heavy equipment during construction could result in excessive levels of vibration that could contribute to structural damage of potentially historic structures nearby, including the 580 Howard Street building, which is located to the southwest of the project site. As stated in the TCDP PEIR, this impact would be temporary but could be considered substantial should nearby structures be damaged.

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58 Kittleson & Associates, Inc., *542-550 Howard Street (Transbay Parcel F) Transportation Impact Study*, September 6, 2018.

59 Ibid.

60 Charles M. Salter Associates, Inc., *Transbay Parcel F (542-550 Howard Street) Environmental Noise Impact Assessment,* October 19, 2018.

However, TCDP PEIR Mitigation Measures M-CP-5a: Construction Best Practices for Historical Resources (**Project Mitigation Measure 1**) and M-CP-5b: Construction Monitoring Program for Historical Resources (**Project Mitigation Measure 2**) would be implemented to reduce the potential for damage and ensure that any damage that may occur is repaired. Implementation of these measures would reduce the impacts of construction-related groundborne vibration on historic structures to a less-than-significant level. All construction activities for the proposed project would be subject to the San Francisco Noise Ordinance. Construction noise is regulated by the Noise Ordinance. The Noise Ordinance requires that construction work be conducted in the following manner: (1) noise levels of construction equipment, other than impact tools, must not exceed 80 dBA at a distance of 100 feet from the source (the equipment generating the noise); (2) impact tools must have intake and exhaust mufflers that are approved by the Director of Public Works or the Director of the Department of Building Inspection (building department) to best accomplish maximum noise reduction; and (3) if the noise from the construction work would exceed the ambient noise levels at the site property line by 5 dBA, the work must not be conducted between 8:00 p.m. and 7:00 a.m. unless the Director of Public Works authorizes a special permit for conducting the work during that period.

The building department is responsible for enforcing the Noise Ordinance for private construction projects during normal business hours (8:00 a.m. to 5:00 p.m.). The police department is responsible for enforcing the Noise Ordinance during all other hours. Nonetheless, during the approximately 45-month construction period for the proposed project, occupants of the nearby properties could be disturbed by construction noise. Times may occur when noise could interfere with indoor activities in nearby residences and other businesses near the project site. The increase in noise in the project area during project construction would not be considered a significant impact of the proposed project, because the construction noise would be temporary, intermittent, and restricted in occurrence and level, as the contractor would be required to comply with the Noise Ordinance and TCDP PEIR M-NO-2b (Project Mitigation Measure 9), which would reduce construction noise impacts to a less-than-significant level.

New Sensitive Uses

The proposed project would be subject to the following interior noise standards, which are described for informational purposes. The California Building Standards Code (Title 24) establishes uniform noise insulation standards. The Title 24 acoustical requirement for residential structures (including hotels) is incorporated into section 1207 of the San Francisco Building Code and requires these structures be designed to prevent the intrusion of exterior noise so that the noise level with windows closed, attributable to exterior sources, shall not exceed 45 dBA in any habitable room. The acoustical requirements of Title 24 are incorporated into the San Francisco Green Building Code. Title 24 allows the project sponsor to choose between a prescriptive or performance-based acoustical requirement for non-residential uses. Both compliance methods require wall, floor/ceiling, and window assemblies to meet certain sound transmission class or outdoor-indoor sound transmission class ratings to ensure that adequate interior noise standards are achieved. In compliance with Title 24, the building department would review the final building plans to ensure that the building wall, floor/ceiling, and window assemblies meet Title 24 acoustical requirements. If determined necessary by the building department, a detailed acoustical analysis of the exterior wall and window assemblies may be required.

The project site is not located within an airport land use plan area, within two miles of a public airport, or in the vicinity of a private airstrip. Therefore, topics 6c are not applicable.

Cumulative Analysis

The cumulative context for traffic noise analyses are typically confined to the local roadways nearest the project site. As project-generated vehicle trips disperse along the local roadway network, the contribution of traffic noise along any given roadway segment would similarly be reduced. As discussed in initial study checklist question 6a, the proposed project would not result in a perceptible increase in traffic noise. Should background traffic levels increase under 2040 cumulative conditions, the project's contribution to traffic noise would be even lower than under existing plus project conditions. Therefore, the proposed project would not result in a considerable contribution to ambient noise levels from project traffic.

The cumulative context for point sources of noise, such as building mechanical equipment systems and amplified noise at common outdoor uses are typically confined to the immediate vicinity in an urban environment because noise attenuates with distance and sight lines are interrupted by nearby buildings. The proposed project's mechanical equipment noise and amplified music would be reduced through implementation of Project Mitigation Measure 7, Reduce Mechanical Equipment Noise, and Project Mitigation Measure 8, Control Exterior Amplified Noise. Therefore, it is not likely that the proposed project's mechanical equipment noise and amplified noise at common outdoor uses would combine with that of cumulative projects to result in a significant increase in ambient noise levels.

The cumulative context for construction noise is usually not further than about 900 feet from the project site.[61] There are multiple reasonably foreseeable projects within 900 feet of the project site that could combine with the project's noise impacts to generate significant cumulative construction noise. These projects include 524 Howard Street, 555 Howard Street, 525 Harrison Street, and 95 Hawthorne Street, which could combine with the project's noise impacts to generate significant cumulative construction noise. The proposed project's construction noise, in combination with the reasonably foreseeable projects listed above, would result in a significant cumulative noise impact, consistent with the conclusions in the TCDP PEIR. The proposed project's construction noise impact would be reduced through compliance with Project Mitigation Measure 9; however, it cannot be stated with certainty, given the amount of construction anticipated in the immediate area, that the project's contribution to cumulative construction noise would be reduced to less-than-significant levels. Given that this impact was disclosed as significant unavoidable in the PEIR, the proposed project would not result in any significant noise impacts that were not identified in the PEIR, nor would it result it in more severe impacts than identified in the PEIR.

Conclusion

With implementation of Project Mitigation Measures 7, 8, and 9, the proposed project would not result in any significant noise impacts, with the exception of the cumulative noise impact discussed above. Even taking into account this significant cumulative noise impact, the proposed project would not result in any significant noise impacts that were not identified in the PEIR, nor would it result it in more severe impacts than identified in the PEIR.

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[61] This distance was selected because typical construction noise levels can affect a sensitive receptor at a distance of 900 feet if there is a direct line-of-sight between a noise source and a noise receptor (i.e., a piece of equipment generating 85 dBA would attenuate to 60 dBA over a distance of 900 feet). An exterior noise level of 60 dBA will typically attenuate to an interior noise level of 35 dBA with the windows closed and 45 dBA with the windows open.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
7. AIR QUALITY—Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal, state, or regional ambient air quality standard?	☐	☐	☐	☒
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☐	☒

The PEIR determined that the Plan would not conflict with or obstruct the implementation of the 2010 *Clean Air Plan*, or result in a cumulatively considerable net increase of any criteria pollutant, and impacts related to these thresholds were found to be less than significant.

The TCDP PEIR identified significant and unavoidable air quality impacts related to exposure of existing and future sensitive receptors, such as residences and child care centers, to emissions of fine particulate matter ($PM_{2.5}$) and toxic air contaminants (TACs) as a result of existing and future mobile (vehicular travel) and stationary (generators, boilers, and cogeneration facilities) sources within and adjacent to the TCDP. PEIR Mitigation Measure M-AQ-2: Implementation of Risk and Hazard Overlay Zone and Identification of Health Risk Reduction Policies was identified to reduce impacts to sensitive receptors through the implementation of a risk and hazard overlay zone, within which certain health risk reduction policies would apply; however, the PEIR determined that impacts at the program level would remain significant and unavoidable. The PEIR found that project-specific impacts may be reduced to less than significant with mitigation incorporated.

The PEIR also identified significant and unavoidable air quality impacts related to generation of criteria air pollutants and to exposure of sensitive receptors to TACs from future construction activity, which could involve the use of diesel-powered off-road equipment. PEIR Mitigation Measure M-AQ-3: Siting of Uses that Emit DPM and Other TACs was identified to require site-specific analyses of on-site stationary sources and implement measures to reduce health risks where necessary; however, the PEIR determined that impacts at the program level would remain significant and unavoidable.

The TCDP PEIR also determined that future construction activity would result in significant and unavoidable impacts related to the generation of criteria air pollutants and exposure of sensitive receptors to TACs. PEIR Mitigation Measures M-AQ-4a: Construction Vehicle Emissions Minimization was identified to reduce project-specific impacts from construction vehicle emissions. However, the PEIR determined that program-level impacts would remain significant and unavoidable. The PEIR determined that the Plan would result in significant and unavoidable impacts from the exposure of sensitive receptors to TACs generated by construction equipment. PEIR Mitigation Measure M-AQ-5: Construction Vehicle Emissions Evaluation and Minimization was identified to reduce project-specific impacts

associated with the operation of construction vehicles. The PEIR determined that impacts at the program level would remain significant and unavoidable. In general, with respect to air quality, the PEIR found that project-specific impacts may be reduced to less than significant with mitigation incorporated.

Finally, the PEIR determined that implementation of the Transit Center District Plan would contribute considerably to cumulative air quality impacts, and the Plan would have significant and unavoidable cumulative impacts with mitigation implemented.

The discussion below is informed by the Air Quality Technical Memorandum prepared for the proposed project.[62]

Construction Dust Control

The TCDP PEIR determined that emissions from fugitive dust would be less than significant with implementation of the San Francisco Dust Control Ordinance (Ordinance 176-08, effective July 30, 2008) and PEIR Mitigation Measure M-AQ-4b: Dust Control Plan. PEIR Mitigation Measure M-AQ-4b applies to sites that are too small (one-half acres or less) to be subject to the Dust Control Ordinance and requires such projects to develop and implement a dust control plan as set forth in Article 22B of the San Francisco Health Code. At 0.73 acres, the proposed project would be subject to the Construction Dust Control Ordinance, rather than PEIR Mitigation Measure M-AQ-4b. Inasmuch as PEIR Mitigation Measure M-AQ-4b was intended to apply the dust control features of the ordinance to sites not subject to the Dust Control Ordinance due to size, compliance with the Dust Control Ordinance would result in the same reduction in construction dust as would PEIR Mitigation Measure M-AQ-4b. Therefore, the project would not result in any dust impacts peculiar to the project or its site.

The intent of the Construction Dust Control Ordinance is to reduce the quantity of fugitive dust generated during site preparation, demolition, and construction work in order to protect the health of the general public and of on-site workers, minimize public nuisance complaints, and to avoid orders to stop work by the building department. Project-related construction activities would result in construction dust, primarily from ground-disturbing activities.

For projects over one-half acre, such as the proposed project, the Dust Control Ordinance requires that the project sponsor submit a Dust Control Plan for approval by the San Francisco Department of Public Health. The building department will not issue a building permit without written notification from the Director of Public Health that the applicant has a site-specific Dust Control Plan, unless the director waives the requirement. The site-specific Dust Control Plan would require the project sponsor to implement additional dust control measures such as installation of dust curtains and windbreaks and to provide independent third-party inspections and monitoring, provide a public complaint hotline, and suspend construction during high wind conditions.

The regulations and procedures set forth by the San Francisco Dust Control Ordinance would ensure that construction dust impacts would not be significant. As noted above, PEIR Mitigation Measure M-AQ-4b is not applicable to the proposed project. Furthermore, the proposed project would not contribute to any cumulative impacts on construction dust.

[62] Ramboll Environ, *Construction and Operational Air Quality Emissions Evaluation for Parcel F*, July 25, 2018.

Criteria Air Pollutants

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

The PEIR determined that at a program level the TCDP would result in significant and unavoidable regional air quality impacts for criteria air pollutants; however, the PEIR acknowledges that "in the case of individual development projects in the plan area, site- and project-specific equipment and other considerations may lead to a conclusion that the project-specific effect can be mitigated to a less-than-significant."

Construction Criteria Air Pollutants

Construction activities from the proposed project would result in the emission of criteria air pollutants from equipment exhaust, construction-related vehicular activity, and construction worker automobile trips. Construction of the proposed project would occur over approximately 45 months. Construction-related criteria air pollutants generated by the proposed project were quantified using the California Emissions Estimator Model (CalEEMod) and provided within an air quality technical memo.[63] The model was developed, including default data (e.g., emission factors, meteorology, etc.), in collaboration with California air districts' staff. Default assumptions were used where project-specific information was unknown. Emissions were converted from tons/year to lbs/day using the estimated construction duration of 980 working days. As shown in Table 5, below, unmitigated project construction emissions would be below the threshold of significance for ROG, NOx, exhaust PM_{10}, and exhaust $PM_{2.5}$.

Table 5: Daily Project Construction Emissions

	Pollutant Emissions (Average Pounds per Day)			
	ROG	**NOx**	**Exhaust PM_{10}**	**Exhaust $PM_{2.5}$**
Unmitigated Project Emissions	9.6	24	0.49	0.46
Significance Threshold	54.0	54.0	82.0	54.0

Source: Bay Area Air Quality Management District, *CEQA Air Quality Guidelines,* May 2017.

[63] Ramboll Environ, *Construction and Operational Air Quality Emissions Evaluation for Parcel F,* July 25, 2018.

Operational Criteria Air Pollutants

The PEIR evaluated the operational criteria air pollutant impacts from vehicle trips under PEIR Impact AQ-1. The PEIR determined that the Transit Center District Plan's growth in vehicle miles travelled would be consistent with the anticipated growth in population and that the Plan would be consistent with the 2010 Clean Air Plan. Therefore, the Transit Center District Plan would not result in a cumulatively considerable net increase of any criteria air pollutant for which the region is in non-attainment for state or federal air quality standards.

The proposed project would generate criteria pollutant emissions associated with vehicle traffic (mobile sources), on-site area sources (i.e., natural gas combustion for space and water heating, and combustion of other fuels by building and grounds maintenance equipment), energy usage, and testing of two backup diesel generators. The emergency diesel generators would be located on levels B1 and 7. The generators were assumed to be 2,750 kilowatts (kW) and 500 kW of electricity in case of emergency. Bay Area Air Quality Management District (air district) Rule 9-8-330.3 restricts non-emergency use of emergency standby diesel-fueled CI engines to a maximum of 50 hours per year.[64] Therefore, this analysis assumed that the emergency diesel generators would each operate 50 hours per year.

Operational criteria air pollutant impacts of the proposed project were evaluated in the Air Quality Technical Memorandum using CalEEMod, with the exception of the emergency generators, emissions of which were quantified using equipment specific data.[65] Default assumptions were used where project-specific information was unknown. The daily and annual emissions associated with operation of the proposed project are shown in Table 6, below. Table 6 also includes the thresholds of significance the city uses.

Table 6: Summary of Operational Criteria Air Pollutant Emissions

	ROG	NOx	PM_{10}	$PM_{2.5}$
Project Average Daily Emissions (lbs/day)	26	39	0.80	0.78
Significance Threshold (lbs/day)	54	54	82	54
Project Maximum Annual Emissions (tpy)	4.8	7.0	0.15	0.14
Significance Threshold (tpy)	10.0	10.0	15.0	10.0

lbs/day = pounds per day

tpy = tons per year

Source: Bay Area Air Quality Management District, *CEQA Air Quality Guidelines*, May 2017.

As shown in Table 5, the proposed project would not exceed daily or annual significance thresholds for ROG, NOx, PM_{10} or $PM_{2.5}$; therefore, the proposed project would have a less-than-significant impact related to operational air pollutant emissions. The proposed project would not contribute considerably to cumulative operational air pollutant emissions and would not result in any significant cumulative operational air pollutant emissions.

64 Ibid.

65 For the emergency generators, the air quality technical report used equipment-specific data where available and emissions factors for the 2,750 kW emergency generator were based on Tier 2 emission standards and emission factors for the 500 kW emergency generator were based on CalEEMod default generator set emission factors for operational year 2022 based on horsepower rating.

Health Risk

The PEIR evaluated the health risk impacts of the Plan upon new sensitive receptors under Impact AQ-2 and from new sources of fine particulate matter and toxic air contaminants under Impact AQ-3. The PEIR identified a significant and unavoidable impact in regards to health risks from locating sensitive receptors in areas with high levels of fine particulate matter and toxic air contaminants and exposing existing and future sensitive receptors to significant levels of fine particulate matter and toxic air contaminants from vehicle and equipment emissions. The proposed project includes sensitive land uses (e.g., residential) and would include two emergency back-up generators, which would emit diesel particulate matter, a known toxic air contaminant.

Siting of Sensitive Land Uses

Subsequent to publication of the PEIR, the San Francisco Board of Supervisors approved amendments to the San Francisco Building and Health Codes, generally referred to as Enhanced Ventilation Required for Urban Infill Sensitive Use Developments, or Health Code article 38 (Ordinance 224-14, effective December 8, 2014). The purpose of article 38 is to protect the public health and welfare by establishing an air pollutant exposure zone and imposing an enhanced ventilation requirement for all urban infill sensitive use development within the air pollutant exposure zone. The air pollutant exposure zone as defined in article 38 includes areas that, based on modeling of all known air pollutant sources undertaken by the city in partnership with the air district, exceed health protective standards for cumulative $PM_{2.5}$ concentration and/or cumulative excess cancer risk, and incorporates health vulnerability factors and proximity to freeways. Projects within the air pollutant exposure zone require special consideration to determine whether the project's activities would expose sensitive receptors to substantial air pollutant concentrations or add emissions to areas already adversely affected by poor air quality. The ordinance requires that the project sponsor submit an enhanced ventilation proposal for approval by the Department of Public Health (the health department) that achieves protection from $PM_{2.5}$ (fine particulate matter) equivalent to that associated with a minimum efficiency reporting value 13 filtration. The building department will not issue a building permit without written notification from the Director of Public Health that the applicant has an approved enhanced ventilation proposal.

Thus, PEIR Mitigation Measure M-AQ-2: Implementation of Risk and Hazard Overlay Zone and Identification of Health Risk Reduction Policies has been implemented by the city through establishment of an air pollutant exposure zone and enhanced ventilation requirements under article 38. The project site is located within the air pollutant exposure zone and the proposed project's residential uses would be subject to the enhanced ventilation requirements under Health Code article 38. Compliance with Health Code article 38 would satisfy PEIR Mitigation Measure M-AQ-2.

In compliance with article 38, the project sponsor submitted an initial application to the health department on May 10, 2017. These requirements supersede the provisions of PEIR Mitigation Measure M-AQ-2. Therefore, PEIR Mitigation Measure M-AQ-2 is no longer applicable to the proposed project.

Construction

The PEIR determined that implementation of PEIR Mitigation Measure M-AQ-5: Construction Vehicle Emission Evaluation and Minimization would not reduce significant health risk impacts from the construction of subsequent projects to below a significant level, and the impact would be significant and unavoidable. As discussed above, the project site is located within an identified air pollutant exposure zone; therefore, the ambient health risk to sensitive receptors from air pollutants is considered

substantial. The proposed project would require heavy-duty off-road diesel vehicles and equipment during most of the anticipated 45-month construction period. Thus, the proposed project's construction emissions would contribute to this significant impact. Therefore, the project sponsor would be required to implement project Mitigation Measures 10 and 11. **Project Mitigation Measure 10: Construction Vehicle Emission Minimization**, which would implement PEIR Mitigation Measure M-AQ-4a, would require the project sponsor maintain and properly tune all construction equipment according to manufacturer's specifications and checked to be running in proper condition to reduce construction vehicle emissions. **Project Mitigation Measure 11: Construction Vehicle Emission Evaluation and Minimization**, which would implement PEIR Mitigation Measure M-AQ-5 demonstrating compliance with engine requirements, alternative source of power requirements, construction emissions minimization plan requirements and monitoring to reduce construction emissions (full text provided in the "Mitigation Measures" section below beginning on p. 107). As noted, this impact was identified as significant and unavoidable in the TCDP PEIR, and thus, the proposed project would not result in new or more severe impacts than the significant and unavoidable cumulative impact identified in the PEIR.

Siting New Sources

In regards to siting new sources of air pollutant emissions, particularly the project's proposed two emergency back-up generators, PEIR Mitigation Measure M-AQ-3: Siting of Uses that Emit DPM and Other TACs was identified to reduce the health risk impact from new sources of diesel particulate matter. As noted above, subsequent to publication of the PEIR, the city partnered with the air district to model all stationary and mobile emissions sources in San Francisco, resulting in identification of the air pollutant exposure zone. This modeling obviates the need for project-specific modeling previously required by TCDP PEIR Mitigation Measure M-AQ-3. In addition, with **Project Mitigation Measure 12: Best Available Control Technology for Diesel Generators**, which would implement PEIR Mitigation Measure M-AQ-3 to ensure the project sponsor follows emission standards for particulate matter and compliance with the air district New Source Review permitting process, the proposed project's potential health risk effects from the proposed emergency generators would be reduced to a less than significant level.

Cumulative Analysis

As discussed above, regional air pollution is by its nature a cumulative impact. Emissions from past, present, and future projects contribute to the region's adverse air quality on a cumulative basis. No single project by itself would be sufficient in size to result in regional nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulative adverse air quality impacts.[66] The project-level thresholds for criteria air pollutants are based on levels by which new sources are not anticipated to contribute to an air quality violation or result in a considerable net increase in criteria air pollutants. Therefore, because the proposed project would not result in significant criteria air pollutant impacts, the project would not result in a considerable contribution to cumulative regional air quality impacts.

As discussed above, the project site is located in an area that already experiences poor air quality. The project would add temporary construction equipment, new vehicle trips, and stationary sources of emissions from a backup generator within an area already adversely affected by poor air quality, resulting in a considerable contribution to cumulative health risk impacts on nearby sensitive receptors.

[66] Bay Area Air Quality Management District, CEQA Air Quality Guidelines, May 2017, page 2-1.

This would be a significant cumulative impact. The proposed project would be required to implement Project Mitigation Measures 10, Construction Vehicle Emissions Minimization, and Mitigation Measure 11, Construction Vehicle Emissions Evaluation and Minimization, which could reduce construction period emissions, and Project Mitigation Measure 12, Best Available Control Technology for Diesel Generators, which requires best available control technology to limit emissions from the project's emergency back-up generators. Implementation of these mitigation measures would reduce the project's contribution to cumulative localized health risk impacts.

Conclusion

For the above reasons, with implementation of Project Mitigation Measures 10, 11, and 12, (implementing TCDP PEIR Mitigation Measures M-AQ-4a, M-AQ-5, and M-AQ-3) along with the Dust Control Ordinance, the proposed project would not result in any new or more severe air quality impact than what was previously disclosed in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
8. GREENHOUSE GAS EMISSIONS— Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☐	☒
b) Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

The PEIR concluded that adoption of the Transit Center District Plan would not directly result in greenhouse gas (GHG) emissions; however, implementation of development projects in the plan area, including the proposed project, would result in GHG emissions. The Plan includes goals and policies that would apply to the proposed project, and these policies are generally consistent with the city's *Strategies to Address Greenhouse Gas Emissions*. The PEIR concluded that emissions resulting from development under the Plan, including the proposed project, would be less than significant and no mitigation measures were required.

The air district has prepared guidelines and methodologies for analyzing GHGs. These guidelines are consistent with CEQA Guidelines sections 15064.4 and 15183.5 which address the analysis and determination of significant impacts from a proposed project's GHG emissions and allow for projects that are consistent with an adopted GHG reduction strategy to conclude that the project's GHG impact is less than significant. San Francisco's *Strategies to Address Greenhouse Gas Emissions*[67] presents a comprehensive assessment of policies, programs, and ordinances that collectively represent San Francisco's GHG reduction strategy in compliance with the air district and CEQA guidelines. These GHG reduction actions

[67] San Francisco Planning Department, *Strategies to Address Greenhouse Gas Emissions in San Francisco,* July 2017. Available at http://sfmea.sfplanning.org/GHG/GHG_Strategy_October2017.pdf, accessed October 2, 2018.

have resulted in a 30 percent reduction in GHG emissions in 2016 compared to 1990 levels,[68] exceeding the year 2020 reduction goals outlined in the air district's *2017 Clean Air Plan*,[69] Executive Order S-3-05[70], and Assembly Bill 32 (also known as the Global Warming Solutions Act).[71,72] In addition, San Francisco's GHG reduction goals are consistent with, or more aggressive than, the long-term goals established under Executive Orders S-3-05,[73] B-30-15,[74,75] and Senate Bill (SB) 32.[76,77,78] Therefore, projects that are consistent with San Francisco's GHG Reduction Strategy would not result in GHG emissions that would have a significant effect on the environment and would not conflict with state, regional, and local GHG reduction plans and regulations.

The Transit Center District Plan determined that the goals and policies of the area plan were consistent with the San Francisco's GHG reduction strategy and that implementation of the area plan policies would ensure that subsequent development would be consistent with GHG plans and would result in less-than-significant impacts with respect to GHG emissions.

The proposed project would increase the intensity of use with construction of a mixed-use tower with approximately 165 residential units, 189 hotel rooms, 274,000 gsf of office uses, 59,800 gsf of hotel amenities, 9,900 sf of retail uses, 14,900 sf of open space, and 181 vehicle parking spaces**.** Therefore, the proposed project would contribute to annual long-term increases in GHGs as a result of increased vehicle

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68 San Francisco Department of the Environment, *San Francisco's Carbon Footprint (2016),* September 2018. Available at https://sfenvironment.org/carbon-footprint, accessed September 25, 2018.

69 Bay Area Air Quality Management District, *Clean Air Plan*, September 2017. Available at *http://www.baaqmd.gov/plans-and-climate/air-quality-plans/current-plans*, accessed July 13, 2018.

70 Office of the Governor, *Executive Order S-3-05,* June 1, 2005. Available at https://www.gov.ca.gov/news.php?id=1861, accessed October 25, 2018.

71 California Legislative Information, *Assembly Bill 32*, September 27, 2006. Available at http://www.leginfo.ca.gov/pub/05-06/bill/asm/ab_0001-0050/ab_32_bill_20060927_chaptered.pdf, accessed October 25, 2018.

72 Executive Order S-3-05, Assembly Bill 32, and the Bay Area 2010 Clean Air Plan set a target of reducing GHG emissions to below 1990 levels by year 2020.

73 Executive Order S-3-05 sets forth a series of target dates by which statewide emissions of GHGs need to be progressively reduced, as follows: by 2010, reduce GHG emissions to 2000 levels (approximately 457 million metric tons of carbon dioxide equivalents ($MTCO_2E$)); by 2020, reduce emissions to 1990 levels (approximately 427 million $MTCO_2E$); and by 2050 reduce emissions to 80 percent below 1990 levels (approximately 85 million $MTCO_2E$). Because of the differential heat absorption potential of various GHGs, GHG emissions are frequently measured in "carbon dioxide-equivalents," which present a weighted average based on each gas's heat absorption (or "global warming") potential.

74 Office of the Governor, *Executive Order B-30-15, April 29, 2015.* Available at https://www.gov.ca.gov/news.php?id=18938, accessed October 25, 2018. Executive Order B-30-15 sets a state GHG emissions reduction goal of 40 percent below 1990 levels by the year 2030.

75 San Francisco's GHG reduction goals are codified in section 902 of the Environment Code and include: (i) by 2008, determine City GHG emissions for year 1990; (ii) by 2017, reduce GHG emissions by 25 percent below 1990 levels; (iii) by 2025, reduce GHG emissions by 40 percent below 1990 levels; and by 2050, reduce GHG emissions by 80 percent below 1990 levels.

76 Senate Bill 32 amends California Health and Safety Code Division 25.5 (also known as the California Global Warming Solutions Act of 2006) by adding section 38566, which directs that statewide greenhouse gas emissions to be reduced by 40 percent below 1990 levels by 2030.

77 Senate Bill 32 was paired with Assembly Bill 197, which would modify the structure of the State Air Resources Board; institute requirements for the disclosure of greenhouse gas emissions criteria pollutants, and toxic air contaminants; and establish requirements for the review and adoption of rules, regulations, and measures for the reduction of greenhouse gas emissions.

78 Executive Order B-55-18, which was signed in September 2018, establishes a statewide goal to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions after. Available at https://www.gov.ca.gov/wp-content/uploads/2018/09/9.10.18-Executive-Order.pdf, accessed September 25, 2018. The statewide executive order is slightly more aggressive than the commitment made by Mayor Mark Farrell in April 2018 for the City to reach net-zero greenhouse gas emissions by 2050. The San Francisco Department of the Environment is currently developing a plan to meet the goal of carbon neutrality.

trips (mobile sources) and residential, hotel, office and commercial operations that result in an increase in energy use, water use, wastewater treatment, and solid waste disposal. Construction activities would also result in temporary increases in GHG emissions.

The proposed project would be subject to regulations adopted to reduce GHG emissions as identified in the GHG reduction strategy. As discussed below, compliance with the applicable regulations would reduce the project's GHG emissions related to transportation, energy use, waste disposal, wood burning, and use of refrigerants.

Compliance with the city's Commuter Benefits Program, transportation management programs, Transportation Sustainability Fee, Jobs-Housing Linkage Program, bicycle parking requirements, low-emission car parking requirements, and car sharing requirements would reduce the proposed project's transportation-related emissions. These regulations reduce GHG emissions from single-occupancy vehicles by promoting the use of alternative transportation modes with zero or lower GHG emissions on a per capita basis.

The proposed project would be required to comply with the energy efficiency requirements of the city's Green Building Code, Stormwater Management Ordinance, Water Conservation and Irrigation ordinances, Existing Commercial Buildings Energy Performance Ordinance, alternate water sources for non-potable applications, and light pollution reduction requirements, which would promote energy and water efficiency, thereby reducing the proposed project's energy-related GHG emissions.[79] Additionally, the project would be required to meet the renewable energy criteria of the Green Building Code, further reducing the project's energy-related GHG emissions.

The proposed project's waste-related emissions would be reduced through compliance with the city's Recycling and Composting Ordinance, Construction and Demolition Debris Recovery Ordinance, and Green Building Code requirements. These regulations reduce the amount of materials sent to a landfill, reducing GHGs emitted by landfill operations. These regulations also promote reuse of materials, conserving their embodied energy[80] and reducing the energy required to produce new materials.

Compliance with the city's street tree planting requirements would serve to increase carbon sequestration by adding six new trees. Other regulations, including those limiting refrigerant emissions and the Wood Burning Fireplace Ordinance would reduce emissions of GHGs and black carbon, respectively. Regulations requiring low-emitting finishes would reduce volatile organic compounds (VOCs).[81] Compliance with the city's Construction Site Runoff Control Program would reduce the discharge of sediment or other pollutants from construction. Thus, the proposed project was determined to be consistent with San Francisco's GHG reduction strategy.[82]

Therefore, the proposed project's GHG emissions would not conflict with state, regional, and local GHG reduction plans and regulations. Furthermore, the proposed project is within the scope of the

[79] Compliance with water conservation measures reduce the energy (and GHG emissions) required to convey, pump and treat water required for the project.

[80] Embodied energy is the total energy required for the extraction, processing, manufacture and delivery of building materials to the building site.

[81] While not a GHG, VOCs are precursor pollutants that form ground level ozone. Increased ground level ozone is an anticipated effect of future global warming that would result in added health effects locally. Reducing VOC emissions would reduce the anticipated local effects of global warming.

[82] San Francisco Planning Department, *Greenhouse Gas Analysis: Compliance Checklist for 542-550 Howard Street*, September 18, 2018.

development evaluated in the PEIR and would not result in impacts associated with GHG emissions beyond those disclosed in the PEIR. No mitigation measures are necessary.

Conclusion

For the above reasons, the proposed project would not result in a significant individual or cumulative GHG impact. Therefore, the proposed project would not result in significant GHG impacts that were not identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
9. WIND—Would the project:				
a) Create wind hazards in publicly accessible areas of substantial pedestrian use?	☐	☐	☐	☒

Planning Code section 148, Reduction of Ground-Level Wind Currents in C-3 Districts, requires buildings to be shaped so as not to cause ground-level wind currents to exceed, more than 10 percent of the time, 11 mph in substantial pedestrian use areas, and 7 mph in public seating areas. [83] When a project would result in exceedances of a comfort criterion, an exception may be granted, pursuant to section 309, if the building or addition cannot be designed to meet the criteria. Section 148 also establishes a hazard criterion, which is an equivalent wind speed of 26 mph as averaged for a single full hour of the year.[84] Under section 148, new buildings and additions may not cause wind speeds that meet or exceed this hazard criterion and no exception may be granted for buildings that result in winds that exceed the hazard criterion.

For the purposes of CEQA review, a project would have a significant effect with respect to the pedestrian wind environment if it would create wind hazards in publicly accessible areas of substantial pedestrian use. In this context, the planning department has determined that an exceedance of the wind hazard criterion of section 148 is the standard for determining whether pedestrian winds would "substantially affect public areas." The section 148 comfort criteria are also discussed here, for information.

The PEIR identified significant but mitigable impacts related to the substantial increases wind speeds in publicly accessible open spaces and new exceedances of the Planning Code section 148 wind hazard criterion. The TCDP PEIR identified PEIR Mitigation Measure M-WI-2: Tower Design to Minimize

[83] The wind ordinance comfort criteria are defined in terms of *equivalent wind speed*, which is an average wind speed (mean velocity), adjusted to include the level of gustiness and turbulence. *Equivalent wind speed* is defined as the mean wind velocity, multiplied by the quantity (one plus three times the turbulence intensity) divided by 1.45. This calculation magnifies the reported wind speed when turbulence intensity is greater than 15 percent. Throughout this memorandum, unless otherwise stated, use of the term "wind speeds" in connection with the wind-tunnel tests refers to *equivalent wind speeds* that are exceeded 10 percent of the time.

[84] The wind hazard criterion is derived from the 26 mph hourly average wind speed that would generate a 3-second gust of wind at 20 meters per second, a commonly used guideline for wind safety. Because the original Federal Building wind data was collected at one-minute averages, the 26 mph hourly average is converted to a one-minute average of 36 mph, which is used to determine compliance with the 26 mph one-hour hazard criterion in the *Planning Code*. (Arens, E. *et al.*, "Developing the San Francisco Wind Ordinance and its Guidelines for Compliance," Building and Environment, Vol. 24, No. 4, p. 297-303, 1989.)

Pedestrian Wind Speeds to mitigate impacts to a less-than-significant level. Pursuant to PEIR Mitigation Measure M-WI-2, and based on the height and location of the proposed project, a pedestrian wind assessment ("Wind Assessment") was prepared by a qualified wind consultant to evaluate pedestrian-level wind effects of the proposed project.[85] As part of this wind assessment, a wind tunnel test was conducted. The test included massing models of other potential future development in the vicinity of the proposed project, which were modeled as boxy, rectangular massings, extrapolated up to the maximum height limit.

The objective of the Wind Assessment was to provide a quantitative evaluation of the potential wind impacts of the proposed development, by providing a screening-level estimation of potential wind impacts that would occur if the project were constructed as proposed. The wind-tunnel test measured wind speeds for the existing, existing plus project, and cumulative scenarios. As with the PEIR wind assessment, the cumulative scenario included a model for the Salesforce Tower and massing models of other potential future development in the vicinity of the project site. The project-specific wind-tunnel test included a project-specific model based on drawings for the proposed project's tower (800 feet tall to the top of the parapet). Wind speed measurements were taken at 38 locations for the project and cumulative scenarios including one location (location 33) on the proposed pedestrian bridge that would connect the proposed building to Salesforce Park, which was not measured in the existing scenario as it does not yet exist.

Hazard Criterion

The wind assessment found that, under the existing scenario, two locations exceeded the 26-mile-per-hour wind hazard criterion for 1 hour per year: one on the rooftop at the south end of the Transit Center (location 31) at a total of 1.1 hours per year and one on the rooftop of the Transit Center, north of the project site (location 38) at a total of 3.9 hours per year (see Exhibit 2, Figure 2 for the existing scenario test results). The wind assessment found that, under the existing plus project scenario, the same two locations would exceed the 26-mile-per-hour wind hazard criterion. In addition, under the existing plus project scenario, an additional hazard exceedance would occur at location 33, on the elevated pedestrian bridge connecting the proposed project's building to the Salesforce Park across Natoma Street. This test location, which does not exist under the existing conditions scenario, is unprotected and susceptible to winds aligned with Natoma Street and also receives winds redirected from the north-northeast and southeast (see Exhibit 2, Figure 3 for the existing plus project scenario). Multiple bridge designs were tested to ensure that wind speeds at this location (33) would be reduced to below hazard criterion exceedance levels. The design that achieved the goal of eliminating this hazard exceedance would require 6-foot-tall parapet wall heights on the north and south sides of the pedestrian bridge. This design has been incorporate into the proposed project design and would not require a mitigation measure to implement (see Exhibit 2, Figure 4 for a figure of bridge design that would eliminate hazard criterion exceedance). As such, the proposed project would not result in any net new exceedances as compared to the existing conditions.

Comfort Criterion

Effects related to pedestrian comfort are provided for informational purposes; there are no applicable thresholds of significance under CEQA that have been adopted by the city with respect to pedestrian

[85] CPP, *Pedestrian-Level Winds Report and Wind Tunnel Tests for Parcel F,* September 5, 2018.

comfort relative to wind. Based on the wind testing, existing wind conditions near the project site average 11 mph for the 38 test locations tested. Under the existing scenario, wind speeds at 16 of the 38 locations exceed the planning code's 11 mph pedestrian-comfort criterion an average of 12 percent of the year. These areas are along Natoma Street at New Montgomery Street, along Second Street at Natoma and Howard streets, along Howard Street east of the project site, along First Street at Tehama Street, at Minna Street west of the project site, atop the Salesforce Park, and at localized areas to the north and east of the project site. Under the existing plus project scenario, the average comfort wind speed would increase by 0.9 mph at all locations. This increase in comfort criteria exceedances are generally in the same locations as under the existing scenario, but would result in 7 additional comfort criterion exceedances for a total of 23 of the 38 locations. These additional exceedances would be along Natoma Street toward the northeast end of the Transit Center, on the eastern side of the project site, and along Howard Street to the east of the project site. The addition of new pedestrian comfort exceedances would require the project sponsor to seek an exception under Planning Code section 309. When compared to the existing plus project scenario, the cumulative scenario would result in two additional comfort criterion exceedances for a total of 25 of the 38 locations, including locations along Howard Street to the east of the project site and under the elevated roadway near Tehama Street. Therefore, wind conditions under the cumulative scenario are expected to be similar to the existing plus project scenario. Wind conditions around the project site are not expected to be affected substantially by construction of reasonably foreseeable development under the cumulative scenario. As a result, the proposed project would not result in new or peculiar impacts, or adverse effects of greater severity than were already analyzed and disclosed in the TCDP PEIR with respect to the wind comfort criteria.

Cumulative Analysis

Cumulative conditions for the wind analysis included the following reasonably foreseeable projects: 390 First Street, 325 Fremont Street, 95 Hawthorne Street, 655 Folsom Street, 524 Howard Street, 555 Howard Street, 633 Folsom Street, 667 Folsom Street, 120 Hawthorne Street and 126 Hawthorne Street, 525 Harrison Street, Transbay Redevelopment Plan Block 2 and 4.[86]

Under the cumulative scenario evaluated in the wind assessment, an additional hazard exceedance location not present under the existing and existing plus project scenarios would occur at the ground level on Howard Street, northeast of the project site and southeast of the future tower at 524 Howard Street (location 21) for a total of 1.4 hours per year, while the hazard criterion exceedance at location 38 for a total of 2.2 hours per year that would occur under the existing and existing plus project scenarios would be eliminated. These changes would likely be due to the addition of future development that would shelter location 38 from southerly winds while slightly increasing the wind sensitivity at location 21. Overall, no net new hazard exceedances would occur under the cumulative scenario compared to the existing and existing plus project scenarios. As a result, under the cumulative scenario, the proposed project is not anticipated to cause adverse wind impacts or result in new hazardous wind conditions in or around the project site.

[86] Since the wind analysis was prepared, the following projects have been completed or are currently under construction, and, as such, are considered to be part of the existing conditions: 390 First Street, 325 Fremont Street, 524 Howard Street, 667 Folsom Street, 120 Hawthorne Street and 126 Hawthorne Street.

Conclusion

For the reasons stated above, the proposed project would not result in significant wind impacts, either individually or cumulatively. Therefore, the proposed project would not result in significant wind impacts that were not identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
10. SHADOW—Would the project:				
a) Create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open spaces?	☐	☐	☐	☒

Planning Code section 295 generally prohibits new structures above 40 feet in height that would cast additional shadows on open space that is under the jurisdiction of the San Francisco Recreation and Park Commission between one hour after sunrise and one hour before sunset, at any time of the year, unless that shadow would not result in a significant adverse effect on the use of the open space. A project that adds new shadow to sidewalks or a public open space, or exceeds the Absolute Cumulative Limit[87] on a section 295 park does not necessarily result in a significant impact under CEQA. The City's significance criteria used in CEQA review asks whether a project would "create new shadow that substantially and adversely affects the use and enjoyment of publicly accessible open space."

The TCDP PEIR considered reasonable foreseeable future projects on 13 specific sites in the TCDP, based on generalized massing models of buildings at the heights that would be allowed under the TCDP. The PEIR found that new shadows from development within the plan area would affect nine parks, eight of which have established Absolute Cumulative Limits for net new shadow under section 295. Considered together, development under the TCDP would require that the Absolute Cumulative Limit be increased on seven downtown parks. No mitigation is available for shadow impacts on existing parks, because it not possible to lessen the intensity or otherwise reduce the shadow cast by a building at a given height and bulk. Therefore, the TCDP PEIR found the plan would have a significant and unavoidable impact with respect to shadow.

To evaluate the actual design of the proposed project, a project-specific shadow study was performed using a detailed 3-D model of the proposed project.[88] The results of this project specific shadow study, including a

[87] The Absolute Cumulative Limit represents the maximum percentage of new shadow, expressed as a percentage of theoretical annual available sunlight (TAAS). 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.

[88] Fastcast, *Shadow Analysis Report Transbay Parcel F Project San Francisco, CA,* September 2018.

quantitative analysis of potential shadow impacts on section 295 parks and potential significant shadow impacts under CEQA were discussed in the project specific shadow technical memorandum and are summarized here.

Union Square Plaza

Union Square Plaza is an approximately 2.42-acre (105,516-square feet) public plaza, located approximately 0.50 mile west of the project site. Union Square Plaza contains landscaped areas, walkways, and areas for active and passive uses. The proposed project would add new shadow to Union Square Plaza in the early morning between 7:44 a.m. until no later than 8:15 a.m. from August 30 through September 13 and from March 29 through April 12 for a total of six weeks. New project shadow would be cast on the northwest portion of Union Square Plaza, which includes primarily open space, stairs, and portable seating with tables, chairs, and umbrellas.

The existing annual shadow coverage on Union Square Plaza is 44.99 percent shaded relative to the theoretical annual available sunlight (TAAS) (approximately 392,667,242 square foot hours of shadow). The quantitative analysis found that the proposed project would add approximately 0.029 percent new shadow, relative to TAAS (approximately 115,526 sfh of shadow) for a total of 45.02 percent shaded under existing plus project conditions. As discussed in the TCDP PEIR and the shadow study for the 50 First Street project,[89] the remaining shadow budget for Union Square Plaza is 0.143 percent. Therefore, the remaining shadow budget for Union Square Plaza with the proposed project would be 0.114 percent. The average duration of new shadow from the proposed project on Union Square Plaza would be 18 minutes. The maximum extent of net new shadow cast by the proposed project would occur on September 6 and April 5 at 7:44 a.m., when approximately 14,956 square feet of project shadow would fall on the northwest portion of Union Square, covering approximately 14.17 percent of the park and increasing shadow coverage from 82.33 percent of the park to 96.5 percent coverage of the park, with only a small sliver of sunlight remaining. The greatest amount of net new daily shadow from the proposed project would also occur on September 6 and April 5, when the project would add approximately 4,687 square foot hours of new shadow (see Exhibit 2, Figure 5). The Absolute Cumulative Limit for Union Square is currently 0.143 percent of TAAS. Because the proposed project would add about 0.029 percent of new shadow, the project shadow would fit within this "shadow budget."

The Salesforce Tower (referred to as Transit Tower in the TCDP PEIR), the newly completed office-residential tower at 181 Fremont Street and under-construction project at 50 First Street would also shade Union Square. Other than the proposed project, remaining development sites identified in the PEIR as casting shadow on Union Square include a proposed tower adjacent to the Palace Hotel (with a height limit of 600 feet, although a proposal on file at the planning department seeks approval for an approximately 700-foot-tall building) and a potential 700-foot tower on the Golden Gate University site. If a tower were to proceed on the Palace Hotel site or a tower be proposed on the Golden Gate University site, such project(s) would be subject to project-specific shadow analysis.

Willie "Woo Woo" Wong Playground

Willie "Woo Woo" Wong Playground is an approximately 0.61-acre (26,563 square feet) inner-city park, located approximately 0.62 mile northwest of the project site. The park contains two sand-floor playgrounds, and basketball, tennis and volleyball courts. It also includes a recreational center that hosts

[89] ESA, *Oceanwide Center (50 First Street) Project Specific CEQA and sections 146, 147, and 295 Shadow Analysis,* March 19, 2016.

afterschool programs and indoor gym and ping-pong tables. The proposed project would add new shadow to Willie "Woo Woo" Wong Playground in the early morning starting after 8:00 a.m. and ending before 8:30 a.m. for a total of 11 weeks of the year between November 15 and November 22 and between January 18 and January 25. The new project shadow would cover 2,628 square feet (or 9.89 percent) of the playground and would be cast on a portion of the northwest side of the tennis courts.

The TCDP PEIR found that the proposed project and a potential 700-foot tower on the Golden Gate University site would cast shadows on Willie "Woo Woo" Wong Playground, which would occur from early November to early December and during January (approximately two months in all), from approximately 8:00 a.m. to 8:20 a.m. The TCDP PEIR found that the proposed project would cast the greatest area of new shadow at any one time of approximately 4,000 square feet (about 15 percent of the total area of Willie Wong Playground), at 8:15 a.m. in late November and mid-January with shadow on the playground increasing from 80 percent to 97 percent shadow coverage.

The existing annual shadow coverage on Willie "Woo Woo" Wong Playground is 58.44 percent shaded relative to TAAS (approximately 98,852,508 sfh of shadow). The quantitative analysis found that the proposed project would add approximately 0.00996 percent new shadow, relative to TAAS (approximately 9,845 sfh of shadow) for a total of 58.45 percent shaded under existing plus project conditions. The Absolute Cumulative Limit for Willie "Woo Woo" Wong Playground is currently 0.03 percent of TAAS; therefore, the remaining shadow budget for the playground with the proposed project would be 0.02 percent. The average duration of new shadow resulting from the proposed project on Willie "Woo Woo" Wong Playground would be 10 minutes, 48 seconds. The greatest amount of net new daily shadow from the proposed project would occur on November 29 and January 11 at 8:15 a.m., when the project would add approximately 2,628 sfh of new shadow (see Exhibit 2, Figure 6). The duration of net new project shadow reaching Willie "Woo Woo" Wong Playground during the year would be 11 weeks, slightly larger than the eight weeks analyzed in the TCDP PEIR. However, the greatest area of new shadow would be less than what was analyzed in the TCDP PEIR, with the project casting new shadow of approximately 2,628 square feet, compared to the 4,000 square feet analyzed in the TCDP PEIR.

Other than the proposed project, the only remaining development site that was identified in the TCDP PEIR as casting shadow on Willie "Woo Woo" Wong Playground was a potential 700-foot tower on the Golden Gate University site. If a tower were proposed on the Golden Gate University site, it would be subject to project-specific shadow analysis.

Other Public and Publicly Accessible Open Spaces

Salesforce Park

Salesforce Park is a 5.4-acre rooftop park located atop the Transbay Transit Center, less than 100 feet north from the project site across Natoma Street. Salesforce Park is under the jurisdiction of the Transbay Joint Powers Authority. The rooftop park is 1,400-foot long and includes an amphitheater, a children play space, a café, a restaurant, and open grass areas. Salesforce Park would be shaded by the proposed project throughout the year, beginning at 7:52 a.m. and lasting no later than 7:00 p.m.

The existing annual shadow coverage on Salesforce Park is 41.83 percent shaded. The quantitative analysis found that the proposed project would add approximately 8.25 percent new shadow, relative to TAAS (approximately 63,887,258 sfh) for a total of 50.07 percent shaded under existing plus project conditions. The average duration of new shadow resulting from the proposed project on Salesforce Park

would be 8 hours, 53 minutes, and 17 seconds. The maximum extent of net new shadow cast by the proposed project would occur on November 15 and January 25 at 2:00 p.m., lasting 15 minutes, during which time the shadow would cover approximately 94,025 sf or 45.16 percent of the park. Due to the close proximity of Salesforce Park to the project site, the proposed project would add net new shadow on the park every day throughout the year. During the summer months, net new shadow from the proposed project would occur during the morning hours through the early afternoon, until shortly after 2:00 p.m., with new shadow covering the southwestern portion of the park containing an amphitheater and a restaurant. During the fall and spring months, net new shadow from the proposed project would occur in the early morning hours and would last until shortly after 3:00 p.m. with new shadow covering the southwestern and middle portions of the park containing an amphitheater, a restaurant, children play space, and open grass spaces. During the winter months, net new shadow from the proposed project would cover at least a portion of the park throughout the majority of the day, starting at 8:19 a.m., and lasting until shortly after 3:00 p.m. moving from the southwestern to the northeastern end of the park over the course of the day.

The TCDP PEIR stated that the TCDP plan area buildings, including the proposed project, would add new shadow to Salesforce Park (referred to as City Park in the TCDP PEIR). Existing buildings located near the Salesforce Park, including the Salesforce Tower, would cast shadow throughout the year on most of the park area. The TCDP PEIR acknowledged that this park would be surrounded by high-rise development; thus, it was expected that buildings that were existing at the time of the preparation of the TCDP PEIR, as well as future buildings anticipated as a result of upzoning proposed in that PEIR, would cast shadows onto the park during the day. As noted above, the TCDP PEIR found the plan would have a significant and unavoidable impact with respect to shadow on parks. The proposed project's new shadow would not result in any significant shadow impacts that were not identified in the PEIR, nor would it result in more severe impacts than identified in the PEIR.

Rincon Park

Rincon Park is a 2-acre waterfront park, located along the Embarcadero, approximately 0.5 mile northeast of the project site. Rincon Park is leased from the Port of San Francisco and developed by Gap Inc. in conjunction with the construction of its headquarters office building. Rincon Park is adjacent to the Bay Trail and includes groomed patches of grass and landscaped areas along a paved promenade area.

The TCDP PEIR found that the non-section 295 public open space that would be most greatly affected by the plan area development is Rincon Park. This open space would be newly shaded in the late afternoon throughout much of the year, except from mid-fall through mid-winter, by the Salesforce Tower, 181 Fremont, the 50 First Street project, and potential 700-foot buildings at the Golden Gate University site and at 350 Mission Street. New buildings in the plan area would add additional shadow between the shadow cast by existing buildings, obscuring some of the existing sunlight.

The existing annual shadow coverage on Rincon Park is 30.52 percent shaded. The quantitative analysis found that the proposed project would add 0.00024 percent (1,136 sfh) increase in annual shadow on the furthermost northwestern edge of Rincon Park, which consists mostly of a small portion of dirt. The average duration of new shadow resulting from the proposed project on Rincon Park would be 14 minutes, 52 seconds. The maximum extent of net new shadow by the proposed shadow would occur on November 8 and February 1 at 3:15 p.m., lasting 15 minutes, and would cover approximately 111 sf of the park, consisting of trees and planters in the midday hours, from late winter through spring. As the proposed project would add minor net new shadow to Rincon Park, the proposed project's new shadow

would not result in an adverse physical change to this park.

For remaining development sites identified in the TCDP PEIR and individual development projects that would be subject to Planning Code sections 295, 146, and 147 and could cast shadows on Salesforce Park and Rincon Park, such project(s) would be subject to project-specific shadow analysis.

Future Parks

There are four proposed parks in the vicinity of the proposed project, including Transbay Park (to be located 0.2 miles east of the project site), Under Ramp Park (referred to as Oscar Park in the TCDP PEIR) (to be located 100 feet southeast of the project site, under Fremont Street offramp), Second & Howard Plaza (to be located 250 feet southwest of the project site) and Mission Square (to be located 950 feet northeast of the project site). As discussed in the shadow study, the proposed project has the potential to cast new shadow on the future Transbay Park during the evening hours of the fall and spring months covering the eastern portion of the park consisting of open grass areas. With respect to the future Under Ramp Park, the proposed project has the potential to add minor new shadow to this park; however, all net new shadow would be subsumed by the existing overhead freeway structures. The proposed project has the potential to cast new shadow on the future Second & Howard Plaza during the early morning hours of summer on the northwestern and northern portions of the plaza consisting of open space, a fountain, and trees. The proposed project has the potential to cast new shadow on the future Mission Square during the early afternoon hours of fall, spring, and winter months. During this time, the southern portion of the park with outdoor tables would be shaded by the proposed project.

Cumulative Analysis

Cumulative conditions for the shadow analysis included the following reasonably foreseeable projects: 390 First Street, 325 Fremont Street, 95 Hawthorne Street, 655 Folsom Street, 524 Howard Street, 555 Howard Street, 633 Folsom Street, 667 Folsom Street, 120 Hawthorne Street and 126 Hawthorne Street, 525 Harrison Street, Transbay Redevelopment Plan Block 2 and 4.[90]

Based on the shadow analysis, these cumulative projects would not add any new shadow on Union Square Plaza and Willie "Woo Woo" Wong Playground. However, these cumulative projects would cast new shadow on Salesforce Park and Rincon Park, contributing to the significant and unavoidable shadow impact identified in the TCPD PEIR. Under cumulative conditions, the proposed project would add a smaller amount of shadow to Salesforce Park than under the existing plus project conditions, approximately 6.06 percent new shadow, relative to TAAS (approximately 46,967,034 sfh) for a total of 54.99 percent shaded under cumulative conditions. Under cumulative conditions, the average duration of new shadow resulting from the proposed project on Salesforce Park would be 8 hours, 43 minutes, and 3 seconds. The maximum extent of net new shadow cast by the proposed project would occur on October 25 and February 15 at 1:45 p.m., lasting 15 minutes, during which time the shadow would cover approximately 52,308 sf or 25.12 percent of the park. Under cumulative conditions, the proposed project would add a slightly smaller amount of shadow to the same northwestern edge of Rincon Park, approximately 658 sfh of net new shadow resulting in a 0.00014 percent increase in annual shadow, relative to TAAS (approximately 144,257,085 sfh) and combined with shadow cast by cumulative projects,

[90] Since the shadow analysis was prepared, the following projects have been completed or are currently under construction, and, as such, are considered to be part of the existing conditions: 390 First Street, 325 Fremont Street, 524 Howard Street, 667 Folsom Street, 120 Hawthorne Street and 126 Hawthorne Street.

would shade the entire park throughout different days/times of the year. Under cumulative conditions, the average duration of new shadow resulting from the proposed project on Rincon Park would be 15 minutes. The maximum extent of net new shadow cast by the proposed project would be similar to that under existing plus project conditions and would occur on November 8 and February 1 at 3:15 p.m., lasting 15 minutes, during which time the shadow would cover approximately 111 sf of the park.

The proposed project would similarly contribute to the previously identified significant and unavoidable shadow impact. Therefore, the proposed project would not result in additional or more severe cumulative shadow impacts than were analyzed in the TCDP PEIR.

Conclusion

Based upon the amount and duration of new shadow and the importance of sunlight to each of the open spaces analyzed, the proposed project would not substantially affect, in an adverse manner, the use or enjoyment of these open spaces beyond what was analyzed and disclosed in the TCDP FEIR. With respect to section 295 parks, the proposed project's new shadow on Union Square and Willie "Woo Woo" Wong Playground would contribute considerably to the significant and unavoidable impact identified in the TCDP FEIR with respect to the need to increase the Absolute Cumulative Limit of downtown parks. With respect to other parks (not subject to section 295), the proposed project would either contribute very minor amount of shadow to those spaces (i.e., Rincon Park) or its shadow impacts were already anticipated with the implementation of the TCDP plan (i.e., Salesforce Park). Thus, the proposed project would not result in new or more severe shadow impacts than those identified in the PEIR. This conclusion is consistent with the findings of the PEIR, and the proposed project would not result in individual or cumulative shadow impacts beyond those analyzed in the PEIR, nor would it result it in substantially more severe impacts than identified in the PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
11. RECREATION—Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facilities would occur or be accelerated?	☐	☐	☐	☒
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☐	☒

The PEIR found that implementation of the Transit Center District Plan would result in an increase in the use of existing neighborhood parks and recreational facilities, but not to a degree that would lead to or accelerate their physical deterioration or require the construction of new facilities. Although the Plan

would increase the population of the area, the PEIR acknowledged that the Plan would primarily increase the population of office workers, who would not be anticipated to use the parks and open spaces to an extent that would cause substantial deterioration of existing facilities. The PEIR concluded that the new five-acre park above the Transit Center (now known as Salesforce Park), in combination with the public and private open space that would accompany new development within the TCDP plan area, would help to alleviate the demand that would be generated by the increase in population. In addition, the PEIR determined that city planning efforts would ensure new open spaces are provided in areas with high demand. Therefore, implementation of the Plan would have a less-than-significant impact on recreation and public space and no mitigation measures were required.

In November 2012, the voters of San Francisco passed the 2012 San Francisco Clean and Safe Neighborhood Parks Bond, providing the Recreation and Park Department an additional $195 million to continue capital projects for the renovation and repair of parks, recreation, and open space assets. An update of the Recreation and Open Space Element (ROSE) of the General Plan was adopted in April 2014. The amended ROSE provides a 20-year vision for open spaces in the city. The amended ROSE includes information and policies about accessing, acquiring, funding, and managing open spaces in San Francisco. The amended ROSE identifies locations where proposed open space connections should be built, specifically streets appropriate for potential "living alleys." In addition, the amended ROSE identifies the role of both the Better Streets Plan and the Green Connections Network in open space and recreation. Green Connections are streets and paths that connect people to parks, open spaces, and the waterfront while enhancing the ecology of the street environment. Two routes identified within the Green Connections Network cross the TCDP area: Downtown to Mission Bay (Route 19) and Folsom, Mission Creek to McLaren (Route 20).[91]

The project site is located in the TCDP area, which is served primarily by the recently constructed Salesforce Park, as well as a number of privately-owned, publicly-accessible open spaces (POPOS) associated with nearby developments. In the project vicinity, there are seven existing POPOS: 100 First Street located 0.07 mile north of the project site; 101 Second Street located 0.05 mile northwest of the project site; 222 Second Street located 0.06 mile southwest of the project site; 535 Mission Street located 0.06 mile north of the project site; 555 Mission Street located 0.04 mile northwest of the project site; 505-525 Howard Square located 0.09 mile east of the project site; and Foundry Square, located 0.08 mile northeast of the project site. In addition, two future parks have been proposed: Under Ramp Park [referred to as Oscar Park in the TCDP PEIR] and 2nd & Howard Plaza.

The proposed project would include a total of approximately 22,400 square feet (sf) of open space, consisting of a combination of public open space and common open spaces accessible only to building residents, guests and employees. This would include approximately 5,800 sf of publicly accessible commercial open space, including 1,950 sf of open space for the public passageway from Howard Street through the project site to Natoma Street, 666 sf of open space adjacent to the public elevator, and 830 sf for the public elevator from levels 1 through 5, and 2,530 sf of publicly accessible open space at the terrace and pedestrian bridge to Salesforce Park on level 5.

Although new residents, hotel employees and guests, and office employees and guests at the project site would increase the use of nearby public and private open spaces, the provision of new open space at the

[91] San Francisco Planning, *Green Connections Network,* March 2014. Available at http://sfplanning.org/Citywide/green_connections/GC_Final_Network_Map_03-2014.pdf, accessed September 6, 2018.

project site would provide adequate open space for on-site residents and guests. In addition, the use of the recently constructed Salesforce Park and other planned POPOS by local residents, including residents, hotel guests, and employees that would be generated by the proposed project, was anticipated during the project's design and evaluation as part of the TCDP PEIR. Therefore, the proposed project would not create a substantial increase in the use of open space and recreation facilities such that physical deterioration or degradation of existing facilities would occur, and there would be no additional impacts on recreation beyond those analyzed in the TCDP PEIR.

Cumulative Analysis

Cumulative development in the project vicinity would result in an intensification of land uses and an increase in the use of nearby recreational resources and facilities. The Recreation and Open Space Element of the General Plan provides a framework for providing a high-quality open space system for its residents, while accounting for expected population growth through year 2040. In addition, San Francisco voters passed two bond measures, in 2008 and 2012, to fund the acquisition, planning, and renovation of the city's network of recreational resources. As discussed above, there are several parks, open spaces, or other recreational facilities in the vicinity of the project site, and one large new park has recently been constructed within the plan area. These existing recreational facilities would be able to accommodate the increase in demand for recreational resources generated by nearby cumulative development projects without resulting in physical degradation of those resources. For these reasons, the proposed project would not combine with reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact on recreational resources or facilities.

Conclusion

As discussed above, the proposed project would not result in significant individual or cumulative impacts related to recreational resources. Therefore, the proposed project would not result in a significant recreational impact that was not disclosed in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
12. UTILITIES AND SERVICE SYSTEMS—Would the project:				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☒	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?	☐	☐	☐	☒

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
c) Result in a determination by the wastewater treatment provider that would serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

The TCDP PEIR describes the general environmental conditions in the plan area with respect to utilities and service systems and found that implementation of the TCDP would result in less-than-significant impacts to utilities and service systems, including wastewater, water supply, and solid waste. No mitigation measures were identified.

The project site is in an urban area and would connect to existing utilities including water and wastewater connections, electricity, natural gas, and telecommunications systems. The construction impacts associated with connecting to these systems are accounted for in the project's construction equipment and operating assumptions that provide the basis for determining the environmental effects on various environmental resources, including construction noise and air quality. Therefore, this initial study accounts for any environmental effects associated with providing connections to these utilities.

The following analysis evaluates whether: (1) sufficient water supplies are available to serve the proposed project and reasonably foreseeable future development in normal, dry, and multiple dry years, and (2) the proposed project would require or result in the relocation or construction of new or expanded water supply facilities the construction or relocation of which would have significant environmental impacts that were not identified in the TCDP PEIR. To support this analysis, a project-specific water supply assessment based on updated water supply and demand projections was prepared.[92] Background on the city's water system and the updated projections are described in the sections below.

Background on Hetch Hetchy Regional Water System

San Francisco's Hetch Hetchy regional water system, operated by the SFPUC, supplies water to approximately 2.7 million people. The system supplies both retail customers—primarily in San Francisco—and 27 wholesale customers in Alameda, Santa Clara, and San Mateo counties. The system provides an average of 85 percent of its supply from the Tuolumne River watershed, stored in Hetch Hetchy Reservoir in Yosemite National Park, and the remaining 15 percent from local surface waters in the Alameda and Peninsula watersheds. The split between these resources varies from year to year depending on hydrological conditions and operational circumstances. Separate from the regional water system, the SFPUC owns and operates an in-city distribution system that serves retail customers in San

[92] SFPUC, *Revised Water Supply Assessment for the 542-550 Howard Street Project*, May 17, 2019.

Francisco. Approximately 97 percent of the San Francisco retail water supply is from the regional system; the remainder is comprised of local groundwater and recycled water.

Water Supply Reliability and Drought Planning

In 2008, the SFPUC adopted the Phased Water System Improvement Program (WSIP) to ensure the ability of the regional water system to meet certain level of service goals for water quality, seismic reliability, delivery reliability, and water supply through 2018.[93] The SFPUC's level of service goals for regional water supply are to meet customer water needs in non-drought and drought periods and to meet dry-year delivery needs while limiting rationing to a maximum of 20 percent system-wide. In approving the WSIP, the SFPUC established a supply limitation of up to 265 million gallons per day (mgd) to be delivered from its water supply resources in the Tuolumne, Alameda and Peninsula watersheds in years with normal (average) precipitation.[94] The SFPUC's water supply agreement with its wholesale customers provides that approximately two-thirds of this total (up to 184 mgd) is available to wholesale purchasers and the remaining one-third (up to 81 mgd) is available to retail customers. The total amount of water the SFPUC can deliver to retail and wholesale customers in any one year depends on several factors, including the amount of water that is available from natural runoff, the amount of water in reservoir storage, and the amount of that water that must be released from the system for purposes other than customer deliveries (e.g., required instream flow releases below reservoirs). A "normal year" is based on historical hydrological conditions that allow the reservoirs to be filled by rainfall and snowmelt, allowing full deliveries to customers; similarly, a "wet year" and a "dry year" is based on historical hydrological conditions with above and below "normal" rainfall and snowmelt, respectively.

For planning purposes, the SFPUC uses a hypothetical drought that is more severe than what has historically been experienced. This drought sequence is referred to as the "design drought" and serves as the basis for planning and modeling of future scenarios. The design drought sequence used by the SFPUC for water supply reliability planning is an 8.5-year period that combines the following elements to represent a drought sequence more severe than historical conditions:

- **Historical Hydrology**—a six-year sequence of hydrology from the historical drought that occurred from July 1986 to June 1992
- **Prospective Drought**—a 2.5-year period which includes the hydrology from the 1976-77 drought
- **System Recovery Period**—The last six months of the design drought are the beginning of the system recovery period. The precipitation begins in the fall, and by approximately the month of December, inflow to reservoirs exceeds customer demands and SFPUC system storage begins to recover.

While the most recent drought (2012 through 2016) included some of the driest years on record for the SFPUC's watersheds, the design drought still represents a more severe drought in duration and overall water supply deficit.

Based on historical records of hydrology and reservoir inflow from 1920 to 2017, current delivery and flow obligations, and fully-implemented infrastructure under the WSIP, normal or wet years occurred 85 out of 97 years. This translates into roughly nine normal or wet years out of every 10 years. Conversely,

[93] On December 11, 2018, the SFPUC Commission extended the timing of the WSIP water supply decision through 2028 in its Resolution No. 18-0212.

[94] SFPUC Resolution No. 08-200, *Adoption of the Water System Improvement Program Phased WSIP Variant,* October 30, 2008.

system-wide rationing is required roughly one out of every 10 years. The frequency of dry years is expected to increase as climate change intensifies.

2015 Urban Water Management Plan

The California Urban Water Management Planning Act[95] requires urban water supply agencies to prepare *urban water management plans* to plan for the long-term reliability, conservation, and efficient use of California's water supplies to meet existing and future demands. The act requires water suppliers to update their plans every five years based on projected growth for at least the next 20 years.

Accordingly, the current urban water management plan for the City and County of San Francisco is the 2015 Urban Water Management Plan update.[96] The 2015 plan is an update to the 2010 Urban Water Management Plan. It presents information on the SFPUC's retail and wholesale service areas, the regional water supply system and other water supply systems operated by the SFPUC, system supplies and demands, water supply reliability, Water Conservation Act of 2009 compliance, water shortage contingency planning, and water demand management.

The water demand projections in the 2015 plan reflect anticipated population and employment growth, socioeconomic factors, and the latest conservation forecasts. For San Francisco, housing and employment growth projections are based on the San Francisco Planning Department's Land Use Allocation 2012 (see 2015 Urban Water Management Plan, Appendix E, Table 5, p. 21), which in turn is based on the Association of Bay Area Governments (ABAG) growth projections through 2040.[97] The 2015 plan presents water demand projections in five-year increments over a 25-year planning horizon through 2040.

The 2015 plan compares anticipated water supplies to projected demand through 2040 for normal, single-dry, and multiple-dry water years. Retail water supplies are comprised of regional water system supply, groundwater, recycled water, and non-potable water. Under normal hydrologic conditions, the total retail supply is projected to increase from 70.1 mgd in 2015 to 89.9 mgd in 2040. According to the plan, available and anticipated future water supplies would fully meet projected demand in San Francisco through 2040 during normal years.

On December 11, 2018, by Resolution No. 18-0212, the SFPUC amended its 2009 Water Supply Agreement between the SFPUC and its wholesale customers. That amendment revised the Tier 1 allocation in the Water Supply Allocation Plan to require a minimum reduction of 5 percent of the regional water system supply for San Francisco retail customers whenever system-wide reductions are required due to dry-year supply shortages.[98] When accounting for the requirements of this recently amended agreement, existing and planned supplies would meet projected retail water system demands in all years except for an approximately 3.6 to 6.1 mgd or 5 to 6.8 percent shortfall during dry years through the year 2040. This relatively small shortfall is primarily due to implementation of the amended 2009 water supply agreement. In such an event, the SFPUC would implement the SFPUC's Retail Water Shortage Allocation

[95] California Water Code, division 6, part 2.6, sections 10610 through 10656, as last amended in 2015.
[96] San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco*, June 2016. This document is available at https://sfwater.org/index.aspx?page=75
[97] Association of Bay Area Governments, *Jobs-Housing Connection Strategy*, May 2012.
[98] SFPUC, Resolution No. 18-0212, December 11, 2018.

Plan and could manage this relatively small shortfall by prohibiting certain discretionary outdoor water uses and/or calling for voluntary rationing among all retail customers. Based on experience in past droughts, retail customers could reduce water use to meet this projected level of shortfall. The required level of rationing is well below the SFPUC's regional water supply level of service goal of limiting rationing to no more than 20 percent on a system-wide basis.

Based on the 2015 Urban Water Management Plan, as modified by the 2018 amendment to the 2009 Water Supply Agreement, sufficient retail water supplies would be available to serve projected growth in San Francisco through 2040. While concluding supply is sufficient, the 2015 Urban Water Management Plan also identifies projects that are underway or planned to augment local supply. Projects that are underway or recently completed include the San Francisco Groundwater Supply Project and the Westside Recycled Water Project. A more current list of potential regional and local water supply projects that the SFPUC is considering is provided below under Additional Water Supplies.

In addition, the plan describes the SFPUC's ongoing efforts to improve dry-year water supplies, including participation in Bay Area regional efforts to improve water supply reliability through projects such as interagency interties,[99] groundwater management and recharge, potable reuse, desalination, and water transfers. While no specific capacity or supply has been identified, this program may result in future supplies that would benefit SFPUC customers.

2018 Bay-Delta Plan Amendment

In December 2018, the State Water Resources Control Board adopted amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary, which establishes water quality objectives to maintain the health of the rivers and the Bay-Delta ecosystem.[100] Among the goals of the adopted Bay-Delta Plan Amendment is to increase salmonid populations in the San Joaquin River, its tributaries (including the Tuolumne River), and the Bay-Delta. Specifically, the plan amendment requires increasing flows in the Stanislaus, Tuolumne, and Merced rivers to 40 percent of unimpaired flow[101] from February through June every year, whether it is wet or dry. During dry years, this would result in a substantial reduction in the SFPUC's water supplies from the Tuolumne River watershed.

If this plan amendment is implemented, the SFPUC would be able to meet the projected retail water demands presented in the 2015 Urban Water Management Plan in normal years but would experience supply shortages in single dry years and multiple dry years. Implementation of the Bay-Delta Plan Amendment would result in substantial dry-year water supply shortfalls throughout the SFPUC's regional water system service area, including San Francisco. The 2015 Urban Water Management Plan assumes limited rationing for retail customers may be needed in multiple dry years to address an

[99] Interties is an interconnection permitting passage of utility service (e.g., water or electricity) between two or more systems, such as electric and water utility systems. (California Department of Water Resource, *Glossary,* https://water.ca.gov/Water-Basics/Glossary, accessed August 22, 2019).

[100] State Water Resources Control Board Resolution No. 2018-0059, *Adoption of Amendments to the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary and Final Substitute Environmental Document,* December 12, 2018, available at *https://www.waterboards.ca.gov/plans_policies/docs/2018wqcp.pdf*.

[101] "Unimpaired flow" represents the water production of a river basin, unaltered by upstream diversions, storage, or by export or import of water to or from other watersheds.

anticipated supply shortage by 2040; the 2018 amendment to the 2009 Water Supply Agreement with wholesale customers would slightly increase rationing levels indicated in the 2015 plan. By comparison, implementation of the Bay-Delta Plan Amendment would result in supply shortfalls in all single dry years and multiple dry years and rationing to a greater degree than previously anticipated to address supply shortages not accounted for in the 2015 Urban Water Management Plan or as a result of the 2018 amendment to the Water Supply Agreement.

The state water board has stated that it intends to implement the plan amendment by the year 2022, assuming all required approvals are obtained by that time. However, at this time, the implementation of the Bay-Delta Plan Amendment is uncertain for several reasons, as the SFPUC explained in the Water Supply Assessment prepared for this project. First, under the federal Clean Water Act, the United States Environmental Protection Agency (U.S. EPA) must approve the water quality standards identified in the plan amendment within 90 days from the date the approval request is received. It is uncertain what determination the U.S. EPA will make and its decision could result in litigation.

Second, since adoption of the Bay-Delta Plan Amendment, over a dozen lawsuits have been filed in state and federal court, challenging the water board's adoption of the plan amendment, including legal challenges filed by the federal government at the request of the U.S. Bureau of Reclamation. That litigation is in the early stages, and there have been no dispositive court rulings as of this date.

Third, the Bay-Delta Plan Amendment is not self-executing and does not allocate responsibility for meeting its new flow requirements to the SFPUC or any other water rights holders. Rather, the plan amendment merely provides a regulatory framework for flow allocation, which must be accomplished by other regulatory and/or adjudicatory proceedings, such as a comprehensive water rights adjudication or, in the case of the Tuolumne River, the Clean Water Act, section 401 certification process in the Federal Energy Regulatory Commission's relicensing proceeding for Don Pedro Dam. The license amendment process is currently expected to be completed in the 2022-2023 timeframe. This process and other regulatory and/or adjudicatory proceeding would likely face legal challenges and have lengthy timelines, and quite possibly could result in a different assignment of flow responsibility for the Tuolumne River than currently exists (and therefore a different water supply effect on the SFPUC).

Fourth, in recognition of the obstacles to implementation of the Bay-Delta Plan Amendment, the state water board directed its staff to help complete a "Delta watershed-wide agreement, including potential flow measures for the Tuolumne River" by March 1, 2019, and to incorporate such agreements as an "alternative" for a future amendment to the Bay-Delta Plan to be presented to the [water board] as early as possible after December 1, 2019." In accordance with the water board's instruction, on March 1, 2019, the SFPUC, in partnership with other key stakeholders, submitted a proposed project description for the Tuolumne River that could be the basis for a voluntary agreement with the state water board that would serve as an alternative path to implementing the Bay-Delta Plan's objectives. On March 26, 2019, the SFPUC adopted Resolution No. 19-0057 to support its participation in the voluntary agreement negotiation process. In a written progress report to the Voluntary Agreement Plenary Participants dated July 1, 2019, the California secretaries for Environmental Protection and for Natural Resources stated that the collective state agencies should be able "to determine the adequacy" of the various proposed voluntary agreements, including the proposed Tuolumne Voluntary Agreement, by October 15, 2019, and

that if the state team recommends the voluntary agreements to the state water board, then (1) scientific peer review of the voluntary agreements would be completed by the spring of 2020, and (2) a draft CEQA document would be released for public comment in the summer of 2020, with a finalized CEQA document completed the following year.

For these reasons, whether, when, and the form in which the Bay-Delta Plan Amendment will be implemented, and how those amendments will affect the SFPUC's water supply, is currently unknown.

Additional Water Supplies

In light of the adoption of the Bay-Delta Plan Amendment and the resulting potential limitation to the SFPUC's regional water system supply during dry years, the SFPUC is expanding and accelerating its efforts to develop additional water supplies and explore other projects that would improve overall water supply resilience. Developing these supplies would reduce water supply shortfalls and reduce rationing associated with such shortfalls. The SFPUC has taken action to fund the study of additional water supply projects, which are described in the water supply assessment for the proposed project and listed below:

- Daly City Recycled Water Expansion
- Alameda County Water District Transfer Partnership
- Brackish Water Desalination in Contra Costa County
- Alameda County Water District-Union Sanitary District Purified Water Partnership
- Crystal Springs Purified Water
- Eastside Purified Water
- San Francisco Eastside Satellite Recycled Water Facility
- Additional Storage Capacity in Los Vaqueros Reservoir from Expansion
- Calaveras Reservoir Expansion

The capital projects that are under consideration would be costly and are still in the early feasibility or conceptual planning stages. These projects would take 10 to 30 or more years to implement and would require environmental permitting negotiations, which may reduce the amount of water that can be developed. The yield from these projects unknown and is not currently incorporated into SFPUC's supply projections.

In addition to capital projects, the SFPUC is also considering developing related water demand management policies and ordinances, such as funding for innovative water supply and efficiency technologies and requiring potable water offsets for new developments.

Water Supply Assessment

Under sections 10910 through 10915 of the California Water Code, urban water suppliers like the SFPUC must prepare water supply assessments for certain large projects, as defined in CEQA Guidelines section 15155.[102] Water supply assessments rely on information contained in the water supplier's urban water

[102] Pursuant to CEQA Guidelines section 15155(1), "a water-demand project" means:
(A) A residential development of more than 500 dwelling units.
(B) A shopping center or business establishment employing more than 1,000 persons or having more than 500,000 square feet of floor space.
(C) A commercial office building employing more than 1,000 persons or having more than 250,000 square feet of floor area.

management plan and on the estimated water demand of both the proposed project and projected growth within the relevant portion of the water supplier's service area. Because the proposed project is a mixed use development of approximately 165 dwelling units, 189 hotel rooms, 274,000 gsf of office uses, 59,800 gsf of hotel amenities, 9,900 sf of retail space, and 22,400 sf, it meets the definition of a water demand project under CEQA. Accordingly, the SFPUC adopted a water supply assessment for the proposed project on June 11, 2019.[103]

The water supply assessment for the proposed project identifies the project's total water demand, including a breakdown of potable and non-potable water demands. The proposed project is subject to San Francisco's Non-potable Water Ordinance (San Francisco Health Code article 12C). The Non-potable Water Ordinance requires new commercial, mixed-use, and multi-family residential development projects with 250,000 square feet or more of gross floor area to install and operate an onsite non-potable water system. Such projects must meet their toilet and urinal flushing and irrigation demands through the collection, treatment, and use of available graywater, rainwater, and foundation drainage. While not required, projects may use treated blackwater or stormwater if desired. Furthermore, projects may choose to apply non-potable water to other non-potable water uses, such as cooling tower blowdown and industrial processes, but are not required to do so under the ordinance. The proposed project would meet the requirements of the Non-potable Water Ordinance by using graywater and rainwater for toilet and urinal flushing and irrigation.

Both potable and non-potable demands for the project were estimated using the SFPUC's Non-potable Water Calculator and supplemented with additional calculations for cooling tower and hotel demands. According to the demand estimates, the project's total water demand would be approximately 0.048 mgd, which would be comprised of 0.042 mgd of potable water and 0.006 mgd of non-potable water. According to the water supply assessment, approximately 13.3 percent of the project's total water demand would be met by non-potable water.[104]

The water supply assessment estimates future retail (citywide) water demand through 2040 based on the population and employment growth projections contained in the planning department's Land Use Allocation 2012. The department has determined that the proposed project represents a portion of the planned growth accounted for in Land Use Allocation 2012. Therefore, the project's demand is incorporated in the 2015 Urban Water Management Plan.

The water supply assessment determined that the project's potable water demand of 0.042 mgd would contribute 0.05 percent to the projected total retail demand of 89.9 mgd in 2040. The project's total water demand of 0.048 mgd, which does not account for the 0.042 mgd savings anticipated through compliance with the non-potable water ordinance, would represent 0.05 percent of 2040 total retail demand. Thus, the

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(D) A hotel or motel, or both, having more than 500 rooms, (e) an industrial, manufacturing, or processing plant, or industrial park planned to house more than 1,000 persons, occupying more than 40 acres of land, or having more than 650,000 square feet of floor area.

(F) a mixed-use project that includes one or more of the projects specified in subdivisions (a)(1)(A), (a)(1)(B), (a)(1)(C), (a)(1)(D), (a)(1)(E), and (a)(1)(G) of this section.

(G) A project that would demand an amount of water equivalent to, or greater than, the amount of water required by a 500 dwelling unit project.

103 SFPUC, *Revised Water Supply Assessment for the 542-550 Howard Street Project*, May 17, 2019.

104 Although 0.006 is 12.5% of 0.048, the SFPUC's Non-Potable Water Calculator shows that 13.3% of the project's total water demand would be met by non-potable sources. The difference is due to rounding.

proposed project represents a small fraction of the total projected water demand in San Francisco through 2040.

Due to the recent 2018 Bay Delta Plan Amendments, the water supply assessment considers these demand estimates under three water supply scenarios. To evaluate the ability of the water supply system to meet the demand of the proposed project in combination with both existing development and projected growth in San Francisco, the water supply assessment describes each of the following water supply scenarios:

- Scenario 1: Current Water Supply
- Scenario 2: Bay-Delta Plan Voluntary Agreement
- Scenario 3: 2018 Bay-Delta Plan Amendment

As discussed below, the water supply assessment concludes that water supplies would be available to meet the demand of the proposed project in combination with both existing development and projected growth in San Francisco through 2040 under each of these water supply scenarios with varying levels of rationing during dry years. The following is a summary of the analysis and conclusions presented in the SFPUC's water supply assessment for the project under each of the three water supply scenarios considered.

Scenario 1 – Current Water Supply

Scenario 1 assumes no change to the way in which water is supplied, and that neither the Bay-Delta Plan Amendment nor a Bay-Delta Plan Voluntary Agreement would be implemented. Thus, the water supply and demand assumptions contained in the 2015 Urban Water Management Plan and the 2009 Water Supply Agreement as amended would remain applicable for the project's water supply assessment. As stated above, the project is accounted for in the demand projections in the 2015 Urban Water Management Plan.

Under Scenario 1, the water supply assessment determined that water supplies would be available to meet the demand of the project in combination with existing development and projected growth in all years, except for an approximately 3.6 to 6.1 mgd or 5- to 6.8-percent shortfall during dry years through the year 2040. This relatively small shortfall is primarily due to implementation of the amended 2009 Water Supply Agreement. To manage a small shortfall such as this, the SFPUC may prohibit certain discretionary outdoor water uses and/or call for voluntary rationing by its retail customers. During a prolonged drought at the end of the 20-year planning horizon, the project could be subject to voluntary rationing in response to a 6.8-percent supply shortfall, when the 2018 amendments to the 2009 Water Supply Agreement are taken into account. This level of rationing is well within the SFPUC's regional water system supply level of service goal of limiting rationing to no more than 20 percent on a system-wide basis (i.e., an average throughout the regional water system).

Scenario 2 – Bay-Delta Plan Voluntary Agreement

Under Scenario 2, a voluntary agreement would be implemented as an alternative to the adopted Bay-Delta Plan Amendment. The March 1, 2019, proposed voluntary agreement submitted to the state water board has yet to be accepted, and the shortages that would occur with its implementation are not known. The voluntary agreement proposal contains a combination of flow and non-flow measures that are designed to benefit fisheries at a lower water cost, particularly during multiple dry years, than would occur under the Bay-Delta Plan Amendment. The resulting regional water system supply shortfalls during dry years would be less than those under the Bay-Delta Plan Amendment and would require rationing of a lesser degree and closer in alignment to the SFPUC's adopted level of service goal for the

regional water system of rationing of no more than 20 percent system-wide during dry years. The SFPUC Resolution No. 19-0057, which authorized the SFPUC staff to participate in voluntary agreement negotiations, stated its intention that any final voluntary agreement allow the SFPUC to maintain both the water supply and sustainability level of service goals and objectives adopted by the SFPUC when it approved the WSIP. Accordingly, it is reasonable to conclude that if the SFPUC enters into a voluntary agreement, the supply shortfall under such an agreement would be of a similar magnitude to those that would occur under Scenario 1. In any event, the rationing that would be required under Scenario 2 would be of a lesser degree than under the Bay-Delta Plan Amendment as adopted.

Scenario 3 – Bay-Delta Plan Amendment

Under Scenario 3, the 2018 Bay-Delta Plan Amendment would be implemented as it was adopted by the state water board without modification. As discussed above, there is considerable uncertainty whether, when, and in what form the plan amendment will be implemented. However, because implementation of the plan amendment cannot be ruled out at this time, an analysis of the cumulative impact of projected growth on water supply resources under this scenario is included in this document to provide a worst-case impact analysis.

Under this scenario, which is assumed to be implemented after 2022, water supplies would be available to meet projected demands through 2040 in wet and normal years with no shortfalls. However, under Scenario 3 the entire regional water system—including both the wholesale and retail service areas—would experience significant shortfalls in single dry and multiple dry years, which over the past 97 years occur on average just over once every 10 years. Significant dry-year shortfalls would occur in San Francisco, regardless of whether the proposed project is constructed. Except for the currently anticipated shortfall to retail customers of about 6.1 mgd (6.8 percent) that is expected to occur under Scenario 1 during years seven and eight of the 8.5-year design drought based on 2040 demand levels, these shortfalls to retail customers would exclusively result from supply reductions resulting from implementation of the Bay-Delta Plan Amendment. The retail supply shortfalls under Scenario 3 would not be attributed to the incremental demand associated with the proposed project, because the project's demand is incorporated already in the growth and water demand/supply projections contained in the 2015 Urban Water Management Plan.

Under the Bay-Delta Plan Amendment, existing and planned dry-year supplies would be insufficient for the SFPUC to satisfy its regional water system supply level of service goal of no more than 20 percent rationing system-wide. The Water Shortage Allocation Plan does not specify allocations to retail supply during system-wide shortages above 20 percent. However, the plan indicates that if a system-wide shortage greater than 20 percent were to occur, regional water system supply would be allocated between retail and wholesale customers per the rules corresponding to a 16- to 20-percent system-wide reduction, subject to consultation and negotiation between the SFPUC and its wholesale customers to modify the allocation rules. The allocation rules corresponding to the 16- to 20-percent system-wide reduction are reflected in the project's water supply assessment. These allocation rules result in shortfalls of 15.6 to 49.8 percent across the retail service area as a whole under Scenario 3. As shown in Table 5 of the water supply assessment, total shortfalls under Scenario 3 would range from 12.3 mgd (15.6 percent) in a single dry year to 36.1 mgd (45.7 percent) in years seven and eight of the 8.5-year design drought based on 2025 demand levels and from 21 mgd (23.4 percent) in a single dry year to 44.8 mgd (49.8 percent) in years seven and eight of the 8.5-year design drought based on 2040 demand.

Impact Analysis

As described above, the supply capacity of the Hetch Hetchy regional water system that provides the majority of the city's drinking water far exceeds the potential demand of any single development project in San Francisco. No single development project alone in San Francisco would require the development of new or expanded water supply facilities or require the SFPUC to take other actions, such as imposing a higher level of rationing across the city in the event of a supply shortage in dry years. Therefore, a separate project-only analysis is not provided for this topic. The following analysis instead considers whether the proposed project in combination with both existing development and projected growth through 2040 would require new or expanded water supply facilities, the construction or relocation of which could have significant cumulative impacts on the environment that were not identified in the TCDP PEIR. It also considers whether a high level of rationing would be required that could have significant cumulative impacts. It is only under this cumulative context that development in San Francisco could have the potential to require new or expanded water supply facilities or require the SFPUC to take other actions, which in turn could result in significant physical environmental impacts related to water supply. If significant cumulative impacts could result, then the analysis considers whether the project would make a considerable contribution to the cumulative impact.

Impact related to New or Expanded Water Supply Facilities

The SFPUC's adopted water supply level of service goal for the regional water system is to meet customer water needs in non-drought and drought periods. The system performance objective for drought periods is to meet dry-year delivery needs while limiting rationing to a maximum of 20 percent system-wide reduction in regional water service during extended droughts. As the SFPUC has designed its system to meet this goal, it is reasonable to assume that to the extent the SFPUC can achieve its service goals, sufficient supplies would be available to serve existing development and planned growth accounted for in the 2015 Urban Water Management Plan (which includes the proposed project) and that new or expanded water supply facilities are not needed to meet system-wide demand. While the focus of this analysis is on the SFPUC's retail service area and not the regional water system as a whole, this cumulative analysis considers the SFPUC's regional water supply level of service goal of rationing of no more than 20 percent in evaluating whether new or expanded water supply facilities would be required to meet the demands of existing development and projected growth in the retail area through 2040. If a shortfall would require rationing of more than 20 percent to meet system-wide dry-year demand, the analysis evaluates whether as a result, the SFPUC would develop new or expanded water supply facilities that result in significant physical environmental impacts. It also considers whether such a shortfall would result in a level of rationing that could cause significant physical environmental impacts. If the analysis determines that there would be a significant cumulative impact, then per CEQA Guidelines section 15130, the analysis considers whether the project's incremental contribution to any such effect is "cumulatively considerable".

As discussed above, existing and planned dry-year supplies would meet projected retail demands through 2040 under Scenario 1 within the SFPUC's regional water system adopted water supply reliability level of service goal. Therefore, the SFPUC could meet the water supply needs for the proposed project in combination with existing development and projected growth in San Francisco through 2040 from the SFPUC's existing system. The SFPUC would not be expected to develop new or expanded water supply facilities for retail customers under Scenario 1 and there would be no significant cumulative environmental impact.

The effect of Scenario 2 cannot be quantified at this time but as explained previously, if it can be designed to achieve the SFPUC's level of service goals and is adopted, it would be expected to have effects similar

to Scenario 1. Given the SFPUC's stated goal of maintaining its level of service goals under Scenario 2, it is expected that Scenario 2 effects would be more similar to Scenario 1 than to Scenario 3. In any event, any shortfall effects under Scenario 2 that exceed the SFPUC's service goals would be expected to be less than those under Scenario 3. Therefore, the analysis of Scenario 3 would encompass any effects that would occur under Scenario 2 if it were to trigger the need for increased water supply or rationing in excess of the SFPUC's regional water system level of service goals.

Under Scenario 3, the SFPUC's existing and anticipated water supplies would be sufficient to meet the demands of existing development and projected growth in San Francisco, including the proposed project, through 2040 in wet and normal years, which have historically occurred in approximately nine out of 10 years on average. During dry and multiple dry years, retail supply shortfalls of 15.6 to 49.8 percent could occur.

The SFPUC has indicated in its water supply assessment that as a result of the adoption of the Bay-Delta Plan Amendment and the resulting potential limitations on supply to the regional water system during dry years, the SFPUC is increasing and accelerating its efforts to develop additional water supplies and explore other projects that would increase overall water supply resilience. It lists possible projects that it will study. The SFPUC is beginning to study water supply options, but it has not determined the feasibility of the possible projects, has not made any decision to pursue any particular supply projects, and has determined that the identified potential projects would take anywhere from 10 to 30 years or more to implement.

There is also a substantial degree of uncertainty associated with the implementation of the Bay-Delta Plan Amendment and its ultimate outcome, and therefore, there is substantial uncertainty in the amount of additional water supply that may be needed, if any. Moreover, there is uncertainty and lack of knowledge as to the feasibility and parameters of the possible water supply projects the SFPUC is beginning to explore. Consequently, the physical environmental impacts that could result from future supply projects is quite speculative at this time and would not be expected to be reasonably determined for a period of time ranging from 10 to 30 years. Although it is not possible at this time to identify the specific environmental impacts that could result, this analysis assumes that if new or expanded water supply facilities, such as those listed above under "Additional Water Supplies," were developed, the construction and/or operation of such facilities could result in significant adverse environmental impacts, and this would be a significant cumulative impact.

As discussed above, the proposed project would represent 0.11 percent of total demand and 0.09 percent of potable water demand in San Francisco in 2040, whereas implementation of the Bay Delta Plan Amendment would result in a retail supply shortfall of up to 49.8 percent. Thus, new or expanded dry-year water supplies would be needed under Scenario 3 regardless of whether the proposed project is constructed. As such, any physical environmental impacts related to the construction and/or operation of new or expanded water supplies would occur with or without the proposed project. Therefore, the proposed project would not have a considerable contribution to any significant cumulative impacts that could result from the construction or operation of new or expanded water supply facilities developed in response to the Bay-Delta Plan Amendment.

Impact related to Rationing

Given the long lead times associated with developing additional water supplies, in the event the Bay-Delta Plan Amendment were to take effect sometime after 2022 and result in a dry-year shortfall, the expected action of the SFPUC for the next 10 to 30 years (or more) would be limited to requiring increased rationing. The remaining analysis therefore focuses on whether rationing at the levels that

might be required under the Bay-Delta Plan Amendment could result in any cumulative impacts, and if so, whether the project would make a considerable contribution to these impacts.

The SFPUC has established a process through its Retail Water Shortage Allocation Plan for actions it would take under circumstances requiring rationing. Rationing at the level that might be required under the Bay-Delta Plan Amendment would require changes to how businesses operate, changes to water use behaviors (e.g., shorter and/or less-frequent showers), and restrictions on irrigation and other outdoor water uses (e.g., car washing), all of which could lead to undesirable socioeconomic effects. Any such effects would not constitute physical environmental impacts under CEQA.

High levels of rationing could however lead to adverse physical environmental effects, such as the loss of vegetation cover resulting from prolonged restrictions on irrigation. Prolonged high levels of rationing within the city could also make San Francisco a less desirable location for residential and commercial development compared to other areas of the state not subject to such substantial levels of rationing, which, depending on location, could lead in turn to increased urban sprawl. Sprawl development is associated with numerous environmental impacts, including, for example, increased greenhouse gas emissions and air pollution from longer commutes and lower density development, higher energy use, loss of farmland, and increased water use from less water-efficient suburban development.[105] In contrast, as discussed in the transportation section, the proposed project is located in an area where VMT per capita is well below the regional average; projects in San Francisco are required to comply with numerous regulations that would reduce greenhouse gas emissions, as discussed in the greenhouse gas section of this initial study, and San Francisco's per capita water use is among the lowest in the state. Thus, the higher levels of rationing on a citywide basis that could be required under the Bay-Delta Plan Amendment could lead directly or indirectly to significant cumulative impacts. The question, then, is whether the project would make a considerable contribution to impacts that may be expected to occur in the event of high levels of rationing.

While the levels of rationing described above apply to the retail service area as a whole (i.e., 5 to 6.8 percent under Scenario 1, 15.6 to 49.8 percent under Scenario 3), the SFPUC may allocate different levels of rationing to individual retail customers based on customer type (e.g., dedicated irrigation, single-family residential, multi-family residential, commercial, etc.) to achieve the required level of retail (city-wide) rationing. Allocation methods and processes that have been considered in the past and may be used in future droughts are described in the SFPUC's current Retail Water Shortage Allocation Plan[106]. However, additional allocation methods that reflect existing drought-related rules and regulations adopted by the SFPUC during the recent drought are more pertinent to current and foreseeable development and water use in San Francisco and may be included in the SFPUC's update to its Retail Water Shortage Allocation Plan.[107] The Retail Water Shortage Allocation Plan will be updated as part of the 2020 Urban Water Management Plan update in 2021. The SFPUC anticipates that the updated Retail Water Shortage Allocation Plan would include a tiered allocation approach that imposes lower levels of rationing on customers who use less water than other customers in the same customer class and would require higher levels of rationing by customers who use more water. This approach aligns with the state water board's statewide emergency conservation mandate imposed during the recent drought, in which urban water suppliers who used less water were subject to lower reductions than those who used more

[105] Pursuant to the SFPUC 2015 Urban Water Management Plan, San Francisco's per capita water use is among the lowest in the state.

[106] San Francisco Public Utilities Commission, *2015 Urban Water Management Plan for the City and County of San Francisco, Appendix L – Retail Water Shortage Allocation Plan,* June 2016. This document is available at https://sfwater.org/index.aspx?page=75

[107] SFPUC, *2015-2016 Drought Program*, adopted by Resolution 15-0119, May 26, 2015.

water. Imposing lower rationing requirements on customers who already conserve more water is also consistent with the implementation of prior rationing programs based on past water use in which more efficient customers were allocated more water.

The SFPUC anticipates that, as a worst-case scenario under Scenario 3, a mixed-used customer such as the proposed project would be subject to a range of 16 to 50 percent rationing during a severe drought.[108] In accordance with the Retail Water Shortage Allocation Plan, the level of rationing that would be imposed on the proposed project would be determined at the time of a drought or other water shortage and cannot be established with certainty prior to the shortage event. However, newly-constructed buildings, such as the proposed project, have water-efficient fixtures and non-potable water systems that comply with the latest regulations. Thus, if these buildings can demonstrate below-average water use, they would likely be subject to a lower level of rationing than other retail customers that meet or exceed the average water use for the same customer class.

While any substantial reduction in water use in a new, water efficient building likely would require behavioral changes by building occupants that are inconvenient, temporary rationing during a drought is expected to be achievable through actions that would not cause or contribute to significant environmental effects. The effect of such temporary rationing would likely cause occupants to change behaviors but would not cause the substantial loss of vegetation because vegetation on this urban infill site would be limited to ornamental landscaping, and non-potable water supplies would remain available for landscape irrigation in dry years. The project would not include uses that would be forced to relocate because of temporary water restrictions, such as a business that relies on significant volumes of water for its operations. While high levels of rationing that would occur under Scenario 3 could result in future development locating elsewhere, existing residents, hotel employees and guests, and office employees and guests occupying the proposed project would be expected to tolerate rationing for the temporary duration of a drought.

As discussed above, implementation of the Bay-Delta Plan Amendment would result in substantial system-wide water supply shortfalls in dry years. These shortfalls would occur with or without the proposed project, and the project's incremental increase in potable water demand (0.05 percent of total retail demand) would have a negligible effect on the levels of rationing that would be required throughout San Francisco under Scenario 3 in dry years.

As such, temporary rationing that could be imposed on the project would not cause or contribute to significant environmental effects associated with the high levels of rationing that may be required on a city-wide basis under Scenario 3. Thus, the project would not make a considerable contribution to any significant cumulative impacts that may result from increased rationing that may be required with implementation of the Bay-Delta Plan Amendment, were it to occur.

[108] This worst-case rationing level for San Francisco multi-family residential was estimated for the purpose of preparing comments on the Draft Substitute Environmental Document in Support of Potential Changes to the Bay-Delta Plan (SED), dated March 16, 2017. See comment letter Attachment 1, Appendix 3, Page 5, Table 3. The comment letter and attachments are available at: https://www.waterboards.ca.gov/public_notices/comments/2016_baydelta_plan_amendment/docs/dennis_herrera.pdf. The state water board's SED assumes that the City will develop additional water supplies through large scale water transfers and/or construction of a large-scale desalination plant or new in-Delta diversion. The city's comments on the SED explain why increased rationing is in fact the SFPUC's most reasonably foreseeable response to the water supply reductions that may result from Bay-Delta Plan Amendment.

Water Supply Conclusion

As stated above, there is considerable uncertainty as to whether the Bay-Delta Plan Amendment will be implemented. If the plan amendment is implemented, the SFPUC will need to impose higher levels of rationing than its regional water system level of service goal of no more than 20 percent rationing during drought years by 2025 and for the next several decades. Implementation of the plan amendment would result in a shortfall beginning in years two and three of multiple dry-years in 2025 of 33.2 percent, and dry year shortfalls by 2040 ranging from 23.4 percent in a single dry year and year one of multiple dry years to up to 49.8 percent in years seven and eight of the 8.5-year design drought. While the SFPUC may seek new or expanded water supply facilities, it has not made any definitive decision to pursue particular actions and there is too much uncertainty associated with this potential future decision to identify environmental effects that would result. Such effects are therefore speculative at this time. In any case, the need to develop new or expanded water supplies in response to the Bay Delta Plan Amendment and any related environmental impacts would occur irrespective of the water demand associated with the proposed project. Given the long lead times associated with developing additional supplies, the SFPUC's expected response to implementation of the Bay-Delta Plan Amendment would be to ration in accordance with procedures in its Retail Water Shortage Allocation Plan.

Both direct and indirect environmental impacts could result from high levels of rationing. However, the project is a mixed-use urban infill development that would be expected to tolerate the level of rationing imposed on it for the duration of the drought, and thus would not contribute to sprawl development caused by rationing under the Bay-Delta Plan Amendment. The project itself would not be expected to contribute to a loss of vegetation because project-generated non-potable supplies would remain available for irrigation in dry years. Nor would the small increase in potable water demand attributable to the project compared to citywide demand substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Thus, the proposed project would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta Plan Amendment. Therefore, for the reasons described above, under all three scenarios, this impact would be considered less than significant.

Wastewater Treatment

The project site is served by San Francisco's combined sewer system, which handles both sewage and stormwater runoff. The Southeast Water Pollution Control Plant provides wastewater and stormwater treatment and management for the east side of the city, including the project site. The project site is covered by impervious surfaces and would be required to comply with the city's Stormwater Management Ordinance. This ordinance requires the proposed project to decrease the amount of impervious area onsite and reduce peak stormwater runoff compared to existing conditions. Therefore, with implementation of the proposed project, stormwater from the project site to the Southeast Water Treatment Plant would be reduced, compared to existing conditions. Further, wastewater volumes generated by the project would be minimal in comparison to stormwater flows. Thus, the proposed project would not require new or expanded stormwater or wastewater facilities.

Solid Waste Disposal

The city disposes of its municipal solid waste at the Recology Hay Road Landfill, and that practice is anticipated to continue until 2025, with an option to renew the agreement thereafter for an additional six years. San Francisco Ordinance No. 27-06 requires mixed construction and demolition debris to be transported to a facility that must recover for reuse or recycling and divert from landfill at least 65 percent of all received construction and demolition debris. San Francisco's Mandatory Recycling and

Composting Ordinance No. 100-09 requires all properties and persons in the city to separate their recyclables, compostables, and landfill trash.

The proposed project would incrementally increase total city waste generation; however, the proposed project would be required to comply with San Francisco ordinance numbers 27-06 and 100- 09. Due to the existing and anticipated increase of solid waste recycling in the city and the requirements to divert construction debris from the landfill, any increase in solid waste resulting from the proposed project would be accommodated by the existing Hay Road landfill. Thus, the proposed project would have less-than-significant impacts related to solid waste.

Cumulative Analysis

As stated above, the small increase in potable water demand attributable to the project compared to citywide demand would not substantially affect the levels of dry-year rationing that would otherwise be required throughout the city. Thus, the proposed project would not make a considerable contribution to a cumulative environmental impact caused by implementation of the Bay-Delta plan amendment.

All projects in San Francisco would be required to comply with the same regulations described above which reduce stormwater, potable water use, and waste generation. Therefore, the proposed project, in combination with other reasonably foreseeable future projects would not result in a cumulative utilities and service systems impact.

Conclusion

The proposed project would represent a small fraction of the overall demand for utilities and service systems analyzed in the TCDP PEIR and, consistent with the findings in the TCDP PEIR, utilities and service providers have accounted for the growth in demand, including that of the proposed project, individually and cumulatively.

As discussed above, the proposed project would not result in a significant individual or cumulative impact than was analyzed in the PEIR, and there would be no additional impacts on utilities and service systems beyond those analyzed in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
13. PUBLIC SERVICES—Would the project:				
a) Result in substantial adverse physical impacts associated with the provision of, or the need for, new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives for any public services such as fire protection, police protection, schools, parks, or other services?	☐	☐	☐	☒

The PEIR found that implementation of the Plan would result in less-than-significant impacts to police, fire, and park services. The increased residential and worker population in the area would result in

increased demand for police and fire protection services, as well as park use, but this demand could be accommodated within existing infrastructure and planned improvements in the TCDP area, such as new parks and open spaces, or through re-deployment of resources from other areas of the city, if needed. Development of the proposed project would increase overall demand for public services. However, this growth would not exceed growth projections for the plan area, as discussed in topic 2, Population and Housing. Public service providers have accounted and planned for such growth in order to continue to provide services to San Francisco residents. Therefore, the proposed project would not result in a substantial increase in the demand for police or fire protection services. As described above, the proposed project would also not result in new or more severe impacts to parks or recreational facilities.

With the construction of 165 housing units, and assuming a 0.05 student yield rate for market-rate units,[109] the proposed project would generate about 9 elementary or high school students. These additional students would not exceed the capacity of schools such that new facilities would be required and thus the proposed project would not result in new or more severe impacts on school facilities than what was already analyzed and disclosed in the PEIR. In addition, and as discussed in the PEIR, the Leroy F. Greene School Facilities Act of 1998, or Senate Bill 50 (SB 50), restricts the ability of local agencies such as the City and County of San Francisco to deny land use approvals on the basis that public school facilities are inadequate. SB 50 establishes the base amount of allowable developer fees per square foot of commercial and residential construction. These fees are intended to address local school facility needs resulting from new development. The proposed project would contribute the necessary fees to ensure that local schools can support the proposed project's incremental increase in demand.

Cumulative Analysis

The proposed project, combined with projected citywide growth through 2040, would increase demand for public services, including police and fire protection and public schooling. The fire department, the police department, the school district, and other city agencies have accounted for such growth in providing public services to the residents of San Francisco. For these reasons, the proposed project would not combine with reasonably foreseeable future projects to increase the demand for public services requiring new or expanded facilities, the construction of which could result in significant physical environmental impacts.

Conclusion

Overall, and consistent with the findings in the PEIR, public services would not be adversely affected by the proposed project, individually or cumulatively, and the proposed project would not result in a new or more severe significant impact than was identified in the PEIR.

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[109] San Francisco Planning Department, Transit Center District Plan and Transit Tower Final Environmental Impact Report, Planning Department Case Nos. 2007.0558E and 2008.0789E, State Clearinghouse No. 2008072073, certified May 24, 2012. Available online at: http://sf-planning.org/area-plan-eirs, accessed October 25, 2018.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
14. BIOLOGICAL RESOURCES—Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
c) Have a substantial adverse effect on federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
f) Conflict with the provisions of an adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

The TCDP area is a dense, developed urban area that does not contain any natural vegetation communities; therefore, development under the TCDP, as addressed as part of the TCDP PEIR, would not affect any special-status plants. There are no riparian corridors, estuaries, marshes, or wetlands in the plan area that could be affected by the development anticipated under the TCDP. In addition, development envisioned under the TCDP would not substantially interfere with the movement of any resident or migratory wildlife species through compliance with Planning Code section 139, Standards for Bird-Safe Building, which requires specific window and façade treatments for structures over 300 feet in height to reduce bird mortality due to building features. However, the PEIR determined that construction in the plan area could have a significant effect on special-status birds and bats through tree removal or building demolition. The PEIR concluded that implementation of the TCDP would not result in significant impacts on biological resources with implementation of PEIR Mitigation Measures M-BI-1a: Pre-Construction Bird Surveys and M-BI-1b: Pre-Construction Bat Surveys. PEIR Improvement Measure I-BI-2: Night Lighting Minimization was identified to reduce potential effects on birds from night lighting at project sites.

The project site is currently vacant except for one air vent and a below grade train box associated with TTC located beneath a portion of the site. As such, the proposed project would not involve the demolition of existing structures or removal of any trees that could disturb nesting birds including special-status birds and those protected by the federal Migratory Bird Treaty Act and the California Fish and Game Code, nor affect special-status bat species. Therefore, Mitigation Measures M-BI-1a and M-BI-1b would not be applicable to the proposed project. Even absent these mitigation measures, for the reasons stated above, the proposed project would not result in any new or more severe significant impacts to biological resources not identified in the PEIR.

Cumulative Analysis

As the proposed project would have no impact on special-status species or sensitive habitats, the project would not have the potential to contribute to cumulative impacts to special-status species or sensitive habitats. All projects are required to comply with federal and state regulations related to the protection of migratory birds, including the Migratory Bird Treaty Act and the California Fish and Game Code section 3500. Therefore, cumulative impacts to migratory birds would be less than significant. Similarly, all projects within San Francisco are required to comply with *Public Works Code* section 801 *et.seq.*, which would ensure that any cumulative impact resulting from tree removal would be less than significant.

Conclusion

As discussed above, the proposed project would not result in a significant individual or cumulative impact with respect to biological resources. Therefore, the proposed project would not result in a significant biological resources impact that was not disclosed in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
15. GEOLOGY AND SOILS—Would the project:				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? (Refer to Division of Mines and Geology Special Publication 42.)	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
c) Be located on geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☒
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code, creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Change substantially the topography or any unique geologic or physical features of the site?	☐	☐	☐	☒

The TCDP PEIR found that all impacts related to geology and soils would be less than significant, including impacts related to earthquake fault, seismic groundshaking, seismically induced ground failure, or landslides. Much of the TCDP area, including the project site, is located within a potential liquefaction hazard zone as identified by the California Geological Survey (CGS). Compliance with applicable codes and recommendations made in project-specific geotechnical analyses would not eliminate earthquake risks, but would reduce them to an acceptable level, given the seismically active characteristics of the Bay Area. Thus, the PEIR concluded that implementation of the plan would not result in significant impacts with regard to geology, and no mitigation measures were identified in the PEIR.

Under the direction and management of the seven-member citizen Building Inspection Commission, the mission of the building department is to oversee the effective, efficient, fair and safe enforcement of San Francisco's Building, Housing, Plumbing, Electrical, and Mechanical Codes, along with the Disability Access Regulations. To ensure that the potential for adverse geologic, soils, and seismic hazards is adequately addressed, San Francisco relies on the state and local regulatory process for review and approval of building permits pursuant to the California Building Code (state building code, California Code of Regulations, Title 24); the San Francisco Building Code (local building code), which is the state building code plus local amendments that supplement the state code including Administrative Bulletins (AB); the building department's implementing procedures including Information Sheets (IS), and the State Seismic Hazards Mapping Act of 1990 (seismic hazards act, located in Public Resources Code section 2690 et seq.).

Pursuant to the seismic hazards act, the California State Geologist has identified seismic hazard zones for landslide and liquefaction hazards. These mapped areas enable cities and counties to adequately prepare the safety element of their general plans and to encourage land use management policies and regulations to reduce and mitigate those hazards in order to protect public health and safety. The seismic hazard act

also includes criteria for project approval, and guidelines for evaluating seismic hazards and recommending mitigation measures.[110]

Projects located within a seismic hazard zone for liquefaction hazard are subject to the seismic hazards act requirements, which include the preparation of a geotechnical investigation by qualified engineer and/or geologist to delineate the area of hazard and to propose mitigation measures to address any identified hazards. The local building official must incorporate the recommended mitigation measures from the geotechnical investigation to address such hazards into the conditions of the building permit. The project site is within a seismic hazard zone for liquefaction hazard; thus, site design and construction must comply with the requirements of the seismic hazard act.

The proposed project involves construction of a new 61-story, 750-foot-tall (800 feet including rooftop mechanical features) mixed-use tower in a seismic hazard zone for liquefaction hazard and is therefore also subject to a mandatory interdepartmental project review prior to a public hearing before the planning commission or the issuance of the new construction building permit. The interdepartmental review meeting must include representatives from the planning, building, public works, and fire departments to provide input on code compliance for applicable state and local codes.[111]

With respect to grading, foundation design, and superstructure design for buildings 240 feet or taller (such as that proposed by the project), the building department permit review procedures are subject to interim building department guidance. The interim guidelines specify requirements for Geotechnical Engineering peer reviews including the scope of geotechnical and structural review conducted by qualified geotechnical reviewers as part of a Geotechnical Engineering Design Review Team (review team).[112] On December 27, 2017, the building department issued information sheet S-18, Interim Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review for New Tall Buildings (interim guidelines), which has since been updated on March 27, 2019.[113] The interim guidelines supplement and clarify the information in AB 082 (Guidelines and Procedures for Structural Design Review)[114] as well as AB 083 (Requirements and Guidelines for the Seismic Design of New Tall Buildings using Non-Prescriptive Seismic-Design Procedures).[115,116] Tall buildings are defined as those 240 feet or taller, which includes the proposed building. The interim guidelines specify

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110 In the context of the seismic hazards act, "mitigation" refers to measures that are consistent with established practice and that will reduce seismic risk to acceptable levels, rather than the mitigation measures that are identified under the California Environmental Quality Act (CEQA) to reduce or avoid environmental impacts of a proposed project.

111 San Francisco Planning Department. *Interdepartmental Project Review.* Available at: http://forms.sfplanning.org/ProjectReview_ApplicationInterdepartmental.pdf, accessed October 25, 2018.

112 A qualified geotechnical reviewer for Engineering Design Review Teams shall be a geotechnical engineer (G.E.) registered in California or a Civil Engineer (C.E.) registered in California with substantially demonstrated geotechnical experience.

113 San Francisco Department of Building Inspection, *Information Sheet No. S-18, Interim Guidelines and Procedures for Structural, Geotechnical, and Seismic Hazard Engineering Design Review for New Tall Buildings,* March 27, 2019, http://sfdbi.org/sites/default/files/IS%20S-18.pdf, accessed August 23, 2019.

114 San Francisco Department of Building Inspection, November 21, 2018, *Administrative Bulletin 082, Guidelines and Procedures for Structural Design Review, http://sfdbi.org/sites/default/files/AB-082.pdf,* accessed August 23, 2019.

115 San Francisco Department of Building Inspection, March 25, 2008 (Updated January 1, 2014 for code references), Administrative Bulletin 083, *Requirements and Guidelines for the Seismic Design of New Tall Buildings using Non-Prescriptive Seismic-Design Procedures, http://sfdbi.org//sites/default/files/Documents/Administrative_Bulletins/2013_AB/AB_083_updated_010114.pdf,* accessed March 27, 2018.

116 As stated in IS-18, SEAONC experts are reviewing the information and procedures in Administrative Bulletin 082 and Administrative Bulletin 083 and may recommend to the director of the building department and to the building inspection commission the adoption of modified guidelines for future tall building safety in San Francisco.

requirements for the scope of geotechnical and structural review conducted by qualified geotechnical reviewers as part of a Geotechnical Engineering Design Review Team (review team).[117] This process and specified requirements would be applicable to the proposed project.

The project sponsor's engineer of record for the project would work with the two-member geotechnical review team to resolve all comments related to the foundation design in order to achieve consensus on the adequacy of the building's foundation and structural design. A report of the findings from the geotechnical review team shall be provided to the building department director. The report will provide findings and address following issues: the foundation type (shallow or deep), foundation design, interpretation of geotechnical and geological investigations, soil-foundation-structure interaction under static and seismic loading conditions, effects of dewatering and construction-related activities on the site and in the vicinity, and foundation or building settlement. The interim guidance also requires that prior to the completion of the proposed project, the project sponsor would contract with qualified monitoring surveyors and instrumentation engineers to monitor the effects of settlement on the building and foundations of the project for a period of ten years after the issuance of the certificate of final completion and occupancy. The findings from the post-occupancy surveys shall be provided to the building department annually within this 10-year period.

Under the proposed project, incorporation of the appropriate engineering and design features in accordance with geotechnical recommendations prepared by a qualified professional and the building codes would: ensure that the new structures would not suffer substantial damage; that substantial debris such as building exterior finishes or windows would not separate from the building; that building occupants would be able to safely vacate the building following an earthquake; and that pedestrians and other bystanders would not be injured. Since the proposed project would be required to comply with this geotechnical engineering coordination, impacts related to groundshaking would be less than significant.

A geotechnical investigation was prepared for the proposed project.[118] The investigation will be subject to building department structural information sheet S-20, Preliminary Guidelines for Review of Geotechnical Reports prepared for Design and Construction of Tall Buildings.[119] The investigation found that the project site is underlain by 5 to 15 feet of fill material comprising sand, silt, gravel, brick fragments, asphalt, and wood. The fill was likely placed at the site during the post-1906-earthquake leveling process. The fill was removed from the northwest portion of the site during the excavation for the Transbay Transit Center (TTC) train box and associated improvements, which are located on the project site. Fill is likely present in the remainder of the site. Below that fill at 20 to 35 feet below ground surface (bgs) is dune sand. Below the dune sand is a 5- to 30-foot-thick medium stiff to stiff sandy clay (marsh deposit). The marsh deposit is generally weak and compressible. Below the weak marsh deposit is the dense Colma formation consisting of clayey sand, silty sand, and clean sand and extends to depths of 80 to 90 feet bgs. Beneath the Colma formation is Old Bay Clay and alluvium/colluvium. Bedrock is located between 160 to 185 feet below grade at the western portion of the site and 130 to 160 feet at the easternmost portion of the site.

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[117] A qualified geotechnical reviewer for Engineering Design Review Teams shall be a geotechnical engineer (G.E.) registered in California or a Civil Engineer (C.E.) registered in California with substantially demonstrated geotechnical experience.

[118] Langan Treadwall Rollo, P*reliminary Geotechnical Evaluation Parcel F – Transbay Redevelopment Area, San Francisco, California,* May 25, 2016.

[119] San Francisco Department of Building Inspection, *Information Sheet No. S-20, Preliminary Guidelines for Review of Geotechnical Reports prepared for Design and Construction of Tall Buildings,* June 5, 2019, online at http://sfdbi.org/sites/default/files/IS%20S-20.pdf, accessed August 23, 2019.

According to the geotechnical investigation, the groundwater level at the project site had been lowered by ongoing construction dewatering at the TTC. The proposed project's geotechnical investigation estimated that the high groundwater level at the project site may rise to 12 feet bgs.

During a major earthquake on a segment of one of the nearby faults, strong to violent groundshaking is expected to occur at the project site. Strong shaking during an earthquake could result in ground failure such as that associated with soil liquefaction, lateral spreading, and seismic densification. Available subsurface information was utilized to perform a preliminary evaluation of the potential of these phenomena occurring at the project site, as further discussed below.

Seismic Hazards

Published data indicate neither known active faults nor extensions of active faults exist beneath the site. Therefore, the geotechnical investigation concluded the potential of surface rupture at the site is low. The site is relatively level and the potential for earthquake-induced landsliding is very low.

Liquefaction, Lateral Spreading, Seismic Densification, and Associated Hazards

The geotechnical investigation concluded that loose to medium dense sandy fill below the high groundwater level, and medium dense dune sand and sandy layers within the marsh deposit, could liquefy in a major earthquake on a nearby active fault. The results of the investigation indicate the ground surface could settle between ½ to 2 inches during a major earthquake on a nearby active fault. The fill, dune sand, and marsh deposits would be removed during excavation for the proposed project's basement and mat. Therefore, significant differential settlement between the building and adjacent improvements could occur. However, as discussed above, the proposed project's site design and construction must comply with the requirements of the seismic hazard act that would include adequate measures to address the potential effects of liquefaction hazard and these must be made conditions of the building permit approval. In addition, local building code requirements for structural design review for tall buildings would require peer review of the project's site conditions and its engineering design by a two-member engineering design review team, along with monitoring for any settlement during a 10-year period after the certificate of final completion and occupancy is issued for the proposed project.

The geotechnical investigation concluded that existing subsurface information at the site and its vicinity indicate the liquefiable soil is not susceptible to lateral spreading. This is consistent with no historical evidence of lateral spreading of the surficial materials in the area of the project site during either the 1906 or the 1989 earthquake. On the basis of the existing subsurface information, the investigation concluded the potential for lateral spreading at the project site is low. However, this would be confirmed during the detailed design level investigation.

Seismic densification could occur during strong groundshaking in loose, clean granular deposits above the water table, resulting in ground surface settlement. During a major earthquake on a nearby active fault, the geotechnical investigation anticipated the loose to medium dense sandy fill above the groundwater level could settle on the order of ½ to 3 inches. Within the building footprint, the soil susceptible to seismic densification would be removed; ground settlement associated with seismic densification would be limited to areas outside the proposed basement.

The building department permit review process would ensure that the project's structural and foundation plans comply with applicable building code provisions and are in conformance with the measures recommended in the project-specific geotechnical reports and recommendations made by peer reviewers or the engineering design review team as required by IS S-18, AB-082, and AB-083. Overall, this

process would ensure that the proposed project would not exacerbate the potential for liquefaction, lateral spreading, and seismic densification.

Building Foundations

The geotechnical investigation concluded that the proposed project could be constructed on the project site, provided that recommendations included in the proposed project's geotechnical investigation are implemented.

Podium Foundation

The geotechnical investigation stated that mat bearing on the Colma Formation may be feasible for the support of the podium. The feasibility of the mat would be confirmed during the design level geotechnical investigation and the structural design peer review for the proposed project. The geotechnical investigation also recommended vertical anchors such as tiedowns or micro piles could be used to provide uplift resistance for the mat foundation from friction between the perimeter of the shaft and the surrounding soil. Vertical anchors consist of small-diameter (6- to 14-inch diameter) drilled, concrete- or grout-filled shafts with steel bars, pipes, or tendons embedded into the concrete or grout.

Tower Foundation

Based on easements for the on-site Transbay Subsurface Facilities and Transbay Venting Facilities (train box easement) document,[120] the project would be supported on a mat with deep foundations that gain support primarily from friction in the soil and bedrock below the basement. The geotechnical investigation recommended that large-diameter, drilled cast-in-place piers (also known as drilled shafts), or rectangular-section load bearing elements (also known as barrettes) extend up to the bedrock. The depth to bedrock varies beneath the project site and ranges from approximately 130 to 185 feet below existing grades (160 to 185 feet at the western portion of the site and 130 to 160 feet at the easternmost portion of the site). The investigation concluded that out of the two options of drilled shafts and barrettes, drilled shafts would be a better foundation system for the proposed structure than barrettes. Drilled piers would need to extend into bedrock and the penetration into bedrock would be based on the anticipated building loads. The final design capacity for the drilled piers would need to be based on the results of full-scale load testing of the foundation elements.

Basement Walls

To protect against moisture migration, the geotechnical investigation recommended that basement walls should be waterproofed and water stops should be placed at all construction joints. Walls should also be drained above the groundwater table. Basement walls would be partially submerged and should be designed to withstand the earth pressures, hydrostatic pressure increment (where undrained and/or below groundwater), a traffic surcharge where applicable, seismic earth pressure increment, and any surcharge pressures from adjacent foundations from the buildings at 530 and 540 Howard Street (and possibly Pylon 9). The wall pressures would be similar to other buildings with deep basements within the San Francisco Bay Area and would be able to be accommodated in the permanent wall design.

[120] TJPA, *Easements for Transbay Subsurface Facilities and Transbay Venting Facilities (Train Box Easement) Parcel F*, August 5, 2015.

TTC Train Box Easement

The train box easement document included project design requirements related to the TTC train box easement such as the use of a shoring wall constructed by TJPA for the TTC train box can be used as part of the shoring for the proposed structure, and the provision for a seismic separation joint and soil-structure interaction between the Transbay venting facilities and the proposed structure. Additionally, the train box easement document concluded that excavation for the proposed project structure cannot extend below the slab of the TTC box easement and no gravity loads should be imposed by the proposed project structure to the Transbay venting facilities.

Construction

Dewatering Systems

Dewatering of the site during excavation would be required and should be performed using an active system, consisting of a series of dewatering wells near the proposed structure's perimeter. The wells would be continually pumped using float switches to maintain the groundwater level below the base of the excavation. As a cutoff wall would be installed to shore the excavation, only internal dewatering would be required and the use of active pumps should adequately dewater the site with no significant lowering of the groundwater level outside of the excavation. Piezometers should be installed outside of the shoring to monitor the groundwater level. No significant settlement of surrounding structures or improvements associated with the required dewatering for the project is anticipated. As stated above, the building department permit review process would ensure that the proposed project would address effects of the proposed dewatering and construction-related activities on the site and in the vicinity for conformance with measures recommended in the project-specific geotechnical reports and recommendations made by the engineering design review team as required by IS S-18.

Temporary Shoring

Internally braced shoring and/or top down construction may be required adjacent to the on-site train box. The shoring wall constructed by the TJPA for the Transit Center Train Box can be used as part of the shoring for the proposed excavation. Construction of the proposed basement and mat foundation requires excavation to 65 feet bgs. Excavation for the proposed project should be shored to protect the surrounding structures. The investigation deemed that a cutoff wall, consisting of deep soil-cement mixed columns or panels or a concrete diaphragm wall are feasible methods of excavation support for the proposed project. The bottom of the basement walls should extend into the Old Bay Clay to create an effective groundwater cutoff. In addition, temporary support of the TTC train box, the existing buildings east of the project site (530 and 540 Howard Street), streets and utilities during project construction would be required. Excavation would not extend below the TTC train box foundation and lateral support of the existing shoring wall constructed by TJPA would be required.

Construction activities including the drilling of the large diameter drilled piers would require the use of large excavation rigs and other heavy construction equipment such as cranes. The geotechnical investigation recommended that a working pad consisting of a layer of geotextile fabric or geogrid overlain by at least three feet of crushed rock would likely be required to be constructed to support the heavy construction equipment. In addition, prior to and during construction, a monitoring program should be established to evaluate project conditions during construction and effects of the construction on adjacent structures. Types of construction monitoring would likely include establishment and periodic reading of survey points on the surrounding buildings and improvements within 200 feet of the proposed

excavation, installation and reading of inclinometers behind the temporary shoring walls to evaluate the magnitude and depth of shoring movement, and establishment and reading of survey points at the tops of the temporary shoring wall (every 25 feet) to determine horizontal shoring movements installation during excavation activities, and reading of groundwater piezometers inside and outside excavation limits to monitor the elevation of the groundwater during project construction. As required by IS S-18, the building department permit review process would ensure that the proposed project would address effects of construction-related activities on foundation performance of neighboring buildings and structures.

The project is required to conform to the San Francisco Building Code, which ensures the safety of all new construction in the city. As part of the permit review process, the building department would review the project-specific geotechnical report and would require the geotechnical investigation to comply with requirements in the building code as well as review requirements in information sheet S-20. In addition, the building department may require additional site-specific soils report(s) through the building permit application process, as needed. The project is also required to comply with measures recommended by the engineering design review team required by IS S-18, AB-082, and AB-083, if applicable. The building department's requirement for a geotechnical report and review of the building permit application pursuant to the building department's implementation of the building code would ensure that the proposed project would have no significant impacts related to soils, seismic or other geological hazards.

During the building department's review of the proposed project's building permit application, the building department would review the construction plans for conformance with recommendations in the project-specific geotechnical report. The building permit application would be reviewed pursuant to the building department's implementation of the building code, local implementing procedures, and state laws, regulations, and guidelines would ensure that the proposed project would have no significant impacts related to soils, seismic, or other geological hazards.

In light of the above, the proposed project would not result in a significant effect related to seismic and geologic hazards. Therefore, the proposed project would not result in significant impacts related to geology and soils that were not identified in the TCDP PEIR, and no mitigation measures are necessary. Furthermore, the proposed project would not contribute to any cumulative impacts related to geology and soils.

Paleontological Resources

The TCDP PEIR found there are no known paleontological resources in the plan area. As explained above, the project site is underlain by 5 to 15 feet of fill material comprising sand, silt, gravel, brick fragments, asphalt, and wood. The fill was removed from the northwest portion of the site during the excavation for the Transbay Transit Center (TTC) train box and associated improvements. Fill is likely present over the remainder of the site. Below that fill at 20 to 35 feet below ground surface (bgs) is dune sand. Below the dune sand is a 5- to 30-foot-thick medium stiff to stiff sandy clay (marsh deposit). Below the weak marsh deposit is the dense Colma formation consisting of clayey sand, silty sand, and clean sand and this layer extends to depths of 80 to 90 feet bgs. Beneath the Colma formation is Old Bay Clay and alluvium/colluvium.[121] The proposed project would entail excavation to a maximum depth of approximately 70 feet below the ground surface for construction of the four below-grade parking levels.

[121] Langan Treadwall Rollo, P*reliminary Geotechnical Evaluation Parcel F – Transbay Redevelopment Area, San Francisco, California,* May 25, 2016.

Sand does not typically contain paleontological resources, and the marine deposits are considered relatively young in age and therefore unlikely to contain rare or important fossils. The proposed project would not result in significant impacts on paleontological resources that were not identified in the PEIR, nor would it result it in new or greater impacts than identified in the PEIR. The project would have a less than significant impact, and no mitigation is required.

Cumulative Analysis

The project would have no impact with regards to environmental effects of septic systems or alternative waste disposal systems or unique geologic features. Therefore, the proposed project would not have the potential to combine with effects of reasonably foreseeable projects to result in cumulative impacts to those resource topics.

Environmental impacts related to geology and soils are generally site-specific. All development within San Francisco would be subject to the same seismic safety standards and design review procedures of the California and local building codes and be subject to the requirements of the Construction Site Runoff Ordinance. These regulations would ensure that cumulative effects of development on seismic safety, geologic hazards, and erosion are less than significant. Impacts to paleontological resources are generally site-specific. Therefore, the proposed project in combination with reasonably foreseeable projects would not result in cumulative impacts to paleontological resources. For these reasons, the proposed project would not combine with past, present, and reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact related to geology and soils.

Conclusion

As discussed above, the proposed project would not result in a significant individual or cumulative impact with respect to geology and soils. Therefore, the proposed project would not result in a significant geology and soils impact that was not disclosed in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
16. HYDROLOGY AND WATER QUALITY—Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☐	☒
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☐	☒
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:	☐	☐	☐	☒
i) Result in substantial erosion or situation on- or off-site;	☐	☐	☐	☒

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
ii) Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☐	☒
iv) Impede or redirect flood flows?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due a project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

The TCDP PEIR determined that implementation of the plan could affect water quality due to grading and earthmoving operations, the use of fuels and other chemicals, and groundwater dewatering activities during construction and demolition of various projects. In addition, operation of projects in the plan area would result in changes to sanitary sewer flows and stormwater runoff patterns that could have an impact on water quality. The PEIR determined that compliance with all applicable regulations, including the federal Clean Water Act, the National Pollutant Discharge Elimination System (NPDES), Article 4.1 of the San Francisco Public Works Code, the San Francisco Green Building Ordinance, and San Francisco's Stormwater Design Guidelines would ensure impacts to water quality are less than significant. The PEIR determined that impacts due to the depletion of groundwater would be less than significant, as projects in the Plan area would rely on surface water and recycled water to meet their demand, and while groundwater dewatering would occur, groundwater from the Downtown San Francisco Groundwater Basin is not used for drinking water. In addition, because the plan area is almost entirely paved or covered by existing buildings, implementation of the plan would not alter groundwater infiltration rates. Impacts from erosion and flooding, as well as impacts to the existing stormwater drainage system, were considered less than significant, as projects in the plan area would comply with San Francisco's Stormwater Design Guidelines, which would minimize stormwater runoff. The PEIR determined that projects in the plan area would not expose people, housing or structures to a substantial risk of flooding or death involving inundation by seiche, tsunami, or mudflow.

The proposed project would involve excavation to a maximum 70 feet below grade for construction of the building foundation and below-ground parking levels. The geotechnical investigation anticipated that the high groundwater level at the project site may rise to 12 feet bgs. Construction stormwater discharges to the city's combined sewer system would be subject to the requirements of Article 4.1 of the San Francisco Public Works Code (supplemented by Department of Public Works Order No. 158170), which incorporates and implements the city's NPDES permit, and the federal Combined Sewer Overflow Control Policy. Stormwater drainage during construction would flow to the city's combined sewer system, where it would receive treatment at the Southeast plant or other wet weather facilities and would be discharged through an existing outfall or overflow structure in compliance with the existing NPDES permit. Therefore, compliance with applicable permits would reduce water quality impacts, and the

proposed project would not result in new or more severe impacts related to violation of water quality standards or degradation of water quality due to discharge of construction related stormwater runoff.

Regarding groundwater supplies, the proposed project would use potable water from the San Francisco Public Utilities Commission (SFPUC). Groundwater from the Downtown San Francisco Groundwater Basin is not used as drinking water, and the proposed project would not result in additional impervious surfaces to the extent that it would affect groundwater recharge because the site is currently vacant except for one air vent and a below grade train box associated with TTC. The proposed project would not affect the course of a stream or river. Given the project site already comprises impervious surfaces, the proposed project would not result in an increase in impervious surfaces, and it would not contribute runoff that would exceed the capacity of existing or planned stormwater drainage systems. Stormwater flows and drainage would be controlled consistent with San Francisco's Stormwater Design Guidelines. The project sponsor would be required to submit a Stormwater Control Plan (SCP) for approval by the SFPUC that complies with the Stormwater Design Guidelines using Best Management Practices, thereby ensuring that the proposed project meets performance measures set by the SFPUC related to stormwater runoff rate and volume. Compliance with San Francisco's Stormwater Design Guidelines would reduce the quantity and rate of stormwater runoff to the city's combined sewer system and improve the water quality of those discharges.

The project site is not in an area subject to reservoir inundation hazards and is not located in a volcanic area that could be subject to mudflow. The project site is not located within a 100-year flood hazard area or in an area subject to reservoir inundation hazards, mudflow, or seiches.[122] The project site is not shown on SFPUC maps as being subject to flooding from sea level rise by 2100, assuming 36 inches of sea level rise and a 100-year storm surge.[123] Similarly, the project site also is not located within a tsunami hazard zone and would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche or tsunami.[124] Therefore, the proposed project would have no impact related to these hazards. Impacts from sea level rise are expected to be less than significant, given the existing National Warning System and San Francisco outdoor warning system.

Cumulative Analysis

The proposed project would have no impact with respect to the following topics and therefore would not have the potential to contribute to any cumulative impacts for those resource areas: redirect or impede flood flows, release of pollutants due to inundation, alterations to a stream or river or changes to existing drainage patterns. The proposed project and other development within San Francisco would be required to comply with the Stormwater Management and Construction Site Runoff Ordinances that would reduce the amount of stormwater entering the combined sewer system and prevent discharge of construction-related pollutants into the sewer system. As the project site is not located in a groundwater basin that is used for water supply, the project would not combine with reasonably foreseeable projects to result in

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122 Federal Emergency Management Agency and San Francisco Floodplain Management Program, *San Francisco Interim Floodplain Maps*, November 12, 2015. Available at: http://www.sfgsa.org/san-francisco-floodplain-management-program; and City and County of San Francisco Hazard Mitigation Plan, November 2014; Available at: http://sfdem.org/2014-hazard-mitigation-plan, accessed September 4, 2018.

123 San Francisco Public Utilities Commission (SFPUC), *Climate Stressors and Impact: Bayside Sea Level Rise Mapping, Final Technical Memorandum*, June 2014.

124 San Francisco Planning Department. *San Francisco General Plan, Community Safety Element Map 5*. October 2012. Available online at: http://www.sf-planning.org/ftp/General_Plan/Community_Safety_Element_2012.pdf, accessed September 4, 2018.

significant cumulative impacts to groundwater. Therefore, the proposed project in combination with other projects would not result in significant cumulative impacts to hydrology and water quality.

Conclusion

As discussed above, the proposed project would result in less-than-significant individual and cumulative impacts related to hydrology and water quality. Therefore, the proposed project would not result in any new or more severe impacts than those identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
17. HAZARDS AND HAZARDOUS MATERIALS—Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving fires?	☐	☐	☐	☒

The TCDP PEIR described the general environmental conditions in the plan area with respect to the presence of hazardous materials and wastes, a description of hazardous building materials likely to be present, and an overview of the relevant hazardous materials regulations that are applicable. The project site is not within two miles of an airport or private air strip, and there are no schools within 0.25-mile of the TCDP plan area. Therefore, topics c, e, and f are not applicable. The TCDP PEIR identified significant

impacts related to potentially exposing workers and the public to hazardous materials as a result of contaminated soils and groundwater or demolition or renovation of buildings.

The TCDP PEIR included several mitigation measures (some of which are site dependent and some that are applicable to all projects within the plan area). These mitigation measures include requirements for preparing site assessments and corrective actions for sites located bayward of the historic tide line (PEIR Mitigation Measure M-HZ-2a), preparing site assessments and corrective actions for sites located landward of the historic tide line (PEIR Mitigation Measure M-HZ-2b), preparing site assessments and corrective actions for all sites (PEIR Mitigation Measure M-HZ-2c), and hazardous building materials abatement (PEIR Mitigation Measure M-HZ-3). With implementation of these mitigation measures, potential impacts related to hazards and hazardous materials as a result of development within the TCDP area would be reduced to a less-than-significant level.[125] The proposed project would not be located bayward of the historic tide line, and therefore, PEIR Mitigation Measures M-HZ-2a is not applicable to the proposed project.

Routine Transport, Use, and Disposal of Hazardous Materials

The TCDP PEIR noted that for all development under the TCDP, including development of the project site, compliance with the San Francisco Health Code, which incorporates state and federal requirements, as well as California Highway Patrol and California Department of Transportation regulations, would minimize potential exposure of site personnel and the public to any accidental releases of hazardous materials or waste and would also protect against potential environmental contamination. Therefore, consistent with the TCDP, the potential impacts related to the routine use, transport, and disposal of hazardous materials associated with development of the project site would not be new or of greater severity than what was already analyzed and disclosed in the TCDP PEIR.

Hazardous Building Materials

The TCDP PEIR determined that future development in the plan area may involve demolition or renovation of existing structures containing hazardous building materials. Some building materials commonly used in older buildings could present a public health risk if disturbed during an accident or during demolition or renovation of an existing building. Hazardous building materials addressed in the PIER include asbestos, electrical equipment such as transformers and fluorescent light ballasts that contain PCBs or di (2 ethylhexyl) phthalate (DEHP), fluorescent lights containing mercury vapors, and lead-based paints. Asbestos and lead-based paint may also present a health risk to existing building occupants if they are in a deteriorated condition. If removed during demolition of a building, these materials would also require special disposal procedures. The TCDP PEIR identified a significant impact associated with hazardous building materials including PCBs, DEHP, and mercury, and determined that that PER Mitigation Measure M-HZ-3: Hazardous Building Materials Abatement would reduce these effects to a less-than-significant level. As discussed above, the project site is currently a vacant site except for one air vent and a below grade train box associated with TTC and development of the site would not include demolition of any existing buildings; therefore, PEIR Mitigation Measure M-HZ-3 would not apply to development of the project site.

[125] In general, the actions identified in these mitigation measures are now required by the Maher Ordinance, except for M-HZ-3.

Soil and Groundwater Contamination

Since certification of the TCDP PEIR, Article 22A of the Health Code, also known as the Maher Ordinance, was expanded to include properties throughout the city where there is potential to encounter hazardous materials, primarily industrial zoning districts, sites with industrial uses or underground storage tanks, sites with historic bay fill, and sites in proximity to freeways or underground storage tanks. The over-arching goal of the Maher Ordinance is to protect public health and safety by requiring appropriate handling, treatment, disposal and when necessary, mitigation of contaminated soils that are encountered in the building construction process. Projects that disturb 50 cubic yards or more of soil (such as the proposed project) that are located on sites with potentially hazardous soil or groundwater within TCDP area are subject to this ordinance.

The project site is located in a Maher area, and development of the proposed project would require excavation to a maximum depth approximately 70 feet below the ground surface (bgs) for construction of four underground levels with building foundation, which would result in the removal of approximately 51,180 cubic yards of soil. Therefore, the project is subject to the Maher Ordinance, which is administered and overseen by the health department. The Maher Ordinance requires the project sponsor to retain the services of a qualified professional to prepare a Phase I Environmental Site Assessment (ESA) that meets the requirements of Health Code section 22.A.6.

The Phase I ESA would determine the potential for site contamination and level of exposure risk associated with the project. Based on that information, the project sponsor may be required to conduct soil and/or groundwater sampling and analysis. Where such analysis reveals the presence of hazardous substances in excess of state or federal standards, the project sponsor is required to submit a site mitigation plan (SMP) to the health department or other appropriate state or federal agency(ies), and to remediate any site contamination in accordance with an approved SMP prior to the issuance of any building permit.

In compliance with the Maher Ordinance, the project sponsor has submitted a Maher Application to the health department and a Phase I ESA has been prepared to assess the potential for site contamination.[126, 127] Based on the Phase I ESA, the project site was used for industrial purposes in at least 1910s, when it was occupied by a rubber manufacturing plant and later by an oil refinery and paper and printing company. Earthquake debris and coal tar waste from a nearby gas plant were reportedly used as fill material at the site and surrounding areas during the late 1800s and early 1900s. As a result of the aforementioned activities, the project site and some of the surrounding areas are known to contain soil and groundwater contamination. Subsurface investigations conducted at the site in 1999, 2008, and 2010 confirmed that the site is underlain by approximately 0.5 to 8.0 feet of fill material composed of silts and sands with gravel, and fragments of brick and other debris. Soil samples collected within the project area as part of these investigations contained concentrations of lead in excess of California and federal hazardous waste thresholds as well as regulatory screening criterion for commercial and industrial land use. Arsenic, zinc, and SVOCs were also detected above screening levels in on site areas.

The project site has undergone recent redevelopment and the northern portion has been excavated to approximately 65 feet bgs in connection with the construction of the train box associated with construction of the Transbay Transit Center. However, the southern portion of the site has not been

[126] Cameron Falconer, Hines, *Maher Ordinance Application: 524-550 Howard Street, San Francisco*¸ May 10, 2017.
[127] Ramboll Environ US Corporation, *Phase I Environmental Site Assessment Parcel F*, May 5, 2016.

excavated and it is likely that fill material known to be associated with elevated contaminant concentrations (i.e. lead, arsenic, zinc, and SVOCs) remains onsite. As such, the Phase I ESA considered the presence of such fill material remaining in the subsurface at the site to constitute a Recognized Environmental Condition (REC). Planned future redevelopment activities would presumably include the removal of remaining fill material during further (deeper) excavation during new construction.

The proposed project would be required to remediate potential soil and groundwater contamination described above in accordance with Article 22A of the Health Code. Therefore, the proposed project would not result in any new significant impacts or more severe impacts related to hazards or hazardous materials that were not identified in the TCDP PEIR.

Cumulative Analysis

Environmental impacts related to hazards and hazardous materials are generally site-specific. Nearby cumulative development projects would be subject to the same regulations addressing use of hazardous waste (article 22 of the health code), hazardous soil and groundwater (article 22B of the health code) and building and fire codes addressing emergency response and fire safety. For these reasons, the proposed project would not combine with past, present, or reasonably foreseeable future projects in the project vicinity to create a significant cumulative impact related to hazards and hazardous materials.

Conclusion

Based on the above, the proposed project would not result in individual or cumulative significant impacts related to hazards or hazardous materials that were not identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
18. MINERAL RESOURCES—Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

As noted in the TCDP PEIR, all land in San Francisco, including the 524-550 Howard Street project site, is designated as Mineral Resource Zone 4 (MRZ-4) indicating that there is not adequate information available for assignment to any other MRZ.[128] Thus, the project site is not a designated area of significant mineral deposits. The project site is not a mineral resource recovery site, and it would not require quarrying, mining, dredging, or extraction of locally important mineral resources on the project site, and it would not deplete non-renewable natural resources. In addition, no significant mineral resources exist

[128] California Division of Mines and Geology, *Open File Report 96 03 and Special Report 146, Parts I and II,* 1986.

in San Francisco.[129] Therefore, the proposed project would have no impact on mineral resources either individually or cumulatively.

Conclusion

Consistent with the findings in the TCDP PEIR, the proposed project would have no impact related to mineral resources, and, therefore, it would not result in any new or more severe significant project or cumulative impacts than were identified in the TCDP PEIR.

Topics:	*Significant Impact Peculiar to Project or Project Site*	*Significant Impact not Identified in PEIR*	*Significant Impact due to Substantial New Information*	*No Significant Impact not Previously Identified in PEIR*
19. ENERGY—Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☐	☒
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

With respect to energy resources, the TCDP PEIR determined that the implementation of the TCDP would facilitate the construction of new residential units, hotel, office, and commercial buildings. Development of the proposed project would not result in unusually large amounts of fuel, water, or energy in the context of energy use throughout the city and region. Demand from the proposed project would be typical for a building of the size and nature proposed and would meet, or exceed, the current state and local codes and standards concerning energy consumption, including Title 24 of the *California Code of Regulations* and the San Francisco Green Building Ordinance. Documentation showing compliance with these standards has been submitted to the city in the form of the "Compliance Checklist Table for Greenhouse Gas Analysis: Private Development Projects" described above. Title 24 and the Green Building Ordinance are enforced by the building department.

Cumulative Analysis

All cumulative projects in the city are required to comply with the transportation demand management ordinance and the same energy efficiency standards set forth in the California Code of Regulations Title 24 and the San Francisco Green Building Ordinance. Therefore, cumulative impacts on energy resources would be less than significant.

Conclusion

Consistent with the findings in the PEIR, the proposed project would have a less-than-significant impact related to energy resources, and, therefore, it would not result in any new or more severe significant project or cumulative impacts than were identified in the TCDP PEIR.

[129] San Francisco Planning Department, *San Francisco General Plan Environmental Protection Element,* amended December 2, 2004.

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
20. AGRICULTURE AND FORESTRY RESOURCES—Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance, as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or forest land to non-forest use?	☐	☐	☐	☒

The PEIR determined that the Transit Center District Plan area, and the surrounding areas, do not contain agricultural or forest uses and are not zoned for such uses; therefore, implementation of the Plan would not convert any prime farmland, unique farmland or Farmland of Statewide Importance to non-agricultural use. In addition, the Plan would not conflict with existing zoning for agricultural land use or a Williamson contract, nor would it involve any changes to the environment that could result in the conversion of farmland. The Plan would not result in the loss of forest land or conversion of forest land to non-forest uses.

Consistent with the PEIR, the project site and surrounding areas do not contain agricultural or forest uses and are not zoned for such uses. Therefore, construction of the proposed project would not convert any prime farmland, unique farmland or Farmland of Statewide Importance to non-agricultural use, and it would not conflict with existing zoning for agricultural land use or a Williamson contract, nor would it involve any changes to the environment that could result in the conversion of farmland. The proposed project would not result in the loss of forest land or conversion of forest land to non-forest uses. Accordingly, and consistent with the PEIR these criteria are not applicable to the proposed project.

Conclusion

For the above reasons, the proposed project would not result in any new or more severe impacts to agricultural or forest resources not identified in the TCDP PEIR..

Topics:	Significant Impact Peculiar to Project or Project Site	Significant Impact not Identified in PEIR	Significant Impact due to Substantial New Information	No Significant Impact not Previously Identified in PEIR
21. WILDFIRE—If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an adopted emergency response plan or emergency evacuation plans?	☐	☐	☐	☒
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structure to significant risks including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

The project site is not located in or near state responsibility lands for fire management or lands classified as very high fire hazard severity zones. Therefore, this topic is not applicable to the project.

MITIGATION MEASURES

Project Mitigation Measure 1: Construction Best Practices for Historic Resources (Implements TCDP PEIR Mitigation Measure M-CP-5a). The project sponsor of a development project in the plan area shall incorporate into construction specifications for the proposed project a requirement that the construction contractor(s) use all feasible means to avoid damage to adjacent and nearby historic buildings, including, but not necessarily limited to, staging of equipment and materials as far as possible from historic buildings to avoid direct impact damage; using techniques in demolition (of the parking lot), excavation, shoring, and construction that create the minimum feasible vibration; maintaining a buffer zone when possible between heavy equipment and historical resource(s) within 125 feet, as identified by the planning department; appropriately shoring excavation sidewalls to prevent movement of adjacent structures; design and installation of the new foundation to minimize uplift of adjacent soils; ensuring adequate drainage from adjacent sites; covering the roof of adjacent structures to avoid damage from falling objects; and ensuring appropriate security to minimize risks of vandalism and fire.

Project Mitigation Measure 2: Construction Monitoring Program for Historic Resources (Implements TCDP PEIR Mitigation Measure M-CP-5b). The project sponsor shall undertake a monitoring program to minimize damage to adjacent historic buildings and to ensure that any such damage is documented and repaired. The monitoring program would include the following components. Prior to the start of any ground-disturbing activity, the project sponsor shall engage a historic architect or qualified historic

preservation professional to undertake a preconstruction survey of historical resource(s) identified by the planning department within 125 feet of planned construction to document and photograph the buildings' existing conditions. Based on the construction and condition of the resource(s), the consultant shall also establish a maximum vibration level that shall not be exceeded at each building, based on existing condition, character-defining features, soils conditions, and anticipated construction practices (a common standard is 0.2 inches per second, peak particle velocity). To ensure that vibration levels do not exceed the established standard, the project sponsor shall monitor vibration levels at each structure and shall prohibit vibratory construction activities that generate vibration levels in excess of the standard.

Should vibration levels be observed in excess of the standard, construction shall be halted and alternative techniques put in practice, to the extent feasible. The consultant shall conduct regular periodic inspections of each building during ground-disturbing activity on the project site. Should damage to either building occur, the building(s) shall be remediated to its preconstruction condition at the conclusion of ground-disturbing activity on the site.

Project Mitigation Measure 3: Subsequent Archeological Testing Program (Implements TCDP PEIR Mitigation Measure M-CP-1). 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 rotational Department Qualified Archaeological Consultants List (QACL) maintained by the planning department archaeologist. The project sponsor shall contact the Department archeologist to obtain the names and contact information for the next three archeological consultants on the QACL. 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 at the direction of the Environmental Review Officer (ERO). 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) and (c).

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

At the completion of the archeological testing program, the archeological consultant shall submit a written report of the findings to the ERO. If based on the archeological testing program the archeological consultant finds that significant archeological resources may be present, the ERO in consultation with the

archeological consultant shall determine if additional measures are warranted. Additional measures that may be undertaken include additional archeological testing, archeological monitoring, and/or an archeological data recovery program. If the ERO determines that a significant archeological resource is present and that the resource could be adversely affected by the proposed project, at the discretion of the project sponsor either:

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

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

Archeological Monitoring Program. If the ERO in consultation with the archeological consultant determines that an archeological monitoring program shall be implemented, the archeological consultant shall prepare an archeological monitoring plan (AMP):

- 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 soils-disturbing activities, such as demolition, foundation removal, excavation, grading, utilities installation, foundation work, driving of piles (foundation, shoring, etc.), site remediation, etc., shall require archeological monitoring because of the risk these activities pose to potential archaeological resources and to their depositional context;
- Archeological monitoring shall conform to the requirements of the final AMP reviewed and approved by the ERO;
- The archeological consultant shall advise all project contractors to be on the alert for evidence of the presence of the expected resource(s), of how to identify the evidence of the expected resource(s), and of the appropriate protocol in the event of apparent discovery of an archeological resource;
- The archeological monitor(s) shall be present on the project site according to a schedule agreed upon by the archeological consultant and the ERO until the ERO has, in consultation with project archeological consultant, determined that project construction activities could have no effects on significant archeological deposits;
- The archeological monitor shall record and be authorized to collect soil samples and artifactual/ecofactual material as warranted for analysis;
- If an intact archeological deposit is encountered, all soils-disturbing activities in the vicinity of the deposit shall cease. The archeological monitor shall be empowered to temporarily redirect demolition/excavation/pile driving/construction activities and equipment until the deposit is evaluated. If in the case of pile driving activity (foundation, shoring, etc.), the archeological monitor has cause to believe that the pile driving activity may affect an archeological resource, the pile driving activity shall be terminated until an appropriate evaluation of the resource has been made in consultation with the ERO. The archeological consultant shall immediately notify the ERO of the encountered archeological deposit. The archeological consultant shall make a

reasonable effort to assess the identity, integrity, and significance of the encountered archeological deposit, and present the findings of this assessment to the ERO.

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

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

The scope of the ADRP shall include the following elements:

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

Human Remains and Associated or Unassociated Funerary Objects. The treatment of human remains and of associated or unassociated funerary objects discovered during any soils disturbing activity shall comply with applicable State and Federal Laws, including immediate notification of the Office of the Chief Medical Examiner of the City and County of San Francisco and in the event of the Medical Examiner'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 ERO shall also be immediately notified upon discovery of human remains. The archeological consultant, project sponsor, ERO, and MLD shall have up to but not beyond six days after the discovery to make all reasonable efforts to develop an agreement for the treatment of human remains and associated or unassociated funerary objects with appropriate dignity (CEQA Guidelines. Sec. 15064.5(d)). The agreement

should take into consideration the appropriate excavation, removal, recordation, analysis, curation, possession, and final disposition of the human remains and associated or unassociated funerary objects. Nothing in existing State regulations or in this mitigation measure compels the project sponsor and the ERO to accept recommendations of an MLD. The archeological consultant shall retain possession of any Native American human remains and associated or unassociated burial objects until completion of any scientific analyses of the human remains or objects as specified in the treatment agreement if such as agreement has been made or, otherwise, as determined by the archeological consultant and the ERO. If no agreement is reached State regulations shall be followed including the reburial of the human remains and associated burial objects with appropriate dignity on the property in a location not subject to further subsurface disturbance (Pub. Res. Code Sec. 5097.98).

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

Once approved by the ERO, copies of the FARR shall be distributed as follows: California Archaeological Site Survey Northwest Information Center (NWIC) shall receive one (1) copy and the ERO shall receive a copy of the transmittal of the FARR to the NWIC. The Major Environmental Analysis 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.

Project Mitigation Measure 4: Garage/Loading Attendant (Implements TCDP PEIR Mitigation Measure M-TR-5). The project sponsor shall ensure that building management employs attendant(s) for the project's garage. The attendant shall be stationed at the project's valet station to direct vehicles entering and exiting the building and avoid any safety-related conflicts with pedestrians on the sidewalk during the peak periods of traffic and pedestrian activity, with extended hours as dictated by traffic and pedestrian conditions and by activity in the project garage. The project shall also install audible and/or visible warning devices, or comparably effective warning devices as approved by the planning department and/or the Sustainable Streets Division of the Municipal Transportation Agency, to alert pedestrians of the outbound vehicles from the car elevators, as applicable. The project sponsor shall ensure that valet attendants actively manage vehicle traffic in the porte cochère area, passenger loading zone, and loading dock.

Project Mitigation Measure 5: Loading Dock Management (Implements TCDP PEIR Mitigation Measure M-TR-7a). The project sponsor shall develop a loading dock management plan to ensure that off-street loading facilities are efficiently used and maintained and that trucks longer than can be safely accommodated are not permitted to use the building's loading dock. In order to do so, the project sponsor shall develop a plan for management and maintenance of the building's loading dock and truck turntable and shall ensure that tenants in the building are informed of limitations and conditions on loading schedule and truck size. Such a management plan shall include strategies such as the use of an attendant to direct and guide trucks, installing a "Full" sign at the loading dock driveway, limiting activity during

peak hours, installation of audible and/or visual warning devices, and other features. The maintenance plan will include a schedule for routine maintenance of the truck turntable.

Project Mitigation Measure 6: Construction Coordination (Implements TCDP PEIR Mitigation Measure M-TR-9). To minimize potential disruptions to transit, traffic, and pedestrian and bicyclists, the project sponsor and/or construction contractor shall develop a Construction Management Plan that could include, but not necessarily be limited to, the following:

- Limit construction truck movements to the hours between 9:00 a.m. and 4:00 p.m. (or other times, if approved by the Municipal Transportation Agency) to minimize disruption of traffic, transit, and pedestrian flow on adjacent streets and sidewalks during the weekday a.m. and p.m. peak periods.
- Identify optimal truck routes to and from the site to minimize impacts to traffic, transit, pedestrians, and bicyclists; and,
- Encourage construction workers to use transit when commuting to and from the site, reducing the need for parking.

The project sponsor shall also coordinate with the Municipal Transportation Agency/Sustainable Streets Division, the Transbay Joint Powers Authority, and construction manager(s)/ contractor(s) for the Transit Center project, and with Muni, AC Transit, Golden Gate Transit, and SamTrans, as applicable, to develop construction phasing and operations plans that would result in the least amount of disruption that is feasible to transit operations, pedestrian and bicycle activity, and vehicular traffic.

The Construction Management Plan would disseminate appropriate information to contractors and affected agencies with respect to coordinating construction activities to minimize overall disruptions and ensure that overall circulation in the project area is maintained to the extent possible, with particular focus on ensuring transit, pedestrian, and bicycle connectivity. The program would supplement and expand, rather than modify or supersede, any manual, regulations, or provisions set forth by SFMTA, the Department of Public Works, or other city departments and agencies, and Caltrans.

Project Mitigation Measure 7: Reduce Mechanical Equipment Noise (Implements TCDP PEIR Mitigation Measure M-NO-1e): After completing installation of the mechanical equipment but before receipt of any Certificate of Occupancy, the project sponsor shall conduct noise measurements to ensure that the noise generated by stationary equipment complies with section 2909 (b) and (d) of the San Francisco Noise Ordinance. The noise measurements shall be conducted by persons qualified in acoustical analysis and/or engineering. To ensure that the project noise from mechanical equipment is minimized to meet the Noise Ordinance requirements, the project sponsor shall incorporate the following measures:

- The generators shall include sound attenuators sufficient to not exceed 75 dBA at the project property plane.
- The Level 4 air-handler unit air intake systems shall include 10 feet of internally lined duct or a sound attenuator sufficient to not exceed 61 dBA at the project property plane.
- The Level 6 exhaust fan air discharge system shall include 40 feet of internally lined duct or a sound attenuator sufficient to not exceed 61 dBA at the project property plane.

- The Level 32 air-handler unit air intake systems shall include 5 feet of internally lined duct or a sound attenuator sufficient to not exceed 61 dBA at the project property plane.
- The Level 32 exhaust fan air discharge systems shall include 5 feet of internally lined duct or a sound attenuator sufficient to not exceed 61 dBA at the project property plane.
- The Level 62 (also referenced as mechanical mezzanine) exhaust fan air discharge systems shall include 10 feet of internally lined duct or a sound attenuator sufficient to not exceed 61 dBA at the project property plane.

On completion of such testing, the acoustical consultant/acoustical engineer shall submit a memorandum summarizing test results to the San Francisco Planning Department. If measured noise levels are found to exceed these standards (no more than 8 dBA above ambient noise levels at the respective property line), the project sponsor shall be responsible for implementing stationary equipment noise control measures or other acoustical upgrades such as additional noise insulation in mechanical rooms to achieve the standard. No Certificate of Occupancy shall be issued for any part of the structure until the standards in the Noise Ordinance are shown to be met.

Project Mitigation Measure 8: Control Exterior Amplified Noise (Implements TCDP PEIR Mitigation Measure M-NO-1e): To ensure that the project noise from exterior amplified noise is minimized to meet the Noise Ordinance requirements (article 29 of the Police Code), the project sponsor shall incorporate the following measures:

- During events on the Level 2 Terrace, the project sponsor shall ensure that amplified music be controlled to a noise level no greater than 57 dBA at 25 feet from the center of a given noise source (e.g., two loudspeakers, guitar amplifier, etc.). Permanent equipment (e.g., speakers) on-site and provided by the sponsor shall have electronic limiters and shall be set to maintain the 57 dBA at 25 feet limit.

- The sponsor shall ensure that speakers on the Level 2 Terrace do not face sensitive receivers, including the mixed-use residential tower at 524 Howard Street. For temporary equipment brought for special events, the sponsor shall have a staff person with a sound level meter who would monitor the noise levels to ensure that the 57 dBA at 25 feet limit is maintained.

Project Mitigation Measure 9: General Construction Noise Control Measures (Implements TCDP PEIR Mitigation Measure M-NO-2b): To ensure that project noise from construction activities is minimized to the maximum extent feasible, the project sponsor of a development project in the plan area shall undertake the following:

- The project sponsor shall conduct noise monitoring at the beginning of major construction phases (e.g., demolition, excavation) to determine the need and the effectiveness of noise-attenuation measures.
- The project sponsor shall require the general contractor to ensure that equipment and trucks used for project construction utilize the best available noise control techniques (e.g., improved mufflers, equipment redesign, use of intake silencers, ducts, engine enclosures and acoustically-attenuating shields or shrouds, wherever feasible).
- The project sponsor shall require the general contractor to avoid placing stationary noise sources (such as generators and compressors) within noise-sensitive buffer areas (measured at linear 20

feet) between immediately adjacent neighbors to muffle such noise sources, and to construct barriers around such sources and/or the construction site, which could reduce construction noise by as much as five dBA. To further reduce noise, the contractor shall locate stationary equipment in pit areas or excavated areas, if feasible.

- The project sponsor shall require the general contractor to use impact tools (e.g., jack hammers, pavement breakers, and rock drills) that are hydraulically or electrically powered wherever possible to avoid noise associated with compressed air exhaust from pneumatically powered tools. Where use of pneumatic tools is unavoidable, an exhaust muffler on the compressed air exhaust shall be used, along with external noise jackets on the tools, which could reduce noise levels by as much as 10 dBA.
- The project sponsor shall include noise control requirements in specifications provided to construction contractors. Such requirements could include, but not be limited to, performing all work in a manner that minimizes noise to the extent feasible; use of equipment with effective mufflers; undertaking the noisiest activities during times of least disturbance to surrounding residents and occupants, as feasible; and selecting haul routes that avoid residential buildings inasmuch as such routes are otherwise feasible.
- Prior to the issuance of each building permit, along with the submission of construction documents, the project sponsor shall submit to the planning department and Department of Building Inspection (the building department) a list of measures to respond to and track complaints pertaining to construction noise. These measures shall include (1) a procedure and phone numbers for notifying the building department, the Department of Public Health, and the Police Department (during regular construction hours and off-hours); (2) a sign posted on-site describing permitted construction days and hours, noise complaint procedures and who to notify in the event of a problem, with telephone numbers listed, and a complaint hotline number that shall be answered at all times during construction; (3) designation of an on-site construction complaint and enforcement manager for the project; and (4) notification of neighboring residents and non-residential building managers within 300 feet of the project construction area at least 30 days in advance for each major phase of construction and expected loud activities (extreme noise generating activities defined as activities generating noise levels of 90 dBA or greater) including estimated duration of activity, construction hours, and contact information.
- The project sponsor shall limit construction to the hours of 7:00 a.m. to 8:00 p.m. per San Francisco Police Code Article 29.
- The project sponsor shall require that all construction equipment be in good working order and that mufflers are inspected to be functioning properly. Avoid unnecessary idling of equipment and engines.

Project Mitigation Measure 10: Construction Vehicle Emissions Minimization (Implements TCDP PEIR Mitigation Measure M-AQ-4a). To reduce construction vehicle emissions, the project sponsor shall incorporate the following into construction specifications:

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer's specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

Project Mitigation Measure 11: Construction Vehicle Emissions Evaluation and Minimization (Implements TCDP PEIR Mitigation Measure M-AQ-5).

The project sponsor or the project sponsor's contractor shall comply with the following:

1. Engine Requirements.
    a. All off-road equipment greater than 25 horsepower (hp) and operating for more than 20 hours over the entire duration of construction activities shall have engines that meet or exceed either U.S. Environmental Protection Agency (U.S. EPA) or California Air Resources Board (ARB) Tier 2 off-road emission standards and have been retrofitted with an ARB Level 3 Verified Diesel Emissions Control Strategy. Equipment with engines meeting Tier 4 Interim or Tier 4 Final off-road emissions standards automatically meet this requirement.
    b. Where access to alternative sources of power are available, portable diesel engines shall be prohibited.
    c. Diesel engines, whether for off-road or on-road equipment, shall not be left idling for more than two minutes, at any location, except as provided in exceptions to the applicable state regulations regarding idling for off-road and on-road equipment (e.g., traffic conditions, safe operating conditions). The Contractor shall post legible and visible signs in English, Spanish, and Chinese, in designated queuing areas and at the construction site to remind operators of the two minute idling limit.
    d. The Contractor shall instruct construction workers and equipment operators on the maintenance and tuning of construction equipment, and require that such workers and operators properly maintain and tune equipment in accordance with manufacturer specifications.
2. Waivers
    a. The planning department's Environmental Review Officer or designee (ERO) may waive the alternative source of power requirement of section (1)(b) if an alternative source of power is limited or infeasible at the project site. If the ERO grants the waiver, the Contractor must submit documentation that the equipment used for onsite power generation meets the requirements of section (1)(a).

       The ERO may waive the equipment requirements of section (1)(a) if: a particular piece of off-road equipment with an ARB Level 3 VDECS is technically not feasible; the equipment would not produce desired emissions reduction due to expected operating modes; installation of the equipment would create a safety hazard or impaired visibility for the operator; or, there is a compelling emergency need to use off-road equipment that is not retrofitted with an ARB Level 3 VDECS. If the ERO grants the waiver, the Contractor must use the next cleanest piece of off-road equipment, according to the table below.

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

How to use the table: If the ERO determines that the equipment requirements cannot be met, then the project sponsor would need to meet Compliance Alternative 1. If the ERO determines that the contractor cannot supply off-road equipment meeting Compliance Alternative 1, then the contractor must meet Compliance Alternative 2. If the ERO determines that the contractor cannot supply off-

road equipment meeting Compliance Alternative 2, then the contractor must meet Compliance Alternative 3. *Alternative Fuels are not a VDECS.

3. Construction Emissions Minimization Plan. Before starting on-site construction activities, the Contractor shall submit a Construction Emissions Minimization Plan to the ERO for review and approval. The plan shall state, in reasonable detail, how the Contractor will meet the requirements of section 1.

    a. 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. The description may include, but is not limited to: equipment type, equipment manufacturer, equipment identification number, engine model year, engine certification (Tier rating), horsepower, engine serial number, and expected fuel usage and hours of operation. For VDECS installed, the description may include: 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, the description shall also specify the type of alternative fuel being used.

    b. The ERO shall ensure that all applicable requirements of the plan have been incorporated into the contract specifications. The plan shall include a certification statement that the contractor agrees to comply fully with the plan.

    c. The contractor shall make the plan available to the public for review on-site during work hours. The contractor shall post at the construction site, a legible and visible sign summarizing the plan. The sign shall also state that the public may ask to inspect the plan for the project at any time during working hours and shall explain how to request to inspect the plan. The Contractor shall post at least one copy of the sign in a visible location on each side of the construction site facing a public right-of-way.

4. Monitoring. After start of construction activities, the Contractor shall submit quarterly reports to the ERO documenting compliance with the plan. After completion of construction activities and prior to receiving a final certificate of occupancy, the project sponsor shall submit to the ERO a final report summarizing construction activities, including the start and end dates and duration of each construction phase, and the specific information required in the plan.

Project Mitigation Measure 12: Best Available Control Technology for Diesel Generators (Implements TCDP PEIR Mitigation Measure M-AQ-3). The project sponsor shall ensure that the backup diesel generators meet or exceed one of the following emission standards for particulate matter: (1) Tier 4 certified engine, or (2) Tier 2 or Tier 3 certified engine that is equipped with a California Air Resources Board (ARB) Level 3 Verified Diesel Emissions Control Strategy (VDECS). A non-verified diesel emission control strategy may be used if the filter has the same particulate matter reduction as the identical ARB verified model and if the Bay Area Air Quality Management District (air district) approves of its use. The project sponsor shall submit documentation of compliance with the air district New Source Review permitting process (Regulation 2, Rule 2, and Regulation 2, Rule 5) and the emission standard requirement of this mitigation measure to the planning department for review and approval prior to issuance of a permit for a backup diesel generator from any City agency.

IMPROVEMENT MEASURES

Project Improvement Measure 1: Install Conflict Striping. To increase visibility of the driveway crossing and passenger loading zone, the project should construct a highly visible treatment on the street across the loading dock driveway and passenger loading zone. For example, skip stop conflict striping or solid green markings could be used in the bike lane to demarcate the conflict zones. Implementation of this improvement measure would require the review and approval of SFMTA.

Project Improvement Measure 2: Queue Abatement. It shall be the responsibility of the owner/operator of any off-street parking facility with more than 20 parking spaces to ensure that vehicle queues do not occur regularly on the public right-of-way. A vehicle queue is defined as one or more vehicles (destined to the parking facility) blocking any portion of Natoma Street or sidewalk for a consecutive period of 3 minutes or longer on a daily or weekly basis.

If a recurring queue occurs, the owner/operator of the parking facility should employ abatement methods as needed to abate the queue. Suggested proactive methods may include:

- Employment or deployment of additional valet staff to direct passenger loading activities
- Installation of LOT FULL signs with active management by attendants
- Use of off-site parking facilities
- Implementation of additional transportation demand management strategies, including parking time limits, paid parking, time of day parking surcharge

If the Planning Director, or his or her designee, suspects that a recurring queue is present, the planning department should notify the property owner in writing. Upon request, the owner/operator shall hire a qualified transportation consultant to evaluate the conditions at the site for no less than seven days. The consultant shall prepare a monitoring report to be submitted to the planning department for review. If the planning department determines that a recurring queue does exist, the facility owner/operator shall have 90 days from the date of the written determination to abate the queue.

Exhibit 1

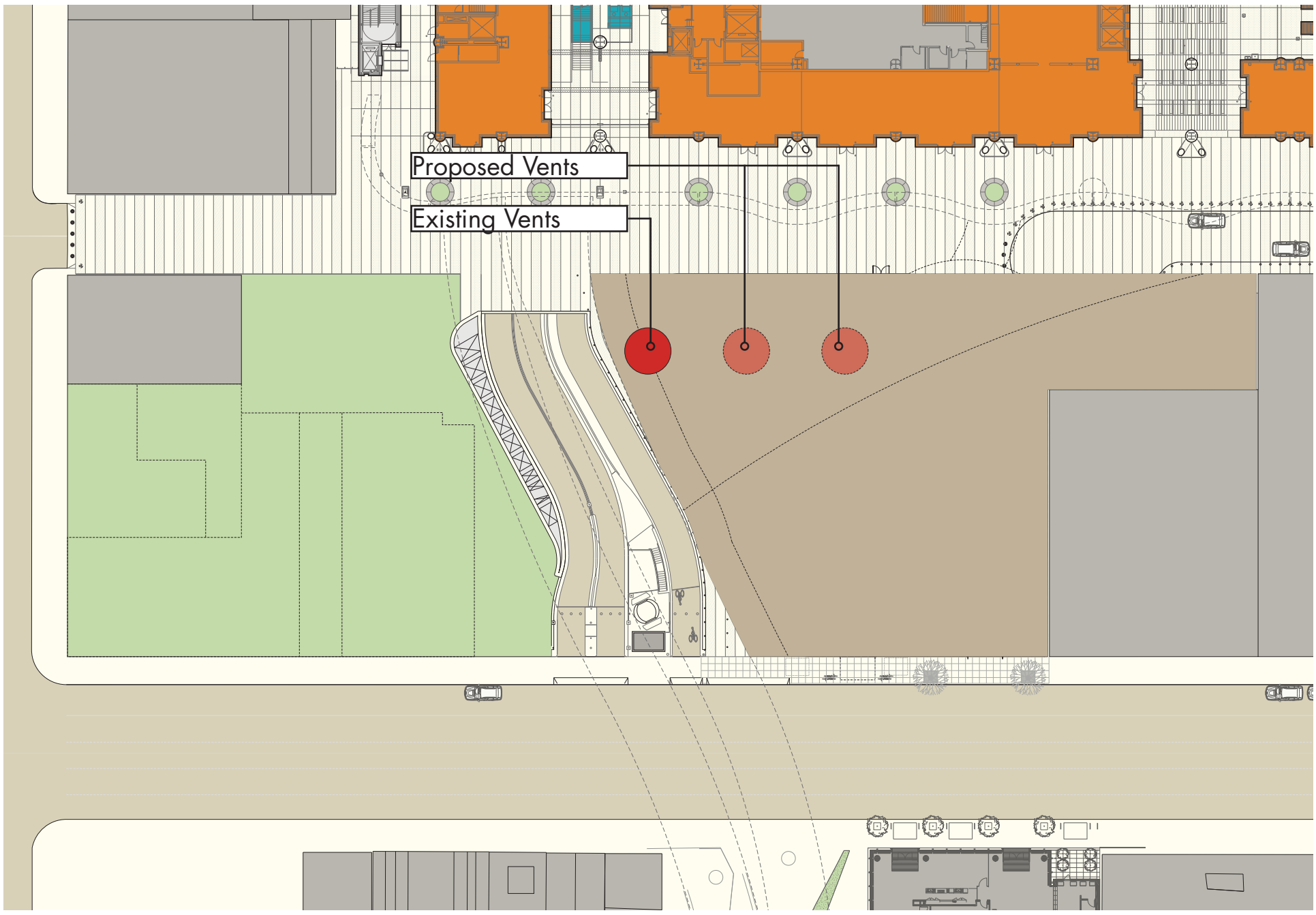


FIGURE 1 - PREVIOUS VENTING SYSTEM CONFIGURATION

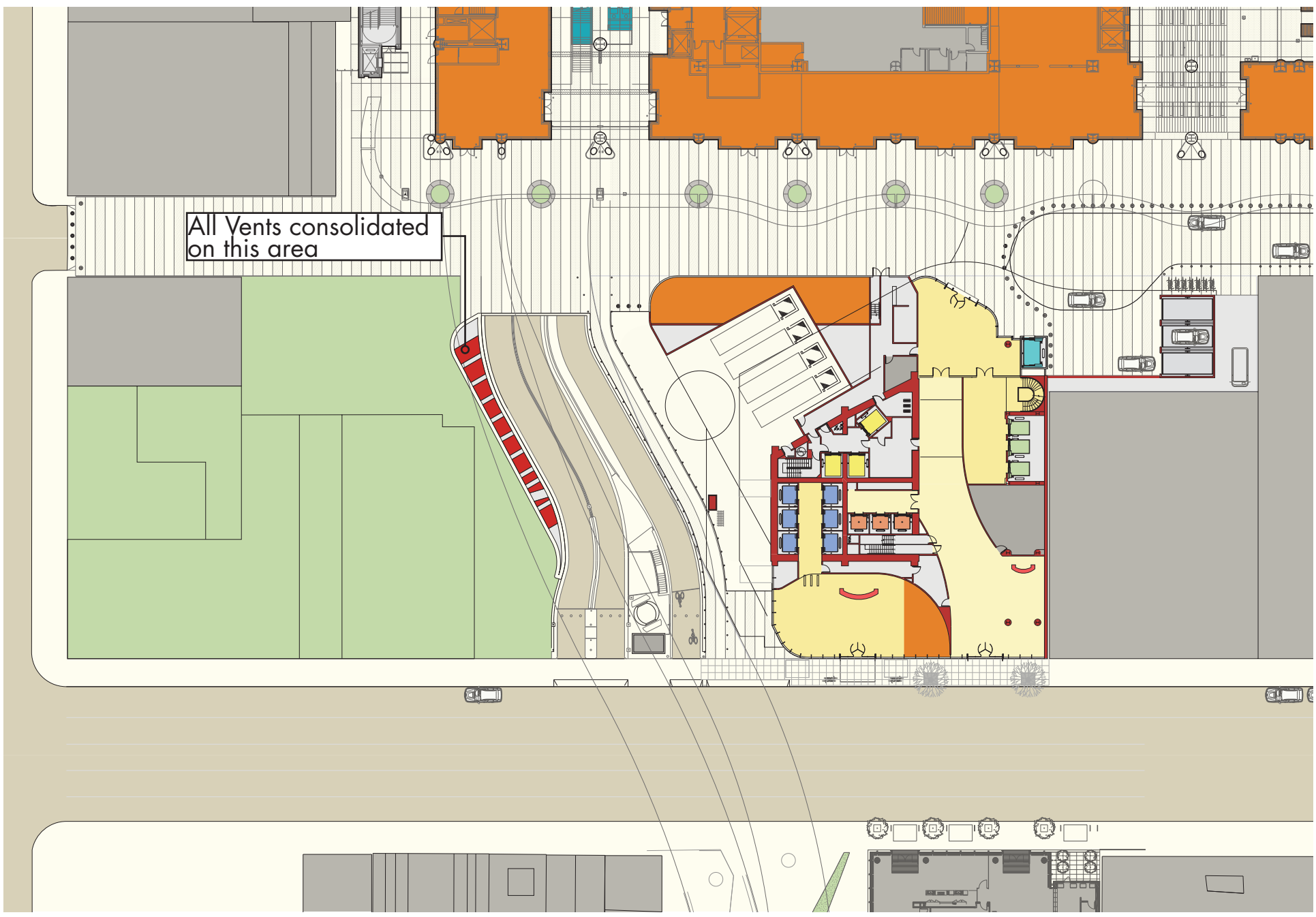


FIGURE 2 - UPDATED VENTING SYSTEM CONFIGURATION

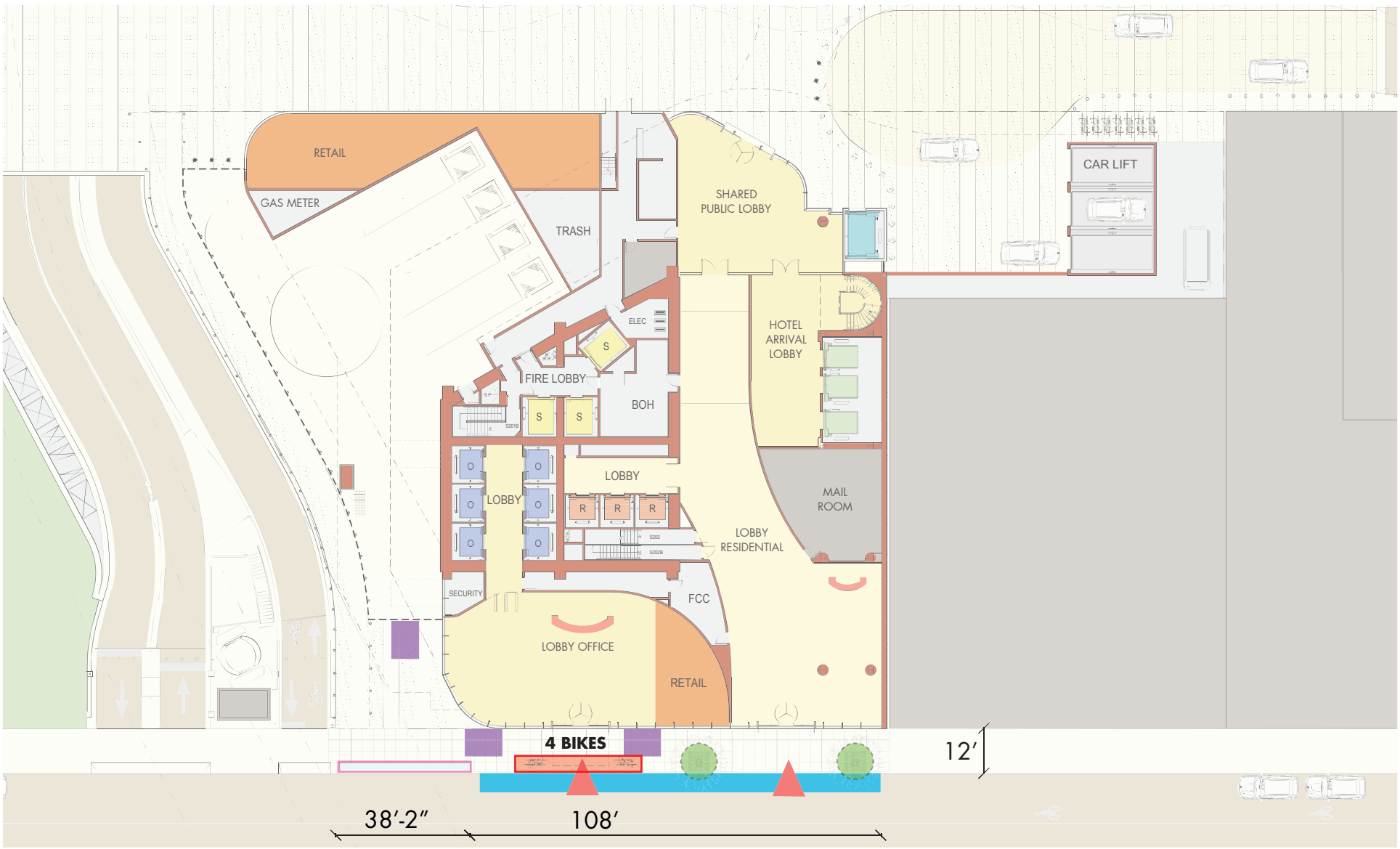


FIGURE 3 - CURB CUT AND WHITE CURB

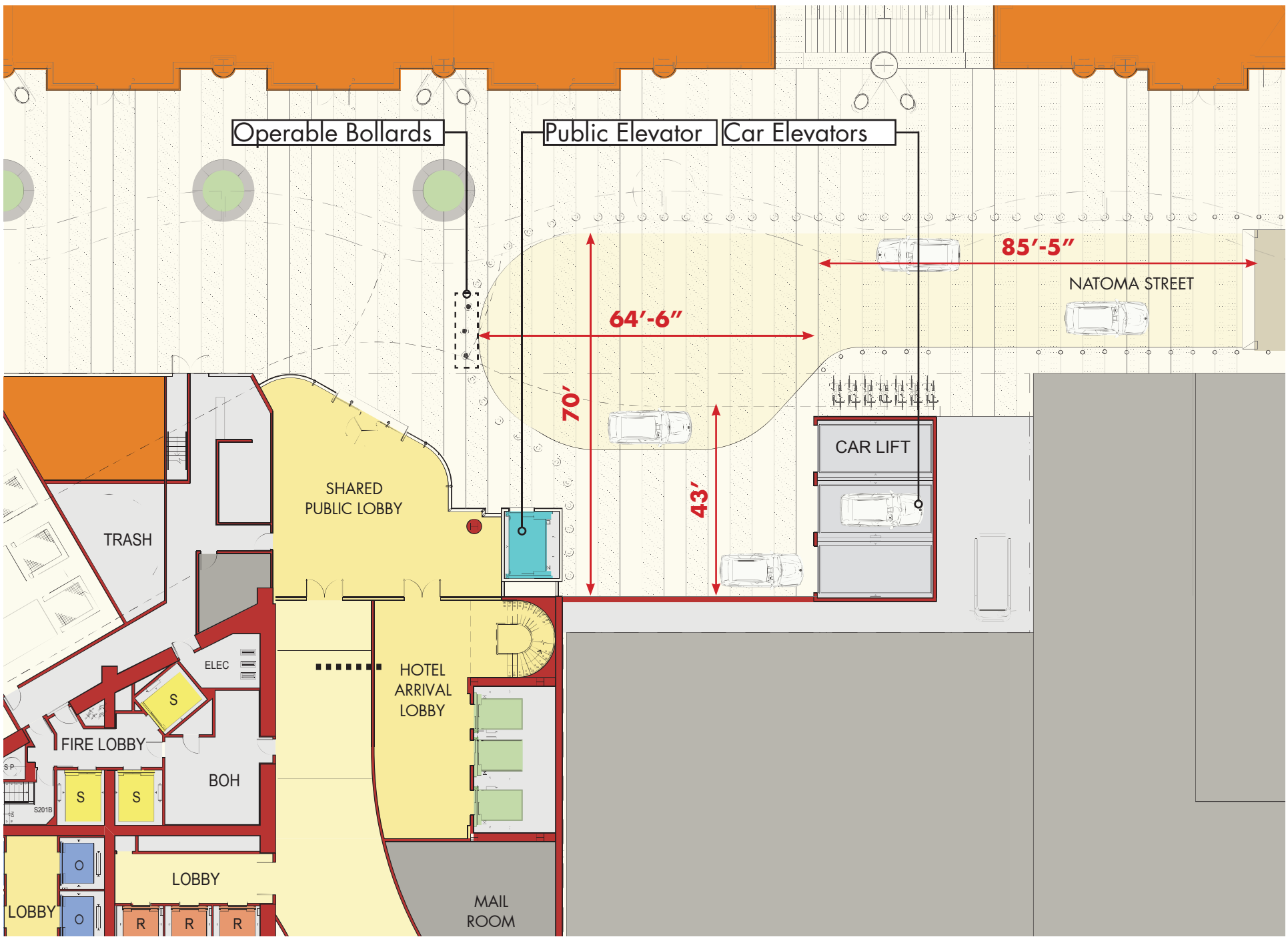
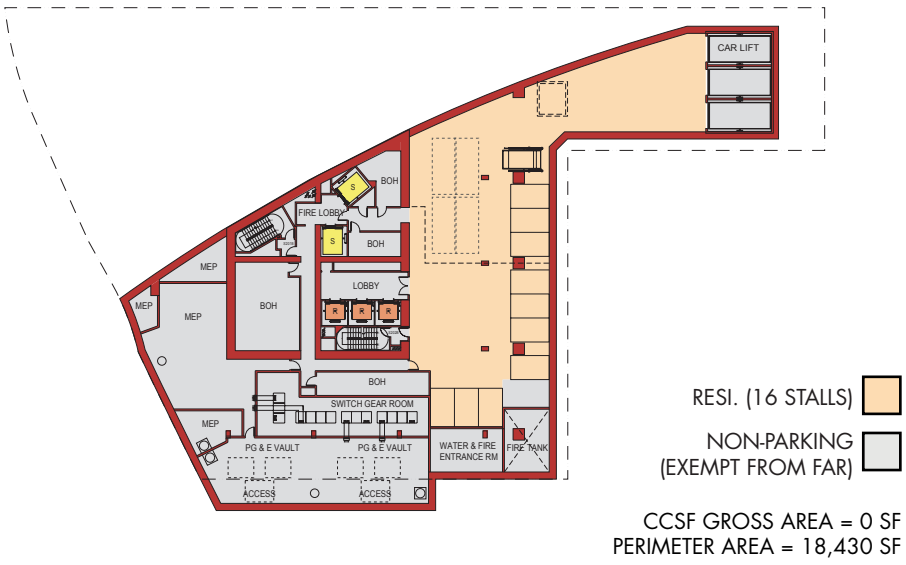


FIGURE 4 - NATOMA CUL-DE-SAC

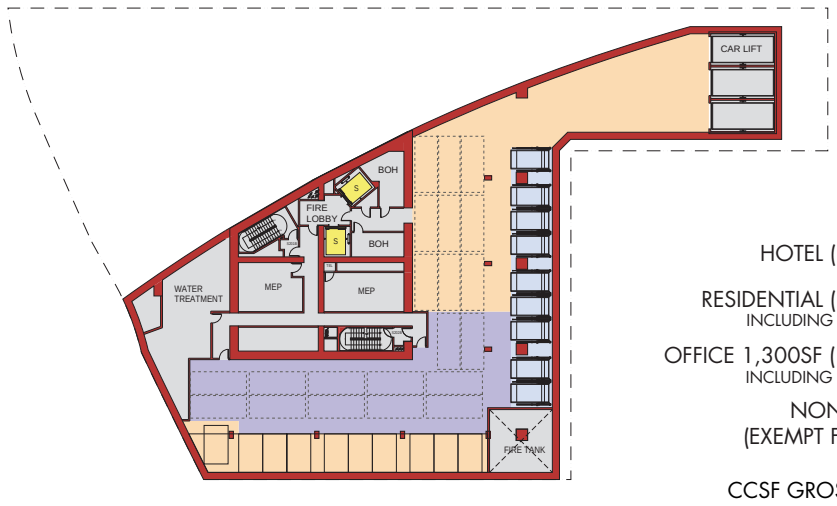


RESI. (16 STALLS)

NON-PARKING (EXEMPT FROM FAR)

CCSF GROSS AREA = 0 SF
PERIMETER AREA = 18,430 SF

PARKING PLAN - LEVEL B1



HOTEL (12 STALLS)

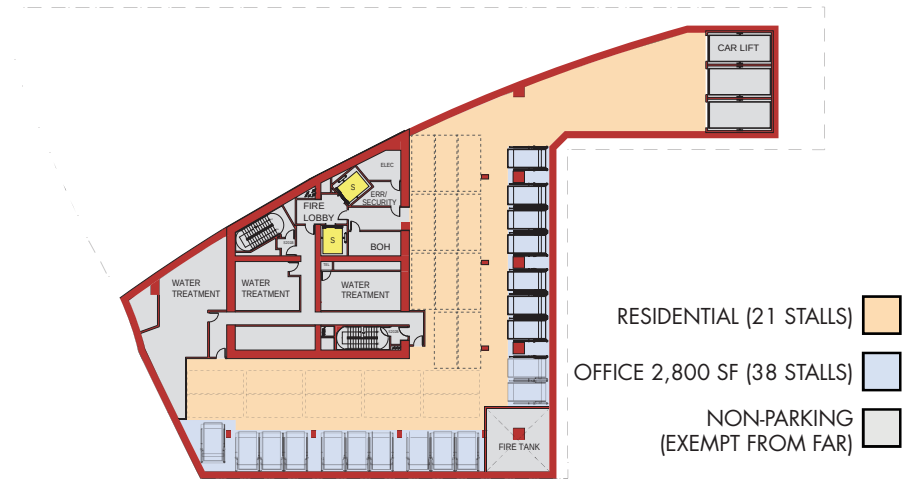
RESIDENTIAL (19 STALLS)
INCLUDING 2 CAR SHARE

OFFICE 1,300SF (18 STALLS)
INCLUDING 2 CAR SHARE

NON-PARKING (EXEMPT FROM FAR)

CCSF GROSS AREA = 0 SF
PERIMETER AREA = 18,430 SF

PARKING PLAN - LEVEL B2



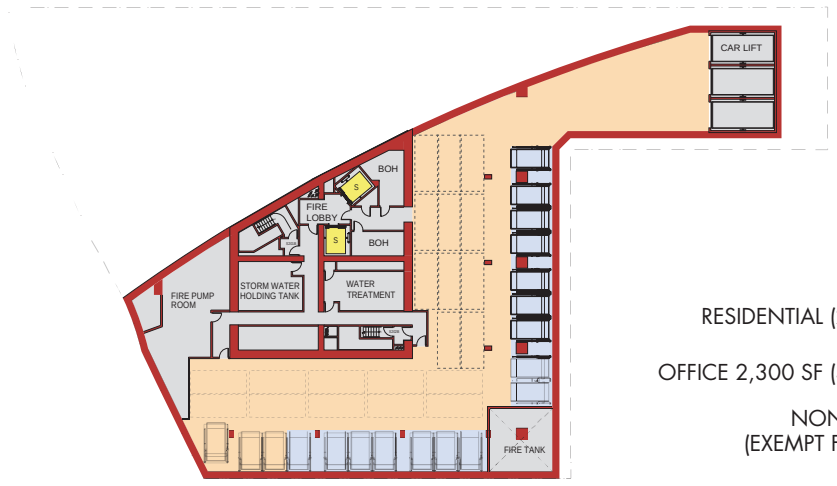
RESIDENTIAL (21 STALLS)

OFFICE 2,800 SF (38 STALLS)

NON-PARKING (EXEMPT FROM FAR)

CCSF GROSS AREA = 0 SF
PERIMETER AREA = 18,430 SF

PARKING PLAN - LEVEL B3



RESIDENTIAL (27 STALLS)

OFFICE 2,300 SF (32 STALLS)

NON-PARKING (EXEMPT FROM FAR)

CCSF GROSS AREA = 0 SF
PERIMETER AREA = 18,430 SF

PARKING PLAN - LEVEL B4

FIGURE 5 - PARKING SUMMARY

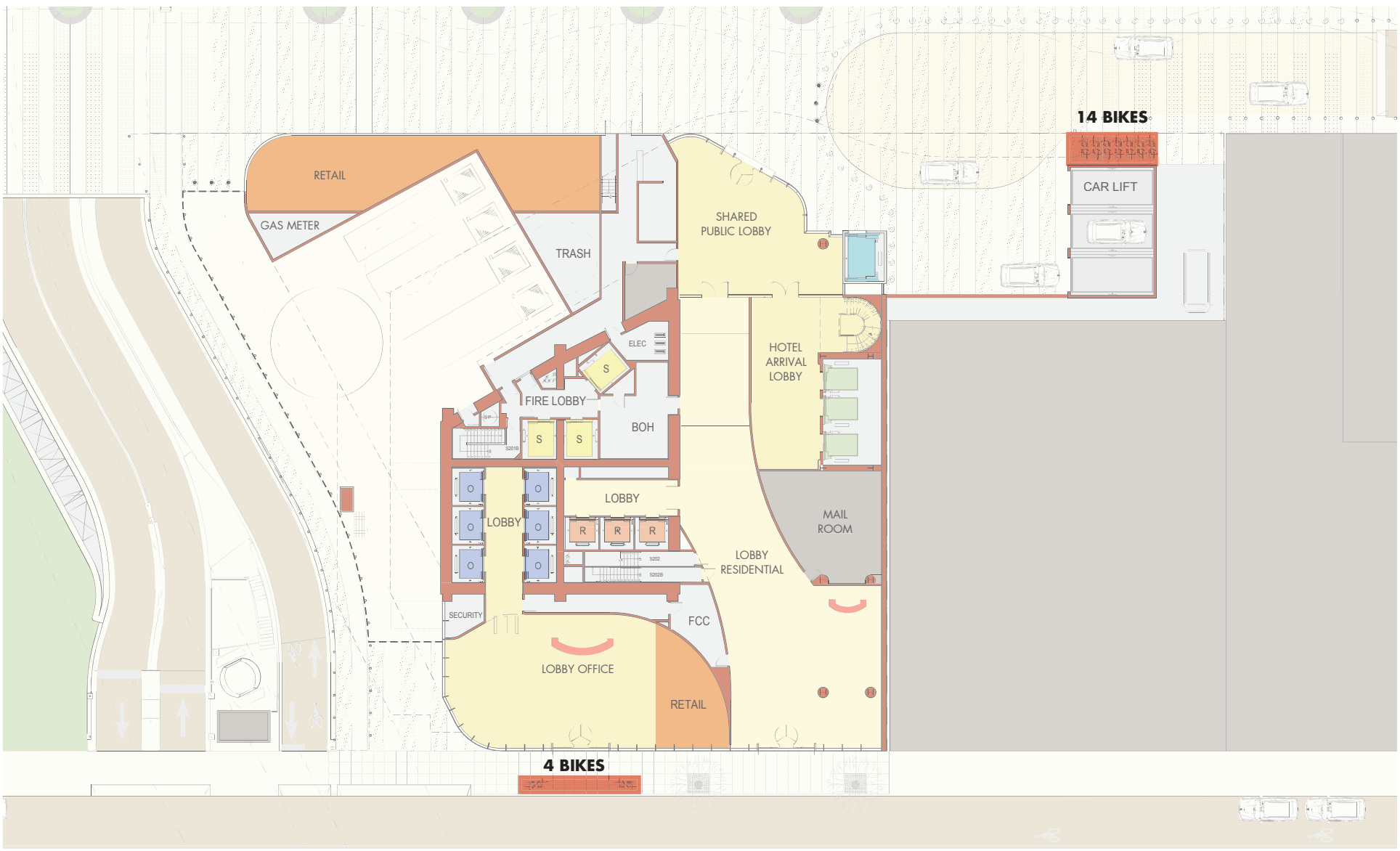
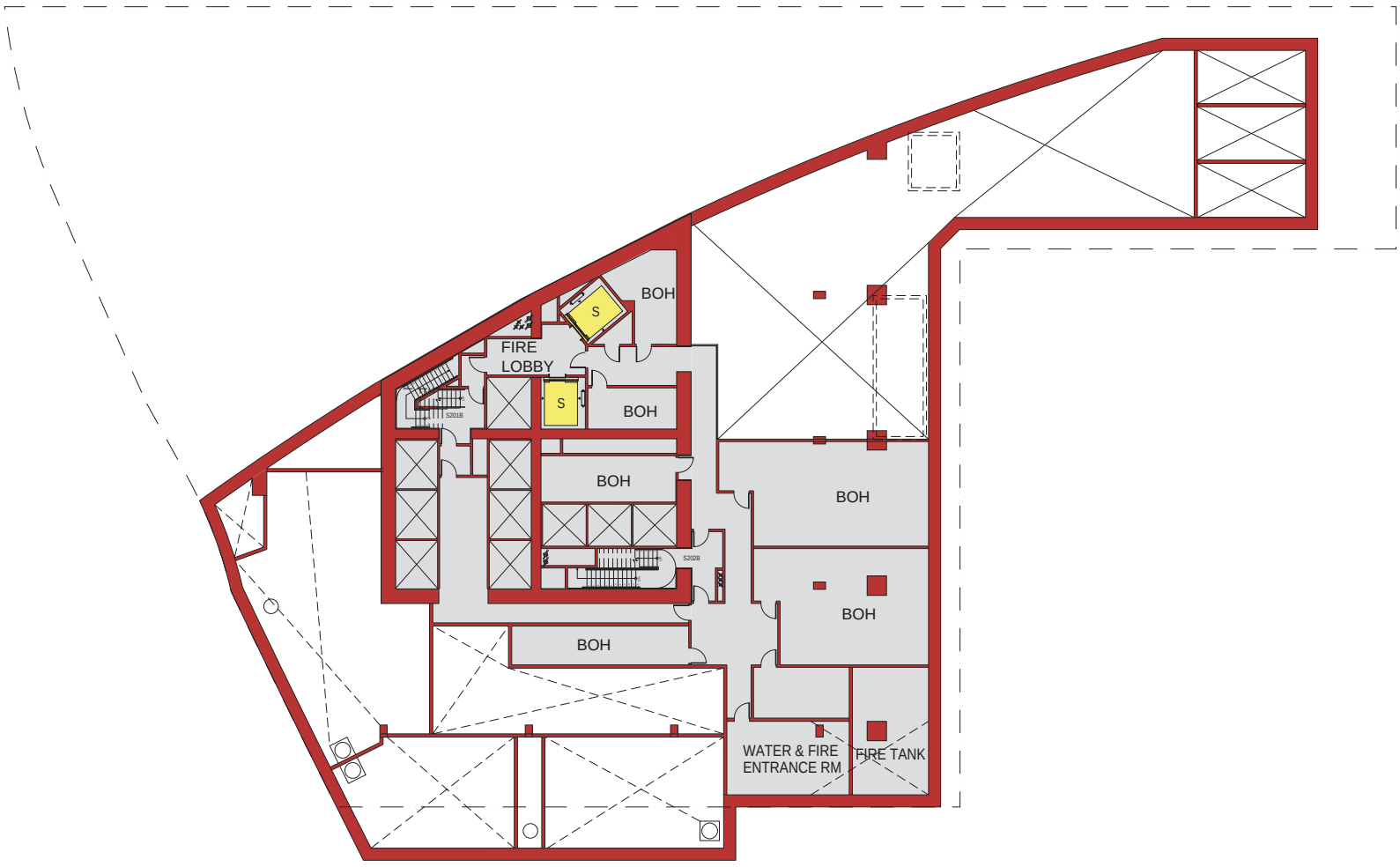
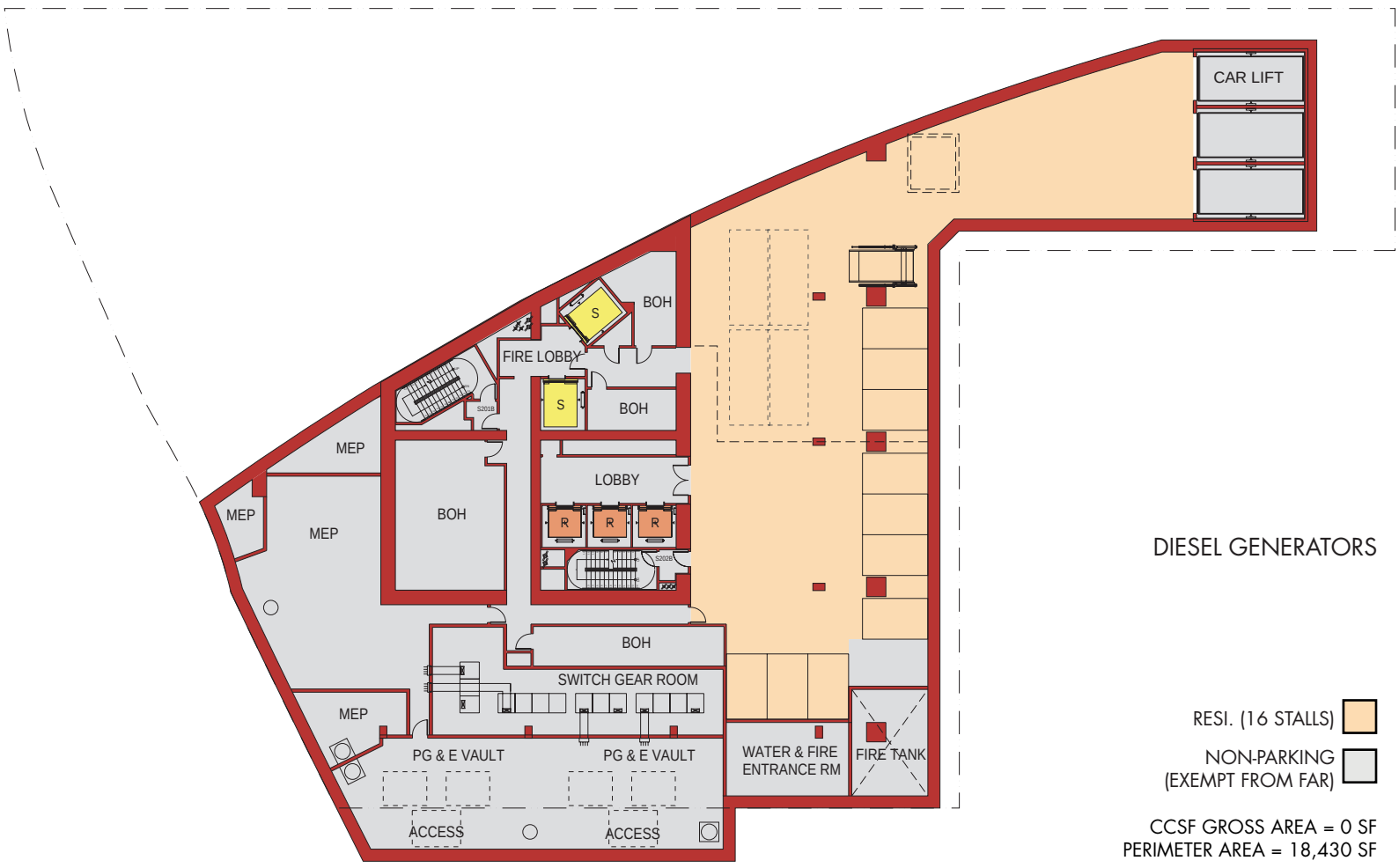


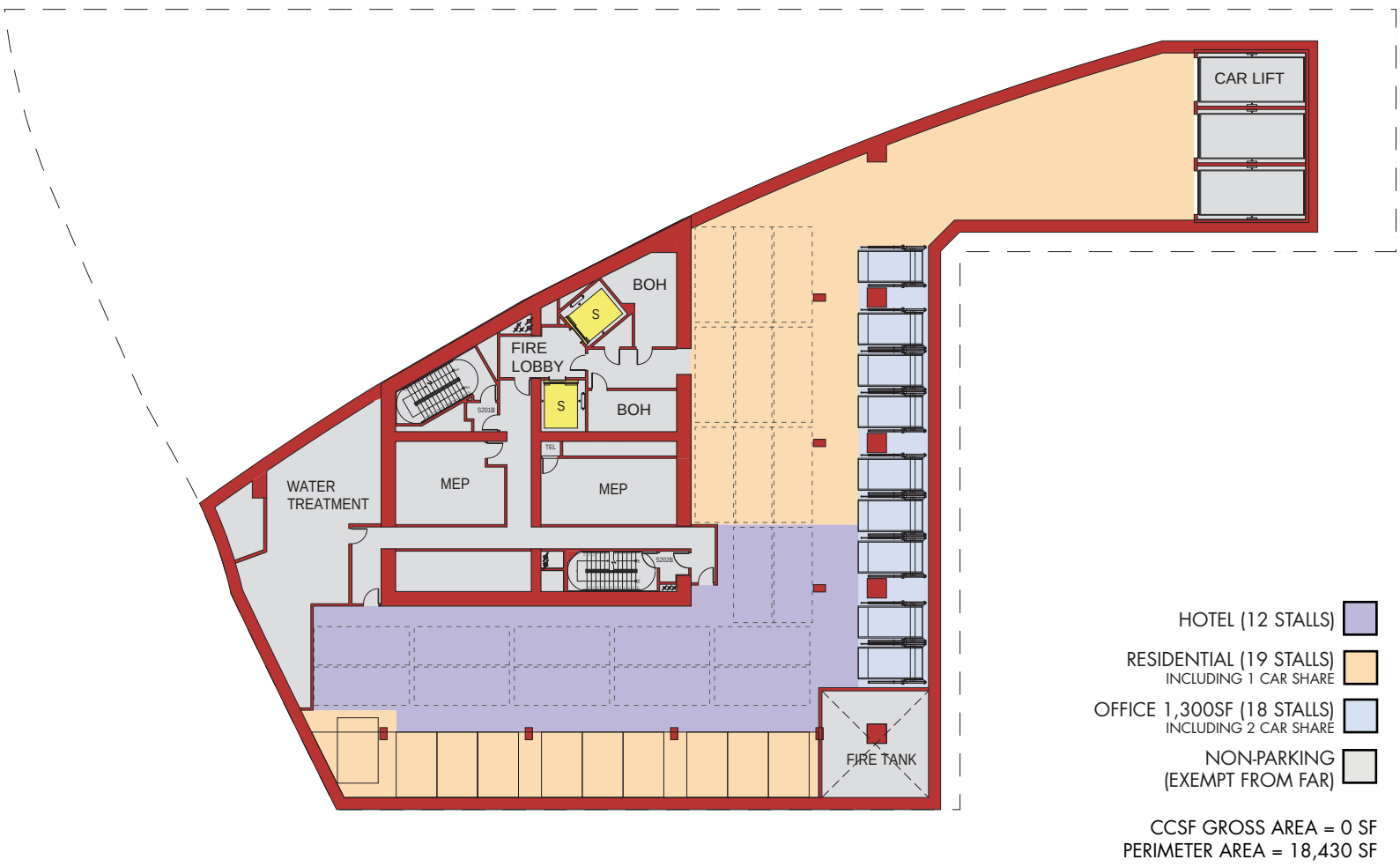
FIGURE 6 - CLASS 2 BIKE PARKING



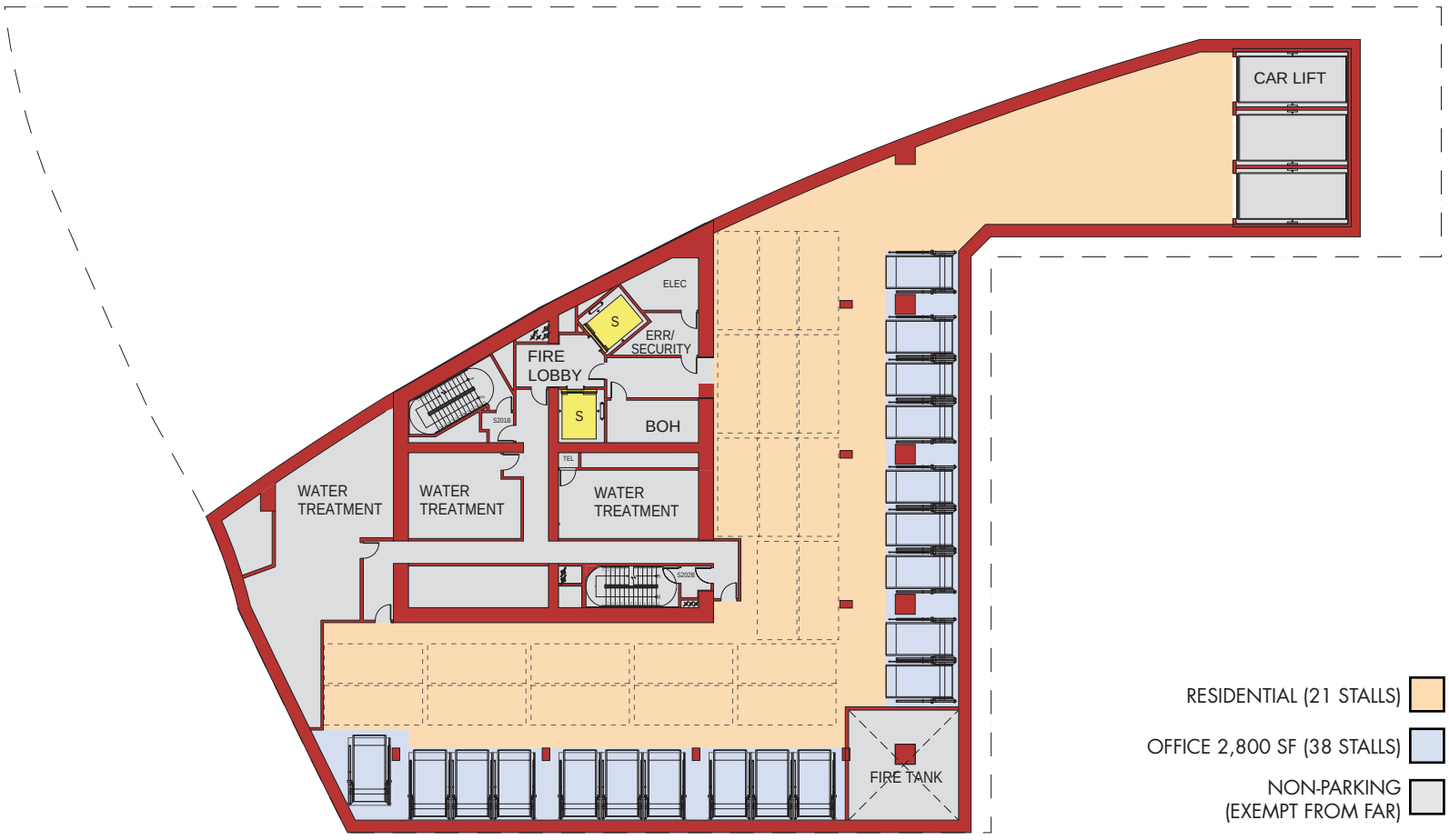
LEVEL B1 MEZZ



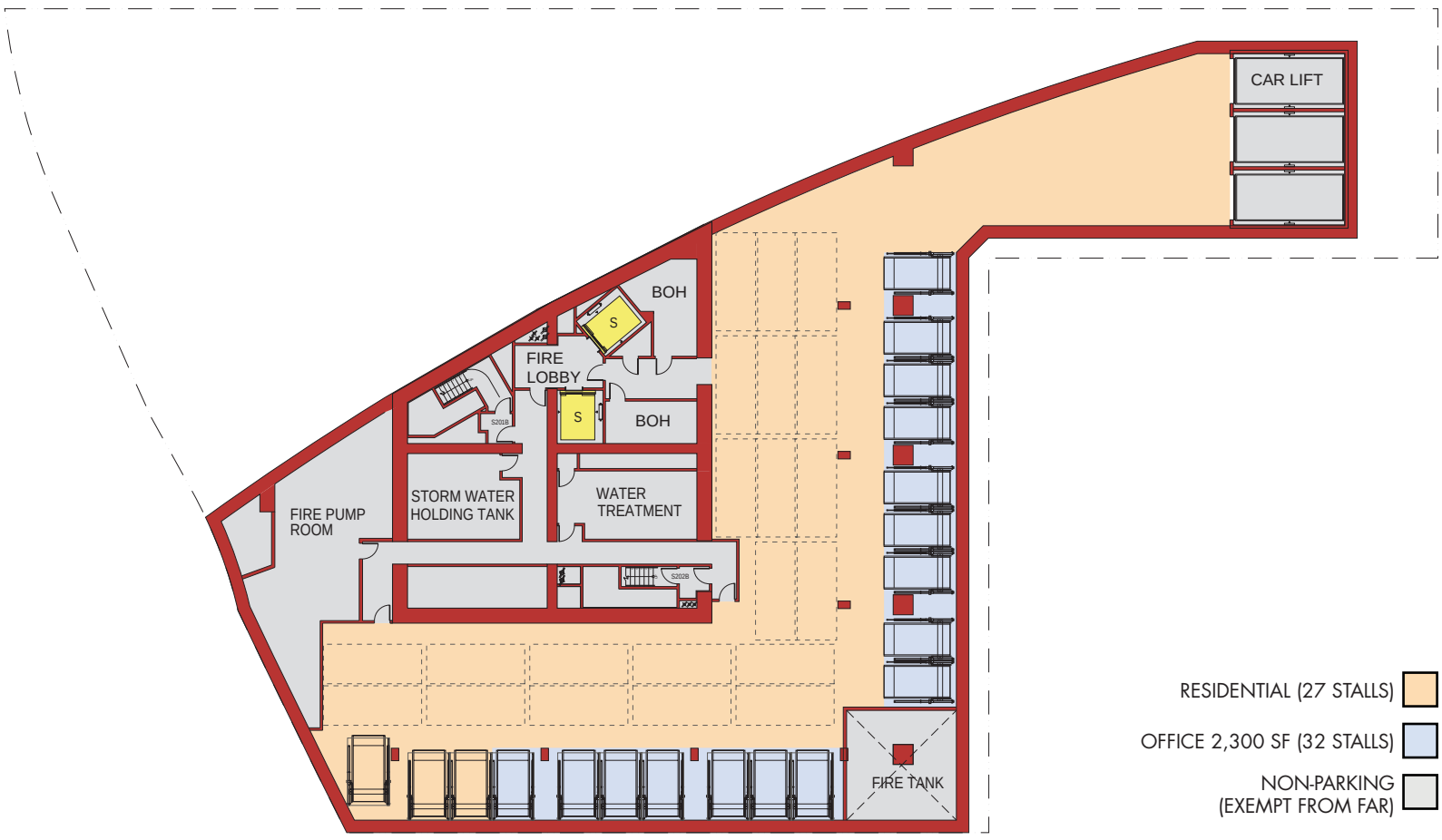
LEVEL B1



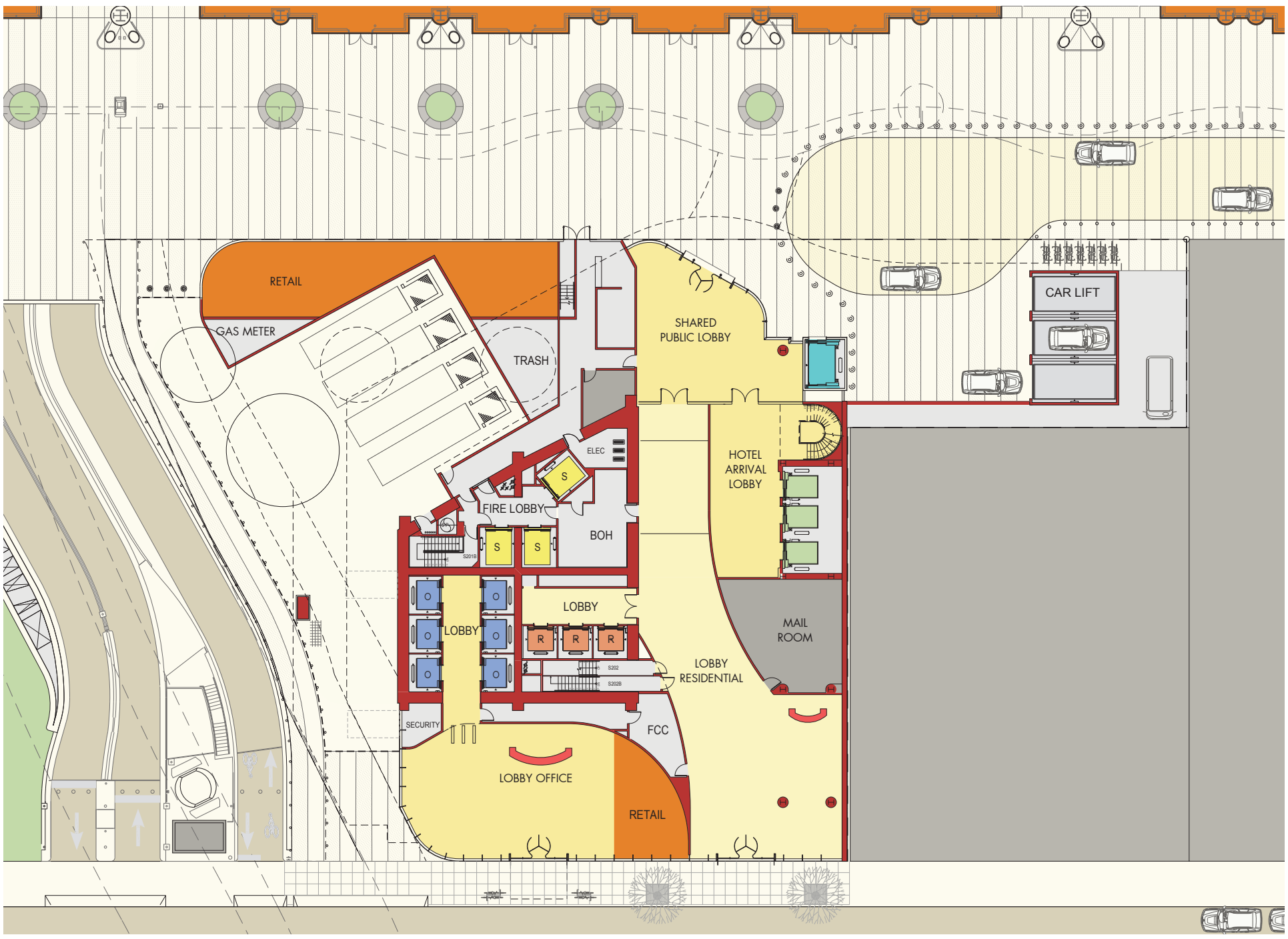
LEVEL B2



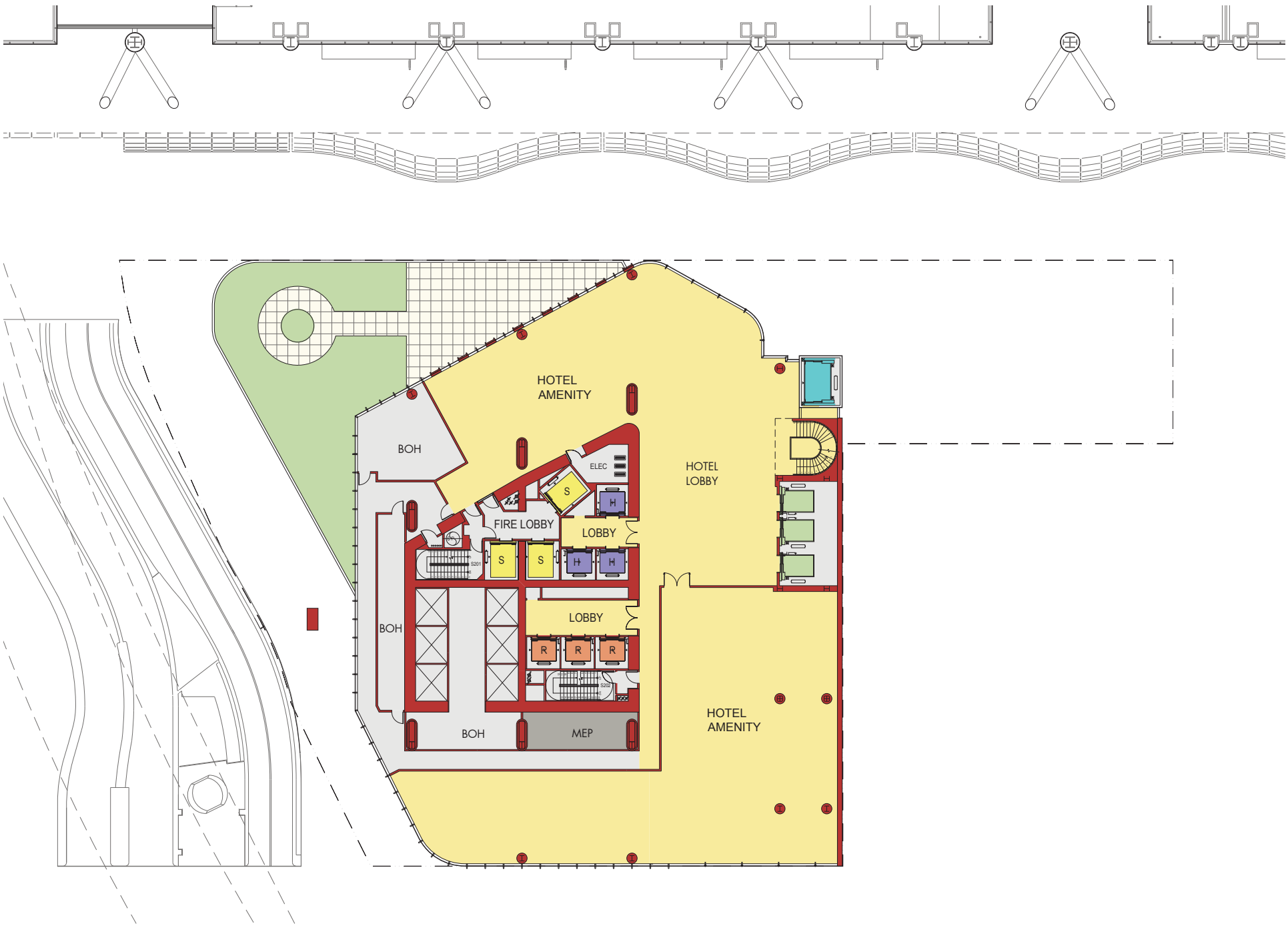
LEVEL B3



LEVEL B4

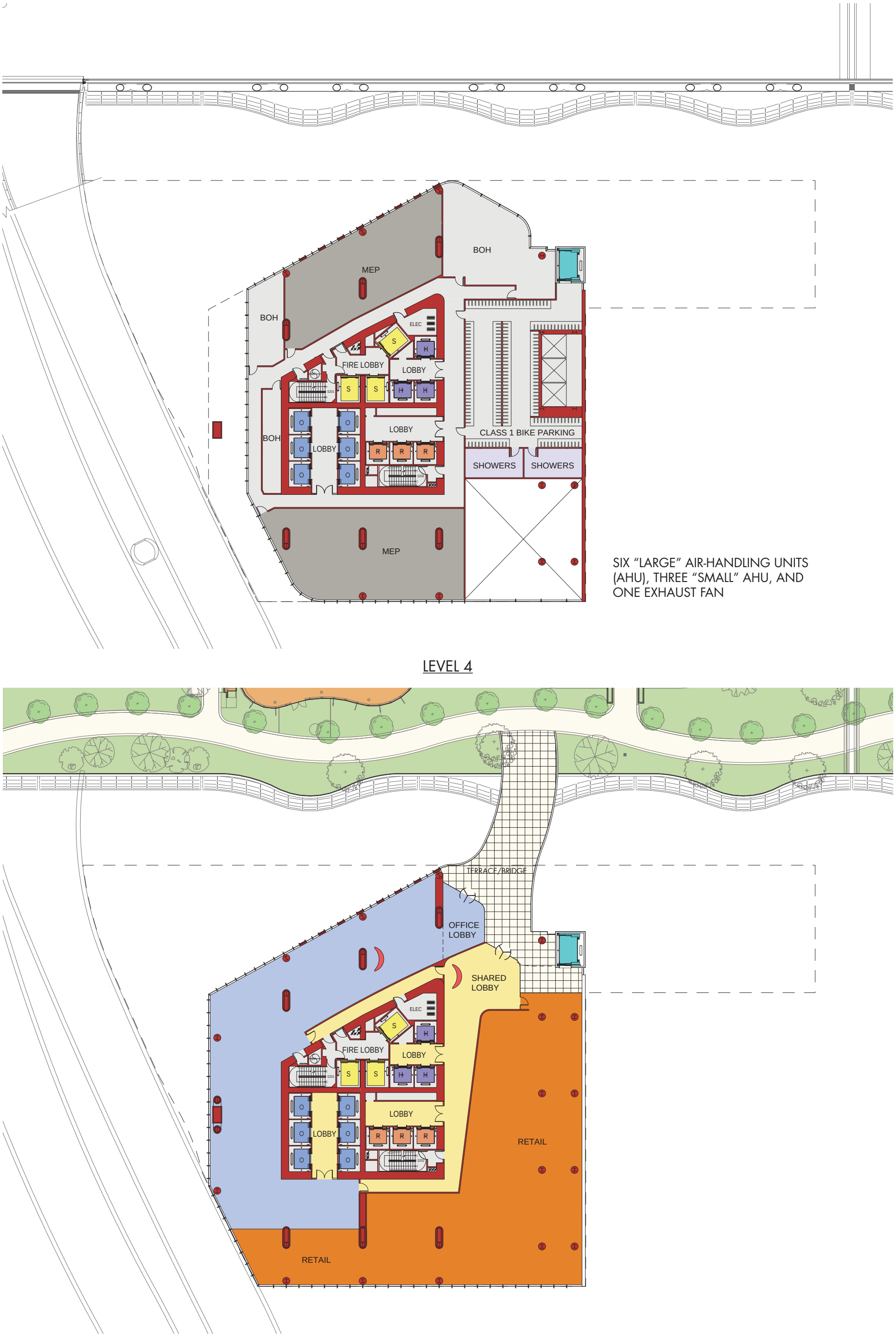


LEVEL 1



LEVEL 2

LEVEL 3



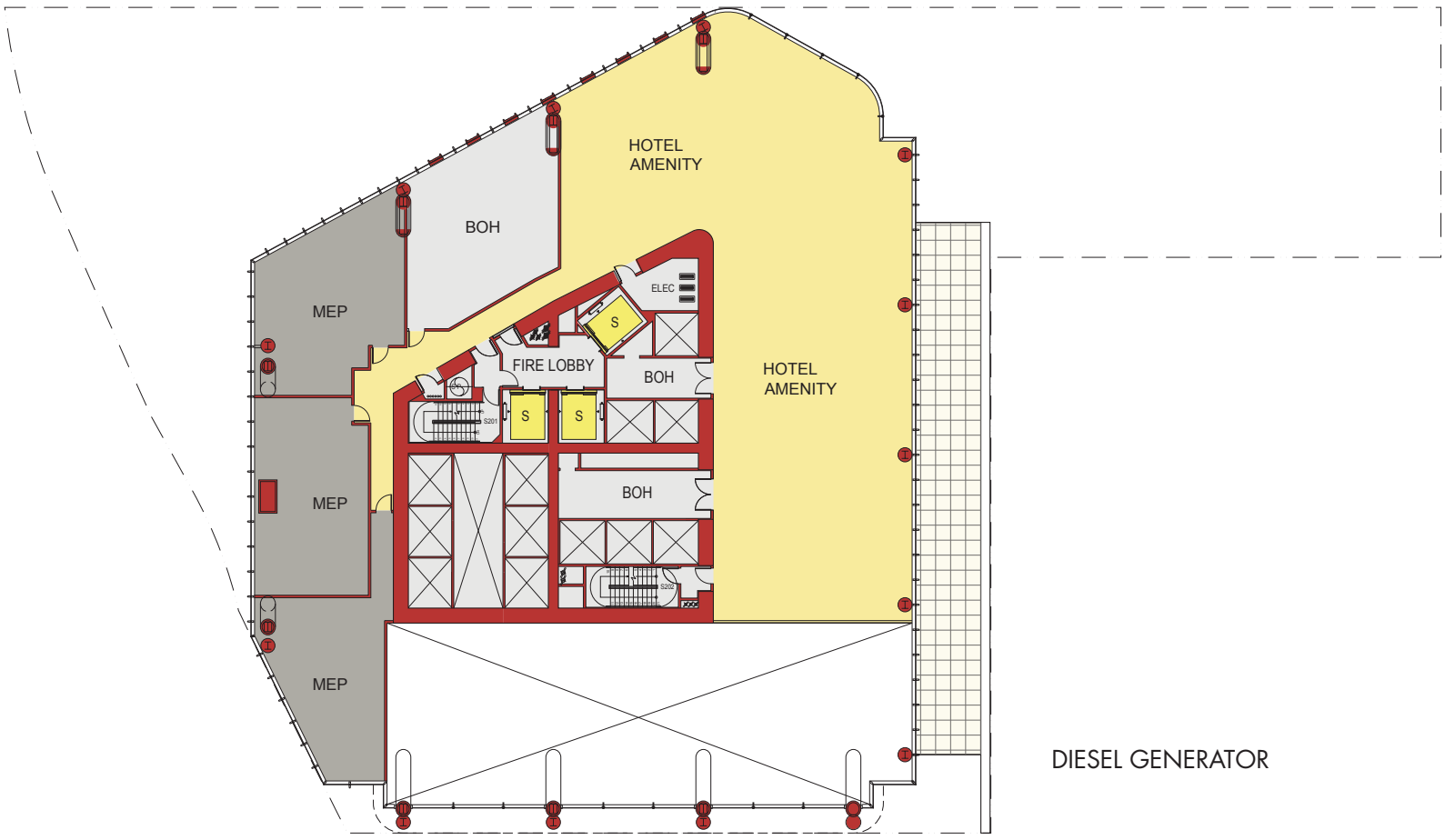
SIX “LARGE” AIR-HANDLING UNITS (AHU), THREE “SMALL” AHU, AND ONE EXHAUST FAN

LEVEL 4

LEVEL 5

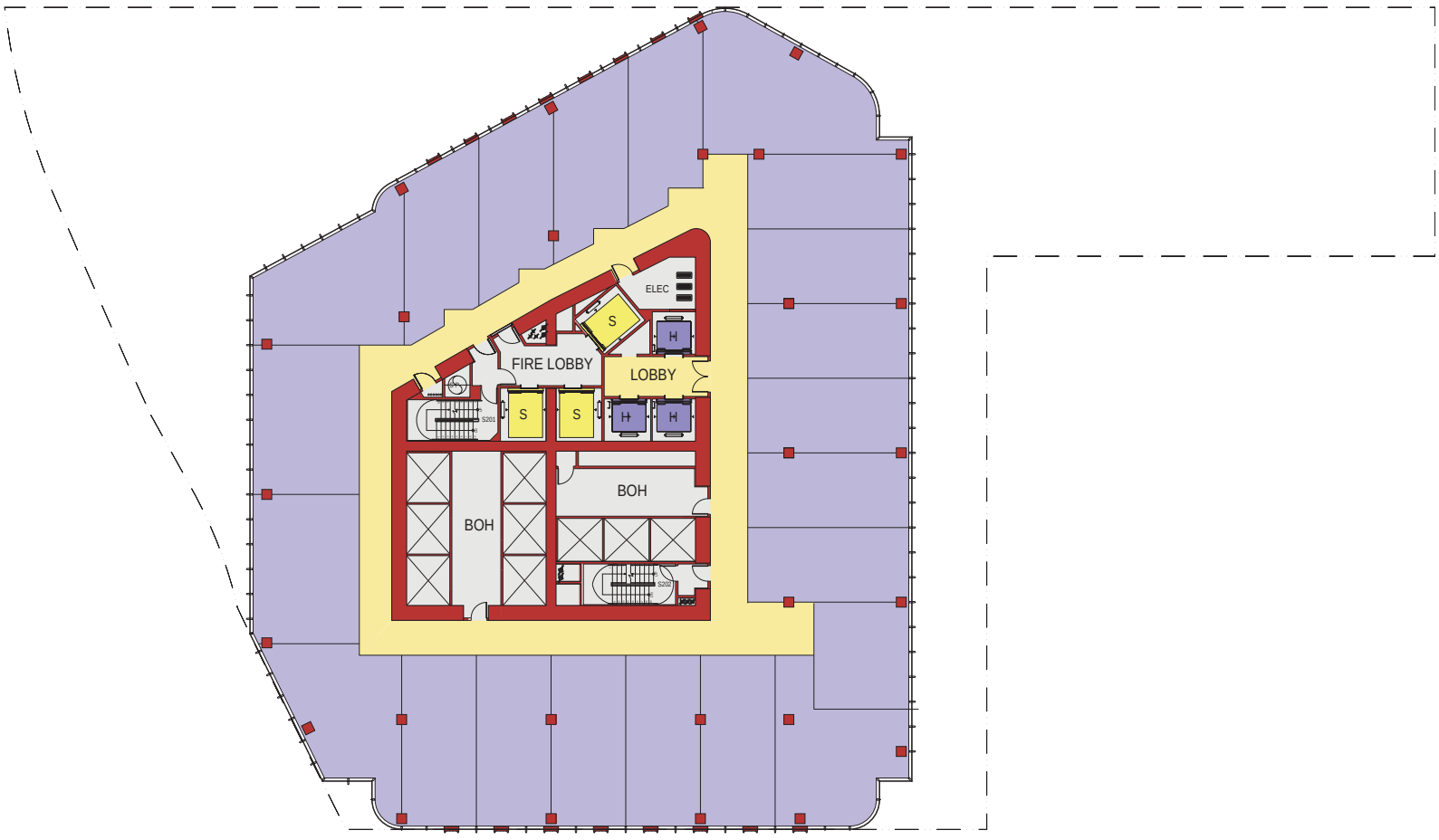
ONE “SMALL” AHU

LEVEL 6



DIESEL GENERATOR

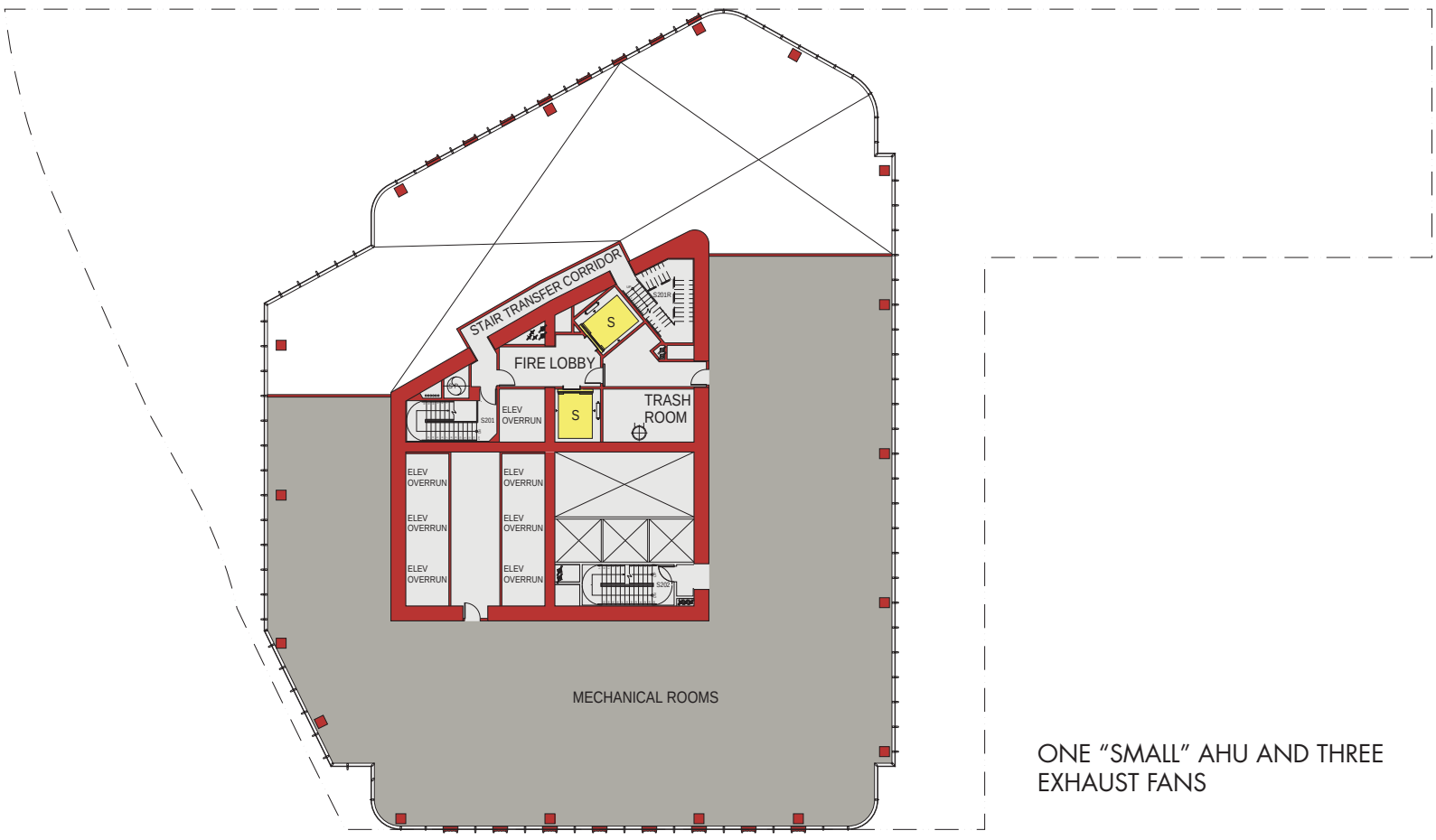
LEVEL 7



LEVEL 8 TO 16 - TYPICAL HOTEL ROOM FLOOR

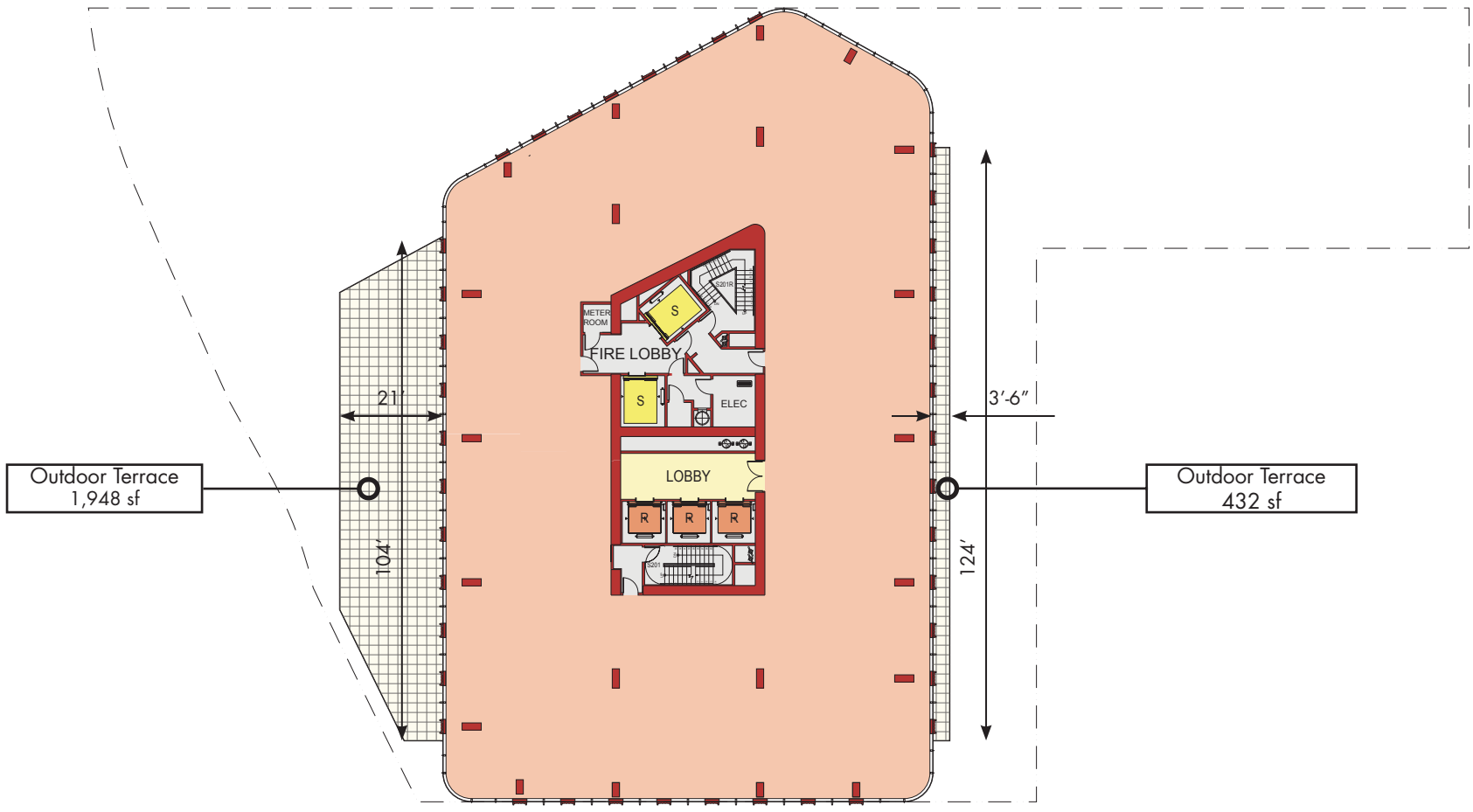
LEVEL 17 TO 30 - TYPICAL OFFICE FLOOR

LEVEL 31 OFFICE FLOOR



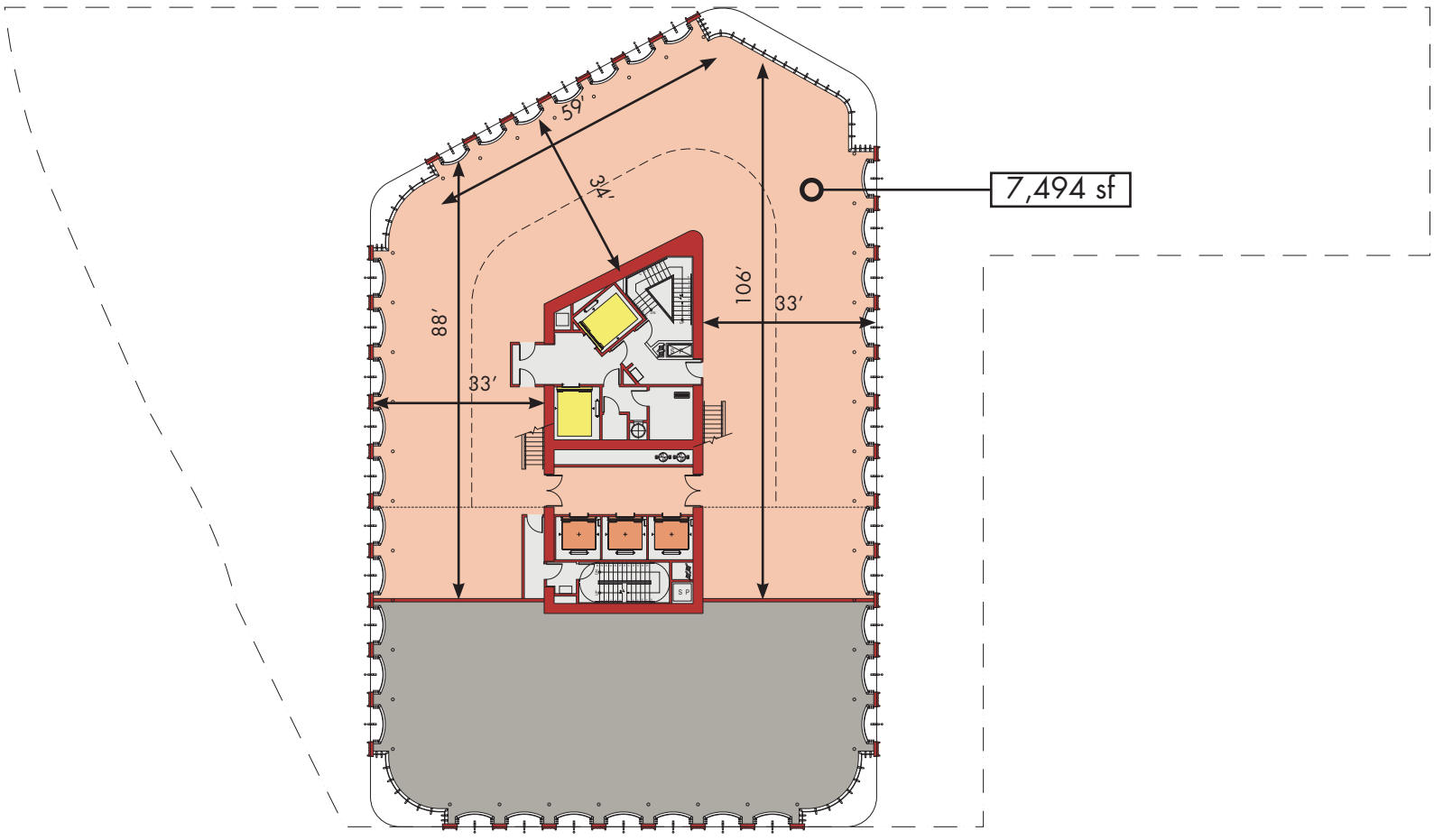
ONE “SMALL” AHU AND THREE EXHAUST FANS

LEVEL 32 MECHANICAL

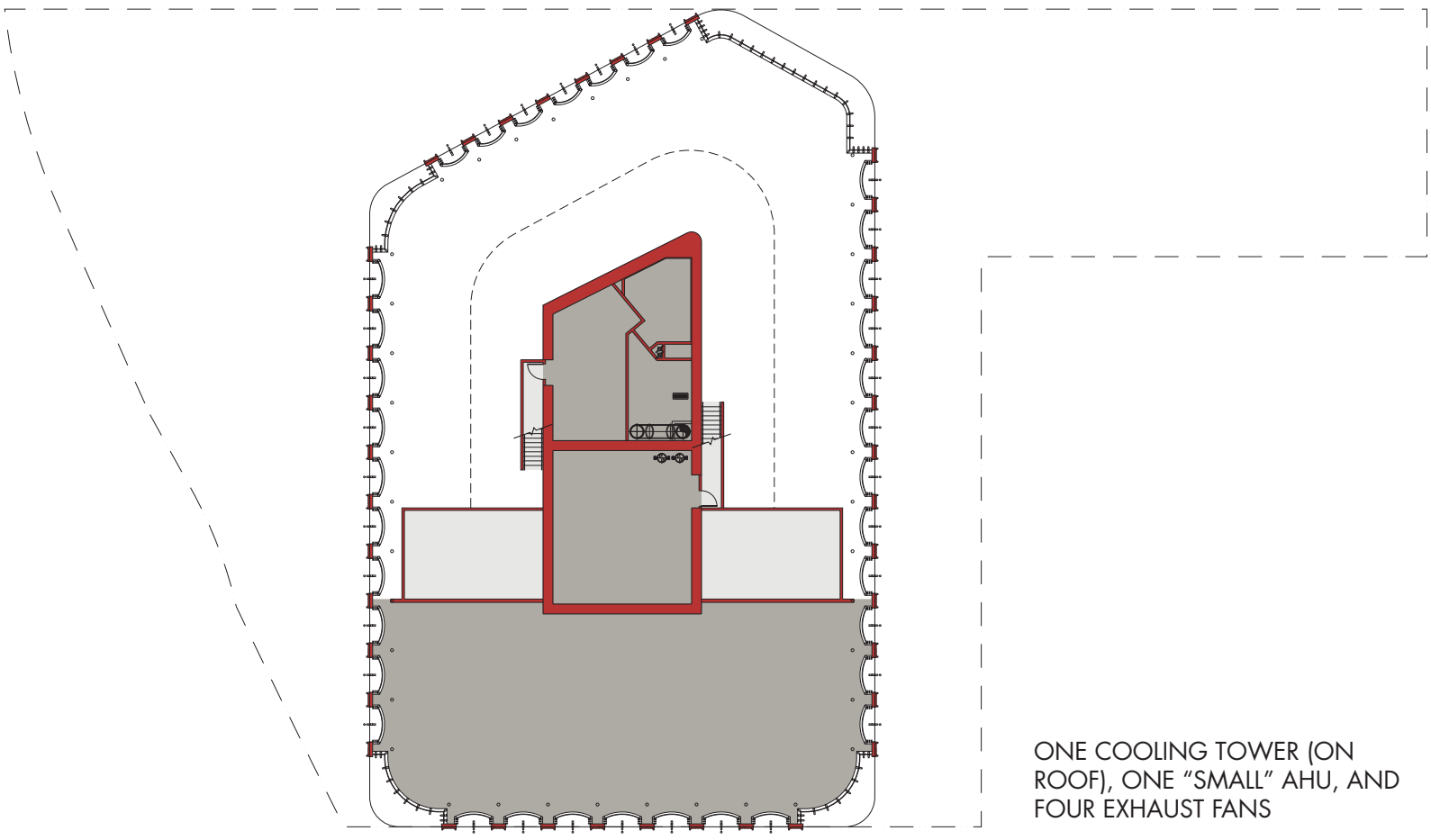


LEVEL 33 RESIDENTIAL AMENITY FLOOR

LEVEL 34 TO 61 – TYPICAL RESIDENTIAL

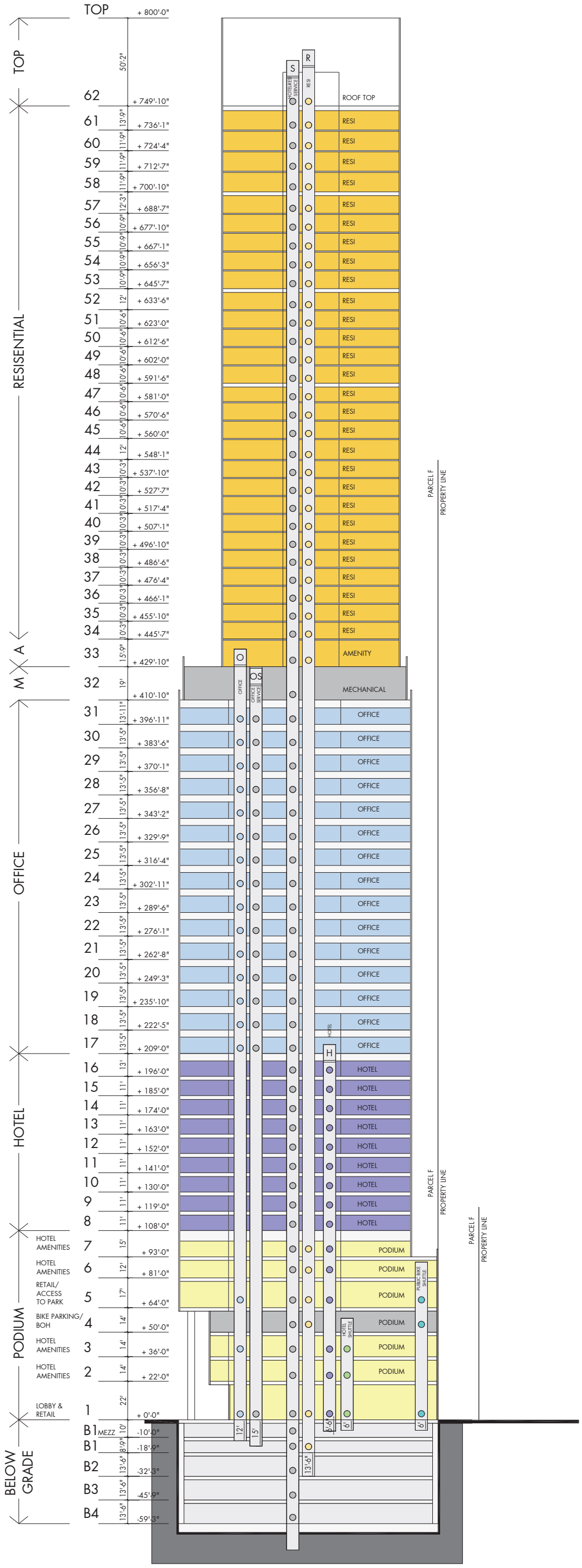


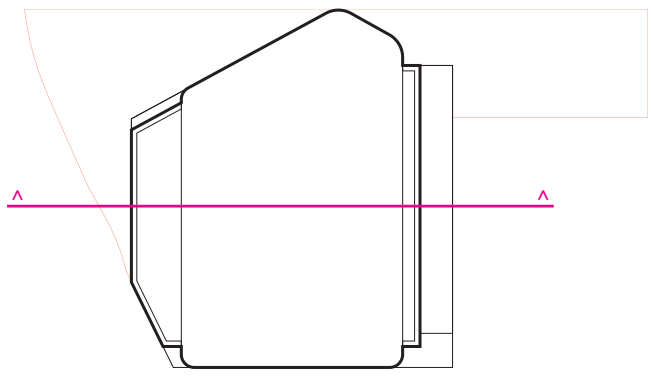
LEVEL 62 - ROOF



ONE COOLING TOWER (ON ROOF), ONE "SMALL" AHU, AND FOUR EXHAUST FANS

LEVEL 62 - MECHANICAL MEZZANINE





TOWER SECTION - EAST/WEST

TOWER ELEVATION - SOUTH

TOWER ELEVATION - NORTH (FACING NATOMA STREET)

Exhibit 2

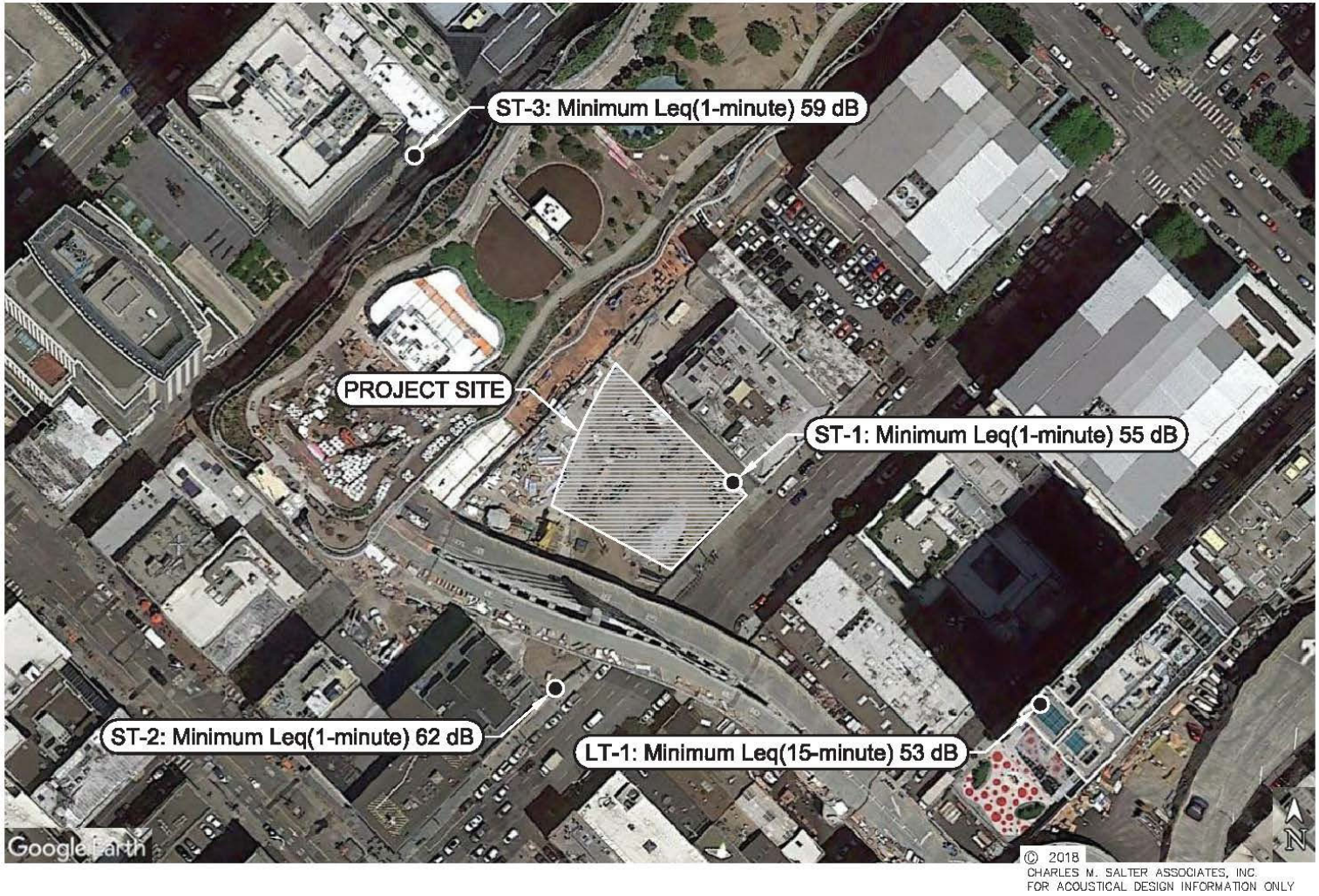


Figure 1: Noise measurement locations and existing noise levels

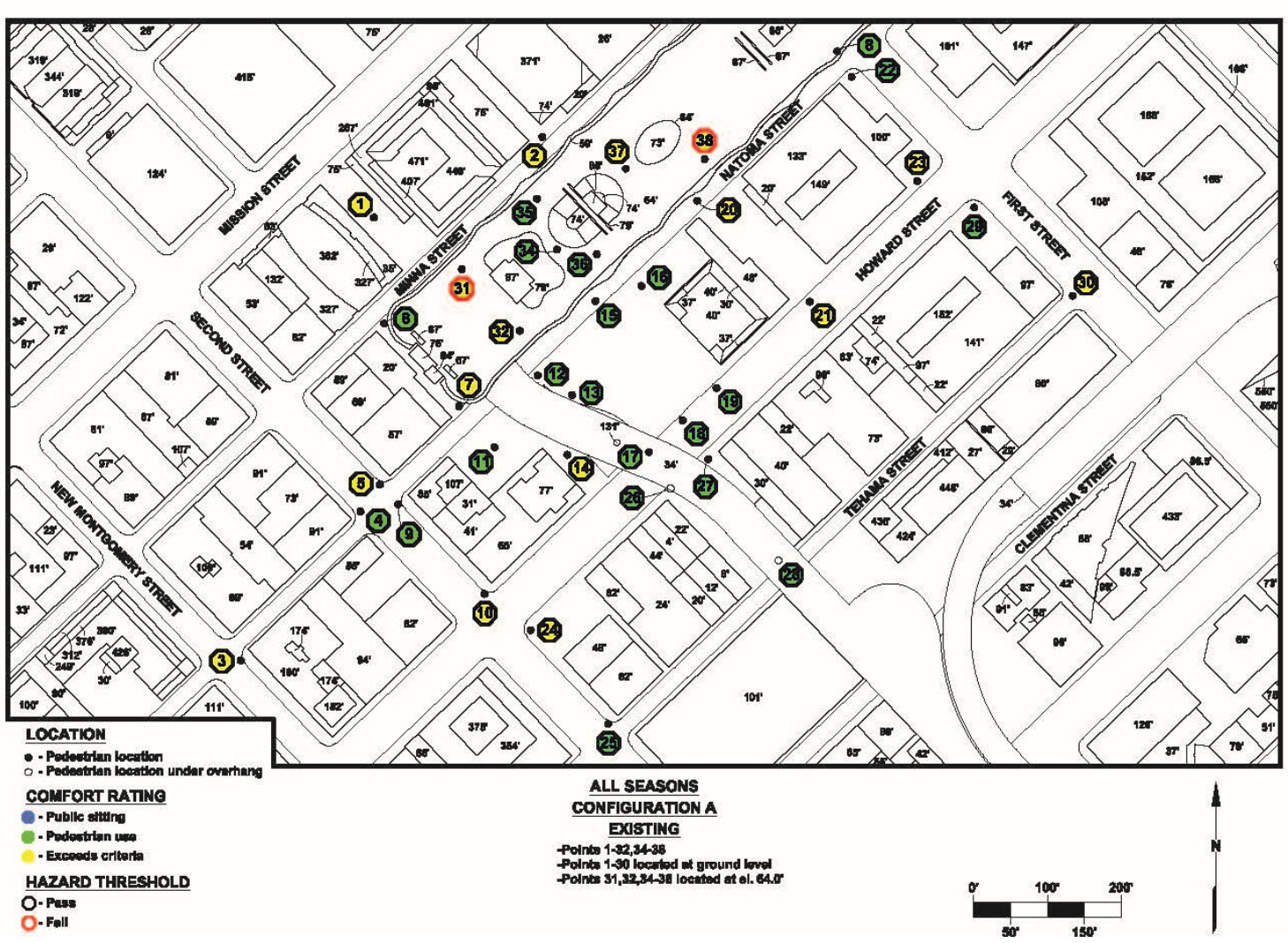


Figure 2: Existing pedestrian wind speed measurement points with comfort/hazard ratings

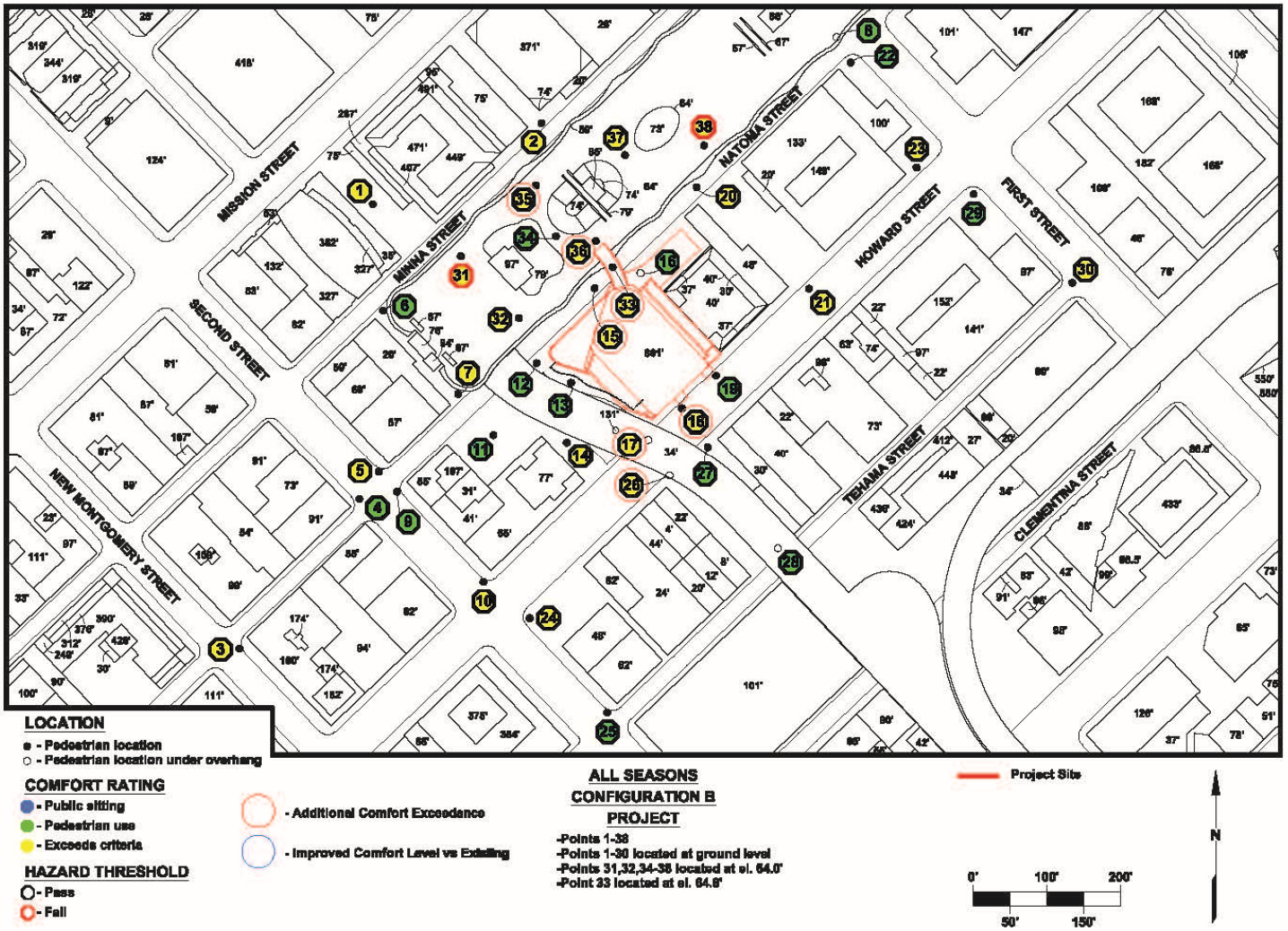


Figure 3: Existing plus project pedestrian wind speed measurement points with comfort/hazard ratings

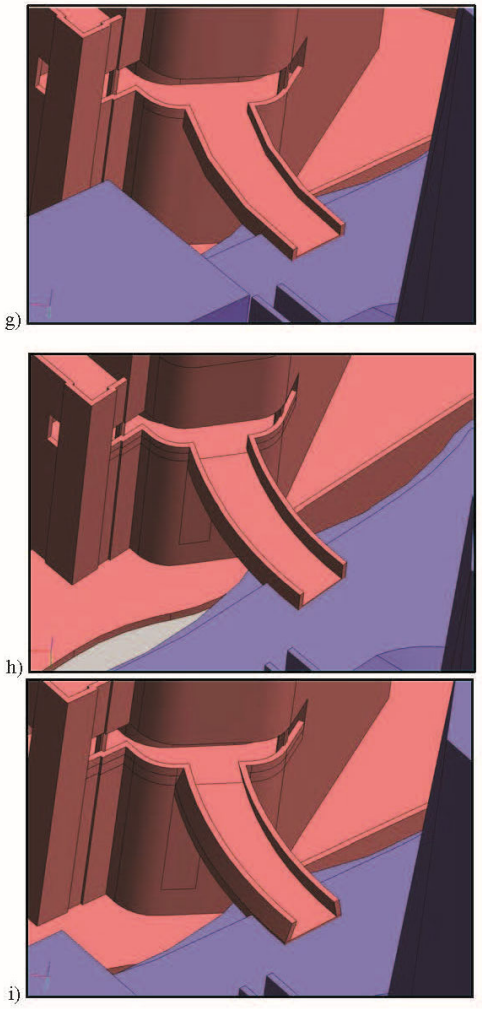


Figure 4: Pedestrian bridge designs

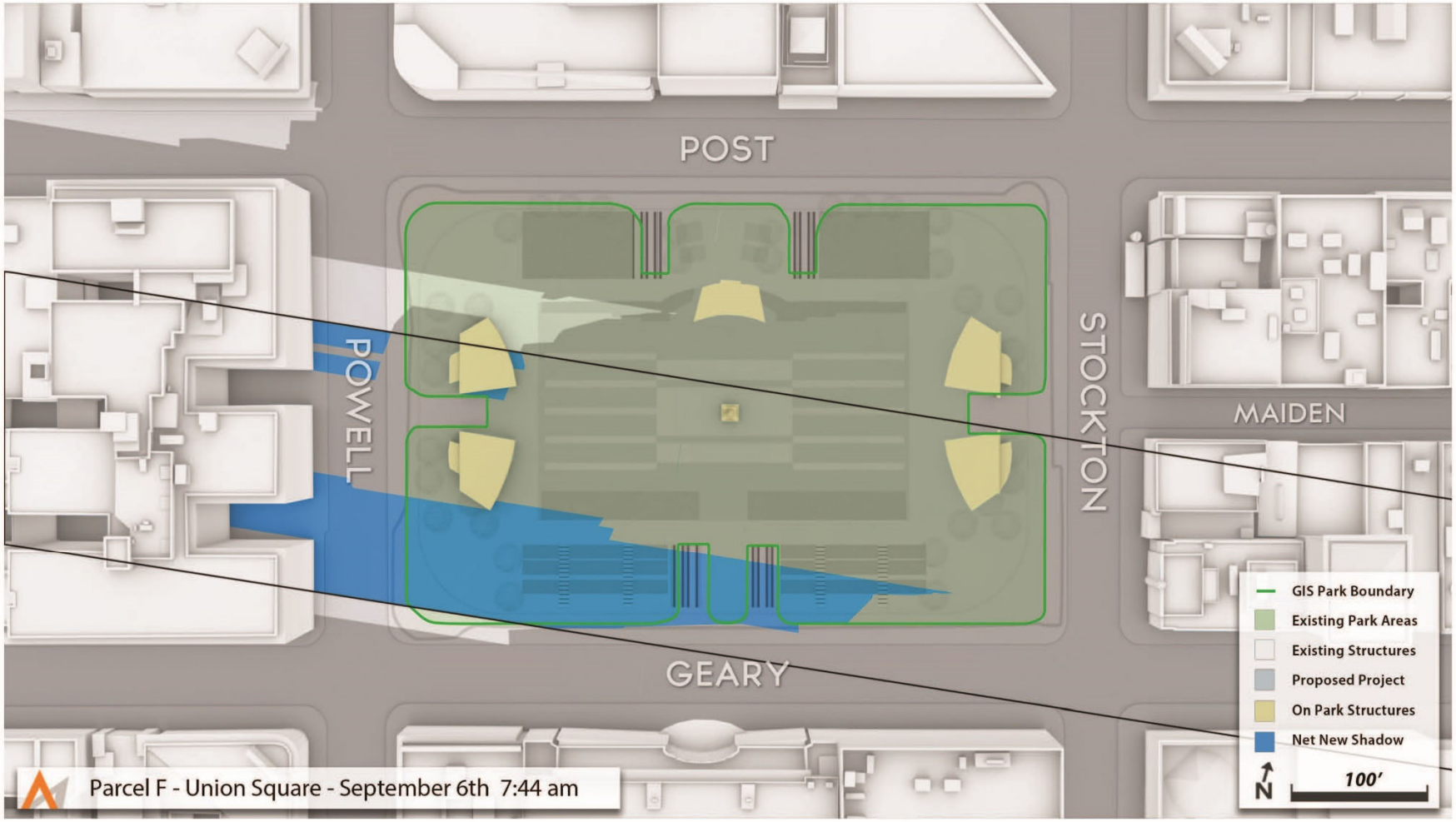


Figure 5: Greatest amount of net new project shadow on Union Square

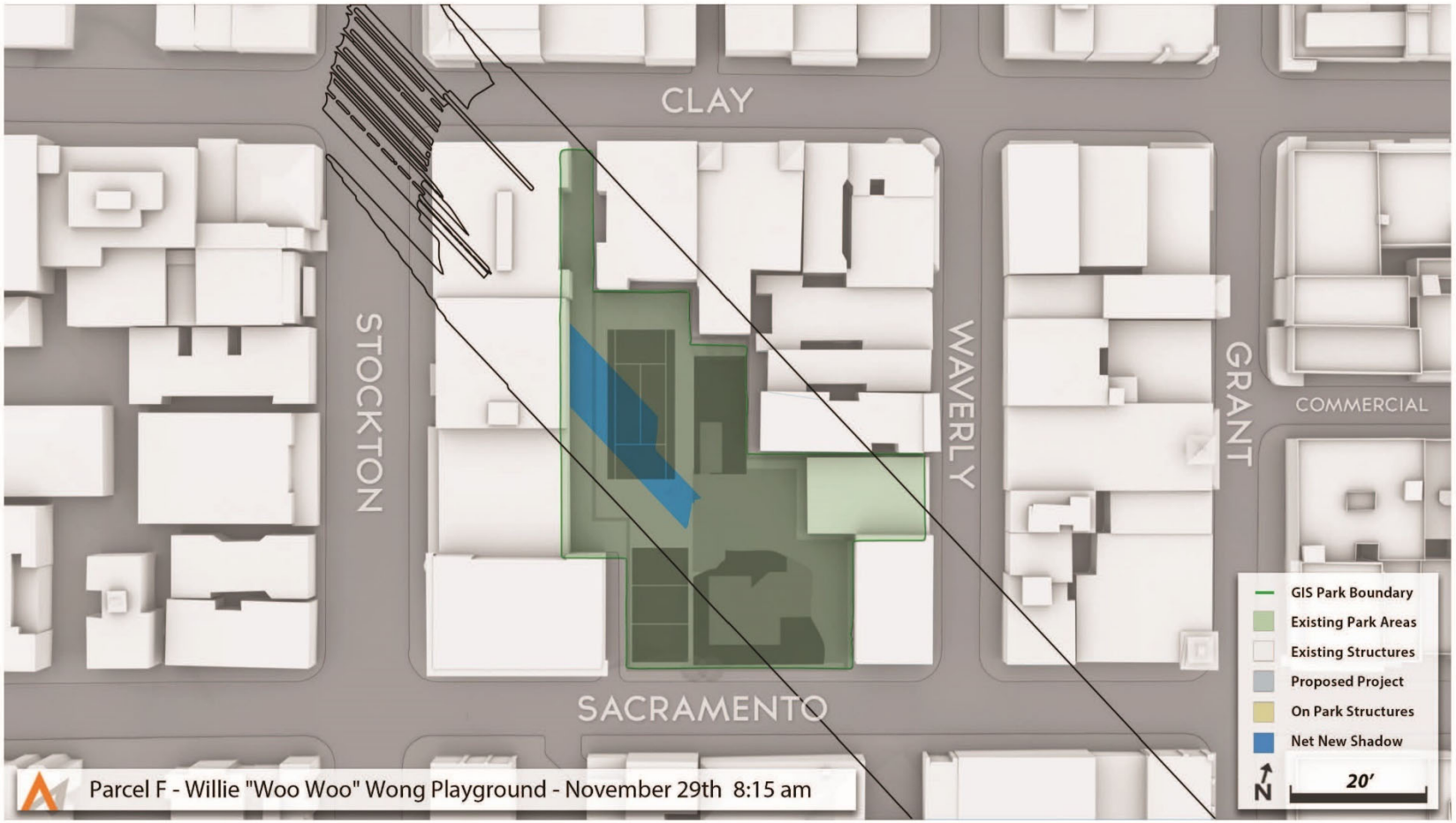


Figure 6: Greatest amount of net new project shadow on Willie "Woo Woo" Wong Playground